MAPS AND USER GUIDES

MAP	TITLE	PART NO	USER GUIDE
0001	DIAGNOSTIC USER GUIDE W DISKETTES	6841631	
0002	DIAGNOSTIC USER GUIDE W/O DISKETTES	6842299	
0005	TELEPROCESSING DIAGNOSTIC U/G	6842275	
0006	DISK DIAGNOSTIC U/G	6842305	
0022	5152 PRINTER DIAGNOSTIC U/G RPQ 8N5033	6842316	
0024	5217 PRINTER DIAGNOSTIC U/G	6842328	
1000	START MAP	6842340	
1016	DISK AND SIA MAP	6842297	5324
1100	INITIAL FAILURE MAP	6841341	
1150	CONFIGURATION DISPLAY MAP	6841633	
1200	POWER ON RESET MAP	6842342	
1201	POWER ON RESET MAP (FEATURES)	6841638	5246
1205	PROCESSOR MAP	6841712	5241
1210	STORAGE MAP	6841713	
1212	UPDATE STORAGE MAP	6842276	
1220	TRAP DATA MAP	6841653	5152
1225	INTERMITTENT ERROR MAP	6841716	
1250	POWER MAP	6842343	
1300	KEYBOARD MAP	6841654	5217
1400	DISPLAY MAP	6842344	
1450	WORD PROCESSING MAP	6842277	
1500	DISKETTE STRATEGY MAP	6841632	5242
1501	DISKETTE ENTRY MAP	6842271	
1502	RPQ EXTENDED FEATURE MAP	6842272	
1530	1500/1505 PID FAILURE MAP(DISKETTE)	6841634	
1540	READ/WRITE FAILURE MAP (DISKETTE)	6841636	
1545	NOT READY MAP (DISKETTE)	6841637	
1555	SEEK ERROR MAP (DISKETTE)	6841639	
1560	5246 POWER MAP	6842270	

MAPS AND USER GUIDES (CONTINUED)

MAP	TITLE	PART NO
1600 - 1651	5247 DISK UNIT MAPS	SEE DISK INDEX BOOK 3
1900	PRINTER REFERENCE MAP	6842334
1901	PRINTER SWITCH CABLE ASM MAP	6842324
1905	5217 DIAGNOSTIC PRINTOUTS MAP	6842325
2200 - 2204	5152 PRINTER MAPS (RPQ 8N5033)	SEE PRINTER INDEX
2000 - 2025	5241 PRINTER MAPS	SEE PRINTER INDEX
2400 - 2404	5217 PRINTER ATTACHMENT MAPS	SEE PRINTER INDEX
3000 - 3025	5242 PRINTER MAPS	SEE PRINTER INDEX

PID NUMBERS AND THE USER GUIDE THEY ARE IN.

PID	TITLE	USER GD
0001	DIAGNOSTIC CONTROL PROGRAM	0001
0002	5322/5324-0 DCP	0002
0100	FORMATTE DISKETTE UTILITY	0001
0105	COPY DISKETTE UITLITY	0001
0110	READ VERIFY DISKETTE UTILITY	0001
0115	VTOC DISPLAY UTILITY	0001
0120	ERROR LOG DISPLAY UTILITY	0001
0125	EC/PTF SUPPORT UTILITY	0001/0002
0126	EC/PN DISPLAY UTILITY	0002
0150	CONFIGURATION DISPLAY	0001/0002
0600	DASD FORMAT UTILITY	0006
0605	DASD BUILD/REBUILD UTILITY	0006
0610	5247 READ VERIFY UTILITY	0006
0620	5247 ERROR LOG DISPLAY UTILITY	0006
0625	5247 EC/PN DISPLAY UTILITY	0006/0002
1200	PROCESSOR POWER ON TEST	0001/0002
1205	CPU PROCESSOR FLT	0001/0002
1210	CPU STORAGE FLT	0001/0002
1212	UPDATE STORAGE TEST	0001/0002
1300	KEYBOARD FLT	0001/0002
1400	SCREEN IMAGE TEST PATTERNS	0001/0002
1450	WORD PROCESSING SUPPORT TEST	0001/0002
1500	ROS RESIDENT DISKETTE DRIVE 1-4	0001
1505	DISKETTE FLT, PART 1	0001
1510	DISKETTE FLT, PART 2	0001
1600	ROS RESIDENT SERIAL LINK ATT	0002
1605	5247 CPU FAULT LOCATING TEST	0006
1620	DASD FAULT LOCATING TEST	0006
1630	DISKETTE RESIDENT 5247 SERIAL LINK	0006
2200	5152 PRINTER FLT (RPQ 8N5033)	0022

2300	5241/5242 PRINTER FLT	0001/0002
2400	5217 PRINTER ATTACHMENT FLT	0024
5000	COMMUNICATIONS FEATURE FUNCT'L DIAG	0005
5010	BSCA ADAPTER, DOWN LINE TEST	0005
5020	COMMUNICATIONS FEATURE SERVICE AIDS	0005
DMON	ROS RESIDENT MONITOR	0001/0002

START MAP

PAGE 1 OF 12

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP ENTRY POINT	PAGE NUMBER	STEP NUMBER
1200	G	3	007
1205	B	9	055
1210	B	9	055
1300	B	9	055
1400	A	1	001
1400	B	9	055
1600	A	1	001
1620	A	1	001
2001	A	1	001
2001	B	9	055
2401	A	1	001
2401	B	9	055
3001	A	1	001
3001	B	9	055
3004	B	9	055

EXIT POINTS

EXIT THIS MAP PAGE NUMBER	STEP NUMBER	TO MAP NUMBER	ENTRY POINT
6	037	1016	A
7	040	1016	A
12	065	1016	A
3	004	1100	A
3	006	1200	A
5	022	1220	A
5	026	1220	A
12	071	1220	A
11	056	1225	A
5	021	1300	A
5	025	1300	A
8	046	1300	A
9	048	1300	A
3	008	1400	A
12	067	1501	A
9	052	1501	AA
6	034	1600	A
12	066	1600	A
12	070	1600	A
12	069	1600	E
12	068	1900	B

001
(ENTRY POINT A)

GENERAL RULES

1. TURN POWER OFF BEFORE REMOVING OR REPLACING PARTS.

2. FOR CRT MECHANICAL PROBLEMS, GO TO THE CRT SECTION OF THE SERVICE MANUAL.

3. BEFORE REPLACING ANY CABLE, SEE THE CABLE FIGURE IN THE SERVICE MANUAL AND CHECK THE

(STEP 001 CONTINUES)

(STEP 001 CONTINUED)
CABLE FOR CONTINUITY OF THE LEADS OR SHORT CIRCUIT BETWEEN THE LEADS. REPAIR THE CABLE IF POSSIBLE.

4. IF WORD PROCESSING CARD IS INSTALLED AND YOU ARE DIRECTED TO REVIEW I/O OR FEATURE CARDS; REMOVE THE CABLE CONNECTING THE WORD PROCESSING CARD TO THE SYSTEM. REMOVE THE CRT SIGNAL CABLE FROM THE WORD PROCESSING CARD AND CONNECT IT TO THE SYSTEM.

5. AFTER A REPAIR HAS BEEN MADE, ENSURE THAT THE FOLLOWING RULES ARE OBSERVED:

(A) RECONNECT ANY CABLES OR PARTS THAT WERE DISCONNECTED (ENSURE THAT THE CABLES ARE TIED AND LOCATED IN THEIR CORRECT POSITIONS (SEE SM 1200 AND 1215).

(B) REMOVE ALL TEST JUMPERS.

(C) VERIFY THE REPAIR BY RUNNING THE PROGRAM THAT FAILED.

****

BEFORE STARTING - RECORD ANY SYMPTOMS SUCH AS ERROR MESSAGES OR TRAP DISPLAYS. (SEE THE DIAGNOSTIC USER GUIDE 0001 FOR A DESCRIPTION OF ERROR LOG DISPLAY AND TRAP DATA DISPLAY.)

1. POWER OFF THE CPU.

2. SET THE DISPLAY BRIGHTNESS CONTROL (ON FRONT OF PROCESSOR) IN THE CENTER OF ITS ADJUSTMENT RANGE.

(STEP 001 CONTINUES)

(STEP 001 CONTINUED)

3. POWER ON ALL ATTACHED I/O UNITS, IF POWERED OFF.

NOTE: IF YOU SEE THAT AN ATTACHED I/O UNIT DOES NOT POWER ON, GO TO THE ENTRY MAP FOR THAT DEVICE.

4. WAIT 1 MINUTE.

5. POWER ON THE CPU.

6. AFTER YOU POWER ON THE SYSTEM, LOOK AND LISTEN FOR THE FOLLOWING CONDITIONS INSIDE OF 90 SECONDS AFTER POWER ON.

(A) THE FOLLOWING MESSAGE IS DISPLAYED:

'READY' ON LINE 24, STARTING IN POSITION 2 OF THE LINE.

(B) THE AUDIBLE ALARM IS TURNED ON, THEN TURNED OFF.

* * * * * * * * * * * * * * * * * *

ARE ANY CHARACTERS DISPLAYED ON THE CRT WITH THE BRIGHTNESS CONTROL SET AT CENTER RANGE? (IF DATA IS DISTORTED OR CHARACTERS ARE NOT CORRECTLY FORMED, ANSWER 'YES')?
Y N
|
| 002
| IS THE CURSOR THE ONLY THING ON
| THE SCREEN?
| Y N
		05APR82 PN6842340
EC327594 PEC323398
3 3 3
A B C

START MAP

PAGE 3 OF 12

003

GO TO STEP 005,
ENTRY POINT BB.

004
GO TO INITIAL FAILURE MAP.
GO TO MAP 1100, ENTRY POINT A.

005
(ENTRY POINT BB)

DOES THE AUDIBLE ALARM TURN ON, THEN OFF INSIDE OF 90 SECONDS AFTER POWER ON?
Y N

006

GO TO MAP 1200, ENTRY POINT A.

007
(ENTRY POINT G)

THE DISPLAY IS NOT NORMAL IF ANY OF THE FOLLOWING CONDITIONS OCCUR:

(A) DISPLAY LINES NOT STRAIGHT, DISTORTED.
(B) CHARACTERS NOT DISTINCT, OUT OF FOCUS.
(C) CHARACTER WIDTH NOT CONSTANT FROM THE LEFT TO RIGHT SIDE OF THE SCREEN.
(D) CHARACTER HEIGHT NOT CONSTANT FROM TOP TO BOTTOM OF THE DISPLAY.
(E) RASTER IS DECREASED IN SIZE.
(F) RASTER IS OUT OF SYNC.
(G) DISPLAY CONTAINS WIDE HORIZONTAL BARS SIMILAR TO A TELEVISION SET WITH THE HORIZONTAL HOLD OUT OF ADJUSTMENT.
(H) EXTRA OR MISSING DOTS IN THE
(STEP 007 CONTINUES)

(STEP 007 CONTINUED)
CHARACTERS.
(I) WRONG CHARACTERS DISPLAYED.
(J) DISPLAY NOT ALIGNED CORRECTLY ON THE FACE OF THE CRT.
(K) DISPLAY 'TOO DIM' OR 'TOO BRIGHT' OR 'NO DISPLAY AT ALL'.

IS THE DISPLAY NORMAL?
Y N

008
GO TO THE DISPLAY MAP
GO TO MAP 1400, ENTRY POINT A.

009
IS A FLASHING CURSOR DISPLAYED ON THE SCREEN?
Y N

010
1. REPLACE THE CPU PLANAR BOARD (SEE SM 1230).

2. VERIFY REPAIR.

011
IS THE CUSTOMER REPORTED SYMPTOM SYSTEM/23 TRAP ERRORS?
Y N

012
IS THE ONLY CUSTOMER REPORTED SYMPTOM ON THE 5247 'READY INDICATOR' NOT ON?
Y N

013
IS THE ONLY CUSTOMER REPORTED SYMPTOM 'READY INDICATOR ON THE 5247 TAKES MORE THAN 2 MINUTES TO LIGHT'?
Y N

05APR82 PN6842340

1 1 1 EC327594 PEC323398
2 2 2 4
D E F G

014
IS THERE A DISKETTE ATTACHMENT CARD INSTALLED IN THE SYSTEM? (SEE SM 1205 AND 1230).
Y N

015
IS THERE A WORK STATION SIA CARD INSTALLED IN THE SYSTEM AND IS JUMPER 'C3' IN PLACE? (SEE SM 1205 AND 1230).
Y N

016
THIS CONFIGURATION CANNOT BE SERVICED - RETURN TO STEP ONE OF THIS MAP AND REVIEW THE STEPS THAT GOT YOU HERE.

017
LOAD DIAGNOSTICS FROM A 5247 (NO DISKETTE SYSTEM)

1. ENSURE THE 5247 IS POWERED UP AND THE 'READY' LIGHT IS ON. (IF 'READY' IS OFF, GO TO MAP 1600, ENTRY POINT A).

2. PRESS AND HOLD 'CMD' AND PRESS 'TEST'. THEN PRESS AND HOLD 'CMD' AND PRESS 'ERROR RESET'.

3. WHEN THE MENU FOR PID 1600 APPEARS, SELECT OPTION 3 (LOAD DCP).

DOES THE DCP PROGRAM LOAD CORRECTLY? (DCP MENU DISPLAYED).
Y N

--NOTE-- IF, WHILE EXECUTING 5247 RESIDENT DIAGNOSTICS, THE PROGRAMS APPEAR TO 'HANG' OR 'BLOW UP' IN AN UNEXPECTED WAY, I/O FEATURE CARDS MAY BE CAUSING THE FAILURE. REMOVAL OF I/O FEATURE CARDS WILL ISOLATE THIS TYPE OF FAILURE (SEE SM 1205 AND 1230).

018
DOES THE WORD 'FAILED' APPEAR NEXT TO OPTION 3 ON THE PID 1600 MENU?
Y N

019
ARE FEATURE CARDS OTHER THAN THE WORK STATION SIA CARD PRESENT IN THE SYSTEM (SEE SM 1205 AND 1230)?
Y N

020
DOES A TRAP OCCUR WHILE TRYING TO LOAD DCP?
Y N

021
GO TO KEYBOARD MAP.
GO TO MAP 1300,
ENTRY POINT A.

022

GO TO MAP 1220,
ENTRY POINT A.

023
1. POWER DOWN.

2. REMOVE ALL FEATURE CARDS (EXCEPT THE WORK STATION SIA CARD, SEE SM 1205 AND 1230).

3. POWER UP AND ATTEMPT TO LOAD DCP.

DOES DCP LOAD OK?
Y N

024
DOES A TRAP OCCUR WHILE TRYING TO LOAD DCP?
Y N

025
GO TO KEYBOARD MAP.
GO TO MAP 1300,
ENTRY POINT A.

026

GO TO MAP 1220,
ENTRY POINT A.

027
RECONNECT FEATURE CARDS ONE AT A TIME UNTIL THE FAILING CARD IS IDENTIFIED (SEE SM 1205 AND 1230).

028
DO YOU HAVE 'LINK ERROR STATUS' DISPLAYED?
Y N

029
DO YOU HAVE 'DCP NOT FOUND' DISPLAYED?
Y N

030
DO YOU HAVE 'FILE ERROR ...' DISPLAYED?
Y N

031

GO TO PAGE 6,
STEP 035,
ENTRY POINT E.

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START MAP

PAGE 6 OF 12

032
SEE DIAGNOSTIC USER GUIDE 0002, PID 1600, TO DETERMINE ERROR ENDING STATUS.

DID THE ENDING STATUS INDICATE 'UNSAFE'?
Y N

033

GO TO STEP 035, ENTRY POINT E.

034

GO TO MAP 1600, ENTRY POINT A.

035
(ENTRY POINT E)

FIRST TIME HERE?
Y N

036
REPLACE BOTH CE DISKETTES.

FIRST TIME HERE?
Y N

037

GO TO MAP 1016, ENTRY POINT A.

038

GO TO PAGE 7, STEP 039, ENTRY POINT K.

START MAP

PAGE 7 OF 12

039
(ENTRY POINT K)

DCP AND 'SYSTEM 23 WITHOUT DISKETTE' DIAGNOSTICS MUST BE LOADED TO THE 5247. SEE DIAGNOSTIC USER GUIDE 0006, PID 0605.

WHEN DCP AND 'SYSTEM 23 WITHOUT DISKETTE' HAVE BEEN LOADED, RETURN TO THIS MAP, ENTRY POINT A.

040

GO TO MAP 1016, ENTRY POINT A.

041

GO TO PAGE 9, STEP 054, ENTRY POINT D.

042
(ENTRY POINT C)

1. PLACE THE DIAGNOSTIC DISKETTE PN 6841645 IN DRIVE 1, 2, 3 OR 4 AND CLOSE THE LEVER.

2. IF DRIVES 3 OR 4 ARE BEING USED TO LOAD THE DIAGNOSTICS AND THEY ARE SHARED WITH ANOTHER PROCESSOR, POWER DOWN THE OTHER PROCESSOR.

3. PRESS AND HOLD 'CMD' AND PRESS 'TEST'.
   THEN PRESS AND HOLD 'CMD' AND PRESS 'ERROR RESET'.

4. WHEN THE MESSAGE 'SELECT DRIVE (1-4)' APPEARS AT THE TOP OF THE CRT, ENTER '1' OR '2' TO SELECT ONE OF THE INTERNAL
(STEP 042 CONTINUES)

--NOTE-- IF, WHILE EXECUTING DISKETTE RESIDENT DIAGNOSTICS, THE PROGRAMS APPEAR TO 'HANG' OR 'BLOW UP' IN AN UNEXPECTED WAY, I/O FEATURE CARDS MAY BE CAUSING THE FAILURE. REMOVAL OF I/O FEATURE CARDS WILL ISOLATE THIS TYPE OF FAILURE (SEE SM 1205 AND 1230).

(STEP 042 CONTINUED)
DRIVES, '3' OR '4' TO SELECT ONE OF THE EXTERNAL DRIVES.

5. AFTER THE DRIVE IS SELECTED, ANSWER WITH A '0' (NO) RESPONSE FOR EACH MESSAGE THAT APPEARS AT THE TOP OF THE CRT UNTIL 'LOAD DCP?' APPEARS. THEN ENTER A '1' (YES) RESPONSE.

DOES THE DCP PROGRAM LOAD CORRECTLY (DCP MENU DISPLAYED) ?
Y N

043
IS THE MESSAGE 'ROUTINE 0D END STATUS XX' DISPLAYED?

-NOTE- IF DRIVE 3 OR 4 IS SELECTED AND THESE DRIVES ARE SHARED WITH ANOTHER PROCESSOR, IT MAY TAKE UP TO 4 MINUTES FOR THE 'ROUTINE 0D STATUS XX' MESSAGE TO BE DISPLAYED.

Y N

044
DOES A 'TRAP' OCCUR JUST AFTER THE 'CMD' AND 'ERROR RESET' KEYS ARE PRESSED?
Y N

045
ARE FEATURE CARDS OTHER THAN DISKETTE PRESENT IN THE SYSTEM (SEE SM 1205 AND 1230)?
Y N

046
GO TO KEYBOARD MAP
GO TO MAP 1300,
ENTRY POINT A.

047
1. POWER DOWN.

2. REMOVE ALL FEATURE CARDS (EXCEPT DISKETTE).

3. POWER UP AND ATTEMPT TO LOAD DCP.

DOES DCP LOAD OK?
Y N

048
GO TO KEYBOARD MAP
GO TO MAP 1300,
ENTRY POINT A.

049
RECONNECT FEATURE CARDS ONE AT A TIME UNTIL THE FAILING CARD IS IDENTIFIED (SEE SM 1205 AND 1230).

050
CHECK TO SEE IF JUMPER 'C3' IS PRESENT ON THE CPU PLANAR BOARD (SEE SM 1230).

1. IF THE JUMPER IS PRESENT, REMOVE IT AND RETURN TO STEP 001 OF THIS MAP.

2. IF THE JUMPER IS NOT PRESENT, REPLACE THE CPU PLANAR BOARD (SEE SM 1230).

051
IS THE ROUTINE 0D STATUS 'FB'?
Y N

052

GO TO MAP 1501, ENTRY POINT AA.

053
STATUS 'FB' INDICATES THAT THE DCP PROGRAM WAS NOT FOUND ON THE DISKETTE. ENSURE THAT A C.E. DISKETTE IS INSTALLED IN THE SELECTED DRIVE. IF A C.E. DISKETTE IS INSTALLED, REPLACE:

1. C.E. DISKETTE.

2. DISKETTE ATTACHMENT CARD (SEE SM 1511 AND 1205).

3. CPU PLANAR BOARD (SEE SM 1230).

GO TO PAGE 7, STEP 042,
ENTRY POINT C.

054
(ENTRY POINT D)

DO THE CUSTOMER REPORTED SYMPTOMS POINT TO A SPECIFIC UNIT?
Y N

055
(ENTRY POINT B)

1. RUN ALL DIAGNOSTIC PROGRAMS IN THE SEQUENCE SHOWN BELOW. (SEE THE MAP ENTRY POINT GIVEN FOR THE SPECIFIC SEQUENCE OF ROUTINES TO BE RUN.)

2. IF AN ERROR IS FOUND DURING THE PROGRAM RUN, GO TO THE ASSOCIATED MAP SHOWN.

(STEP 055 CONTINUES)

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1 EC327594 PEC323398
1

(STEP 055 CONTINUED)

UNIT	PID	MAP	ENTRY POINT
KEYBOARD	1300	1300	A
CONFIGURATION DISPLAY (SEE NOTE 3 BELOW)	0150	1150	A
PROCESSOR	1205	1205	A
CPU STORAGE	1210	1210	A
UPDATE STORAGE (SEE NOTE 4)	1212	----	-
DISKETTE (ALL DRIVES) (RUN SECTIONS 1 AND 2 ONLY)	1505	1501	AA
DISKETTE (ALL DRIVES)	1510	1501	DD
DISKETTE (51TD) (RUN 1510 USING A 2D DISKETTE)	1510	1500	G
DISKETTE (DRIVE 3/4) (SEE NOTE 5)	1500	1501	AA
PRINTERS SEE MAP	----	1900	A
DISPLAY	1400	1400	A
COMMUNICATION FEATURES/RPQ'S	5000 (SEE NOTE 4)	----	-
5247 SEE MAP	----	1016	A

NOTE 3: TO RUN PID 0150 (CONFIGURATION DISPLAY) DCP OPTION 18 MUST BE SELECTED.

NOTE 4: USE DCP OPTION '10'. SEE DIAGNOSTIC USER GUIDE 0001, FOR THE FEATURE/RPQ IN QUESTION, TO DETERMINE THE PID NUMBER FOR THE FEATURE/RPQ DIAGNOSTIC PROGRAM.

NOTE 5: IF DRIVES #3 AND #4 ARE SHARED, POWER DOWN BOTH PROCESSORS ATTACHED TO

(STEP 055 CONTINUES)

(STEP 055 CONTINUED)
THE SHARED DISKETTE FILE. INSERT THE DIAGNOSTIC DISKETTE IN DRIVE 3/4. POWER UP BOTH PROCESSORS, SELECT PID 1500 (ROS RESIDENT DISKETTE TEST) AND EXECUTE PID 1500 IN LOOP MODE ON BOTH PROCESSORS. SEE DIAGNOSTIC USER GUIDE 0001 FOR OPERATING INSTRUCTIONS.

WAS AN ERROR FOUND BY THE PROGRAM(S)?
Y N

056
NO ERROR FOUND. FAILURE MAY BE INTERMITTENT. GO TO INTERMITTENT MAP.
GO TO MAP 1225, ENTRY POINT A.

057
GO TO THE MAP ASSOCIATED WITH THE FAILING PROGRAM.

058
IS THE REPORTED CUSTOMER SYMPTOM A PRINTER PROBLEM?
Y N

059
IS THE REPORTED CUSTOMER SYMPTOM A DISKETTE PROBLEM?
Y N

060
IS THE REPORTED CUSTOMER SYMPTOM A 5247 PROBLEM?
Y N

1 1
1 2 2
2 A A A
Z A B C

061
VERIFY CORRECT MACHINE CONFIGURATION (RUN PID 0150 UNDER DCP OPTION 18). IF CONFIGURATION IS WRONG, GO TO MAP 1150. IF OK, SELECT AND RUN THE PROGRAM FOR THE SUSPECT UNIT.
(IF YOU ARE NOT POSITIVE ABOUT WHICH ROUTINES TO RUN, GO TO THE MAP ENTRY POINT GIVEN FOR DIRECTIONS)

UNIT	PID	MAP	ENTRY POINT
PROCESSOR	1205	1205	A
CPU STORAGE	1210	1210	A
UPDATE STORAGE (SEE NOTE 2 BELOW)	1212	----	-
KEYBOARD	1300	1300	A
DISPLAY	1400	1400	A
PRINTERS		1900	A
COMMUNICATION FEATURES/RPQ'S	5000 (SEE NOTE 2)	----	-

NOTE 2: USE DCP OPTION '10'. SEE DIAGNOSTIC USER GUIDE 0001, FOR THE FEATURE/RPQ IN QUESTION, TO DETERMINE THE PID NUMBER AND MAP ENTRY POINT FOR THE FEATURE/RPQ DIAGNOSTIC PROGRAM.

WAS AN ERROR FOUND OR SHOWN BY THE PROGRAM?
Y N

062
RETURN TO THE DCP BY PRESSING 'ATTN' AND '9' (ON THE NUMERIC KEYBOARD) UNTIL THE DCP MENU IS DISPLAYED.

GO TO PAGE 9, STEP 055, ENTRY POINT B.

063
GO TO THE MAP ASSOCIATED WITH THE FAILING PROGRAM. (SEE TABLE IN THE PRECEDING STEP FOR ENTRY POINTS).

064
IS CUSTOMER SYMPTOM 'POWER' INDICATOR ON THE 5247 NOT LIGHTED?
Y N

065
GO TO MAP 1016, ENTRY POINT A.

066
GO TO MAP 1600, ENTRY POINT A.

067
GO TO MAP 1501, ENTRY POINT A.

068
GO TO MAP 1900, ENTRY POINT B.

069
GO TO MAP 1600, ENTRY POINT E.

070
GO TO MAP 1600, ENTRY POINT A.

071
GO TO THE TRAP MAP.
GO TO MAP 1220, ENTRY POINT A.

INITIAL FAILURE

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP: ENTRY POINT	PAGE NUMBER	STEP NUMBER
1000	A	1	001

EXIT POINTS

EXIT THIS MAP: PAGE NUMBER	STEP NUMBER	TO: MAP NUMBER	ENTRY POINT
3	008	1200	B
1	003	1250	A
2	006	1250	A
5	027	1400	A

001
(ENTRY POINT A)

DOES THE AUDIBLE ALARM SOUND INSIDE OF 40 SECONDS AFTER TURNING POWER ON?
Y N
|
| 002
| 1. REMOVE THE FRONT COVER OF THE CPU UNIT (SEE SM 1220).
| 2. POWER ON.
| 3. OBSERVE THE 'POWER GOOD' LED LOCATED IN THE FRONT OF THE POWER SUPPLY. (IF LED IS LIGHTED, +5, -5, +12, -12V DC ARE ALL OK. DOES NOT INCLUDE +24V DC.). (SEE SM 1240).
|
| IS THE LED LIGHTED?
| Y N
| |
| | 003
| | GO TO POWER MAP
| | GO TO MAP 1250,
| | ENTRY POINT A.
| |
| |
| |
| |
| |
| |
| |
| |

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EC323398 PEC-------

3 2
A B

004
1. USING THE CE LOGIC PROBE, READ THE CE REGISTER TEST PINS ON THE CPU PLANAR BOARD. RECORD RESULTS. (SEE SM 1230 FOR LOCATIONS.) (SEE NOTE 1.)

NOTE 1
GENERAL LOGIC PROBE SET UP

	CPU PLANAR(SEE SM 1230)
A)	TECHNOLOGY SWITCH = MULTI
B)	LATCH SWITCH = NONE
C)	GATE REF. SWITCH = GND
D)	POWER LEAD (BLACK) = GND
E)	POWER LEAD (RED) = +5V
F)	PROBE GROUND LEAD = GND
G)	TEST 'UP' LIGHT = +5V
H)	TEST 'DOWN' LIGHT = GND

ARE THE CE REGISTER TEST PINS EQUAL TO A HEX VALUE OF '01' TO '06'? (IF THE CE REGISTER TEST PINS HAVE 'PULSING' SIGNALS, ANSWER THE QUESTION 'NO'.)
Y N
|
| 005
| 1. OPEN THE REAR COVER.
|
| 2. PUT THE PLANAR BOARD IN THE SERVICE POSITION (SEE SM 1230).
|
| 3. MEASURE THE DC VOLTAGES AT THE CPU PLANAR BOARD CONNECTOR P4 (SEE SM 1211 AND 1230 FOR LOCATIONS AND VOLTAGES).
|
| ARE ALL VOLTAGES CORRECT?
| Y N
| |
| | 006
| | GO TO POWER MAP
| | GO TO MAP 1250,
| | ENTRY POINT A.
| |
| |
| |
| |
| |
| |
| |
| |

007
1. REPLACE CPU PLANAR BOARD (SEE SM 1230).

2. VERIFY REPAIR.
-NOTE- IF PROBLEM REMAINS AFTER REPLACEMENT OF PLANAR BOARD, SEE NOTE 1, PAGE 2, MAP 1200.

008
RECORD ERROR CODE AND GO TO THE POWER ON TEST MAP.
GO TO MAP 1200, ENTRY POINT B.

009
ENSURE THAT THE OPERATOR 'BRIGHTNESS' CONTROL IS SET AT THE CENTER OF ITS ADJUSTMENT RANGE.

IS IT CORRECT?
Y N

010
ADJUST THE BRIGHTNESS CONTROL.

DID THE ADJUSTMENT CORRECT THE PROBLEM?
Y N

011

GO TO STEP 013, ENTRY POINT B.

012
PROBLEM CORRECTED. VERIFY REPAIR.

013
(ENTRY POINT B)

1. REMOVE THE FRONT COVER.

2. PUT THE CPU PLANAR IN THE SERVICE POSITION (SEE SM 1230).

IS THE CRT SIGNAL CABLE CONNECTED DIRECTLY INTO THE CPU PLANAR BOARD? (NO COMPOSITE VIDEO RPQ AND/OR WORD PROCESSING SUPPORT CARD PRESENT.) (SEE SM 1205 AND 1230).
Y N

014
1. REMOVE THE CABLE CONNECTING THE COMPOSITE VIDEO RPQ AND/OR THE WORD PROCESSING SUPPORT CARD TO THE CPU PLANAR BOARD (SEE SM 1205, 1230 AND 1212).

2. REMOVE THE CRT SIGNAL CABLE CONNECTOR FROM THE COMPOSITE VIDEO RPQ CARD AND/OR THE WORD PROCESSING SUPPORT CARD AND CONNECT IT INTO THE CPU PLANAR BOARD CRT SIGNAL CABLE SOCKET (SEE SM 1205, 1230).

DOES THE CRT NOW WORK CORRECTLY?
Y N

015

GO TO PAGE 4, STEP 017, ENTRY POINT C.

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EC323398 PEC-------

016
1. REPLACE THE COMPOSITE VIDEO RPQ CARD OR CABLE (SEE SM 1205, 1230 AND 1212).

2. REPLACE THE WORD PROCESSING CARD OR CABLE (FOR CARD SEE SM 1205 AND 1230, FOR CABLE SEE SM 1212).

3. VERIFY REPAIR.

017
(ENTRY POINT C)

1. REMOVE THE CRT REAR COVER.

2. CHECK FOR 5 VOLTS DC PRESENT ON THE CRT DRIVER/RECEIVER CARD BY USING THE CE METER (SEE SM 1411).

IS 4.6 TO 5.5 VOLTS PRESENT?
Y N

018
USE THE CE METER TO MEASURE 12 VOLTS ON THE (BACK) OF THE CRT DRIVER/RECEIVER CARD (SEE SM 1411) FOR (A01).

IS 11.0 TO 13.2 VOLTS PRESENT?
Y N

019
CHECK FOR 12 VOLTS DC ON THE CPU PLANAR BOARD ON (A11) AT THE CRT CABLE JACK (SEE SM 1411, 1230).

IS THERE 11.0 TO 13.2 VOLTS PRESENT?
Y N

020
REPLACE THE CPU PLANAR BOARD (SEE SM 1230).

021
REPAIR OR REPLACE THE CRT CABLES FROM THE CPU PLANAR BOARD TO THE CRT DRIVER/RECEIVER CARD (SEE SM 1411).

022
REPLACE THE CRT DRIVER/RECEIVER CARD (SEE SM 1430).

023
USING THE CE LOGIC PROBE, CONNECTED TO THE CPU PLANAR BOARD, PROBE THE HORIZONTAL, VERTICAL AND VIDEO SIGNALS AT THE TEST POINTS ON THE DRIVER/RECEIVER CARD, PINS F, J AND K (SEE SM 1411) FOR LOCATIONS (SEE NOTE 1, PAGE 2 OF THIS MAP).

ARE ALL LINES PULSING?
Y N

024
1. REMOVE THE REAR COVER ON THE CPU UNIT (SEE SM 1220).

2. PUT THE CPU PLANAR BOARD IN THE SERVICE POSITION (SEE SM 1230).

3. REMOVE THE CRT SIGNAL CABLE FROM THE CPU PLANAR BOARD AND PROBE THE SAME SIGNALS ON THE CPU CRT SIGNAL CABLE JACK (SEE SM 1212 FOR LOCATIONS).

ARE ALL LINES PULSING?
Y N

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EC323398 PEC-------

025
1. REPLACE CPU PLANAR BOARD (SEE SM 1230)

2. VERIFY REPAIR.
-NOTE- IF PROBLEM REMAINS AFTER REPLACEMENT OF PLANAR BOARD, SEE NOTE 1, PAGE 2, MAP 1200.

026
1. REPLACE THE EXTERNAL CRT DRIVER/RECEIVER CARD (SEE SM 1430).

2. REPAIR OR REPLACE CRT SIGNAL CABLES (SEE SM 1411).

3. VERIFY REPAIR.

027
GO TO THE DISPLAY MAP.
GO TO MAP 1400, ENTRY POINT A.

CONFIGURATION DISPLAY

PAGE 1 OF 4

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP: ENTRY POINT	PAGE NUMBER	STEP NUMBER
1000	A	1	001
1210	A	1	001
2025	A	1	001
3025	A	1	001

EXIT POINTS

EXIT THIS MAP: PAGE NUMBER	STEP NUMBER	TO: MAP NUMBER	ENTRY POINT
3	021	1501	EE
2	007	1900	C

001
(ENTRY POINT A)

RUN PID 0150 TO DISPLAY MACHINE CONFIGURATION. CHECK THE MACHINE HISTORY AND VERIFY THAT THE CONFIGURATION DISPLAYED IS CORRECT.

IS THE CONFIGURATION CORRECT?
Y N
|
| 002
| IS THE STORAGE CONFIGURATION
| CORRECT?
| Y N
| |
| | 003
| | CHECK THE SEATING OF THE
| | STORAGE CARDS (SEE SM 1230).
| |
| | ARE THE CARDS SEATED
| | CORRECTLY?
| | Y N
| | |
| | | 004
| | | SEAT CARDS AND VERIFY
| | | REPAIR.

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EC327594 PEC323398

4 2 2
A B C

CONFIGURATION

PAGE 2 OF 4

005
REPLACE:
1. CPU PLANAR BOARD (SEE SM 1230).

2. STORAGE CARDS.

006
IS THE PRINTER CONFIGURATION FOR PRINTER PORT #1 CORRECT?
Y N

007
(ENTRY POINT C)

GO TO MAP 1900, ENTRY POINT C.

008
IS THE COUNTRY SELECT INFORMATION CORRECT?
Y N

009
CHECK THE JUMPERS (SEE SM 1230).

ARE THE JUMPERS CORRECT?
Y N

010
CORRECT THE JUMPERS AND VERIFY REPAIR.

011
REPLACE THE CPU PLANAR BOARD. (SEE SM 1230).

012
IS THE TEST JUMPER INFORMATION CORRECT?
Y N

013
CHECK FOR TEST JUMPERS INSTALLED (THERE SHOULD BE NO TEST JUMPERS INSTALLED FOR NORMAL OPERATION) (SEE SM 1230).

ARE THE TEST JUMPERS OFF?
Y N

014
REMOVE THE TEST JUMPERS AND VERIFY THE REPAIR.

015
REPLACE THE CPU PLANAR BOARD (SEE SM 1230).

016
IS THE INFORMATION ABOUT THE 'NO INTERNAL DISKETTE JUMPER' CORRECT? (IF JUMPER IS NOT INSTALLED, NO MESSAGE WILL BE DISPLAYED.)
Y N

017
CHECK FOR JUMPER BEING INSTALLED OR NOT (DETERMINE IF SYSTEM CONFIGURATION NEEDS A JUMPER) (SEE SM 1230).

IS JUMPERING CORRECT?
Y N

018
CORRECT JUMPERING AND VERIFY REPAIR

019
REPLACE CPU PLANAR BOARD (SEE SM 1230).

020
IS THE DISKETTE CONFIGURATION CORRECT?
Y N
| |
| |
| |
| |
| |
| 021
|
| GO TO MAP 1501, ENTRY POINT EE.
|
022
IS THE WORD PROCESSING INFORMATION CORRECT?
Y N
|
| 023
| CHECK SEATING OF THE WORD PROCESSING SUPPORT CARD. IF OK, REPLACE:
|
| 1. WORD PROCESSING SUPPORT CARD (SEE SM 1205 AND 1230).
|
| 2. CPU PLANAR BOARD (SEE SM 1230).
|
| 3. VERIFY REPAIR.
|
024
IS THE '2ND PRINTER PORT' INFORMATION CORRECT?
Y N
| |
| |
| |
| |
| |
| |
| |
| |
| |
| |
| |
| |
| |
| |
| |

-NOTE- IF THE EXTERNAL DRIVES (3 AND 4) ARE SHARED WITH ANOTHER PROCESSOR, CONFIGURATION RESULTS ARE NOT RELIABLE IF THE OTHER PROCESSOR IS USING THE EXTERNAL DRIVES. IF THIS OCCURS, POWER DOWN THE OTHER PROCESSOR AND RUN PID 0150 AGAIN.

025
CHECK SEATING OF 2ND PRINTER PORT ATTACHMENT CARD. IF OK, REPLACE:
1. 2ND PRINTER PORT ATTACHMENT CARD (SEE SM 1205 AND 1230).
2. CPU PLANAR BOARD (SEE SM 1230).
3. VERIFY REPAIR.

026
IS THE 'PRINTER ATTACHED TO 2ND PRINTER PORT' INFORMATION CORRECT?
Y N

027

GO TO PAGE 2, STEP 007,
ENTRY POINT C.

028
IS THE COMMUNICATIONS ATTACHMENT INFORMATION CORRECT?
Y N

029
CHECK SEATING OF COMMUNICATIONS ATTACHMENT CARD. IF OK, REPLACE:
1. COMMUNICATIONS ATTACHMENT CARD (SEE SM 5220 AND 5260).
2. CPU PLANAR BOARD (SEE SM 1230).
3. VERIFY REPAIR.

030
IS THE INFORMATION ABOUT THE SIA LINK ATTACHMENT CORRECT?
Y N

031
CHECK SEATING OF THE WORK STATION SIA CARD. IF OK, REPLACE:
1. WORK STATION SIA CARD (SEE SM 1205 AND 1230).
2. CPU PLANAR BOARD (SEE SM 1230).
3. VERIFY REPAIR.

032

GO TO STEP 033,
ENTRY POINT B.

033
(ENTRY POINT B)

NO PROBLEM WITH THE CONFIGURATION. RETURN TO THE MAP THAT SENT YOU HERE.

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POWER-ON RESET

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1000	A	1	001
1016	A	1	001
1016	B	2	007
1100	B	2	007
1201	B	2	007
1600	B	2	007
1630	B	2	007

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
13	012	1000	G

001
(ENTRY POINT A)

IS THE 'AUDIBLE ALARM NOT WORKING' THE ONLY CUSTOMER REPORTED SYMPTOM?
Y N

002
(ENTRY POINT C)

DOES THE DISPLAY SHOW THE POWER-ON DIAGNOSTIC ROUTINE RESULTS INDICATORS AT THE TOP OF THE DISPLAY?
Y N

003

GO TO PAGE 14, STEP 024,
ENTRY POINT E.

-JAPAN ONLY- IF THE 'JAPAN' COUNTRY SELECT JUMPER IS INSTALLED (SEE SM 1230), A NUMERIC '1' WILL BE DISPLAYED AS A 'Þ' CHARACTER DURING THE POWER ON ROUTINES IF A PRINTER IS NOT ATTACHED TO THE SYSTEM.

004
DO THE POWER ON DIAGNOSTICS
APPEAR TO START AGAIN AFTER
ENDING?
Y N

005
IS THE WORD 'TRAP' DISPLAYED AT
THE BOTTOM OF THE SCREEN?
Y N

006
DID THE POWER ON RESET TEST
HANG WITHOUT SHOWING AN ERROR
INDICATOR? (SEE PID 1200 IN
USER GUIDE 0001 OR 0002).
Y N

007
(ENTRY POINT B)

COMPARE THE ERROR CODE WITH THOSE SHOWN IN THE FOLLOWING TABLE AND TAKE THE RECOMMENDED ACTION. IN CASE OF MORE THAN ONE ERROR, USE THE FIRST ERROR TO DETERMINE THE REPAIR ACTION.

(SYSTEM/23 FAILURES)

NOTE 1: IF THE FAILURE IS STILL PRESENT AFTER REPLACING THE RECOMMENDED FRU, THE CPU BOARD OR ANOTHER FRU PLUGGED INTO THE CPU BOARD MAY BE CAUSING THE PROBLEM. CARD EXCHANGE IS THE RECOMMENDED PROCEDURE TO CORRECT THIS TYPE OF FAILURE. ALSO MEASURE THE DC VOLTAGES AT THE CPU PLANAR BOARD (P4). (SEE SM 1211, 1205, 1230). IF A VOLTAGE IS WRONG, GO TO MAP 1250. IF VOLTAGE IS ALL RIGHT, AND CARD REPLACEMENT HAS NOT SOLVED THE PROBLEM, GO TO MAP 1225 AND PERFORM CHECKS RECOMMENDED IN THAT MAP.

CAUTION

POWER DOWN BEFORE REMOVING/REPLACING CARDS OR CABLES.

(STEP 007 CONTINUES)

(STEP 007 CONTINUED)

TABLE A

CODE	REPAIR ACTION
FF, 00 OR 01	FAILURE IN CPU INSTRUCTIONS, REGISTERS, FLAGS OR DATA AND ADDRESS BUSES. CHECK TO ENSURE THAT +5 VOLTS (+/- 10%) IS PRESENT ON CPU PLANAR BOARD (SEE SM 1230). IF OK, REMOVE ALL CARDS (SEE SM 1205 AND 1230) AND CABLES (EXCEPT POWER) FROM THE CPU PLANAR BOARD AND RUN THE TEST AGAIN. IF THE ERROR CODE CHANGES, START REINSTALLING CARDS ONE AT A TIME TO ISOLATE THE FAILING FRU. IF THE ERROR CODE REMAINS THE SAME, REPLACE THE CPU PLANAR BOARD (SEE SM 1230). IF PROBLEM NOT FIXED, SEE NOTE 1, PAGE 2, THIS MAP.
02	CRC ERROR IN FIRST ROS MODULE. ISOLATE AS DESCRIBED IN ERROR '01'. IF ERROR CODE DOES NOT CHANGE, REPLACE CPU PLANAR BOARD (SEE SM 1230). IF THE ERROR CODE CHANGES, RECONNECT CARDS UNTIL FAILURE IS ISOLATED. IF PROBLEM NOT FIXED, SEE NOTE 1, PAGE 2, THIS MAP.
03	RESERVED: IF THIS ERROR CODE IS FOUND IN THE CE REGISTER TEST POINTS REPLACE CPU PLANAR BOARD (SEE SM 1230).

(STEP 007 CONTINUES)

(STEP 007 CONTINUED)

04	FAILURE IN FIRST 16K BLOCK OF BASE STORAGE OR IN STORAGE SUPPORT CIRCUITS ON CPU PLANAR BOARD. EXCHANGE THE BASE STORAGE CARD. IF THE PROBLEM IS NOT CORRECTED, THEN REPLACE THE CPU PLANAR BOARD (SEE SM 1230). IF PROBLEM NOT FIXED, SEE NOTE 1, PAGE 2, THIS MAP.
05	CANNOT INITIALIZE AND SYNC. THE CRT AND DMA CONTROLLERS. REPLACE: 1) CPU PLANAR BOARD (SEE SM 1230), 2) STORAGE CARD CONTAINING THE FIRST 16K OF READ/WRITE STORAGE (BASE STORAGE), 3) CRT ASSEMBLY (SEE SM 1430). IF PROBLEM NOT FIXED, SEE NOTE 1, PAGE 2, THIS MAP.
06 (LATCHES) 07 (ON CRT)	FAILURE IN CRT INTERFACE LINES (HORIZONTAL, VERTICAL, OR VIDEO). DISCONNECT CRT CABLE AT THE CPU END. RUN TEST AGAIN. IF TEST ENDS WITHOUT ERROR (AN AUDIBLE ALARM AFTER APPROXIMATELY 30-45 SECONDS INDICATES CORRECT ENDING), AFTER REMOVING THE CRT CABLE, REPLACE: 1. CRT DRIVER/ RECEIVER CARD (SEE SM 1430). 2) CRT ASSEMBLY (SEE SM 1430). 3) CRT CABLE ASSEMBLIES (SEE SM 1430). IF TEST FAILS AT ERROR '06' IN THE CE LATCHES, WITH THE CRT CABLE REMOVED, REPLACE THE CPU PLANAR BOARD (SEE SM 1230). IF PROBLEM NOT FIXED, SEE NOTE 1, PAGE 2, THIS MAP.
08	FAILURE IN PAGE REGISTERS. REPLACE CPU PLANAR BOARD (SEE SM 1230). IF PROBLEM NOT FIXED, SEE NOTE 1, PAGE 2, THIS MAP.

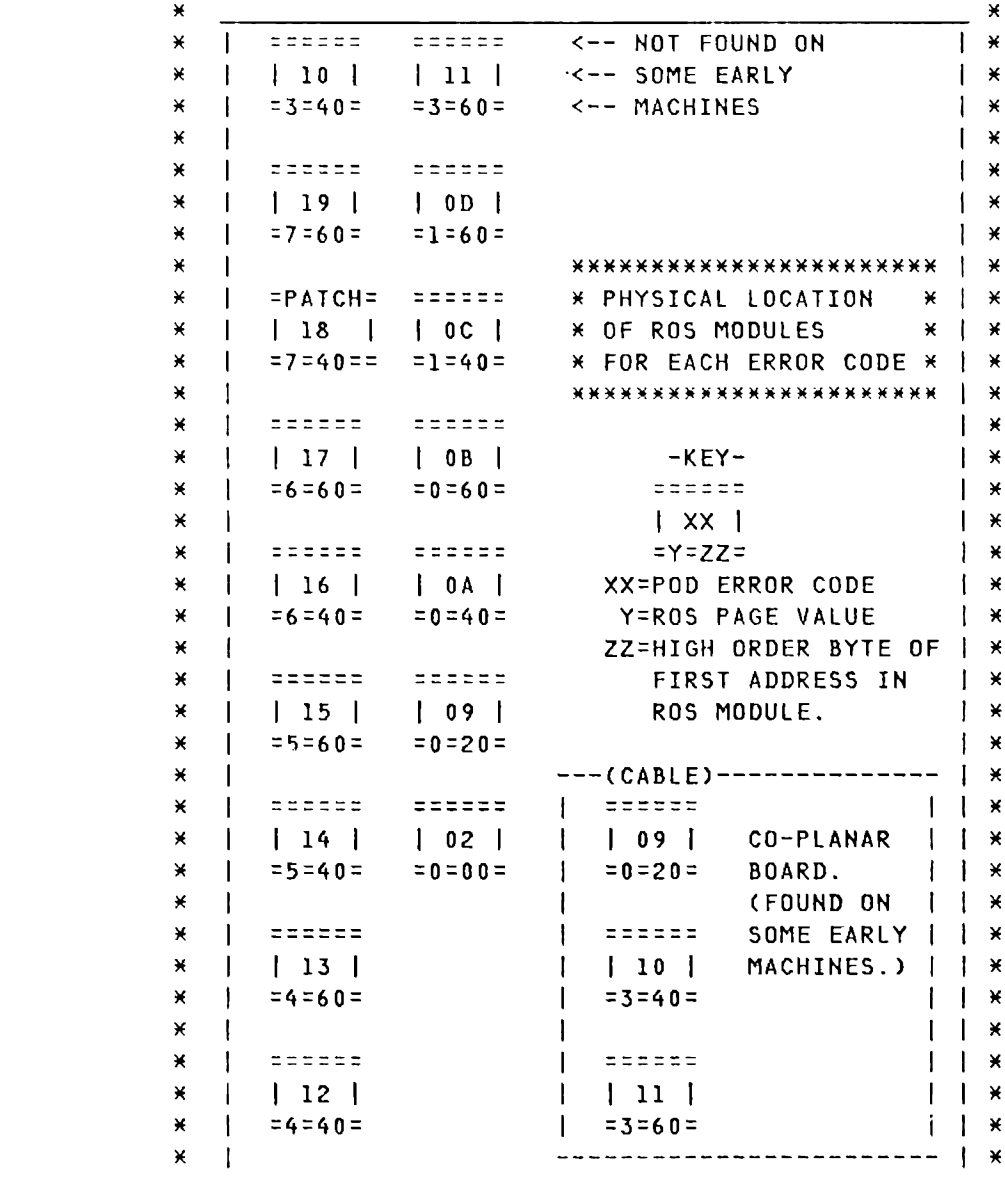
(STEP 007 CONTINUES)

(STEP 007 CONTINUED)

09 THROUGH 19

CRC FAILURE IN ROS. REPLACE CPU PLANAR BOARD, PATCH MODULE, OR CO-PLANAR (SEE CHART BELOW). IF NOT REPAIRED, SEE NOTE 1, PAGE 2, THIS MAP.

** TOP VIEW OF PLANAR SEEN FROM THE REAR **



(STEP 007 CONTINUES)

(STEP 007 CONTINUED)

1A THROUGH 1D AND 21 THROUGH 23	CRC FAILURE IN ROS LOCATED ON I/O FEATURE CARDS. (USE OF ROS SPACE SPECIFIED BY THESE NUMBERS IS NOT SPECIFIED AT THIS TIME). IF ONE OF THESE INDICATORS SHOW AN ERROR, REMOVE ALL I/O CARDS (SEE SM 1205 AND 1230) AND RUN THE POWER ON TEST AGAIN. IF AN ERROR IS STILL PRESENT, REPLACE THE CPU PLANAR BOARD (SEE SM 1230). IF THE FAILURE DISAPPEARS, PLUG FEATURE CARDS, ONE AT A TIME, TO FIND THE FAILING FRU. IF PROBLEM REMAINS, SEE NOTE 1, PAGE 2, THIS MAP.
1E THROUGH 20	CRC FAILURE IN ROS ON A 5247 ATTACHMENT FEATURE. REPLACE THE WORK STATION SIA CARD (SM 1205 AND 1230). IF PROBLEM REMAINS, SEE NOTE 1, PAGE 2, THIS MAP.
27	CRC FAILURE IN ROS ON SECOND PRINTER ATTACHMENT FEATURE. REPLACE FEATURE. IF PROBLEM REMAINS, SEE NOTE 1, PAGE 2, THIS MAP.
28 AND 29	SEE REPAIR INFORMATION ASSOCIATED WITH CODES 1A THROUGH 26, LOCATED IN THIS MAP.

(STEP 007 CONTINUES)

(STEP 007 CONTINUED)

FAILURE IN STORAGE. SEE THE FOLLOWING TABLE FOR FAILING FRU. (SEE SM 1230 FOR LOCATIONS.)

TEST	STORAGE CONFIGURATION: (32K X 1), (32K X 2), (64K + 32K), OR (64K X 2) — BASE STORAGE	FEATURE STORAGE	STORAGE CONFIGURATION: (64K X 1) — BASE STORAGE
2A THROUGH 30			
2A	X		X
2B		X	X
2C		X	X
2D	X		
2E	X		
2F		X	
30		X	

REPLACE FAILING STORAGE CARD. (ENSURE JUMPERS ARE CORRECT ON 64K CARD BEFORE REPLACING.) IF PROBLEM NOT FIXED, REPLACE: 1) CPU PLANAR BOARD, 2) ANY OTHER STORAGE CARDS (IF PRESENT). THE FOLLOWING TABLE DESCRIBES VALID STORAGE CONFIGURATIONS:

STORAGE SIZE-->	32K	64K	64K *	96K **	128K **
BASE	32K	32K	64K	64K	64K
FEATURE	---	32K	---	32K	64K

64K STORAGE CARD JUMPERS

* (64K TOTAL) JUMPERS #1 AND #3	** (96K & 128K) JUMPERS #2 AND #4

IF PROBLEM NOT FIXED, SEE NOTE 1, PAGE 2, THIS MAP.

(STEP 007 CONTINUES)

(STEP 007 CONTINUED)

31	READ/WRITE STORAGE PAGE ACCESS FAILURE. REPLACE: 1) CPU PLANAR BOARD (SEE SM 1230), 2) READ/WRITE STORAGE CARD(S). IF PROBLEM NOT FIXED, SEE NOTE 1, PAGE 2, THIS MAP.
32	DMA PAGE REGISTER FAILURE. REPLACE CPU PLANAR BOARD (SEE SM 1230). IF PROBLEM NOT FIXED, SEE NOTE 1, PAGE 2, THIS MAP.

(STEP 007 CONTINUES)

(STEP 007 CONTINUED)

33	INTERRUPT CONTROLLER FAILURE. REPLACE CPU PLANAR BOARD (SEE SM 1230).
	IF THIS TEST FINDS A 'HOT' INTERRUPT, THE SYSTEM WILL STOP WITH A NUMBER THAT SHOWS THE 'HOT' INTERRUPT DISPLAYED ON THE 4TH LINE FROM THE TOP OF THE SCREEN. USE THE FOLLOWING TABLE TO DETERMINE THE DEVICE CAUSING THE INTERRUPT:

NUMBER	DEVICE
1	KEYBOARD
2	PRINTER RECEIVE
3	PRINTER TRANSMIT
4	PRINTER 2 RECEIVE
5	DISKETTE
6	PRINTER 2 TRANSMIT
7	TP RECEIVE
8	TP TRANSMIT

	IF THE DEVICE CAUSING THE INTERRUPT IS A PLUGABLE CARD, REMOVE THE CARD AND RUN THE TEST AGAIN. IF THE TEST STILL FAILS, REPLACE THE CPU PLANAR BOARD (SEE SM 1230). IF THE TEST RUNS WITHOUT ERROR, REPLACE THE FRU THAT WAS REMOVED. IF PROBLEM NOT FIXED, SEE NOTE 1, PAGE 2, THIS MAP.
	TIMER INTERRUPT FAILURE
34	REPLACE THE CPU PLANAR BOARD (SEE SM 1230). IF PROBLEM NOT FIXED, SEE NOTE 1, PAGE 2, OF THIS MAP.

(STEP 007 CONTINUES)

(STEP 007 CONTINUED)

```
**********************************************************************
*                 *    WRONG KEYBOARD RESPONSE TO A RESET COMMAND    *
*                 *                                                  *
*                 * (A)  CRITICAL ERROR INDICATOR (BLINKING REVERSE  *
*     35          *     VIDEO.)                                      *
*                 *                                                  *
*                 *   REPLACE: 1) KEYBOARD ADAPTER CARD              *
*                 *                (SEE SM 1330).                    *
*                 *      CHECK, REPAIR, OR REPLACE THE FOLLOWING     *
*                 *            2) EXTERNAL KEYBOARD CABLE            *
*                 *               (SEE SM 1320).                     *
*                 *            3) INTERNAL KEYBOARD CABLE ASSEMBLY   *
*                 *               (SEE SM 1320).                     *
*                 *   REPLACE: 4) KEYBOARD ASSEMBLY (SEE SM 1330).   *
*                 *      CHECK, REPAIR, OR REPLACE THE FOLLOWING     *
*                 *            5) CPU PLANAR BOARD (SEE SM 1230).    *
*                 *--------------------------------------------------*
*                 * (B)  NOT CRITICAL ERROR INDICATOR (REVERSE VIDEO)*
*                 *                                                  *
*                 *   A KEY INTERRUPT WAS SENSED AFTER THE CORRECT   *
*     35          *   RESPONSE TO A RESET (JAMMED DOWN KEY). THE SCAN*
*                 *   CODE SENSED ON THE 4TH LINE FROM THE TOP OF THE*
*                 *   CRT IS THE FAILING SCAN CODE. SEE SM 1310 AND  *
*                 *   DETERMINE WHICH KEY IS FAILING. INSPECT THE KEY*
*                 *   FOR FOREIGN MATERIAL (PAPER CLIPS, ETC.) THAT  *
*                 *   MIGHT BE CAUSING THE JAMMED CONDITION. IF NONE *
*                 *   ARE FOUND, REPLACE KEYBOARD (SEE SM 1330).     *
*                 *   IF PROBLEM NOT FIXED, SEE NOTE 1, MAP 1200-2   *
**********************************************************************
```

(STEP 007 CONTINUES)

(STEP 007 CONTINUED)

36	TIMER 0 OR PRINTER ATTACHMENT WRAP FAILED. 1. POWER OFF PROCESSOR AND ATTACHED PRINTER. 3. POWER ON PROCESSOR. IF TEST 36 FAILS, REPLACE THE CPU PLANAR BOARD (SEE SM 1230). IF TEST 36 RUNS WITHOUT ERROR, GO TO ENTRY POINT F OF MAP 1900. -NOTE- IF THIS TEST AND THE NEXT TEST (37) SHOW A 'FEATURE ABSENT' (UNDERLINE) RESULT AND A PRINTER IS PRESENT ON THE SYSTEM AND POWER IS ON, GO TO MAP 1900, ENTRY POINT C. NOTE: IF PROBLEM IS NOT IN THE PRINTER, THEN REPLACE THE CPU PLANAR BOARD (SEE SM 1230). IF PROBLEM NOT FIXED, SEE NOTE 1, PAGE 2, THIS MAP.
37	THE ATTACHED PRINTER DID NOT RESPOND CORRECTLY TO A DIAGNOSE COMMAND. GO TO MAP 1900, ENTRY POINT E TO ISOLATE THE PROBLEM. -NOTE- THIS ERROR IS NORMAL IF THE PRINTER IS ATTACHED THROUGH A SHARED PRINTER SWITCH AND THE PRINTER IS SWITCHED TO THE 'OTHER' PROCESSOR. ('ERROR RESET' KEY WILL BYPASS THIS ERROR.) NOTE: IF PROBLEM IS NOT IN THE PRINTER, THEN REPLACE THE CPU PLANAR BOARD (SEE SM 1230). IF PROBLEM NOT FIXED, SEE NOTE 1, PAGE 2, THIS MAP.

(STEP 007 CONTINUES)

(STEP 007 CONTINUED)

38	DISKETTE ATTACHMENT FAILURE. 1. POWER DOWN. 2. REMOVE ALL I/O CARDS EXCEPT DISKETTE CARD (SEE SM 1205 AND 1230). 3. REMOVE DISKETTE ATTACHMENT CABLES FROM DISKETTE CARD. 4. POWER ON. IF TEST '38' RUNS WITHOUT ERROR, PLUG I/O CARDS AND CABLES ONE AT A TIME UNTIL CARD OR CABLE CAUSING THE ERROR IS FOUND. IF TEST '38' FAILS, REPLACE: 1. DISKETTE ATTACHMENT CARD (SEE SM 1511 AND 1205). 2. CPU PLANAR BOARD (SEE SM 1230). IF PROBLEM NOT FIXED, SEE NOTE 1, PAGE 2, THIS MAP. WITHOUT DISKETTE ATTACHMENT CARD AND WITH A WORK STATION SIA CARD - VERIFY JUMPER C3 IS INSTALLED (SEE SM 1230). IF JUMPER IS INSTALLED, REPLACE CPU PLANAR BOARD (SEE SM 1230).
39	+24 VOLTS FOR DISKETTE #1 AND #2 MISSING OR OUT OF TOLERANCE. PRESS <ERROR RESET> AND GO TO MAP 1500, ENTRY POINT A. IF PROBLEM NOT FIXED, SEE NOTE 1, PAGE 2, THIS MAP.
3A THROUGH FE	FEATURE TEST. GO TO MAP 1201, ENTRY POINT A. FOR THE REST OF TABLE A.

(STEP 007 CONTINUES)

(STEP 007 CONTINUED)

008
IS AN 'FD' SHOWN AS THE LAST SEQUENCE INDICATOR?
Y N

009
DO THE CHARACTERS '*3' SHOW ON THE BOTTOM LINE OF THE CRT? (*3 = WAITING FOR LINK).
Y N

010
1. REPLACE CPU PLANAR BOARD (SEE SM 1230).

2. VERIFY REPAIR.

011
WAIT UNTIL THE 5247 LINK POWER ON DIAGNOSTICS COMPLETE (TEST 3D AND 3E). (IT MAY TAKE UP TO 4 MINUTES.)

DOES AN ERROR SHOW ON EITHER TEST 3D OR 3E?
Y N

012

GO TO MAP 1000, ENTRY POINT G.

013
SEE ERROR CODE 3D OR 3E IN MAP 1201.

014
SEE ERROR CODE 'FD' IN MAP 1201.

015
IS AN ERROR SHOWN IN THE POWER ON TEST RESULTS DISPLAY (REVERSE VIDEO OR BLINKING REVERSE VIDEO BLOCK BEHIND ONE OR MORE TEST NUMBERS)?
Y N

016
IS THE LAST POWER ON DIAGNOSTIC RESULT INDICATOR SHOWN '39'?
Y N

017
ADD 1 TO THE LAST POWER-ON DIAGNOSTIC RESULT INDICATOR SHOWN IN THE TOP SECTION OF THE DISPLAY. THIS IS THE 'ERROR CODE' TO BE USED IN THE NEXT STEP.

GO TO PAGE 2, STEP 007, ENTRY POINT B.

018
IS 2ND PRINTER PORT FEATURE INSTALLED (SEE SM 1205 AND 1230)?
Y N

019
IS THE 5247 ATTACHMENT FEATURE INSTALLED (WORK STATION SIA CARD, SEE SM 1205 AND 1230)?
Y N

020
1. REPLACE CPU PLANAR BOARD (SEE SM 1230).

2. VERIFY REPAIR.

POWER-ON RESET

021
1. REPLACE THE WORK STATION SIA CARD (SEE SM 1205 AND 1230).

2. REPLACE CPU PLANAR BOARD (SEE SM 1230).

3. VERIFY REPAIR.

022
ADD 1 TO THE LAST POWER-ON DIAGNOSTIC RESULT INDICATOR SHOWN IN THE TOP SECTION OF THE DISPLAY. THIS IS THE 'ERROR CODE' TO BE USED IN THE NEXT STEP.

GO TO PAGE 2, STEP 007, ENTRY POINT B.

023

GO TO PAGE 2, STEP 007, ENTRY POINT B.

024
(ENTRY POINT E)

FIRST TIME AT THIS STEP?
Y N

025
REPLACE:
1. STORAGE CARD(S).

2. CPU PLANAR BOARD (SEE SM 1230).

3. VERIFY REPAIR.

026
1. POWER OFF AND SEE NOTE--------->

2. PLACE 'STOP ON ERROR' JUMPER ON THE CPU PLANAR BOARD (SEE SM 1230 FOR JUMPER LOCATIONS).

3. POWER ON THE CPU.
GO TO PAGE 1, STEP 002,
ENTRY POINT C.

027
1. REMOVE THE FRONT COVER OF THE CPU UNIT (SEE SM 1220).

2. ENSURE THE JUMPERS ARE CORRECTLY INSTALLED ON THE CPU PLANAR BOARD (SEE SM 1230) (AUDIBLE ALARM/DISPLAY JUMPERS).

3. IF CORRECTLY INSTALLED, CHECK FOR FAILING JUMPERS.

ARE THE JUMPERS OK?
Y N

028
1. REPAIR OR REPLACE THE JUMPERS (SEE SM 1230).

2. REPLACE THE CPU PLANAR BOARD (SEE SM 1230).

029
CHECK JUMPERS 'D' AND 'E' ON THE CPU PLANAR BOARD (SEE SM 1230) FOR CORRECT LOCATION. IF JUMPERS ARE OK, REPLACE CPU PLANAR BOARD (SEE SM 1230).

IF EITHER JUMPER A1 (CE LOOP ON TEST) OR JUMPER A4 (FACTORY TEST) ARE INSTALLED (SEE SM 1230), REMOVE THEM AND GO TO MAP 1000, ENTRY POINT A. IF JUMPERS ARE OK, CONTINUE WITH THE NEXT STEP.

POWER-ON RESET

ENTRY POINT A

POWER-ON RESET (FEATURE TEST CODES)

CODE	REPAIR ACTION
3A	INTERNAL WRAP OF SECOND PRINTER ATTACHMENT FEATURE CARD FAILED. 1. POWER OFF PROCESSOR AND ATTACHED PRINTERS. 2. REMOVE ALL I/O FEATURE CARDS EXCEPT THE 2ND PRINTER ATTACHMENT CARD FROM THE SYSTEM. (SEE SM 1205 AND 1230). 3. POWER ON THE PROCESSOR. IF TEST '3A' FAILS, REPLACE 2ND PRINTER ATTACHMENT CARD. IF TEST '3A' RUNS WITHOUT ERROR, ISOLATE PROBLEM TO I/O FEATURE CARDS OR THE ATTACHED PRINTER. IF THE PRINTER IS DETERMINED TO BE THE FAILING UNIT, GO TO MAP 1900, ENTRY POINT F. -NOTE 1-IF THIS TEST AND THE NEXT TEST (3B) SHOW A 'FEATURE ABSENT' (UNDERLINE) RESULT AND A PRINTER IS PRESENT ON THE SYSTEM, GO TO MAP 1900, ENTRY POINT E. IF PROBLEM NOT FIXED, SEE NOTE 1, PAGE 2, MAP 1200. -NOTE 2-IF PROBLEM IS NOT IN THE PRINTER, THEN REPLACE THE CPU PLANAR BOARD (SEE SM 1230).
3B	THE ATTACHED PRINTER DID NOT RESPOND CORRECTLY TO A DIAGNOSE COMMAND. GO TO MAP 1900, ENTRY POINT E TO ISOLATE THE PROBLEM. -NOTE- THIS ERROR IS NORMAL IF THE PRINTER IS ATTACHED THROUGH A SHARED PRINTER SWITCH AND THE PRINTER IS SWITCHED TO THE 'OTHER' PROCESSOR. ('ERROR RESET' WILL BYPASS THIS ERROR.) IF PROBLEM NOT FIXED, SEE NOTE 1, PAGE 2, MAP 1200. -NOTE 1-IF PROBLEM IS NOT IN THE PRINTER, THEN REPLACE THE CPU PLANAR BOARD (SEE SM 1230).

CODE	REPAIR ACTION
3C	WORK STATION SIA CARD IN THE SYSTEM/23 FAILED. 1. POWER DOWN. 2. REMOVE ALL OTHER CARDS FROM THE I/O CARD SOCKETS (SEE SM 1230). 3. POWER ON. 4. IF ERROR '3C' STILL OCCURS, REPLACE THE WORK STATION SIA CARD (SEE SM 1205 AND 1230). 5. IF ERROR '3C' DISAPPEARS, PLUG IN I/O CARDS, ONE AT A TIME, UNTIL THE FAILING CARD IS LOCATED. 6. REPLACE CPU PLANAR BOARD (SEE SM 1230).
	TRAP: REPLACE 1. WORK STATION SIA CARD (SEE SM 1205 AND 1230). 2. CPU PLANAR BOARD (SEE SM 1230).
3D	'OPEN LINK' OPERATION TO THE 5247 FAILED. VERIFY THAT THE SERIAL LINK CABLE BETWEEN THE 5247 AND THE WORK STATION IS CORRECTLY CONNECTED. (SEE SM 6007 AND 6330). IF OK, GO TO MAP 1016, A. -NOTE- IF THIS TEST FAILS, THE NEXT TEST IS BYPASSED.
3E	IF '3E=XXXX XXXX XXXX XXXX' IS DISPLAYED ON LINE 5, RECORD THE STATUS INFORMATION AND GO TO MAP 1600, ENTRY POINT A. (X'S = STATUS INFORMATION)
	IF '3E(XX)' IS DISPLAYED, GO TO MAP 1016, ENTRY POINT A.
3F THROUGH FC	REPLACE CPU PLANAR BOARD. IF THE PROBLEM IS NOT FIXED, SEE NOTE 1, PAGE 2, MAP 1200.

CODE	REPAIR ACTION
FD	SEQUENCE CODE 'FD' IS DISPLAYED AT THE START OF THE SYSTEM DISKETTE CONFIGURATION ROUTINE. IF SHARED EXTERNAL DISKETTES ARE ATTACHED TO THE SYSTEM AND CANNOT BE ACCESSED BECAUSE THE OTHER PROCESSOR IS USING THEM, THE SYSTEM WILL HANG UNTIL THE OTHER PROCESSOR RELEASES THEM. IF THE EXTERNAL DISKETTES ARE NOT SHARED OR THE OTHER PROCESSOR IS NOT USING THEM: 1. REPLACE DISKETTE ATTACHMENT CARD (SM 1205 AND 1511). 2. IF PROBLEM NOT FIXED AND EXTERNAL DRIVES ARE ATTACHED TO THE SYSTEM ASSUME THE EXTERNAL DRIVES TO BE THE 'FAILING DRIVES' AND GO TO MAP 1500, ENTRY POINT EE. --NOTE-- WHEN THIS ERROR CODE IS DISPLAYED, THE KEYBOARD IS ACTIVE AND PID 1500 (ROS RESIDENT DISKETTE DIAGNOSTICS) CAN BE SELECTED WITH THE CMD-TEST AND CMD-ERROR RESET KEY SEQUENCE. NOTE: 'CMD-ERROR RESET' KEY WILL BYPASS THIS ERROR.
FE	REPLACE CPU PLANAR BOARD. IF THE PROBLEM IS NOT FIXED, SEE NOTE 1, PAGE 2, MAP 1200.

PROCESSOR

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1000	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	010	1000	B
2	009	1225	A
3	013	1300	A
3	014	1500	A

001
(ENTRY POINT A)

1. BEFORE STARTING, RECORD ANY ERROR MESSAGES OR 'TRAP' DISPLAYS.

2. VERIFY THAT ALL CABLES AND CARDS ARE SEATED AND TIGHT.

CAUTION

TO RESEAT OR EXCHANGE STORAGE CARDS, FIRST POWER OFF SYSTEM.

3. TO RUN PID 1205, SELECT DCP MENU OPTION '3'. (SEE DIAGNOSTIC USERS GUIDE 0001, PID 1205.)

4. VERIFY THAT PID 1205 LOADED, SIGNED ON (MESSAGE I-300), EXECUTED ROUTINE 1 AND DISPLAYED OPTIONS (MESSAGE I-301) OK.

DID PID 1205 LOAD AND DISPLAY OPTIONS LIST WITHOUT ERROR?
Y N
|
| 002
| GO TO PAGE 3, STEP 011,
| ENTRY POINT F.
|
|
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|
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003
SELECT OPTION '1' TO RUN AUTOMATIC ROUTINES.

DID ROUTINE 1 RUN OK?
Y N

004
GO TO PAGE 3, STEP 015,
ENTRY POINT G.

005
DID ROUTINES 2 AND 3 RUN OK?
Y N

006
GO TO STEP 008,
ENTRY POINT D.

007
NO FAILURE FOUND. SEE NOTE 1.
USE OPTION '9' AND 'ENTER' TO RETURN TO DCP MAIN MENU.
RETURN TO MAP THAT SENT YOU HERE.

NOTE 1:

IF CPU PLANAR BOARD IS SUSPECTED AND PROBLEM IS INTERMITTENT, FIRST RUN ROUTINE 8 AND VERIFY THAT THE TRAP INTERRUPT DISPLAY DATA IS CORRECT. IF NOT CORRECT, EXCHANGE PLANAR BOARD (SEE SM 1230). NEXT, SET LOOP MODE WITH OPTION '0' AND THEN OPTION '1' TO LOOP PROGRAM. RUN WITH COVERS CLOSED UNTIL NORMAL OPERATING TEMPERATURE IS REACHED. USE 'ATTN' AND 'E' TO END LOOPING. GO TO MAP ENTRY POINT 'A', IF A FAILURE IS SENSED.

008
(ENTRY POINT D)

EXCHANGE 'CPU PLANAR BOARD' (SEE SM 1230).

(ENTRY POINT E)

VERIFY REPAIR.
IS PROBLEM CORRECTED?
Y N

009
EXCHANGE AND TEST (SEE SM 1230):

1) 'BASE STORAGE CARD'.
2) 'CPU PLANAR BOARD'.

IF NOT REPAIRED, SUSPECT POWER.
GO TO MAP 1225, ENTRY POINT A.

010
RETURN SYSTEM TO NORMAL. INSTALL ALL CARDS AND CABLES.

VERIFY SYSTEM.
GO TO MAP 1000, ENTRY POINT B.

011
(ENTRY POINT F)

DID PID 1205 SIGN ON
WITH MESSAGE I-300?
Y N
|
| 012
| VERIFY CORRECT KEYBOARD ENTRY.
| VERIFY THAT A '3' DISPLAYED
| NEXT TO THE '?' WHEN THE '3'
| KEY WAS PRESSED (ON THE RIGHT
| END NUMERIC PAD) AND MOVED UP
| WHEN THE 'ENTER' KEY WAS
| PRESSED.
|
| WAS THE KEYBOARD ENTRY OK?
| Y N
| |
| | 013
| | KEYBOARD PROBLEM.
| | SEE DIAGNOSTIC USERS GUIDE
| | 0001, PID 1300.
| | GO TO MAP 1300,
| | ENTRY POINT A.
| |
| 014
| 1. USE ANY ERROR MESSAGES OR
| 'TRAP' ERRORS AS A GUIDE TO
| THE PROBLEM. SEE DIAGNOSTIC
| USERS GUIDE 0001, PID 0001,
| FOR MESSAGE DEFINITIONS.
|
| 2. VERIFY CORRECT CE DISKETTE
| AND DRIVE NUMBER.
|
| 3. IF PROBLEM IS NOT CORRECTED,
| NEXT VERIFY DISKETTE
| ATTACHMENT WITH ROS PID
| 1500. (SEE DIAGNOSTIC USERS
| GUIDE 0001, PID 1500). IF
| ERROR,
| GO TO MAP 1500, ENTRY POINT A.
|
|
|
|
|
|
|
|

|
|
|
|
|
015
(ENTRY POINT G)

ERROR WITH 'FRU=' OR 'SEE MAP'?
Y N
|
| 016
| RESEAT / EXCHANGE 'BASE STORAGE
| CARD'.
| GO TO PAGE 2, STEP 008,
| ENTRY POINT E.
|
017
EXCHANGE FRU OR GO TO MAP.
GO TO PAGE 2, STEP 008,
ENTRY POINT E.

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STORAGE

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP: ENTRY POINT	PAGE NUMBER	STEP NUMBER
1000	A	1	001

EXIT POINTS

EXIT THIS MAP: PAGE NUMBER	STEP NUMBER	TO: MAP NUMBER	ENTRY POINT
6	036	1000	B
5	033	1150	A
6	035	1225	A
4	025	1300	A
4	026	1500	A

001
(ENTRY POINT A)

1. BEFORE STARTING, RECORD ANY ERROR MESSAGES OR 'TRAP' DISPLAYS.

2. CLEAN STORAGE CARD CONTACTS WHEN SWAPPING CARDS ONLY IF NECESSARY. USE CLEANER PART 619022.

CAUTION

TO RESEAT OR EXCHANGE STORAGE CARDS, POWER OFF SYSTEM FIRST.

3. TO RUN PID 1210, SELECT DCP MENU OPTION '4' (SEE DIAGNOSTIC USERS GUIDE 0001, PID 1210).

4. VERIFY PID 1210 LOADED AND SIGNED ON (MESSAGE I-400), EXECUTED ROUTINE 1 AND DISPLAYED OPTIONS (MESSAGE I-401).

DID PID 1210 LOAD AND DISPLAY MENU LIST WITHOUT ERROR MESSAGE?
Y N
| |
| |
| |
| |
| |

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2 2
A B

002
GO TO PAGE 4, STEP 023,
ENTRY POINT D.

003
SELECT OPTION '1' TO RUN AUTOMATIC ROUTINES.

DID ROUTINES 1, 2 AND 3 RUN 'OK'?
Y N

004
GO TO PAGE 5, STEP 027,
ENTRY POINT E.

005
DID MESSAGE I-419 DISPLAY CORRECT READ/WRITE STORAGE SIZE?
Y N

006
VERIFY STORAGE CONFIGURATION IS CORRECT. SWAP IF POSSIBLE OR RESEAT STORAGE CARD(S).

GO TO PAGE 6, STEP 034,
ENTRY POINT G.

007
DID ROUTINE 4 RUN 'OK'?
Y N

008
WAS MESSAGE E-442 DISPLAYED?
(PAGE REGISTER ERROR)
Y N

009
GO TO PAGE 3, STEP 016,
ENTRY POINT B.

010
GO TO PAGE 6, STEP 034,
ENTRY POINT F.

011
DID MESSAGE I-443 DISPLAY THE CORRECT ROS STORAGE SIZE.
Y N

012
USE PID 0125, ROUTINE 2, TO DISPLAY ROS MODULE ADDRESSES. COMPARE WITH MACHINE HISTORY TO DETERMINE NUMBER OF MODULES.

1. IF MISSING MODULE 'PAGE' IS '0' THROUGH '7', CHECK THE PLANAR BOARD FOR LOOSE OR MISSING ROS MODULES OR EXCHANGE PLANAR BOARD (SEE SM 1230 AND 1231).

2. IF 'PAGE' IS '8' THROUGH 'F', THE MISSING MODULE IS ON A FEATURE CARD. RUN FEATURE DIAGNOSTICS OR EXCHANGE FEATURE CARD (SEE SM 1205 AND 1230).

GO TO PAGE 6, STEP 034,
ENTRY POINT G.

013
DETERMINE IF THE 'MACHINE UPDATE CARD' (16K) WITH ITS 'MACHINE UPDATE CARD INSTALLED JUMPER' ON THE CPU PLANAR BOARD OR THE 'WORD PROCESSING FEATURE CARD' (16K) IS INSTALLED (SEE SM 1205 AND 1230).

DID ROUTINE 5 RUN WITHOUT ERROR AND DISPLAY CORRECT CONTROL STORAGE FEATURES?
Y N

014

GO TO PAGE 3, STEP 020,
ENTRY POINT C.

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015

1. NO FAILURE FOUND. SEE NOTE 1.

2. USE OPTION '9' AND 'ENTER' TO RETURN TO DCP MAIN MENU.

3. RETURN TO MAP THAT SENT YOU HERE.

NOTE 1:

1. IF STORAGE OR ROS IS SUSPECT AND PROBLEM IS INTERMITTENT, SET LOOP MODE WITH OPTION '0' AND THEN USE OPTION '1' TO LOOP PROGRAM.

2. RUN WITH COVERS CLOSED UNTIL SYSTEM REACHES OPERATING TEMPERATURE.

3. END LOOPING WITH 'ATTN' AND 'E'.

4. SWAP STORAGE CARDS WHEN POSSIBLE AND REPEAT DIAGNOSTICS.

5. CHECK JUMPERING ON 64K CARDS IF STORAGE CONFIGURATION IS CHANGED.

6. USE OPTION '8' FOR EXTENDED STORAGE EXERCISER.

7. GO TO MAP ENTRY POINT 'A' IF A FAILURE IS SENSED.

016
(ENTRY POINT B)

DID ROUTINE 4 STOP WITH 'PAGE=' '8' THROUGH 'F' IN MESSAGE I-440?
Y N
|
| 017
| MESSAGE E-441 WITH 'PAGE=' '0' THROUGH '7'?
| Y N
| |
| | 018
| | GO TO STEP 020,
| | ENTRY POINT C.
| |
| 019
| GO TO PAGE 6, STEP 034,
| ENTRY POINT F.
|
020
(ENTRY POINT C)

1. POWER OFF SYSTEM.

2. EXCHANGE FAILING FRU, IF KNOWN, AND VERIFY REPAIR.

3. REMOVE ALL FEATURE CARDS PLUGGED INTO THE I/O BUS. IF THE 'MACHINE UPDATE CARD' IS REMOVED, ALSO REMOVE THE 'MACHINE UPDATE CARD INSTALLED' JUMPER (A3) FROM THE CPU PLANAR BOARD (SEE SM 1205 AND 1230). (DO NOT REMOVE THE DISKETTE CONTROLLER CARD OR STORAGE.)

4. POWER ON SYSTEM AND RUN PID 1210, ROUTINE 4 AND 5.

DID ROUTINE 4 AND 5 RUN WITHOUT ERROR?
Y N
| |
| |
| |
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| |
EC994445 PEC869281

021
GO TO PAGE 6, STEP 034,
ENTRY POINT F.

022
1. POWER OFF SYSTEM AND INSTALL A FEATURE CARD. IF THE 'MACHINE UPDATE CARD' IS INSTALLED, ALSO INSTALL THE 'MACHINE UPDATE CARD INSTALLED' JUMPER (A3) ON THE CPU PLANAR BOARD (SEE SM 1205 AND 1230).

2. POWER ON AND RUN PID 1210, ROUTINE 4 AND 5. REPEAT STEP 1 UNTIL FAILING CARD IS FOUND.

3. EXCHANGE FAILING FEATURE CARD.

4. INSTALL REMOVED CARDS AND JUMPERS.

5. RUN FLT FOR ALL FEATURES INSTALLED.

GO TO PAGE 6, STEP 034,
ENTRY POINT G.

023
(ENTRY POINT D)

DID PID 1210 SIGN ON
(MESSAGE I-400)?
Y N

024
VERIFY CORRECT KEYBOARD ENTRY.

VERIFY THAT A '4' DISPLAYED NEXT TO THE '?' WHEN THE '4' KEY WAS PRESSED (ON THE RIGHT END NUMERIC PAD) AND THEN MOVED UP WHEN THE 'ENTER' KEY WAS PRESSED.

WAS KEYBOARD ENTRY OK?
Y N

025
KEYBOARD PROBLEM.
GO TO MAP 1300,
ENTRY POINT A.

026
1. VERIFY CORRECT CE DISKETTE AND DRIVE NUMBER.

2. USE ANY ERROR MESSAGES OR 'TRAP' ERRORS AS A GUIDE TO THE PROBLEM. (SEE DIAGNOSTIC USERS GUIDE 0001, PID 0001, FOR MESSAGE DEFINITIONS.)

3. IF PROBLEM NOT CORRECTED, NEXT VERIFY DISKETTE ATTACHMENT WITH ROS ROUTINES (SEE DIAGNOSTIC USERS GUIDE 0001, PID 1500).

4. IF ERROR THEN,
GO TO MAP 1500, ENTRY POINT A.

027
(ENTRY POINT E)

WAS MESSAGE E-417 (STORAGE CONFIGURATION ERROR) DISPLAYED?
Y N

028
ERROR WITH 'FRU=' OR 'SEE MAP'?
Y N

029
DID ROUTINE 2 OR 3 STOP WITH 'ADDR=' OTHER THAN '00'?
Y N

030
RESEAT / EXCHANGE 'BASE STORAGE CARD'.
GO TO PAGE 6, STEP 034, ENTRY POINT G.

031
EXCHANGE FRU USING 'PAGE= #'.

'PAGE=' - - - FRU
- 0 - 'BASE STORAGE CARD'
- 1 - 'FEATURE STORAGE CARD' (OR SINGLE 64K CARD)
- 2 - 'FEATURE STORAGE CARD' (OR SINGLE 64K CARD)
- 3 - 'BASE STORAGE CARD'
- 4 - 'BASE STORAGE CARD'
- 5 - 'FEATURE STORAGE CARD'
- 6 - 'FEATURE STORAGE CARD'
- 7 - 'CPU PLANAR BOARD'
- 8-F - 'I/O CHANNEL STORAGE'

GO TO PAGE 6, STEP 034, ENTRY POINT G.

032
EXCHANGE FRU OR GO TO MAP.

GO TO PAGE 6, STEP 034, ENTRY POINT G.

033
IF STORAGE CARDS WERE SWAPPED AS A TEST AND 'STATUS=' '4' THEN ENTER A '1' AND CONTINUE TEST, OR CHECK STORAGE CARD LOCATIONS.

CORRECT STATUS CODES AND STORAGE CARD CONFIGURATIONS ARE:

STATUS	BASE	FEATURE	
- 0 -	64K	64K	
- 4 -	32K	64K	- NOT VALID
- 8 -	64K	32K	
- A -	64K		- JUMPERED
- C -	32K	32K	
- E -	32K		

ANY OTHER STATUS IS AN ERROR.

THE 'NOT VALID' CONFIGURATION CAN BE TESTED BY PID 1210 BUT MUST BE CHANGED FOR SYSTEM USE.

TO CHANGE FROM A TWO CARD CONFIGURATION TO A SINGLE 64K CARD THE STORAGE CARD JUMPERS MUST BE CHANGED.

SUSPECT STORAGE CARD CONNECTORS. RESEAT STORAGE CARDS AND REPEAT TEST.
IF PROBLEM NOT CORRECTED THEN GO TO MAP 1150, ENTRY POINT A.

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034
(ENTRY POINT F)

1. EXCHANGE 'CPU PLANAR BOARD'.

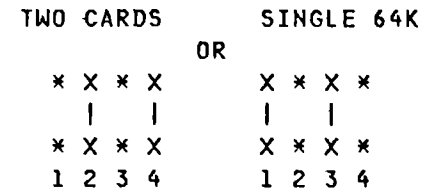
2. CHECK PLUGGABLE ROS MODULES
(SEE SM 1230 AND 1231).

(ENTRY POINT G)

VERIFY REPAIR.

IS PROBLEM CORRECTED?
Y N
|
| 035
| 1. EXCHANGE AND TEST (SEE SM
| 1230):
|
| A) 'FEATURE STORAGE CARD'.
| B) 'BASE STORAGE CARD'.
| C) 'CPU PLANAR BOARD'.
|
| 2. IF NOT REPAIRED, SUSPECT
| POWER.
| GO TO MAP 1225, ENTRY POINT A.
|
036
1. RETURN SYSTEM TO NORMAL.
INSTALL ALL CARDS AND CABLES
IN CORRECT POSITIONS.

2. CHECK THAT THE 64K STORAGE
CARDS ARE JUMPERED CORRECTLY
IF CHANGED FOR TESTS.



3. VERIFY SYSTEM.
GO TO MAP 1000, ENTRY POINT B.

UPDATE STORAGE

PAGE 1 OF 3

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1000	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	010	1225	A

001
(ENTRY POINT A)

1. LOAD PID 1212 USING OPTION 10 FROM THE DCP MENU. (SEE DIAGNOSTIC USER GUIDE 0001, PID 1212 FOR LOADING INSTRUCTIONS.)

2. SELECT OPTION 0 FROM PID 1212 MENU AND RUN THE STORAGE TEST. NOTE: THIS TEST RUNS FOR ABOUT 5 MINUTES.

DID STORAGE TEST COME TO A CORRECT COMPLETION?
Y N
|
| 002
| DID THE SCREEN GO BLANK AFTER
| TEST STARTED?
| Y N
| |
| | 003
| | DID AN ERROR HALT OCCUR?
| | Y N
| | |
| | | 004
| | | 1. REPLACE THE UPDATE
| | | STORAGE CARD (SEE SM
| | | 1205).
| | |
| | | 2. REPLACE THE CPU PLANAR
| | | BOARD (SEE SM 1230).
| | |
| | | 3. VERIFY REPAIR.
| | |
| | |

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EC994445 PEC987896

2 2 2
A B C

005
1. REPLACE THE UPDATE STORAGE CARD (SEE SM 1205).

2. REPLACE THE CPU PLANAR BOARD (SEE SM 1230).

3. VERIFY REPAIR.

006
1. REPLACE THE UPDATE STORAGE CARD (SEE SM 1205).

2. REPLACE THE CPU PLANAR BOARD (SEE SM 1230).

3. VERIFY REPAIR.

007
1. POWER OFF THE SYSTEM.

2. WAIT 30 SECONDS AND POWER ON THE SYSTEM.

3. LOAD PID 1212 AND SELECT OPTION 0. (SEE DIAGNOSTIC USERS GUIDE 0001, PID 1212, FOR LOADING INSTRUCTIONS.)

4. THIS STEP RUNS THE ROUTINE TO CHECK THE I/O CHECK (PARITY CHECK) CIRCUIT.

DID AN ERROR HALT OCCUR?
Y N

008
WAS THIS MAP ENTERED BECAUSE THE CUSTOMER HAD A TRAP 2000?
Y N

009
1. SELECT OPTION 1 PID 1212 (SEE DIAGNOSTIC USERS GUIDE 0001, PID 1212, FOR INSTRUCTIONS.)

2. LET THE STORAGE TEST LOOP AND IF NO ERRORS OCCUR FAILURE MAY BE INTERMITTENT.

DID AN ERROR HALT OCCUR OR DID THE SCREEN GO BLANK?
Y N

010
1. PROBLEM IS INTERMITTENT.

2. GO TO THE INTERMITTENT MAP
GO TO MAP 1225,
ENTRY POINT A.

011
1. REPLACE THE UPDATE STORAGE CARD (SEE SM 1205).

2. REPLACE THE CPU PLANAR BOARD (SEE SM 1230).

3. VERIFY REPAIR.

012
1. REPLACE THE UPDATE STORAGE CARD (SEE SM 1205).

2. REPLACE THE CPU PLANAR BOARD (SEE SM 1230).

3. VERIFY REPAIR.

UPDATE STORAGE

013

1. REPLACE THE UPDATE STORAGE CARD (SEE SM 1205).

2. REPLACE THE CPU PLANAR BOARD (SEE SM 1230).

3. VERIFY REPAIR.

TRAP DATA

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP ENTRY POINT	PAGE NUMBER	STEP NUMBER
1000	A	1	001

EXIT POINTS

EXIT THIS MAP PAGE NUMBER	STEP NUMBER	TO MAP NUMBER	ENTRY POINT
3	010	1225	A
3	008	1250	A

001
(ENTRY POINT A)
TRAP DATA DISPLAY (-JAPAN ONLY- SEE NOTE ON NEXT PAGE)

'TRAP XXXX AB00 CCCC DDEE FFGG HHII JJJJ KKKK LLLL MMMM NNPP QQQQRRRR SSSS TTTT
UUUU VVVV WWWW YYYY ZZZZ 1111 2222 3333 4444 55556666 7777 8888 9999 @@@@ ????'

XXXX = TRAP CLASS BITS
'80XX' = POWER CHECK
'40XX' = WRITE TO ROS TRAP
'20XX' = I/O CHANNEL TRAP
'10XX' = STORAGE PARITY CHECK
'00XX' = SYSTEM PROGRAMMING ERROR TRAP
SEE TABLE 'X' AT THE END OF THIS MAP FOR CAUSES
A = PAGE IN USE AT THE TIME OF THE TRAP
B = HIGH ORDER ADDRESS BITS AT TIME OF TRAP
00 = ALWAYS 00
CCCC = DMA CHANNEL 0 ADDRESS (DISKETTE)
DD = INTERRUPT CONTROLLER INTERRUPT MASK
EE = PROCESSOR INTERRUPT MASK
FF = R/W STORAGE WRITE PAGE REGISTER
GG = R/W STORAGE READ PAGE REGISTER
HH = ROS PAGE REGISTER
II = DMA PAGE REGISTER
JJJJ = STACK POINTER VALUE LESS EIGHT AT TIME OF TRAP
KKKK = H/L REGISTER CONTENTS
LLLL = D/E REGISTER CONTENTS
MMMM = B/C REGISTER CONTENTS
NN = A REGISTER
PP = FLAGS
QQQQ = PROGRAM COUNTER AT TIME OF TRAP
RRRR THROUGH ???? = STACK CONTENTS (MAY NOT HAVE ANY MEANING)

(STEP 001 CONTINUES)

(STEP 001 CONTINUED)

-NOTE- ON SYSTEMS THAT HAVE THE 'JAPAN' COUNTRY SELECT JUMPER INSTALLED (SEE SM 1230) A '1' CHARACTER WILL BE SEEN AS A 'Þ' CHARACTER ON A TRAP DISPLAY.

SEE THE 'XXXX' VALUES IN THE DATA DISPLAY EXAMPLE GIVEN ABOVE.
ARE THEY EQUAL TO '0000'?
Y N
|
| 002
| ARE THEY EQUAL TO '00XX'?
| ('XX' VALUES OTHER THAN '00')
| Y N
| |
| | 003
| | ARE THEY EQUAL TO '10XX'?
| | ('XX' = IGNORE)
| | Y N
| | |
| | | 004
| | | ARE THEY EQUAL TO '20XX'?
| | | ('XX' = IGNORE)
| | | Y N
| | | |
| | | | 005
| | | | ARE THEY EQUAL TO '40XX'?
| | | | ('XX' = IGNORE)
| | | | Y N

```
D E F       SYSTEM 23
2 2 2
            TRAP DATA
| | |
| | |       PAGE   3 OF   7
| | |
| | |
| | 006
| | ARE THEY EQUAL TO '80XX'?
| | ('XX' = IGNORE)
| | Y N
| | |
| | | 007
| | | REPLACE:
| | | 1. CPU   PLANAR   BOARD  (SEE  SM
| | |    1230).
| | | 2. STORAGE CARDS.
| | | 3. POWER SUPPLY (SEE SM 1240).
| | | 4. VERIFY REPAIR.
| | |
| | 008
| | TRAP 80XX - POWER CHECK.
| | GO TO POWER MAP
| | GO TO MAP 1250, ENTRY POINT A.
| |
| 009
| TRAP 40XX - WRITE TO ROS TRAP.
| RUN  THE  POWER-ON  RESET  TEST  (PID
| 1200),  ROS  RESIDENT  DISKETTE  TEST
| (PID 1500), AND ALL DISKETTE RESIDENT
| TESTS.  IF NONE OF THESE  TESTS  SHOW
| AN  ERROR,  THE  TRAP WAS CAUSED BY A
| PROGRAMMING ERROR.  CALL FOR AID.
|
010
TRAP 20XX - I/O CHANNEL TRAP.

INSPECT THE ROS PAGE RESISTOR VALUES IN
THE TRAP DATA DISPLAY  (VALUE  'HH'  IN
THE EXAMPLE ON PAGE 1 OF THIS MAP).
1. IF    'HH'='F8',    REPLACE     WORD
   PROCESSING SUPPORT CARD (SEE SM 1230
   AND 1205).
2. IF 'HH'='FF', REPLACE MACHINE UPDATE
   CARD (SEE SM 1205).
3. IF  PROBLEM  IS  NOT  FIXED, SEE MAP
   1225, AND  PERFORM  THE  RECOMMENDED
   CHECKS.
GO TO MAP 1225, ENTRY POINT A.
```

011
TRAP 10XX - READ/WRITE STORAGE PARITY CHECK.

LOOK AT 'B' VALUE, IS IT C,D,E,F?
Y N
|
| 012
| REPLACE BASE STORAGE CARD.
|
013
OBSERVE THE CHARACTER REPRESENTED BY THE 'A' IN THE DATA DISPLAY EXAMPLE IN STEP 1. USE THE FOLLOWING CHART TO DETERMINE THE STORAGE CARD CAUSING THE ERROR. (SEE SM 1230.)

STORAGE CONFIGURATION		
(32K X 1), (32K X 2) (64K + 32K), OR (64K X 2)		(64K X 1)
'A' VALUE	BASE STORAGE	FEATURE STORAGE	BASE STORAGE
0	X		X
1		X	X
2		X	X
3	X		
4	X		
5		X	
6		X	

1. REPLACE THE FAILING CARD.
2. REPLACE THE CPU PLANAR BOARD (SEE SM 1230).
3. VERIFY REPAIR.

014
TRAP 00XX - MICROCODE ERROR. SEE TABLE 'X' AT THE END OF THIS STEP FOR CAUSES. CALL FOR AID IF NECESSARY.

TABLE 'X'

00XX	REASON
0000	SYSTEM CALL ATTEMPTED THROUGH A TRANSFER VECTOR THAT HAS NOT BEEN INITIALIZED.
0001	SYSTEM STORAGE CONTROLLER ROUTINE SENSED AN ERROR IN ITS STORAGE POINTERS.
0002	DATA STORAGE CONTROLLER ROUTINE SENSED AN ATTEMPT TO FREE ITS PERMANENTLY ASSIGNED STORAGE.
0003	'BASIC' STORAGE CONTROLLER ROUTINE SENSED A WRONG DIRECTORY ENTRY.
0004	'BASIC' STORAGE CONTROLLER ROUTINE SENSED A WRONG FORWARD OR BACKWARD POINTER.
0005	'BASIC' STORAGE CONTROLLER ROUTINE SENSED A WRONG PROGRAM BLOCK OR REFERENCE.
0006	DATA CONTROL ROUTINE SENSED A WRONG VARIABLE ON ENTRY.
0007	DATA CONTROL ROUTINE SENSED A WRONG VARIABLE ON ENDING.

015
DID THE TRAP '0000' OCCUR AFTER THE POWER ON RESET TEST HAD ENDED? (AFTER THE AUDIBLE ALARM THAT SIGNALS THE END OF THE TEST.)
Y N

016
1. REPLACE CPU PLANAR BOARD (SEE SM 1230).

2. IF 5247 ATTACHMENT FEATURE IS INSTALLED, REPLACE THE WORK STATION SIA CARD (SEE SM 1205 AND 1230).

3. VERIFY REPAIR.

017
1. RUN POWER ON RESET TEST (PID 1200) AND FORCE AN ERROR BY HOLDING DOWN THE SPACE BAR ON THE KEYBOARD.

2. LOOK AT THE RESULTS INDICATORS FOR THE ROS CRC CHECK TEST (09 THROUGH 29).

DO RESULTS INDICATORS 09, 0A, 0B, 0C, 0D, 12, 13, 14, 15, 16, 17, 18, 19 SHOW AS 'PRESENT' (NOT UNDERLINED)?
Y N

018
CHECK ALL PLUGGABLE ROS MODULES FOR CORRECT SEATING OR BENT PINS. (SEE MAP 1200, ERROR CODES 09 THROUGH 19 FOR MODULE LOCATIONS). IF NO PROBLEMS ARE FOUND, REPLACE CPU PLANAR BOARD (SEE SM 1230).

019
IS THE SECOND PRINTER ATTACHMENT CARD INSTALLED?
Y N

020
(ENTRY POINT B)

IS THE WORK STATION SIA CARD INSTALLED?
Y N

021
1. REPLACE CPU PLANAR BOARD (SEE SM 1230).

(NOTE: IF PROBLEM NOT FIXED, SEE MAP 1225 AND PERFORM RECOMMENDED CHECKS).

2. VERIFY REPAIR.

022
IS RESULTS INDICATOR 1E, 1F OR 20 UNDERLINED?
Y N

023
1. REPLACE CPU PLANAR BOARD (SEE SM 1230).

(NOTE: IF PROBLEM NOT FIXED, SEE MAP 1225 AND PERFORM RECOMMENDED CHECKS).

2. VERIFY REPAIR.

024
1. REPLACE THE WORK STATION SIA CARD (SEE SM 1205 AND 1230).

2. REPLACE CPU PLANAR BOARD (SEE SM 1230).

3. VERIFY REPAIR.

025
IS RESULTS INDICATOR 27 UNDERLINED?
Y N

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7 7

026

GO TO PAGE 6, STEP 020,
ENTRY POINT B.

027

1. REPLACE SECOND PRINTER ATTACHMENT CARD (SEE SM 1205 AND 1230).

2. VERIFY REPAIR.

INTERMITTENT ERROR

(ENTRY POINT A)

IF YOU ARE HAVING INTERMITTENT PROBLEMS WITH DISKETTES, DISK OR PRINTERS GO TO THE FOLLOWING MAPS:

DISKETTE	MAP 1500, ENTRY POINT C
5247 (DISK)	MAP 1651, ENTRY POINT A
PRINTERS	MAP 1900, ENTRY POINT D

IF THE PROBLEM IS NOT REPAIRED, RETURN TO THIS MAP AND PERFORM THE FOLLOWING CHECKS:

1. A.C. INPUT POWER: ENSURE THAT THE A.C. INPUT POWER IS +/- 10% OF THE GIVEN VALUE SHOWN ON THE POWER SUPPLY OF EACH SYSTEM UNIT.

   -GBGI SYSTEM- ENSURE THAT THE A.C. TRANSFORMER IS JUMPERED CORRECTLY FOR THE CUSTOMER SUPPLY VOLTAGE (50 HZ - SEE SM 1260 AND 1210. 50 HZ SEE SM 1250 AND 1210).

2. GROUNDING: CHECK THAT ALL OUTLETS SUPPLYING POWER TO THE SYSTEM UNITS ARE CORRECTLY GROUNDED. (USE TOOL PN 9900453)

3. TIGHTEN ALL SCREW CONNECTIONS IN THE POWER SUPPLIES OF THE SYSTEM UNITS.

4. CHECK ALL D.C. VOLTAGES FOR TOO MUCH RIPPLE USING AN OSCILLOSCOPE.

   THE MAXIMUM PERMISSIBLE AMOUNT OF RIPPLE IS 3% OF THE GIVEN VOLTAGE. EXAMPLE: FOR +5 VOLTS, MAXIMUM RIPPLE = 5 X .03 = 150 MILLIVOLTS (PEAK-TO-PEAK).

   -NOTE- IF AN OSCILLOSCOPE IS NOT AVAILABLE, THE PROCEDURE GIVEN IN SM 1211 TO USE A C.E. METER MAY BE USED. THIS PROCEDURE WILL NOT GIVE EXACT VALUES OF PEAK-TO-PEAK RIPPLE BUT CAN SHOW IF IT IS NECESSARY TO OBTAIN AN OSCILLOSCOPE.

   IF HIGH VALUES OF RIPPLE ARE FOUND, TIGHTEN ALL CAPACITOR MOUNTING SCREWS IN THE POWER SUPPLY BEING MEASURED. IF THIS DOES NOT CORRECT THE PROBLEM, REPLACE THE POWER SUPPLY. (SEE SM 1240, 1250 AND 1260).

5. AIR FLOW: ENSURE THAT ALL FANS ARE RUNNING AND THAT ALL AIR FLOW OPENINGS ARE FREE OF OBSTRUCTIONS. (SM 1200 AND 1210 MAY BE USEFUL IF FANS ARE NOT RUNNING IN THE CPU).

6. MEASURE ALL D.C. VOLTAGES AT THE CPU PLANAR BOARD. (SEE SM 1211

AND 1230 FOR LOCATIONS AND TOLERANCES). IF ANY VOLTAGE IS NOT CORRECT, GO TO MAP 1250, ENTRY POINT A.

7. THE FOLLOWING ITEMS SHOULD BE CHECKED IF ELECTRICAL NOISE PROBLEMS ARE SUSPECTED:

   1. DISKETTE CARD CONNECTION TO BRACKET - TIGHTEN SECURELY.
   2. DISKETTE CARD BRACKET TO LOGIC DRAWER - TIGHTEN SECURELY.
   3. GROUND STRAP FROM KEYBOARD TO BASE - TIGHTEN SECURELY.
   4. ENSURE CABLES ARE LOCATED IN THEIR CORRECT POSITIONS AS SHOWN IN SM 1215.
   5. GROUND CLAMP TO POWER SUPPLY FRAME - TIGHTEN VERY SECURELY (2 SCREWS).

8. LOOPING: ALTHOUGH THE DIAGNOSTIC PROGRAMS ARE MAINLY MEANT TO FIND SOLID ERRORS, THE LOOP OPTIONS IN MANY OF THE TEST ROUTINES MAY BE USEFUL IN FINDING INTERMITTENT ERRORS. SEE THE PROGRAM DIAGNOSTIC USER GUIDE FOR LOOPING INSTRUCTIONS.

PROGRAM	MAP	PROGRAM TITLE	SECTION TESTED
PID1200	1000	CPU POWER-ON TEST (ROS)	CPU PLANAR BOARD
PID1205	1205	CPU PROCESSOR FLT	CPU PLANAR BOARD
PID1210	1210	CPU STORAGE FLT	SYSTEM STORAGE
PID1300	1300	KEYBOARD FLT	KEYBOARD
PID1400	1400	DISPLAY FLT	DISPLAY
PID1500	1500	DISKETTE DIAG.(ROS)	DISKETTE DRIVES 1-4
PID1505	1500	DISKETTE FLT (PART 1)	ALL DISKETTE DRIVES
PID1510	1500	DISKETTE FLT (PART 2)	ALL DISKETTE DRIVES
	1900	PRINTER FLT (ENTRY POINT A)	
PID5000		T.P. FLT	ALL T.P. HARDWARE

9. ERROR LOG

   THE ERROR LOG IS USED TO RECORD ERRORS THAT OCCUR DURING CUSTOMER OPERATION. THIS LOG OF ERROR DATA IS KEPT IN SYSTEM STORAGE AND ON THE CUSTOMER'S DISKETTE.

   A REVIEW OF THIS HISTORY OF ERRORS MAY BE USED BY THE CE TO IDENTIFY WHICH SECTION OF THE SYSTEM HAS BEEN CAUSING THE INTERMITTENT ERRORS.

   CE UTILITY PID 0120 IS USED TO DISPLAY (OR PRINT) THE ERROR LOG HISTORY FROM THE CUSTOMER'S DISKETTE.

PROCEDURE TO DISPLAY/PRINT ERROR LOG DATA

1. LOAD THE DCP PROGRAM PID 0001.

2. SELECT DCP MENU OPTION '18' TO DISPLAY THE CE UTILITY MENU.

3. SELECT OPTION '24' FROM THE CE UTILITY MENU TO LOAD PID 0120 (ERROR LOG DISPLAY).

   NOTE: THE USER MAY DECIDE TO PRINT THE ERROR LOG ON THE PRINTER BY PRESSING THE 'ATTN' AND 'COPY D' KEYS TO ENABLE THE ALTERNATE PRINT FUNCTION.

4. FOLLOW THE PID 0120 PROMPTING MESSAGES.
   (SEE PID 0120 IN USER GUIDE 0001)

5. INTERPRETING ERROR LOG DATA:

   (SEE PID 0120 IN USER GUIDE 0001, SECTION 18.5.4)

POWER MAP

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1100	A	1	001
1200	A	1	001
1220	A	1	001
1225	A	1	001
1400	AC	16	124
1500	A	1	001
1530	A	1	001
1545	A	1	001
1545	AC	16	124
1555	A	1	001

001
(ENTRY POINT A)

DANGER

AC LINE VOLTAGE IS PRESENT IN THE POWER SUPPLY WHEN POWER OFF/ON SWITCH IS IN THE 'OFF' POSITION. ALWAYS PULL THE AC LINE CORD FROM THE CUSTOMER OUTLET WHEN WORKING IN THE PRIMARY POWER AREA.

SEE NOTES BEFORE CONTINUING.
>>>--------------->

1. BEFORE CONTINUING WITH THIS MAP, MOVE POWER CORD TO A KNOWN GOOD AC OUTLET. IF THE SYSTEM WORKS CORRECTLY, HAVE CUSTOMER REPAIR POWER TO THE ORIGINAL OUTLET. IF SYSTEM STILL FAILS, CONTINUE WITH THIS MAP.
2. NOTE: FOR GBG/I SYSTEMS F6 = CB1 AND REPLACE F6 = RESET CB1.
3. REMOVE THE FRONT COVER OF THE CPU UNIT (SEE SM 1220).

(STEP 001 CONTINUES)

NOTES:

'TYPE 1' SUPPLY MAY BE IDENTIFIED BY NO METAL COVERS ON THE POWER SUPPLY UNIT. LOCATED BEHIND THE FRONT COVER OF THE CPU UNIT THE POWER SUPPLY BOARD, WITH FUSES AND INTERNAL PARTS VISIBLE.
'TYPE 2' SUPPLIES HAVE SHEET METAL COVERS. (WHEN WORKING WITH TYPE 2 SUPPLIES SEE THE LABELS ON THE SUPPLY FOR FUSE LOCATIONS AND AC WIRING INFORMATION.)

*** GBGI SYSTEMS ***
UNUSUAL POWER SUPPLY/SYSTEM PROBLEMS MAY RESULT IF THE AC VOLTAGE SELECTION JUMPERS ON THE POWER SUPPLY TRANSFORMER DO NOT MATCH THE CUSTOMERS INPUT VOLTAGE ALWAYS CHECK THAT THESE JUMPERS ARE CORRECT BEFORE REPLACING THE POWER SUPPLY AND AFTER A NEW SUPPLY IS INSTALLED. (SEE SM 1250 AND 1260 FOR AC VOLTAGE SELECTION PROCEDURE.)

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(STEP 001 CONTINUED)
4. SEE SM 1210 AND SM 1211 FOR ALL OF THE FOLLOWING:
5. OBSERVE THE ''POWER GOOD'' LED LOCATED AT THE FRONT OF THE POWER SUPPLY ON THE CARD. (IF THE LED IS LIGHTED, +5, -5, +12 AND -12V DC ARE ALL OK. DOES NOT INCLUDE +24V DC.)

IS POWER GOOD INDICATOR ON WHEN POWER SWITCH IS ON?
Y N

002
1. POWER OFF
2. CHECK ALL FUSES (F1, F2, F3, F4, F5, F6) (SEE SM 1241, 1251, 1261)

ARE ALL FUSES GOOD?
Y N

003
1. REPLACE DAMAGED FUSES.
2. POWER ON.

IS POWER GOOD INDICATOR OFF?
Y N

004
PROBLEM SOLVED.
VERIFY REPAIR.

005
1. POWER OFF.
2. CHECK ALL FUSES AGAIN.

ARE ALL FUSES GOOD?
Y N

006
IS PRIMARY FUSE F6/CB1 GOOD?
Y N

4 4 4 4
A B C D E

E

007
1. POWER OFF.
2. DISCONNECT AC DISTRIBUTION CONNECTORS (P1, P2, P3, P5). (SEE SM 1210.)
3. REPLACE FUSE F6.
4. POWER ON.

IS FUSE F6/CB1 GOOD?
Y N

008
1. POWER OFF.
2. REPLACE POWER SUPPLY. (SEE SM 1240, 1250, 1260).
3. VERIFY REPAIR.

009
PROBLEM IS NOT IN THE P/S.

IS DRIVE 1 PRESENT ON THE SYSTEM?
Y N

010

GO TO PAGE 4, STEP 021, ENTRY POINT E.

011
1. POWER OFF.
2. RECONNECT THE AC DISTRIBUTION CABLE AT CONNECTOR P1 (DRIVE 1).
3. POWER ON.

IS FUSE F6/CB1 GOOD?
Y N

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3 3
F G

012
1. POWER OFF.
2. RECONNECT REMAINING AC DISTRIBUTION CABLES.
3. PROBLEM IS IN DRIVE 1. REPLACE FUSE F6.
4. REMOVE DRIVE 1 FROM PROCESSING UNIT (SEE SM 1510).
5. REMOVE AC LEADS FROM MOTOR START CAPACITOR (SEE SM 1551).
6. USE CE METER TO DETERMINE IF MOTOR START CAPACITOR HAS A SHORT CIRCUIT.

DOES CAPACITOR HAVE A SHORT CIRCUIT?
Y N

013
1. REPLACE DRIVE MOTOR (SEE SM 1550).
2. VERIFY REPAIR.

014
1. REPLACE CAPACITOR (SEE SM 1551).
2. VERIFY REPAIR.

015
IS DRIVE 2 PRESENT ON THE SYSTEM?

Y N

016

GO TO PAGE 4, STEP 021, ENTRY POINT E.

017
1. POWER OFF.
2. RECONNECT THE AC DISTRIBUTION CABLE AT CONNECTOR P2 (DRIVE 2).
3. POWER ON.

IS FUSE F6/CB1 GOOD?
Y N

018
1. POWER OFF.
2. RECONNECT REMAINING AC DISTRIBUTION CABLES.
3. PROBLEM IS IN DRIVE 2. REPLACE FUSE F6.
4. REMOVE DRIVE 2 FROM PROCESSING UNIT (SEE SM 1510).
5. REMOVE AC LEADS FROM MOTOR START CAPACITOR (SEE SM 1551).
6. USE CE METER TO DETERMINE IF MOTOR START CAPACITOR HAS A SHORT CIRCUIT.

DOES CAPACITOR HAVE A SHORT CIRCUIT?
Y N

019
1. REPLACE DRIVE MOTOR (SEE SM 1550).
2. VERIFY REPAIR.

020
1. REPLACE CAPACITOR (SEE SM 1551).
2. VERIFY REPAIR.

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021
(ENTRY POINT E)

1. POWER OFF.
2. RECONNECT THE AC DISTRIBUTION CABLE AT CONNECTOR P3 (DISPLAY).
3. POWER ON.

IS FUSE F6/CB1 GOOD?
Y N

022
1. POWER OFF.
2. RECONNECT REMAINING AC DISTRIBUTION CABLES.
3. PROBLEM IS IN DISPLAY. REPLACE FUSE F6.
4. REPLACE DISPLAY UNIT (SEE SM 1430).

023
1. POWER OFF.
2. RECONNECT THE AC DISTRIBUTION CABLE AT CONNECTOR P5 (FAN).
3. POWER ON.

IS FUSE F6/CB1 GOOD?
Y N

024
1. POWER OFF.
2. REPLACE FUSE F6 (SEE SM 1241, 1251, 1261).
3. PROBLEM IS IN FAN. REPLACE FAN (SEE SM 1270).
4. VERIFY REPAIR.

025
PROBLEM DISAPPEARED.
VERIFY REPAIR.

026
GO TO PAGE 12, STEP 083, ENTRY POINT C.

027
GO TO PAGE 10, STEP 068, ENTRY POINT B.

028
IS THIS A 'TYPE 2' SUPPLY?
Y N

029
GO TO PAGE 10, STEP 068, ENTRY POINT B.

030
IS THE 'OVERVOLTAGE LED' LIGHTED? (THE OVERVOLTAGE ('OV') LED IS LOCATED JUST BELOW THE POWER GOOD LED (SEE SM 1206).
Y N

031
GO TO PAGE 10, STEP 068, ENTRY POINT B.

032
REPLACE POWER SUPPLY (SEE SM 1240, 1250, 1260)

033
IS THE FAN ON WHEN THE POWER SWITCH IS ON?
Y N

034
1. POWER OFF.
2. PULL AC PLUG.
3. OPEN REAR COVER OF THE CPU UNIT (SEE SM 1220).
4. DISCONNECT THE AC DISTRIBUTION CABLE AT CONNECTOR P5 (SEE SM 1270).
5. CHECK THE AC VOLTAGE AT P5 (SEE SM 1240).

IS THE VOLTAGE GOOD?
Y N

035
1. REPAIR/REPLACE CABLE P5.
2. VERIFY REPAIR.

036
PROBLEM IS NOT IN THE POWER SUPPLY.

1. REPLACE THE FAN (SEE SM 1270).
2. VERIFY REPAIR.

037
POWER OFF.

IS POWER GOOD INDICATOR OFF WHEN POWER SWITCH IS OFF?
Y N

038
'TYPE 2' SUPPLY - REPLACE POWER SUPPLY (SEE SM 1240, 1250, 1260).

'TYPE 1' SUPPLY - PERFORM FOLLOWING STEPS:

1. PULL AC PLUG.
2. REPLACE POWER SWITCH (SEE SM 1245, 1255, 1265).
3. VERIFY REPAIR.

039

1. MEASURE THE 'DC' VOLTAGES AT THE TEST POINTS ON THE POWER SUPPLY (SEE SM 1241, 1251, 1261).
2. SEE CHART A:

CHART A

VOLTS	METER LEADS +	-	MIN.	MAX.
+24	+24	GND	+22.0	+26.4
+12	+12	GND	+11.0	+13.2
+ 5	+ 5	GND	+4.6	+5.5
-5	GND	-5	-4.6	-5.5
-12	GND	-12	-11.0	-13.2

'GND' MAY BE MARKED 'RTN'
DO NOT MEASURE -5 V AT THE FUSE ON TYPE 2 SUPPLY (CHECK CONNECTOR ON THE SIDE OF THE SUPPLY.)

IS ANY VOLTAGE OUT OF THE SPECIFIED RANGE?

Y N

040

CHECK FOR TOO MUCH RIPPLE ON THE DC OUTPUT VOLTAGES USING AN OSCILLOSCOPE OR THE C.E. METER (SEE SM 1211).

-NOTE- THE PROCEDURE IN SM 1211 TO CHECK RIPPLE USING A C.E. METER WILL NOT GIVE EXACT VALUES OF PEAK-TO-PEAK RIPPLE. IT SHOULD ONLY BE USED AS A QUICK CHECK TO DETERMINE IF ANY RIPPLE IS PRESENT. AN OSCILLOSCOPE SHOULD BE USED TO DETERMINE EXACT VALUES OF RIPPLE.

IS TOO MUCH RIPPLE PRESENT ON ANY DC VOLTAGE?

Y N

041
MEASURE THE DC VOLTAGE AT THE POWER GOOD TERMINAL ON CONNECTOR P4 (SEE SM 1211). (METER LEADS: + = POWER GOOD, - = RETURN.)

IS POWER GOOD SIGNAL BETWEEN 2.4V AND 5.5V DC WHEN POWER SWITCH IS ON?
Y N

042
1. POWER OFF.
2. REPLACE POWER SUPPLY (SEE SM 1240, 1250, 1260).
3. VERIFY REPAIR.

043
1. PLACE THE CPU PLANAR BOARD IN THE SERVICE POSITION (SEE SM 1240).
2. REMOVE THE DC CONNECTOR (P4) FROM THE CPU PLANAR BOARD.
3. MEASURE VOLTAGES AT THE CPU END OF THE CABLE (SEE SM 1211.)

ARE THE VOLTAGES OK?
Y N

044
1. REPAIR FAILING CABLE.
2. VERIFY REPAIR.

045
1. REPLACE CPU PLANAR BOARD (SEE SM 1230).
2. VERIFY REPAIR.

046
1. POWER OFF.
2. TIGHTEN ALL CAPACITOR MOUNTING SCREWS (TYPE 1 SUPPLY).
3. IF HIGH VALUES OF RIPPLE ARE STILL PRESENT, REPLACE POWER SUPPLY (SEE SM 1240, 1250 OR 1260).
4. VERIFY REPAIR.

047
IS THE +24V DC LEVEL THE ONLY ONE OUT OF THE SPECIFIED RANGE?
Y N

048
1. POWER OFF.
2. PULL AC PLUG.
3. REMOVE THE POWER SUPPLY (SEE SM 1240).
3. REMOVE AC DISTRIBUTION BOX COVER.
4. CHECK FOR CORRECT LOCATIONS AND TIGHTEN ALL CONNECTIONS ON TB1 (SEE SM 1210).
5. REINSTALL AC DISTRIBUTION BOX COVER.
6. REINSTALL AC PLUG.
7. POWER ON.
2. IF THE PROBLEM REMAINS, REPLACE POWER SUPPLY (SEE SM 1240, 1250, 1260).
3. VERIFY REPAIR.

049
POWER OFF (SEE SM 1241, 1251, 1261).

IS DC OUTPUT FUSE F4 GOOD?
Y N

050
1. REPLACE FUSE F4
2. POWER ON.

IS FUSE F4 GOOD?
Y N

051
1. POWER OFF.
2. DISCONNECT THE +24V DC DISTRIBUTION CABLES (DRIVE 1 AND DRIVE 2) (SEE SM 1211 AND 1215).
3. REPLACE FUSE F4.
4. POWER ON.

IS THE REPLACED F4 GOOD?
Y N

052
1. POWER OFF.
2. REPLACE POWER SUPPLY (SEE SM 1240, 1250, 1260).
3. VERIFY REPAIR.

053
1. POWER OFF.
2. RECONNECT DRIVE 1 DC DISTRIBUTION CABLE.
3. POWER ON.

IS FUSE F4 GOOD?
Y N

054
1. POWER OFF. PROBLEM IS IN DRIVE 1.
2. REPLACE FUSE F4.
3. REMOVE DRIVE 1 FROM PROCESSING UNIT (SEE SM 1510)
4. DISCONNECT HEAD LOAD SOLENOID (SEE SM 1540).
5. POWER ON.

IS FUSE F4 GOOD?
Y N

055
1. POWER OFF.
2. CONNECT HEAD LOAD SOLENOID.
3. DISCONNECT STEPPER MOTOR (SEE SM 1560).
(51TD SEE SM 1560).
4. REPLACE FUSE F4 (SEE SM 1241, 1251, 1261).
5. POWER ON.

IS FUSE F4 GOOD?
Y N

056
1. POWER OFF.
2. REPLACE DRIVE CONTROL CARD (SEE SM 1572).
3. REPLACE FUSE F4.
4. VERIFY REPAIR.

057
1. POWER OFF.
2. REPLACE STEPPER MOTOR (SEE SM 1560).
3. VERIFY REPAIR.

058
1. POWER OFF.
2. REPLACE HEAD LOAD SOLENOID (SEE SM 1540).
3. VERIFY REPAIR.

059
1. POWER OFF.
2. RECONNECT DRIVE 2 DC DISTRIBUTION CABLE.
3. POWER ON.

IS FUSE F4 GOOD?
Y N

060
1. POWER OFF. PROBLEM IS IN DRIVE 2.
2. REPLACE FUSE F4.
3. REMOVE DRIVE 2 FROM PROCESSING UNIT.
4. DISCONNECT HEAD LOAD SOLENOID (SEE SM 1540).
5. POWER ON.

IS FUSE F4 GOOD?
Y N

061
1. POWER OFF.
2. CONNECT HEAD LOAD SOLENOID.
3. DISCONNECT STEPPER MOTOR (SEE SM 1560).
4. REPLACE FUSE F4 (SEE SM 1241, 1251, 1261).
5. POWER ON.

IS FUSE F4 GOOD?
Y N

062
1. POWER OFF.
2. REPLACE DRIVE CONTROL CARD (SEE SM 1572).
3. REPLACE FUSE F4.
4. VERIFY REPAIR.

063
1. POWER OFF.
2. REPLACE STEPPER MOTOR (SEE SM 1560).
3. VERIFY REPAIR.

064
1. POWER OFF.
2. REPLACE HEAD LOAD SOLENOID (SEE SM 1540).
3. VERIFY REPAIR.

065
PROBLEM DISAPPEARED.
VERIFY REPAIR.

066
PROBLEM SOLVED.
VERIFY REPAIR.

067
1. POWER OFF.
2. REPLACE POWER SUPPLY (SEE SM 1240, 1250, 1260).
3. VERIFY REPAIR.

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068
(ENTRY POINT B)

1. REMOVE AC PLUG FROM WALL OUTLET.
2. DISCONNECT LINE CORD FROM AC INPUT CONNECTOR J1 (SEE SM 1240, 1250, 1260).
3. TEST LINE CORD FOR CONTINUITY.

IS CONTINUITY OK?
Y N

069
1. REPLACE LINE CORD.
2. VERIFY REPAIR.

070
1. REMOVE FRONT COVER FROM PROCESSOR (SEE SM 1220).
2. TIGHTEN ALL DC CAPACITOR SCREWS (TYPE 1 SUPPLY) AND CHECK ALL TERMINALS FOR GOOD CONTACT.
3. RECONNECT LINE CORD AT CONNECTOR J1 AND PLUG IN.
4. POWER ON.

IS POWER GOOD INDICATOR OFF?
Y N

071
PROBLEM SOLVED.
VERIFY REPAIR.

072
1. POWER OFF.
2. DISCONNECT DC DISTRIBUTION CABLES TO DRIVE 1 AND DRIVE 2 AT THE POWER SUPPLY (SEE SM 1211 AND 1241).
3. PLACE THE CPU PLANAR IN THE SERVICE POSITION (SEE SM 1230).
4. DISCONNECT DC DISTRIBUTION CABLE P4 AT CPU PLANAR END.
5. POWER ON.
6. MEASURE THE DC VOLTAGES AT THE DC CONNECTOR P4 (SEE SM 1211).
7. SEE CHART A

CHART A

	METER LEADS			
VOLTS	+	-	MIN.	MAX.
+24	+24	GND	+22.0	+26.4
+12	+12	GND	+11.0	+13.2
+ 5	+ 5	GND	+4.6	+5.5
-5	GND	-5	-4.6	-5.5
-12	GND	-12	-11.0	-13.2

-NOTE- 'GND' MAY BE MARKED 'RTN'
ARE ANY OUTPUT VOLTAGES BELOW 1V DC?
Y N

073
1. POWER OFF.
2. REPLACE POWER SUPPLY (SEE SM 1240, 1250, 1260).
3. VERIFY REPAIR.

074
ARE ALL OUTPUTS BELOW 1V DC?
Y N

075
1. POWER OFF.
2. REPLACE POWER SUPPLY (SEE SM 1240, 1250, 1260).
3. VERIFY REPAIR.

076
1. POWER OFF.
2. PULL AC PLUG.
3. REMOVE SWITCH BOX COVER.
4. TEST FOR CONTINUITY ACROSS SWITCH IN ON POSITION. (S1-2 TO S1-3 AND S1-5 TO S1-6). (SEE SM 1245, 1255, 1265).

IS CONTINUITY OK?
Y N

077
'TYPE 2' SUPPLY - REPLACE POWER SUPPLY (SEE SM 1240, 1250, 1260).

'TYPE 1' SUPPLY - PERFORM THE FOLLOWING STEPS:

1. REPLACE POWER SWITCH (SEE SM 1245, 1255, 1265).
2. INSTALL SWITCH COVER.
3. VERIFY REPAIR.

078
1. DISCONNECT THE LINE CORD AT CONNECTOR J1.
2. REMOVE AC DISTRIBUTION BOX COVER (TYPE 1 SUPPLY).
3. CHECK FOR CORRECT LOCATIONS AND TIGHTEN ALL CONNECTIONS ON TB1 (SEE SM 1210).

ARE ALL CONNECTIONS CORRECT AND TIGHT?
Y N

079
1. CORRECT BAD CONNECTIONS.
2. INSTALL SWITCH BOX COVER.
3. INSTALL AC DISTRIBUTION BOX COVER.
4. RECONNECT LINE CORD AT CONNECTOR J1.
5. VERIFY REPAIR.

080
'TYPE 2' SUPPLY - REPLACE POWER SUPPLY (SEE SM 1240, 1250, 1260)

'TYPE 1' SUPPLY - CONTINUE WITH THE FOLLOWING STEPS:

CHECK CONTINUITY FROM J1 TO POWER SWITCH AND BACK TO TB1.
SEE CHART C.

CHART C
TB1-1 TO J1-6
TB1-1 TO S1-2
TB1-2 TO J1-N
TB1-2 TO S1-5
TB1-4 TO S1-3
TB1-5 TO S1-6

ARE ALL CONTINUITY CHECKS GOOD?
Y N

081
1. REPAIR BAD CABLE(S).
2. RECONNECT LINE CORD AT CONNECTOR J1.
3. INSTALL SWITCH BOX COVER.
4. INSTALL AC DISTRIBUTION BOX COVER.
5. INSTALL THE POWER SUPPLY (SEE SM 1240).
6. VERIFY REPAIR.

082
1. REPLACE POWER SUPPLY (SEE SM 1240, 1250, 1260).
2. RECONNECT LINE CORD AT CONNECTOR J1.
3. VERIFY REPAIR.

083
(ENTRY POINT C)

1. POWER OFF.
2. REMOVE THE CPU FRONT COVER IF NOT ALREADY DONE (SEE SM 1220).
3. DISCONNECT THE DC DISTRIBUTION CABLES (P4 AND, IF PRESENT, DRIVE 1 AND DRIVE 2) (SEE SM 1211, 1215, 1241, 1251, 1261).
4. REPLACE DAMAGED FUSE.
5. POWER ON

IS REPLACED FUSE GOOD?
Y N

084
1. POWER OFF.
2. REPLACE POWER SUPPLY (SEE SM 1240, 1250, 1260).
3. RECONNECT THE DC DISTRIBUTION CABLES.
4. VERIFY REPAIR.

085
1. POWER OFF. PROBLEM IS NOT IN THE POWER SUPPLY.
2. DISCONNECT THE DC DISTRIBUTION CABLES (P4 AND, IF PRESENT, DRIVE 1 AND DRIVE 2). (SEE SM 1211 AND 1215).
3. CHECK ALL DISTRIBUTION CABLES FOR CONTINUITY AND/OR SHORT.

ARE THE DC DISTRIBUTION CABLES OK?
Y N

086
1. REPAIR BAD CABLES.
2. VERIFY REPAIR.

087
IS DRIVE 1 PRESENT ON THE SYSTEM?
Y N

088

GO TO PAGE 15, STEP 119,
ENTRY POINT D.

089
1. RECONNECT THE DC DISTRIBUTION CABLE TO DRIVE 1.
2. POWER ON.

IS THE REPLACED FUSE STILL GOOD?
Y N

090
1. POWER OFF.
2. REPLACE DAMAGED FUSE.
3. RECONNECT REMAINING DC DISTRIBUTION CABLES.
4. PROBLEM IS IN DRIVE 1. REMOVE DRIVE 1 FROM PROCESSING UNIT (SEE SM 1510).
5. (SEE SM 1241, 1251, 1261).

WAS DAMAGED FUSE F4? (+24V DC)
Y N

091
WAS DAMAGED FUSE F5? (+5V DC)
Y N

092
1. REPLACE DRIVE CONTROL CARD (SEE SM 1572).
2. VERIFY REPAIR.

093
1. DISCONNECT LED CONNECTOR (SEE SM 1570).
2. POWER ON.

IS FUSE F5 GOOD?
Y N

094
1. POWER OFF.
2. RECONNECT LED CONNECTOR.
3. DISCONNECT PTX CONNECTOR.
4. REPLACE FUSE F5.
5. POWER ON.

IS FUSE F5 GOOD?
Y N

095
1. POWER OFF.
2. REPLACE DRIVE CONTROL CARD (SEE SM 1572).
3. REPLACE FUSE F5.
4. VERIFY REPAIR.

096
1. POWER OFF.
2. REPLACE PTX (SEE SM 1571).
3. VERIFY REPAIR.

097
1. REPLACE LED (SEE SM 1570).
2. VERIFY REPAIR.

098
1. DISCONNECT HEAD LOAD SOLENOID CONNECTOR.
2. POWER ON.

IS FUSE F4 GOOD?
Y N

099
1. POWER OFF.
2. RECONNECT HEAD LOAD SOLENOID.
3. DISCONNECT STEPPER MOTOR CONNECTOR.
4. REPLACE FUSE F4.
5. POWER ON.

IS FUSE F4 GOOD?
Y N

100
1. POWER OFF.
2. REPLACE DRIVE CONTROL CARD (SEE SM 1572).
3. REPLACE FUSE F4.
4. VERIFY REPAIR.

101
1. POWER OFF.
2. REPLACE STEPPER MOTOR (SEE SM 1560).
3. VERIFY REPAIR.

102
1. POWER OFF.
2. REPLACE HEAD LOAD SOLENOID (SEE SM 1540).
3. VERIFY REPAIR.

103
IS DRIVE 2 PRESENT ON THE SYSTEM?
Y N

104

GO TO PAGE 15, STEP 119,
ENTRY POINT D.

105
1. POWER OFF.
2. RECONNECT THE DC DISTRIBUTION CABLE TO DRIVE 2.
3. POWER ON.

IS THE REPLACED FUSE GOOD?
Y N

106
1. POWER OFF.
2. REPLACE DAMAGED FUSE.
3. RECONNECT REMAINING DC DISTRIBUTION CABLES.
4. PROBLEM IS IN DRIVE 2. REMOVE DRIVE 2 FROM PROCESSING UNIT (SEE SM 1510).
5. (SEE SM 1241, 1251, 1261).

WAS DAMAGED FUSE F4?
Y N

107
WAS DAMAGED FUSE F5 ?
Y N

108
1. REPLACE DRIVE CONTROL CARD (SEE SM 1572).
2. VERIFY REPAIR.

109
1. DISCONNECT LED CONNECTOR (SEE SM 1570).
2. POWER ON.

IS FUSE F5 GOOD?
Y N

110
1. POWER OFF.
2. RECONNECT LED CONNECTOR.
3. DISCONNECT PTX CONNECTOR.
4. REPLACE FUSE F5.
5. POWER ON.

IS FUSE F5 GOOD?
Y N

111
1. POWER OFF.
2. REPLACE DRIVE CONTROL CARD (SEE SM 1572).
3. REPLACE FUSE F5.
4. VERIFY REPAIR.

112
1. POWER OFF.
2. REPLACE PTX (SEE SM 1571).
3. VERIFY REPAIR.

113
1. REPLACE LED (SEE SM 1570).
2. VERIFY REPAIR.

114
1. DISCONNECT HEAD LOAD SOLENOID CONNECTOR (SEE SM 1540).
2. POWER ON.

IS FUSE F4 GOOD?
Y N

115
1. POWER OFF.
2. RECONNECT HEAD LOAD SOLENOID.
3. DISCONNECT STEPPER MOTOR CONNECTOR (SEE SM 1560).
4. REPLACE FUSE F4.
5. POWER ON.

IS FUSE F4 GOOD?
Y N

116
1. POWER OFF.
2. REPLACE DRIVE CONTROL CARD (SEE SM 1572).
3. REPLACE FUSE F4.
4. VERIFY REPAIR.

117
1. POWER OFF.
2. REPLACE STEPPER MOTOR (SEE SM 1560).
3. VERIFY REPAIR.

118
1. POWER OFF.
2. REPLACE HEAD LOAD SOLENOID (SEE SM 1540).
3. VERIFY REPAIR.

119
(ENTRY POINT D)

1. POWER OFF.
2. PLACE CPU PLANAR IN THE SERVICE POSITION IF NOT ALREADY DONE (SEE SM 1230).
3. RECONNECT P4.
5. REMOVE ALL CARDS FROM CPU PLANAR BOARD (SEE SM 1205 AND 1230).
6. POWER ON.

IS THE REPLACED FUSE GOOD?
Y N

120
1. POWER OFF.
2. REPLACE DAMAGED FUSE.
3. REPLACE CPU PLANAR BOARD. (SEE SM 1230).
4. INSERT ALL CARDS BACK INTO PLANAR BOARD (SEE SM 1205 AND 1230).
5. VERIFY REPAIR.

121
1. POWER OFF.
2. INSERT ONE CARD INTO CPU PLANAR BOARD.
3. POWER ON.

IS THE REPLACED FUSE GOOD?
Y N

122
1. POWER OFF.
2. THE LAST CARD INSERTED INTO CPU PLANAR BOARD IS BAD. REPLACE THIS CARD.
3. REPLACE THE DAMAGED FUSE.
4. INSERT ALL REMAINING ATTACHMENT CARDS (SEE SM 1205 AND 1230).
5. VERIFY REPAIR.

123
1. REPEAT THE LAST STEP UNTIL BAD ATTACHMENT CARD IS INSERTED AND FUSE BLOWS.
2. REPLACE LAST CARD INSERTED.
3. REPLACE DAMAGED FUSE.
4. INSERT ALL REMAINING CARDS.
5. VERIFY REPAIR.

124
(ENTRY POINT AC)

(AC MISSING FROM DISKETTES OR CRT)

DANGER

AC LINE VOLTAGE IS PRESENT IN THE POWER SUPPLY WHEN THE POWER ON/OFF SWITCH IS IN THE 'OFF' POSITION. ALWAYS PULL THE AC LINE CORD FROM THE POWER SUPPLY WHEN WORKING IN THE AC POWER AREA.
1. REMOVE THE POWER SUPPLY (SEE SM 1240, 1250, 1260).
2. -TYPE 2 SUPPLY- REMOVE TOP COVER.
3. CHECK FOR LOOSE CONNECTIONS ON TB1 WHERE AC DISTRIBUTION CABLES ARE CONNECTED AND CONTINUITY OF CABLE.

ARE CONNECTIONS OK/AND CONTINUITY?
Y N

125
1. CORRECT PROBLEM IF BAD CONNECTIONS ARE FOUND/OR REPLACE/REPAIR CABLE.
2. REPLACE THE POWER SUPPLY (1240, 1250, 1260).

126
REPLACE POWER SUPPLY (SEE SM 1240, 1250, 1260).

KEYBOARD MAP

PAGE 1 OF 2

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP: ENTRY POINT	PAGE NUMBER	STEP NUMBER
1000	A	1	001
1205	A	1	001
1210	A	1	001

EXIT POINTS

EXIT THIS MAP: PAGE NUMBER	STEP NUMBER	TO: MAP NUMBER	ENTRY POINT
2	009	1000	B

001
(ENTRY POINT A)

IS IT POSSIBLE TO LOAD PID 1300?
Y N
|
| 002
| ONE OF THE KEYS THAT MUST BE
| USED TO LOAD DCP OR PID 1300 IS
| FAILING.
|
| 1. REPLACE KEYBOARD (SEE SM
| 1330).
| 2. VERIFY REPAIR.
|
003
IF YOU DO NOT KNOW EXACTLY WHICH
KEY IS FAILING, ANSWER THE NEXT
QUESTION 'NO'.

IS THERE A SINGLE KEY FAILING?
Y N
|
| 004
| LOAD DIAGNOSTIC PID 1300 AND
| SELECT OPTION #1 (TEST COMPLETE
| KEYBOARD). FOLLOW THE
| DIRECTIONS GIVEN ON THE SCREEN.
|
| DID PID 1300 IDENTIFY A
| PROBLEM?
| Y N

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2 2 2
A B C

KEYBOARD MAP

PAGE 2 OF 2

005
TEST EVERY KEY USING OPTION #0 OF PID 1300.

GO TO STEP 007, ENTRY POINT B.

006

GO TO STEP 011, ENTRY POINT C.

007
(ENTRY POINT B)

LOAD PID 1300 AND SELECT OPTION #0 (TEST SINGLE KEY). SEE SM 1310 AND TEST THE SUSPECT KEY FOR CORRECT SCAN CODE AND FUNCTION.

IS THE FAILING KEY IDENTIFIED?
Y N

008
INSPECT THE KEYBOARD AND ENSURE THAT ALL KEY TOPS ARE IN THE CORRECT POSITIONS (SEE SM 1340 FOR KEYBOARD ARRANGEMENTS).

ARE ANY KEYS IN THE WRONG POSITIONS?
Y N

009
KEYBOARD IS OK. RETURN TO START MAP.

GO TO MAP 1000, ENTRY POINT B.

010
REPLACE KEYBOARD (SEE SM 1330).

CAUTION

DO NOT ATTEMPT TO REMOVE AND REPLACE KEY TOPS. IF THE KEYBOARD BECOMES CONTAMINATED, INTERMITTENT FAILURES MAY OCCUR.

011
(ENTRY POINT C)

BEFORE REPLACING THE KEYBOARD, INSPECT THE AREA AROUND THE FAILING KEY FOR FOREIGN MATERIAL (PAPER CLIPS, ETC.). IF ANY IS FOUND, REMOVE THEM AND TEST THE KEY. IF NO FOREIGN MATERIAL IS FOUND, REPLACE THE KEYBOARD (SEE SM 1330).

CAUTION

DO NOT ATTEMPT TO DISASSEMBLE THE KEYBOARD. IT CONTAINS NO FIELD REPAIRABLE PARTS.

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DISPLAY MAP

PAGE 1 OF 8

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP: ENTRY POINT	PAGE NUMBER	STEP NUMBER
1000	A	1	001
1100	A	1	001

EXIT POINTS

EXIT THIS MAP: PAGE NUMBER	STEP NUMBER	TO: MAP NUMBER	ENTRY POINT
7	047	1000	A
2	009	1000	B
6	042	1225	A
7	051	1250	AC

001
(ENTRY POINT A)

--GBGI ONLY-- SEE NOTE 1.

NOTE 1:

ON GBGI SYSTEMS, UNUSUAL CRT PROBLEMS CAN RESULT IF THE POWER SUPPLY TRANSFORMER IS NOT JUMPERED TO MATCH THE CUSTOMERS INPUT VOLTAGE. CHECK THESE JUMPERS (SEE SM 1210) AND CORRECT IF NECESSARY BEFORE REPLACING THE CRT ASSEMBLY.

CE LOGIC PROBE- SEE NOTE 2.

NOTE 2:

GENERAL LOGIC PROBE SET UP

(SEE SM 1230)

A) TECHNOLOGY SWITCH = MULTI
B) LATCH SWITCH = NONE
C) GATE REF. SWITCH = GND
D) POWER LEAD (BLACK) = GND
E) POWER LEAD (RED) = +5V
F) PROBE GROUND LEAD = GND
G) TEST 'UP' LIGHT = +5V
H) TEST 'DOWN' LIGHT = GND

(STEP 001 CONTINUES)

(STEP 001 CONTINUED)
IS A COMPOSITE VIDEO RPQ CARD AND/OR WORD PROCESSING CARD PRESENT ON THE SYSTEM (SEE SM 1205)?
Y N

002
(ENTRY POINT D)

IS THE PROBLEM 'VERY DIM' OR 'NO DISPLAY'?
Y N

003
IS THE PROBLEM EXTRA OR MISSING DOTS IN CHARACTER BLOCKS?
Y N

004
IS THE PROBLEM 'WRONG CHARACTERS DISPLAYED'?
Y N

005
IS THE PROBLEM 'DISPLAY OUT OF SYNCHRONIZATION, CHARACTERS DISTORTED, OR DISPLAY OUT OF ALIGNMENT'?
Y N

006
IS THE PROBLEM 'WRONG LANGUAGE CHARACTER SETS DISPLAYED'?
Y N

007
IS THE PROBLEM 'FIELD ATTRIBUTES OR CHARACTER ATTRIBUTES NOT WORKING CORRECTLY' (REVERSE VIDEO, BLINKING, HIGHLIGHT, ETC)?
Y N

008
IS THE PROBLEM 'INTERNAL DISPLAY WORKS OK BUT EXTERNAL CRT UNIT ATTACHED TO COMPOSITE VIDEO RPQ IS FAILING'?
Y N

009
DISPLAY IS OK. RETURN TO START MAP.
GO TO MAP 1000, ENTRY POINT B.

010
REPLACE THE COMPOSITE VIDEO RPQ CARD WITH A KNOWN GOOD CARD.

DOES THE EXTERNAL CRT UNIT ATTACHED TO THE COMPOSITE VIDEO RPQ CARD NOW WORK CORRECTLY?
Y N

011
INFORM CUSTOMER THAT THE PROBLEM IS IN EITHER THE CUSTOMER SUPPLIED CABLE OR THE EXTERNAL CRT UNIT.

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012
PROBLEM SOLVED.
VERIFY REPAIR.

013
1. REMOVE THE FRONT COVER (SEE SM 1220).

2. CHECK JUMPERS 'D' AND 'E' (SEE SM 1230).

IS THE JUMPER OK?
Y N

014
1. IF JUMPERS ARE IN WRONG POSITION, CORRECT JUMPER POSITION AND TEST AGAIN.

2. IF JUMPERS ARE OK, REPLACE THE CPU PLANAR BOARD (SEE SM 1230).

015
LOAD PID 1400, SELECT THE ATTRIBUTE TEST ROUTINE AND CHECK FOR THE FOLLOWING:

1. THE DISPLAY MATCHES THE WORDS SHOWN ON THE CRT SCREEN.

2. THE 'BOX' FIGURE FORMED WITH CHARACTER ATTRIBUTES ON THE RIGHT SIDE OF THE SCREEN IS CORRECTLY FORMED WITH NO LARGE GAPS IN THE LINES THAT MAKE UP THE FIGURE. (-NOTE- A SMALL GAP (ABOUT THE WIDTH OF ONE DOT) NEAR THE LEFT END OF THE HORIZONTAL LINES IN THE 'BOX' FIGURE IS NORMAL.)

IS THE DISPLAY CORRECT?
Y N

016
IS 'HIGHLIGHT' THE ONLY FAILING ATTRIBUTE?
Y N

017
1. REPLACE CPU PLANAR BOARD (SEE SM 1230).

2. VERIFY REPAIR.

018
CHECK FOR 5 VOLTS DC PRESENT ON THE CRT DRIVER/RECEIVER CARD BY USING THE CE METER (SEE SM 1411).

IS 4.6 TO 5.5 VOLTS PRESENT?
Y N

019
USE THE CE METER TO MEASURE 12 VOLTS ON THE (BACK) OF THE CRT DRIVER/RECEIVER CARD (SEE SM 1411) FOR TEST POINT (A01).

IS 11.0 TO 13.2 VOLTS PRESENT?
Y N

020
1. REMOVE CRT SIGNAL CABLE FROM THE CPU PLANAR BOARD.

2. CHECK FOR 12 VOLTS DC ON THE CPU PLANAR BOARD ON TEST POINT (A11) AT THE CRT CABLE JACK (SEE SM 1212 FOR LOCATIONS).

IS 11.0 TO 13.2 VOLTS PRESENT?
Y N

021
REPLACE THE CPU PLANAR BOARD (SEE SM 1230).

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022
REPAIR OR REPLACE THE CRT CABLES FROM THE CPU PLANAR BOARD TO THE DRIVER/RECEIVER CARD (SEE SM 1411).

023
REPLACE THE CRT DRIVER/RECEIVER CARD (SEE SM 1430).

024
USING THE CE LOGIC PROBE, PROBE A04 THE (+) HIGHLIGHT VIDEO SIGNAL AT THE CABLE CONNECTOR ON THE (BACK) OF THE CRT DRIVER/RECEIVER CARD (SEE SM 1411) (SEE NOTE 2).

IS THE HIGHLIGHT LINE PULSING?
Y N

025
1. REPLACE THE CPU PLANAR (SEE SM 1230).

2. REPAIR/REPLACE CRT CABLES FROM CPU PLANAR TO CRT DRIVER/RECEIVER CARD (SEE SM 1411).

3. VERIFY REPAIR.

026
1. REPLACE CRT DRIVER/RECEIVER CARD (SEE SM 1430).

2. REPLACE CRT DISPLAY UNIT ASSEMBLY (SEE SM 1430).

027
CALL FOR AID.

028
1. LOAD PID 0150 (CONFIGURATION DISPLAY) AND DISPLAY THE COUNTRY SELECT OPTION.

2. IF CHARACTER SET IS WRONG, CHECK THE COUNTRY SELECT JUMPERS (SEE SM 1230 FOR LOCATIONS).

3. IF JUMPERS ARE CORRECT, REPLACE THE CPU PLANAR BOARD (SEE SM 1230).

029
CHECK FOR 5 VOLTS DC PRESENT ON THE CRT DRIVER/RECEIVER CARD BY USING THE CE METER (SEE SM 1411).

IS 4.6 TO 5.5 VOLTS PRESENT?
Y N

030
USE THE CE METER TO MEASURE 12 VOLTS ON THE (BACK) OF THE CRT DRIVER/RECEIVER CARD (SEE SM 1411) FOR TEST POINT (A01).

IS 11.0 TO 13.2 VOLTS PRESENT?
Y N

031
1. REMOVE CRT CABLE FROM THE CPU PLANAR BOARD.

2. CHECK FOR 12 VOLTS DC ON THE CPU PLANAR BOARD (A11) AT THE CRT CABLE JACK (SEE SM 1411).

IS 11.0 TO 13.2 VOLTS PRESENT?
Y N

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032
REPLACE THE CPU PLANAR BOARD (SEE SM 1230).

033
REPAIR OR REPLACE THE CRT CABLES FROM THE CPU PLANAR BOARD TO THE CRT DRIVER/RECEIVER CARD (SEE SM 1212).

034
REPLACE THE CRT DRIVER/RECEIVER CARD (SEE SM 1430).

035
USING THE CE LOGIC PROBE, PROBE THE HORIZONTAL, VERTICAL AND VIDEO SIGNALS AT THE TEST POINTS ON THE BACK OF THE DRIVER/RECEIVER CARD, PINS F, J AND K (SEE SM 1411 FOR LOCATIONS) (SEE NOTE 2).

ARE ALL LINES PULSING?
Y N

036
REMOVE THE CRT DRIVER/RECEIVER CARD. (LEAVE THE CRT CABLE ATTACHED). PROBE THE SAME SIGNALS AT THE CRT CONNECTOR ON THE DRIVER/RECEIVER CARD (SEE SM 1411).

ARE ALL LINES PULSING?
Y N

037
1. REMOVE CRT SIGNAL CABLE FROM THE CPU PLANAR BOARD.

2. PROBE THE SAME SIGNALS AT THE CPU CRT PLANAR BOARD CONNECTOR PINS (SEE SM 1212 FOR LOCATIONS).

ARE ALL LINES PULSING?
Y N

038
1. REPLACE CPU PLANAR BOARD (SEE SM 1230).

2. VERIFY REPAIR.

039
1.REPLACE THE CRT DRIVER/RECEIVER CARD (SEE SM 1430).

2. REPAIR/REPLACE CRT SIGNAL CABLE FROM THE CPU PLANAR BOARD TO THE DRIVER/RECEIVER CARD (SEE SM 1411).

3. VERIFY REPAIR.

040
REPLACE CRT DISPLAY UNIT ASSEMBLY (SEE SM 1430).

DISPLAY MAP

PAGE 6 OF 8

041

1. PERFORM CRT ADJUSTMENTS (SEE SM 1440).

NOTE: IF THE DISPLAY IS DISTORTED TO THE POINT THAT IT CANNOT BE READ, IGNORE THE INSTRUCTION IN SM 1440 TO LOAD PID 1400, ROUTINE 0. USE ANY CHARACTERS THAT ARE DISPLAYED AND THE PROCEDURES IN SM 1440 TO OBTAIN A READABLE DISPLAY. AT THAT POINT, LOAD PID 1400, ROUTINE 0 AND PERFORM ADJUSTMENTS IN SM 1440.

2. IF ADJUSTMENTS DO NOT CORRECT PROBLEM, REPLACE THE CRT DISPLAY UNIT ASSEMBLY (SEE SM 1430).

IS THE PROBLEM FIXED?

Y N

042

PROBLEM MAY BE RIPPLE ON THE D.C. VOLTAGES.

SEE MAP 1225 FOR RIPPLE CHECK PROCEDURES.
GO TO MAP 1225,
ENTRY POINT A.

043

VERIFY REPAIR.

044

GO TO PAGE 7, STEP 045,
ENTRY POINT C.

--50 HZ ONLY-- BEFORE PERFORMING ADJUSTMENTS ENSURE THE '50 HZ' JUMPER IS PRESENT ON THE CPU PLANAR BOARD (SEE SM 1230).

045
(ENTRY POINT C)

LOAD PID 1400 AND SELECT THE CHARACTER SET DISPLAY THAT MATCHES THE COUNTRY SELECT JUMPERING FOR THIS SYSTEM. (SEE DIAGNOSTIC USERS GUIDE 0001, PID 1400 FOR LOADING PROCEDURES.) (SEE SM 1230 FOR JUMPERS).

DOES THE CHARACTER SET EXACTLY MATCH THE CHARACTER SET EXAMPLE IN SM 1450?
Y N

046
REPLACE CPU PLANAR BOARD (SEE SM 1230).

047
NO PROBLEM FOUND
GO TO MAP 1000, ENTRY POINT A.

048
OBSERVE THE FILAMENT OF THE CRT (SEE SM 1400).

IS THE FILAMENT LIGHTED?
Y N

049
CHECK THE FUSE LOCATED ON THE CRT DISPLAY UNIT (SEE SM 1420.)

IS THE FUSE BLOWN?
Y N

050
DISCONNECT THE AC POWER CONNECTOR AT THE REAR OF THE CRT AND MEASURE THE LINE VOLTAGE (SEE SM 1400).

DANGER

IS THE VOLTAGE BETWEEN 100 AND 130 VOLTS A.C.?
Y N

051
DETERMINE WHY AC IS NOT REACHING THE CRT.

GO TO MAP 1250, ENTRY POINT AC.

052
REPLACE THE CRT DISPLAY UNIT (SEE SM 1430).

053
REPLACE THE FUSE (SEE SM 1420).

DOES THE FUSE BLOW AGAIN?
Y N

054
PROBLEM SOLVED.

055
REPLACE CRT DISPLAY UNIT (SEE SM 1430).

056
PERFORM THE ADJUSTMENTS THAT AFFECT BRIGHTNESS (SEE SM 1440).

DID THE ADJUSTMENTS CORRECT THE PROBLEM?
Y N

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8 8 EC323398 PEC-------
A A

057
1. REPLACE CRT DRIVER/RECEIVER CARD (SEE SM 1430).

2. REPLACE CRT DISPLAY UNIT (SEE SM 1430).

058
PROBLEM SOLVED.
VERIFY REPAIR.

059
1. REMOVE THE CABLE FROM THE CPU PLANAR BOARD TO THE COMPOSITE VIDEO RPQ CARD AND/OR THE WORD PROCESSING CARD (SEE SM 1230, 1205 AND 1212 (MODEL 4XX).

2. REMOVE THE CRT SIGNAL CABLE FROM THE COMPOSITE VIDEO RPQ CARD AND/OR THE WORD PROCESSING SUPPORT CARD AND CONNECT IT DIRECTLY TO THE CPU BOARD (SEE SM 1205, 1230 AND 1212 (MODEL 4XX).

DOES THE CRT NOW WORK CORRECTLY?
Y N

060

GO TO PAGE 2, STEP 002,
ENTRY POINT D.

061
1. REPLACE COMPOSITE VIDEO RPQ CARD.

2. REPLACE THE WORD PROCESSING SUPPORT CARD (SEE SM 1205 AND 1230).

3. REPLACE THE CABLE FROM THE FEATURE/RPQ CARD TO THE CPU PLANAR BOARD (SEE SM 1205, 1230 AND 1212 (MODEL 4XX).

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EC323398 PEC-------

WORD PROCESSING

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1000	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	011	1225	A

001
(ENTRY POINT A)

1. LOAD PID 1450 FROM DCP MENU OPTION 10 (SEE THE USER GUIDE 0001, PID 1450 FOR LOADING INSTRUCTIONS).

IS THE PROBLEM AN ATTRIBUTE PROBLEM, (NO BLINKING, HIGHLIGHT, REVERSE VIDEO OR UNDERLINE)?
Y N
|
| 002
| (ENTRY POINT B)
|
| 1. SELECT OPTION 0 FROM PID
| 1450 MENU AND RUN THE
| STORAGE TEST.
|
| NOTE: THIS TEST RUNS FOR ABOUT
| 5 MINUTES.
|
| DID STORAGE TEST COME TO A GOOD
| END?
| Y N
| |
| | 003
| | DID THE SCREEN GO BLANK AFTER
| | TEST STARTED?
| | Y N

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3 2 2 2
A B C D

004
WAS AN ERROR MESSAGE DISPLAYED?
Y N

005
1. REPLACE THE WORD PROCESSING SUPPORT CARD (SEE SM 1205 AND 1230).

2. REPLACE THE CPU PLANAR BOARD (SEE SM 1230).

3. VERIFY REPAIR.

006
1. REPLACE THE WORD PROCESSING SUPPORT CARD (SEE SM 1205 AND 1230).

2. REPLACE THE CPU PLANAR BOARD (SEE SM 1230).

3. VERIFY REPAIR.

007
1. REPLACE THE WORD PROCESSING SUPPORT CARD (SEE SM 1205 AND 1230).

2. REPLACE THE CPU PLANAR BOARD (SEE SM 1230).

3. VERIFY REPAIR.

008
1. POWER OFF THE SYSTEM.

2. WAIT 30 SECONDS AND POWER ON THE SYSTEM.

3. LOAD PID 1450 AND SELECT OPTION 0 (SEE USER GUIDE 0001, PID 1450 FOR LOADING INSTRUCTIONS).

4. THIS STEP RUNS THE ROUTINE TO CHECK THE I/O CHECK (PARITY CHECK) CIRCUIT.

WAS AN ERROR MESSAGE DISPLAYED?
Y N

009
WAS THIS MAP ENTERED BECAUSE THE CUSTOMER HAD A TRAP 2000?
Y N

010
1. SELECT OPTION 1 PID 1450 (SEE USER GUIDE 0001, PID 1450 FOR INSTRUCTIONS).

2. LET THE STORAGE TEST LOOP AND IF NO ERRORS OCCUR FAILURE MAY BE INTERMITTENT.

WAS AN ERROR MESSAGE DISPLAYED OR DID THE SCREEN GO BLANK?
Y N

011
1. PROBLEM IS INTERMITTENT.

2. GO TO THE INTERMITTENT MAP
GO TO MAP 1225,
ENTRY POINT A.

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012
1. REPLACE THE WORD PROCESSING SUPPORT CARD (SEE SM 1205 AND 1230).

2. REPLACE THE CPU PLANAR BOARD (SEE SM 1230).

3. VERIFY REPAIR.

013
1. REPLACE THE WORD PROCESSING SUPPORT CARD (SEE SM 1205 AND 1230).

2. REPLACE THE CPU PLANAR BOARD (SEE SM 1230).

3. VERIFY REPAIR.

014
1. REPLACE THE WORD PROCESSING SUPPORT CARD (SEE SM 1205 AND 1230).

2. REPLACE THE CPU PLANAR BOARD (SEE SM 1230).

3. VERIFY REPAIR.

015
1. SELECT OPTION 2 ATTRIBUTE TEST.

WAS AN ERROR MESSAGE DISPLAYED?
Y N

016
DID THE SCREEN GO BLANK OR IS IT FLASHING?
Y N

017
IS THE SCREEN NORMAL (SEE USER GUIDE 0001, PID 1450)?
Y N

018
1. CHECK THAT THE HIGHLIGHT JUMPER IS INSTALLED (SEE SM 1205 AND 1230).

2. REPLACE THE WORD PROCESSING SUPPORT CARD (SEE SM 1205 AND 1230).

3. REPLACE THE WORD PROCESSING SUPPORT CABLE TO THE CPU BOARD (SEE SM 1212).

4. REPLACE THE CPU PLANAR BOARD (SEE SM 1230).

5. VERIFY REPAIR.

019
IS THE PROBLEM MOVING ATTRIBUTES?
Y N

020
1. TERMINATE ROUTINE BY PRESSING 'ATTN E'.

2. LOAD AND SELECT OPTION 0, (STORAGE TEST, SEE USER GUIDE 0001, PID 1450 FOR LOADING INSTRUCTIONS).

3. GO TO ENTRY B
GO TO PAGE 1, STEP 002,
ENTRY POINT B.

WP SUPPORT

PAGE 4 OF 4

021

1. REPLACE THE WORD PROCESSING SUPPORT CARD (SEE SM 1205 AND 1230).

2. REPLACE THE WORD PROCESSING SUPPORT CABLE TO THE CPU BOARD (SEE SM 1212).

3. REPLACE THE CPU PLANAR BOARD (SEE SM 1230).

4. VERIFY REPAIR.

022

1. REPLACE THE WORD PROCESSING SUPPORT CARD (SEE SM 1205 AND 1230).

2. REPLACE THE WORD PROCESSING SUPPORT CABLE TO THE CPU BOARD (SEE SM 1212).

3. REPLACE THE CPU PLANAR BOARD (SEE SM 1230).

4. VERIFY REPAIR.

023

1. REPLACE THE WORD PROCESSING SUPPORT CARD (SEE SM 1205 AND 1230).

2. REPLACE THE WORD PROCESSING SUPPORT CABLE TO THE CPU BOARD (SEE SM 1212).

3. REPLACE THE CPU PLANAR BOARD (SEE SM 1230).

4. VERIFY REPAIR.

DISKETTE STRATEGY

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1000	G	13	128
1200	A	2	001
1201	EE	5	034
1205	A	2	001
1210	A	2	001
1225	C	17	170
1501	A	2	001
1501	F	10	096
1501	G	13	128
1501	T	26	247
1501	U	7	067
1502	A	2	001
1530	B	6	048

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
3	010	1250	A
8	074	1250	A
32	321	1250	A
6	046	1502	A
17	168	1502	A
28	268	1502	A
4	022	1502	D
11	102	1502	D
12	124	1502	D
13	138	1502	D
18	178	1502	D
19	191	1502	D
21	212	1502	D
28	274	1502	D
5	038	1530	A
6	040	1530	A
9	092	1530	A
9	094	1540	A
13	126	1540	A
14	142	1540	H
14	144	1545	A
16	164	1545	A
16	166	1545	A
17	169	1545	A
8	071	1560	A
32	321	1560	A

001
(ENTRY POINT A)

* * * NOTE * * *

IF EXTENDED RPQ FEATURE IS INSTALLED ON THE PROCESSOR, USE SM R4904 FOR REMOVAL/REPLACEMENT OF THE DISKETTE ATTACHMENT CARD.

IF EXTENDED RPQ FEATURE IS INSTALLED ON THE 5246 DISKETTE UNIT, USE SM R4908 FOR REMOVAL/REPLACEMENT OF THE MULTIPLEXER CARD.

SEE NOTE 1 ON THE RIGHT ----->

WHEN A FRU DOES NOT REPAIR THE PROBLEM, REPLACE THE FRU WITH THE ORIGINAL.

DID POWER-ON TEST RUN OK?
Y N
|
| 002
| ERROR 38?
| Y N
| |
| | 003
| | (ENTRY POINT J)
| |
| | (ERROR 39)
| |
| |
| | IS DRIVE 1 INSTALLED ON
| | SYSTEM?
| | Y N

5 3 3 3
A B C D

NOTE 1:

1. REFERENCE TO SM 15XX AND 12XX INDICATES INTERNAL DRIVES 1 OR 2, SM 45XX IS FOR EXTERNAL DRIVES 3 OR 4. SM R49XX IS FOR THE REMOTE PROCESSOR/5246 RPQ EXTENDED FEATURE.
2. IT MAY BE NECESSARY TO PUT THE DISKETTE DRIVES IN THE SERVICE POSITION (SEE SM 1510 AND 1220 OR SM 4510 AND 4505).
3. DAMAGE TO THE DISKETTE MAY OCCUR IF NOT REMOVED BEFORE POWERING DOWN.
4. THIS MAP CHART NEEDS THE CE DISKETTE TO BE A TYPE 1 DISKETTE.
5. IT TAKES APPROXIMATELY 4 MINUTES FOR A 'COULD NOT SECURE' (ENDING STATUS 32) TO SHOW ON THE SCREEN. LET THIS TIME PASS WHEN IT APPEARS THAT ONE OR BOTH PROCESSORS ARE HUNG.

004
CHECK JUMPER FOR 'NO INTERNAL DISKETTES INSTALLED ON SYSTEM' (SEE SM 1230).

IS JUMPER INSTALLED?
Y N

005
1. INSTALL JUMPER (SEE SM 1230).
2. VERIFY REPAIR.

006
REPLACE PLANAR BOARD (SEE SM 1230).

007
(NO +24V TO DISKETTE ATTACHMENT FROM DRIVE 1.)

ON DRIVE 1 AT THE DISKETTE ATTACHMENT CARD, CHECK PIN B03 FOR +24V DC ON CABLE BETWEEN DISKETTE DRIVE CONTROL CARD AND DISKETTE ATTACHMENT CARD (SEE SM 1505).

IS +24V DC VOLTAGE PRESENT?
Y N

008
1. POWER OFF.
2. CHECK CABLE FROM DRIVE 1 TO DISKETTE ATTACHMENT CARD FOR CONTINUITY OF +24V DISTRIBUTION (SEE SM 1211 & 1505).

IS CABLE OK?
Y N

009
1. REPAIR/REPLACE CABLE (SEE SM 1211 AND 1215 OR 1505 AND 1511).
2. VERIFY REPAIR.

010

GO TO MAP 1250, ENTRY POINT A.

011
1. POWER OFF.
2. REPLACE DISKETTE ATTACHMENT CARD (SEE SM 1205 AND 1511).
3. POWER ON.

ERROR 39?
Y N

012
PROBLEM IS REPAIRED.

013
1. POWER OFF.
2. REINSTALL ORIGINAL DISKETTE ATTACHMENT CARD.
3. REPLACE CPU PLANAR BOARD (SEE SM 1230).
4. VERIFY REPAIR.

014
1. REMOVE ALL FEATURE I/O CARDS EXCEPT DISKETTE ATTACHMENT (SEE SM 1205 AND 1230).
2. IF EXTERNAL DRIVES ARE INSTALLED, REMOVE CABLE FROM THE DISKETTE ATTACHMENT CARD TO THE MULTIPLEXER CARD AT THE DISKETTE ATTACHMENT CARD (SEE SM 1212). (IF EXTENDED RPQ FEATURE IS INSTALLED, REMOVE CABLE FROM EXTENDED FEATURE CARD AND REMOVE EXTENDED FEATURE CARD. SEE SM R4904).

(STEP 014 CONTINUES)

(STEP 014 CONTINUED)
3. RUN POWER ON DIAGNOSTICS AGAIN.

ERROR 38?
Y N

015
REINSTALL FEATURE I/O CARDS ONE AT A TIME. RUN POWER ON DIAGNOSTICS AFTER EACH FEATURE CARD IS REINSTALLED, UNTIL ERROR 38 OCCURS AGAIN. THE LAST I/O FEATURE CARD INSTALLED THAT CAUSED ERROR 38 TO OCCUR AGAIN IS BAD. REPLACE IT.

DID AN I/O FEATURE CARD CAUSE AN ERROR 38?
Y N

016
IS DRIVE 3 AND 4 INSTALLED?
Y N

017
REPLACE DISKETTE ATTACHMENT CARD (SEE SM 1205 AND 1511).

018
1. REINSTALL CABLE FROM THE DISKETTE MULTIPLEXER CARD TO THE DISKETTE ATTACHMENT CARD. (IF THE EXTENDED RPQ FEATURE IS INSTALLED, REINSTALL CABLE AT EXTENDED FEATURE CARD (SEE SM R4904).
2. DISCONNECT CABLE AT THE MULTIPLEXER CARD END. (SEE SM 4506 AND 4501).

ERROR 38?
Y N

019
REPLACE MULTIPLEXER CARD (SEE SM 4578).

020
IF EXTENDED RPQ FEATURE INSTALLED (SEE SM R4902), IS AN ERROR 38 ON THE REMOTE PROCESSOR?
Y N

021
1. POWER OFF.
2. CHECK CABLE BETWEEN DISKETTE ATTACHMENT CARD AND THE MULTIPLEXER CARD FOR CONTINUITY OR SHORT CIRCUITS (SEE SM 4505).
3. REPAIR/REPLACE AS NECESSARY. (SEE SM 4579).

022

GO TO MAP 1502, ENTRY POINT D.

023
1. CONNECT ANY CABLES THAT MAY HAVE BEEN REMOVED.
2. VERIFY REPAIR.

024
1. REPLACE DISKETTE ATTACHMENT CARD (SEE SM 1205 AND 1511).
2. REINSTALL ANY I/O FEATURE CARDS THAT WERE REMOVED (SEE SM 1205 AND 1230).
3. REINSTALL ANY CABLES THAT WERE REMOVED BEFORE.

IS PROBLEM FIXED?
Y N

14AUG81 PN6841632

EC994445 PEC987896

5 5

DISKETTE STRATEGY

025
1. REPLACE CPU PLANAR BOARD (SEE SM 1230).
2. REINSTALL ORIGINAL DISKETTE ATTACHMENT CARD (SEE SM 1205 AND 1511).
3. VERIFY REPAIR.

026
VERIFY REPAIR.

027
IS SHARED EXTERNAL DRIVES FEATURE PRESENT ON THE SYSTEM?
Y N

028
GO TO STEP 034,
ENTRY POINT EE.

029
FAILURE ONLY WHEN RUNNING DIAGNOSTIC IN SHARED MODE?
Y N

030
GO TO STEP 034,
ENTRY POINT EE.

031
REPLACE THE MULTIPLEXER CARD (SEE SM 4578).

IS PROBLEM FIXED?
Y N

032
GO TO STEP 034,
ENTRY POINT EE.

033
VERIFY REPAIR

034
(ENTRY POINT EE)

1. POWER OFF.
2. POWER ON.
3. RUN ROS RESIDENT DISKETTE TEST, PID 1500 (SEE DIAGNOSTIC USER'S GUIDE 0001 TO OPTION ROS RESIDENT DIAGNOSTICS).
4. SELECT FAILING DISKETTE DRIVE.
5. SELECT 'DISKETTE DIAGNOSTIC WITHOUT LOOP' OPTION TO RUN TEST ON FAILING DISKETTE DRIVE.

TEST RUN OK?
Y N

035
IS ENDING STATUS '31'?
Y N

036
IS THE FAILING DRIVE DRIVE 1 OR DRIVE 2?
Y N

037
IS ENDING STATUS '32'?
Y N

038
PID 1500 DISKETTE FAILURE.
GO TO MAP 1530,
ENTRY POINT A.

039
GO TO PAGE 26,
STEP 247,
ENTRY POINT T.

14AUG81 PN6841632

EC994445 PEC987896

040
PID 1500 DISKETTE FAILURE.
GO TO MAP 1530, ENTRY POINT A.

041
IS EXTENDED RPQ FEATURE INSTALLED (SEE SM R4902)?
Y N

042

GO TO PAGE 29, STEP 276,
ENTRY POINT BB.

043
IS ERROR '31' ON REMOTE PROCESSOR?
Y N

044

GO TO PAGE 29, STEP 276,
ENTRY POINT BB.

045
DOES LOCAL PROCESSOR FAIL?
Y N

046

GO TO MAP 1502, ENTRY POINT A.

047

GO TO PAGE 29, STEP 276,
ENTRY POINT BB.

048
(ENTRY POINT B)

(NOTE: IF SHARED EXTERNAL DRIVES IS INSTALLED, POWER OFF, THEN POWER ON BOTH PROCESSORS. IF FAILING DRIVE IS EXTERNAL AND SHARED, LOAD DCP FROM SUSPECTED FAILING PROCESSOR).
LOAD DCP PROGRAM ON FAILING DISKETTE DRIVE.

DID DCP LOAD OK?
Y N

049
IS ENDING STATUS '32'?
Y N

050
REPLACE CE DISKETTE.
VERIFY

051

GO TO PAGE 26, STEP 247,
ENTRY POINT T.

052
WHEN DCP MENU IS DISPLAYED ENTER OPTION '0' TO LOAD PID 1505 DISKETTE FLT (PART 1).

DID PID 1505 LOAD OK?
Y N

053
ENDING STATUS '32'?
Y N

054
REPLACE CE DISKETTE.
VERIFY

055

GO TO PAGE 26, STEP 247,
ENTRY POINT T.

056

1. SELECT OPTION 2.
2. RUN PID 1505 WITHOUT LOOP ON FAILING DRIVE, UNTIL CONFIGURATION RECORD IS DISPLAYED. (NOTE: WAIT A MAXIMUM OF 4 MINUTES FOR CONFIGURATION.)

DID CONFIGURATION RECORD DISPLAY WITHOUT ENDING STATUS '032'?
Y N

057

GO TO PAGE 26, STEP 247,
ENTRY POINT T.

058

IS THE CONFIGURATION RECORD CORRECT?
Y N

059

IS EXTERNAL DRIVES FEATURE INSTALLED?
Y N

060

GO TO STEP 067,
ENTRY POINT U.

061

DOES THE CONFIGURATION RECORD INDICATE THAT EXTERNAL DRIVE POWER IS OFF?
Y N

062

IS ENDING STATUS 032?
Y N

063

GO TO STEP 067,
ENTRY POINT U.

064

GO TO PAGE 26, STEP 247,
ENTRY POINT T.

065

CHECK THAT EXTERNAL DRIVES ARE POWERED ON.

IS THE EXTERNAL DRIVE ON/OFF SWITCH IN THE ON POSITION, AND THE LINE PLUG CONNECTED TO THE WALL OUTLET?
Y N

066

POWER EXTERNAL DRIVE ON AND VERIFY.

067

(ENTRY POINT U)

IS INTERNAL +24 VOLTS OK (SEE CONFIGURATION DISPLAY)?
Y N

068

GO TO PAGE 2, STEP 003,
ENTRY POINT J.

14AUG81 PN6841632

EC994445 PEC987896

096
(ENTRY POINT F)

SEE NOTE 2 ---------->
1. RETURN TO THE DCP.
2. ENTER DCP MENU OPTION '8' TO LOAD PID 1510 WITHOUT LOOP.
3. SELECT FAILING DRIVE TO RUN TEST.
4. READ TYPE DISKETTE MESSAGE AND VERIFY THAT THE TYPE OF DISKETTE SENSED IS EQUAL WITH DISKETTE INSERTED.

TYPE OF DISKETTE THE SAME?
Y N

097
(ENTRY POINT L)

IS EXTENDED RPQ FEATURE INSTALLED (SEE SM R4902)?
Y N

098

GO TO PAGE 11, STEP 103, ENTRY POINT GG.

099
IS AN EXTERNAL DRIVE FAILING ON THE REMOTE PROCESSOR?
Y N

100

GO TO PAGE 11, STEP 103, ENTRY POINT GG.

101
DOES THE LOCAL PROCESSOR FAIL?
Y N

NOTE 2:

IF ENTRY TO THIS MAP WAS BECAUSE OF AN ERROR IN THE FORMAT ROUTINE (PID 1510), RUN PID 1510 AGAIN, AFTER FILE IS REPAIRED, TO WRITE OVER TRACK 76.

102

GO TO MAP 1502, ENTRY POINT D.

103
(ENTRY POINT GG)

DIAGNOSE PROBLEM USING THE LOCAL PROCESSOR

IS DRIVE 1 OR DRIVE 2 FAILING TO INDICATE THE CORRECT DISKETTE TYPE?
Y N

104

GO TO PAGE 24, STEP 234,
ENTRY POINT H.

105
(INTERNAL DRIVES)

DOES SYSTEM HAVE ONLY ONE INTERNAL DISKETTE DRIVE (DRIVE 1)?
Y N

106
1. MOVE DISKETTE TO OTHER INTERNAL DRIVE.
2. POWER OFF.
3. POWER ON.
4. RUN PID 1510 ON THIS DRIVE.

TYPE OF DISKETTE THE SAME?
Y N

107
1. REPLACE DISKETTE ATTACHMENT CARD (SEE SM 1205 AND 1511).
2. VERIFY REPAIR.

108
IS DRIVE 1 THE FAILING DRIVE?
Y N

109
1. POWER DOWN.
2. MOVE DRIVE 2 CABLE AT ATTACHMENT CARD TO DRIVE 1 POSITION (SEE SM 1511).
3. POWER UP.
4. INSTALL DISKETTE IN DRIVE 2. SELECT DRIVE 1.
5. RUN PID 1510 AGAIN.

IS THE FAILURE THE SAME AS THE ORIGINAL FAILURE?
Y N

110
1. REPLACE DISKETTE ATTACHMENT CARD (SEE SM 1205 AND 1511).
2. RETURN CABLES TO ORIGINAL POSITION.
3. VERIFY REPAIR.

111
RETURN CABLES TO ORIGINAL POSITION.
GO TO PAGE 23, STEP 229,
ENTRY POINT D.

112
1. POWER DOWN.
2. MOVE DRIVE 1 CABLE AT THE ATTACHMENT CARD TO DRIVE 2 POSITION (SEE SM 1511).
3. POWER UP.
4. INSTALL DISKETTE IN DRIVE 1. SELECT DRIVE 2.
5. RUN PID 1510 AGAIN.

IS THE FAILURE THE SAME AS THE ORIGINAL FAILURE?
Y N

113
1. REPLACE DISKETTE ATTACHMENT CARD (SEE SM 1205 AND 1511).
2. RETURN CABLES TO ORIGINAL POSITION.
3. VERIFY REPAIR.

114
RETURN CABLES TO ORIGINAL POSITION.
GO TO PAGE 23, STEP 229, ENTRY POINT D.

115
1. POWER DOWN.
2. MOVE CABLE TO OTHER PORT ON THE DISKETTE ATTACHMENT CARD (SEE SM 1511).
3. POWER UP.
4. SELECT DRIVE 2.
5. RUN PID 1510.

DID THE SAME FAILURE OCCUR?
Y N

116
1. REPLACE THE DISKETTE ATTACHMENT CARD (SEE SM 1205 AND 1511).
2. VERIFY REPAIR.

117
1. REPLACE DRIVE CONTROL CARD (SEE SM 1572).
2. CHECK DISKETTE ATTACHMENT CABLE FOR CONTINUITY OR SHORT CIRCUITS (SEE SM 1505, 1511).
3. REPLACE DISKETTE ATTACHMENT CARD (SEE SM 1205 AND 1511).
4. VERIFY REPAIR.

118
RUN TEST TO THE END OR UNTIL AN ERROR.

TEST RUN OK?
Y N

119
IS EXTENDED RPQ FEATURE INSTALLED (SEE SM R4902)?
Y N

120
GO TO STEP 125, ENTRY POINT HH.

121
IS AN EXTERNAL DRIVE FAILING ON THE REMOTE PROCESSOR?
Y N

122
GO TO STEP 125, ENTRY POINT HH.

123
DOES THE LOCAL PROCESSOR FAIL?
Y N

124
GO TO MAP 1502, ENTRY POINT D.

125
(ENTRY POINT HH)

DIAGNOSE PROBLEM USING THE LOCAL PROCESSOR

IS ENDING STATUS 'E-031'?
Y N

126
WRITE FAILURE
GO TO MAP 1540,
ENTRY POINT A.

127

GO TO PAGE 29, STEP 276,
ENTRY POINT BB.

128
(ENTRY POINT G)

IS FAILING DRIVE A 31SD (SINGLE SURFACE DISKETTE DRIVE)?
Y N

129
1. OBTAIN A TYPE 2D DISKETTE FORMATTED 128 OR 512 BYTE RECORDS, FM OR MFM.
2. LOAD DCP FROM CE DISKETTE AND SELECT OPTION 8 TO LOAD PID 1510.
3. INSERT A TYPE 2D DISKETTE IN FAILING DRIVE.
4. RUN PID 1510 UNTIL DISKETTE TYPE APPEARS OR ERROR.

IS ENDING STATUS E009 'DRIVE NOT READY'?
Y N

130
IS THE DISKETTE TYPE THAT IS DISPLAYED CORRECT?
Y N

131

GO TO PAGE 10,
STEP 097,
ENTRY POINT L.

132
RUN PID 1510 TO THE END OR UNTIL AN ERROR.

TEST RUN OK?
Y N

133
IS EXTENDED RPQ FEATURE INSTALLED (SEE SM R4902)?
Y N

134

GO TO STEP 139,
ENTRY POINT JJ.

135
IS AN EXTERNAL DRIVE FAILING ON THE REMOTE PROCESSOR?
Y N

136

GO TO STEP 139,
ENTRY POINT JJ.

137
DOES THE LOCAL PROCESSOR FAIL?
Y N

138

GO TO MAP 1502,
ENTRY POINT D.

139
(ENTRY POINT JJ)

DIAGNOSE PROBLEM USING THE LOCAL PROCESSOR

IS MESSAGE 'E-03B FORMAT SIDE 1 FORMATTED SIDE 0?
Y N

140
IS MESSAGE 'E-009 DISKETTE NOT READY' DISPLAYED?
Y N

141
IS ENDING STATUS '031'?
Y N

142
READ OR WRITE FAILURE.
GO TO MAP 1540, ENTRY POINT H.

143

GO TO PAGE 29, STEP 276, ENTRY POINT BB.

144
READY PROBLEM.
GO TO MAP 1545, ENTRY POINT A.

145
1. LOAD DCP FROM A CE DISKETTE AND SELECT PID 1510 (SEE DIAGNOSTIC USER GUIDE 0001).
2. BYPASS ERROR STOPS.
3. LOOP TEST.
4. SELECT FAILING DISKETTE DRIVE.
5. INSERT A 2D TYPE DISKETTE IN THE FAILING DISKETTE DRIVE.
6. PROBE '+SELECT HEAD 1' ON THE DISKETTE DRIVE CONTROL CARD (SEE SM 1503 OR 4508). (OBSERVE THE PROBE WHILE PID 1510 FORMATS BOTH SIDES).

DID '+SELECT HEAD 1' FAIL TO PULSE?
Y N

146
REPLACE THE DISKETTE DRIVE CONTROL CARD (SEE SM 1572 OR 4572).

A
W

147
PROBE '+SELECT HEAD 1' AT THE DISKETTE ATTACHMENT CARD (SEE SM 1505, 1511 OR 4504). (OBSERVE THE PROBE WHILE PID 1510 FORMATS BOTH SIDES).

DID '+SELECT HEAD 1' PULSE?
Y N

148
POWER DOWN.

IS DISKETTE DRIVE 3/4 FAILING?
Y N

149
CHECK THE CABLE FROM THE DISKETTE DRIVE CONTROL CARD TO THE DISKETTE ATTACHMENT CARD FOR CONTINUITY OR SHORT CIRCUIT ON '+SELECT HEAD 1' LINE (SEE SM 1505 FOR CABLE WIRE LOCATIONS).

DOES '+SELECT HEAD 1' LINE HAVE A SHORT CIRCUIT OR OPEN?
Y N

150
1. REPLACE THE DISKETTE ATTACHMENT CARD (SEE SM 1205 AND 1511).
2. REPLACE THE DISKETTE DRIVE CONTROL CARD (SEE SM 1572).

151
REPAIR/REPLACE CABLE AS NECESSARY (SEE SM 1215, 1505 AND 1511).

152
CHECK THE CABLE FROM THE DISKETTE ATTACHMENT CARD TO THE MULTIPLEXER CARD FOR CONTINUITY OR A SHORT CIRCUIT ON '+SELECT HEAD 1' (SEE SM 4505).

DOES '+SELECT HEAD 1' HAVE A SHORT CIRCUIT OR OPEN?
Y N

153
1. REPLACE THE DISKETTE ATTACHMENT CARD (SEE SM 1205 AND 1511).
2. REPLACE THE MULTIPLEXER CARD (SEE SM 4578).

154
REPAIR/REPLACE CABLE AS NECESSARY (SEE SM 4505 AND 4579).

155
IS DISKETTE DRIVE 3/4 FAILING?
Y N

156
1. CHECK CABLE BETWEEN THE DISKETTE DRIVE CONTROL CARD AND THE DISKETTE ATTACHMENT CARD FOR OPEN OR SHORT CIRCUIT ON '+SELECT HEAD 1' LINE.
2. REPAIR/REPLACE AS NECESSARY (SEE SM 1205, 1505, 1511).
3. REPLACE DISKETTE DRIVE CONTROL CARD (SEE SM 1572).

157
PROBE '+SELECT HEAD 1' AT THE MULTIPLEXER CARD AT THE CABLE THAT CONNECTS TO THE DISKETTE ATTACHMENT CARD (SEE SM 4505).

DID '+SELECT HEAD 1' PULSE?
Y N

158
1. CHECK CABLE BETWEEN THE DISKETTE ATTACHMENT CARD AND THE MULTIPLEXER CARD FOR OPEN OR SHORT CIRCUIT ON '+SELECT HEAD 1' LINE (SEE SM 4505).
2. REPAIR/REPLACE AS NECESSARY (SEE SM 4579).
3. REPLACE THE MULTIPLEXER CARD (SEE SM 4578).

159
PROBE '+SELECT HEAD 1' AT THE MULTIPLEXER CARD ON THE CABLE THAT CONNECTS TO THE FAILING DISKETTE DRIVE (SEE SM 4507).

DID '+SELECT HEAD 1' PULSE?
Y N

160
1. CHECK CABLE BETWEEN THE MULTIPLEXER CARD AND THE FAILING DISKETTE DRIVE CONTROL CARD FOR OPEN OR SHORT CIRCUIT ON '+SELECT HEAD 1' LINE. (SEE SM 4507).
2. REPAIR/REPLACE AS NECESSARY (SEE SM 4511).
3. REPLACE THE MULTIPLEXER CARD (SEE SM 4578).
4. REPLACE THE DISKETTE DRIVE CONTROL CARD (SEE SM 4572).

161
1. CHECK CABLE BETWEEN THE FAILING DISKETTE DRIVE CONTROL CARD AND THE MULTIPLEXER CARD FOR OPEN OR SHORT CIRCUIT ON '+SELECT HEAD 1' LINE. (SEE SM 4507).
2. REPAIR/REPLACE AS NECESSARY (SEE SM 4511).
3. REPLACE DISKETTE DRIVE CONTROL CARD (SEE SM 4572).

162

GO TO PAGE 17, STEP 170, ENTRY POINT C.

163
IS EXTENDED RPQ FEATURE INSTALLED (SEE SM R4902)?
Y N

164

GO TO MAP 1545, ENTRY POINT A.

165
IS DRIVE 3 OR 4 FAILING FROM THE REMOTE PROCESSOR?
Y N

166
(DRIVE 1 OR 2 OR LOCAL DRIVE 3 OR 4 FAILING)

GO TO MAP 1545, ENTRY POINT A.

167
DOES FAILING DRIVE FAIL FROM THE LOCAL PROCESSOR?
Y N

168	
(DRIVE 3 OR 4 REMOTE FAILURE)	
GO TO MAP 1502, ENTRY POINT A.	
169	
(DIAGNOSE FROM LOCAL PROCESSOR)	
GO TO MAP 1545, ENTRY POINT A.	

170
(ENTRY POINT C)

1. INSERT THE CE DISKETTE IN DRIVE BEING TESTED.
2. LOAD DCP PROGRAM.
3. WHEN DCP MENU IS DISPLAYED ENTER OPTION '0' TO LOAD PID 1505 DISKETTE FLT (PART 1).
4. SELECT OPTION 2 DISKETTE DRIVE TEST.
5. BYPASS ERROR STOPS.
6. SELECT LOOP ONE ROUTINE.
7. LOOP ON ROUTINE 0A.
8. SELECT DISKETTE DRIVE. (SEE NOTE 3).

NOTE: WAIT UNTIL DIAGNOSTICS SEQUENCE TO ROUTINE 0A).

9. PROBE AT THE DISKETTE DRIVE CONTROL CARD. (SEE SM 1505 OR 4508 CABLE PIN LOCATIONS).
   '+ INNER TRACKS'
   '+ SWITCH FILTER'

   (NOTE: +SWITCH FILTER IS NOT USED ON A 31SD DRIVE.)

BOTH LINES PULSING?

Y N

NOTE 3:

ENTRY POINT C, OF THIS MAP, IS TO ENSURE THAT ALL DISKETTE DRIVES HAVE THE FOLLOWING SIGNALS.

1. +INNER TRACKS
2. +SWITCH FILTER
3. NO PULSES ON WRITE DATA WHILE SEEKING AND READING

IF NO DISKETTE DRIVE IS SUSPECTED, RUN ON ALL DISKETTE DRIVES THAT ARE ATTACHED.

171
PROBE '+INNER TRACKS' AND '+SWITCH FILTER' AT THE DISKETTE ATTACHMENT CARD AT THE CONNECTOR ASSOCIATED WITH THE SELECTED DISKETTE DRIVE.

NOTE:
1. -- LOCAL DRIVE 3 OR 4 --

FOR DRIVES 3 AND 4 PROBE AT DISKETTE ATTACHMENT CARD CONNECTOR THAT CONNECTS TO THE MULTIPLEXER CARD (SEE SM 1505 OR 4504 FOR CABLE PIN LOCATIONS).

2. -- EXTENDED DRIVE 3 OR 4 --

PROBE AT THE DISKETTE ATTACHMENT CARD WHERE CABLE LEADS TO THE EXTENDED FEATURE CARD. SEE SM R4900).

BOTH LINES PULSING?
Y N

172
POWER DOWN.

IS DRIVE 1 OR 2 MISSING PULSE?
Y N

173
IS EXTENDED RPQ FEATURE INSTALLED (SEE SM R4902)?
Y N

174

GO TO STEP 179,
ENTRY POINT KK.

175
IS AN EXTERNAL DRIVE FAILING ON THE REMOTE PROCESSOR?
Y N

176

GO TO STEP 179,
ENTRY POINT KK.

177
DOES THE LOCAL PROCESSOR FAIL?
Y N

178

GO TO MAP 1502, ENTRY POINT D.

179
(ENTRY POINT KK)

DIAGNOSE PROBLEM USING THE LOCAL PROCESSOR

CHECK THE CABLE BETWEEN THE DISKETTE ATTACHMENT CARD AND THE MULTIPLEXER CARD FOR CONTINUITY/SHORT CIRCUIT ON THE SIGNAL LINE OR LINES THAT WERE MISSING PULSES (SEE SM 4505).

IS THE CABLE OK?
Y N

180
REPAIR/REPLACE CABLE AS NECESSARY (SEE SM 4579).

181
1. REPLACE THE DISKETTE ATTACHMENT CARD (SEE SM 1205 AND 1511).
2. REPLACE THE MULTIPLEXER CARD (SEE SM 4578).

182
CHECK THE CABLE BETWEEN THE DISKETTE DRIVE ATTACHMENT CARD AND THE DISKETTE DRIVE CONTROL CARD FOR CONTINUITY/SHORT CIRCUIT ON THE SIGNAL LINE OR LINES THAT WAS MISSING PULSES (SEE SM 1505).

IS THE CABLE OK?
Y N

183
REPAIR/REPLACE CABLE AS NECESSARY (SEE SM 1205, 1505 AND 1511).

184
1. REPLACE THE DISKETTE ATTACHMENT CARD (SEE SM 1205 AND 1511).
2. REPLACE THE DISKETTE DRIVE CONTROL CARD (SEE SM 1572).

185
DRIVES 1 OR 2 MISSING PULSE?
Y N

186
IS EXTENDED RPQ FEATURE INSTALLED (SEE SM R4902)?
Y N

187

GO TO STEP 192,
ENTRY POINT LL.

188
IS AN EXTERNAL DRIVE FAILING ON THE REMOTE PROCESSOR?
Y N

189

GO TO STEP 192,
ENTRY POINT LL.

190
DOES THE LOCAL PROCESSOR FAIL?
Y N

191

GO TO MAP 1502, ENTRY POINT D.

192
(ENTRY POINT LL)

DIAGNOSE PROBLEM USING THE LOCAL PROCESSOR

1. POWER DOWN.
2. CHECK CABLE FROM DISKETTE ATTACHMENT CARD TO MULTIPLEXER CARD FOR CONTINUITY/SHORT CIRCUITS ON SIGNAL LINE MISSING PULSE. (SEE SM 4505). REPAIR/REPLACE AS NECESSARY (SEE SM 4511).
3. CHECK CABLE FROM MULTIPLEXER CARD TO DISKETTE DRIVE CONTROL CARD FOR CONTINUITY/SHORT CIRCUITS ON SIGNAL LINE MISSING PULSE. (SEE SM 4507). REPAIR/REPLACE AS NECESSARY (SEE SM 4579).

ARE CABLES OK?
Y N

193
REPAIR/REPLACE AS NECESSARY.
1. SEE SM 4579 FOR CABLE FROM DISKETTE ATTACHMENT CARD TO MULTIPLEXER CARD.
2. SEE SM 4511 FOR CABLE FROM MULTIPLEXER CARD TO DRIVE CONTROL CARD.

194
1. REPLACE THE MULTIPLEXER CARD (SEE SM 4578).
2. REPLACE THE DISKETTE DRIVE CONTROL CARD (SEE SM 4572).

195
1. CHECK CABLE FROM DISKETTE ATTACHMENT CARD TO DISKETTE DRIVE CONTROL CARD FOR CONTINUITY/SHORT CIRCUITS ON THE SIGNAL LINE MISSING PULSE. (SEE SM 1505 CABLE PIN LOCATIONS). REPAIR/REPLACE AS NECESSARY (SEE SM 1215 AND 1511).
2. REPLACE DISKETTE DRIVE CONTROL CARD (SEE SM 1572).

196
PROBE '+WRITE DATA' AT THE CABLE POSITION ON THE DISKETTE ATTACHMENT CARD FOR THE SELECTED DISKETTE DRIVE. OBSERVE PROBE FOR A MINIMUM OF 5 SECONDS. (NOTE: FOR DRIVES 3 AND 4 PROBE AT THE CABLE END THAT CONNECTS TO THE MULTIPLEXER CARD) (SEE SM 1505 OR 4505).

LINE NOT PULSING?
Y N

197
REPLACE DISKETTE ATTACHMENT CARD (SEE SM 1205 AND 1511).

198
HAVE ALL ATTACHED DISKETTE DRIVES BEEN TESTED?
Y N

199

GO TO PAGE 17, STEP 170, ENTRY POINT C.

200
(ENTRY POINT M)

(THIS SECTION WILL CHECK THAT HEAD LOAD CIRCUITS ARE WORKING CORRECTLY.)

1. RETURN TO DCP.
2. SELECT PID 1505.
3. SELECT OPTION 4 (WRITE TRACK THREE AND 76 STRESS PATTERN).
4. BYPASS ERROR STOP.
5. LOOP TEST.
6. SELECT DISKETTE DRIVE BEING TESTED.
7. OBSERVE DISKETTE DRIVE HEAD ACCESS ASSEMBLY WHILE SENDING A RECAL COMMAND. (SEE MENU ON CRT).

DO THE HEADS LOAD AND UNLOAD?
Y N

201
PROBE 'HEAD ENGAGE' AT THE DISKETTE DRIVE CONTROL CARD WHILE SENDING A RECAL COMMAND. (SEE SM 1502 (31SD), 1503 (51TD) OR 4508).

MISSING 'HEAD ENGAGE' PULSE?
Y N

202
1. REPLACE THE DISKETTE DRIVE CONTROL CARD (SEE SM 1572 OR 4572).
2. REPLACE HEAD LOAD SOLENOID (SEE SM 1542 OR 4542).

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2 2
2 1 EC994445 PEC987896

203
POWER DOWN.

IS DRIVE 3 OR 4 FAILING?
Y N

204
CHECK CABLE BETWEEN THE DISKETTE ATTACHMENT CARD AND DISKETTE DRIVE CONTROL CARD FOR CONTINUITY/SHORT CIRCUITS ON 'HEAD ENGAGE' LINE (SEE SM 1505).

IS CABLE OK?
Y N

205
REPAIR/REPLACE AS NECESSARY. (SEE SM 1215, 1505 AND 1511).

206
REPLACE IN THE FOLLOWING ORDER UNTIL PROBLEM IS CORRECTED:
1. DISKETTE ATTACHMENT CARD (SEE SM 1205 AND 1511).
2. DISKETTE DRIVE CONTROL CARD (SEE SM 1572).
3. HEAD LOAD SOLENOID (SEE SM 1542).

207
IS EXTENDED RPQ FEATURE INSTALLED (SEE SM R4902)?
Y N

208

GO TO STEP 213,
ENTRY POINT MM.

209
IS AN EXTERNAL DRIVE FAILING TO LOAD AND UNLOAD HEADS ON THE REMOTE PROCESSOR?
Y N

210

GO TO STEP 213,
ENTRY POINT MM.

211
DOES THE LOCAL PROCESSOR FAIL TO LOAD AND UNLOAD HEADS?
Y N

212

GO TO MAP 1502, ENTRY POINT D.

213
(ENTRY POINT MM)

DIAGNOSE PROBLEM USING THE LOCAL PROCESSOR

1. CHECK CABLE BETWEEN THE DISKETTE ATTACHMENT CARD AND THE MULTIPLEXER CARD FOR CONTINUITY/SHORT CIRCUITS ON 'HEAD ENGAGE' LINE (SEE SM 4505).
2. CHECK CABLE BETWEEN THE MULTIPLEXER CARD AND THE DISKETTE DRIVE CONTROL CARD FOR CONTINUITY/SHORT CIRCUITS ON 'HEAD ENGAGE' LINE (SEE SM 4507 FOR LOCATIONS).

ARE CABLES OK?
Y N

214
REPAIR/REPLACE AS NECESSARY.
1. SEE SM 4579 FOR CABLE FROM DISKETTE ATTACHMENT CARD TO MULTIPLEXER CARD.
2. SEE SM 4511 FOR CABLE FROM MULTIPLEXER CARD TO DRIVE CONTROL CARD.

215
REPLACE IN THE FOLLOWING ORDER UNTIL PROBLEM IS CORRECTED:
1. DISKETTE ATTACHMENT CARD (SEE SM 1205 AND 1511).
2. MULTIPLEXER CARD (SEE SM 4578).
3. DISKETTE DRIVE CONTROL CARD (SEE SM 4572).
4. HEAD LOAD SOLENOID (SEE SM 4542).

216
HAVE ALL ATTACHED DISKETTE DRIVES BEEN TESTED?
Y N

217

GO TO PAGE 20, STEP 200,
ENTRY POINT M.

218
ARE THERE 31SD DRIVES ATTACHED TO THE SYSTEM?
Y N

219
PROBLEM MAY BE THE CUSTOMER'S DISKETTE. PID 0110 AND PID 0120 CAN BE USED TO ISOLATE THESE PROBLEMS. SEE DIAGNOSTIC USER GUIDE 0001 FOR INFORMATION ON USING THESE PROGRAMS.

220
CHECK ALL DISKETTE DRIVE ERASE COILS FOR CONTINUITY BY REMOVING READ/WRITE HEAD CONNECTOR ON THE CONTROL CARD (HEAD 0 ERASE TO HEAD 0 ERASE COMMON). (SEE SM 1502).
(NOTE: PERFORM THIS CHECK ONLY ON 31SD DRIVES.)

ARE ERASE COILS OK?
Y N

221
REPAIR OR REPLACE HEAD CARRIAGE ASSEMBLY WITH OPEN ERASE COIL (SEE SM 1530).

222
PROBLEM MAY BE THE CUSTOMER'S DISKETTE. PID 0110 AND PID 0120 CAN BE USED TO ISOLATE THESE PROBLEMS. SEE DIAGNOSTIC USER GUIDE 0001 FOR INFORMATION ON USING THESE PROGRAMS.

223

GO TO PAGE 26, STEP 247,
ENTRY POINT T.

224
CHECK CONFIGURATION FOR OTHER PROCESSOR.

1. LOAD DCP ON OTHER PROCESSOR.
2. WHEN DCP MENU IS DISPLAYED, ENTER OPTION '0' TO LOAD PID 1505 DISKETTE FLT (PART 1).
3. SELECT OPTION 2.
4. RUN PID 1505 WITHOUT LOOP ON ANY CONNECTED DRIVE UNTIL THE CONFIGURATION RECORD IS DISPLAYED.

(NOTE: WAIT MAXIMUM 4 MINUTES FOR
(STEP 224 CONTINUES)

(STEP 224 CONTINUED)
CONFIGURATION.

CONFIGURATION RECORD DISPLAYS WITHOUT ENDING STATUS '032'?
Y N
|
| 225
|
| GO TO PAGE 26, STEP 247,
| ENTRY POINT T.
|
226
IS CONFIGURATION OK?
Y N
|
| 227
|
| GO TO PAGE 7, STEP 067,
| ENTRY POINT U.
|
228

GO TO PAGE 9, STEP 087,
ENTRY POINT V.

229
(ENTRY POINT D)

1. POWER DOWN.
2. RETURN CABLES TO ORIGINAL POSITION IF NOT IN ORIGINAL POSITION.
3. EXCHANGE DRIVE CONTROL CARD ON FAILING DRIVE. VERIFY THAT DISKETTE IS IN FAILING DRIVE. (SEE SM 1572 OR 4572).
4. POWER UP.
5. RUN TEST (PID 1510) ON FAILING DRIVE AGAIN.

DID THE SAME FAILURE OCCUR?
Y N
|
| 230
| VERIFY REPAIR.
|
231
DID AN EXTERNAL DRIVE FAIL (DRIVE 3 OR 4)?
Y N
|
| 232
| 1. CHECK CABLE FROM DISKETTE DRIVE CONTROL CARD TO DISKETTE ATTACHMENT CARD FOR CONTINUITY ON 'SENSE LINE' B05 (SEE SM 1505).
| 2. REPAIR/REPLACE AS NECESSARY (SEE SM 1215, 1505 AND 1511).
| 3. REPLACE DISKETTE ATTACHMENT CARD (SEE SM 1205 AND 1511).
| 4. VERIFY REPAIR.
|
|
|
|
|
|
|
|
|
|

233

1. CHECK CABLE FROM DISKETTE DRIVE CONTROL CARD TO MULTIPLEXER CARD FOR CONTINUITY ON SENSE LINE B05. (SEE SM 4507).
2. REPAIR/REPLACE AS NECESSARY (SEE SM 4511).
3. CHECK CABLE FROM MULTIPLEXER CARD TO DISKETTE ATTACHMENT CARD FOR CONTINUITY ON 'DISKETTE SENSE' LINE (SEE SM 4505).
4. REPAIR/REPLACE AS NECESSARY (SEE SM 4579).
5. REPLACE MULTIPLEXER CARD (SEE SM 4578).
6. REPLACE DISKETTE ATTACHMENT CARD (SEE SM 1205 AND 1511).
7. VERIFY REPAIR.

234

(ENTRY POINT H)

(EXTERNAL DRIVES)

DOES SYSTEM HAVE ONLY ONE EXTERNAL DISKETTE DRIVE (DRIVE 3)?

Y N

235

1. MOVE DISKETTE TO OTHER EXTERNAL DRIVE.
2. POWER OFF.
3. POWER ON.
4. RUN PID 1510 ON OTHER DRIVE UNTIL DISKETTE TYPE IS DISPLAYED.
5. READ CAUTION MESSAGE AND VERIFY THAT THE TYPE OF DISKETTE SENSED IS EQUAL WITH DISKETTE INSERTED.

TYPE OF DISKETTE THE SAME?

Y N

236

1. REPLACE DISKETTE ATTACHMENT CARD (SEE SM 1205 AND 1511).
2. REPLACE MULTIPLEXER CARD (SEE SM 4578).
3. REPAIR/REPLACE CABLE FROM THE MULTIPLEXER CARD TO THE DISKETTE ATTACHMENT CARD (SEE SM 4505, 4579).

237

IS DRIVE 3 THE FAILING DRIVE?

Y N

238
1. POWER DOWN.
2. MOVE DRIVE 4 CABLE AT MULTIPLEXER CARD TO DRIVE 3 POSITION (SEE SM 4506 AND 4501).
3. POWER UP.
4. INSTALL DISKETTE IN DRIVE FOUR. SELECT DRIVE 3.
5. RUN PID 1510 AGAIN.

IS THE FAILURE THE SAME AS THE ORIGINAL FAILURE?
Y N

239
1. REPLACE MULTIPLEXER CARD (SEE SM 4578).
2. RETURN CABLES TO ORIGINAL POSITION.
3. VERIFY REPAIR.

240
RETURN CABLES TO ORIGINAL POSITION.
GO TO PAGE 23, STEP 229, ENTRY POINT D.

241
1. POWER DOWN.
2. MOVE DRIVE 3 CABLE AT THE MULTIPLEXER CARD TO DRIVE 4 POSITION (SEE SM 4506 AND 4501).
3. POWER UP.
4. INSTALL DISKETTE IN DRIVE 3. SELECT DRIVE 4.
5. RUN PID 1510 AGAIN.

IS THE FAILURE THE SAME AS THE ORIGINAL FAILURE?
Y N

242
1. REPLACE MULTIPLEXER CARD (SEE SM 4578).
2. RETURN CABLES TO ORIGINAL POSITION.
3. VERIFY REPAIR.

243
RETURN CABLES TO ORIGINAL POSITION.
GO TO PAGE 23, STEP 229, ENTRY POINT D.

244
1. POWER DOWN.
2. MOVE CABLE FROM DRIVE 3 TO DRIVE 4 CONNECTOR AT THE MULTIPLEXER CARD.
3. POWER UP.
4. SELECT DRIVE 4.
5. RUN PID 1510 UNTIL DISKETTE TYPE IS DISPLAYED.

IS TYPE OF DISKETTE THE SAME?
Y N

245
1. REPLACE DRIVE CONTROL CARD (SEE SM 4572).
2. CHECK CABLE BETWEEN DISKETTE DRIVE CONTROL CARD AND MULTIPLEXER CARD FOR CONTINUITY OR SHORT CIRCUITS (SEE SM 4507).
3. REPAIR/REPLACE AS NECESSARY (SEE SM 4511).
4. CHECK CABLE BETWEEN MULTIPLEXER CARD AND DISKETTE ATTACHMENT CARD FOR CONTINUITY OR SHORT CIRCUITS (SEE SM 4505).
5. REPAIR/REPLACE AS NECESSARY (SEE SM 4579).
6. REPLACE MULTIPLEXER CARD (SEE SM 4578).
7. REPLACE DISKETTE ATTACHMENT
(STEP 245 CONTINUES)

(STEP 245 CONTINUED)
CARD (SEE SM 1205 AND 1511).

246
1. REPLACE THE DISKETTE ATTACHMENT CARD (SEE SM 1205 AND 1511).
2. REPLACE MULTIPLEXER CARD (SEE SM 4578).

247
(ENTRY POINT T)

ERROR 32?
Y N

248
1. REPLACE MULTIPLEXER CARD (SEE SM 4578).
2. VERIFY REPAIR.

249
IS SHARED EXTERNAL DRIVES FEATURE INSTALLED?
Y N

250
MOVE CABLE TO OTHER PORT ON THE MULTIPLEXER CARD.

SAME FAILURE?
Y N

251
REPLACE MULTIPLEXER CARD (SM 4578).

252
1. CHECK CABLE BETWEEN THE MULTIPLEXER CARD AND THE DISKETTE ATTACHMENT CARD FOR CONTINUITY/SHORT CIRCUITS (SEE SM 4505).
2. REPAIR/REPLACE IF NECESSARY (SEE SM 4579).
3. REPLACE MULTIPLEXER CARD (SM 4578).
4. REPLACE DISKETTE ATTACHMENT CARD (SM 1205 AND 1511).

253
BOTH PROCESSORS FAIL?
Y N

254
IS REMOTE RPQ PROCESSOR INSTALLED?
Y N

255
NOTE WHICH EXTERNAL PORT THE FAILING PROCESSOR IS CONNECTED TO.

1. POWER DOWN.
2. SWAP PORTS AT THE MULTIPLEXER CARD.
3. POWER UP.
4. RUN DIAGNOSTIC AGAIN.

DOES SAME PROCESSOR FAIL ON OTHER PORT?
Y N

256
ERROR 32 ON OTHER PROCESSOR?
Y N

257
ERROR DISAPPEARED.
1. RETURN CABLES TO ORIGINAL POSITIONS.
2. VERIFY.
3. IF ERROR RETURNS, REPLACE MULTIPLEXER CARD (SEE SM 4578).

258
REPLACE MULTIPLEXER CARD (SEE SM 4578).

259
1. REMOVE CABLE OF WORKING PROCESSOR AT MULTIPLEXER CARD.
2. POWER DOWN, THEN POWER UP THE PROCESSOR AND THE 5246.
3. RUN DIAGNOSTICS AGAIN.

SAME FAILURE?
Y N

260
CHECK CABLE OF WORKING PROCESSOR FOR OPEN/SHORTS (SEE SM 4505).

IS CABLE OK?
Y N

261
REPAIR/REPLACE CABLE (SEE SM 4579).

262
REPLACE DISKETTE ATTACHMENT CARD OF WORKING PROCESSOR (SEE SM 1205 AND 1511).

263
CHECK CABLE FROM DISKETTE ATTACHMENT CARD TO MULTIPLEXER CARD FOR OPEN/SHORTS (SEE SM 4505).

IS CABLE OK?
Y N

264
REPAIR/REPLACE CABLE (SEE SM 4579).

265
REPLACE DISKETTE ATTACHMENT CARD OF FAILING PROCESSOR (SEE SM 1205 AND 1511).

266
IS REMOTE PROCESSOR FAILING?
Y N

267
1. REMOVE CABLE GOING TO REMOTE PROCESSOR AT THE MULTIPLEXER CARD.
2. POWER OFF THE PROCESSOR AND THE 5246.
3. POWER ON THE LOCAL PROCESSOR.
4. RUN LOCAL PROCESSOR AGAIN.

SAME FAILURE?
Y N

268

GO TO MAP 1502, ENTRY POINT A.

269
1. CHECK CABLE FROM LOCAL PROCESSOR TO MULTIPLEXER CARD FOR OPEN/SHORTS (SEE SM 4505).
   REPAIR/REPLACE CABLE (SEE SM 4579).
2. REPLACE DISKETTE ATTACHMENT CARD IN LOCAL PROCESSOR (SEE SM 1205 AND 1511).
3. REPLACE MULTIPLEXER CARD (SEE SM 4578 OR R4908).

270
1. REMOVE CABLE AT THE MULTIPLEXER CARD GOING TO THE LOCAL PROCESSOR.
2. POWER OFF, THEN ON, BOTH THE REMOTE PROCESSOR AND THE EXTERNAL DRIVES.
3. RUN FAILING DIAGNOSTICS.

SAME FAILURE?
Y N

271
CHECK CABLE FROM LOCAL PROCESSOR TO MULTIPLEXER CARD FOR OPEN/SHORTS (SEE SM 4505).

IS CABLE OK?
Y N

272
REPAIR/REPLACE CABLE (SEE SM 4579).

273
1. REPLACE DISKETTE ATTACHMENT CARD ON LOCAL PROCESSOR (SEE SM 1205 AND 1511).
2. REPLACE MULTIPLEXER CARD (SEE SM 4578 OR R4908).

274

GO TO MAP 1502, ENTRY POINT D.

275
1. REPLACE MULTIPLEXER CARD (SEE SM 4578).
2. VERIFY REPAIR.

276
(ENTRY POINT BB)

THIS SECTION OF THE MAP CHART IS TO BE USED SPECIFICALLY FOR ENDING STATUS '031', 'DRIVE WAS NOT READY'.

THIS ERROR INDICATES THAT AT SOME PERIOD OF TIME THE MICROPROCESSOR ON THE ATTACHMENT CARD READ THAT THE SELECTED DISKETTE DRIVE WENT FROM 'READY' TO 'NOT READY', AND THEN BECAME READY. THIS ERROR IS INTERMITTENT.

THE MICROPROCESSOR CHECKS THE INDEX PULSE OF THE DISKETTE DRIVES ATTACHED. THIS STATUS IS REPORTED IF, FOR A PERIOD OF TIME, INDEX PULSES ARE MISSING. OBSERVE THE FAILING DRIVE FOR VISIBLE REASONS FOR MISSING INDEX, SUCH AS DRIVE MOTOR STOPPING, DRIVE BELT SLIPPING ON SPINDLE PULLEY, DISKETTE NOT TURNING INTERMITTENTLY.

IS THERE A VISIBLE REASON FOR MISSING INDEX PULSE?
Y N

277
(ENTRY POINT CC)

DOES PROCESSOR HAVE ONLY ONE DRIVE?
Y N

278
DOES PROCESSOR HAVE BOTH INTERNAL AND EXTERNAL DRIVES?
Y N

3 3 3
1 0 0
C C C C
J K L M

C MAP 1500-29
M

279
ARE DRIVES 1 AND 2 INSTALLED?
Y N

280
ARE EXTERNAL DRIVES SHARED WITH ANOTHER PROCESSOR?
Y N

281
BOTH DRIVES GIVE ENDING STATUS '031'?
Y N

282

GO TO PAGE 31,
STEP 307,
ENTRY POINT P.

283

GO TO PAGE 31, STEP 306,
ENTRY POINT S.

284
DO BOTH PROCESSORS REPORT ENDING STATUS '031'?
Y N

285

GO TO PAGE 31, STEP 306,
ENTRY POINT S.

286

GO TO PAGE 31, STEP 307,
ENTRY POINT P.

287
BOTH DRIVES REPORT ENDING STATUS '031'?
Y N

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3 3
0 0 EC994445 PEC987896
C C
N P

288

GO TO STEP 302,
ENTRY POINT K.

289
REPLACE DISKETTE ATTACHMENT CARD (SEE SM 1205 AND 1511).

290
DO OTHER DISKETTE DRIVES REPORT ENDING STATUS '031'?
Y N

291
IS DRIVE 1 OR 2 FAILING?
Y N

292
ARE EXTERNAL DRIVES SHARED WITH ANOTHER PROCESSOR?
Y N

293

GO TO PAGE 31,
STEP 304,
ENTRY POINT N.

294
DOES OTHER PROCESSOR REPORT ENDING STATUS '031' ON FAILING DRIVE?
Y N

295

GO TO PAGE 31,
STEP 306,
ENTRY POINT S.

296

GO TO PAGE 31, STEP 307,
ENTRY POINT P.

297

GO TO STEP 302,
ENTRY POINT K.

298
DRIVES 3 AND/OR 4 FAILING?
Y N

299
REPLACE DISKETTE ATTACHMENT CARD (SEE SM 1205 AND 1511).

300

GO TO PAGE 31, STEP 306,
ENTRY POINT S.

301
IS DRIVE 3 INSTALLED?
Y N

302
(ENTRY POINT K)

DRIVE 1 OR 2
1. REPLACE DISKETTE ATTACHMENT CARD (SEE SM 1205 AND 1511).
2. REPLACE LED ASSEMBLY (SEE SM 1570).
3. REPLACE PTX ASSEMBLY (SEE SM 1571).
4. REPLACE CABLE FROM DISKETTE ATTACHMENT CARD TO DRIVE CONTROL CARD (SEE SM 1215, 1505 AND 1511).
5. REPLACE DRIVE CONTROL CARD (SEE SM 1572).
6. REPLACE DRIVE MOTOR (SEE SM 1550).
7. IF BINDING SPINDLE PULLEY, REPLACE DISKETTE DRIVE ASSEMBLY (SEE SM 1510).

303
IS DRIVE 3 SHARED WITH ANOTHER PROCESSOR?
Y N

304
(ENTRY POINT N)

DRIVE 3 OR 4
1. REPLACE MULTIPLEXER CARD (SEE SM 4578).
2. REPLACE CABLE FROM MULTIPLEXER CARD TO DRIVE CONTROL CARD (SEE SM 4511).
3. REPLACE CABLE FROM MULTIPLEXER CARD TO DISKETTE ATTACHMENT CARD (SEE SM 4579).
4. REPLACE LED ASSEMBLY (SEE SM 4570).
5. REPLACE PTX ASSEMBLY (SEE SM 4571).
6. REPLACE DISKETTE ATTACHMENT CARD (SEE SM 1205 AND 1511).
7. REPLACE DRIVE CONTROL CARD (SEE SM 4572).
8. REPLACE DRIVE MOTOR (SEE SM 4550).
9. IF BINDING SPINDLE PULLEY, REPLACE DISKETTE DRIVE ASSEMBLY (SEE SM 4510).

305
IS OTHER PROCESSOR REPORTING ENDING STATUS '031'?
Y N

C C
T U

306
(ENTRY POINT S)

DRIVE 3 OR 4
1. REPLACE DISKETTE ATTACHMENT CARD (SEE SM 1205 AND 1511).
2. REPLACE CABLE FROM DISKETTE ATTACHMENT CARD TO MULTIPLEXER CARD (SEE SM 4579).
3. REPLACE MULTIPLEXER CARD (SEE SM 4578).

307
(ENTRY POINT P)

DRIVE 3 OR 4
1. REPLACE MULTIPLEXER CARD (SEE SM 4578).
2. REPLACE CABLE FROM MULTIPLEXER CARD TO DRIVE CONTROL CARD (SEE SM 4511).
3. REPLACE LED ASSEMBLY (SEE SM 4570).
4. REPLACE PTX ASSEMBLY (SEE SM 4571).
5. REPLACE DRIVE MOTOR (SEE SM 4550).
6. REPLACE DRIVE CONTROL CARD (SEE SM 4572).
7. IF BINDING SPINDLE PULLEY, REPLACE DISKETTE DRIVE ASSEMBLY (SEE SM 4510).

308
DID THE DISKETTE DRIVE PULLEY STOP TURNING?
Y N

309
DID DISKETTE FAIL TO TURN?
Y N

310

GO TO PAGE 29, STEP 277, ENTRY POINT CC.

311

CHECK DRIVE PULLEY AND SPINDLE ASSEMBLY FOR BINDS OR THAT DRIVE PULLEY AND SPINDLE ARE STRONGLY ATTACHED TO EACH OTHER.

IS PULLEY ASSEMBLY OK?
Y N

312

REPLACE COMPLETE DISKETTE DRIVE ASSEMBLY (1510 OR 4510).

313

CHECK HEAD LOAD ADJUSTMENTS (SEE SM 1540 OR 4540).

IS HEAD LOAD ADJUSTMENT OK?
Y N

314

ADJUST AND VERIFY (SEE SM 1540 AND 1542 OR SM 4540 AND 4542).

315

REPLACE COLLET ASSEMBLY (SEE SM 1521 OR 4521).

316

DID MOTOR PULLEY STOP TURNING?
Y N

317

REPLACE DRIVE BELT (SEE SM 1552 OR 4552).

318

1. POWER OFF.
2. CHECK AC CONNECTOR TO DRIVE MOTOR FOR LOOSE CONNECTIONS (SEE SM 1200 OR 4574).

IS THE AC CONNECTOR OK?
Y N

319

REPAIR/REPLACE (SEE SM 1200 OR 4574).

320

1. POWER UP.
2. MEASURE AC VOLTAGE TO FAILING DISKETTE DRIVE MOTOR (SEE SM 1210 OR 4574).

IS VOLTAGE OK?
Y N

321

FOR DRIVE 3 AND 4
GO TO MAP 1560, ENTRY POINT A.

FOR DRIVE 1 AND 2
GO TO MAP 1250, ENTRY POINT A.

322

1. REPLACE MOTOR START CAPACITOR (SEE SM 1551 OR 4551).
2. REPLACE AC DRIVE MOTOR (SEE SM 1550 OR 4550).

DISKETTE ENTRY

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP: ENTRY POINT	PAGE NUMBER	STEP NUMBER
1000	A	1	001
1000	AA	2	004
1000	DD	4	035
1150	EE	2	014

EXIT POINTS

EXIT THIS MAP: PAGE NUMBER	STEP NUMBER	TO: MAP NUMBER	ENTRY POINT
2	005	1500	A
2	007	1500	A
2	009	1500	A
4	036	1500	F
4	038	1500	F
4	040	1500	F
3	029	1500	G
4	032	1500	G
4	033	1500	T
4	034	1500	T
2	015	1500	U
3	018	1500	U
3	020	1500	U
2	010	1502	A
3	019	1502	A
4	041	1502	A

001
(ENTRY POINT A)
WAS FAILING DRIVE IDENTIFIED BY
THE CUSTOMER?
Y N
|
| 002
|
| GO TO PAGE 2, STEP 011,
| ENTRY POINT BB.
|
003
ATTEMPT TO LOAD DCP ON THE
'FAILING' DRIVE.

DOES DCP LOAD OK?
Y N
| |
| |
| |
| |
| |
| |
| | 22FEB82 PN6842271
| |
EC323398 PEC994445

2 2
A B

004
(ENTRY POINT AA)

IS EXTENDED RPQ FEATURE INSTALLED (SEE SM R4902)?
Y N

| 005
| GO TO MAP 1500, ENTRY POINT A.

006
IS THE EXTERNAL DRIVE FAILING ON THE REMOTE PROCESSOR?
Y N

| 007
| GO TO MAP 1500, ENTRY POINT A.

008
DOES LOCAL PROCESSOR RUN OK ON EXTERNAL DRIVES?
Y N

| 009
| (DIAGNOSE DISKETTE DRIVE OTHER THAN THE EXTENDED DRIVE)
| GO TO MAP 1500, ENTRY POINT A.

010
(EXTENDED RPQ FEATURE PROBLEM)
GO TO MAP 1502, ENTRY POINT A.

011
(ENTRY POINT BB)

LOAD PID 1505 (OPTION 2 ONLY).

DID PID 1505 LOAD OK?
Y N

| 012
| GO TO STEP 004,
| ENTRY POINT AA.

013
CHECK DISKETTE CONFIGURATION (I-003 MESSAGE) SHOWN WHEN PID 1505 IS RUN.

IS DISKETTE CONFIGURATION OK?
Y N

| 014
| (ENTRY POINT EE)
|
| IS EXTENDED RPQ FEATURE INSTALLED (SEE SM R4902)?
| Y N
| | 015
| | GO TO MAP 1500, ENTRY POINT U.
| 016
| IS THE CONFIGURATION RECORD FOR THE REMOTE PROCESSOR CORRECT?
| Y N
| | 017
| | IS CONFIGURATION RECORD OK FOR LOCAL PROCESSOR?
| | Y N

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C D E F SYSTEM 23
2 2 2 2

DISKETTE ENTRY

PAGE 3 OF 4

018
(DIAGNOSE DISKETTE DRIVE OTHER THAN THE EXTENDED DRIVE)
GO TO MAP 1500,
ENTRY POINT U.

019
(EXTENDED RPQ FEATURE PROBLEM)
GO TO MAP 1502,
ENTRY POINT A.

020

GO TO MAP 1500, ENTRY POINT U.

021
WHEN MESSAGE A-003 APPEARS, SELECT THE DRIVE THAT DCP WAS LOADED FROM.

(ENTRY POINT CC)

CONTINUE WITH THE RUNNING OF OPTION 2, PID 1505.

DID PID 1505 RUN WITHOUT ERRORS?
Y N

022

GO TO PAGE 2, STEP 004,
ENTRY POINT AA.

023
RUN PID 1510

(NOTE: RESPOND WITH DRIVE NUMBER IF DCP MESSAGE A-0020 'ENTER DRIVE NUMBER (X)' IS DISPLAYED.)

DID PID 1510 LOAD OK?
Y N

G H

024
REPLACE CE DISKETTE.

025
RUN PID 1510 ON FAILING (SUSPECTED) DRIVE.

WAS AN ERROR FOUND BY PID 1510?
Y N

026
HAVE ALL DRIVES ON SYSTEM BEEN TESTED?
Y N

027
1. RESTART OPTION 2 OF PID 1505.
2. WHEN MESSAGE A-003 APPEARS, MOVE THE DIAGNOSTIC DISKETTE TO A DRIVE THAT HAS NOT BEEN TESTED AND ENTER THE DRIVE NUMBER.
GO TO STEP 021,
ENTRY POINT CC.

028
ARE EXTERNAL DISKETTES PRESENT AND ATTACHED TO ANOTHER PROCESSOR?
Y N

029

GO TO MAP 1500,
ENTRY POINT G.

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4 4
J K

030
1. POWER DOWN BOTH PROCESSORS.

2. INSERT THE DIAGNOSTIC DISKETTE IN DRIVE 3.

3. POWER UP BOTH PROCESSORS.

4. SELECT PID 1500 (ROS RESIDENT DISKETTE TEST).

5. SELECT DRIVE 3 FROM BOTH PROCESSORS.

6. EXECUTE PID 1500 IN 'LOOP' MODE (LET PID 1500 LOOP AT LEAST 4 TIMES.)

DOES ROS RESIDENT DISKETTE DRIVE TEST (PID 1500) SHOW AN ERROR FROM EITHER PROCESSOR OR DOES EITHER PROCESSOR FAIL TO COMPLETE ROUTINES 07 THROUGH 0A?
Y N

031
REPEAT THE PROCEDURE IN THE LAST STEP FOR DISKETTE DRIVE 4, IF PRESENT.

DOES PID 1500 SHOW AN ERROR FROM EITHER PROCESSOR?
Y N

032

GO TO MAP 1500, ENTRY POINT G.

033

GO TO MAP 1500, ENTRY POINT T.

034

GO TO MAP 1500, ENTRY POINT T.

035
(ENTRY POINT DD)

IS EXTENDED RPQ FEATURE INSTALLED (SEE SM R4902)?
Y N

036

GO TO MAP 1500, ENTRY POINT F.

037
IS AN EXTERNAL DRIVE FAILING ON THE REMOTE PROCESSOR?
Y N

038

GO TO MAP 1500, ENTRY POINT F.

039
POWER OFF REMOTE PROCESSOR.

DOES LOCAL PROCESSOR RUN OK ON EXTERNAL DRIVES?
Y N

040
(DIAGNOSE DISKETTE DRIVE OTHER THAN THE EXTENDED DRIVE)
GO TO MAP 1500, ENTRY POINT F.

041
(EXTENDED RPQ FEATURE PROBLEM)
GO TO MAP 1502, ENTRY POINT A.

EXTENDED RPQ FEATURE

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1500	A	1	001
1500	D	3	013
1501	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	008	1500	A
2	012	1500	A

001
(ENTRY POINT A)

VERIFY THAT ALL CABLE CONNECTORS FROM PROCESSOR TO EXTERNAL DRIVES ARE CONNECTED:

1. CABLE AT MULTIPLEXER CARD CONNECTED TO EXTENDED PORT 2 (SEE SM R4902).
2. EXTENDED CABLE WHERE IT CONNECTS TO CABLE GOING TO MULTIPLEXER CARD (SEE SM R4902)
3. EXTENDED CABLE WHERE IT CONNECTS TO THE EXTENDED FEATURE CARD AT THE REMOTE PROCESSOR (SEE SM R4902).
4. CABLE FROM DISKETTE ATTACHMENT CARD TO THE EXTENDED FEATURE CARD IN THE REMOTE PROCESSOR (SEE SM R4902).
5. JUMPER BLOCK ASSEMBLY ON EXTENDED FEATURE CARD IS CONNECTED (SM R4900).

ARE CABLES CONNECTED?
Y N
| |
| |
| |
| |
| |
| |
| |
| |
| |
| |

002
CONNECT CABLES AND RUN TEST THAT FAILED AGAIN.

IS PROCESSOR RUNNING OK NOW?
Y N

003

GO TO STEP 005,
ENTRY POINT B.

004
VERIFY REPAIR.

005
(ENTRY POINT B)

DOES REMOTE PROCESSOR HAVE INTERNAL DISKETTE DRIVE(S)?
Y N

006

GO TO STEP 009,
ENTRY POINT C.

007
RUN THE FAILING DIAGNOSTIC ON DRIVE 1, ON REMOTE PROCESSOR.

TEST RUNS OK?
Y N

008
(DIAGNOSE FAILURE ON INTERNAL DISKETTE DRIVE)
GO TO MAP 1500, ENTRY POINT A.

009
(ENTRY POINT C)

1. POWER OFF EXTERNAL DRIVES.
2. REMOVE CABLE CONNECTED TO EXTENDED PORT 2, (CABLE THAT CONNECTS TO THE REMOTE PROCESSOR) AT THE MULTIPLEXER CARD (SEE SM R4900, R4902).
3. MOVE CABLE CONNECTED TO PORT 1 TO NORMAL PORT 2 CONNECTOR (SEE SM R4900).
4. POWER ON EXTERNAL DRIVES.
5. RUN FAILING DIAGNOSTIC AGAIN USING LOCAL PROCESSOR.

TEST RUN OK?
Y N

010
1. POWER DOWN.
2. REPLACE MULTIPLEXER CARD (SEE SM R4908).
3. POWER UP.
4. RUN FAILING DIAGNOSTIC AGAIN USING PROCESSOR ON NORMAL PORT 2.

SAME FAILURE?
Y N

011
1. REINSTALL ALL CABLES TO THEIR NORMAL POSITIONS (SEE SM R4902).
2. VERIFY REPAIR.

012
(DIAGNOSE FAILURE WITH LOCAL PROCESSOR CONNECTED TO NORMAL PORT 2)
GO TO MAP 1500, ENTRY POINT A.

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013
(ENTRY POINT D)

(CHECK EXTENDED FEATURE CABLE)

1. POWER DOWN REMOTE PROCESSOR.
2. CHECK CABLE BETWEEN DISKETTE ATTACHMENT CARD AND EXTENDED FEATURE CARD FOR OPENS OR SHORT CIRCUITS (SEE SM R4900).
3. CHECK THE JUMPER BLOCK ON THE EXTENDED FEATURE CARD FOR OPENS OR SHORT CIRCUITS (SEE SM R4902).

IS THE CABLE AND BLOCK OK?
Y N

014
REPAIR/REPLACE AS NECESSARY (SEE SM R4906).

015
1. POWER OFF REMOTE PROCESSOR AND EXTERNAL DRIVES.
2. DISCONNECT CABLES AT EXTENDED FEATURE CARD AND MULTIPLEXER CARD (SEE SM R4902).
3. CHECK CABLES FOR SHORT CIRCUIT SEE SM R4906). DO NOT SEPARATE CABLE BETWEEN EXTENDED FEATURE CARD AND MULTIPLEXER CARD.

IS CABLE OK?
Y N

016
1. ISOLATE THE SHORT CIRCUIT. IT MAY BE IN THE SHORT CABLE OR IN THE LONG EXTENDED CABLE. (TO ISOLATE SHORT CIRCUIT, DISCONNECT EXTENDED CABLE AND SHORT CABLE AT THE SHORT CABLE CONNECTOR. SEE SM R4902).
2. REPAIR AS NECESSARY (SEE SM R4906).
3. REINSTALL ALL CABLES TO THEIR NORMAL POSITIONS (SEE SM R4902).
4. VERIFY REPAIR.

017
1. MOVE CABLE, AT MULTIPLEXER CARD, FROM EXTENDED PORT 2 TO THE TEST BLOCK (SEE SM R4900).
2. DISCONNECT CABLE (IF NOT ALREADY DISCONNECTED) THAT IS CONNECTED TO THE REMOTE PROCESSOR AT THE EXTENDED FEATURE CARD (SEE SM R4902).
3. CHECK CABLE AT EXTENDED FEATURE CONNECTOR (THE END THAT USUALLY CONNECTS TO THE EXTENDED FEATURE CARD) FOR CONTINUITY (SEE SM R4906).

IS CABLE CONTINUITY OK?
Y N

018
1. ISOLATE THE OPEN. IT MAY BE IN THE SHORT CABLE OR IN THE LONG PART OF THE EXTENDED CABLE (SEE SM R4906).
2. REPAIR AS NECESSARY (SEE SM R4906).
3. REINSTALL ALL CABLES TO THEIR NORMAL POSITIONS (SEE SM R4902).
4. VERIFY REPAIR.

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EXTENDED RPQ FEATURE

019

1. REPLACE EXTENDED FEATURE CARD (SEE SM R4900, R4904).
2. REPLACE MULTIPLEXER CARD (SEE SM R4908).
3. REPLACE DISKETTE ATTACHMENT CARD (SEE SM R4900, R4904).
4. REPLACE CPU PLANAR BOARD (SEE SM 1230).

PID 1500/1505 FAIL

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1500	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
3	019	1250	A
9	073	1250	A
4	026	1250	A
8	068	1500	B
8	065	1540	A
13	095	1540	A
6	046	1545	A
8	067	1555	A
12	090	1555	A
13	092	1555	A
9	073	1560	A
13	097	1560	A

001
(ENTRY POINT A)

* * * NOTE * * *

IF EXTENDED RPQ FEATURE IS INSTALLED ON THE PROCESSOR, USE SM R4904 FOR REMOVAL/REPLACEMENT OF THE DISKETTE ATTACHMENT CARD.

IF EXTENDED RPQ FEATURE IS INSTALLED ON THE 5246 DISKETTE UNIT, USE SM R4908 FOR REMOVAL/REPLACEMENT OF THE MULTIPLEXER CARD.

(STEP 001 CONTINUES)

(STEP 001 CONTINUED)
SEE NOTE 1. >>>>---------->

1. CHECK FOR LOOSE OR BROKEN BELT AND CHECK CABLES FOR CORRECT SEATING. LOOK FOR LOOSE OR DAMAGED PARTS.
2. REPAIR/REPLACE AS NEEDED.
3. ENSURE THAT THE DISKETTE DRIVE PULLEY IS TURNING IN THE RIGHT DIRECTION (COUNTERCLOCKWISE WHEN SEEN FROM THE CONTROL CARD SIDE). IF ROTATION IS IN THE WRONG DIRECTION, REPLACE:
   A. MOTOR START CAPACITOR (SEE SM 1551 OR 4551).
   B. DISKETTE DRIVE MOTOR (SEE SM 1550 OR 4550).
4. IF NONE OF THESE PROBLEMS ARE FOUND, ANSWER THE FOLLOWING STEP:

DID ROUTINES 0 THROUGH 4 OF PID 1500 OR 1505 RUN OK?
Y N
|
| 002
| IS ENDING STATUS '10' MISSING +24V?
| Y N
| |
| | 003
| | 1. REPLACE DISKETTE ATTACHMENT CARD. (SEE SM 1205 AND 1511).
| | 2. RUN PID 1500 AGAIN.
| |
| | IS FAILURE THE SAME?
| | Y N
| | |
| | | 004
| | | VERIFY.

4 3 3
A B C

NOTE 1:
REFERENCE TO SM 12XX OR 15XX INDICATES INTERNAL DRIVES 1 OR 2, SM 45XX IS FOR EXTERNAL DRIVES 3 OR 4.

005
1. REMOVE ALL FEATURE I/O CARDS EXCEPT DISKETTE ATTACHMENT CARD (SEE SM 1230).
2. RUN FAILING PID AGAIN.

IS FAILURE THE SAME?
Y N

006
REINSTALL FEATURE I/O CARDS, ONE AT A TIME, UNTIL ERROR OCCURS. THE LAST I/O CARD INSTALLED THAT CAUSED ERROR TO OCCUR AGAIN IS BAD. REPLACE IT.

DID I/O CARD CAUSE AN ERROR?
Y N

007
REPLACE CPU PLANAR BOARD (SEE SM 1230).

008
VERIFY REPAIR.

009
REPLACE CPU PLANAR BOARD (SEE SM 1230).

010
IS DRIVE 1 ATTACHED?
Y N

011
IS DRIVE 3 ATTACHED?
Y N

012
NOT A VALID CONFIGURATION OF DISKETTES.

013
CHECK JUMPER FOR 'NO INTERNAL DISKETTES INSTALLED ON SYSTEM' (SEE SM 1230).

IS JUMPER INSTALLED?
Y N

014
1. INSTALL JUMPER (SEE SM 1230).
2. VERIFY REPAIR.

015
REPLACE CPU PLANAR BOARD (SEE SM 1230).

016
(MISSING +24V TO THE DISKETTE ATTACHMENT CARD.)

CHECK +24V AT THE DISKETTE ATTACHMENT CARD (SM 1505).

IS VOLTAGE PRESENT?
Y N

017
CHECK FOR OPEN/SHORT CIRCUIT IN THE CABLE FROM DRIVE 1 AND THE POWER SUPPLY TO THE DISKETTE ATTACHMENT CARD (SEE SM 1505).

IS CABLE OK?
Y N

018
REPAIR/REPLACE AS NECESSARY (SEE SM 1215, 1505 AND 1511).

019

GO TO MAP 1250, ENTRY POINT A.

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020
REPLACE DISKETTE ATTACHMENT CARD (SEE SM 1205 AND 1511).

021
(ROUTINE 05 THROUGH 0A FAILURE)

IS FAILING DRIVE INTERNAL DRIVE 1 OR DRIVE 2?
Y N

022
(DRIVE 3 OR 4 FAILURE)
GO TO PAGE 13, STEP 096, ENTRY POINT C.

023
CHECK THE DC VOLTAGES AT FAILING DISKETTE DRIVE CONTROL CARD (SEE SM 1502 (31SD), 1503 (51TD).

ARE THE VOLTAGES OK?
Y N

024
CHECK FOR OPEN/SHORT CIRCUIT IN THE CABLE FROM FAILING DRIVE AND THE POWER SUPPLY TO THE DISKETTE ATTACHMENT CARD (SEE SM 1505).

IS CABLE OK?
Y N

025
REPAIR/REPLACE AS NECESSARY (SEE SM 1215, 1505 AND 1511).

026

GO TO MAP 1250, ENTRY POINT A.

027
(DRIVE 1 OR 2 FAILURE)

DOES SYSTEM HAVE ONLY ONE INTERNAL DISKETTE DRIVE?
Y N

028
(TWO INTERNAL DISKETTE DRIVES)

1. MOVE DISKETTE TO THE OTHER INTERNAL DRIVE.
2. POWER OFF.
3. POWER ON.
4. RUN PID 1500 (ROS RESIDENT DISKETTE TEST) ON OTHER DRIVE.

DID PID 1500 RUN OK?
Y N

029
(BOTH INTERNAL DISKETTE DRIVES FAIL)

1. POWER DOWN.
2. REPLACE DISKETTE ATTACHMENT CARD. (SEE SM 1205 AND 1511).
3. POWER UP.
4. VERIFY REPAIR.

IS PROBLEM FIXED
Y N

030
REPLACE CPU PLANAR BOARD (SEE SM 1230).

IS PROBLEM FIXED?
Y N

031
REPLACE CE DISKETTE.

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032
VERIFY REPAIR.

033
VERIFY REPAIR.

034
IS DRIVE 1 THE FAILING DRIVE?
Y N

035
(DRIVE 2 IS FAILING)

1. POWER DOWN.
2. MOVE DRIVE 2 CABLE AT DISKETTE ATTACHMENT CARD TO DRIVE ONE POSITION (SEE SM 1511).
3. POWER UP.
4. INSTALL DISKETTE IN DRIVE TWO.
5. SELECT DRIVE 1. RUN PID 1500 AGAIN (ROS RESIDENT DISKETTE TEST).

IS THE FAILURE THE SAME AS THE ORIGINAL FAILURE?
Y N

036
(DRIVE 2 OK IN DRIVE 1 POSITION)

1. REPLACE DISKETTE ATTACHMENT CARD (SEE SM 1205 AND 1511).
2. RETURN CABLES TO ORIGINAL POSITION.
3. VERIFY REPAIR.

037
(DRIVE 2 FAILED IN DRIVE 1 POSITION)

1. POWER DOWN.
2. RETURN CABLES TO ORIGINAL POSITION.
3. POWER UP.
4. RUN FAILING DIAGNOSTIC AGAIN.

GO TO PAGE 6, STEP 043, ENTRY POINT B.

038
(DRIVE 1 IS FAILING)

1. POWER DOWN.
2. MOVE DRIVE 1 CABLE AT THE DISKETTE ATTACHMENT CARD TO DRIVE TWO POSITION.
3. POWER UP.
4. INSTALL DISKETTE IN DRIVE 1. SELECT DRIVE 2.
5. RUN PID 1500 AGAIN (ROS RESIDENT DISKETTE TEST).

IS THE FAILURE THE SAME AS THE ORIGINAL FAILURE?
Y N

039
(DRIVE 1 OK IN DRIVE 2 POSITION)

1. REPLACE DISKETTE ATTACHMENT CARD (SEE SM 1205 AND 1511).
2. RETURN CABLES TO ORIGINAL POSITION.
3. VERIFY REPAIR.

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040
(DRIVE 1 FAILED IN DRIVE 2 POSITION)

1. POWER DOWN.
2. RETURN CABLES TO ORIGINAL POSITION.
3. POWER UP.
4. RUN FAILING DIAGNOSTIC AGAIN.

GO TO STEP 043, ENTRY POINT B.

041
(ENTRY POINT E)

(ONE INTERNAL DISKETTE DRIVE)

1. POWER DOWN.
2. MOVE CABLE TO OTHER CONNECTOR ON THE DISKETTE ATTACHMENT CARD (SEE SM 1511).
3. POWER UP.
4. SELECT DRIVE 2.
5. RUN PID 1500 (ROS RESIDENT DISKETTE TEST) ON DRIVE.

DID THE SAME FAILURE OCCUR?
Y N

042
1. REPLACE THE DISKETTE ATTACHMENT CARD (SEE SM 1205 AND 1511).
2. VERIFY REPAIR.

043
(ENTRY POINT B)

1. POWER DOWN.
2. MOVE CABLE TO ORIGINAL POSITION IF NOT ALREADY IN ORIGINAL POSITION.
3. POWER UP.
4. RUN ROS RESIDENT DISKETTE TEST AGAIN ON FAILING DRIVE (PID 1500).

IS ENDING STATUS '0E' OR '21 THROUGH 27' OR '07,1E,1F'?
Y N

044
ROUTINE 5 RUN OK?
Y N

045
IS ENDING STATUS '02' CURRENT ENABLED?
Y N

046
NOT READY FAILURE
GO TO MAP 1545, ENTRY POINT A.

047

GO TO PAGE 9, STEP 070, ENTRY POINT Y.

048
ROUTINE 6 RUN OK?
Y N

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049
(SPEED FAILURE.)

1. POWER DOWN.
2. CHECK SPINDLE PULLEY FOR FREE MOVEMENT. (REPLACE DISKETTE DRIVE ASSEMBLY IF SPINDLE PULLEY HAS BINDS (SEE SM 1510; 4510).
3. CHECK COLLET/SPRING FOR CORRECT OPERATION. (SEE SM 1520 AND 1521 OR 4520 AND 4521).

(ROTATIONAL SPEED ERROR).

STATUS #16 OR #17
1. CHECK MOTOR PULLEY SET SCREW FOR TIGHTNESS.
2. REPLACE DRIVE MOTOR (SEE SM 1550 OR 4550).

(MISSING INDEX OR '1C' OR TIMING ERROR).

STATUS #18 OR #19
1. POWER DOWN THE SYSTEM.
2. CHECK WITH A C.E. OHM METER TO SEE IF THE '+ INDEX' LINE AT THE DISKETTE DRIVE HAS A SHORT CIRCUIT TO GROUND. (A READING OF LESS THAN 90 OHMS IS NEAR A SHORT CIRCUIT). (SEE SM 1502 (31SD), 1503 (51TD) OR 4508 FOR TEST POINT LOCATION.)

DOES THE METER READ MORE THAN 90 OHMS (-METER LEAD TO GROUND, +METER LEAD ON +INDEX)?
Y N

050
(INDEX SHORT PROBLEM)

ISOLATE THE SHORT CIRCUIT (LOW READING) AND REPAIR/REPLACE:

1. SIGNAL CABLE TO DISKETTE DRIVE CONTROL CARD (SEE SM 1215, 1505, 1511 OR 4507, 4511).
2. DISKETTE DRIVE CONTROL CARD. (SEE SM 1572 OR 4572).
3. DISKETTE ATTACHMENT CARD. (SEE SM 1205 AND 1511).
4. PTX ASSEMBLY (SEE SM 1571 OR 4571).
5. DRIVE 3 AND 4 ONLY, MULTIPLEXER CARD AND SIGNAL CABLE FROM THE DISKETTE ATTACHMENT CARD TO THE MULTIPLEXER CARD (SEE SM 4578 AND 4579).

051
1. PERFORM THE LED OUTPUT SERVICE CHECK. (SEE SM 1570 OR 4570 FOR THE LED OUTPUT SERVICE CHECK.)
2. REMOVE OR REPLACE THE LED ASSEMBLY IF NEEDED.

IS THE LED VOLTAGE CORRECT?
Y N

052
1. REPLACE LED ASSEMBLY. (SEE SM 1570 OR 4570).
2. VERIFY REPAIR.

ANY MORE ERRORS?
Y N

053
PROBLEM IS CORRECTED.

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054
REPLACE DISKETTE DRIVE CONTROL CARD AND VERIFY REPAIR (SEE SM 1572 OR 4572).

055
PERFORM THE PTX OUTPUT SERVICE CHECK. (SEE SM 1571 OR 4571 FOR THE PTX OUTPUT SERVICE CHECK.)

IS OUTPUT OK FOR DISKETTE BEING USED?
Y N

056
REPLACE DISKETTE DRIVE CONTROL CARD (SEE SM 1572 OR 4572).

ANY MORE ERRORS?
Y N

057
PROBLEM IS CORRECTED.

058
REPLACE PTX ASSEMBLY (SEE SM 1571 OR 4571).

059
1. REPLACE PTX ASSEMBLY (SEE SM 1571 OR 4571).
2. REPLACE COLLET/SPRING ASSEMBLY (SEE SM 1521 OR 4521).
3. REPLACE LED ASSEMBLY (SEE SM 1570 OR 4570).
4. REPLACE CPU PLANAR BOARD (SEE SM 1230).

060
ROUTINE 7 RUN OK?
Y N

061
IS ENDING STATUS '02' CURRENT ENABLED?
Y N

062
GO TO PAGE 12, STEP 089, ENTRY POINT F.

063
GO TO PAGE 9, STEP 070, ENTRY POINT Y.

064
ROUTINE 9 RUN OK?
Y N

065
READ ERROR.
GO TO MAP 1540, ENTRY POINT A.

066
ROUTINE 0A RUN OK?
Y N

067
SEEK FAILURE.
GO TO MAP 1555, ENTRY POINT A.

068
ROS RESIDENT DISKETTE TEST PID 1500 OR PID 1505 OPTION 2 DISKETTE DIAGNOSTIC RAN OK.
GO TO MAP 1500, ENTRY POINT B.

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069
1. REPLACE DISKETTE ATTACHMENT CARD (SEE SM 1205 AND 1511).
2. REPLACE CPU PLANAR BOARD. (SEE SM 1230).
3. IF EXTERNAL DISKETTE (DRIVE 3,4) REPLACE MULTIPLEXER CARD (SEE SM 4578).

070
(ENTRY POINT Y)

CHECK FOR +5/-5V ON SIGNAL CABLE FOR SELECTED DRIVE (SEE SM 1505 OR SM 4507).

ARE VOLTAGES OK?
Y N
|
| 071
| (DRIVES 1-4 VOLTAGE CHECK).
|
| 1. POWER DOWN.
| 2. CHECK CONTINUITY OF DISKETTE
| DC DISTRIBUTION CABLE. (SEE
| SM 1211 1505 OR 4507).
|
| IS CABLE OK?
| Y N
| |
| | 072
| | REPLACE/REPAIR CABLE (SEE SM
| | 1215, 1211, 1501 AND 1511 OR
| | 4507 AND 4511).
| |
| 073
| (DRIVE 3 AND 4)
| GO TO MAP 1560, ENTRY POINT A.
| ----------
| (DRIVE 1 AND 2)
| GO TO MAP 1250, ENTRY POINT A.
|
074
REPLACE THE DISKETTE ATTACHMENT CARD (SEE SM 1205 AND 1511).

SAME FAILURE?
Y N
|
| 075
| VERIFY REPAIR.
|
|
|
|
|
|

076
IS DRIVE 1 AND/OR DRIVE 2 THE ONLY DRIVES ON THE SYSTEM?
Y N

077
IS DRIVE 1 OR 2 THE FAILING DRIVE?
Y N

078
(DRIVE 3 OR 4 VOLTAGE DISTRIBUTION CHECK)

CHECK FOR +5V/-5V AT THE MULTIPLEXER CARD (SEE SM 4507).

IS VOLTAGE OK?
Y N

079
1. REPLACE/REPAIR CABLE BETWEEN THE MULTIPLEXER CARD AND DISKETTE DRIVE 3 (SEE SM 4511 AND 4500).
2. REPLACE MULTIPLEXER CARD (SEE SM 4578).
3. VERIFY REPAIR.

080
(CHECK IF BOTH EXTERNAL DRIVES ARE FAILING)

INSTALL DISKETTE IN OTHER EXTERNAL DRIVE THREE OR FOUR, RUN PID 1500 (ROS RESIDENT DISKETTE TEST) ON OTHER DRIVE.

SAME FAILURE?
Y N

1
1

081
1. REPAIR/REPLACE CABLE FROM DISKETTE DRIVE CONTROL CARD TO MULTIPLEXER CARD (SEE SM 4511, 4500).
2. REPLACE DISKETTE DRIVE CONTROL CARD (SEE SM 4572).
3. REPLACE MULTIPLEXER CARD (SEE SM 4578).

082
1. REPAIR/REPLACE CABLE FROM DISKETTE ATTACHMENT CARD TO THE MULTIPLEXER CARD (SEE SM 4505 AND 4579).
2. REPLACE THE MULTIPLEXER CARD (SEE SM 4578).

083
(CHECK TO FIND OUT IF THE EXTERNAL DISKETTE IS CAUSING THE PROBLEM)

1. POWER DOWN.
2. DISCONNECT CABLE TO THE MULTIPLEXER CARD AT THE DISKETTE ATTACHMENT CARD (SEE SM 4504).
3. POWER ON.
4. RUN PID 1500 (ROS RESIDENT DISKETTE TEST) ON THE FAILING DISKETTE DRIVE (DRIVE ONE OR DRIVE TWO).

SAME FAILURE?
Y N

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1 1

1 1 EC994445 PEC987896

084
1. POWER OFF.
2. RECONNECT CABLE AT THE DISKETTE ATTACHMENT CARD TO THE MULTIPLEXER CARD.
3. DISCONNECT THE CABLE FROM THE DISKETTE ATTACHMENT CARD AT THE MULTIPLEXER END (SEE SM 4506 AND 4501).
4. RUN PID 1500 (ROS RESIDENT DISKETTE TEST) AGAIN.

SAME FAILURE?
Y N

085
1. REPLACE THE MULTIPLEXER CARD (SEE SM 4578).
2. REINSTALL CABLE TO MULTIPLEXER CARD (SEE SM 4506 AND 4501).

086
1. CHECK CABLE FROM THE DISKETTE ATTACHMENT CARD TO THE MULTIPLEXER CARD FOR CONTINUITY/SHORT CIRCUITS (SEE SM 4505).
2. REPAIR/REPLACE AS NECESSARY (SEE SM 4579).

087
REINSTALL CABLE TO DISKETTE ATTACHMENT CARD (SEE SM 4504).
GO TO STEP 088,
ENTRY POINT G.

088
(ENTRY POINT G)

1. REPLACE DISKETTE DRIVE CONTROL CARD (SEE SM 1572).
2. CHECK DISKETTE ATTACHMENT CABLE FOR OPENS/SHORT CIRCUITS FOR DRIVE 1 OR 2 (SEE SM 1505 CABLE PIN LOCATIONS).
3. REPAIR/REPLACE AS NECESSARY (SEE SM 1215, 1511).
4. REPLACE CPU PLANAR BOARD IF ALL SYSTEM DISKETTE DRIVES FAIL (SEE SM 1230).

089
(ENTRY POINT F)

(DETERMINE READ OR SEEK FAILURE)

1. SELECT MAP CHART SUPPORT OPTION FROM PID 1500 (ROS RESIDENT DISKETTE TEST) (SEE DIAGNOSTIC USER GUIDE 0001, PID 1500.)

TABLE 1

ENTER KEY(S)	ACTION TAKEN
0	RECAL
1 (AND) +FIELD	SEEK IN 1 TRACK
1 (AND) -FIELD	SEEK OUT 1 TRACK
4 (AND) +FIELD	SEEK IN 4 TRACKS
4 (AND) -FIELD	SEEK OUT 4 TRACKS
7	HEAD ALIGN (TRACK 40,39,40)
9	END, GO TO POWER-ON DIAGNOSTICS

NOTE: COMMAND WILL BE REJECTED IF AN ATTEMPT TO SEEK PAST TRACK '0' OR TRACK '76'.

2. SEE TABLE 1 AND SELECT OPTION 0, THEN SELECT OPTION 7.

DOES CARRIAGE MOVE SMOOTHLY WITH NO ERRATIC MOVEMENT?
Y N
|
| 090
| SEEK FAILURE
| GO TO MAP 1555, ENTRY POINT A.
|
091
AFTER OPTION 7 CAUSES DRIVE TO SEEK, USE THE TIMING PIN TO CHECK THAT THE TIMING HOLE LINES UP WITH THE CASTING (VERIFY HEAD CARRIAGE ASSEMBLY MECHANICALLY AT TRACK 40).
SEE SM 1530 OR 4530, SERVICE CHECK ADJUSTMENT FIGURE, IF YOU ARE NOT POSITIVE THAT THE PIN IS INSERTED FULLY.
1. POWER DOWN.
2. WITH PIN INSERTED, ATTEMPT TO MOVE HEAD CARRIAGE ASSEMBLY.

(STEP 091 CONTINUES)

(STEP 091 CONTINUED)
IS STEPPER MOTOR PULLEY LOCKED IN PLACE?
Y N
|
| 092
|
| GO TO MAP 1555, ENTRY POINT A.
|
093
CHECK FOR MOVEMENT OF HEAD ASSEMBLY WITH ALIGNMENT PIN INSTALLED.

IS HEAD ASSEMBLY TIGHT?
Y N
|
| 094
| (HEAD CARRIAGE ASSEMBLY TO PULLEY PROBLEM)
|
| 1. CHECK DRIVE BAND SCREWS FOR TIGHTNESS (SEE SM 1562 OR 4562). ADJUST AS NECESSARY.
| 2. ALIGN HEAD CARRIAGE ASSEMBLY. (SEE SM 1530 OR 4530).
|
095
READ FAILURE
REMOVE ALIGNMENT PIN IF INSERTED
GO TO MAP 1540, ENTRY POINT A.

096
(ENTRY POINT C)

CHECK DC VOLTAGES AT THE DRIVE CONTROL CARD OF EITHER DRIVE 3 OR DRIVE 4 (SEE SM 4508).

ARE VOLTAGES OK?
Y N
|
| 097
|
| GO TO MAP 1560, ENTRY POINT A.
|
098
DOES SYSTEM HAVE ONLY ONE EXTERNAL DISKETTE DRIVE (DRIVE 3)?
Y N
|
| 099
| 1. MOVE DISKETTE TO THE OTHER EXTERNAL DRIVE.
| 2. POWER OFF CPU.
| 3. POWER ON CPU.
| 4. RUN PID 1500 (ROS RESIDENT DISKETTE TEST WITHOUT LOOP) ON OTHER EXTERNAL DRIVE.
|
| DID PID 1500 RUN OK?
| Y N
| |
| | 100
| | 1. POWER DOWN.
| | 2. REPLACE DISKETTE ATTACHMENT CARD. (SEE SM 1205 AND 1511).
| | 3. POWER UP.
| | 4. VERIFY REPAIR.
| |
| | IS PROBLEM FIXED?
| | Y N

101
1. POWER OFF.
2. REPAIR/REPLACE CABLE BETWEEN THE DISKETTE ATTACHMENT CARD AND THE MULTIPLEXER CARD (SEE SM 4505 AND 4579).
3. REPLACE MULTIPLEXER CARD (SEE SM 4578).
4. REPLACE CE DISKETTE.
5. REPLACE CPU PLANAR BOARD (SEE SM 1230).
6. VERIFY REPAIR.

102
VERIFY REPAIR.

103
IS DRIVE 3 THE FAILING DRIVE?
Y N

104
1. POWER DOWN.
2. MOVE DRIVE 4 CABLE AT MULTIPLEXER CARD TO DRIVE 3 POSITION (SEE SM 4506 AND 4501).
3. POWER UP.
4. INSTALL DISKETTE IN DRIVE FOUR.
5. SELECT DRIVE 3. RUN PID 1500 AGAIN (ROS RESIDENT DISKETTE TEST WITHOUT LOOP).

IS THE FAILURE THE SAME AS THE ORIGINAL FAILURE?
Y N

105
1. REPLACE MULTIPLEXER CARD (SEE SM 4578).
2. REPLACE DISKETTE ATTACHMENT CARD (SEE SM 1205 AND 1511).
3. RETURN CABLES TO ORIGINAL POSITION.
4. CHECK CABLE BETWEEN MULTIPLEXER CARD AND THE DISKETTE ATTACHMENT CARD FOR OPEN OR SHORT CIRCUIT (SEE SM 4505).
5. REPAIR/REPLACE AS NECESSARY (SEE SM 4579).
6. VERIFY REPAIR.

106

GO TO PAGE 6, STEP 043, ENTRY POINT B.

107
1. POWER DOWN.
2. MOVE DRIVE 3 CABLE AT THE MULTIPLEXER CARD TO DRIVE 4 POSITION (SEE SM 4506 AND 4501).
3. POWER UP.
4. INSTALL DISKETTE IN DRIVE 3. SELECT DRIVE 4.
5. RUN PID 1500 ROS RESIDENT DISKETTE TEST AGAIN.

IS THE FAILURE THE SAME AS THE ORIGINAL FAILURE?
Y N

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1 1
5 5 EC994445 PEC987896

108
1. REPLACE MULTIPLEXER CARD (SEE SM 4578).
2. REPLACE DISKETTE ATTACHMENT CARD (SEE SM 1205 AND 1511).
3. RETURN CABLES TO ORIGINAL POSITION.
4. CHECK CABLE BETWEEN MULTIPLEXER CARD AND THE DISKETTE ATTACHMENT CARD FOR OPEN OR SHORT CIRCUIT (SEE SM 4505).
5. REPAIR/REPLACE AS NECESSARY (SEE SM 4579).
6. VERIFY REPAIR.

109

GO TO PAGE 6, STEP 043,
ENTRY POINT B.

110
1. POWER DOWN.
2. MOVE CABLE FROM DRIVE 3 CONTROL CARD TO MULTIPLEXER CARD TO DRIVE 4 CONNECTOR ON THE MULTIPLEXER CARD (SEE SM 4506 AND 4501).
3. POWER UP.
4. SELECT DRIVE 4.
5. RUN PID 1500 (ROS RESIDENT DISKETTE TEST) ON DRIVE.

DID THE SAME FAILURE OCCUR?
Y N

A A
S T

111
1. REPLACE MULTIPLEXER CARD (SEE SM 4578).
2. REPLACE DISKETTE ATTACHMENT CARD (SEE SM 1205 AND 1511).
3. RETURN CABLES TO ORIGINAL POSITION.
4. CHECK CABLE BETWEEN MULTIPLEXER CARD AND THE DISKETTE ATTACHMENT CARD FOR OPEN OR SHORT CIRCUIT (SEE SM 4505).
5. REPAIR/REPLACE AS NECESSARY (SEE SM 4579).
6. VERIFY REPAIR.

112
1. POWER DOWN.
2. MOVE CABLE TO ORIGINAL POSITION.
3. POWER UP.

GO TO PAGE 6, STEP 043,
ENTRY POINT B.

READ/WRITE FAILURE

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1500	A	1	001
1500	H	5	026
1530	A	1	001

001
(ENTRY POINT A)

* * * NOTE * * *

IF EXTENDED RPQ FEATURE IS INSTALLED ON THE PROCESSOR, USE SM R4904 FOR REMOVAL/REPLACEMENT OF THE DISKETTE ATTACHMENT CARD.

IF EXTENDED RPQ FEATURE IS INSTALLED ON THE 5246 DISKETTE UNIT, USE SM R4908 FOR REMOVAL/REPLACEMENT OF THE MULTIPLEXER CARD.

(REFERENCE TO SM 12XX OR 15XX INDICATES INTERNAL DRIVES 1 OR 2, SM 45XX IS FOR EXTERNAL DRIVES 3 OR 4.

SEE NOTE 1 FOR 2D DISKETTE FAILURES.

IS ENDING STATUS E00B, E00C ERASE FAILURE?

Y N

(2D DISKETTE FAILURES)
NOTE 1:
ENTRY TO THIS MAP MAY BE BECAUSE OF A FAILURE IN PID 1510, WITH A 2D DISKETTE INSTALLED IN A 51TD DISKETTE DRIVE. IF THIS IS THE CONDITION, WHEN INSTRUCTED TO RUN FAILING DIAGNOSTIC AGAIN, AFTER A POWER ON, PERFORM THE FOLLOWING:

1. LOAD THE FAILING DIAGNOSTIC FROM A WORKING DISKETTE DRIVE, AND SELECT THE FAILING DRIVE, OR INSTALL THE CE DISKETTE IN THE FAILING DISKETTE DRIVE, AFTER PID 1510 IS LOADED, REMOVE THE CE DISKETTE AND INSTALL THE 2D DISKETTE.

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READ/WRITE FAILURE

PAGE 2 OF 12

002
NOTE: TURN POWER ON IF POWER IS OFF.

WHILE INSPECTING DRIVE, TOUCH JUMPER BETWEEN TEST POINT TPA08 (51TD) OR TPHLD (31SD) (HEAD LOAD) AND GROUND ON DRIVE CONTROL CARD (SEE SM 1502 (31SD), 1503 (51TD) OR 4508).

*******CAUTION*******
ON A 51TD DRIVE THE HEADS CAN BE DAMAGED IF THE HEADS ARE LOADED AND NO DISKETTE IS IN THE DRIVE.

DOES THE HEAD LOAD BAIL MOVE?
Y N

003
CHECK FOR CORRECT PATH OF BAIL ACTUATOR CABLE (SEE SM 1542; 4542).

IS PATH CORRECT AND IS CABLE NOT BROKEN?
Y N

004
1. REPLACE OR VERIFY CORRECT CABLE PATH (SEE SM 1542 OR 4542).
2. PERFORM SOLENOID BAIL SERVICE CHECK (SEE SM 1540 OR 4540).

005
REMOVE BAIL (SEE SM 1541 OR 4541).

IS THE BAIL RETURN SPRING IN PLACE AND NOT BROKEN?
Y N

READ/WRITE FAILURE

006
REPLACE BAIL RETURN SPRING (SEE SM 1541; 4541).

007
1. POWER DOWN.
2. CHECK HEAD LOAD SOLENOID RESISTANCE (SEE SM 1502 (31SD), 1503 (51TD) OR 4508).
3. RESISTANCE SHOULD MEASURE AS INDICATED IN TABLE AT RIGHT.

	MINIMUM	MAXIMUM
31SD	140 OHMS	400 OHMS
51TD	113 OHMS	250 OHMS

IS SOLENOID RESISTANCE INSIDE LIMITS?
Y N

008
REPAIR OR REPLACE AS NEEDED (SEE SM 1542 OR 4542).

NOTE:
IF HEAD LOAD SOLENOID RESISTANCE WAS BELOW MINIMUM PERMITTED, DAMAGE TO THE DISKETTE DRIVE CONTROL CARD MAY HAVE OCCURRED. IF PROBLEM IS STILL PRESENT AFTER HEAD LOAD SOLENOID IS REPAIRED/REPLACED, REPLACE THE DISKETTE DRIVE CONTROL CARD (SEE SM 1572 OR 4572).

009
1. OPERATE BAIL WITH YOUR HANDS.
2. CHECK TO SEE THAT SOLENOID AND BAIL ARE FREE OF BINDS.
3. CHECK TO SEE THAT BAIL RETURN SPRING RETURNS BAIL TO ITS STOP.

IS BAIL FREE OF BINDS?
Y N

SYSTEM 23

READ/WRITE FAILURE

010
REPAIR/REPLACE THE BINDING PART (SEE SM 1540, 1541 AND 1542 OR 4540, 4541 AND 4542).

011
CHECK IDLER PULLEY BRACKET SCREW (SEE SM 1542 OR 4542).

IS IT TIGHT?
Y N

012
1. TIGHTEN BRACKET SCREW.
2. PERFORM HEAD LOAD SOLENOID BAIL SERVICE CHECK (SEE SM 1540 OR 4540).
3. ADJUST HEAD LOAD SOLENOID (SEE SM 1540 OR 4540).

013
REPLACE THE DISKETTE DRIVE CONTROL CARD (SEE SM 1572 OR 4572).

014
DRIVE CONTROL CARD ALREADY EXCHANGED?
Y N

015
1. POWER DOWN.
2. EXCHANGE DISKETTE DRIVE CONTROL CARD (SEE SM 1572 OR 4572).
3. RUN FAILING DIAGNOSTIC AGAIN.

SAME FAILURE?
Y N

016
1. REPLACE DISKETTE DRIVE CONTROL CARD (SEE SM 1572 OR 4572).
2. VERIFY REPAIR

017

GO TO STEP 018, ENTRY POINT B.

018
(ENTRY POINT B)

CHECK IDLER PULLEY BRACKET SCREW (SEE SM 1542 OR 4542).

IS IT TIGHT?
Y N

019
1. TIGHTEN BRACKET SCREW.
2. PERFORM HEAD LOAD SOLENOID BAIL SERVICE CHECK (SEE SM 1540 OR 4540).
3. ADJUST HEAD LOAD SOLENOID (SEE SM 1540 OR 4540).

020
PERFORM A HEAD LOAD SOLENOID SERVICE CHECK (SEE SM 1540 OR 4540).

IS SERVICE CHECK OK?
Y N

021
ADJUST OR REPLACE AS NEEDED. (SEE SM 1542 OR 4542).

022
CHECK ADJUSTMENT OF HEAD/CARRIAGE ASSEMBLY (SEE SM 1530 OR 4530).

IS ADJUSTMENT CORRECT?
Y N

023
ALIGN HEAD/CARRIAGE ASSEMBLY (SEE SM 1530 OR 4530).

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024
(ENTRY POINT D)

1. REPLACE CE DISKETTE.
2. RUN FAILING DIAGNOSTIC AGAIN.

IS FAILURE THE SAME?
Y N

025
VERIFY REPAIR.

026
(ENTRY POINT H)

REMOVE ANY JUMPERS IF INSTALLED EARLIER.

WAS ENTRY TO THIS MAP FROM MAP 1500?
Y N

027
IS FAILING DRIVE DRIVE 1 OR DRIVE 2?
Y N

028

GO TO PAGE 10, STEP 086, ENTRY POINT F.

029

GO TO PAGE 7, STEP 048, ENTRY POINT C.

030
IS ENDING STATUS E00B, E00C ERASE FAILURE?
Y N

031
IS INTERNAL DRIVE (DRIVE 1 OR 2) FAILING?
Y N

032

GO TO PAGE 8, STEP 068, ENTRY POINT E.

033
DOES SYSTEM HAVE ONLY ONE DISKETTE DRIVE?
Y N

034
1. MOVE DISKETTE TO THE OTHER INTERNAL DRIVE.
2. POWER OFF.
3. POWER ON.
4. RUN FAILING DIAGNOSTIC ON OTHER DRIVE.

DID FAILING DIAGNOSTIC NOW RUN OK?
Y N

035
1. REPLACE DISKETTE ATTACHMENT CARD. (SEE SM 1205 AND 1511).
2. VERIFY REPAIR.

036
IS DRIVE 1 THE FAILING DRIVE?
Y N

037
1. POWER DOWN.
2. MOVE DRIVE 2 CABLE AT DISKETTE ATTACHMENT CARD TO DRIVE 1 POSITION (SEE SM 1511).
3. POWER UP.
4. INSTALL DISKETTE IN DRIVE 2.
5. SELECT DRIVE 1. RUN FAILING DIAGNOSTIC AGAIN.

IS THE FAILURE THE SAME AS THE ORIGINAL FAILURE
Y N

038
1. POWER DOWN.
2. REPLACE DISKETTE ATTACHMENT CARD (SEE SM 1205 AND 1511).
3. RETURN DISKETTE AND CABLES TO ORIGINAL POSITION.
4. POWER UP.
5. VERIFY REPAIR.

039

1. RETURN DISKETTE CABLES TO ORIGINAL POSITION.
2. CHECK CABLE FOR CONTINUITY OR SHORT CIRCUITS (SEE SM 1505). REPAIR/REPLACE AS NECESSARY (SEE SM 1215, 1505, 1511).
3. REPLACE DISKETTE ATTACHMENT CARD IF NOT ALREADY EXCHANGED. (SEE SM 1205 AND 1511).

IS PROBLEM FIXED?
Y N

040
IS FAILING DRIVE A 51TD DRIVE?
Y N

041
REPLACE HEAD LOAD PRESSURE PAD (SEE SM 1531).

IS PROBLEM FIXED?
Y N

042
REPLACE HEAD CARRIAGE ASSEMBLY (SEE SM 1530).

043
VERIFY REPAIR.

044
REPLACE HEAD CARRIAGE ASSEMBLY (SEE SM 1530).

045
VERIFY REPAIR.

046
1. POWER DOWN.
2. MOVE DRIVE 1 CABLE, AT DISKETTE ATTACHMENT CARD, TO DRIVE 2 POSITION (SEE SM 1511).
3. POWER UP.
4. INSTALL DISKETTE IN DRIVE 1.
5. SELECT DRIVE 2. RUN FAILING DIAGNOSTIC AGAIN.

IS THE FAILURE THE SAME AS THE ORIGINAL FAILURE?
Y N

047
1. POWER DOWN.
2. REPLACE DISKETTE ATTACHMENT CARD (SEE SM 1511).
3. RETURN DISKETTE AND CABLES TO ORIGINAL POSITION.
4. POWER UP.
5. VERIFY REPAIR.

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048
(ENTRY POINT C)

ONE INTERNAL DISKETTE DRIVE?
Y N

049
1. RETURN DISKETTE CABLES TO ORIGINAL POSITION IF NOT IN ORIGINAL POSITION.
2. CHECK CABLE FOR CONTINUITY OR SHORT CIRCUITS (SEE SM 1505).
3. REPAIR/REPLACE AS NECESSARY (SEE SM 1215, 1505, 1511).

IS PROBLEM FIXED?
Y N

050
IS FAILING DRIVE A 51TD DRIVE?
Y N

051
REPLACE HEAD LOAD PRESSURE PAD (SEE SM 1531).

IS PROBLEM FIXED?
Y N

052
REPLACE HEAD CARRIAGE ASSEMBLY (SEE SM 1530).

053
VERIFY REPAIR.

054
REPLACE HEAD CARRIAGE ASSEMBLY (SEE SM 1530).

055
VERIFY REPAIR.

056
1. RETURN DISKETTE CABLES TO ORIGINAL POSITION IF NOT IN ORIGINAL POSITION.
2. CHECK CABLE FOR CONTINUITY OR SHORT CIRCUITS (SEE SM 1505).
3. REPAIR/REPLACE AS NECESSARY (SEE SM 1215, 1505, 1511).
4. REPLACE DISKETTE ATTACHMENT CARD IF NOT ALREADY EXCHANGED (SEE SM 1205 AND 1511).

IS PROBLEM FIXED?
Y N

057
IS FAILING DRIVE A 51TD DRIVE?
Y N

058
REPLACE HEAD LOAD PRESSURE PAD (SEE SM 1531).

IS PROBLEM FIXED?
Y N

059
REPLACE HEAD CARRIAGE ASSEMBLY. (SEE SM 1530).

060
VERIFY REPAIR.

061
REPLACE HEAD CARRIAGE ASSEMBLY (SEE SM 1530).

062
VERIFY REPAIR

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063
1. POWER DOWN.
2. MOVE CABLE TO OTHER CONNECTOR ON THE DISKETTE ATTACHMENT CARD.
3. POWER UP.
4. SELECT DRIVE 2.
5. RUN FAILING DIAGNOSTIC ON DRIVE.

DID THE SAME FAILURE OCCUR?
Y N

064
1. REPLACE THE DISKETTE ATTACHMENT CARD. (SEE SM 1205 AND 1511).
2. VERIFY REPAIR.

065

GO TO PAGE 7, STEP 048, ENTRY POINT C.

066

GO TO PAGE 11, STEP 093, ENTRY POINT G.

067

GO TO PAGE 11, STEP 093, ENTRY POINT G.

068
(ENTRY POINT E)

(EXTERNAL DRIVES)

DOES SYSTEM HAVE ONLY ONE EXTERNAL DISKETTE DRIVE (DRIVE 3)?
Y N

069
1. MOVE DISKETTE TO OTHER EXTERNAL DRIVE.
2. POWER OFF.
3. POWER ON.
4. RUN FAILING DIAGNOSTIC ON OTHER DRIVE.

DID FAILING DIAGNOSTIC NOW RUN OK?
Y N

070
1. REPLACE DISKETTE ATTACHMENT CARD (SEE SM 1205 AND 1511).
2. RUN FAILING TEST AGAIN.

IS FAILURE SAME AS ORIGINAL FAILURE?
Y N

071
VERIFY REPAIR.

072
1. REPLACE MULTIPLEXER CARD (SEE SM 4578).
2. CHECK THE CABLE BETWEEN THE MULTIPLEXER CARD AND THE DISKETTE ATTACHMENT CARD FOR OPENS OR SHORT CIRCUITS (SEE SM 4505).
3. REPAIR/REPLACE AS NECESSARY (SEE SM 4579).

073
IS DRIVE 3 THE FAILING DRIVE?
Y N

074
1. POWER DOWN.
2. MOVE DRIVE FOUR CABLE AT MULTIPLEXER CARD TO DRIVE THREE POSITION (SEE SM 4506 AND 4501).
3. POWER UP.
4. INSTALL DISKETTE IN DRIVE FOUR.
5. SELECT DRIVE THREE. RUN FAILING DIAGNOSTIC AGAIN.

IS THE FAILURE THE SAME AS THE ORIGINAL FAILURE?
Y N

075
1. POWER DOWN.
2. REPLACE MULTIPLEXER CARD (SEE SM 4578).
3. RETURN CABLES AND DISKETTE TO ORIGINAL POSITION.
4. POWER UP AND RUN FAILING TEST AGAIN.

IS PROBLEM CORRECTED?
Y N

076
REPLACE DISKETTE ATTACHMENT CARD (SEE SM 1205 AND 1511).

077
VERIFY REPAIR.

078

GO TO PAGE 10, STEP 086,
ENTRY POINT F.

079
1. POWER DOWN.
2. MOVE DRIVE THREE CABLE AT THE MULTIPLEXER CARD TO DRIVE FOUR POSITION.
3. POWER UP.
4. INSTALL DISKETTE IN DRIVE THREE.
5. SELECT DRIVE FOUR. RUN FAILING DIAGNOSTIC AGAIN.

IS THE FAILURE THE SAME AS THE ORIGINAL FAILURE?
Y N

080
1. POWER DOWN.
2. REPLACE MULTIPLEXER CARD (SEE SM 4578).
3. RETURN CABLES TO ORIGINAL POSITION.

IS PROBLEM CORRECTED?
Y N

081
REPLACE DISKETTE ATTACHMENT CARD (SEE SM 1205 AND 1511).

082
VERIFY REPAIR.

083

GO TO PAGE 10, STEP 086,
ENTRY POINT F.

084
1. POWER DOWN.
2. MOVE CABLE TO OTHER CONNECTOR ON THE DISKETTE MULTIPLEXER CARD (SEE SM 4506 AND 4501).
3. POWER UP.
4. SELECT DRIVE 4.
5. RUN FAILING DIAGNOSTIC ON DRIVE.

DID THE SAME FAILURE OCCUR?
Y N

085
1. REPLACE THE DISKETTE ATTACHMENT CARD (SEE SM 1205 AND 1511).
2. REPLACE MULTIPLEXER CARD (SEE SM 4578).

086
(ENTRY POINT F)

ONE EXTERNAL DRIVE?
Y N

087
1. RETURN DISKETTE CABLES TO ORIGINAL POSITION IF NOT IN ORIGINAL POSITION.
2. CHECK CABLE BETWEEN DISKETTE DRIVE CONTROL CARD AND MULTIPLEXER CARD FOR CONTINUITY AND SHORT CIRCUITS (SEE SM 4507).
3. REPAIR/REPLACE AS NECESSARY (SEE SM 4511).

IS PROBLEM FIXED?
Y N

088
REPLACE HEAD CARRIAGE ASSEMBLY (SEE SM 4530).

A
Z A

089
VERIFY REPAIR.

090
1. RETURN DISKETTE CABLES TO ORIGINAL POSITION IF NOT IN ORIGINAL POSITION.
2. CHECK CABLE BETWEEN DISKETTE DRIVE CONTROL CARD AND MULTIPLEXER CARD FOR CONTINUITY AND SHORT CIRCUITS (SEE SM 4507).
3. REPAIR/REPLACE AS NECESSARY (SEE SM 4511).
4. CHECK CABLE BETWEEN MULTIPLEXER CARD AND DISKETTE ATTACHMENT CARD FOR CONTINUITY AND SHORT CIRCUITS (SEE SM 4505).
5. REPAIR/REPLACE AS NECESSARY (SEE SM 4579).
6. REPLACE MULTIPLEXER CARD IF NOT ALREADY REPLACED. (SEE SM 4578).
7. REPLACE DISKETTE ATTACHMENT CARD IF NOT ALREADY REPLACED. (SEE SM 1205 AND 1511).

IS PROBLEM FIXED?
Y N

091
REPLACE HEAD CARRIAGE ASSEMBLY (SEE SM 4530).

092
VERIFY REPAIR.

093
(ENTRY POINT G)

(ERASE COIL OR ERASE CIRCUIT FAILURE).

IS FAILING DRIVE A 51TD DRIVE?
Y N

094
(ENTRY POINT BB)

1. RUN PID 1510 WITH BYPASS ERROR STOPS, AND LOOP MODE ON FAILING DISKETTE DRIVE.
2. PROBE 'WRITE/ERASE ENABLE' AT THE DISKETTE DRIVE CONTROL CARD (SEE SM 1502 (31SD), 1503 (51TD).

IS LINE PULSING?
Y N

095
PROBE 'ERASE GATE' AT THE DISKETTE DRIVE CONTROL CARD (SEE SM 1502 (31SD), 1503 (51TD).

IS LINE PULSING?
Y N

096
1. CHECK CABLE BETWEEN DISKETTE ATTACHMENT CARD AND DRIVE CONTROL CARD FOR OPEN ON 'ERASE GATE'. (SEE SM 1505). REPAIR/REPLACE AS NECESSARY (SEE SM 1215, 1505, 1511).
2. REPLACE DISKETTE ATTACHMENT CARD (SEE SM 1205 AND 1511).

A A A
B C D

097
REPLACE THE DISKETTE DRIVE CONTROL CARD (SEE SM 1572).

098
1. CHECK CABLE BETWEEN DISKETTE ATTACHMENT CARD AND DRIVE CONTROL CARD FOR OPEN ON 'CURRENT ENABLE' (SEE SM 1502 (31SD), 1503 (51TD). REPAIR/REPLACE AS NECESSARY (SEE SM 1215, 1505, 1511).
2. REPLACE DISKETTE ATTACHMENT CARD (SEE SM 1205 AND 1511).

099
CHECK ERASE COIL ON FAILING HEAD FOR OPEN (SEE SM 1502 (31SD), 1503 (51TD) OR 4508).

IS THE ERASE COIL OK?
Y N

100
REPLACE READ/WRITE HEAD CARRIAGE ASSEMBLY (SEE SM 1530 OR 4530).

101
IS DRIVE 3 OR 4 THE FAILING DRIVE?
Y N

102

GO TO STEP 094, ENTRY POINT BB.

103

1. RUN PID 1510 WITH BYPASS ERROR STOP AND LOOP MODE ON FAILING DISKETTE DRIVE.
2. PROBE 'WRITE/ERASE ENABLED' AT THE DISKETTE DRIVE CONTROL CARD (SEE SM 4508).

IS LINE PULSING?
Y N

104

PROBE 'ERASE GATE' AT THE DISKETTE DRIVE CONTROL CARD (SEE SM 4508).

IS LINE PULSING?
Y N

105

1. CHECK CABLE BETWEEN DRIVE CONTROL CARD AND MULTIPLEXER CARD FOR OPEN/SHORT CIRCUIT ON 'ERASE GATE' (SEE SM 4507).
2. REPAIR/REPLACE IF NECESSARY (SEE SM 4511).
3. CHECK CABLE BETWEEN MULTIPLEXER CARD AND DISKETTE ATTACHMENT CARD FOR OPEN/SHORT CIRCUIT ON 'ERASE GATE' (SEE SM 4505).
4. REPAIR/REPLACE IF NECESSARY (SEE SM 4579).
5. REPLACE MULTIPLEXER CARD. (SEE SM 4578).
6. REPLACE DISKETTE ATTACHMENT CARD (SEE SM 1205 AND 1511).

106

REPLACE THE DISKETTE DRIVE CONTROL CARD (SEE SM 4572).

107

1. CHECK CABLE BETWEEN DRIVE CONTROL CARD AND MULTIPLEXER CARD ON 'WRITE ERASE ENABLED' LINE FOR OPEN OR SHORT CIRCUITS (SEE SM 4507).
2. REPAIR/REPLACE IF NECESSARY (SEE SM 4511).
3. CHECK CABLE BETWEEN MULTIPLEXER CARD AND DISKETTE ATTACHMENT CARD ON 'WRITE ERASE ENABLED' LINE FOR OPEN/SHORT CIRCUITS (SEE SM 4505).
4. REPAIR/REPLACE IF NECESSARY (SEE SM 4579).
5. REPLACE MULTIPLEXER CARD (SEE SM 4578).
6. REPLACE DISKETTE ATTACHMENT CARD (SEE SM 1205 AND 1511).

NOT READY MAP

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1500	A	1	001
1530	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
3	010	1250	A
4	021	1250	AC
3	007	1560	A
4	020	1560	A

001
(ENTRY POINT A)

* * * NOTE * * *

A KNOWN GOOD DISKETTE MUST BE CORRECTLY INSERTED. IF THE DISKETTE WAS NOT INSERTED CORRECTLY OR THE DISKETTE WAS DEFECTIVE, GO TO MAP 1000, ENTRY POINT A.

IF EXTENDED RPQ FEATURE IS INSTALLED ON THE PROCESSOR, USE SM R4904 FOR REMOVAL/REPLACEMENT OF THE DISKETTE ATTACHMENT CARD.

IF EXTENDED RPQ FEATURE IS INSTALLED ON THE 5246 DISKETTE UNIT, USE SM R4908 FOR REMOVAL/REPLACEMENT OF THE MULTIPLEXER CARD.

(STEP 001 CONTINUES)

(STEP 001 CONTINUED)
SEE NOTE 1 FOR 2D DISKETTE FAILURES. >>>---------->

USE THIS MAP WHEN A DRIVE WILL NOT BECOME READY OR IF THE DRIVE IS HAVING A PROBLEM MAINTAINING ITS READY STATUS.

VISUALLY CHECK FAILING DISKETTE DRIVE.

REFERENCE TO SM 12XX OR 15XX INDICATES INTERNAL DRIVES 1 OR 2, SM 45XX IS FOR EXTERNAL DRIVES 3 OR 4.

IS THE SPINDLE PULLEY TURNING?
Y N
|
| 002
|
| GO TO PAGE 3, STEP 014,
| ENTRY POINT B.
|
003
CHECK '+24V DC', '+5V DC' AND '-5V DC' INPUT VOLTAGE AT THE DISKETTE DRIVE CONTROL CARD. (SEE SM 1502 (31SD), 1503 (51TD) OR 4508 FOR TEST PIN LOCATIONS AND SM 1211 OR 4573 FOR POWER SPECIFICATIONS).

ARE THE LINES INSIDE TOLERANCE?
Y N
|
| 004
| IS DRIVE 1 OR 2 THE FAILING
| DRIVE?
| Y N

3 3 3
A B C

NOTE 1:

ENTRY TO THIS MAP MAY BE BECAUSE OF A FAILURE IN PID 1510, WITH A 2D DISKETTE INSTALLED IN A 51TD DISKETTE DRIVE. IF THIS IS THE CONDITION, WHEN INSTRUCTED TO RUN FAILING DIAGNOSTIC AGAIN, AFTER A POWER ON, PERFORM THE FOLLOWING:

LOAD THE FAILING DIAGNOSTIC FROM A WORKING DISKETTE DRIVE, AND SELECT THE FAILING DRIVE, OR INSTALL THE CE DISKETTE IN THE FAILING DISKETTE DRIVE. AFTER PID 1510 IS LOADED, REMOVE THE CE DISKETTE, AND INSTALL THE 2D DISKETTE.

005
1. POWER DOWN.
2. CHECK THE CONTINUITY OF THE CABLE THAT SUPPLIES DC POWER (SEE SM 4507).

IS CABLE OK?
Y N

006
REPAIR/REPLACE CABLE ASSEMBLY (SEE SM 4507 AND 4511).

007

GO TO MAP 1560, ENTRY POINT A.

008
1. POWER DOWN.
2. CHECK THE CONTINUITY OF THE CABLE THAT SUPPLIES DC POWER (SEE SM 1211).

IS CABLE OK?
Y N

009
REPAIR/REPLACE CABLE ASSEMBLY (SEE SM 1215, 1505, 1511).

010

GO TO MAP 1250, ENTRY POINT A.

011
CHECK TO SEE THAT THE DISKETTE IS INSERTED CORRECTLY.

IS THE DISKETTE INSERTED CORRECTLY INTO THE DRIVE AND IS THE LATCH CLOSED?
Y N

012
RUN TEST AGAIN WITH DISKETTE CORRECTLY INSERTED.

013
JUMPER 'HEAD LOAD' TEST POINT TO GROUND ON THE DISKETTE DRIVE CONTROL CARD. (SEE SM 1502 (31SD), 1503 (51TD) OR 4508 FOR TEST POINT LOCATION.) THE SOLENOID WILL BECOME ACTIVATED CAUSING THE BAIL TO LOAD THE HEAD(S), AND PUT MAXIMUM LOAD ON THE DRIVE PARTS.
(NOTE: REMOVE JUMPER WHEN DRIVE IS REPAIRED)

CAUTION: ON A 51TD DRIVE THE HEADS CAN BE DAMAGED IF THE HEADS ARE LOADED AND THERE IS NO DISKETTE IN THE DRIVE.

IS THE SPINDLE PULLEY TURNING?
Y N

014
(ENTRY POINT B)

IS THE BELT INSTALLED?
Y N

015
INSTALL OR REPLACE THE BELT. (SEE SM 1552 OR 4552.)

016
KEEP THE HEAD(S) LOADED, IF LOADED EARLIER.

IS THE AC MOTOR PULLEY TURNING?
Y N

017
IS THE AC MOTOR SHAFT TURNING?
Y N

018
1. POWER DOWN.
2. DISCONNECT AC PLUG ON FAILING DRIVE (SEE SM 1200 OR 4574.
3. POWER UP.
4. MEASURE THE AC VOLTAGE AT THE AC MOTOR CONNECTOR (SEE SM 1210 OR 4574 FOR POWER SPECIFICATIONS.)

IS THE AC VOLTAGE CORRECT AT THE AC MOTOR CONNECTOR?
Y N

019
DRIVE 1 OR 2 FAILING?
Y N

020
GO TO MAP 1560, ENTRY POINT A.

021
GO TO MAP 1250, ENTRY POINT AC.

022
1. POWER OFF.
2. RECONNECT AC PLUG.
3. REMOVE THE BELT (SEE SM 1552 OR 4552).
4. LET THE AC MOTOR COOL 5 MINUTES.
5. POWER ON.

DOES THE AC MOTOR START?
Y N

023
REPLACE THE AC MOTOR STARTING CAPACITOR. (SEE SM 1551 OR 4551 FOR CAPACITOR REMOVAL AND REPLACEMENT PROCEDURE.)

DOES THE AC MOTOR START?
Y N

024
REPLACE THE AC MOTOR. (SEE SM 1550 OR 4550 FOR AC DRIVE MOTOR REMOVAL AND REPLACEMENT PROCEDURE.

025
PROBLEM IS CORRECTED.
REPLACE BELT AND VERIFY REPAIR. (SEE SM 1552 OR 4552).

026
1. CLOSE THE LATCH TO ENGAGE THE COLLET.
2. CHECK THE SPINDLE PULLEY ASSEMBLY FOR BINDS.

IS THE SPINDLE PULLEY FREE FROM BINDS?
Y N

027
OPEN THE LATCH TO DISENGAGE THE COLLET AND CHECK FOR BINDS AND NOISE.

IS THE SPINDLE PULLEY FREE FROM BINDS AND NOISE?
Y N

028
REPLACE THE COMPLETE DRIVE ASSEMBLY. (SEE SM 1510 OR 4510).

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029
REPLACE THE COLLET ASSEMBLY (SEE SM 1521 OR 4521).

030
1. POWER OFF.
2. REMOVE ANY JUMPERS INSTALLED EARLIER.
3. REPLACE THE AC MOTOR STARTING CAPACITOR. (SEE SM 1551 OR 4551 FOR CAPACITOR REMOVAL AND REPLACEMENT PROCEDURE).
4. REPLACE THE AC DRIVE MOTOR (SEE SM 1550 OR 4550).

031
THE AC MOTOR PULLEY IS LOOSE. ADJUST AND TIGHTEN. (SEE THE REPLACEMENT CHAPTER OF SM 1550 OR 4550.)

032
1. POWER DOWN.
2. REMOVE THE BELT (SEE SM 1552 OR 4552).
3. POWER ON.
4. CLOSE THE LATCH TO ENGAGE THE COLLET AND CHECK THE SPINDLE PULLEY ASSEMBLY FOR BINDS.

IS THE SPINDLE PULLEY FREE OF BINDS AND NOISE?
Y N

033
OPEN THE LATCH TO DISENGAGE THE COLLET AND CHECK THE SPINDLE PULLEY FOR NOISE AND BINDS.

IS SPINDLE PULLEY FREE OF BINDS AND NOISE?
Y N

034
REPLACE THE COMPLETE DISKETTE DRIVE ASSEMBLY. (SEE SM 1510 OR 4510).

035
1. REPLACE THE COLLET ASSEMBLY (SEE SM 1521 OR 4521.)
2. REINSTALL THE BELT.

036
1. INSTALL NEW DRIVE BELT (SEE SM 1552 OR 4552).
2. REPLACE THE COLLET ASSEMBLY. (SEE SM 1521 OR 4521).

037
IS THE COLLET TURNING?
Y N

038
1. REMOVE JUMPER TO TEST POINT 'HEAD LOAD'.
2. OPEN THE LATCH. REMOVE DISKETTE.

IS THE SPINDLE PART OF THE SPINDLE PULLEY ASSEMBLY TURNING?
Y N

039
REPLACE THE COMPLETE DISKETTE DRIVE ASSEMBLY (SEE SM 1510 OR 4510).

040
1. POWER DOWN.
2. REPLACE COLLET ASSEMBLY (SEE SM 1521 OR 4521).

NOT READY MAP

PAGE 6 OF 9

041

1. REMOVE ANY JUMPERS INSTALLED EARLIER.
2. PROBE '+INDEX' TEST POINT WITH A KNOWN GOOD DISKETTE INSERTED AT THE FAILING DISKETTE DRIVE. (SEE SM 1502 (31SD), 1503 (51TD) OR 4508 FOR TEST POINT LOCATIONS.)

(NOTE: USE SAME TYPE OF DISKETTE THAT FAILED.)

IS THE '+INDEX' LINE PULSING?

Y N

042

1. POWER DOWN THE SYSTEM.
2. CHECK WITH A C.E. OHM METER TO SEE IF THE '+ INDEX' LINE AT THE DISKETTE DRIVE HAS A SHORT CIRCUIT TO GROUND (A READING OF LESS THAN 90 OHMS IS NEARLY A SHORT CIRCUIT). (SEE SM 1502 (31SD), 1503 (51TD) OR 4508 FOR TEST POINT LOCATION.)

DOES THE METER READ MORE THAN 90 OHMS. (-LEAD TO GROUND, +METER LEAD ON +INDEX)?

Y N

043

DISCONNECT THE DISKETTE ATTACHMENT CABLE CONNECTOR AT THE DISKETTE DRIVE CONTROL CARD (SEE SM 1502 (31SD), 1503 (51TD) OR 4508).

DOES THE METER READ MORE THAN 90 OHMS?

Y N

044

DISCONNECT THE PTX ASSEMBLY (SEE SM 1571 OR 4571).

DOES THE METER READ MORE THAN 90 OHMS?

Y N

045

REPLACE THE DISKETTE DRIVE CONTROL CARD (SEE SM 1572 OR 4572).

046

REPLACE THE PTX ASSEMBLY (SEE SM 1571 OR 4571).

047

IS DRIVE 1 OR 2 THE FAILING DRIVE?

Y N

048

(TO DETERMINE A SHORT CIRCUIT IN DRIVE 3 OR 4).

1. RECONNECT THE CABLE CONNECTOR AT THE DISKETTE DRIVE CONTROL CARD.
2. DISCONNECT THE CONNECTOR AT THE MULTIPLEXER CARD (SEE SM 4506 AND 4501).

DOES THE METER READ MORE THAN 90 OHMS?

Y N

049

REPAIR/REPLACE THE CABLE BETWEEN THE DISKETTE DRIVE CONTROL CARD AND THE MULTIPLEXER CARD (SEE SM 4507 AND 4511).

050
1. RECONNECT THE CABLE CONNECTOR AT THE MULTIPLEXER CARD FROM THE DISKETTE DRIVE CONTROL CARD.
2. DISCONNECT THE CABLE AT THE MULTIPLEXER END THAT CONNECTS TO THE DISKETTE ATTACHMENT CARD (SEE SM 4506 AND 4501).

DOES THE METER READ MORE THAN 90 OHMS?
Y N

051
REPLACE THE MULTIPLEXER CARD (SEE SM 4578).

052
1. RECONNECT THE CABLE AT THE MULTIPLEXER END THAT REACHES TO THE DISKETTE ATTACHMENT CARD.
2. DISCONNECT CABLE AT THE DISKETTE ATTACHMENT CARD END THAT CONNECTS TO THE MULTIPLEXER CARD (SEE SM 4504).

DOES THE METER READ MORE THAN 90 OHMS?
Y N

053
REPAIR/REPLACE THE CABLE BETWEEN THE DISKETTE ATTACHMENT CARD AND THE MULTIPLEXER CARD (SEE SM 4505 AND 4579).

054
REPLACE THE DISKETTE ATTACHMENT CARD (SEE SM 1205 AND 1511).

055
(TO DETERMINE A SHORT CIRCUIT IN DRIVE 1 OR 2).

1. RECONNECT THE CABLE CONNECTOR AT THE DRIVE CONTROL CARD.
2. DISCONNECT THE CABLE CONNECTOR AT THE DISKETTE ATTACHMENT CARD THAT CONNECTS TO THE DISKETTE DRIVE CONTROL CARD (SEE SM 1205 AND 1511).

DOES THE METER READ MORE THAN 90 OHMS?
Y N

056
REPAIR/REPLACE THE CABLE BETWEEN THE DISKETTE ATTACHMENT CARD AND THE DISKETTE DRIVE CONTROL CARD (SEE SM 1215, 1505, 1511 FOR CABLE PIN LOCATIONS).

057
REPLACE THE DISKETTE ATTACHMENT CARD (SEE SM 1205 AND 1511).

058
1. PERFORM THE LED OUTPUT SERVICE CHECK. (SEE SM 1570 OR 4570 FOR THE LED OUTPUT SERVICE CHECK.)
2. REMOVE OR REPLACE THE LED IF NEEDED.

IS THE LED VOLTAGE CORRECT?
Y N

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059
1. REPLACE LED ASSEMBLY (SEE SM 1570 OR 4570).
2. VERIFY REPAIR.

ANY MORE ERRORS?
Y N

060
PROBLEM IS CORRECTED.

061
1. REPLACE DISKETTE DRIVE CONTROL CARD.
2. VERIFY REPAIR (SEE SM 1572 OR 4572).

062
PERFORM THE PTX SERVICE CHECK. (SEE SM 1571 OR 4571 FOR THE PTX OUTPUT SERVICE CHECK.)

IS OUTPUT OK FOR DISKETTE BEING USED?
Y N

063
REPLACE DISKETTE DRIVE CONTROL CARD (SEE SM 1572 OR 4572).

ANY MORE ERRORS?
Y N

064
PROBLEM IS CORRECTED.

065
REPLACE PTX ASSEMBLY (SEE SM 1571 OR 4571).

066
REPLACE PTX ASSEMBLY (SEE SM 1571 OR 4571).

ANY MORE ERRORS?
Y N

067
VERIFY REPAIR.

068
1. REPLACE LED ASSEMBLY (SEE SM 1570 OR 4570).
2. VERIFY REPAIR.

069
IS DRIVE 1 OR 2 FAILING?
Y N

070

GO TO PAGE 9, STEP 074, ENTRY POINT C.

071
PROBE +INDEX, FOR THE FAILING DRIVE, AT THE DISKETTE ATTACHMENT CARD (ATTACH POWER LEADS OF CE GENERAL LOGIC PROBE TO CPU PLANAR BOARD (SEE SM 1230).

IS LINE PULSING?
Y N

072
1. REPAIR OR REPLACE DISKETTE ATTACHMENT CABLE (SEE SM 1215, 1505 AND 1511).
2. REPLACE DISKETTE DRIVE CONTROL CARD (SEE SM 1572).
3. REPLACE THE DISKETTE ATTACHMENT CARD (SEE SM 1205 AND 1511).

073
1. REPLACE DISKETTE ATTACHMENT CARD (SEE SM 1205 AND 1511).
2. REPLACE DRIVE CONTROL CARD (SEE SM 1572).

074
(ENTRY POINT C)

DRIVE 3 OR 4 FAILING

PROBE +INDEX AT THE CABLE FROM DISKETTE DRIVE CONTROL CARD TO THE MULTIPLEXER CARD AT THE MULTIPLEXER CARD (SEE SM 4507).

IS LINE PULSING?
Y N
|
| 075
| 1. REPAIR OR REPLACE CABLE FROM
| THE DISKETTE DRIVE CONTROL
| CARD TO THE MULTIPLEXER CARD
| (SEE SM 4507 AND 4511).
| 2. REPLACE MULTIPLEXER CARD
| (SEE SM 4578).
| 3. REPLACE DISKETTE DRIVE
| CONTROL CARD (SEE SM 4572).
|
076
PROBE +INDEX AT THE DISKETTE ATTACHMENT CARD AT THE EXTERNAL DRIVE CONNECTOR (SEE SM 4508).

IS LINE PULSING?
Y N
|
| 077
| 1. REPAIR OR REPLACE CABLE FROM
| MULTIPLEXER CARD TO THE
| DISKETTE ATTACHMENT CARD.
| (SEE SM 4505 AND 4579).
| 2. REPLACE MULTIPLEXER CARD
| (SEE SM 4578).
|
078
1. REPLACE DISKETTE ATTACHMENT CARD (SEE SM 12105 AND 1511).
2. REPLACE DISKETTE DRIVE CONTROL CARD (SEE SM 4572).

SEEK ERROR MAP

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1530	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	005	1250	A
2	006	1560	A

001
(ENTRY POINT A)

* * * NOTE * * *

IF EXTENDED RPQ FEATURE IS INSTALLED ON THE PROCESSOR, USE SM R4904 FOR REMOVAL/REPLACEMENT OF THE DISKETTE ATTACHMENT CARD.

IF EXTENDED RPQ FEATURE IS INSTALLED ON THE 5246 DISKETTE UNIT, USE SM R4908 FOR REMOVAL/REPLACEMENT OF THE MULTIPLEXER CARD.

REFERENCE TO SM 12XX OR 15XX INDICATES INTERNAL DRIVES 1 OR 2, SM 45XX IS FOR EXTERNAL DRIVES 3 OR 4.

CHECK '+24V DC', '+5V DC', AND '-5V DC' INPUT VOLTAGES AT THE DISKETTE DRIVE CONTROL CARD. (SEE SM 1502 (31SD), 1503 (51TD) OR 4508 FOR TEST PIN LOCATIONS AND SM 1211 OR 4573 FOR POWER SPECIFICATIONS.)

ARE THE LINES INSIDE TOLERANCE?
Y N
| |
| |
| |
| |
| |

TABLE 1

ENTER KEY(S)	ACTION TAKEN
0	RECAL
1 (AND) +FIELD	SEEK IN 1 TRACK
1 (AND) -FIELD	SEEK OUT 1 TRACK
4 (AND) +FIELD	SEEK IN 4 TRACK
4 (AND) -FIELD	SEEK OUT 4 TRACKS
7	HEAD ALIGN (TRACK 40,39,40)
9	END, GO TO POWER-ON DIAGNOSTICS

NOTE: COMMAND WILL BE REJECTED IF AN ATTEMPT TO SEEK PAST TRACK '0' OR TRACK '76'.

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2 2
A B

SEEK ERROR MAP

002
1. POWER DOWN.
2. CHECK CONTINUITY OF THE CABLE THAT SUPPLIES DC POWER (SEE SM 1211 AND 1505 OR 4507.

IS CABLE GOOD?
Y N

003
REPAIR/REPLACE CABLE (SEE SM 1215 AND 1511 OR 4507 AND 4511).

004
DRIVE 3 OR DRIVE 4 PROBLEM?
Y N

005

GO TO MAP 1250, ENTRY POINT A.

006

GO TO MAP 1560, ENTRY POINT A.

007
1. REMOVE TIMING PIN IF NOT ALREADY REMOVED.
2. SELECT MAP CHART SUPPORT OPTION FROM PID 1500. SEE DIAGNOSTIC USER GUIDE 0001.
3. ISSUE A RECAL.
4. PROBE 'ACCESS 0' AND 'ACCESS 1' AT DISKETTE DRIVE CONTROL CARD TEST POINTS WHILE DOING A RECAL BY PRESSING THE '0' KEY. (USE TABLE 1, THIS MAP, FOR REFERENCE). (SEE SM 1502 (31SD), 1503 (51TD) OR 4508).

BOTH LINES HAVE PULSES?
Y N

008
IS DRIVE 1 OR 2 FAILING?
Y N

009
1. POWER OFF PROCESSOR.
2. POWER ON PROCESSOR.
3. LEAVE THE EXTERNAL DISKETTE UNIT POWERED UP.
4. AFTER POWER ON TEST IS COMPLETED, PERFORM THE NEXT CHECK.
5. PROBE 'ACCESS 0' AND 'ACCESS 1' AT THE DISKETTE ATTACHMENT CARD (SEE SM 4504 FOR CABLE LOCATIONS).

ARE BOTH LINES AT A SOLID 'UP' LEVEL?
Y N

010
REPLACE DISKETTE ATTACHMENT CARD (SEE SM 1205, 1511).

011
1. SELECT MAP CHART SUPPORT OPTION FROM PID 1500. SEE DIAGNOSTIC USER GUIDE 0001.
2. PROBE 'ACCESS 0' AND 'ACCESS 1' AT THE DISKETTE ATTACHMENT CARD (SEE SM 4504 FOR CABLE LOCATIONS).

BOTH LINES PULSE?
Y N

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012
1. POWER DOWN.
2. CHECK THE CABLE FROM THE DISKETTE ATTACHMENT CARD TO THE MULTIPLEXER CARD FOR CONTINUITY/SHORT CIRCUITS ON THE LINE THAT IS MISSING PULSES (SEE SM 4505).

IS THE CABLE OK?
Y N

013
REPAIR/REPLACE CABLE AS NECESSARY. (SEE SM 4505 AND 4579).

014
1. REPLACE THE DISKETTE ATTACHMENT CARD (SEE SM 1205 AND 1511).
2. REPLACE THE MULTIPLEXER CARD (SEE SM 4578).

015
PROBE 'ACCESS 0' AND 'ACCESS 1' AT THE MULTIPLEXER CARD WHERE THE CABLE FROM THE DISKETTE ATTACHMENT CARD CONNECTS (SEE SM 4505).

BOTH LINES PULSE?
Y N

016
1. REPAIR/REPLACE CABLE BETWEEN MULTIPLEXER CARD AND THE DISKETTE ATTACHMENT CARD (SEE SM 4505 AND 4579).
2. REPLACE MULTIPLEXER CARD (SEE SM 4578).

017
PROBE 'ACCESS 0' AND 'ACCESS 1' AT THE MULTIPLEXER CARD, WHERE THE CABLE FROM THE FAILING DISKETTE DRIVE CONNECTS (SEE SM 4507), WHILE MOVING ACCESS FOUR TRACKS IN (USE TABLE 1, THIS MAP FOR REFERENCE).

BOTH LINES PULSE?
Y N

018
1. CHECK CABLE FROM THE MULTIPLEXER CARD TO THE FAILING DISKETTE DRIVE CONTROL CARD FOR OPENS/SHORT CIRCUITS.
2. REPAIR/REPLACE AS NECESSARY (SEE SM 4507 AND 4511).
3. REPLACE THE MULTIPLEXER CARD (SEE SM 4578).
4. REPLACE DISKETTE DRIVE CONTROL CARD (SEE SM 4572).

019
1. CHECK CABLE FROM THE MULTIPLEXER CARD TO THE FAILING DISKETTE DRIVE CONTROL CARD FOR OPENS/SHORT CIRCUITS.
2. REPAIR/REPLACE AS NECESSARY (SEE SM 4507 AND 4511).
3. REPLACE DISKETTE DRIVE CONTROL CARD (SEE SM 4572).

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SEEK ERROR MAP

PAGE 4 OF 7

020
PROBE 'ACCESS 0' AND 'ACCESS 1' AT THE DISKETTE ATTACHMENT CARD END OF CABLE WHILE DOING A RECAL BY PRESSING THE '0' KEY (SEE TABLE 1, THIS MAP, FOR REFERENCE). (SEE SM 1505 ATTACHMENT CABLE PIN LOCATIONS).

BOTH LINES HAVE PULSES?
Y N

021
CHECK THE CABLE FROM THE DISKETTE ATTACHMENT CARD TO THE DISKETTE DRIVE CONTROL CARD FOR CONTINUITY/SHORT CIRCUITS ON THE LINE THAT IS MISSING PULSES (SEE SM 1505).

IS THE CABLE OK?
Y N

022
REPAIR/REPLACE AS NECESSARY (SEE SM 1215 AND 1511).

023
1. REPLACE DISKETTE ATTACHMENT CARD (SEE SM 1205 AND 1511).
2. REPLACE DISKETTE DRIVE CONTROL CARD (SEE SM 1572).

024
REPAIR/REPLACE THE DISKETTE ATTACHMENT CABLE BETWEEN THE DISKETTE ATTACHMENT CARD AND FAILING DRIVE. (SEE SM 1215, 1505 AND 1511).

025

1. DO A RECAL TO TRACK 00 (SEE TABLE 1, THIS MAP, FOR REFERENCE).
2. USE THE CE METER TO MEASURE VOLTAGE ON DISKETTE DRIVE CONTROL CARD TEST POINTS 'MC-3', 'MC-1', 'MC-2', AND 'MC-0' TO A GROUND (SEE SM 1502 (31SD), 1503 (51TD) OR 4508).
3. CHECK EACH TEST POINT AND COMPARE RESULTS TO TABLE AT RIGHT.
4. SINGLE CYCLE STEP TO TRACK 01 (USE TABLE 1, THIS MAP, FOR REFERENCE).
5. REPEAT MEASUREMENTS. REPEAT FOR TRACKS 02 AND 03.

SEEK ERROR MONITOR TAP

	MMC 33	MMC 11	MMC 22	MMC 00
TRACK 00	UP	UP	UP	DN
TRACK 01	UP	DN	UP	UP
TRACK 02	UP	UP	DN	UP
TRACK 03	DN	UP	UP	UP

DN = 0 TO +22.00V
UP = +21.6 TO +26.4V

ARE RESULTS THE SAME AS TABLE AT RIGHT?
Y N

026

1. POWER OFF.
2. REMOVE STEPPER MOTOR CONNECTOR (SEE SM 1502 (31SD), 1503 (51TD) OR 4508).
3. MEASURE RESISTANCES OF EACH STEPPER MOTOR COIL TO +24 COMMON AT PINS IN STEPPER MOTOR CONNECTOR. RESISTANCE ACROSS EACH COIL TO COMMON SHOULD BE 115-141 OHMS. (SEE SM 1502 (31SD), 1503 (51TD) OR 4508 FOR PIN LOCATIONS.)

(STEP 026 CONTINUES)

SEEK ERROR MAP

(STEP 026 CONTINUED)
ARE RESISTANCES OF ALL FOUR COILS CORRECT?
Y N

027
1. REPLACE STEPPER MOTOR. (SEE SM 1560 OR 4560).
2. POWER ON.

ANY MORE FAILURES?
Y N

028
PROBLEM IS CORRECTED.

029
1. REPLACE DISKETTE DRIVE CONTROL CARD (SEE SM 1572 OR 4572).
2. VERIFY REPAIR.

030
1. REPLACE DISKETTE DRIVE CONTROL CARD (SEE SM 1572 OR 4572).
2. VERIFY REPAIR.

031
1. POWER OFF.
2. REMOVE STEPPER MOTOR CONNECTOR (SEE SM 1502 (31SD), 1503 (51TD) OR 4508).
3. MEASURE RESISTANCE OF EACH STEPPER MOTOR COIL AT PINS IN STEPPER MOTOR CONNECTOR. RESISTANCE ACROSS EACH COIL TO COMMON SHOULD BE 115-141 OHMS. (SEE SM 1502 (31SD), 1503 (51TD) OR 4508 FOR PIN LOCATIONS.)

ARE RESISTANCES OF ALL FOUR COILS CORRECT?
Y N

032
REPLACE STEPPER MOTOR. (SEE SM 1560 OR 4560).

033
1. EXCHANGE DISKETTE DRIVE CONTROL CARD.
2. POWER UP.
3. SELECT AND RUN FAILING DIAGNOSTIC AGAIN.

SAME TYPE OF FAILURE OCCUR?
Y N

034
REPLACE THE DISKETTE DRIVE CONTROL CARD. (SEE SM 1572 OR 4572).

035
POWER OFF.
CHECK TO SEE THAT THE STEPPER MOTOR PULLEY CLAMP IS TIGHT AND THE PULLEY IS TIGHT ON THE STEPPER MOTOR SHAFT.
(SEE SM 1561 OR 4561).

ARE THEY TIGHT?
Y N

036
1. TIGHTEN AS NECESSARY. (SEE THE REPLACEMENT PROCEDURE OF SM 1561 OR 4561.)
2. PERFORM HEAD ALIGNMENT PROCEDURE (SEE SM 1530 OR 4530).

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037
CHECK THE STEPPER MOTOR DRIVE BAND TO SEE THAT IT IS NOT DAMAGED.

IS THE STEPPER MOTOR DRIVE BAND FREE OF DAMAGE?
Y N

038
REPLACE THE STEPPER MOTOR DRIVE BAND. (SEE SM 1562 OR 4562 FOR DRIVE BAND REMOVAL AND REPLACEMENT PROCEDURE.)

039
CHECK TO SEE IF THERE IS A GAP BETWEEN THE STEPPER MOTOR PULLEY AND THE CASTING. (SEE SM 1561 OR 4561 FOR FIGURE OF WHERE TO OBSERVE GAP.)

IS THERE A GAP?
Y N

040
1. ADJUST THE PULLEY SO THAT THERE IS A GAP AND ALSO SO THAT THE DRIVE BAND TRACKS CORRECTLY. (SEE SM 1561 AND 1562 OR 4561 AND 4562.)
2. PERFORM HEAD ALIGNMENT (SEE SM 1530 OR 4530).

041
CHECK TO SEE THAT THE HEAD CARRIAGE MOVES FREELY, TO BOTH LIMITS OF THE CARRIAGE MOVEMENT, WHEN MOVED BY HAND.

DOES THE HEAD CARRIAGE MOVE FREELY?
Y N

042
1. ISOLATE THE BINDING PART.
2. CLEAN/REPLACE AS NECESSARY (SEE SM 1530 OR 4530).

043
1. POWER ON.
2. ALIGN HEAD CARRIAGE ASSEMBLY (SEE SM 1530 OR 4530).
3. RUN FAILING DIAGNOSTIC AGAIN.

SAME TYPE OF FAILURE OCCUR?
Y N

044
VERIFY REPAIR.

045
REPLACE STEPPER MOTOR (SEE SM 1560 OR 4560).

5246 POWER MAP

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP: ENTRY POINT	PAGE NUMBER	STEP NUMBER
1500	A	1	001
1530	A	1	001
1545	A	1	001
1555	A	1	001

001
(ENTRY POINT A)

*** DANGER ***

AC LINE VOLTAGE IS PRESENT IN THE POWER SUPPLY WHEN POWER ON/OFF SWITCH IS IN THE OFF POSITION. ALWAYS DISCONNECT THE AC LINE CORD FROM THE CUSTOMER WALL OUTLET WHEN WORKING IN PRIMARY POWER AREA.

*** GBGI SYSTEMS ***
UNUSUAL POWER SUPPLY/SYSTEM PROBLEMS MAY RESULT IF THE AC VOLTAGE SELECTION JUMPERS ON THE POWER SUPPLY TRANSFORMER DO NOT MATCH THE CUSTOMERS INPUT VOLTAGE ALWAYS CHECK THAT THESE JUMPERS ARE CORRECT BEFORE REPLACING THE POWER SUPPLY AND AFTER A NEW SUPPLY IS INSTALLED. (SEE SM 4574 FOR AC VOLTAGE SELECTION PROCEDURE.)

* * * NOTE * * *

IF EXTENDED RPQ FEATURE IS INSTALLED ON THE PROCESSOR, USE SM R4904 FOR REMOVAL/REPLACEMENT (STEP 001 CONTINUES)

(STEP 001 CONTINUED)
OF THE DISKETTE ATTACHMENT CARD.

IF EXTENDED RPQ FEATURE IS INSTALLED ON THE 5246 DISKETTE UNIT, USE SM R4908 FOR REMOVAL/REPLACEMENT OF THE MULTIPLEXER CARD.

1. POWER OFF EXTERNAL DISKETTE(S).
2. REMOVE COVER. (SEE SM 4509).
3. POWER ON AND OBSERVE FAN AND THE DISKETTE DRIVE PULLEYS.

IS FAN TURNING?
Y N

002
ARE DISKETTE DRIVE PULLEY(S) TURNING?
Y N

003
IS CB1 TRIPPED?
Y N

004
1. POWER OFF.
2. MOVE POWER PLUG TO A KNOWN GOOD OUTLET.
3. POWER ON.

DOES THE FAN FAIL TO TURN?
Y N

005
PROBLEM IS CUSTOMER WALL OUTLET. INFORM CUSTOMER AND VERIFY REPAIR.

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3 3 2 2
A B C D

006
1. POWER OFF.
2. REMOVE POWER PLUG FROM CUSTOMER WALL OUTLET.
3. CHECK THE AC LINE CORD FOR CONTINUITY.

IS AC LINE CORD OK?
Y N

007
REPLACE LINE CORD.

008
1. REPLACE POWER SUPPLY (SEE SM 4576).
2. VERIFY REPAIR.

009
1. POWER OFF.
2. DISCONNECT AC DISTRIBUTION CABLE AT FAN AND DRIVE 3 AND DRIVE 4 IF INSTALLED. (SEE SM 4574).
3. RESET CB1.
4. POWER ON.

IS CB1 OK?
Y N

010
1. POWER OFF
2. REPLACE POWER SUPPLY (SEE SM 4576).
3. VERIFY REPAIR

011
1. POWER OFF.
2. CONNECT AC CABLE TO FAN. (SEE SM 4574).
3. POWER ON.

IS CB1 TRIPPED?
Y N

012
1. POWER OFF.
2. CONNECT AC CABLE TO DRIVE THREE. (SEE SM 4574).
3. POWER ON.

IS CB1 TRIPPED?
Y N

013
IS DRIVE 4 INSTALLED?
Y N

014
NO FAILURE FOUND.

015
1. POWER OFF.
2. CONNECT AC CABLE TO DRIVE FOUR. (SEE SM 4574).
3. POWER ON.

IS CB1 TRIPPED?
Y N

016
NO FAILURE FOUND

017
(DRIVE 4 MOTOR PROBLEM)

REPLACE:
1. MOTOR START CAPACITOR. (SEE SM 4551).
2. AC DRIVE MOTOR. (SEE SM 4550).

018
(DRIVE 3 MOTOR PROBLEM)

REPLACE:
1. MOTOR START CAPACITOR. (SEE SM 4551).
2. AC DRIVE MOTOR. (SEE SM 4550).

019
REPLACE FAN (SEE SM 4577).

020
1. POWER OFF.
2. DISCONNECT CONNECTOR (P5) THAT SUPPLIES AC VOLTAGE TO THE FAN MOTOR (SEE SM 4574).
3. POWER ON.
4. CHECK AC VOLTAGE (J5) TO FAN (SEE SM 4574).

IS AC VOLTAGE OK?
Y N

021
1. POWER OFF.
2. REPLACE POWER SUPPLY (SEE SM 4576).
3. VERIFY REPAIR.

022
REPLACE FAN. (SEE SM 4577).

023
ARE DISKETTE DRIVE PULLEY(S) TURNING?
Y N

024
TWO EXTERNAL DISKETTE DRIVES?
Y N

025
GO TO STEP 028,
ENTRY POINT BB.

026
IS EITHER DRIVE MOTOR TURNING (IF DRIVE 4 IS INSTALLED, BOTH DRIVE PULLEYS MUST BE TURNING TO ANSWER YES)?
Y N

027
1. POWER OFF.
2. REPLACE POWER SUPPLY (SEE SM 4576).
3. VERIFY REPAIR.

028
(ENTRY POINT BB)

CHECK THE AC VOLTAGE AT DRIVE MOTOR OF FAILING DRIVE (SEE SM 4574).

IS VOLTAGE OK?
Y N

029
1. POWER OFF.
2. REPLACE POWER SUPPLY (SEE SM 4576).
3. VERIFY REPAIR.

030
REPLACE:
1. MOTOR START CAPACITOR. (SEE SM 4551).
2. AC DRIVE MOTOR. (SEE SM 4550).

031
MEASURE THE DC VOLTAGES AT THE DISKETTE DRIVE 3 CONTROL CARD (SEE SM 4508).

IS VOLTAGE OK?
Y N

032
(DRIVE 3 VOLTAGE NO GOOD)

CHECK FUSES. (SEE SM 4581).

ARE FUSES OK?
Y N

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033

GO TO PAGE 10, STEP 095, ENTRY POINT C.

034

DOES THE POWER SUPPLY HAVE AN OVERVOLTAGE LED (OVERVOLTAGE LED IS LOCATED ABOVE FUSE PANEL)?

Y N

035

GO TO PAGE 6, STEP 054, ENTRY POINT KK.

036

IS OVERVOLTAGE LED LIGHTED?

Y N

037

GO TO PAGE 6, STEP 054, ENTRY POINT KK.

038

1. POWER OFF.
2. REPLACE POWER SUPPLY (SEE SM 4576).
3. VERIFY REPAIR.

039

IS DRIVE 4 INSTALLED?

Y N

040

GO TO PAGE 5, STEP 049, ENTRY POINT DD.

041

MEASURE DC VOLTAGES AT THE DISKETTE 4 CONTROL CARD (SEE SM 4508).

IS VOLTAGE OK?

Y N

042

(ENTRY POINT F)

1. POWER OFF.
2. CHECK VOLTAGE AT THE J3/P3 AND J4/P4 CONNECTOR THAT SUPPLIES THE DC VOLTAGE TO THE CONTROL CARD, WHERE THE VOLTAGE WAS NOT OK (SEE SM 4573).

IS VOLTAGE OK?

Y N

043

1. POWER OFF.
2. REPLACE POWER SUPPLY (SEE SM 4576).
3. VERIFY REPAIR.

044

(ENTRY POINT GG)

1. POWER OFF.
2. CHECK CABLE FROM DISKETTE DRIVE CONTROL CARD TO MULTIPLEXER CARD FOR OPENS/SHORT CIRCUITS ON LINES SUPPLYING VOLTAGE FROM P3 OR P4 TO CONTROL CARD (SEE SM 4507).

IS CABLE OK?

Y N

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045
1. REPAIR/REPLACE CABLE (SEE SM 4511).
2. VERIFY REPAIR.

046
1. REPLACE DRIVE CONTROL CARD (SEE SM 4572).
2. MEASURE VOLTAGE AT DRIVE CONTROL CARD.

IS VOLTAGE OK?
Y N

047
1. POWER OFF.
2. REPLACE POWER SUPPLY (SEE SM 4576).
3. VERIFY REPAIR.

048
VERIFY REPAIR.

049
(ENTRY POINT DD)

(DRIVE 3 OR 4 PROBLEM)

MEASURE DC VOLTAGE AT THE MULTIPLEXER CARD. (SEE SM 4507).

IS VOLTAGE OK?
Y N

050
1. POWER OFF.
2. CHECK CABLE FROM DISKETTE DRIVE CONTROL CARD TO MULTIPLEXER CARD FOR OPENS/SHORT CIRCUITS ON LINE SUPPLYING VOLTAGE FROM P3 OR P4 TO THE MULTIPLEXER CARD (SEE SM 4507).

IS CABLE OK?
Y N

051
1. REPAIR/REPLACE CABLE (4511).
2. VERIFY REPAIR.

052
1. REPLACE MULTIPLEXER CARD (SEE SM 4578).
2. VERIFY REPAIR.

053
NO PROBLEM FOUND.

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054
(ENTRY POINT KK)

IS DRIVE 4 INSTALLED?
Y N

055

GO TO STEP 057,
ENTRY POINT CC.

056
CHECK DC VOLTAGES AT DISKETTE DRIVE 4 CONTROL CARD. (SEE SM 4508).

ARE VOLTAGES OK?
Y N

057
(ENTRY POINT CC)

1. POWER OFF.
2. DISCONNECT J3/P3 AND J4/P4 (IF DRIVE 4 INSTALLED) CONNECTOR (SEE SM 4573).
3. POWER ON.
4. MEASURE VOLTAGES AT J3 AND J4 (SEE SM 4573).

ARE THE VOLTAGES OK?
Y N

058
1. POWER OFF.
2. REPLACE POWER SUPPLY (SEE SM 4576).
3. VERIFY REPAIR.

059
WITH DRIVE CABLES CONNECTED, WAS THE +24V DC LEVEL THE ONLY ONE OUT OF THE SPECIFIED RANGE?
Y N

060
1. RECONNECT J3/P3 PLUG.
2. MEASURE VOLTAGE AT J3/P3.

IS VOLTAGE OK?
Y N

061
IS DRIVE 4 INSTALLED?
Y N

062
1. REPLACE POWER SUPPLY (SEE SM 4576).
2. VERIFY REPAIR.

063
1. DISCONNECT J3/P3 PLUG.
2. CONNECT J4/P4 PLUG.
3. MEASURE VOLTAGE AT J4/P4.

IS VOLTAGE OK?
Y N

064
1. POWER OFF.
2. REPLACE POWER SUPPLY (SEE SM 4576).
3. VERIFY REPAIR.

065

GO TO PAGE 4, STEP 044,
ENTRY POINT GG.

066
IS DRIVE 4 INSTALLED?
Y N

067
PROBLEM DISAPPEARED.

068
1. CONNECT J4/P4 PLUG.
2. MEASURE VOLTAGE AT J4/P4.

IS VOLTAGE OK?
Y N

069

GO TO PAGE 4, STEP 044, ENTRY POINT GG.

070
PROBLEM DISAPPEARED.

071
1. POWER OFF.
2. CONNECT J3/P3 DC POWER DISTRIBUTION TO DISKETTE DRIVE THREE (SEE SM 4573).
3. POWER ON.
4. MEASURE THE +24V DC VOLTAGE ON DISKETTE DRIVE CONTROL CARD AT DISKETTE DRIVE 3 (SEE SM 4508).

IS THE +24V DC VOLTAGE INSIDE THE SPECIFIED RANGE?
Y N

072
(DRIVE 3 POWER PROBLEM).

1. POWER OFF.
2. PUT DRIVE 3 IN THE SERVICE POSITION. (SEE SM 4510).
3. DISCONNECT HEAD LOAD SOLENOID. (SEE SM 4508).
4. POWER ON.
5. MEASURE THE +24V DC VOLTAGE AT DISKETTE DRIVE THREE (SEE SM 4508).

(STEP 072 CONTINUES)

(STEP 072 CONTINUED)
IS THE +24V DC VOLTAGE INSIDE THE SPECIFIED RANGE?
Y N

073
1. POWER OFF.
2. CONNECT HEAD LOAD SOLENOID.
3. DISCONNECT STEPPER MOTOR (SEE SM 4508)
4. POWER ON.
5. MEASURE THE +24V DC VOLTAGE AT DISKETTE DRIVE THREE (SEE SM 4508).

IS THE +24V DC VOLTAGE INSIDE THE SPECIFIED RANGE?
Y N

074
1. POWER OFF.
2. REPLACE DISKETTE DRIVE CONTROL CARD. (SEE SM 4572).
3. POWER ON.
4. MEASURE +24V DC VOLTAGE.

IS VOLTAGE OK?
Y N

075
1. POWER OFF.
2. REPLACE MULTIPLEXER CARD (SEE SM 4578).
3. POWER ON.
4. MEASURE +24V DC VOLTAGE.

IS VOLTAGE OK?
Y N

076
1. POWER OFF.
2. REPLACE POWER SUPPLY (SEE SM 4576).
3. VERIFY REPAIR.

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8 A A A
Z A B C

095
(ENTRY POINT C)

1. POWER OFF.
2. DISCONNECT THE DC DISTRIBUTION CABLES J3/P3 DRIVE 3 (J4/P4 IF DRIVE 4 IS INSTALLED) (SEE SM 4501).
3. REPLACE DAMAGED FUSE (SEE SM 4581).
4. POWER ON

IS REPLACED FUSE GOOD?
Y N

096
1. POWER OFF.
2. REPLACE POWER SUPPLY. (SEE SM 4576).
3. VERIFY REPAIR.

097
POWER OFF.
PROBLEM IS NOT IN THE POWER SUPPLY.

1. RECONNECT THE DC DISTRIBUTION CABLE TO DRIVE 3, J3/P3.
2. POWER ON.

IS THE REPLACED FUSE STILL GOOD?
Y N

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098
(PROBLEM IS IN DRIVE 3.)

1. POWER OFF.
2. REPLACE DAMAGED FUSE (SEE SM 4581).
3. RECONNECT DC DISTRIBUTION CABLE TO DRIVE 4, P4/J4 (IF DRIVE 4 IS INSTALLED).
4. CHECK CABLE FROM DISKETTE DRIVE CONTROL CARD TO MULTIPLEXER CARD FOR OPENS/SHORT CIRCUITS ON LINES SUPPLYING VOLTAGE FROM P-3 TO DRIVE CONTROL CARD (SEE SM 4507).

IS CABLE OK?
Y N

099
1. REPAIR/REPLACE CABLE (SEE SM 4511).
2. VERIFY REPAIR.

100
WAS DAMAGED FUSE F1?
Y N

101
WAS DAMAGED FUSE F2 ?
Y N

102
1. POWER OFF.
2. REPLACE FUSE F3 (-5V DC). (SEE SM 4581).
3. REPLACE DRIVE CONTROL CARD (SEE SM 4572).
4. POWER ON.

IS FUSE OK?
Y N

103
1. POWER OFF.
2. REPLACE FUSE F3 (SEE SM 4581).
3. REPLACE MULTIPLEXER CARD (SEE SM 4578).

IS FUSE OK?
Y N

104
1. POWER OFF.
2. REPLACE POWER SUPPLY (SEE SM 4576).
3. VERIFY REPAIR.

105
VERIFY REPAIR.

106
VERIFY REPAIR.

107
1. POWER OFF.
2. REPLACE FUSE F2, (+5V DC). (SEE SM 4581).
3. DISCONNECT LED CONNECTOR (SEE SM 4508).
4. POWER ON.

IS FUSE F2 GOOD?
Y N

108
1. POWER OFF.
2. RECONNECT LED CONNECTOR (SEE SM 4508).
3. DISCONNECT PTX CONNECTOR (SEE SM 4508).
4. REPLACE FUSE F2 (SEE SM 4581).
5. POWER ON.

IS FUSE F2 GOOD?
Y N

109
1. POWER OFF.
2. REPLACE DISKETTE DRIVE CONTROL CARD (SEE SM 4572).
3. REPLACE FUSE F2 (SEE SM 4581).
4. POWER ON.

IS FUSE OK?
Y N

110
1. POWER OFF.
2. REPLACE FUSE F2 (SEE SM 4581).
3. REPLACE MULTIPLEXER CARD (SEE SM 4578).

IS FUSE OK?
Y N

111
1. POWER OFF.
2. REPLACE POWER SUPPLY (SEE SM 4576).
3. VERIFY REPAIR.

IS FUSE OK?
Y N

112
IS EXTENDED RPQ FEATURE INSTALLED (SEE SM R4902)?
Y N

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113
1. CHECK CABLE BETWEEN DISKETTE ATTACHMENT CARD AND MULTIPLEXER CARD FOR OPEN/SHORT CIRCUIT (SEE SM 4505). (IF SHARED FEATURE CHECK BOTH CABLES).
2. REPAIR/REPLACE AS NECESSARY (SEE SM 4579).
3. REPLACE DAMAGED FUSE F2 (SEE SM 4581).
4. VERIFY REPAIR.

114
CHECK THE LOCAL PROCESSOR CABLE FROM THE MULTIPLEXER CARD TO THE DISKETTE ATTACHMENT CARD (SEE SM 4505).

IS CABLE OK?
Y N

115
1. REPAIR/REPLACE AS NECESSARY (SEE SM 4579).
2. REPLACE DAMAGED FUSE F2 (SEE SM 4581).
3. VERIFY REPAIR.

116
CHECK EXTENDED CABLE FOR SHORT CIRCUIT (BOTH ENDS OF CABLE MUST BE DISCONNECTED. SEE SM R4906). DO NOT SEPARATE CABLE BETWEEN EXTENDED FEATURE CARD AND MULTIPLEXER CARD.

IS CABLE OK?
Y N

117
1. ISOLATE THE SHORT CIRCUIT. IT MAY BE IN THE SHORT CABLE OR IN THE LONG EXTENDED CABLE. (TO ISOLATE SHORT CIRCUIT, DISCONNECT EXTENDED CABLE AND SHORT CABLE AT THE SHORT CABLE CONNECTOR. SEE SM R4902).
2. REPAIR AS NECESSARY (SEE SM R4906).
3. REINSTALL ALL CABLES TO THEIR NORMAL POSITIONS (SEE SM R4902).
4. REPLACE DAMAGED FUSE F2 (SEE SM 4581).
5. VERIFY REPAIR.

118
1. MOVE CABLE, AT MULTIPLEXER CARD, FROM EXTENDED PORT 2 TO THE TEST BLOCK (SEE SM R4900).
2. DISCONNECT CABLE (IF NOT ALREADY DISCONNECTED) THAT IS CONNECTED TO THE REMOTE PROCESSOR AT THE EXTENDED FEATURE CARD (SEE SM R4904).
3. CHECK CABLE AT EXTENDED FEATURE CONNECTOR (THE END THAT USUALLY CONNECTS TO THE EXTENDED FEATURE CARD) FOR CONTINUITY (SEE SM R4906).

IS CABLE CONTINUITY OK?
Y N

119
1. ISOLATE THE OPEN. IT MAY BE IN THE SHORT CABLE OR IN THE LONG PART OF THE EXTENDED CABLE (SEE SM R4906).
2. REPAIR AS NECESSARY (SEE SM R4906).
3. REINSTALL ALL CABLES TO THEIR NORMAL POSITIONS (SEE SM R4902).
4. REPLACE DAMAGED FUSE F2 (SEE SM 4581).
5. VERIFY REPAIR.

120
CALL FOR AID.

121
VERIFY REPAIR.

122
VERIFY REPAIR.

123
VERIFY REPAIR.

124
1. POWER OFF.
2. REPLACE PTX ASSEMBLY (SEE SM 4571).
3. VERIFY REPAIR.

125
1. REPLACE LED ASSEMBLY (SEE SM 4570).
2. VERIFY REPAIR.

126
(+24V DC PROBLEM ON DRIVE 3)

1. DISCONNECT HEAD LOAD SOLENOID CONNECTOR (SEE SM 4508).
2. POWER ON.

IS FUSE F1 GOOD?
Y N

127
1. POWER OFF.
2. RECONNECT HEAD LOAD SOLENOID (SEE SM 4508).
3. DISCONNECT STEPPER MOTOR CONNECTOR (SEE SM 4508).
4. REPLACE FUSE F1 (SEE SM 4581).
5. POWER ON.

IS FUSE F1 GOOD?
Y N

128
1. POWER OFF.
2. RECONNECT STEPPER MOTOR CONNECTOR (SEE SM 4508).
3. REPLACE DISKETTE DRIVE CONTROL CARD (SEE SM 4572).
4. REPLACE FUSE F1 (SEE SM 4581).
5. POWER ON.

IS FUSE OK?
Y N

129
1. POWER OFF.
2. REPLACE FUSE F1 (SEE SM 4581).
3. REPLACE MULTIPLEXER CARD (SEE SM 4578).

IS FUSE OK?
Y N

130
1. POWER OFF.
2. REPLACE POWER SUPPLY (SEE SM 4576).
3. VERIFY REPAIR.

131
VERIFY REPAIR.

132
VERIFY REPAIR.

133
1. POWER OFF.
2. REPLACE STEPPER MOTOR (SEE SM 4560).
3. VERIFY REPAIR.

134
1. POWER OFF.
2. REPLACE HEAD LOAD SOLENOID (SEE SM 4540).
3. VERIFY REPAIR.

135
IS DRIVE 4 INSTALLED?
Y N

136
PROBLEM DISAPPEARED.

137
1. POWER OFF.
2. RECONNECT THE DC DISTRIBUTION CABLE TO DRIVE 4, P4/J4.
3. POWER ON.

IS THE REPLACED FUSE GOOD?
Y N

138
(PROBLEM IS IN DRIVE 4.)

1. POWER OFF.
2. REPLACE DAMAGED FUSE (SEE SM 4581).
3. CHECK CABLE FROM DISKETTE DRIVE CONTROL CARD TO MULTIPLEXER CARD FOR OPENS/SHORT CIRCUITS ON LINES SUPPLYING VOLTAGE FROM P-4 TO DRIVE CONTROL CARD (SEE SM 4507).

IS CABLE OK?
Y N

139
1. REPAIR/REPLACE CABLE (SEE SM 4511).
2. VERIFY REPAIR.

140
WAS DAMAGED FUSE F1?
Y N

141
WAS DAMAGED FUSE F2 ?
Y N

142
1. POWER OFF.
2. REPLACE FUSE F3, (-5V DC). (SEE SM 4581).
3. REPLACE DRIVE CONTROL CARD (SEE SM 4572).
4. POWER ON.

IS FUSE OK?
Y N

143
1. POWER OFF.
2. REPLACE FUSE F3 (SEE SM 4581).
3. REPLACE MULTIPLEXER CARD (SEE SM 4578).

IS FUSE OK?
Y N

144
1. POWER OFF.
2. REPLACE POWER SUPPLY (SEE SM 4576).
3. VERIFY REPAIR.

145
VERIFY REPAIR.

146
VERIFY REPAIR.

147
1. POWER OFF.
2. REPLACE FUSE F2, (+5V DC). (SEE SM 4581).
3. DISCONNECT LED CONNECTOR (SEE SM 4508).
4. POWER ON.

IS FUSE F2 GOOD?
Y N

148
1. POWER OFF.
2. RECONNECT LED CONNECTOR (SEE SM 4508).
3. DISCONNECT PTX CONNECTOR (SEE SM 4508).
4. REPLACE FUSE F2 (SEE SM 4581).
5. POWER ON.

IS FUSE F2 GOOD?
Y N

149
1. POWER OFF.
2. RECONNECT PTX CONNECTOR (SEE SM 4508).
3. REPLACE DISKETTE DRIVE CONTROL CARD (SEE SM 4572).
4. REPLACE FUSE F2 (SEE SM 4581).
5. POWER ON.

IS FUSE OK?
Y N

150
1. POWER OFF.
2. REPLACE FUSE F2 (SEE SM 4581).
3. REPLACE MULTIPLEXER CARD (SEE SM 4578).

IS FUSE OK?
Y N

151
1. POWER OFF.
2. REPLACE POWER SUPPLY (SEE SM 4576).
3. VERIFY REPAIR.

152
VERIFY REPAIR.

153
VERIFY REPAIR.

154
1. POWER OFF.
2. REPLACE PTX ASSEMBLY (SEE SM 4571).
3. VERIFY REPAIR.

155
1. POWER OFF.
2. REPLACE LED ASSEMBLY (SEE SM 4570).
3. VERIFY REPAIR.

156
(+24V DC PROBLEM ON DRIVE 4).

1. DISCONNECT HEAD LOAD SOLENOID CONNECTOR (SEE SM 4508).
2. POWER ON.

IS FUSE F1 GOOD?
Y N

157
1. POWER OFF.
2. RECONNECT HEAD LOAD SOLENOID (SEE SM 4508).
3. DISCONNECT STEPPER MOTOR CONNECTOR (SEE SM 4508).
4. REPLACE FUSE F1 (SEE SM 4581).
5. POWER ON.

IS FUSE F1 GOOD?
Y N

158
1. POWER OFF.
2. RECONNECT STEPPER MOTOR CONNECTOR (SEE SM 4508).
3. REPLACE DISKETTE DRIVE CONTROL CARD (SEE SM 4572).
4. REPLACE FUSE F1 (SEE SM 4581).
5. POWER ON.

IS FUSE OK?
Y N

159
1. POWER OFF.
2. REPLACE FUSE F1 (SEE SM 4581).
3. REPLACE MULTIPLEXER CARD (SEE SM 4578).

IS FUSE OK?
Y N

160
1. POWER OFF.
2. REPLACE POWER SUPPLY (SEE SM 4576).
3. VERIFY REPAIR.

161
VERIFY REPAIR.

162
VERIFY REPAIR.

163
1. POWER OFF.
2. REPLACE STEPPER MOTOR (SEE SM 4560).
3. VERIFY REPAIR.

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MAP 1560-16

| |
| |
| 164
| 1. POWER OFF.
| 2. REPLACE HEAD LOAD SOLENOID
| (SEE SM 4542).
| 3. VERIFY REPAIR.
|
165
PROBLEM DISAPPEARED.

PRINTER MAP REFERENCE

(ENTRY POINT A)

(CHECK PRINTER FOR CORRECT OPERATION)

PRINTER	ID	PID	MAP (FOR FAILURES)	ENTRY POINT
5241	01	2300	2001	A
5242-1	02	2300	3001	A
5242-2	03	2300	3001	A
5217	10	2400	2401	F

(ENTRY POINT B)

(CUSTOMER REPORTED PRINTER FAILURE)

PRINTER	
5241	GO TO MAP 2001, ENTRY POINT A
5242	GO TO MAP 3001, ENTRY POINT A
5217	GO TO MAP 2401, ENTRY POINT B

(ENTRY POINT C)

('NOT ATTACHED' OR 'WRONG CONFIGURATION' PROBLEMS)

PRINTER	
5241	GO TO MAP 2001, ENTRY POINT D
5242	GO TO MAP 3001, ENTRY POINT D
5217	GO TO MAP 2401, ENTRY POINT D

(ENTRY POINT D)

(INTERMITTENT PROBLEMS)

PRINTER

5241	GO TO MAP 2022, ENTRY POINT A
5242	GO TO MAP 3022, ENTRY POINT A
5217	GO TO MAP 2403, ENTRY POINT A

(ENTRY POINT E)

(POWER ON DIAGNOSTIC ERROR)

PRINTER

5241	GO TO MAP 2001, ENTRY POINT A
5242	GO TO MAP 3001, ENTRY POINT A
5217	GO TO MAP 2401, ENTRY POINT A

(ENTRY POINT F)

(DIRECTIONS TO RUN 'WRAP TEST' OR A 'WRAP TEST' FAILURE)

PRINTER

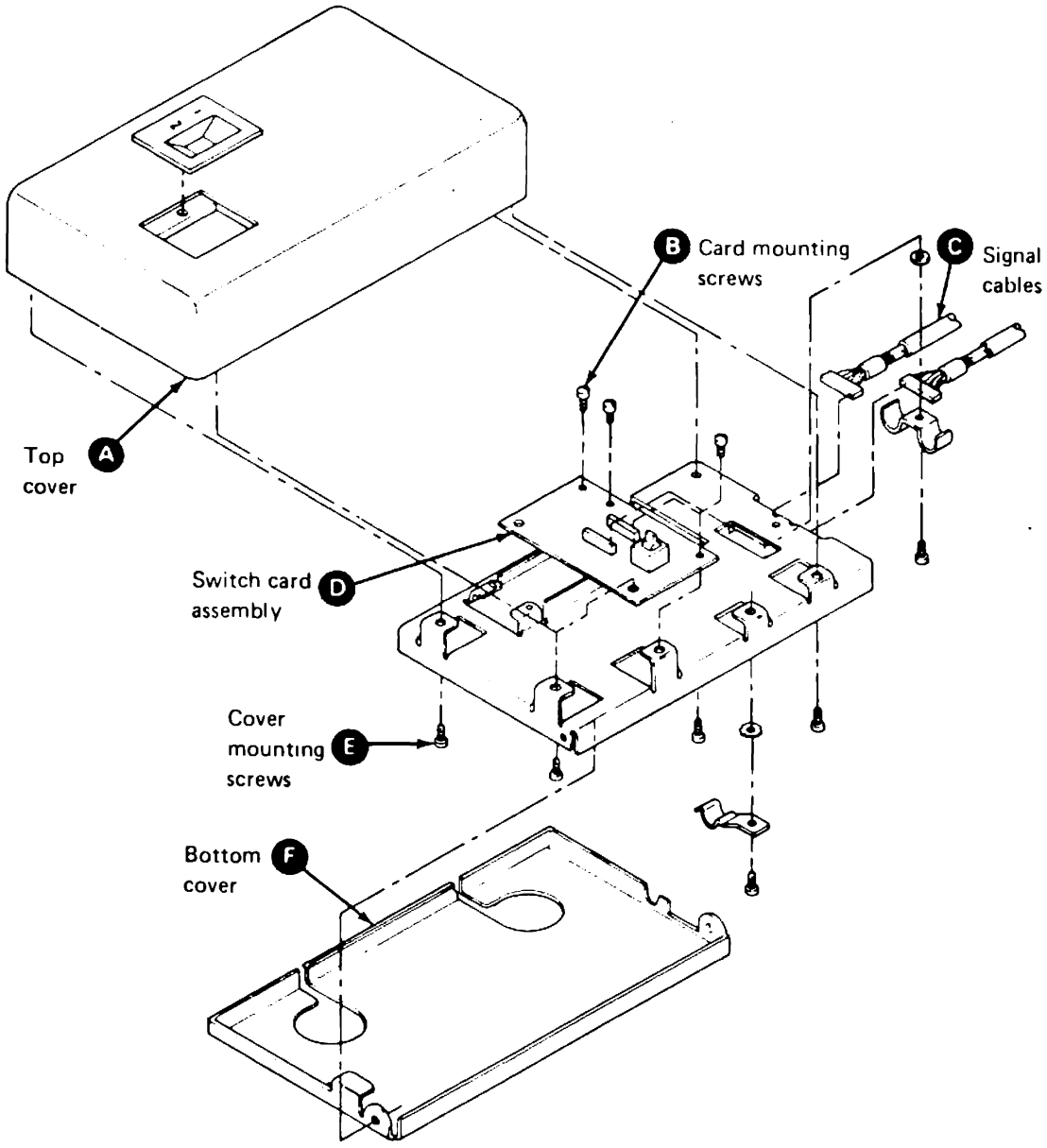
5241	GO TO MAP 2025, ENTRY POINT A
5242	GO TO MAP 3025, ENTRY POINT A
5217	GO TO MAP 2404, ENTRY POINT A

REMOVAL

1. SWITCH OFF THE POWER FOR THE PRINTER AND THE TWO COMPUTERS.
2. LAY THE PRINTER SWITCH CABLE ASSEMBLY FACE DOWN AND PULL OPEN THE BOTTOM COVER (F).
3. DISCONNECT THE PRINTER SIGNAL CABLE FROM THE BOTTOM OF THE SWITCH CARD ASSEMBLY (D). NOTE HOW THE CABLE IS ROUTED THROUGH THE CABLE CLAMPS.
4. REMOVE THE TOP COVER MOUNTING SCREWS (E).
5. LAY THE PRINTER SWITCH CABLE ASSEMBLY FACE UP AND LIFT OFF THE TOP COVER (A).
6. DISCONNECT SIGNAL CABLES 1 AND 2 (C) FROM THE SWITCH CARD ASSEMBLY. NOTE WHICH IS CONNECTOR 1 AND WHICH IS CONNECTOR 2.
7. REMOVE THE THREE SWITCH CARD ASSEMBLY MOUNTING SCREWS (B).
8. REMOVE THE SWITCH CARD ASSEMBLY (D).

REPLACEMENT

1. INSTALL THE SWITCH CARD ASSEMBLY (D) WITH THE THREE MOUNTING SCREWS (B).
2. CONNECT SIGNAL CABLES 1 AND 2 (C).
3. INSTALL THE TOP COVER (A) WITH THE COVER MOUNTING SCREWS (E).
4. LAY THE PRINTER SWITCH CABLE ASSEMBLY FACE DOWN AND CONNECT THE PRINTER SIGNAL CABLE TO THE BOTTOM OF THE SWITCH CARD ASSEMBLY. ENSURE THE CABLE IS ROUTED THROUGH THE CABLE CLAMPS AND THE GROUND SHIELD MAKES GOOD CONTACT WITH THE GROUND CLAMP.
5. CLOSE THE BOTTOM COVER (F).


B Card mounting screws
C Signal cables
Top cover
A
Switch card assembly
D
Cover mounting screws
E
Bottom cover
F

5217 PRINTER

PRINT TEST OUTPUTS - 10 PITCH

GCSID 102, 103

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GCSID 001-008

```
abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789
                              ,±°½§¶¢]³²"='':.?_%,#/-[;)*$&!+(.¼@
```

5217 PRINTER

PAGE 2 OF 9

PID 2400 - ROUTINE 3

First Page

```
1. CARRIAGE RETURN      2. LINE
                           FEED
3. UNDERSCORE:
3.1 SINGLE UNDERSCORE              SINGLE UNDERSCORE              SINGLE UNDERSCORE
3.2 CONTINUOUS UNDERSCORE      CONTINUOUS UNDERSCORE          CONTINUOUS UNDERSCORE
4. TAB:  T          T          T          T          T          T          T          T
5. NEW LINE
6. REQUIRED NEW LINE
7. INDEX RETURN
8. BACKSPACE
9. UNIT BACKSPACE; 1 INCH = 60 UBS      I          I
10. FORMS FEED
```

Second Page

```
11. REQUIRED PAGE END
```

PID 2400 - ROUTINE 4

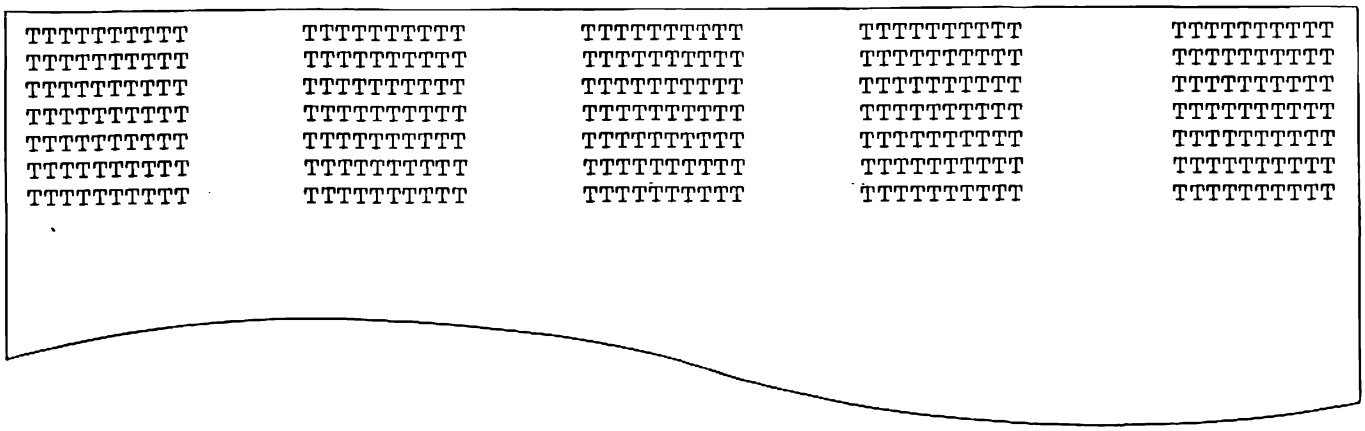
```
12...NO...JUSTIFICATION...I I I
12.1.HALF.JUSTIFICATION...I             I             I
12.2.FULL.JUSTIFICATION...I                       I                           I
12.2.1...HORIZONTAL TAB...I I I
12.2.2...REQUIRED SPACE...I I I
12.2.3...NUMERIC SPACE...I I I
12.2.4.......UNDERSCORE...I                       I                           I
13. CLEAR
14. RESTART
15. DATA INTEGRITY
```

PID 2400 - ROUTINE 5

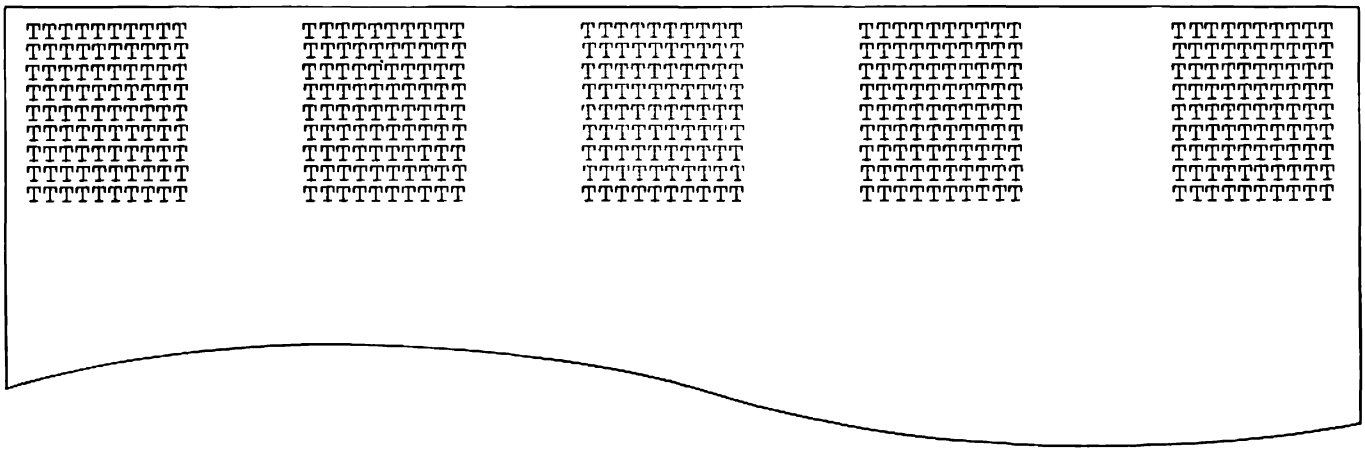
```
 !"#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmno
!"#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnop
"#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopq
#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqr
$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrs
%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrst
&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstu
'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuv
()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvw
)*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwx
*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxy
+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz
,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz
-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz !
./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz !"
/0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz !"#
0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz !"#$
123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz !"#$%
23456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz !"#$%&
3456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz !"#$%&'
456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz !"#$%&'(
56789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz !"#$%&'()
6789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz !"#$%&'()*
789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz !"#$%&'()*+
89:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz !"#$%&'()*+,
9:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz !"#$%&'()*+,-
:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz !"#$%&'()*+,-.
;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz !"#$%&'()*+,-./
<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz !"#$%&'()*+,-./0
=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz !"#$%&'()*+,-./01
>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz !"#$%&'()*+,-./012
?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz !"#$%&'()*+,-./0123
@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz !"#$%&'()*+,-./01234
ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz !"#$%&'()*+,-./012345
BCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz !"#$%&'()*+,-./0123456
CDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz !"#$%&'()*+,-./01234567
DEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz !"#$%&'()*+,-./012345678
EFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz !"#$%&'()*+,-./0123456789
FGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz !"#$%&'()*+,-./0123456789:
GHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz !"#$%&'()*+,-./0123456789:;
HIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz !"#$%&'()*+,-./0123456789:;<
IJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz !"#$%&'()*+,-./0123456789:;<=
JKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz !"#$%&'()*+,-./0123456789:;<=>
KLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz !"#$%&'()*+,-./0123456789:;<=>?
LMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz !"#$%&'()*+,-./0123456789:;<=>?@
```

PID 2400 - ROUTINE 8 (10 characters per inch)

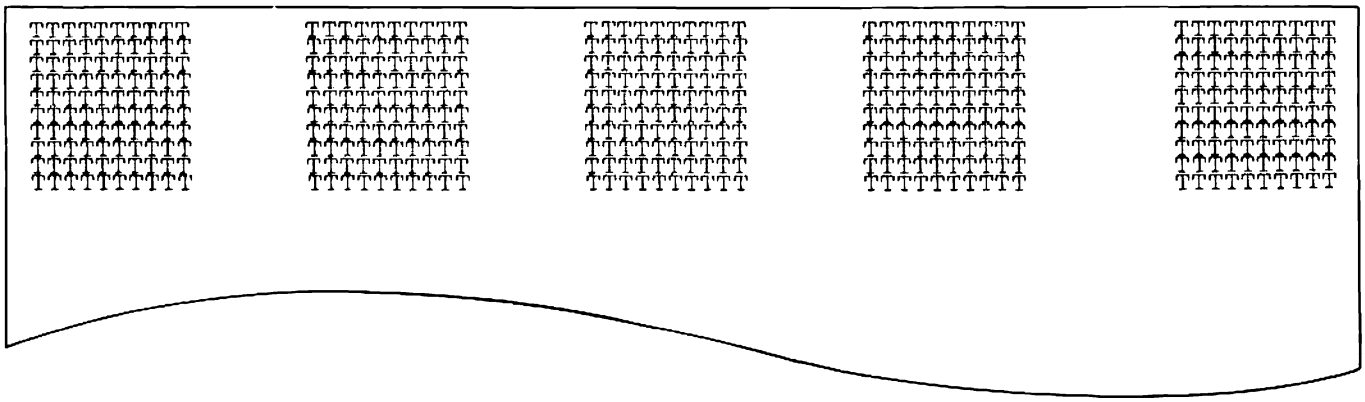
6 lines per inch



8 lines per inch

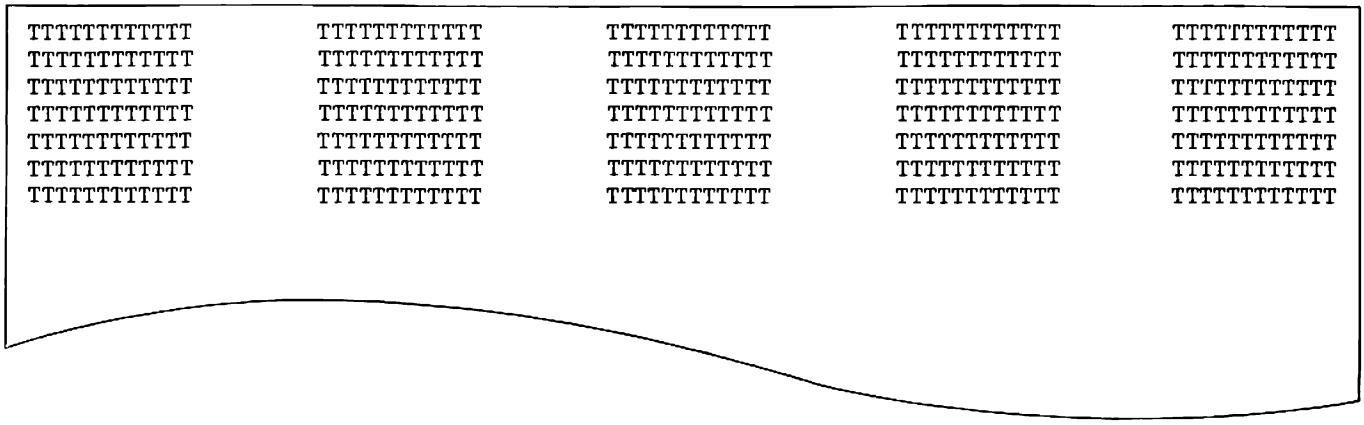


9.6 lines per inch

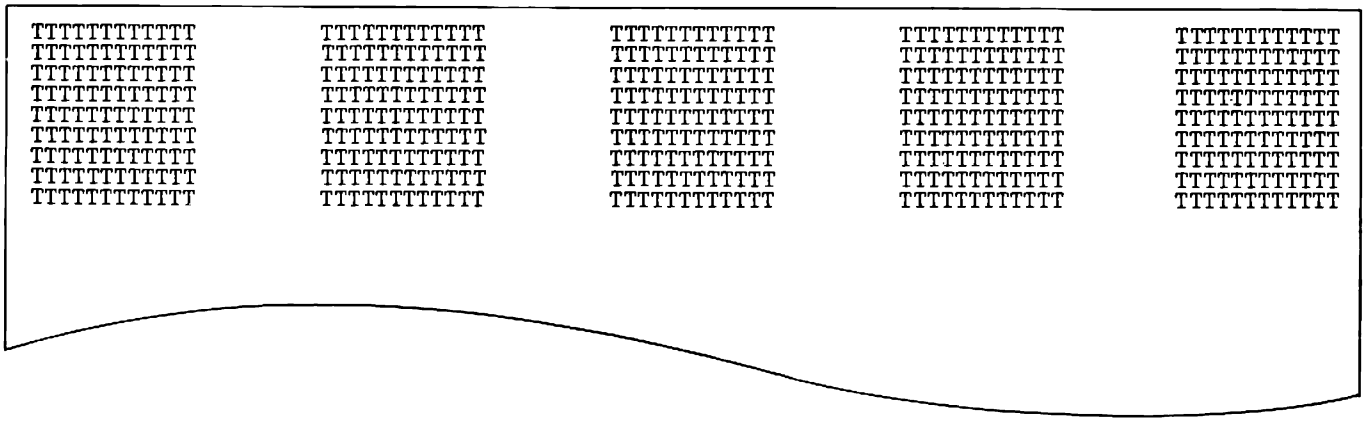


PID 2400 - ROUTINE 8 (12 characters per inch)

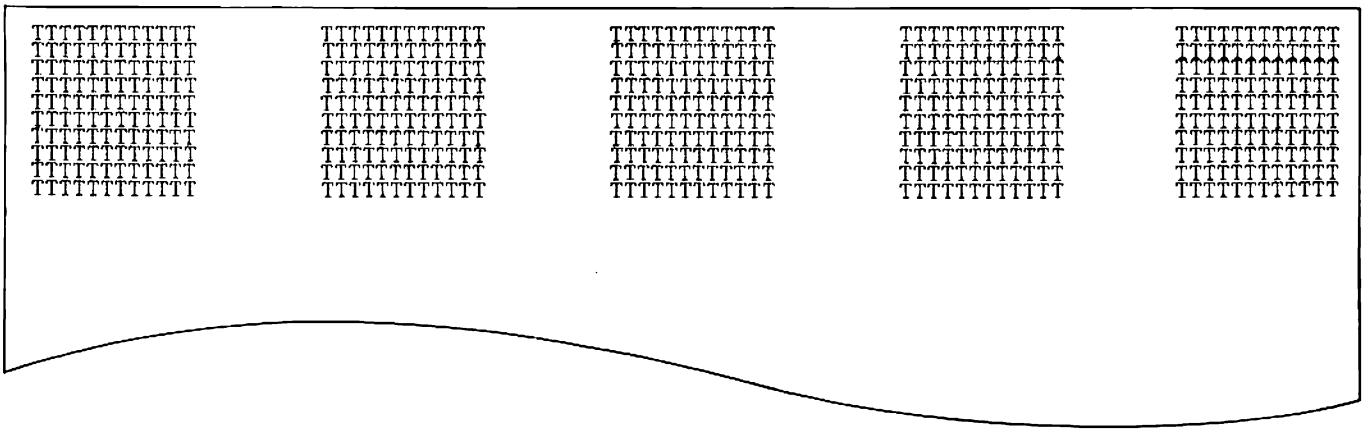
6 lines per inch



8 lines per inch

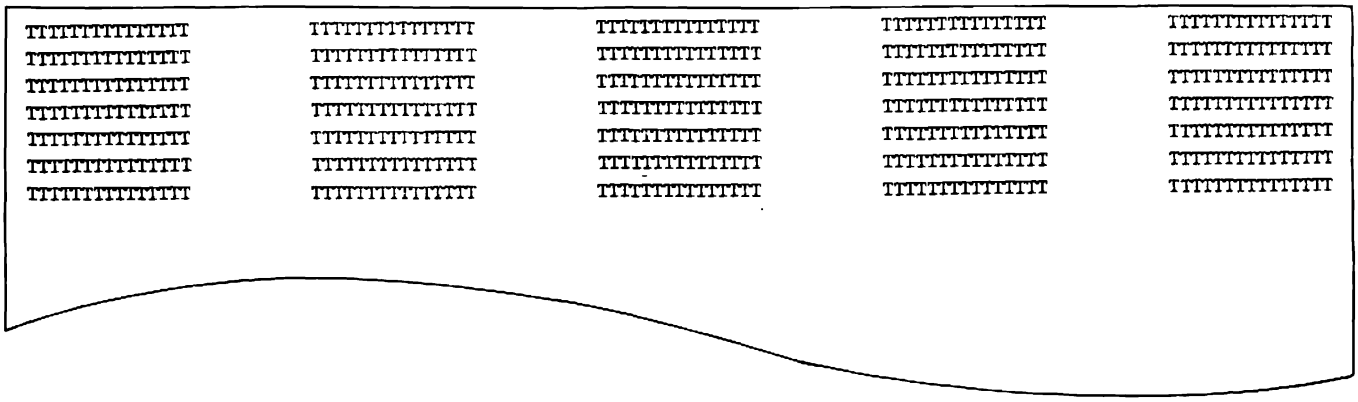


9.6 lines per inch

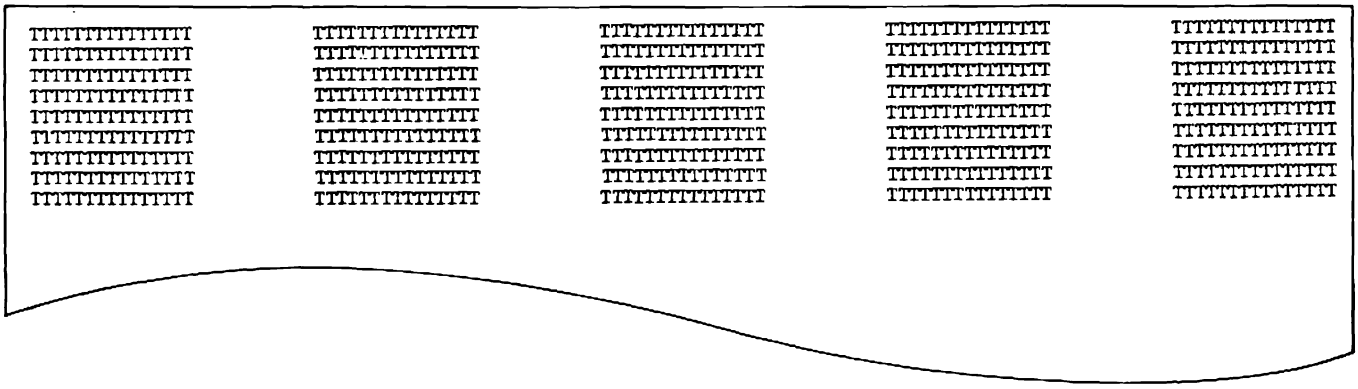


PID 2400 - ROUTINE 8 (15 characters per inch)

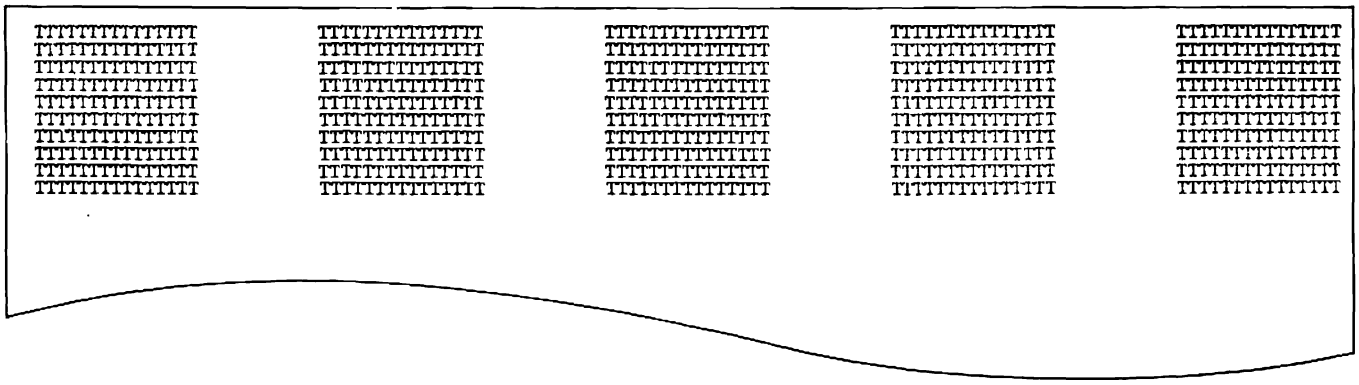
6 lines per inch



8 lines per inch



9.6 lines per inch



PID 2400 - ROUTINE A

First Page

```
AAAAAAAAAAAA                                aaaaaaaaaaaa
BBBBBBBBBBBB                                bbbbbbbbbbbb
CCCCCCCCCCCC                                cccccccccccc
DDDDDDDDDDDD                                dddddddddddd
EEEEEEEEEEEE                                eeeeeeeeeeee
FFFFFFFFFFFF                                ffffffffffff
GGGGGGGGGGGG                                gggggggggggg
HHHHHHHHHHHH                                hhhhhhhhhhhh
IIIIIIIIIII                                  iiiiiiiiiii
JJJJJJJJJJJJ                                jjjjjjjjjjjj
KKKKKKKKKKKK                                kkkkkkkkkkkk
LLLLLLLLLLLL                                llllllllllll
MMMMMMMMMMMM                                mmmmmmmmmmmm
NNNNNNNNNNNN                                nnnnnnnnnnnn
OOOOOOOOOOOO                                oooooooooooo
PPPPPPPPPPPP                                pppppppppppp
QQQQQQQQQQQQ                                qqqqqqqqqqqq
RRRRRRRRRRRR                                rrrrrrrrrrrr
SSSSSSSSSSSS                                ssssssssssss
TTTTTTTTTTTT                                tttttttttttt
UUUUUUUUUUUU                                uuuuuuuuuuuu
VVVVVVVVVVVV                                vvvvvvvvvvvv
WWWWWWWWWWWW                                wwwwwwwwwwww
XXXXXXXXXXXX                                xxxxxxxxxxxx
YYYYYYYYYYYY                                yyyyyyyyyyyy
ZZZZZZZZZZZZ                                zzzzzzzzzzzz
000000000000
111111111111
222222222222
333333333333
444444444444
555555555555
666666666666
777777777777
888888888888
999999999999
```

5217 PRINTER

PAGE 9 OF 9

PID 2400 - ROUTINE A

Second Page

```
AAAAAAAAAAAA aaaaaaaaaaaa
BBBBBBBBBBBB bbbbbbbbbbbb
CCCCCCCCCCCC cccccccccccc
DDDDDDDDDDDD dddddddddddd
EEEEEEEEEEEE eeeeeeeeeeee
FFFFFFFFFFFF ffffffffffff
GGGGGGGGGGGG gggggggggggg
HHHHHHHHHHHH hhhhhhhhhhhh
IIIIIIIIIIII iiiiiiiiiiii
JJJJJJJJJJJJ jjjjjjjjjjjj
KKKKKKKKKKKK kkkkkkkkkkkk
LLLLLLLLLLLL llllllllllll
MMMMMMMMMMM mmmmmmmmmmmm
NNNNNNNNNNNN nnnnnnnnnnnn
OOOOOOOOOOOO oooooooooooo
PPPPPPPPPPPP pppppppppppp
QQQQQQQQQQQQ qqqqqqqqqqqq
RRRRRRRRRRRR rrrrrrrrrrrr
SSSSSSSSSSSS ssssssssssss
TTTTTTTTTTTT tttttttttttt
UUUUUUUUUUU uuuuuuuuuuuu
VVVVVVVVVVV vvvvvvvvvvvv
WWWWWWWWWWW wwwwwwwwwwww
XXXXXXXXXXXX xxxxxxxxxxxx
YYYYYYYYYYYY yyyyyyyyyyyy
ZZZZZZZZZZZZ zzzzzzzzzzzz
000000000000
111111111111
222222222222
333333333333
444444444444
555555555555
666666666666
777777777777
888888888888
999999999999
```

(ENTRY POINT A)

MAP	TITLE	PART NO
2400	PRINTER SYMPTOM INDEX	6842329
2401	PRINTER ENTRY MAP	6842330
2402	VERIFY	6842331
2403	INTERMITTENT AND MISCELLANEOUS PROBLEMS	6842332
2404	WRAP TEST PROCEDURE	6842333

THE INFORMATION CONTAINED IN THESE MAPS WILL AID YOU IN DETERMINING WHERE THE PROBLEM IS. IF YOU HAVE NOT REVIEWED THE BASIC INFORMATION, DO IT BEFORE YOU CONTINUE WITH THE MAPS.

BASIC INFORMATION LIST

POWER OFF/ON DELAY
DIAGNOSTIC AIDS
DEFINITIONS

POWER OFF/ON DELAY

AFTER SWITCHING OFF THE PRINTER WAIT AT LEAST FIVE SECONDS BEFORE SWITCHING ON POWER.

DIAGNOSTIC AIDS

IF THERE IS A CUSTOMER PROBLEM, REMEMBER IT WHEN USING THE MAPS.

1. IDENTIFY THE PROBLEM AREA (SUCH AS FORMS FEED, PRINT HEAD AND RIBBON FEED). WHEN POSSIBLE, THE CUSTOMER SYMPTOM MAY BE USED TO DO THIS,

SPECIFICALLY WHEN THE DIAGNOSTICS RUN WITHOUT ERROR.

2. CHECK MECHANICAL PARTS FOR LOOSE SCREWS, BROKEN SPRINGS, LOOSE OR BINDING CONDITIONS AND INTERFERENCE. WHEN POSSIBLE, OPERATE MECHANICAL PARTS BY HAND TO FIND POSSIBLE AIDS TO SOLVE THE PROBLEM.

3. CHECK ALL FUSES, TAPER PINS, AND OTHER TERMINALS FOR BAD CONNECTIONS AND CONNECTORS FOR FAILING TERMINALS.

4. CHECK THAT ALL CONNECTORS, CABLES, WIRES, AND JUMPERS ARE TIGHTLY PLUGGED IN.

5. CHECK FOR WIRES OR CABLES THAT MAY BE PINCHED OR ARE INTERMITTENTLY CAUSING SHORT CIRCUITS.

6. CHECK FOR BROKEN WIRES THAT MAY TOUCH INTERMITTENTLY.

7. CHECK FOR DISCOLORED CIRCUIT PARTS. OVERHEATED PARTS MAY GIVE AID TO SOLVING THE PROBLEM.

DEFINITIONS

REVIEW THE FOLLOWING DEFINITIONS.

1. FORMS LOADING POSITION

THE PRINT HEAD MOVES TO THE FORMS LOADING POSITION AFTER THE POWER-ON DIAGNOSTICS,

2. SERVICE POSITION

THE PRINT HEAD CARRIER IS CENTERED. THIS POSITION IS REQUIRED TO:

CHANGE PRINTER WHEEL OR TO CHANGE RIBBON.

3. REPLACE

INSTALL A NEW PART, BECAUSE THE OLD PART IS FAILING. FOR EXAMPLE 'REPLACE THE PRINTER PLANAR BOARD', INFORMS YOU TO INSTALL A NEW BOARD BECAUSE THE OLD ONE IS FAILING.

4. MAP REFERENCE

THE EXAMPLE (SEE SM 12XX OR SEE MAP 19XX) IS SHOWING A PROCEDURE OR LOCATION IN A SERVICE INFORMATION MANUAL OR MAP.

5. ERROR LOG 6202 ERRORS

FOR INTERMITTENT PRINTER CHECK PROBLEMS (6202 ERRORS), AN ERROR LOG CAN BE DISPLAYED IN STORAGE LOCATION 09800.

TO DISPLAY THIS INFORMATION DO THE FOLLOWING STEPS:

A. PRESS AND HOLD BOTH THE 'HOLD' AND 'TEST' KEYS.

B. PRESS THE '9' KEY (NUMERIC KEY ABOVE THE ALPHA KEYS).

C. 'MONITOR' SHOULD BE DISPLAYED ON THE SCREEN.

D. KEY IN 'D09800'.

E. THE SCREEN SHOULD DISPLAY 256 BYTES STARTING AT ADDRESS 09800.

F. THE FIRST 3 BYTES CONTAIN THE EXCEPTION BYTES.

G. THE FOURTH BYTE CONTAINS THE PRINTER STATUS.

DISPLAYED DATA:

```
                    MONITOR
D 0  9800
9800   AA BB CC DD 00 --(10 OTHER BYTES)--00  EXPLANATION:

       AA = EXCEPTION BYTE 2
         HEX
         02 = FORMS JAMMED
         10 = NOT READY

       BB = EXCEPTION BYTE 1
         HEX
         01 = BUFFER OVERRUN
         08 = UNEXPECTED COVER OPEN

       CC = EXCEPTION BYTE 0
         HEX
         01 = PARITY ERROR
         02 = OVERRUN ERROR
         04 = FRAME ERROR
```

DD = PRINTER STATUS BYTE
HEX
01 = LEFT MARGIN
02 = FORMS PRESENT
04 = RIBBON AVAILABLE
80 = TEXT PRINT MODE

NOTE: THESE 4 BYTES ARE DISPLAYED HERE IN REVERSE ORDER AS PRESENTED IN USER GUIDE 0024, PID 2400, GENERAL INFORMATION, FOR THE 5217 PRINTER.

EXAMPLE: THE CUSTOMER IS GETTING INTERMITTENT PRINTER CHECKS (6202 ERRORS). THE ERROR DATA DISPLAYED, STARTING AT LOCATION 09800, CONTAINS THE FOLLOWING INFORMATION: 00 01 00 06. THE ERROR IS IDENTIFIED AS A BUFFER OVERRUN SINCE EXCEPTION BYTE 1 = 01, WHICH IS CAUSED BY A PRINTER PROCESSOR FAILURE. USE THE 5217 MAPS TO ISOLATE THE PROBLEM.

TO EXIT THE MONITOR DO THE FOLLOWING STEPS:

A. PRESS 'E' KEY.

B. PRESS 'HOLD' KEY.

FOR ADDITIONAL INFORMATION ON MONITOR, REFER TO USER GUIDE 0001, PID DMON (ROS RESIDENT MONITOR).

5217 PRINTER

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP: ENTRY POINT	PAGE NUMBER	STEP NUMBER
1900	A	1	001
1900	B	1	002
1900	D	9	033
1900	F	2	004
2404	D	9	033

EXIT POINTS

EXIT THIS MAP: PAGE NUMBER	STEP NUMBER	TO: MAP NUMBER	ENTRY POINT
2	005	1000	A
2	010	1000	B
8	023	1000	B
7	015	2402	A
7	016	2402	A
9	031	2402	A
9	034	2402	A
9	036	2402	A
10	038	2402	A
10	039	2402	A
8	026	2404	A
9	032	2404	A

001
(ENTRY POINT A)

WAS THIS MAP ENTERED AFTER RUNNING POWER ON TESTS?
Y N

002
(ENTRY POINT B)

WAS THIS MAP ENTERED BECAUSE PRINTER 2-DIGIT DISPLAY INDICATES ERROR CODE?
Y N

003
WAS THIS MAP ENTERED BECAUSE THE CUSTOMER REPORTED A PRINTER PROBLEM?
Y N

02APR82 PN6842330

EC466930 PEC-------

8 8 7 2
A B C D

004
(ENTRY POINT F)

WAS THIS MAP ENTERED TO RUN PRINTER DIAGNOSTIC TEST PROGRAM PID 2400 (CHECK PRINTER FOR CORRECT OPERATION)?
Y N

005
GO TO THE POWER ON TEST ENTRY.
GO TO MAP 1000, ENTRY POINT A.

006
(ENTRY POINT C)

1. ENSURE PRINTER SIGNAL CABLE IS PLUGGED INTO SELECTED PRINTER PORT.

2. LOAD AND RUN PRINTER DIAGNOSTIC PID 2400 AUTOMATIC ROUTINES 1 THROUGH 5 OR SELECT ROUTINE TO TEST SUSPECTED FUNCTION. SEE THE DIAGNOSTIC USER GUIDE 0024, PID 2400.

3. FOR LOADING INSTRUCTIONS USE DCP OPTION 10.

*****(RETURN TO MAP AFTER RUNNING PRINTER DIAGNOSTICS.)*****

DOES THE CRT DISPLAY AN ERROR MESSAGE?
Y N

007
IS THIS AN INTERMITTENT PROBLEM?
Y N

008
DID YOU FIND A PROBLEM WITH THE PRINTER?
Y N

009
DO YOU WANT TO TEST EACH PRINTER ATTACHED TO THE SYSTEM?
Y N

010
GO TO THE CPU MAP TO CHECK THE CORRECT OPERATION OF THE SYSTEM.

GO TO MAP 1000,
ENTRY POINT B.

011
RUN THE PRINTER DIAGNOSTIC TEST PID 2400 AGAIN, SELECT OTHER PORT (1 OR 2).

GO TO STEP 006,
ENTRY POINT C.

012
GO TO 5217 MAPS.

013
LOOP DIAGNOSTIC PID 2400, SEE THE DIAGNOSTIC USER GUIDE 0024, FOR LOOP PROGRAM INSTRUCTIONS. IF NO FAILURES OCCUR, GO TO THE INTERMITTENT MAP OF THE 5217 PRINTER.

02APR82 PN6842330

EC466930 PEC-------

014
SEE THE ERROR MESSAGE ON CRT AND FOLLOW THE REPAIR ACTION FROM THE FOLLOWING CHART. VERIFY THE REPAIR. GO TO MAP 2402, ENTRY POINT A.

ERROR ID	FAILURE AND REPAIR ACTION
I-292	NO PRINTER ATTACHED. CHECK FOR PRINTER CABLE INSTALLED IN CPU. GO TO ENTRY D OF THIS MAP
I-294	PRINTER ID OBTAINED FROM DATA REQUEST RESPONSE FIELD WAS NOT FOUND TO BE 10. IF THE PRINTER IS A 5217, THEN GO TO THE 5217 MAPS.
E-241	HOLD INTERRUPT ERROR. GO TO THE 5217 MAPS.
E-242	TRANSMIT INTERRUPT ERROR. REPLACE PRINTER PORT 2 FEATURE CARD OR CPU PLANAR BOARD (SEE SM 1205, 1230).
E-243	ERROR INTERRUPT TIMEOUT. GO TO THE 5217 MAPS.
E-244	STATUS INTERRUPT TIMEOUT. GO TO THE 5217 MAPS.
E-245	DATA INTERRUPT TIMEOUT. GO TO THE 5217 MAPS.
E-246	RESUME INTERRUPT ERROR. GO TO THE 5217 MAPS.
E-247	DATA REQUEST TIMEOUT. GO TO THE 5217 MAPS.
E-248	EXCEPTION TIMEOUT. CHECK THAT THE PRINTER POWER IS TURNED ON OR THAT THE SIGNAL CABLE IS PLUGGED INTO THE CPU. IF CORRECT, GO TO MAP 2404, ENTRY POINT A.
E-249	STATUS REQUEST TIMEOUT. CHECK THAT THE PRINTER POWER IS TURNED ON. IF THE POWER IS TURNED ON, GO TO THE 5217 MAP.

(STEP 014 CONTINUES)

(STEP 014 CONTINUED)

ERROR ID	FAILURE AND REPAIR ACTION	
E-24A	PRINTER ATTACHMENT FAILURE. GO TO THE 5217 MAPS.	
E-24B	DATA INTEGRITY FUNCTION FAILED. GO TO THE 5217 MAPS.	
E-24C	RESTART SEQUENCE FAILED. GO TO THE 5217 MAPS.	
E-250	EXCEPTION ERROR. SEE THE ERROR BYTE= XX ON THE CRT AND MATCH TO THE TABLE BELOW.	
	ERROR BYTE=01 INTERFACE CHECK	GO TO MAP 2404, ENTRY A.
	ERROR BYTE=04 INVALID COMMAND	PRINTER MAY HAVE AN ERROR WAITING. SELECT AND RUN ROUTINE 2. IF SAME ERROR BYTE OCCURS GO TO THE 5217 MAPS. IF A NEW ERROR OCCURS FOLLOW THE REPAIR ACTION FROM THIS CHART.
E-250	ERROR BYTE=10, 20, 40, 80 NOT ASSIGNED	NOT A VALID ERROR. GO TO THE 5217 MAPS.
	ERROR BYTE=18, 28, 38, A8, B8, C8, D8, E8, F8 NOT ASSIGNED	NOT A VALID INTERVENTION REQUIRED CODE. GO TO THE 5217 MAPS.
	ERROR BYTE=02 PRINTER CHECK	PRINTER HAS AN ERROR. MATCH THE BIT FROM THE EXCEPTION BYTE TO THOSE DESCRIBED BELOW.
B Y T E 0	** BITS 0,1,2 ** ** FRAME ERROR ** OVERRUN ERROR ** PARITY ERROR	IF ANY OR ALL OF THESE BITS ARE DISPLAYED, SEE TABLE 1. GO TO MAP 2404, ENTRY POINT A.

(STEP 014 CONTINUES)

(STEP 014 CONTINUED)

ERROR ID	FAILURE AND REPAIR ACTION
B Y T E 1	** BIT 0 ** BUFFER OVERRUN ** ** BIT 3 ** UNEXPECTED ** COVER OPEN.	SEE TABLE 1. GO TO THE 5217 MAPS.
B Y T E 2	** BIT 1 ** FORMS JAMMED ** ** ** **	SEE TABLE 1. GO TO THE 5217 MAPS.
E-251	DIAGNOSE EXCEPTION ERROR. DIAGNOSE ERROR OCCURRED. DIAGNOSE RESPONSE=XX IF THE ERROR BYTE=02 PRINTER CHECK PRESS ENTER TO DISPLAY DATA REQUEST EXCEPTION BYTES. GO TO E-250 MESSAGE AND MATCH THE BIT FROM THE EXCEPTION BYTES. SEE TABLE 1. IF OTHER THAN AN ERROR BYTE=02 FOLLOW ERROR MESSAGE.
E-252	NO PRINTER BUSY. GO TO THE 5217 MAPS.
E-253	BAUD RATE CABLE ERROR. IF CONNECTED TO 5217, GO TO ENTRY D OF THIS MAP. IF NOT, WRONG PID BEING RUN. SEE MAP 1900, ENTRY POINT A, FOR CORRECT PID.
E-254	DATA REQUEST ERROR. SEE THE ERROR TABLE FOR ERROR E-250 AND MATCH FOR REPAIR ACTION.
E-255	UNEXPECTED PRINTER STATUS, STATUS=XX SEE TABLE 1. GO TO THE 5217 MAPS.
E-256	SECOND PRINTER PORT NOT INSTALLED OR SECOND PRINTER PORT CARD IS FAILING. REPLACE THE SECOND PRINTER PORT CARD OR THE CPU PLANAR BOARD (SEE SM 1205 AND 1230).

(STEP 014 CONTINUES)

(STEP 014 CONTINUED)

ERROR ID	FAILURE AND REPAIR ACTION
E-257	PRINTER POWER TURNED OFF. IF PRINTER POWER SWITCH IS ON GO TO THE 5217 MAPS.
E-258	LEFT MARGIN SWITCH WAS NOT SENSED. GO TO THE 5217 MAPS.
E-25A	PRINTER WENT NOT READY. IF STOP BUTTON WAS NOT PRESSED TO CAUSE THIS CONDITION THEN GO TO THE 5217 MAPS. OTHERWISE, PRESS START AND ENTER KEY TO CONTINUE.
E-25C	FORMS PRESENT NOT SENSED (TRACTOR FEED INSTALLED). GO TO THE 5217 MAPS.
E-25D	RIBBON AVAILABLE NOT SENSED. GO TO THE 5217 MAPS.
A-25E	IF THIS MESSAGE APPEARS WHEN SWITCH IS SET TO ECONOMY, GO TO THE 5217 MAPS. IF THIS MESSAGE DOES NOT APPEAR WHEN SWITCH IS SET TO NORMAL, GO TO THE 5217 MAPS.
E-261	EXTERNAL RESET FAILURE. REPLACE PRINTER PORT 2 FEATURE CARD OR CPU PLANAR BOARD (SEE SM 1205, 1230).
E-262	RECEIVER NOT READY. REPLACE PRINTER PORT 2 FEATURE CARD OR CPU PLANAR BOARD (SEE SM 1205 AND 1230), OR PRINTER SIGNAL CABLE (SEE 5217 MIM, SECTION 6).
E-263	INTERNAL RESET FAILED. REPLACE PRINTER PORT 2 FEATURE CARD OR CPU PLANAR BOARD (SEE SM 1205, 1230).
E-264	USART ERROR RESET FAILED . REPLACE PRINTER PORT 2 FEATURE CARD OR CPU PLANAR BOARD (SEE SM 1205, 1230).
E-265	USART ERROR OCCURRED, GO TO MAP 2404,ENTRY A. IF IN LOOP MODE, THIS ERROR MAY OCCUR INTERMITTENTLY.
E-266	BAD USART STATUS. REPLACE PRINTER PORT 2 FEATURE CARD OR CPU PLANAR BOARD (SEE SM 1205, 1230). GO TO THE 5217 MAPS.
E-267	USART DATA ERROR. REPLACE PRINTER PORT 2 FEATURE CARD OR CPU PLANAR BOARD (SEE SM 1205 AND 1230).

(STEP 014 CONTINUES)

(STEP 014 CONTINUED)

ERROR ID	FAILURE AND REPAIR ACTION
E-269	USART CANNOT SENSE ERRORS.REPLACE PRINTER PORT 2 FEATURE CARD OR CPU PLANAR BOARD (SEE SM 1205, 1230).
E-26A	USART NOT READY AFTER RESET. GO TO MAP 2404, ENTRY POINT A.
E-26B	CONTINUOUS USART RECEIVE INTERRUPTS. POWER OFF THE PRINTER. RUN PID 2400 ROUTINE 1, IF FAILURE OCCURS REPLACE PRINTER PORT 2 FEATURE CARD OR REPLACE THE CPU PLANAR BOARD (SEE SM 1205, 1230). IF NO ERRORS OCCUR GO TO THE 5217 MAPS.

TABLE 1

BIT	7	6	5	4	3	2	1	0
HEX VALUE	8	4	2	1	8	4	2	1

WAS ERROR MESSAGE DESCRIBED IN ERROR ID LIST ABOVE?
Y N

Y
015
GO TO THE 5217 MAPS.
TO VERIFY REPAIR
GO TO MAP 2402,
ENTRY POINT A.

N
016
FOLLOW REPAIR ACTION FROM ERROR TABLE.
TO VERIFY REPAIR
GO TO MAP 2402, ENTRY POINT A.

017

GO TO PAGE 2, STEP 006,
ENTRY POINT C.

ENTRY MAP

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018
GO TO THE 5217 MAPS.
IF NO PROBLEM IS FOUND IN THE 5217 PRINTER, RETURN TO THIS MAP TO RUN PRINTER DIAGNOSTIC TEST PROGRAM, PID 2400.
GO TO PAGE 2, STEP 006,
ENTRY POINT C.

019
DO BOTH 36 AND 37 SHOW AN UNDERLINE INDICATED?
Y N

020
IS IT A 37 ERROR?
Y N

021
(ENTRY POINT G)

IS THE PRINTER SIGNAL CABLE PLUGGED INTO EITHER PRINTER PORT?
Y N

022
DO YOU WANT TO RUN THE PRINTER DIAGNOSTIC TEST?
Y N

023
GO TO THE CPU MAP TO CHECK CORRECT OPERATION OF THE SYSTEM.

GO TO MAP 1000,
ENTRY POINT B.

024
1. POWER OFF THE CPU AND THE PRINTER.

2. PLUG PRINTER CABLE INTO SELECTED PORT.

3. POWER ON THE PRINTER AND THE CPU.

4. THE NEXT STEP IS TO RUN THE PRINTER DIAGNOSTIC TEST PID 2400, TO LOCATE ANY ATTACHMENT OR PRINTER FAILURES.

5. RUN THE PRINTER DIAGNOSTIC TEST FOR BOTH THE CPU PORT AND PORT 2 IF NECESSARY.

GO TO PAGE 2,
STEP 006,
ENTRY POINT C.

025
TO LOCATE ANY ATTACHMENT OR PRINTER FAILURES,

GO TO PAGE 2, STEP 006,
ENTRY POINT C.

026

GO TO MAP 2404, ENTRY POINT A.

027
DO BOTH 3A AND 3B (FLASHED) SHOW AN UNDERLINE INDICATED?
Y N

028
IS IT A 3B ERROR?
Y N

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N P ENTRY MAP
8 8

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029

GO TO PAGE 8, STEP 021,
ENTRY POINT G.

030
1. POWER OFF BOTH THE PRINTER AND CPU.

2. REMOVE BOTH PRINTER SIGNAL CABLES FROM THE CPU (SEE SM 1230).

3. INSTALL THE PRINTER SIGNAL CABLE REMOVED FROM PRINTER PORT 2 FEATURE CARD INTO PRINTER PORT 1 (SEE SM 1230 AND 1205).

POWER ON THE PRINTER AND CPU.

DID A 37 ERROR OCCUR?
Y N

031
1. REPLACE THE PRINTER PORT 2 FEATURE CARD (SEE SM 1205 AND 1230).

2. REPLACE THE CPU PLANAR BOARD (SEE SM 1230).

TO VERIFY REPAIR
GO TO MAP 2402, ENTRY POINT A.

032

GO TO MAP 2404, ENTRY POINT A.

M MAP 2401-9
8

033
(ENTRY POINT D)

IS THE PRINTER SIGNAL CABLE PLUGGED CORRECTLY INTO THE CPU OR INTO PRINTER PORT 2 FEATURE CARD (SEE SM 1205 AND 1230)?
Y N

034
THIS ERROR IS NORMAL WHEN NO PRINTER ATTACHED.

PLUG THE PRINTER SIGNAL CABLE INTO CPU, OR INTO THE PRINTER PORT 2 FEATURE CARD.
TO VERIFY REPAIR
GO TO MAP 2402, ENTRY POINT A.

035
1. POWER OFF THE CPU AND THE PRINTER.

2. REMOVE THE PRINTER SIGNAL CABLE FROM THE FAILING PRINTER PORT (SEE SM 1205 AND 1230).

3. CHECK FOR CONTINUITY BETWEEN PINS 6 AND 8.

CONTINUITY IS BETWEEN PIN 6 AND PIN 8?
Y N

036
1. REPAIR OR REPLACE PRINTER SIGNAL CABLE (SEE 5217 MIM, SECTION 6).

2. REPLACE THE PRINTER SWITCH CARD ASSEMBLY AND CABLES IF INSTALLED (SEE MAP 1901).

TO VERIFY REPAIR
GO TO MAP 2402, ENTRY POINT A.

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1 EC466930 PEC-------
0
Q MAP 2401-9

037
1. RECONNECT THE PRINTER SIGNAL CABLE INTO THE PRINTER PORT IT WAS REMOVED FROM (SEE SM 1205 AND 1230).

2. POWER ON THE PRINTER AND THE CPU.

DOES 36 AND 37 OR 3A AND 3B AFTER POWER ON SHOW AN UNDERLINE INDICATED?
Y N

038
PRINTER SIGNAL CABLE MAY NOT HAVE BEEN SEATED CORRECTLY OR WAS LOOSE.

TO VERIFY REPAIR
GO TO MAP 2402, ENTRY POINT A.

039
1. IF 3A AND 3B (FLASHED) ARE UNDERLINED,

   REPLACE THE PRINTER PORT 2 FEATURE CARD (SEE SM 1205 AND 1230).

   REPLACE THE CPU PLANAR BOARD (SEE SM 1230).

2. IF 36 OR 37 ARE UNDERLINED,

   REPLACE THE CPU PLANAR BOARD (SEE SM 1230).

3. REPLACE THE PRINTER SIGNAL CABLE (SEE 5217 MIM, SECTION 6).

4. REPLACE THE PRINTER SWITCH CARD ASSEMBLY AND CABLES (SEE MAP 1901).

(STEP 039 CONTINUES)

(STEP 039 CONTINUED)
TO VERIFY REPAIR
GO TO MAP 2402, ENTRY POINT A.

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ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP ENTRY POINT	PAGE NUMBER	STEP NUMBER
2401	A	1	001
2403	A	1	001
2404	A	1	001

EXIT POINTS

EXIT THIS MAP PAGE NUMBER	STEP NUMBER	TO MAP NUMBER	ENTRY POINT
2	002	2403	A

001
(ENTRY POINT A)

IF THE PRINTER IS NOT POWERED OFF, POWER IT OFF NOW.

MAKE THE PRINTER OPERATIONAL:

1. ENSURE THAT ANY CARDS, CONNECTORS, WIRES, AND JUMPERS ARE REINSTALLED OR REMOVED SO THAT THE PRINTER IS BACK TO NORMAL.

2. ENSURE THAT ANY PARTS THAT WERE REMOVED ARE REINSTALLED, REPAIRED OR REPLACED.

POWER ON THE PRINTER.

THE PRINT HEAD CARRIER SHOULD GO TO THE FORMS LOADING POSITION (SERVICE POSITION).

TO SEE IF THE PRINTER CAN FUNCTION, A QUICK METHOD OF CHECKING IT OUT IS TO PRESS STOP (READY OFF) PRESS PRINT TEST - THE POR ROUTINE IS REPEATED AND AN ALL CHARACTER PRINT OUT WILL OCCUR.

IN GENERAL, FOR VERIFYING REPAIRS FOR PRINTER PROBLEMS, RUN PRINTER (STEP 001 CONTINUES)

(STEP 001 CONTINUED)
DIAGNOSTIC PID 2400 PROGRAM THAT TESTS THE AREA OF THE PROBLEM.

SEE THE DIAGNOSTIC USER GUIDE 0024 FOR SET UP INSTRUCTIONS AND FOLLOW THE INSTRUCTIONS WHICH WILL APPEAR ON THE CRT.

FOLLOWING ARE SOME RECOMMENDED PROCEDURES TO VERIFY THE REPAIR OF SPECIFIC PROBLEMS.

1. PROBLEM: WRONG PRINT SPEED OR PRINT SPACING OR LINE TO LINE HORIZONTAL ALIGNMENT. RUN PRINT DIAGNOSTIC ROUTINE 5 WHICH IS A RIPPLE PRINT.

2. PROBLEM: VERTICAL PRINT ALIGNMENT PROBLEMS. RUN PRINT DIAGNOSTIC, ROUTINE 5, RIPPLE PRINT OR ROUTINE 8 WHICH TESTS PAGE PARAMETERS AND PITCHES.

IS THE PROBLEM GONE?
Y N
|
| 002
| GO TO THE MAP FOR INTERMITTENT
| AND MISCELLANEOUS PROBLEMS OR
| TAKE ANOTHER ACTION.
| GO TO MAP 2403, ENTRY POINT A.
|
003
1. VERIFY CUSTOMER OPERATION .
2. INSTALL THE PRINTER COVERS.
3. END OF CALL.

A GENERAL PROCEDURE FOR REPAIRING INTERMITTENT AND MISCELLANEOUS PROBLEM IS:

FOR PRINTER INTERMITTENT PROBLEMS GO TO THE 5217 INTERMITTENT MAPS.

REPAIR THE PROBLEM AS NEEDED.

1. CHECK THAT ALL CONNECTORS ARE TIGHTLY PLUGGED.

2. CHECK ALL CONNECTORS, AND OTHER TERMINALS FOR POOR CRIMPS, FAILING PARTS, LOOSE CONTACTS, ETC.

3. CHECK FOR WIRES OR CABLES THAT MAY BE PINCHED OR INTERMITTENTLY CAUSING THE SHORT.

4. CHECK FOR BROKEN WIRES THAT MAY MAKE CONTACT INTERMITTENTLY.

5. ENSURE ALL POWER SUPPLY CONNECTIONS ARE TIGHT. RECONNECT ALL CONNECTORS IN THE POWER SUPPLY.

6. THE FOLLOWING PROGRAMS CAN BE USED AS AN AID IN DETERMINING INTERMITTENT PROBLEMS:

ROUTINE 5, PID 2400 ATTEMPTS TO PRINT A PATTERN CONTAINING A RIPPLE PRINT PATTERN WITH SINGLE LINE SPACING. THIS ROUTINE IS AN AID IN ENSURING THAT ALL CHARACTERS ARE PRINTED.

ROUTINE 6 IS A (FRIEND) PRINT TEST IN WHICH YOU CAN SET UP YOUR OWN PRINT OR COMMAND PATTERN.

ROUTINE 7 ALONG WITH THE PRINTER WRAP TEST IS USED TO ISOLATE THE FAILURE TO THE FAILING MACHINE.

AFTER ANY REPAIRS, GO TO MAP 2402, TO VERIFY THE REPAIR.

THE FOLLOWING TABLE HAS SYMPTOMS AND SERVICE AIDS TO SOLVE THOSE PROBLEMS:

SYMPTOM OR PROBLEM	SERVICE AID
PRINTER STOPS INTERMITTENTLY	1
PRINTS WRONG OR DROPS PRINT	1
INTERFACE CHECKS	1
6202 ERRORS ERROR LOG	2,3
6211 OR 6230 ERRORS	2

SERVICE AID #1.

THE PRINTER STOPS INTERMITTENTLY OR INTERFACE ERRORS OCCUR DURING DIAGNOSTIC ROUTINES OR CUSTOMER PROGRAMS.

THIS CAN BE CAUSED BY ELECTROSTATIC DISCHARGE TO THE PRINTER FRAME OF METAL PARTS NOT GROUNDED IN THE FORMS TRACTOR UNIT. THE ELECTROSTATIC CHARGE COLLECTED IS CAUSED BY THE FORMS MOVING OVER THE NOT GROUNDED PART(S) AND IS MORE PROBABLE TO OCCUR DURING CONDITIONS OF LOW HUMIDITY. THE ELECTROSTATIC DISCHARGE WILL GENERALLY CAUSE NOISE ON ONE OR MORE OF THE PRINTER INTERFACE SIGNAL LINES WHICH WILL IN TURN CAUSE A PRINTER ERROR. THE FORMS TRACTOR UNIT IS MADE SO THAT ALL METAL PARTS ARE GROUNDED TO THE PRINTER FRAME. THIS CAN BE VERIFIED BY USING THE CE METER TO CHECK FOR CONTINUITY BETWEEN THE PRINTER FRAME AND ANY/ALL METAL PARTS OF THE TRACTOR ASSEMBLY. THE FORMS STAND LOCATED AT THE REAR OF THE PRINTER IS NOT NORMALLY GROUNDED TO THE PRINTER FRAME.

AFTER ANY REPAIRS, GO TO MAP 2402 TO VERIFY.

THE PRINTER INTERMITTENTLY HAS UNSTABLE FORMS MOVEMENT.

RUN ROUTINE 8 AND SELECT 10 CPI AND 9.6 LINES PER PAGE TO PRINT A BLOCK OF T'S. THE TOP OF THE T SHOULD LINE UP UNDER THE BOTTOM OF THE UPPER T THROUGHOUT THE LINE OF PRINT.

GO TO THE 5217 MAPS FOR A SOLUTION TO THE PROBLEM.

SERVICE AID #2.

PRINTER SIGNAL CABLE MAY NOT BE MAKING A TIGHT CONNECTION OR COULD BE LOOSE (SEE SM 1230 AND/OR 5217 MIM, PARAGRAPH 104).

SERVICE AID #3.

ERROR LOG 6202 ERRORS.

FOR INTERMITTENT PRINTER CHECK PROBLEMS (6202 ERRORS), AN ERROR LOG CAN BE DISPLAYED IN STORAGE LOCATION 09801. REFER TO MAP 2400, DEFINITIONS, ITEM 5.

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PAGE 1 OF 3

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP ENTRY POINT	PAGE NUMBER	STEP NUMBER
1900	A	1	001
2401	A	1	001

EXIT POINTS

EXIT THIS MAP PAGE NUMBER	STEP NUMBER	TO MAP NUMBER	ENTRY POINT
3	004	2402	A
3	007	2402	A
3	006	2403	A

001
(ENTRY POINT A)

1. POWER OFF THE PRINTER.

2. REMOVE THE PRINTER SIGNAL CABLE FROM THE CPU.

3. INSERT THE WRAP PLUG INTO THE CPU OR PRINTER PORT 2 CONNECTOR POSITION.

4. LOAD DCP AND SELECT PRINTER DIAGNOSTIC (PID 2400). SELECT PRINTER PORT 1 OR 2. SEE USER GUIDE 0024 FOR INSTRUCTIONS.

5. SELECT ROUTINE 7, SIGNAL WRAP TEST.

DID ROUTINE 7 RUN ERROR FREE?

Y N

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EC466930 PEC-------

3 2
A B

002
SEE THE FOLLOWING MESSAGE CHART FOR ACTION TO BE TAKEN. VERIFY REPAIR. GO TO MAP 2402, ENTRY POINT A.

MESSAGE	ACTION TO BE TAKEN
I-292	NO PRINTER ATTACHED. ENSURE PRINTER WRAP PLUGGED INTO CPU. IF PLUGGED IN GO TO MAP 2401, ENTRY D.
E-253	BAUD RATE ERROR. CHECK CPU END FOR CONTINUITY BETWEEN PINS 6 AND 8. IF OK, REPLACE PRINTER PORT 2 FEATURE CARD OR CPU PLANAR BOARD (SEE SM 1205 AND 1230). IF NOT REPLACE THE PRINTER SIGNAL CABLE OR THE PRINTER SWITCH CARD ASSEMBLY OR CABLES (SEE MAP 1901 OR 5217 MIM, SECTION 6).
E-262	RECEIVE NOT READY. THE PRINTER PORT 2 FEATURE CARD OR CPU PLANAR BOARD OR THE PRINTER SWITCH CARD ASSEMBLY IS FAILING.
E-267	DATA ERROR. THE PRINTER PORT 2 FEATURE CARD, CPU PLANAR BOARD OR THE PRINTER SWITCH CARD ASSEMBLY IS FAILING.

WAS MESSAGE NUMBER DISPLAYED IN ABOVE TABLE?
Y N

003
GO TO THE 5217 MAPS.

A C WRAP TEST MAP
1 2

5217 PRINTER

| |
| | PAGE 3 OF 3
| |
| |

| 004
| REPAIR OR REPLACE AS INDICATED.
|
| TO VERIFY REPAIR
| GO TO MAP 2402, ENTRY POINT A.
|
005
GO TO THE 5217 MAPS.

NOTE: IF PRINTER TESTS OK AND ROUTINE 7 RUNS WITH NO FAILURE, CONTINUE WITH THIS STEP.

IS THE PROBLEM A SOLID FAILURE?
Y N
|
| 006
| YOU MAY HAVE AN INTERMITTENT
| PROBLEM.
|
| GO TO THE INTERMITTENT MAP
|
| GO TO MAP 2403, ENTRY POINT A.
|
007
1. RETURN SIGNAL CABLE TO NORMAL CONNECTION.

2. LOAD AND RUN PID 0150 CONFIGURATION PROGRAM. IF CONFIGURATION IS CORRECT, REPLACE THE CPU PLANAR BOARD (SEE SM 1230) OR THE PRINTER PORT 2 FEATURE CARD (SEE SM 1205 AND 1230).

TO VERIFY REPAIR
GO TO MAP 2402, ENTRY POINT A.