TABLE OF CONTENTS

 20MAY83 PN8327691

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0.0 4963 TEST SEQUENCE

TO TEST THE DISK, LOAD AND EXECUTE THE MAPS ON DISKETTE P/N 6828999. IPL THE BASIC DISKETTE P/N 1635001 AND AT RDY ENTER, INSERT THE CORRECT DISKETTE.

NOTE: ALL DEVICE DIAGNOSTIC PROGRAMS ASSUME ALL PROCESSOR DIAGNOSTICS HAVE RUN SUCCESSFULLY.

AUTO MODE MAPS

7A00
7A10
7A20
7A30

MANUAL MODE MAPS

7A31
7A40

SEE 3.0 FOR DESCRIPTION OF EACH MAP

IF THE MAPS INDICATE A FAILURE BUT DO NOT LOCATE THE FILE, USE MAP 7A91 FOR FREELANCE MODE TO ISOLATE TO A SINGLE FILE.

IF THE MAPS INDICATE A FAILURE BUT DO NOT CORRECT THE PROBLEM, USE THE SCOPE LOOP MAP 7A68 FOR FREELANCE MODE.

FOR ANY SYSTEM 'CHECK' CONDITION (MCK, PCK, PWR/THERM):
GO TO MAP 3871, ENTRY POINT A.

FOR ANY 4963 POWER PROBLEM (POWER GOOD LED OFF OR FLASHING):
GO TO MAP 7A80, ENTRY POINT A.

IF THE FIELD REPLACEMENT UNIT IS THE 4963 ATTACHMENT CARD AND THE SYSTEM STILL FAILS AFTER EXCHANGING THE CARD, ANOTHER ATTACHMENT CARD MAY BE CAUSING THE FAILURE.
MAP 0070 IS A CHANNEL ISOLATE PROCEDURE FOR THIS PROBLEM.
GO TO MAP 0070, ENTRY POINT A.

1.0 GENERAL INFORMATION:

1.1 MINIMUM SYSTEM REQUIREMENTS

1. SERIES/1 PROCESSING UNIT
2. PROGRAMMER/MAINTENENCE CONSOLE
3. DISKETTE DRIVE
4. 16KB STORAGE

1.2 LOADING PROCEDURE(S)

ALL MDI MAP'S, DIAGNOSTICS, AND UTILITIES ARE ON DIAGNOSTIC DISKETTE P/N 6828999.

TO LOAD USING THE PROGRAMMER CONSOLE SEE 4.1 THIS DOCUMENT.

IPL THE BASIC DISKETTE AND AT 'RDY ENTER', INSERT DISKETTE P/N 6828999.

USE THE STANDARD DCP LOAD METHOD - IF USING A KEYBOARD CONSOLE, USE C (LOAD AND WAIT FOR OPTION SELECTION) OR B (LOAD AND GO), FOLLOWED BY THE MAP OR PROGRAM I.D.
SEE MAP 0010, SECTION 07.00.00.

1.3 MESSAGE FORMAT

ALTERNATE CONSOLE MESSAGE FORMAT:

```
**** I3CXX MAP=YYYY STEP=ZZZZ ****
                          ZZZZ = MAP STEP NUMBER
                  YYYY         = MAP NUMBER
      I3CXX                    = THE STOP IS AN MDI OR MAP HALT.
```

IF MAP = 3CXX, THE STOP IS A RESULT OF AN MDI SUPERVISOR DECISION INSTEAD OF A MAP DECISION. SEE MDI HALT LIST IN MAP 0013.

PROGRAMMER CONSOLE HALT FORMAT (MAP 0010, SECTION 07.01.00)

THE WAIT LAMP IS ON.
THE DATA LAMPS = MAP NUMBER OR MDI OR DCP HALT.

LEVEL THREE (3) REGISTER CONTENTS:

R0 = MAP STEP NUMBER.
R1 = DEVICE ADDRESS AND TYPE.
R2 = UNIT ADDRESS, IF USED.
R3 = THE HEXADECIMAL STORAGE ADDRESS OF A POINTER TO DATA.
SEE MAP 0010, SECTIONS 05.03.00 AND 05.04.00.

1.4 COMMENTS

THE CONFIGURATION TABLE MUST BE CORRECT OR THE MAPS OR PROGRAMS WILL HAVE ERRORS. SEE THIS PROLOG, SECTION 5.1.

A SYSTEM LEVEL FAILURE MAY BE SEEN AS A DEVICE FAILURE. ALWAYS START DIAGNOSIS AT THE SYSTEM ENTRY MAP 0020, ENTRY POINT A.

USE THE IBM GENERAL LOGIC PROBE, PART NUMBER 453212, AND THE CSR MULTIMETER, UNLESS THE MAP SAYS TO USE AN OSCILLOSCOPE OR SOME OTHER MULTIMETER.

2.0 SPECIAL TOOLSS AND DOCUMENTS:

2.1 SPECIAL TOOLS:

JUMPER WIRES (6) P/N 452655.
PIN EXTENDING TERMINALS (2) P/N 2594238.
THESE TOOLS HAVE BEEN INCLUDED IN THE SHIP GROUP.

2.2 DOCUMENTS:

DIAGNOSTIC SERVICE GUIDE (0010)
SERIES 1 INSTALLATION DOCUMENTS
4963 MAINTENANCE INFORMATION MANUAL
4963 THEORY DIAGRAMS
SERIES 1 LOGICS SF5XX

3.0 MAP/MDI DESCRIPTIONS:

THE 7AXX MAPS WILL VERIFY CORRECT OPERATION OR FIND AND ISOLATE FAILING FIELD REPLACEMENT UNIT(S) IN THE 4963 ATTACHMENT/DEVICE.

NOTE: ALL DEVICE DIAGNOSTIC PROGRAMS ASSUME ALL PROCESSOR DIAGNOSTICS HAVE RUN SUCCESSFULLY.

3.1 'AUTO' MODE MAPS:

THE DEVICE ENTRY MAP (MAP # 7A00) IS THE FIRST 'AUTO' MODE MAP. IF A COMPLETE AUTO TEST NEEDS MORE MAP'S, MDI WILL AUTOMATICALLY LOAD AND EXECUTE THEM IN THE CORRECT SEQUENCE.
SEE MAP 0010, 05.00.

7A00
EXECUTES ALL DPC INSTRUCTIONS AND TESTS THE MIRCO CONTROLLER ON THE ATTACHMENT CARD.
7A00 LOADS 7A10 AFTER A GOOD RUN.

7A10
EXECUTES INSTRUCTIONS TO TEST THE CONTROLLER AREA
OF THE 4963 DISK SUBSYSTEM.
7A10 LOADS 7A20 AFTER A GOOD RUN.

NOTE: MAPS 7A00 AND 7A10 TEST ONLY THE BASE ADDRESS. ENSURE CONFIGURATION ENTRY IS CORRECT. SEE 5.1 THIS DOCUMENT.

7A20
EXECUTES INSTRUCTIONS TO TEST THE FILE AREA OF THE
4963 DISK SUBSYSTEM. IT TESTS THE FOLLOWING AREAS:

DISK SPEED
AVERAGE SEEK SPEED
SEEK AND RECALIBRATE
READ DATA
READ ID
7A20 LOADS 7A30 AFTER A GOOD RUN.

7A30
TESTS THE FOLLOWING AREAS:

CONFIGURATION JUMPERS ON A2 - C2
ACCESS OF ALL HEADS
VERIFIES THAT ALL SECTOR ID'S AND DATA RECORDS ARE
ERROR FREE.

3.2 'MANUAL' MODE MAPS:

THE 'MANUAL' MODE MAPS PERFORM ADDITIONAL TESTS AND/OR ISOLATE FAILURES FOUND BY THE 'AUTO' MAPS:

NOTE: RUN THESE MAPS ONLY AFTER THE AUTO RUN IS COMPLETE. TO GET TO MANUAL MODE ENTER A '3'. IF YOU USE A 'B' TO RUN THESE MAPS YOU MUST RUN THE MAP AGAIN WHEN A FAILURE IS LISTED. LOAD THE MAP AGAIN FOR THE ADDRESS OF THE FIRST FAILURE LISTED. (USE CXXXX)

7A01
WILL TEST THE ATTACHMENT CARD WITH THE CABLES REMOVED, TO PREVENT ANY NOISE PROBLEM.

7A31
TESTS THE FOLLOWING AREAS:

CONFIGURATION JUMPERS ON A2 - C2
ACCESS OF ALL HEADS

7A40
TESTS SCAN FUNCTIONS.

TEST THE WRITE OPERATIONS ON ALL HEADS.
CSR INTERVENTION IS REQUIRED BEFORE WRITING WITH MOVEABLE AND/OR FIXED HEADS. THE MOVEABLE HEAD TEST WILL WRITE ON THE CE CYLINDER. THE FIXED HEAD TEST WILL WRITE OVER CUSTOMER DATA.

NOTE: IF THE NO OPTION IS SELECTED THE INTERNAL WRITE CIRCUITS ARE TESTED.

7A68
WILL LOOP ON THE FOLLOWING FUNCTION TESTS FOR SCOPING OF POSSIBLE PROBLEMS:

READ DEVICE ID	READ SECTOR ID
READ ID	WRITE SECTOR ID
READ CYCLE STEAL STATUS	WRITE DATA
RECALIBRATE	READ DATA
SEEK	

3.3 'PAPER ONLY' MAPS:

THE FOLLOWING PAPER ONLY MAPS ARE CALLED BY THE AUTO OR MANUAL MAPS.

7A70	FRU ISOLATION(SINGLE)	7A77	FILE TO COMMON ADAPTER
7A71	CABLE CONTINUITY	7A78	PARITY FAILURE
7A72	FRU ISOLATION (MULTIPULE)	7A79	POWER SUPPLY FAILURE
7A73	FRU ISOLATION	7A80	POWER DISTRIBUTION
7A74	DATA UNSAFE	7A81	POWER SUPPLY
7A75	BOARD A1 NET LIST	7A90	IPL
7A76	FRU ISOLATION	7A91	FILE ISOLATION

3.4 'FAILURE ONLY' MAPS:

THE FOLLOWING MAP'S ASSUME A FAILURE. USE THEM ONLY WHEN INSTRUCTED BY ANOTHER MAP.

NOTE: THESE MAPS WILL ALWAYS CALL A FRU.

7A13-7A16 - COMMON ADAPTER

7A21-7A28 - FILE BOARD

7A51 - FILE BOARD

3.5 UTILITIES:

7A69 READ VERIFY
READS ALL SECTOR ID'S AND DATA RECORDS AND LIST ANY THAT REQUIRE CSR INVENTION.
SEE 06.01 FOR THE PROGRAM DESCRIPTION.

7AF0 SCATTER
REASSIGNS ALTERNATE SECTORS FROM CYLINDER 64 TO CLOSEST AVAILABLE SPARE SECTOR.
SEE 06.02 FOR THE PROGRAM DESCRIPTION.

7AF1 SAVE
LOGS ALL DEFECTIVE AND FLAGGED SECTOR INFORMATION TO DATA SETS ON DIAGNOSTIC DISKETTE P/N 6828999
SEE 06.03 FOR THE PROGRAM DESCRIPTION.

7AF2 RESTORE
WRITES ALL IDS ON DISK USING THE DATA SETS GENERATED BY 7AF1 SAVE.
SEE 06.04 FOR THE PROGRAM DESCRIPTION.

7AF5 INITIALIZE
WRITES ALL SECTOR IDS HONORING FACTORY FLAG BIT 6 (MANUFACTURING ASSIGNED DEFECT) AND/OR ALL DATA FIELDS. THIS SHOULD BE USED WHEN INSTALLING DE IN THE FIELD THAT SUSPECTED OF BEING FORMATTED IN ANOTHER USER'S FORMAT.
SEE 06.05 FOR THE PROGRAM DESCRIPTION.

7AF9 DISK MAINTENANCE
ASSIGNS ALTERNATES
FORMATS IDS
WRITES DATA
LIST DATA
LIST IDS
SEE 06.06 FOR THE PROGRAM DESCRIPTION.

4.0 PROGRAMMER'S COMMENTS:

THESE MAP'S USE 'TU ABORT' AT SOME STEPS.
THIS INDICATES A FAILURE NOT EXPECTED BY THE ROUTINE IN USE.
SEE MAP 0010, 05.04.

THESE MAP'S WILL DISPLAY 'EXPECTED/RECEIVED' DATA WHEN AN ALTERNATE CONSOLE IS ASSIGNED.
SEE MAP 0010, 05.03.

IF THE DISK ENCLOSURE IS NAMED AS THE FAILING FIELD REPLACEMENT UNIT. USE MAP 7A69 TO VERIFY/CORRECT IDS/DATA BEFORE EXCHANGING THE DISK ENCLOSURE.

TO RERUN THE DIAGNOSTICS - POWER THE FILES OFF AND
THEN ON TO RESET TO A KNOWN STATE.

ALL MAPS USING DISK WRITE ROUTINES, OPEN WITH A WARNING STATEMENT AND THE CSR HAS THE OPTION TO CONTINUE WITH THE MAP OR TERMINATE.

4.1 LOADING WITH THE PROGRAMMER OR MAINTENANCE CONSOLE.

ENTER ON THE CONSOLE AS FOLLOWS:

```
(B) B    (I)
(B) XXXX (I) (I)
    XXXX = MAP NUMBER
(B) = DATA BUFFER  (I) = CONSOLE INTERRUPT
```

5.0 SERVICE INFORMATION:

5.1 CONFIGURATION INFORMATION:

- SEE LOGICS SF5XX FOR JUMPERING INFORMATION, IF NEEDED.

CONFIGURATION TABLE ENTRY FORMAT:
CARD NAME/FEATURE NUMBER 1234, DEVICE TYPE TT

BYTE	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F
	DA	TT	0X	XX	00	00	XX	XX	XX	X0	00	00	00	00	ID	ID

BYTE 00	=		DEVICE ADDRESS (DA)
BYTE 01	=		DEVICE TYPE (TT)
BYTE 02	=		FLAG BYTE
BIT 6	=	1	IF INSTALLED IN COMMON I/O. SEE 3E00 PROLOG, TWO CHANNEL SWITCH.
BYTE 03	=		BASE ADDRESS (FIRST FILE)
BYTE 04 TO 05	=	00	(ZERO)
BYTE 06 TO 09	=		DISK ENCLOSURE ID FROM DRIVE LABEL
BYTE 0A TO 0D	=	00	(ZERO)
BYTE 0E	=		FIRST BYTE OF DEVICE ID. (IDID)
BYTE 0F	=		LAST BYTE OF DEVICE ID. (IDID)

EXAMPLE ENTRY:

```
BASE ADDRESS    = 48
DEVICE ADDRESS  = 48, 49
DEVICE TYPE     = 7A
DEVICE ID       = 3106
```

BYTE	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F
	48	7A	00	48	00	00	XX	XX	XX	X0	00	00	00	00	31	06
	49	7A	00	48	00	00	XX	XX	XX	X0	00	00	00	00	31	06

NOTE: BYTE 03, BASE ADDRESS MUST MATCH THE ADDRESS OF THE FIRST DRIVE OR 7A00 AND 7A10 WILL NOT DO ANY TESTING. TEST RUNS IN LESS THAN 10 SECONDS WHEN THIS HAPPENS.

NOTE: STARTING IN BYTE 6 IS THE DISK ENCLOSURE ID WHICH IS REQUIRED FOR MAPS 7AF1/7AF2

NOTE: (ID) 3106 = DEVICE ID FOR 4963 WITH 2 FILES

TO ADD THE ENTRY FOR THE 4963, DO THE FOLLOWING IF:

OUTPUT DEVICE HAS A KEYBOARD	- GO TO MAP 3881, ENTRY POINT A.
OUTPUT DEVICE HAS NO KEYBOARD	- GO TO MAP 3881, ENTRY POINT A.
PROGRAMMER CONSOLE ONLY	- GO TO MAP 3882, ENTRY POINT A.

NOTE: WHEN BASIC DIAGNOSTIC DISKETTE CONFIGURATION TABLE IS CORRECT, USE THE CONFIGURATION PROGRAM 38F0, OPTION 0D TO COPY THE CONFIGURATION TABLE (38F1) FROM THE BASIC DISKETTE TO THE DIAGNOSTIC, SYSTEM TEST AND RPQ DISKETTES WITH THE SYSTEM.

5.2 GENERAL SERVICE INFORMATION

THESE MAPS ASSUME THAT ALL PROCESSING UNIT DIAGNOSTICS HAVE RUN WITHOUT ERROR.

WHEN ALL CARDS HAVE BEEN TRIED FROM THE FIELD REPLACEMENT UNIT LIST THEN CHECK THE CABLES FOR SHORTS TO GROUND, AND ALSO TEST THE CABLES FOR OPENS.

5.2.1 STATUS INFORMATION:

DEVICE CONTROL BLOCK (DCB)

0 CONTROL WORD
1 DEVICE DEPENDENT DATA
2 DEVICE DEPENDENT DATA
3 DEVICE DEPENDENT DATA
4 DEVICE DEPENDENT DATA
5 CHAIN ADDRESS
6 BYTE COUNT
7 DATA ADDRESS

I/O CONDITION CODE (IO)

0 DEVICE NOT ATTACHED
1 BUSY
2 BUSY AFTER RESET
3 COMMAND REJECT
4 INTERVENTION REQUIRED
5 INTERFACE DATA CHECK
6 CONTROLLER BUSY
7 SATISFACTORY

INTERRUPT STATUS BYTE (ISB)

0 READ CYCLE STEAL STATUS
1 DELAYED COMMAND REJECT
2 NOT CORRECT LENGTH RECORD
3 DCB SPECIFICATION CHECK
4 STORAGE CHECK
5 NOT VALID STORAGE ADDRESS
6 PROTECTION CHECK
7 INTERFACE DATA CHECK

INTERRUPT CONDITION CODE (IN)

0 CONTROLLER END
1 RESERVED
2 EXCEPTION
3 DEVICE END
4 ATTENTION
5 RESERVED
6 ATTENTION AND EXCEPTION
7 ATTENTION DEVICE END

WORD 0: RESIDUAL ADDRESS
WORD 1: RESIDUAL COUNT
WORD 2: RETRY COUNTS WORD 1
WORD 3: RETRY COUNTS WORD 2

WORD 4: ERROR STATUS WORD 1

BIT 00 - HARD ERROR	BIT 08 - SCAN NOT HIT
01 - ATTACHMENT FOUND INTERFACE PARITY CHECK	09 - SCAN EQUAL HIT
02 - ATTACHMENT GLOBAL TIMEOUT	10 - ATTACHMENT EQUIPMENT CHECK
03 - ALTERNATE SECTOR PROCESSED	11 - WRITE ERROR
04 - SOFT ERROR RETRY	12 - CYCLE STEAL STATUS ERROR
05 - *DISK UNIT	13 - END OF DISK
06 - *CONFIGURATION	14 - ATTACHMENT LOCAL TIMEOUT
07 - *BITS	15 - DISK INTERFACE ERROR

WORD 5: ERROR STATUS WORD 2

BIT 00 - CRC CHECK	BIT 08 - FIXED HEAD NOT SELECTED
01 - DISK UNIT PARITY CHECK	09 - BRAKE APPLIED
02 - DISK UNIT FOUND INTERFACE PARITY CHECK	10 - TRACK AVAILABLE
03 - WRITE GATE CHECK	11 - DISK UNIT COMMAND ERROR
04 - NO RECORD FOUND	12 - DATA UNSAFE
05 - NOT VALID COMMAND PARAMETER	13 - SEEK NOT COMPLETE
06 - MISSING SECTOR PULSE	14 - HOME
07 - DISK UNIT TIME OUT	15 - NOT READY

WORD 6: LAST DCB ADDRESS
WORD 7: CURRENT HEAD/CYLINDER
WORD 8: PREVIOUS HEAD/CYLINDER
WORD 9: FLAG SECTOR/RECORD#
WORD10: HEAD/CYLINDER
WORD11: DISK UNIT SENSE BYTES 1 AND 2
WORD12: DISK UNIT DIAGNOSTIC SENSE BYTE 3 AND WRAP BYTE

FOR MORE STATUS INFORMATION SEE CUSTOMER VERIFY/SYSTEM TEST AND 4963 THEORY MANUAL

6.0 DEVICE UTILITIES:

06.01 7A69 READ VERIFY

06.01.01 PURPOSE:

THIS UTILITY READ VERIFIES ALL SECTOR ID'S AND DATA RECORDS AND LISTS ANY THAT CONTAIN ID OR DATA ERRORS. RUN TIME IS ABOUT 4 MINUTES.

06.01.02 OPERATING PROCEDURES:

THIS PROGRAM EXECUTES UNDER DCP CONTROL AND SUPPORTS THE FOLLOWING OPTIONS:

```
   09   TERMINATE
   0A   VERIFY ENTIRE DISK SURFACE (ID'S AND DATA)
   0B   VERIFY SELECTED TRACK (ID'S AND DATA)
```

TO LOAD: ENTER 'B7A69'

```
DISPLAY
  ENTER DEVICE ADDRESS OF DISK  (7A00)

RESPONSE
  'FXX'
     XX = DEVICE ADDRESS

DISPLAY
   0A   VERIFY ENTIRE DISK, ID'S AND DATA
   0B   VERIFY SELECTED TRACK, ID'S AND DATA
   09   TERMINATE

   SELECT ONE OPTION  (7A01)

RESPONSE
  'FXX'
     XX = SELECTED OPTION
OPTION '09' TERMINATE
  PROGRAM IS TERMINATED.
```

OPTION '0A' VERIFY ENTIRE DISK SURFACE

THIS OPTION WILL READ AND VERIFY ALL SECTOR ID'S AND DATA RECORDS ON THE COMPLETE DISK AND LIST THE FOLLOWING SECTORS ERRORS:

SECTOR ID UNREADABLE
DATA CRC RECORD #1
DATA CRC RECORD #2
DATA CRC RECORD #1 AND #2
NO RECORD FOUND

IF NO ERRORS ARE FOUND THE FOLLOWING MESSAGE WILL BE DISPLAYED:

'NO SECTOR OR DATA ERRORS'

NOTE: FOR EXAMPLE OF ERROR PRINT OUT FORM OPTION A AND B SEE 06.01.03. TO CORRECT THESE ERRORS. SEE 10.00

OPTION '0B' VERIFY SELECTED TRACK

THIS OPTION WILL READ AND VERIFY ALL SECTOR ID'S AND DATA RECORDS ON A SELECTED TRACK AND LIST THE FOLLOWING SECTORS ERRORS:

SECTOR ID UNREADABLE
DATA CRC RECORD #1
DATA CRC RECORD #2
DATA CRC RECORD #1 AND #2
NO RECORD FOUND

IF NO ERRORS ARE FOUND THE FOLLOWING MESSAGE WILL BE DISPLAYED:

'NO SECTOR OR DATA ERRORS'

06.01.03

FORMAT OF ERROR PRINT OUT

S/B FG/SEC	S/B HD/CYL	IS HD/PHY	IS FG/SEC	IS HD/CYL	
0024	0450	0112	0024	0450	DATA CRC RECORD #1
0020	0100	0010	FFFF	FFFF	SECTOR ID UNREADABLE
0026	0520	0113	0826	0520	NO RECORD FOUND 7A6F

SEE 7A00 PROLOG,SECTION 10.0 FOR
INSTRUCTIONS TO CORRECT LISTED ERRORS.

WORD #1 S/B FG/SEC
EXPECTED FLAG AND LOGICAL SECTOR BEING VERIFIED.

WORD #2 S/B HD/CYL
EXPECTED HEAD AND CYLINDER BEING VERIFIED.

BITS	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	0	H	H	H	H	H	0	C	C	C	C	C	C	C	C	C

H = HEAD #
C = CYLINDER #

WORD #3 HD/PHY
TESTED HEAD AND PHYSICAL SECTOR.
BITS 0-7 = HEAD #
BITS 8-15 = PHYSICAL SECTOR #

WORD #4 IS FG/SEC
FLAG AND SECTOR NUMBER READ BY THE PROGRAM
FLAG BYTE
BIT 0 = DEFECTIVE DATA FIELD TWO (*)
BIT 1 = DEFECTIVE DATA FIELD ONE (*)
BIT 2 = USER ASSIGNED DEFECT
BIT 3 = USER PROGRAMMABLE PROTECT BIT
BIT 4 = SECTOR DISPLACED
BIT 5 = SECTOR ASSIGNED TO ALTERNATE SECTOR
BIT 6 = MANUFACTURING ASSIGNED DEFECT
BIT 7 = ASSIGNED ALTERNATE SECTOR

(*) USER MAY USE THESE BITS AS PROGRAMMABLE PROTECT BITS.

WORD #5 IS HD/CYL
HEAD AND CYLINDER NUMBER READ BY THE PROGRAM
BIT MEANING SAME AS WORD #2.

THE DATA LED'S ON THE PROGRAMMER CONSOLE DISPLAY THE HEAD AND CYLINDER BEING VERIFIED.

IF THE PROGRAMMER CONSOLE IS THE ACTIVE CONSOLE, R3 (LEVEL 3) WILL CONTAIN THE STORAGE ADDRESS OF THE ERROR SECTOR TABLE, WHEN HALT 7A6F IS DISPLAYED. THE ERROR SECTOR TABLE CONTAINS ONE SECTOR ENTRY (5 WORDS). RECORD THIS DATA AND ENTER '6' TO CONTINUE.

IF THE PROGRAMMER CONSOLE IS THE ACTIVE CONSOLE, R3 (LEVEL 3) WILL CONTAIN THE STORAGE ADDRESS OF THE ABORT DATA TABLE WHEN HALT 7AF2 IS DISPLAYED.

06.02 7AF0 SCATTER

06.02.01 PURPOSE:

THIS UTILITY MOVES THE ALTERNATE SECTORS ON CYLINDER 64 TO A SPARE SECTOR NEAREST THE DEFECTIVE SECTOR.

DISK ENCLOSURES ARE MANUFACTURED WITH CYLINDER 64 AS THE ALTERNATE. SERIES/1 DOES NOT SUPPORT ANY ALTERNATE CYLINDER. RUN THIS UTILITY ONLY AFTER REPLACING A DISK ENCLOSURE. RUN TIME IS ABOUT 1 MINUTE.

06.03 7AF1 SAVE

06.03.01 PURPOSE:

THIS UTILITY LOGS ALL DEFECTIVE AND FLAGGED SECTOR INFORMATION TO 1 OF 16 DATA SETS, 7AD0 THROUGH 7ADF, ON DIAGNOSTIC DISKETTE P/N 6828999. THIS INFORMATION IS NEEDED TO RESTORE FLAGGED AND DEFECTIVE SECTORS TO THEIR ORIGINAL CONDITION, USING 7AF2 RESTORE, IN CASE OF DISK OR PROGRAM FAILURE. RUN TIME IS ABOUT 5 MINUTES.

EVERY TIME 7AF9 IS RUN TO ASSIGN AN ALTERNATE OR FLAG A SECTOR THIS UTILITY SHOULD BE RUN.

06.03.02 OPERATING PROCEDURES:

THIS UTILITY READS AND VERIFIES DATA SETS 7AD0-7ADF TO ENSURE THE QUALITY OF THE DISKETTE IS SATISFACTORY FOR WRITING. IF ANY DATA SET HAS AN ERROR, THE UTILITY WILL ABORT, AND A NEW DISKETTE IS REQUIRED TO CORRECT THE PROBLEM.

NOTE: IF THE DISKETTE IS REPLACED, COPY DATA SETS 7AD0-7ADF TO SAVE ALL POSSIBLE DATA.

THE FOLLOWING TABLE OF CONTENTS WILL BE LISTED AFTER VERIFICATION IS COMPLETE.

DISPLAY:

DEFECTIVE LIST	DEID	DATE
7AD0	5700123	101278
7AD1	0000000	000000
7ADF	0000000	000000

ZEROS IN THE DEID AND DATE INDICATE THAT THE DATA SET IS AVAILABLE FOR LOGGING FLAGGED SECTOR INFORMATION. DATA IN THE DEID AND DATE FIELDS INDICATE THE DATA SET CONTINS FLAGGED SECTOR INFORMATION FOR DEID XXXXXXX AND THE DATE THE DATA SET WAS UPDATED.

AFTER PRINTING THE TABLE, THE FOLLOWING MESSAGE WILL BE LISTED

```
DISPLAY
  ENTER - DEVICE ADDRESS,DEID,DATE.

RESPONSE
 'FDVDEIDXXXMMDDYY'
    DV = DEVICE ADDRESS 2 DIGITS (HEX)
    DEIDXXX = 7 DIGITS, DISK ENCLOSURE ID
    MMDDYY = 6 DIGITS, CURRENT MONTH,DAY,YEAR
             (050278 = MAY 2,1978)
ENTRY MUST BE ENTERED WITH NO SPACES
```

EXAMPLE:

DEVICE ADDRESS = 48, DEID=1234567, DATE=050278

ENTER - F481234567050278

NOTE: DEID ENTERED MUST MATCH DEID IN THE CONFIGURATION TABLE FOR THE SPECIFIC DEVICE ADDRESS USED. IF DEID DOES NOT MATCH ENTRY IN CONFIGURATION TABLE, AN ERROR MESSAGE WILL DISPLAY, 'DEID DOES MATCH ENTRY IN CONFIGURATION TABLE, ENTER DEVICE ADDRESS, DEID DATE'.

EACH DATA SET MAY CONTAIN UP TO 863 FLAGGED SECTORS. THE NEXT AVAILABLE DATA SET WILL AUTOMATICALLY BE USED, IF IT IS REQUIRED. ALL DATA SETS ARE READ AND VERIFIED, AFTER THE FLAGGED SECTORS ARE LOGGED, AND A NEW TABLE OF CONTENTS WILL BE DISPLAYED. THIS TABLE WILL SHOW THE NUMBER OF DATA SETS USED AND WHEN THEY WERE WRITTEN.

NOTE: IF ANY ERRORS OCCUR DURING THE READ/VERIFY, THIS UTILITY WILL ABORT.

06.04 7AF2 RESTORE

CAUTION: ALL IDS THAT HAVE BEEN WRITTEN OR ASSIGNED AS ALTERNATES SINCE THE DATE LISTED IN THE TABLE OF CONTENTS WILL BE LOST.

06.04.01 PURPOSE:
THIS UTILITY WRITES ALL SECTOR IDS USING THE INFORMATION STORED IN DATA SETS, 7AD0 THROUGH 7ADF, ON DIAGNOSTIC DISKETTE P/N 6828999.

06.04.02 OPERATING PROCEDURES:
THIS UTILITY WRITES ALL SECTOR IDS ON THE 4963 DISK. THE FLAGGED SECTOR IDS ARE READ FROM THE SELECTED DATASET ON THE DIAGNOSTIC DISKETTE (DEID SUPPLIED BY USER) AND ARE USED TO RESET THE SECTOR IDS TO THEIR ORIGINAL STATUS.

NOTE: ALL IDS ARE WRITTEN ON THE DE, NO DATA FIELDS ARE READ OR WRITTEN.

THIS UTILITY READS AND VERIFIES DATA SETS 7AD0-7ADF TO ENSURE THE QUALITY OF THE DISKETTE IS SATISFACTORY. IF ANY DATA SET HAS AN ERROR, THE UTILITY WILL ABORT, AND A NEW DISKETTE IS REQUIRED TO CORRECT THE PROBLEM.

NOTE: IF THE DISKETTE IS REPLACED, COPY DATA SETS 7AD0-7ADF TO SAVE ALL POSSIBLE DATA.

THE FOLLOWING TABLE OF CONTENTS WILL BE DISPLAYED AFTER VERIFICATION IS COMPLETE.

DISPLAY:

DEFECTIVE LIST	DEID	DATE
7AD0	5700123	101278
7AD1	0000000	000000
7AD2	0000000	000000
7ADF	0000000	000000

DATA IN THE DEID AND DATE FIELDS INDICATE THE DATA SET CONTAINS FLAGGED SECTOR INFORMATION FOR DEID XXXXXXX AND THE DATE THE DATA SET WAS UPDATED.

AFTER PRINTING THE TABLE, THE FOLLOWING MESSAGE WILL BE DISPLAYED

```
DISPLAY
  ENTER - DEVICE ADDRESS,DEID

RESPONSE
 'FDVDEIDXXX'
  DV = DEVICE ADDRESS 2 DIGITS (HEX)
  DEIDXXX = 7 DIGITS, DISK ENCLOSURE ID
ENTRY MUST BE ENTERED WITH NO SPACES
```

EXAMPLE:

```
 DEVICE ADDRESS = 48,   DEID=1234567,

ENTER - F481234567050278
```

NOTE: DEID ENTERED MUST MATCH THE DEID ENTRY IN CONFIGURATION TABLE FOR THE SPECIFIC DEVICE ADDRESS INVOLVED. IF DEID DOES NOT MATCH THE ENTRY IN THE CONFIGURATION TABLE, AN ERROR MESSAGE WILL DISPLAY 'DEID DOES NOT MATCH ENTRY IN CONFIGURATION TABLE, ENTER DEVICE ADDRESS, DEID.' CORRECT THE CONFIGRATION ENTRY AND/OR ENTER CORRECT DEID.

RUNNING TIME FOR THIS PROGRAM IS ABOUT 4 OR 5 MINUTES.

06.05 7AF5 INITIALIZE

06.05.01 PURPOSE:

THIS UTILITY INITIALIZES A DISK ENCLOSURE TO SERIES/1 FORMAT.

06.05.02 OPERATING PROCEDURES:

THIS UTILITY IS RUN AFTER EXCHANGING A DISK ENCLOSURE IN THE FIELD IN ORDER TO FORMAT THE DISK ENCLOSURE FOR USE ON SERIES/1. IT IS POSSIBLE TO RECEIVE A NEW DISK ENCLOSURE FROM STOCK THAT IS FORMATTED DIFFERENTLY THAN WHAT SERIES/1 EXPECTS. SERIES/1 EXPECTS TO FIND ALL ALTERNATE SECTORS ON CYLINDER 64 WITH 100% CROSS REFERENCE.

THIS UTILITY HAS TWO SEPARATE PARTS.

PART 1:
READS ALL IDS (NORMAL OR SKEWED) LOOKING FOR FACTORY FLAGGED DEFECTS (FLAG BIT 6). ALL OTHER FLAG BITS ARE IGNORED. THEN, WRITES ALL IDS PRESERVING ALL FACTORY DEFECTS AND ASSIGNS ALTERNATE SECTORS WHEN NECESSARY.

NOTE: IF AN ID IS UNREADABLE, THE PROGRAM WILL 'ABORT'. (AUTOMATIC RETRIES ARE INCLUDED IN PROGRAM). IT IS ASSUMED THE ENCLOSURE IS NEW AND ANY ID THAT IS UNREADABLE INDICATES A DEFECTIVE DISK ENCLOSURE.

WARNING: PART 1 OF THIS PROGRAM IS TO BE RUN ONLY AFTER EXCHANGING A DISK ENCLOSURE. USE 7AF2 IF IDS HAVE TO BE WRITTEN ON AN EXISTING DE. IF FOR SOME REASON THIS PROGRAM (PART 1) IS RUN ON OTHER THAN A NEW DE, ALL USER ASSIGNED DEFECTS AND DATA WILL BE DESTROYED.

PART 2:
WRITES AND VERIFIES ALL DATA FIELDS WITH ZEROS.

NOTE: IF UNABLE TO WRITE A DATA FIELD, THE PROGRAM WILL 'ABORT' (AUTOMATIC RETIRES ARE PERFORMED.) IT IS ASSUMED THE DISK ENCLOSURE IS NEW AND ANY WRITE ERROR INDICATES A DEFECTIVE DISK ENCLOSURE.

WARNING: IF FOR SOME REASON THIS PROGRAM (PART 2) IS RUN ON OTHER THAN A NEW DISK ENCLOSURE, ALL USER DATA WILL BE 'DESTROYED'.

A 'WARNING' MESSAGE WILL BE GIVEN FOLLOWED BY:

DISPLAY
ENTER '1' TO FORMAT ALL IDS, '0' TO SELECT WRITE DATA PROGRAM

RESPONSE
'1' OR '0'
IF '1' GO TO 06.05.03
IF '0' GO TO 06.05.04

06.05.03 FORMAT ID'S

DISPLAY
ENTER DEVICE ADDR OF FILE TO FORMAT ALL IDS
RESPONSE
'FXX'
XX = DEVICE ADDRESS

DISPLAY
SELECTED DISK ENCLOSURE IS A XXMB,YY FIXED HEAD FILE
DEID# ZZZZZZZ AS INDICATED IN CONFIG TABLE
ENTER '1' TO FORMAT FILE, '0' TO TERMINATE PROG
XX = DE SIZE - 23, 29, 58 OR 64 MB
YY = NO FIXED HEADS OR FIXED HEAD FILE
ZZZZZZZ = DISK ENCLOSURE ID

RESPONSE
'1' OR '0'
1 = FORMAT FILE
0 = TERMINATE PROGRAM

RUNNING TIME FOR PART 1 IS ABOUT 4 TO 6 MINUTES.

06.05.04 WRITE DATA

```
DISPLAY
  4963 WRITE DATA PROGRAM ALL USER DATA WILL BE LOST
  ENTER '1' TO ZERO ALL DATA, '0' TO TERMINATE PROG

RESPONSE
 '1' OR '0'
    1 = WRITE DATA
    0 = TERMINATE PROGRAM

DISPLAY
  ENTER DEVICE ADDR OF FILE TO ZERO ALL DATA

RESPONSE
  FXX
    XX = DEVICE ADDRESS

DISPLAY
  SELECTED DISK ENCLOSURE IS A XXMB,YY FIXED HEAD FILE
  DEID# ZZZZZZZ AS INDICATED IN CONFIG TABLE
  ENTER '1' TO FORMAT FILE, '0' TO TERMINATE PROG
    XX = DE SIZE- 23, 29, 58 OR 64 MB
    YY = NO FIXED HEADS OR FIXED HEAD FILE
    ZZZZZZZ = DISK ENCLOSURE ID

RESPONSE
'1' OR '0'
    1 = WRITE DATA
    0 = TERMINATE PROGRAM

RUNNING TIME FOR PART 2 IS ABOUT 6-8 MINUTES.
```

06.06 7AF9 DISK MAINTENANCE UTILITY

06.06.01 PURPOSE:

THIS UTILITY IS USED TO CORRECT SECTOR ERRORS FOUND BY THE READ VERIFY UTILITY 7A69. IT SUPPORTS THE FOLLOWING FUNCTIONS:

READ ID'S
READ DATA RECORDS
FORMAT ID'S
WRITE DATA
ASSIGN ALTERNATES

06.06.02 OPERATING PROCEDURES:

TO CORRECT SECTOR ERRORS FOUND BY THE READ VERIFY UTILITY 7A69 GO TO 10.0 DISK MAINTENANCE UTILITY USER'S GUIDE OR PAPER MAP 7AF9.

7.0 DEVICE EXERCISERS

NONE

8.0 DEVICE DIAGNOSTICS

NONE

9.0 DEVICE OFF LINE TESTS

NONE

10.0 DISK MAINTENANCE UTILITY USER'S GUIDE

THIS GUIDE GIVES INSTRUSTIONS ON HOW TO RESPOND TO ERRORS FOUND BY READ VERIFY UTILITY 7A69. TO USE IT RUN 7A69 AND RECORD THE ERROR SECTOR DATA LISTED. ALL ERRORS LISTED BY 7A69 REQUIRE CSR INTERVENTION. USE THE TABLE BELOW TO FIND THE SECTION REQUIRED TO CORRECT THE ERRORS LISTED.

SECTOR ID UNREADABLE	SEE 10.01
NO RECORD FOUND	SEE 10.02
DATA CRC RECORD 1	SEE 10.03
DATA CRC RECORD 2	SEE 10.01
DATA CRC RECORD 1 AND 2	SEE 10.01 OR 10.03

FORMAT OF 7A69 PRONTOUT OR DISPLAY

S/B FG/SEC FFSS	S/B HD/CYL HHCC	HD/PHY# IGNORE	IS FG/SEC FFSS	IS HD/CYL HHCC
..	..	..	..	..
..	..	..	..	..
..	..	..	..	..
COL 1	COL 2	COL 3	COL 4	COL 5

NOTE:

1. INFORMATION FROM COLUMN 3 WILL NOT BE USED. ALL ENTRIES FOR UTILITY 7AF9 USED IN THE FOLLOWING SECTIONS REQUIRE PORTIONS OF THE S/B (SHOULD BE) COLUMNS (1 AND 2) AS INPUT.

2. ALL STEP 1 AND STEP 3 REFERENCES IN THE FOLLOWING SECTIONS PERTAIN TO MAP 7AF9

3. IF UTILITY 7AF9 ABORTS SUSPECT DEFECTIVE LOGIC CARDS OR DE UNIT, RUN AUTO AND MANUAL MODE DIAGNOSTICS TO FURTHER IDENTIFY THE FAILING COMPONENT. REFERENCE CYCLE STEAL STATUS WORDS IN THE ABORT MATRIX FOR ADDITIONAL INFORMATION.

10.01 ID UNREADABLE

TO CORRECT THIS ERROR, LIST TRACK ID'S BY PERFORMING THE FOLLOWING STEPS:

RUN 7AF9
AT STEP 1 ENTER '1'
AT STEP 3 ENTER F0300 0000 HHCC = LIST ID'S

EXAMINE THE FLAG BYTE OF THE SECTOR IMMEDIATELY PRIOR TO THE UNREADABLE SECTOR.
IF BIT 4 IS ON, GO TO 10.01.01
IF BIT 4 IS OFF, GO TO 10.01.02

10.01.01

AT STEP 1 ENTER '1'
AT STEP 3 ENTER F0100 08SS HHCC 0000 = FORMAT DISPLACED
AT STEP 1 ENTER '1'
AT STEP 3 ENTER F0200 00SS HHCC 0000 = ASSIGN ALTERNATE
IF PROGRAM ABORTS, PERFORM THE FOLLOWING STEPS.

RUN 7AF9
AT STEP 1 ENTER '1'
AT STEP 3 ENTER F0100 0ASS HHCC 0100 = FORMAT DISPLACED SKEWED
AT STEP 1 ENTER '1'
AT STEP 3 ENTER F0200 00SS HHCC 0000 = ASSIGN ALTERNATE
IF PROGRAM ABORTS, SEE 10.00 NOTE 3

10.01.02

AT STEP 1 ENTER '1'
AT STEP 3 ENTER F0100 00SS HHCC 0000 = FORMAT NORMAL
AT STEP 1 ENTER '1'
AT STEP 3 ENTER F0200 00SS HHCC 0000 = ASSIGN ALTERNATE
IF PROGRAM ABORTS, PERFORM THE FOLLOWING STEPS.

RUN 7AF9
AT STEP 1 ENTER '1'
AT STEP 3 ENTER F0100 02SS HHCC 0100 = FORMAT SKEWED
AT STEP 1 ENTER '1'
AT STEP 3 ENTER F0200 00SS HHCC 0000 = ASSIGN ALTERNATE
IF PROGRAM ABORTS, SEE 10.00 NOTE 3

10.02 NO RECORD FOUND

FLAG BITS 0, 1, AND 3 MAY BE USED AS PROGRAMMABLE PROTECT BITS.
ARE BITS 0, 1, OR 3 OF THE FLAG BYTE ON?

NO GO TO 10.02.01

YES GO TO 10.04.00

10.02.01

RUN 7AF9
AT STEP 1 ENTER '1'
AT STEP 3 ENTER F0300 0000 HHCC = LIST ID'S

EXAMINE THE FLAG BYTE OF THE SECTOR IMMEDIATELY PRIOR TO THE NO RECORD FOUND SECTOR.
IF BIT 4 IS ON, GO TO 10.02.02
IF BIT 4 IS OFF, GO TO 10.02.03

10.02.02

AT STEP 1 ENTER '1'
AT STEP 3 ENTER F0100 08SS HHCC 0000 = FORMAT DISPLACED
AT STEP 1 ENTER '1'
AT STEP 3 ENTER F0200 00SS HHCC 0000 = ASSIGN ALTERNATE
IF PROGRAM ABORTS, PERFORM THE FOLLOWING STEPS.

RUN 7AF9
AT STEP 1 ENTER '1'
AT STEP 3 ENTER F0100 0ASS HHCC 0100 = FORMAT DISPLACED SKEWED
AT STEP 1 ENTER '1'
AT STEP 3 ENTER F0200 00SS HHCC 0000 = ASSIGN ALTERNATE
IF PROGRAM ABORTS, SEE 10.00 NOTE 3

10.02.03

AT STEP 1 ENTER '1'
AT STEP 3 ENTER F0100 00SS HHCC 0000 = FORMAT NORMAL
AT STEP 1 ENTER '1'
AT STEP 3 ENTER F0200 00SS HHCC 0000 = ASSIGN ALTERNATE
IF PROGRAM ABORTS, PERFORM THE FOLLOWING STEPS.

RUN 7AF9
AT STEP 1 ENTER '1'
AT STEP 3 ENTER F0100 02SS HHCC 0100 = FORMAT SKEWED
AT STEP 1 ENTER '1'
AT STEP 3 ENTER F0200 00SS HHCC 0000 = ASSIGN ALTERNATE
IF PROGRAM ABORTS, SEE 10.00 NOTE 3

10.03 DATA CRC RECORD #1 AND RECORD #2

THIS PROCEDURE WILL WRITE 0'S IN THE CUSTOMER'S DATA RECORD. CHECK WITH THE CUSTOMER, IF THE DATA DOES NOT NEED TO BE SAVED, CONTINUE. IF THE DATA RECORD NEEDS TO BE SAVED, GO TO 10.05

RUN 7AF9
AT STEP 1 ENTER '1'
AT STEP 3 ENTER F0000 00SS HHCC 0001 = WRITE DATA REC #1

OR

AT STEP 1 ENTER '1'
AT STEP 3 ENTER F1000 00SS HHCC 0001 = WRITE DATA REC #2

10.04 PROTECT FLAG/FLAGS

ASK THE CUSTOMER IF THE PROGRAM SUPPORTS 'PROTECTED DATA'. IF YES, THIS IS NOT AN ERROR.

NOTE: IF MANY SECTORS HAVE PROTECT FLAG/FLAGS ON, THE USER PROGRAM HAS ASSIGNED THEM AS PROTECTED.

IF ONLY ONE SECTOR HAS THE PROTECT FLAG/FLAGS ON AND CORRECTION IS DESIRED, GO TO 10.04.01

10.04.01

RUN 7AF9
AT STEP 1 ENTER '1'
AT STEP 3 ENTER F0300 0000 HHCC = LIST ID'S

EXAMINE THE FLAG BYTE OF THE PROTECTED SECTOR.

IF BIT 4 IS ON, GO TO 10.04.02
IF BIT 4 IS OFF, GO TO 10.04.03

10.04.02

AT STEP 1 ENTER '1'
AT STEP 3 ENTER F0100 08SS HHCC 0000 = FORMAT DISPLACED
IF PROGRAM ABORTS, PERFORM THE FOLLOWING STEPS.

RUN 7AF9
AT STEP 1 ENTER '1'
AT STEP 3 ENTER F0100 0ASS HHCC 0100 = FORMAT DISPLACED SKEWED
AT STEP 1 ENTER '1'
AT STEP 3 ENTER F0200 00SS HHCC 0000 = ASSIGN ALTERNATE
IF PROGRAM ABORTS, SEE 10.00 NOTE 3

10.04.03

AT STEP 1 ENTER '1'
AT STEP 3 ENTER F0100 00SS HHCC 0000 = FORMAT NORMAL
IF PROGRAM ABORTS, PERFORM THE FOLLOWING STEPS.

RUN 7AF9
AT STEP 1 ENTER '1'
AT STEP 3 ENTER F0100 02SS HHCC 0100 = FORMAT SKEWED
AT STEP 1 ENTER '1'
AT STEP 3 ENTER F0200 00SS HHCC 0000 = ASSIGN ALTERNATE
IF PROGRAM ABORTS, SEE 10.00 NOTE 3

10.05 DATA RECOVERY

THE FOLLOWING PROCEDURE ALLOWS A DATA RECORD TO BE WRITTEN TO STORAGE, ALTERED, AND THEN WRITTEN BACK ON THE DISK WITH A NEW CRC CHARACTER GENERATED.

DISPLAY THE DATA RECORD, PERFORM THE FOLLOWING STEPS.

```
RUN 7AF9
AT STEP 1  ENTER '1'
AT STEP 3  ENTER F0400 00SS HHCC 0000 = DISPLAY REC #1

OR

AT STEP 1  ENTER '1'
AT STEP 3  ENTER F0400 00SS HHCC 0100 = DISPLAY REC #2
```

THE PROGRAM WILL DISPLAY A BUFFER ADDRESS, WHICH IS THE STORAGE LOCATION THAT CONTAINS THE DATA RECORD. THE DATA RECORD WILL ALSO BE DISPLAYED ON THE ALTERNATE CONSOLE. ASK THE CUSTOMER TO VERIFY THE DATA RECORD AND USE THE PROGRAMMER'S CONSOLE TO CORRECT ANY ERRORS IN STORAGE. (LOCATE VIA BUFFER ADDRESS DISPLAYED) AFTER CORRECTING THE DATA RECORD OR IF NO ERRORS ARE APPARENT, REWRITE THE DATA RECORD BY PREFORMING THE FOLLOWING STEPS.

```
AT STEP 1  ENTER '1'
AT STEP 3  ENTER F0000 00SS HHCC 0011 = REWRITE REC #1

OR

AT STEP 1  ENTER '1'
AT STEP 3  ENTER F1000 00SS HHCC 0011 = REWRITE REC #2
```

THE DATA RECORD WILL BE WRITTEN FROM STORAGE TO DISK AND A NEW CRC CHARACTER WILL BE GENERATED.

11.0 REFERENCE TABLES

11.01 HEAD AND CYLINDER TABLE

HEAD #	CYLINDER # 000-0FF	CYLINDER # 100-167
0	00XX	01XX
1	04XX	05XX
2	08XX	09XX
3	0CXX	0DXX
4	10XX	11XX
5	14XX	15XX
6	18XX	19XX
7	1CXX	1DXX
8	20XX	21XX
9	24XX	25XX
A	28XX	29XX

FIXED HEADS

HEAD #	CYLINDER #
0	41XX
1	45XX
2	49XX
3	4DXX
4	51XX
5	45XX
6	49XX
7	4DXX

EXAMPLE: HD/CYL-1524 = HEAD 5, CYL 124

11.02 SECTOR/RECORD TABLE

SECTOR	RECORD#1	RECORD#2	SECTOR	RECORD#1	RECORD#2
00	00	20	20	10	30
02	01	21	22	10	30
04	02	22	24	10	30
06	03	23	26	10	30
08	04	24	28	10	30
0A	05	25	2A	10	30
0C	06	26	2C	10	30
0E	07	27	2E	10	30
10	08	28	30	10	30
12	09	29	32	10	30
14	0A	2A	34	10	30
16	0B	2B	36	10	30
18	0C	2C	38	10	30
1A	0D	2D	3A	10	30
1C	0E	2E	3C	10	30
|E	0F	2F	3E	10	30
			40	SPARE SECTOR	

001
(ENTRY POINT A)

THIS IS AN MDI 'MANUAL MODE' MAP.
(SEE DIAGNOSTIC SERVICE GUIDE
05.00.00).
TO USE IT: LOAD AND EXECUTE THE
MAP PROGRAM (C7AF9 WHERE
7AF9=MAP#).
WHEN CE ACTION IS NEEDED DCP
HALTS AND DISPLAYS MAP # AND STEP
#. SEE THE HARD COPY MAP FOR THE
CE ACTION.

CE RESPONSE NECESSARY.
DO YOU WANT TO FORMAT A SECTOR,
WRITE AND VERIFY DATA,LIST DATA
RECORD 1 OR 2,LIST TRACK IDS OR
ASSIGN A SINGLE ALTERNATE SECTOR?
MDI=$QUES
Y N
|
| 002
| END
| MDI=¢STOP

 20MAY83 PN6839423

REVISED 1979 ECA03143 PEC466795

003
(ENTRY POINT B)

```
**********************************
* THIS STEP LETS THE USER        *
* PERFORM THE FOLLOWING:         *
* 0. TEST SECTORS                *
*    (WRITE AND VERIFY DATA)     *
* 1. FORMAT IDS                  *
*    (WRITE SECTOR ID(S))        *
* 2. ASSIGN ALTERNATE SECTORS    *
* 3. LIST TRACK SECTOR IDS       *
* 4. LIST DATA RECORD ONE OR TWO*
*                                *
*                                *
*   **** TEST  SECTORS ***       *
*                                *
* WRITES A TEST PATTERN FROM     *
* USER INPUT (BYTE 6) OR FROM    *
* THE DATA BUFFER AFTER          *
* EXECUTING MODE 04 (LIST DATA   *
* RECORD ONE OR TWO).BYTE 7      *
* DETERMINES WHERE THE DATA IS   *
* TO BE WRITTEN FROM. A SECTOR   *
* OR SECTORS BEING TESTED MUST   *
* CONTAIN A GOOD FLAG(00) FOR    *
* THE WRITE OP TO COMPLETE       *
* CORRECTLY OR IF A SECTOR HAS   *
* BEEN ASSIGNED AN ALTERNATE,    *
* SE BIT MUST BE TURNED ON       *
* (INPUT BYTE SEVEN = X1).       *
* THE SPECIFIED SECTOR NUMBER OR*
* STARTING SECTOR NUMBER FOR     *
* MORE THAN ONE SECTOR           *
* OPERATIONS MUST BE INPUT AS A  *
* LOGICAL SECTOR NUMBER.         *
* ONLY ONE DATA FIELD IS TESTED  *
* AT A TIME USING INPUT BYTE 0.  *
* BYTE 0 = 00 -- DATA RECORD     *
*                ONE TESTED.     *
* BYTE 0 = 10 -- DATA RECORD     *
*                TWO TESTED.     *
```

(STEP 003 CONTINUES)

```
**********************************
* NOTE: ALL INPUT DATA MUST BE   *
* ENTERED IN HEXADECIMAL.        *
* BYTE ZERO:                     *
*      00=TEST/WRITE/VERIFY      *
*         DATA RECORD ONE.       *
*      10=TEST/WRITE/VERIFY      *
*         DATA RECORD TWO.       *
*      01=FORMAT                 *
*      02=ASSIGN ALTERNATE       *
*         SECTOR                 *
*      03=LIST TRACK IDS         *
*      04=LIST DATA RECORD       *
*         1 OR 2                 *
*                                *
* BYTE ONE:00=SINGLE SECTOR      *
*      01='MULTI' SECTOR         *
*                                *
*          'MULTI' REQUEST       *
* TEST SECTOR OR FORMAT OF MORE  *
* THAN ONE SECTOR. IF 'MULTI'    *
* IS SELECTED, ALL SECTORS       *
* STARTING WITH THE INPUT        *
* SECTOR AND ENDING WITH THE     *
* LAST LOGICAL SECTOR            *
* (3E FOR DATA, 40 FOR IDS)      *
* ON THE TRACK ARE WRITTEN OR    *
* FORMATTED (SEE REF TABLE)      *
*                                *
* NOTE: IN ORDER TO FORMAT ALL   *
* SECTORS IN ANY GIVEN TRACK,    *
* THE INPUT SECTOR NUMBER MUST   *
* BE ZERO (00).                  *
*                                *
*     *****  WARNING  *****      *
*                                *
* (WHEN FORMATTING MULTI         *
* SECTORS ALL FLAG BYTES WILL    *
* BE MADE THE SAME VALUE).       *
*                                *
* NOTE:BYTE ONE NOT USED FOR     *
```

(STEP 003 CONTINUES)

(STEP 003 CONTINUED)

```
*                                  *
* BYTE 7 = 0X - DATA WRITTEN       *
*              FROM BYTE 6.        *
* BYTE 7 = 1X - DATA WRITTEN       *
*              FROM DATA BUFFER    *
*              AFTER A MODE 04     *
*              IS EXECUTED.        *
*                                  *
* THE PROGRAM WILL TERMINATE IF    *
* A SECTOR WITH A BAD FLAG IS      *
* TESTED AND THE 'SE' BIT IS       *
* NOT ON.                          *
*                                  *
*     *****  WARNING  *****        *
*                                  *
*    TEST MODE WILL DESTROY        *
*    EXISTING DATA.                *
*                                  *
*                                  *
* **** FORMAT SECTOR ID(S) ****    *
*                                  *
*      *****  NOTE  *****          *
* THIS MODE WRITES THE ID FOR      *
* THE SPECIFIED SECTOR(S) USING    *
* THE FLAGS SUPPLIED BY THE        *
* USER.                            *
* THE SPECIFIED SECTOR NUMBER OR   *
* STARTING SECTOR NUMBER FOR       *
* MORE THAN ONE SECTOR             *
* OPERATIONS MUST BE INPUT AS A    *
* LOGICAL SECTOR NUMBER.           *
* THIS REQUEST WILL NOT            *
* RECOGNIZE SECTORS ALREADY        *
* MARKED BAD OR DISPLACED.         *
* IF FORMATTING A KNOWN BAD OR     *
* DISPLACED SECTOR, INPUT FLAG     *
* MUST CONTAIN BAD AND/OR          *
* DISPLACED FLAG BIT(S).           *
* FOLLOWING IS MEANING OF          *
* MESSAGES:                        *
* MESSAGE #3-(NOT VALID FLAG FOR   *
* SKEWED ID)-          SPECIFIED   *
```

(STEP 003 CONTINUES)

(STEP 003 CONTINUED)

```
* ALTERNATE SECTOR MODE, LIST      *
* SECTOR IDS.                      *
*                                  *
* BYTE TWO: FLAG BYTE              *
* THE FLAG BYTE IS DESCRIBED AS    *
* FOLLOWS:                         *
* BIT                              *
* 0 = DEFECTIVE DATA FIELD TWO     *
*     TWO (*)                      *
* 1 = DEFECTIVE DATA FIELD ONE     *
*     ONE (*)                      *
* 2 = USER ASSIGNED DEFECT         *
* 3 = USER PROGRAMMABLE PROTECT    *
*     BIT                          *
* 4 = SECTOR DISPLACED             *
* 5 = SECTOR ASSIGNED TO           *
*     ALTERNATE CYLINDER           *
* 6 = MANUFACTURING ASSIGNED       *
*     DEFECT                       *
* 7 = ASSIGNED ALTERNATE SECTOR    *
*                                  *
* (*) THESE BITS HAVE NO           *
* MEANING EXCEPT WHEN USED BY      *
* MANUFACTURING TO INDICATE BAD    *
* DATA FIELDS. THE USER MAY USE    *
* THEM AS PROGRAMMABLE PROTECT     *
* BITS.                            *
*                                  *
* NOTE: IN MODE 01 (FORMAT)        *
* USER MUST SPECIFY IF THE         *
* SECTOR ID IS TO BE WRITTEN       *
* DISPLACED (FLAG BIT 4). USE      *
* MODE 03 (LIST SECTOR IDS) TO     *
* DETERMINE IF SECTOR IS TO BE     *
* WRITTEN DISPLACED.               *
*                                  *
* NOTE: BYTE TWO NOT USED IN       *
* ALTERNATE SECTOR MODE OR LIST    *
* SECTOR IDS.                      *
*                                  *
* BYTE THREE: LOGICAL SECTOR       *
*       00 TO 40 - HEXADECIMAL     *
```

(STEP 003 CONTINUES)

```
(STEP 003 CONTINUED)
* FLAG BYTE FOR WRITING A SKEWED*
* ID MUST CONTAIN A BAD FLAG.   *
* (BIT 2 OR 6)                  *
* MESSAGE #5-(ERROR IN WRITING  *
* SECTOR ID) IF AN ERROR WAS    *
* FOUND WHEN ATTEMPTING TO WRITE*
* AN ID NORMAL, OR SKEWED.      *
* IF YOU CAN NOT WRITE ID       *
* WITHOUT ERROR (NORMAL OR      *
* SKEWED) THE DISK ENCLOSURE    *
* SHOULD BE EXCHANGED.          *
* EXCHANGING IS A USER OPTION.  *
*                               *
*                               *
* ** ASSIGN ALTERNATE SECTOR ** *
*                               *
* NOTE: IT IS RECOMMENDED THAT  *
* UTILITY PROGRAM 7A69 BE RUN   *
* BEFORE ASSIGNING ALTERNATE    *
* SECTORS.                      *
* THE OUTPUT OF PROGRAM 7A69    *
* INDICATES SECONDARY ALTERNATE *
* SECTORS, BAD IDS AND BAD DATA *
* FIELDS. THE BAD IDS AND DATA  *
* FIELDS SHOULD BE CORRECTED AND*
* WRITTEN (IF POSSIBLE) BEFORE  *
* ANY ALTERNATE ASSIGN IS MADE. *
* ALTERNATE ASSIGN MODE ASSIGNS *
* AN ALTERNATE SECTOR FOR THE   *
* LOGICAL SECTOR SPECIFIED BY   *
* THE USER. (IDS WRITTEN WITH   *
* THE CORRECT FLAG BITS WITH    *
* EXCHANGED SECTOR ADDRESSES).  *
* DATA IN THE SPECIFIED SECTOR  *
* WILL BE RECOVERED(IF POSSIBLE)*
* AND WILL BE WRITTEN IN THE    *
* ALTERNATE SECTOR.             *
* AN ERROR FOUND IN RECOVERING  *
* DATA WILL DISPLAY MESSAGE #1. *
* (ASSIGN OK, DATA CRC FOUND    *
* HDCY,  REC# XXXX XX).         *
*                               *
(STEP 003 CONTINUES)
```

```
(STEP 003 CONTINUED)
*                (BY 2(S))      *
*                               *
* NOTE: INPUT FOR BYTE 3 MUST   *
* BE A VALID LOGICAL SECTOR     *
* NUMBER. (SEE REF TABLE).      *
* LOGICAL 40 NOT VALID FOR READ *
* OR WRITE DATA OPERATIONS.     *
* THE LOGICAL SECTOR IS NOT     *
* CHECKED FOR VALIDITY.         *
*                               *
* NOTE: BYTE THREE NOT USED IN  *
* LIST IDS MODE.                *
*                               *
* BYTE FOUR: HEAD SELECTION     *
*      (BITS 1-5)               *
*       (BIT  1=1 INDICATES     *
*                 FIXED HEADS   *
*                 IF INSTALLED) *
*       (BITS 2-5 = HEAD(S)     *
*                 (0-A)         *
*                               *
* BYTE FOUR AND FIVE:           *
*      (BITS 7-15)              *
*          = CYLINDER # (0-359) *
*            (HEXADECIMAL 0-167)*
*                               *
* BYTE SIX: WRITE SECTOR ID     *
*           MODE (01)           *
*      00=WRITE ID NORMAL       *
*      01=WRITE ID SKEWED       *
*           LIST DATA MODE (04) *
*      00=LIST DATA RECORD ONE  *
*      01=LIST DATA RECORD TWO  *
*           TEST MODE (00)      *
*      00-FF - TEST PATTERN FOR *
*              WRITING DATA     *
*                               *
* NOTE: BYTE SIX NOT USED IN    *
* ALTERNATE SECTOR MODE OR LIST *
* IDS.                          *
* BYTE SIX NOT USED IN MODE X0  *
* IF BYTE 7 = 1X.               *
(STEP 003 CONTINUES)
```

```
(STEP 003 CONTINUED)
* MESSAGE #1 AND 2:                *
* IF SPECIFIED SECTOR IS ALREADY*
* ASSIGNED, DATA IN THE           *
* ALTERNATE SECTOR WILL BE        *
* VERIFIED. IF DATA VERIFIES      *
* CORRECTLY MESSAGE #2 WILL BE    *
* DISPLAYED (SECTOR ALREADY       *
* ASSIGNED). IF A DATA ERROR IS   *
* FOUND IN THE ASSIGNED DATA      *
* FIELD, MESSAGE#1 WILL DISPLAY   *
* (ASSIGN OK, DATA CRC FOUND      *
* HDCY, REC# XXXX XX).            *
* XXXX  = (HD/CYL)-HEAD AND CYL#*
* (BITS 1- 5) OF WORD=HEAD#       *
* (BITS 7-15) OF WORD=CYLINDER#   *
* XX = DATA RECORD #              *
* (SEE TABLE BELOW TO CONVERT     *
* TO LOGICAL SECTOR #).           *
*                                 *
* NOTE: SPECIFIED SECTOR IDS      *
* THAT ARE TO BE ASSIGNED         *
* ALTERNATE, MUST BE READABLE IF*
* THE ALTERNATE SECTOR IS TO BE   *
* A PRIMARY, ALL SECTORS ON THE   *
* AFFECTED TRACK MUST BE          *
* READABLE. (IDS AND DATA).       *
*                                 *
* NOTE: IF A DATA CRC IS FOUND    *
* WHEN ASSIGNING A PRIMARY        *
* ALTERNATE MESSAGE#1 WILL        *
* DISPLAY (ASSIGN OK,DATA CRC     *
* FOUND    HDCY,REC# XXXX XX).    *
* LIST DATA (MODE 4) FOR THE      *
* FAILING RECORD AND VERIFY THAT*
* THE DATA IS CORRECT. CORRECT    *
* THE DATA IF POSSIBLE AND WRITE*
* DATA RECORD USING MODE X0.      *
* USE TABLE BELOW TO OBTAIN       *
* CORRECT LOGICAL SECTOR NUMBER.*
* NOTE: WHEN ASSIGNING ALTERNATE*
* SECTORS ALL DATA IS READ AND    *
* WRITTEN IN THE ALTERNATE        *
(STEP 003 CONTINUES)
```

```
(STEP 003 CONTINUED)
*                                 *
* BYTE SEVEN: SET CONTROL WORD    *
*             SE BIT              *
*      00=SET BIT OFF             *
*      01=SET BIT ON              *
*         (AUTO ERROR RETRY)      *
*                                 *
* BYTE SEVEN: USED IN MODE X0-    *
*      00=USE DATA FROM BYTE 6,   *
*         SET SE BIT OFF.         *
*      10=USE DATA FROM DATA      *
*         BUFFER,                 *
*         SET SE BIT OFF.         *
*      01=USE DATA FROM BYTE 6,   *
*         SET SE BIT ON.          *
*      11=USE DATA FROM DATA      *
*         BUFFER,                 *
*         SET SE BIT ON.          *
*                                 *
* NOTE: BYTE SEVEN NOT USED IN    *
* ALTERNATE SECTOR MODE OR LIST   *
* IDS.                            *
*                                 *
* FOR EXAMPLE:                    *
* TO FORMAT THE COMPLETE CE       *
* TRACK HEAD 0 FLAG ZERO,         *
* WRITTEN NORMAL                  *
* INPUT= F0101 0000 0167 0000     *
* PROGRAMMER CONSOLE INPUT:       *
* (B),4,F,(I),                    *
* (B),0,1,0,1,(I),                *
* (B),0,0,0,0,(I),                *
* (B),0,1,6,7,(I),                *
* (B),0,0,0,0,(I),(I)             *
*                                 *
* TO FORMAT LOG SECTOR 16,        *
* FIXED HEAD 0, BAD FLAG,         *
* WRITTEN SKEWED                  *
* NOTE: IF FIXED HEAD IS          *
* SPECIFIED CYLINDER# MUST BE     *
* 01FF                            *
* INPUT= F0100 2016 41FF 0100     *
(STEP 003 CONTINUES)
```

```
(STEP 003 CONTINUED)
* SECTOR(S) WITH CORRECT CRC    *
* CHARACTERS EVEN IF A DATA CRC *
* IS FOUND WHEN THE DATA IS     *
* READ.                         *
*                               *
* MESSAGE #4:                   *
* BAD SECTORS WILL DISPLAY      *
* MESSAGE #4 (SECTOR ID NOT     *
* READABLE, WRITE). USE MODE 03-*
* (LIST TRACK IDS) TO LIST IDS  *
* ON A BAD TRACK. BAD IDS WILL  *
* LIST TWO WORDS OF F'S.        *
* DETERMINE LOGICAL SECTOR      *
* NUMBER AND WRITE ID WITH A BAD*
* FLAG (USE MODE 01-FORMAT). IF *
* STILL CAN NOT READ ID WITHOUT *
* ERRORS, WRITE ID SKEWED.      *
*                               *
*                               *
*   **** LIST SECTOR IDS ****   *
*                               *
* READS A FULL TRACK OF IDS AND *
* LISTS THEM IN PHYSICAL SECTOR *
* ORDER STARTING WITH PHYSICAL  *
* SECTOR 0, TWO SECTORS TO A    *
* LINE, IN THE FOLLOWING FORMAT:*
*   WORD0  WORD1  WORD2   WORD3 *
*                               *
* WORD0 - (FG/SEC) - FLAG AND   *
*         LOGICAL SECTOR #      *
* WORD1 - (HD/CYL) - HEAD AND   *
*         CYLINDER #            *
* (BITS 1- 5) OF WORD1 OR 3 =   *
*             HEAD #            *
* (BITS 7-15) OF WORD1 OR 3 =   *
*             CYLINDER #        *
*                               *
* WORD2 - SAME AS WORD0 BUT     *
*         NEXT SECTOR #         *
* WORD3 - SAME AS WORD1 BUT     *
*         NEXT SECTOR #         *
*                               *
(STEP 003 CONTINUES)
```

```
(STEP 003 CONTINUED)
* PROGRAMMER CONSOLE INPUT:     *
* (B),4,F,(I),(B),              *
* (B),0,1,0,0,(I),              *
* (B),2,0,1,6,(I),              *
* (B),4,1,F,F,(I),              *
* (B),0,1,0,0,(I),(I)           *
*                               *
* TO WRITE DATA (89) IN LOGICAL *
* SECTOR 0A, DATA RECORD 1,     *
* DATA FROM BYTE SIX, FIXED     *
* HEAD 07, NO RETRIES           *
* (SE BIT OFF)                  *
* NOTE: IF FIXED HEAD IS        *
* SPECIFIED CYLINDER# MUST BE   *
* 01FF                          *
* INPUT= F0000 000A 5DFF 8900   *
* PROGRAMMER CONSOLE INPUT:     *
* (B),4,F,(I),(B),              *
* (B),0,0,0,0,(I),              *
* (B),0,0,0,A,(I),              *
* (B),5,D,F,F,(I)               *
* (B),8,9,0,0,(I),(I)           *
*                               *
* TO WRITE DATA IN LOG SECTORS  *
* 16-3E, DATA RECORD TWO, DATA  *
* FROM DATA BUFFER, HEAD 1,     *
* CYLINDER 7, NO RETRIES        *
* (SE BIT OFF)                  *
* INPUT= F1001 0016 0407 0010   *
* PROGRAMMER CONSOLE INPUT:     *
* (B),4,F,(I),                  *
* (B),1,0,0,1,(I),              *
* (B),0,0,1,6,(I),              *
* (B),0,4,0,7,(I),              *
* (B),0,0,1,0,(I),(I)           *
*                               *
* TO ASSIGN ALTERNATE FOR       *
* LOGICAL SECTOR 12,            *
* CYLINDER 008, HEAD 01         *
* INPUT= F0200 0012 0408        *
* PROGRAMMER CONSOLE INPUT:     *
* (B),4,F,(I),                  *
(STEP 003 CONTINUES)
```

```
(STEP 003 CONTINUED)
*  NOTE: IF A SECTOR IS WRITTEN *
*  SKEWED THE HIGH ORDER BIT    *
*  (BIT 8 OF WORD 0 OR WORD 2)  *
*  OF THE LOGICAL SECTOR NUMBER *
*  WILL BE FORCED ON BY THE     *
*  PROGRAM. THIS IS ONLY A      *
*  VISUAL INDICATION. IF THE ID *
*  IS BAD, TWO WORDS OF F'S     *
*  WILL BE DISPLAYED.           *
*                               *
*                               *
** LIST DATA RECORD ONE OR TWO **
*                               *
* READS DATA RECORD ONE OR TWO  *
* (256 BYTES) SPECIFIED BY THE  *
* USER AND LISTS THE DATA, FOUR *
* WORDS TO A LINE. NOTE: USER   *
* SPECIFIES LOGICAL SECTOR      *
* NUMBER AND SELECTS DATA       *
* RECORD ONE OR TWO.            *
*                               *
* NOTE: IF A DATA CRC IS FOUND  *
* A MESSAGE, "DATA CRC FOUND"   *
* AND "DATA BUFFER ADDRESS IS   *
* XXXX" WILL BE DISPLAYED ALONG *
* DISPLAYED ALONG WITH THE DATA.*
* NOTE: DATA CAN NOT BE         *
* GUARANTEED WITH A CRC BUT IT  *
* IS POSSIBLE TO ASSEMBLE THE   *
* DATA AGAIN.                   *
*                               *
* NOTE: DATA CAN BE DISPLAYED   *
* AND CORRECTED IN MAIN STORAGE *
* (PROGRAMMER CONSOLE) USING    *
* THE DATA BUFFER ADDRESS       *
* DISPLAYED IN XXXX.            *
* XXXX = STARTING MAIN STORAGE  *
*        ADDRESS OF THE READ    *
*        BUFFER.                *
* USE MODE X0 TO WRITE          *
* CORRECTED DATA.               *
*                               *
(STEP 003 CONTINUES)
```

```
(STEP 003 CONTINUED)
* (B),0,2,0,0,(I),              *
* (B),0,0,1,2,(I),              *
* (B),0,4,0,8,(I),(I)           *
*                               *
* TO LIST SECTOR IDS FOR        *
* HEAD 01, CYLINDER 008.        *
* INPUT= F0300 0000 0408        *
* PROGRAMMER CONSOLE INPUT:     *
* (B),4,F,(I),                  *
* (B),0,3,0,0,(I),              *
* (B),0,0,0,0,(I),              *
* (B),0,4,0,8,(I),(I)           *
*                               *
* TO LIST DATA RECORD 2,        *
* LOGICAL SECTOR 12, HEAD 01,   *
* CYLINDER 008, SE BIT ON       *
* INPUT= F0400 0012 0408 0101   *
* PROGRAMMER CONSOLE INPUT:     *
* (B),4,F,(I),                  *
* (B),0,4,0,0,(I),              *
* (B),0,0,1,2,(I),              *
* (B),0,4,0,8,(I),              *
* (B),0,1,0,1,(I),(I)           *
*                               *
* TO LIST DATA RECORD 1,        *
*  LOGICAL SECTOR 22, HEAD 0A   *
* CYLINDER 156, SE BIT OFF      *
* INPUT= F0400 0022 2956 0000   *
* PROGRAMMER CONSOLE INPUT:     *
* (B),4,F,(I),                  *
* (B),0,4,0,0,(I),              *
* (B),0,0,2,2,(I),              *
* (B),2,9,5,6,(I),              *
* (B),0,0,0,0,(I),(I)           *
*                               *
*                               *
*                               *
*                               *
*                               *
*                               *
*********************************
```

(STEP 003 CONTINUED)

REFERENCE TABLE SHOWING PHYSICAL SECTOR NUMBER, LOGICAL SECTOR NUMBERS AND DATA RECORD NUMBERS FOR ALL HEADS. NOTE: ALL NUMBERS ARE SHOWN IN (HEXADECIMAL). ALSO SHOWN IS SECTOR ID FORMAT AS WRITTEN ON DISK AND CYCLE STEAL STATUS.

PHYSICAL SECT# AS CODED IN DCB FOR WR/RD SECT ID	LOGICAL SECTOR AND RECORD NUMBERS (SEE NOTE 2 BELOW) MOVEABLE HEADS				
	0,4,8	1,5,9	2,6,A	3,7	FIXED HDS 0-7
20 INDEX	40 (1) INDEX	40 (1) INDEX	40 (1) INDEX	40 (1) INDEX	40 (1) INDEX
00	00 00 20	30 18 38	20 10 30	10 08 28	00 00 20
01	02 01 21	32 19 39	22 11 31	12 09 29	02 01 21
02	04 02 22	34 1A 3A	24 12 32	14 0A 2A	04 02 22
03	06 03 23	36 1B 3B	26 13 33	16 0B 2B	06 03 23
04	08 04 24	38 1C 3C	28 14 34	18 0C 2C	08 04 24
05	0A 05 25	3A 1D 3D	2A 15 35	1A 0D 2D	0A 05 25
06	0C 06 26	3C 1E 3E	2C 16 36	1C 0E 2E	0C 06 26
07	0E 07 27	3E 1F 3F	2E 17 37	1E 0F 2F	0E 07 27
08	10 08 28	00 00 20	30 18 38	20 10 30	10 08 28
09	12 09 29	02 01 21	32 19 39	22 11 31	12 09 29
0A	14 0A 2A	04 02 22	34 1A 3A	24 12 32	14 0A 2A
0B	16 0B 2B	06 03 23	36 1B 3B	26 13 33	16 0B 2B
0C	18 0C 2C	08 04 24	38 1C 3C	28 14 34	18 0C 2C
0D	1A 0D 2D	0A 05 25	3A 1D 3D	2A 15 35	1A 0D 2D
0E	1C 0E 2E	0C 06 26	3C 1E 3E	2C 16 36	1C 0E 2E
0F	1E 0F 2F	0E 07 27	3E 1F 3F	2E 17 37	1E 0F 2F
10	20 10 30	10 08 28	00 00 20	30 18 38	20 10 30
11	22 11 31	12 09 29	02 01 21	32 19 39	22 11 31
12	24 12 32	14 0A 2A	04 02 22	34 1A 3A	24 12 32
13	26 13 33	16 0B 2B	06 03 23	36 1B 3B	26 13 33
14	28 14 34	18 0C 2C	08 04 24	38 1C 3C	28 14 34
15	2A 15 35	1A 0D 2D	0A 05 25	3A 1D 3D	2A 15 35
16	2C 16 36	1C 0E 2E	0C 06 26	3C 1E 3E	2C 16 36

(STEP 003 CONTINUES)

(STEP 003 CONTINUED)

```
*  17     * 2E 17 37 * 1E 0F 2F * 0E 07 27 * 3E 1F 3F * 2E 17 37 *
*  18     * 30 18 38 * 20 10 30 * 10 08 28 * 00 00 20 * 30 18 38 *
*  19     * 32 19 39 * 22 11 31 * 12 09 29 * 02 01 21 * 32 19 39 *
*  1A     * 34 1A 3A * 24 12 32 * 14 0A 2A * 04 02 22 * 34 1A 3A *
*  1B     * 36 1B 3B * 26 13 33 * 16 0B 2B * 06 03 23 * 36 1B 3B *
*  1C     * 38 1C 3C * 28 14 34 * 18 0C 2C * 08 04 24 * 38 1C 3C *
*  1D     * 3A 1D 3D * 2A 15 35 * 1A 0D 2D * 0A 05 25 * 3A 1D 3D *
*  1E     * 3C 1E 3E * 2C 16 36 * 1C 0E 2E * 0C 06 26 * 3C 1E 3E *
*  1F     * 3E 1F 3F * 2E 17 37 * 1E 0F 2F * 0E 07 27 * 3E 1F 3F *
*  20     * 40  (1)  * 40  (1)  * 40  (1)  * 40  (1)  * 40  (1)  *
* INDEX   *  INDEX   *  INDEX   *  INDEX   *  INDEX   *    INDEX  *
*                                                                 *
*******************************************************************
*                                                                 *
* NOTE 1 - SECTOR 32 (/40) IS RESERVED AS AN ALTERNATE SECTOR     *
*          AND IS ALWAYS THE SECTOR BEFORE INDEX.                 *
* NOTE 2 - COLUMN 1 = LOGICAL SECTOR# OF SECTOR AS                *
*                WRITTEN ON FILE                                  *
*          COLUMN 2 = RECORD# 1 AS CODED IN DCB FOR               *
*                WRT/RD/SCAN OPS                                  *
*          COLUMN 3 = RECORD# 2 AS CODED IN DCB FOR               *
*                WRT/RD/SCAN OPS                                  *
*                                                                 *
*        SECTOR ID FORMAT AS WRITTEN ON FILE (2 WORDS)            *
*     ----- WORD 0 ----------    ------- WORD 1 -----------       *
*      (FLAG)      (SECTOR#)      (HEAD#)      (CYLINDER#)       *
*     01234567  89101112131415   01234567     89101112131415     *
*     FFFFFFFF  0S S S S S S 0   0HHHHH0C     CC C C C C C C     *
*                                                                 *
*  NOTE: FIXED HEADS ARE INDICATED BY BIT ONE (1) OF HEAD#        *
*           BIT1 = 0 - NO FIXED HEADS                             *
*           BIT1 = 1 - FIXED HEADS                                *
*                                                                 *
*     **** CYCLE STEAL STATUS ****                                *
*                                                                 *
* WORD 0: RESIDUAL ADDRESS                                        *
* WORD 1: RESIDUAL COUNT                                          *
* WORD 2: RETRY COUNTS WORD 1                                     *
* WORD 3: RETRY COUNTS WORD 2                                     *
* WORD 4: ERROR STATUS WORD 1                                     *
*      BIT 00 - HARD ERROR                                        *
*          01 - ATTACHMENT FOUND INTERFACE PARITY CHECK            *
```

(STEP 003 CONTINUES)

```
(STEP 003 CONTINUED)
*           02 - ATTACHMENT GLOBAL TIMEOUT                          *
*           03 - ALTERNATE SECTOR PROCESSED                         *
*           04 - SOFT ERROR RETRY                                   *
*           05 - *DISK UNIT                                         *
*           06 - *CONFIGURATION                                     *
*           07 - *BITS                                              *
*           08 - SCAN NOT HIT                                       *
*           09 - SCAN EQUAL HIT                                     *
*           10 - ATTACHMENT EQUIPMENT CHECK                         *
*           11 - WRITE ERROR                                        *
*           12 - CYCLE STEAL STATUS ERROR                           *
*           13 - END OF DISK                                        *
*           14 - ATTACHMENT LOCAL TIMEOUT                           *
*           15 - DISK INTERFACE ERRORS                              *
* WORD 5: ERROR STATUS WORD 2                                       *
*      BIT 00 - CRC CHECK                                           *
*           01 - DISK UNIT PARITY CHECK                             *
*           02 - DISK UNIT FOUND INTERFACE PARITY CHECK             *
*           03 - WRITE GATE CHECK                                   *
*           04 - NO RECORD FOUND                                    *
*           05 - NOT VALID COMMAND PARAMETER                        *
*           06 - MISSING SECTOR PULSE                               *
*           07 - DISK UNIT TIME OUT                                 *
*           08 - FIXED HEAD NOT SELECTED                            *
*           09 - BRAKE APPLIED                                      *
*           10 - TRACK UNAVAILABLE                                  *
*           11 - DISK UNIT COMMAND ERROR                            *
*           12 - DATA UNSAFE                                        *
*           13 - SEEK NOT COMPLETE                                  *
*           14 - HOME                                               *
*           15 - NOT READY                                          *
* WORD 6: LAST DCB ADDRESS                                          *
* WORD 7: CURRENT HEAD/CYLINDER                                     *
* WORD 8: PREVIOUS HEAD/CYLINDER                                    *
* WORD 9: FLAG SECTOR/RECORD#                                       *
* WORD10: HEAD/CYLINDER                                             *
* WORD11: DISK UNIT SENSE BYTES 1 AND 2                             *
* WORD12: DISK UNIT DIAGNOSTIC SENSE BYTE 3 AND WRAP BYTE           *
*                                                                   *
*********************************************************************
*CE RESPONSE NECESSARY.*
ENTER FOUR WORDS
(STEP 003 CONTINUES)
```

```
(STEP 003 CONTINUED)
MDI=$INPT,DATA=HEX,FIELD=PARM,
LNG=08,LOW=0000000000000000,
HIGH=FFFFFFFFFFFFFFFF
Y N
|
| 004
| RESPONSE NOT VALID
| GO TO PAGE 2, STEP 003,
| ENTRY POINT B.
| MDI=$GOTO,TYPE=INTRNL,EP=B
|
005
FUNCTION NOW BEING EXECUTED
FUNCTION CORRECT?
MDI=$TUXX,T7AAA,2,0000,EQ
Y N
|
| 006
| NOT VALID
| CONTINUE ON 'YES' LEG.
|
|
|
|
|
|
| MDI=$NVLD
|
007
END
GO TO PAGE 1, STEP 001,
ENTRY POINT A.
MDI=$GOTO,TYPE=INTRNL,EP=A
```

IF THE TU CANNOT WRITE DATA OR FORMAT IT WILL ABORT. (SEE DIAGNOSTIC SERVICE GUIDE 05.04.00.)
IF NO ALTERNATE CONSOLE ASSIGNED---R3 (LEVEL 3) WILL HOLD THE STORAGE ADDRESS OF THE ABORT DATA.

CHANNEL INTERFACE MAP

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0020	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
16	066	7A80	A

001
(ENTRY POINT A)

THIS IS AN MDI 'AUTO MODE' MAP (SEE DIAGNOSTIC SERVICE GUIDE 05.00.00).
TO USE IT IN MANUAL MODE: LOAD AND EXECUTE THE MAP PROGRAM (C7A00 WHERE 7A00=MAP#).
NO CE RESPONSE IS NEEDED. IF A FAILURE IS FOUND, THE PROGRAM WILL EITHER; . IDENTIFY THE FAILING FIELD REPLACEMENT UNIT OR . LOAD 'MANUAL MODE' MAPS AND EXECUTE UNTIL A FIELD REPLACEMENT UNIT CAN BE IDENTIFIED OR A CE ACTION IS NEEDED. (SEE DIAGNOSTIC SERVICE GUIDE 05.01.00).

TEST 4963 FILE ATTACHED
MDI=$TUXX,T7A50,01,80,OF
Y N
|
| 002
| NO FILE ATTACHED
| MDI=$FIXT
|
|
|
|
|
|

2
A

CHANNEL INTERFACE

PAGE 2 OF 17

003
TEST BASE FILE?
MDI=$TUXX,T7A52,01,80,OF
Y N

004
NOT BASE FILE
MDI=$GOTO,TYPE=XTRNL,MAP=7A10,
EP=A

005
SEND AN I/O RESET
I/O CC=7?
MDI=$TUXX,T7A01,02,0708,EQ,
PLNG=6,PARM=6F0000
Y N

006
I/O CC=0?
MDI=$TUXX,T7A02,02,0008,EQ,
Y N

007
CHECK THE VOLTAGES TO THE
ATTACHMENT CARD, THEN
DISCONNECT THE CABLES FROM
THE 4963 ATTACHMENT CARD AND
LOAD (C) MAP 7A01.
MDI=$CALL,TYPE=XTRNL,EP=A,
MAP=7A01

008
READ DEVICE I.D.
I/O CC=0?
MDI=$TUXX,T7A01,02,0008,EQ,
PLNG=6,PARM=200000
Y N

009
CHECK THE VOLTAGES TO THE ATTACHMENT CARD, THEN DISCONNECT THE CABLES FROM THE 4963 ATTACHMENT CARD AND LOAD (C) MAP 7A01.
MDI=$CALL,TYPE=XTRNL,EP=A,
MAP=7A01

010
WRONG DEVICE ADDRESS
CHECK THE DEVICE ADDRESS AGAINST THE CONFIGURATION.
IF THE DEVICE ADDRESS IS WRONG, RUN TEST AGAIN WITH THE CORRECT DEVICE ADDRESS.
IF THE DEVICE ADDRESS IS CORRECT,:
EXCHANGE THE 4963 ATTACHMENT CARD.
MDI=$FIXT

011
SEND A READ DEVICE I.D. COMMAND
I/O CC=7?
MDI=$TUXX,T7A01,02,0708,EQ,
PLNG=6,PARM=200000
Y N

012

IF 'LOOP STEP TO STEP' OPTION IS 'ON' (OPTION BYTE 02, BIT 01), THIS STEP NEEDS THE PRECEDING STEP FOR SETUP.

I/O CC=5?
MDI=$TUXX,T7A02,02,0508,EQ
Y N

013

IF 'LOOP STEP TO STEP' OPTION IS 'ON' (OPTION BYTE 02, BIT 01), THIS STEP NEEDS THE PRECEDING STEP FOR SETUP.

I/O CC=3?
MDI=$TUXX,T7A02,02,0308,EQ
Y N

014

IF 'LOOP STEP TO STEP' OPTION IS 'ON' (OPTION BYTE 02, BIT 01), THIS STEP NEEDS THE PRECEDING STEP FOR SETUP.

I/O CC=2?
MDI=$TUXX,T7A02,02,0208,EQ
Y N

015
CHECK THE VOLTAGES TO THE ATTACHMENT CARD, THEN DISCONNECT THE CABLES FROM THE 4963 ATTACHMENT CARD AND LOAD (C) MAP 7A01.
MDI=$CALL,TYPE=XTRNL,EP=A,
MAP=7A01

016
SEND A READ DEVICE I.D. COMMAND
I/O CC=7
MDI=$TUXX,T7A01,02,0708,EQ,
PLNG=6,PARM=200000
Y N

CHANNEL INTERFACE

PAGE 5 OF 17

017
CHECK THE VOLTAGES TO THE ATTACHMENT CARD, THEN DISCONNECT THE CABLES FROM THE 4963 ATTACHMENT CARD AND LOAD (C) MAP 7A01.
MDI=$CALL,TYPE=XTRNL,
EP=A,MAP=7A01

018
BUSY STATUS - OK ON RETRY
GO TO STEP 021,
ENTRY POINT C.

MDI=$GOTO,TYPE=INTRNL,EP=C

019
COMMAND REJECT - EXCHANGE 4963 ATTACHMENT CARD
VERIFY THE REPAIR.
MDI=$FIXT

020
INTERFACE DATA CHECK - EXCHANGE 4963 ATTACHMENT CARD
VERIFY THE REPAIR.
MDI=$FIXT

021
(ENTRY POINT C)

IF 'LOOP STEP TO STEP' OPTION IS 'ON' (OPTION BYTE 02, BIT 01), THIS STEP NEEDS THE PRECEDING STEP FOR SETUP.

I.D. OK?
MDI=$TUXX,T7A02,04,07083006,ON
Y N

022
WRONG DEVICE ADDRESS
CHECK THE DEVICE ADDRESS
AGAINST THE CONFIGURATION.
IF THE DEVICE ADDRESS IS WRONG,
RUN TEST AGAIN WITH
THE CORRECT DEVICE ADDRESS.
IF THE DEVICE ADDRESS IS
CORRECT,:
EXCHANGE THE 4963 ATTACHMENT
CARD.
MDI=$FIXT

023
SEND A READ COMMAND
FUNCTION = 00
I/O CC=3?
MDI=$TUXX,T7A01,02,0308,EQ,
PLNG=6,PARM=000000
Y N

024
CHECK THE VOLTAGES TO THE
ATTACHMENT CARD, THEN
DISCONNECT THE CABLES FROM THE
4963 ATTACHMENT CARD AND LOAD
(C) MAP 7A01.
MDI=$CALL,TYPE=XTRNL,EP=A,
MAP=7A01

025
SEND A READ COMMAND
FUNCTION = 01
I/O CC=3?
MDI=$TUXX,T7A01,02,0308,EQ,
PLNG=6,PARM=100000
Y N

CHANNEL INTERFACE

PAGE 7 OF 17

026
CHECK THE VOLTAGES TO THE ATTACHMENT CARD, THEN DISCONNECT THE CABLES FROM THE 4963 ATTACHMENT CARD AND LOAD (C) MAP 7A01.
MDI=$CALL,TYPE=XTRNL,EP=A,
MAP=7A01

027
SEND A READ STATUS COMMAND
FUNCTION = 10
MODIFIER = NOT 0000
I/O CC=3?
MDI=$TUXX,T7A01,02,0308,EQ,
PLNG=6,PARM=270000
Y N

028
CHECK THE VOLTAGES TO THE ATTACHMENT CARD, THEN DISCONNECT THE CABLES FROM THE 4963 ATTACHMENT CARD AND LOAD (C) MAP 7A01.
MDI=$CALL,TYPE=XTRNL,EP=A,
MAP=7A01

029
SEND A PREPARE COMMAND
I-BIT OFF
IDCB +2 = 0000
ANY LEVEL
I/O CC=7?
MDI=$TUXX,T7A01,02,0708,EQ,
PLNG=6,PARM=600000
Y N

030
CHECK THE VOLTAGES TO THE ATTACHMENT CARD, THEN DISCONNECT THE CABLES FROM THE 4963 ATTACHMENT CARD AND LOAD (C) MAP 7A01.
MDI=$CALL,TYPE=XTRNL,EP=A,
MAP=7A01

031
SEND A PREPARE COMMAND
I-BIT OFF
IDCB +2 = 2222
ANY LEVEL
I/O CC=7?
MDI=$TUXX,T7A01,02,0708,EQ,
PLNG=6,PARM=602222
Y N

032
CHECK THE VOLTAGES TO THE ATTACHMENT CARD, THEN DISCONNECT THE CABLES FROM THE 4963 ATTACHMENT CARD AND LOAD (C) MAP 7A01.
MDI=$CALL,TYPE=XTRNL,EP=A,
MAP=7A01

033
SEND A PREPARE COMMAND
I-BIT OFF
IDCB +2 = FFFE
ANY LEVEL
I/O CC=7?
MDI=$TUXX,T7A01,02,0708,EQ,
PLNG=6,PARM=60FFFE
Y N

```
| 034
| CHECK   THE   VOLTAGES  TO  THE
| ATTACHMENT      CARD,      THEN
| DISCONNECT  THE CABLES FROM THE
| 4963 ATTACHMENT CARD  AND  LOAD
| (C) MAP 7A01.
| MDI=$CALL,TYPE=XTRNL,EP=A,
| MAP=7A01
|
035
SEND A CONTROL COMMAND
FUNCTION = 10
MODIFIER NOT = 0000 OR 1111
I/O CC=3?
MDI=$TUXX,T7A01,02,0308,EQ,
PLNG=6,PARM=650000
Y N
|
| 036
| CHECK  THE  VOLTAGES   TO   THE
| ATTACHMENT      CARD,      THEN
| DISCONNECT THE CABLES FROM  THE
| 4963  ATTACHMENT  CARD AND LOAD
| (C) MAP 7A01.
| MDI=$CALL,TYPE=XTRNL,EP=A,
| MAP=7A01
|
037
SEND AN I/O RESET
I/O CC=7?
MDI=$TUXX,T7A01,02,0708,EQ,
PLNG=6,PARM=6F0000
Y N
|
| 038
| CHECK   THE   VOLTAGES  TO  THE
| ATTACHMENT      CARD,      THEN
| DISCONNECT  THE CABLES FROM THE
| 4963 ATTACHMENT CARD  AND  LOAD
| (C) MAP 7A01.
| MDI=$CALL,TYPE=XTRNL,EP=A,
| MAP=7A01
|
|
|
```

039
(ENTRY POINT B)

SEND A PREPARE COMMAND - LEVEL 0
I/O CC=7?
MDI=$TUXX,T7A01,02,0708,EQ,
PLNG=6,PARM=600001
Y N
|
| 040
| CHECK THE VOLTAGES TO THE
| ATTACHMENT CARD, THEN
| DISCONNECT THE CABLES FROM THE
| 4963 ATTACHMENT CARD AND LOAD
| (C) MAP 7A01.
| MDI=$CALL,TYPE=XTRNL,EP=A,
| MAP=7A01
|
041

IF 'LOOP STEP TO STEP' OPTION IS 'ON' (OPTION BYTE 02, BIT 01), THIS STEP NEEDS THE PRECEDING STEP FOR SETUP.

WERE THERE ANY INTERRUPT(S)DURING
DURING THIS OPERATION?
MDI=$TUXX,T7A02,02,0708,EQ
Y N
|
| 042
| CHECK THE VOLTAGES TO THE
| ATTACHMENT CARD, THEN
| DISCONNECT THE CABLES FROM THE
| 4963 ATTACHMENT CARD AND LOAD
| (C) MAP 7A01.
| MDI=$CALL,TYPE=XTRNL,EP=A,
| MAP=7A01
|
|
|
|
|
|
|
|

|
|
043
SEND AN INTERRUPTING COMMAND
FUNCTION = 00
I/O CC=7?
MDI=$TUXX,T7A03,02,0702,EQ,
PLNG=6,PARM=4D0000
Y N
|
| 044
| CHECK THE VOLTAGES TO THE
| ATTACHMENT CARD, THEN
| DISCONNECT THE CABLES FROM THE
| 4963 ATTACHMENT CARD AND LOAD
| (C) MAP 7A01.
| MDI=$CALL,TYPE=XTRNL,EP=A,
| MAP=7A01
|
045
INTERRUPT SHOULD OCCUR AT THIS TIME
INDICATORS SHOULD BE AS SHOWN
CC=2, ISB=/40, D.A.=TESTED DEVICE
(EXPECT DELAYED COMMAND REJECT IN ISB)
(ISB=/C0 VALID FOR SOME DEVICE(S))
ARE ALL INDICATOR(S) OK?
MDI=$TUXX,T7A02,03,070240,ON
Y N
|
| 046
| CHECK THE VOLTAGES TO THE
| ATTACHMENT CARD, THEN
| DISCONNECT THE CABLES FROM THE
| 4963 ATTACHMENT CARD AND LOAD
| (C) MAP 7A01.
| MDI=$CALL,TYPE=XTRNL,EP=A,
| MAP=7A01
|
|
|
|
|
|

IF 'LOOP STEP TO STEP' OPTION IS 'ON' (OPTION BYTE 02, BIT 01), THIS STEP NEEDS THE PRECEDING STEP FOR SETUP.

047
SEND A PREPARE COMMAND - LEVEL 1
I/O CC=7?
MDI=$TUXX,T7A01,02,0708,EQ,
PLNG=6,PARM=600003
Y N
|
| 048
| CHECK THE VOLTAGES TO THE
| ATTACHMENT CARD, THEN
| DISCONNECT THE CABLES FROM THE
| 4963 ATTACHMENT CARD AND LOAD
| (C) MAP 7A01.
| MDI=$CALL,TYPE=XTRNL,EP=A,
| MAP=7A01
|
049

IF 'LOOP STEP TO STEP' OPTION IS 'ON' (OPTION BYTE 02, BIT 01), THIS STEP NEEDS THE PRECEDING STEP FOR SETUP.

WERE THERE ANY INTERRUPT(S)DURING
DURING THIS OPERATION?
MDI=$TUXX,T7A02,02,0708,EQ
Y N
|
| 050
| CHECK THE VOLTAGES TO THE
| ATTACHMENT CARD, THEN
| DISCONNECT THE CABLES FROM THE
| 4963 ATTACHMENT CARD AND LOAD
| (C) MAP 7A01.
| MDI=$CALL,TYPE=XTRNL,EP=A,
| MAP=7A01
|
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|

|
|
051
SEND AN NOT VALID INTERRUPTING
COMMAND
FUNCTION = 00
I/O CC=7?
MDI=$TUXX,T7A03,02,0702,EQ,
PLNG=6,PARM=4C0000
Y N
|
| 052
| CHECK THE VOLTAGES TO THE
| ATTACHMENT CARD, THEN
| DISCONNECT THE CABLES FROM THE
| 4963 ATTACHMENT CARD AND LOAD
| (C) MAP 7A01.
| MDI=$CALL,TYPE=XTRNL,EP=A,
| MAP=7A01
|
053
INTERRUPT SHOULD OCCUR AT THIS
TIME
INDICATORS SHOULD BE AS SHOWN
CC=2, ISB=/40, D.A.=TESTED DEVICE
(EXPECT DELAYED COMMAND REJECT IN
ISB)
(ISB=/C0 VALID FOR SOME DEVICES)
ARE ALL INDICATOR(S) OK?
MDI=$TUXX,T7A02,03,070240,ON
Y N
|
| 054
| CHECK THE VOLTAGES TO THE
| ATTACHMENT CARD, THEN
| DISCONNECT THE CABLES FROM THE
| 4963 ATTACHMENT CARD AND LOAD
| (C) MAP 7A01.
| MDI=$CALL,TYPE=XTRNL,EP=A,
| MAP=7A01
|
|
|
|
|
|

IF 'LOOP STEP TO STEP' OPTION IS 'ON' (OPTION BYTE 02, BIT 01), THIS STEP NEEDS THE PRECEDING STEP FOR SETUP.

|
|
055
SEND A PREPARE COMMAND - LEVEL 2
I/O CC=7?
MDI=$TUXX,T7A01,02,0708,EQ,
PLNG=6,PARM=600005
Y N
|
| 056
| CHECK THE VOLTAGES TO THE
| ATTACHMENT CARD, THEN
| DISCONNECT THE CABLES FROM THE
| 4963 ATTACHMENT CARD AND LOAD
| (C) MAP 7A01.
| MDI=$CALL,TYPE=XTRNL,EP=A,
| MAP=7A01
|
057

IF 'LOOP STEP TO STEP' OPTION IS 'ON' (OPTION BYTE 02, BIT 01), THIS STEP NEEDS THE PRECEDING STEP FOR SETUP.

WAS OPERATION FREE OF
INTERRUPT(S)?
MDI=$TUXX,T7A02,02,0708,EQ
Y N
|
| 058
| CHECK THE VOLTAGES TO THE
| ATTACHMENT CARD, THEN
| DISCONNECT THE CABLES FROM THE
| 4963 ATTACHMENT CARD AND LOAD
| (C) MAP 7A01.
| MDI=$CALL,TYPE=XTRNL,EP=A,
| MAP=7A01
|
|
|
|
|
|
|
|
|
|
|

059
SEND AN INTERRUPTING COMMAND
FUNCTION = 00
I/O CC=7?
MDI=$TUXX,T7A03,02,0702,EQ,
PLNG=6,PARM=500000
Y N

060
CHECK THE VOLTAGES TO THE ATTACHMENT CARD, THEN DISCONNECT THE CABLES FROM THE 4963 ATTACHMENT CARD AND LOAD (C) MAP 7A01.
MDI=$CALL,TYPE=XTRNL,EP=A,
MAP=7A01

061
INTERRUPT SHOULD OCCUR AT THIS TIME
INDICATORS SHOULD BE AS FOLLOWS
CC=2, ISB=/40, D.A.=TESTED DEVICE (EXPECT DELAYED COMMAND REJECT IN ISB)
(ISB=/C0 VALID FOR SOME DEVICE(S))
ALL INDICATORS OK?
MDI=$TUXX,T7A02,03,070240,ON
Y N

IF 'LOOP STEP TO STEP' OPTION IS 'ON' (OPTION BYTE 02, BIT 01), THIS STEP NEEDS THE PRECEDING STEP FOR SETUP.

062
CHECK THE VOLTAGES TO THE ATTACHMENT CARD, THEN DISCONNECT THE CABLES FROM THE 4963 ATTACHMENT CARD AND LOAD (C) MAP 7A01.
MDI=$CALL,TYPE=XTRNL,EP=A,
MAP=7A01

```
|
|
063
MDI=TUXX,T7A04
RUN INTERRUPT INTERFACE TEST
RUNS OK?
MDI=$TUXX,T7A04,02,0000,EQ
Y N
|
| 064
| CHECK THE VOLTAGES TO THE
| ATTACHMENT CARD, THEN
| DISCONNECT THE CABLES FROM THE
| 4963 ATTACHMENT CARD AND LOAD
| (C) MAP 7A01.
| MDI=$CALL,TYPE=XTRNL,EP=A,
| MAP=7A01
|
065
```

IF 'LOOP STEP TO STEP' OPTION IS 'ON' (OPTION BYTE 02, BIT 01), THIS STEP NEEDS THE PRECEDING STEP FOR SETUP.

```
IS DEVICE READY?
MDI=$TUXX,T7A02,02,0008,OF
Y N
|
| 066
| DEVICE IS NOT READY
| GO TO MAP 7A80, ENTRY POINT A.
| MDI=$CALL,TYPE=XTRNL,MAP=7A80,
| EP=A
|
067
MDI=TUXX,T7A05
RUN START DIAGNOSTIC TESTS.
DID TESTS RUN OK?
MDI=$TUXX,T7A05,01,00,EQ
Y N
| |
| |
| |
| |
| |
| |
| |
```

| |
| |
| 068
| CHECK THE VOLTAGES TO THE
| ATTACHMENT CARD, THEN
| DISCONNECT THE CABLES FROM THE
| 4963 ATTACHMENT CARD AND LOAD
| (C) MAP 7A01.
| MDI=$CALL,TYPE=XTRNL,EP=A,
| MAP=7A01
|

069
CONTINUE WITH 4963 DISK UNIT
DEVICE MAPS.
MDI=$GOTO,TYPE=XTRNL,EP=A,
MAP=7A10

CHANNEL INTERFACE MAP

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP ENTRY POINT	PAGE NUMBER	STEP NUMBER
7A00	A	1	001

EXIT POINTS

EXIT THIS MAP PAGE NUMBER	STEP NUMBER	TO MAP NUMBER	ENTRY POINT
12	064	7A78	E

```
001
(ENTRY POINT A)
*CE RESPONSE IS REQUIRED*
DISCONNECT  THE  CABLES  TO   THE
ATTACHMENT CARD
ARE THE CABLES DISCONNECTED?
MDI=$QUES
Y N
|
| 002
| NO IS NOT VALID CONTINUE ON YES
| LEG.
| MDI=$NVLD
|
003
SEND AN I/O RESET
I/O CC=7?
MDI=$TUXX,T7A01,02,0708,EQ,
PLNG=6,PARM=6F0000
Y N
|
| 004
| I/O CC=0?
| MDI=$TUXX,T7A02,02,0008,EQ,
| Y N
| |
| | 005
| | EXCHANGE  THE 4963 ATTACHMENT
| | CARD.
| | MDI=$FIXT
| |
| |
| |
| |
| |          COPYRIGHT IBM CORP 1976          20MAY83    PN6826977
| |
|            REVISED 1979                    ECA03143   PEC466795
2 2
A B                                                    MAP 7A01-1
```

CHANNEL INTERFACE

PAGE 2 OF 13

006
SEND A READ I.D. COMMAND
I/O CC=0?
MDI=$TUXX,T7A01,02,0008,EQ,
PLNG=6,PARM=200000
Y N

007
EXCHANGE THE 4963 ATTACHMENT
CARD.
MDI=$FIXT

008
WRONG DEVICE ADDRESS
CHECK DEVICE ADDRESS AGAINST
CONFIGURATION.
IF WRONG: RUN AGAINST CORRECT
ADDRESS.
IF CORRECT ADDRESS:
EXCHANGE I/O ATTACHMENT CARD.
MDI=$FIXT

009
SEND A READ I.D. COMMAND
I/O CC=7?
MDI=$TUXX,T7A01,02,0708,EQ,
PLNG=6,PARM=200000
Y N

010

IF 'LOOP STEP TO STEP' OPTION IS 'ON' (OPTION BYTE 02, BIT 01), THIS STEP NEEDS THE PRECEDING STEP FOR SETUP.

I/O CC=5?
MDI=$TUXX,T7A02,02,0508,EQ
Y N

011

IF 'LOOP STEP TO STEP' OPTION IS 'ON' (OPTION BYTE 02, BIT 01), THIS STEP NEEDS THE PRECEDING STEP FOR SETUP.

I/O CC=3?
MDI=$TUXX,T7A02,02,0308,EQ
Y N

012

IF 'LOOP STEP TO STEP' OPTION IS 'ON' (OPTION BYTE 02, BIT 01), THIS STEP NEEDS THE PRECEDING STEP FOR SETUP.

I/O CC=2?
MDI=$TUXX,T7A02,02,0208,EQ
Y N

013
EXCHANGE THE 4963 ATTACHMENT CARD.
MDI=$FIXT

014
SEND A READ I.D. COMMAND
I/O CC=7
MDI=$TUXX,T7A01,02,0708,EQ,
PLNG=6,PARM=200000
Y N

015
EXCHANGE THE 4963 ATTACHMENT CARD.
MDI=$FIXT

016
BUSY STATUS - O.K. ON RETRY
GO TO PAGE 4, STEP 019,
ENTRY POINT C.
MDI=$GOTO,TYPE=INTRNL,EP=C

017
COMMAND REJECT - EXCHANGE I/O ATTACHMENT CARD
VERIFY THE REPAIR.
MDI=$FIXT

018
INTERFACE DATA CHECK - EXCHANGE I/O ATTACHMENT CARD
VERIFY THE REPAIR.
MDI=$FIXT

019
(ENTRY POINT C)

IF 'LOOP STEP TO STEP' OPTION IS 'ON' (OPTION BYTE 02, BIT 01), THIS STEP NEEDS THE PRECEDING STEP FOR SETUP.

I.D. OK?
MDI=$TUXX,T7A02,04,07083006,ON
Y N

020
WRONG DEVICE ADDRESS
CHECK DEVICE ADDRESS AGAINST CONFIGURATION.
IF WRONG: RUN AGAINST CORRECT ADDRESS.
IF CORRECT ADDRESS:
EXCHANGE I/O ATTACHMENT CARD.
MDI=$FIXT

021
SEND A READ COMMAND
FUNCTION = 00
I/O CC=3?
MDI=$TUXX,T7A01,02,0308,EQ,
PLNG=6,PARM=000000
Y N

CHANNEL INTERFACE

PAGE 5 OF 13

022
EXCHANGE THE 4963 ATTACHMENT
CARD.
MDI=$FIXT

023
SEND A READ COMMAND
FUNCTION = 01
I/O CC=3?
MDI=$TUXX,T7A01,02,0308,EQ,
PLNG=6,PARM=100000
Y N

024
EXCHANGE THE 4963 ATTACHMENT
CARD.
MDI=$FIXT

025
SEND A READ STATUS COMMAND
FUNCTION = 10
MODIFIER = NOT 0000
I/O CC=3?
MDI=$TUXX,T7A01,02,0308,EQ,
PLNG=6,PARM=270000
Y N

026
EXCHANGE THE 4963 ATTACHMENT
CARD.
MDI=$FIXT

027
SEND A PREPARE COMMAND
I-BIT OFF
IDCB +2 = 0000
ANY LEVEL
I/O CC=7?
MDI=$TUXX,T7A01,02,0708,EQ,
PLNG=6,PARM=600000
Y N

028
EXCHANGE THE 4963 ATTACHMENT
CARD.
MDI=$FIXT

029
SEND A PREPARE COMMAND
I-BIT OFF
IDCB +2 = 2222
ANY LEVEL
I/O CC=7?
MDI=$TUXX,T7A01,02,0708,EQ,
PLNG=6,PARM=602222
Y N

030
EXCHANGE THE 4963 ATTACHMENT
CARD.
MDI=$FIXT

031
SEND A PREPARE COMMAND
I-BIT OFF
IDCB +2 = FFFE
ANY LEVEL
I/O CC=7?
MDI=$TUXX,T7A01,02,0708,EQ,
PLNG=6,PARM=60FFFE
Y N

032
EXCHANGE THE 4963 ATTACHMENT
CARD.
MDI=$FIXT

033
SEND A CONTROL COMMAND
FUNCTION = 10
MODIFIER NOT = 0000 OR 1111
I/O CC=3?
MDI=$TUXX,T7A01,02,0308,EQ,
PLNG=6,PARM=650000
Y N
|
| 034
| EXCHANGE THE 4963 ATTACHMENT
| CARD.
| MDI=$FIXT
|
035
SEND AN I/O RESET
I/O CC=7?
MDI=$TUXX,T7A01,02,0708,EQ,
PLNG=6,PARM=6F0000
Y N
|
| 036
| EXCHANGE THE 4963 ATTACHMENT
| CARD.
| MDI=$FIXT
|
037
(ENTRY POINT B)

SEND A PREPARE COMMAND - LEVEL 0
I/O CC=7?
MDI=$TUXX,T7A01,02,0708,EQ,
PLNG=6,PARM=600001
Y N
|
| 038
| EXCHANGE THE 4963 ATTACHMENT
| CARD.
| MDI=$FIXT
|
|
|
|
|
|
|
|

039

IF 'LOOP STEP TO STEP' OPTION IS 'ON' (OPTION BYTE 02, BIT 01), THIS STEP NEEDS THE PRECEDING STEP FOR SETUP.

WAS OPERATION FREE OF INTERRUPT(S)?
MDI=$TUXX,T7A02,02,0708,EQ
Y N
|
| 040
| EXCHANGE THE 4963 ATTACHMENT CARD.
| MDI=$FIXT
|
041
SEND AN INTERRUPTING COMMAND
FUNCTION = 00
I/O CC=7?
MDI=$TUXX,T7A03,02,0702,EQ,
PLNG=6,PARM=4D0000
Y N
|
| 042
| EXCHANGE THE 4963 ATTACHMENT CARD.
| MDI=$FIXT
|
043
INTERRUPT SHOULD OCCUR AT THIS TIME
INDICATORS SHOULD BE AS FOLLOWS
CC=2, ISB=/40, D.A.=TESTED DEVICE (EXPECT DELAYED COMMAND REJECT IN ISB)
(ISB=/C0 VALID FOR SOME DEVICE(S))
ALL INDICATORS OK?
MDI=$TUXX,T7A02,03,070240,ON
Y N
| |
| |
| |
| |
| |
| |

IF 'LOOP STEP TO STEP' OPTION IS 'ON' (OPTION BYTE 02, BIT 01), THIS STEP NEEDS THE PRECEDING STEP FOR SETUP.

044
EXCHANGE THE 4963 ATTACHMENT CARD.
MDI=$FIXT

045
SEND A PREPARE COMMAND - LEVEL 1
I/O CC=7?
MDI=$TUXX,T7A01,02,0708,EQ,
PLNG=6,PARM=600003
Y N

046
EXCHANGE THE 4963 ATTACHMENT CARD.
MDI=$FIXT

047

IF 'LOOP STEP TO STEP' OPTION IS 'ON' (OPTION BYTE 02, BIT 01), THIS STEP NEEDS THE PRECEDING STEP FOR SETUP.

WAS OPERATION FREE OF INTERRUPT(S)?
MDI=$TUXX,T7A02,02,0708,EQ
Y N

048
EXCHANGE THE 4963 ATTACHMENT CARD.
MDI=$FIXT

049
SEND A NOT VALID INTERRUPTING COMMAND
FUNCTION = 00
I/O CC=7?
MDI=$TUXX,T7A03,02,0702,EQ,
PLNG=6,PARM=4C0000
Y N

050
EXCHANGE THE 4963 ATTACHMENT CARD.
MDI=$FIXT

051
INTERRUPT SHOULD OCCUR AT THIS TIME
INDICATORS SHOULD BE AS FOLLOWS
CC=2, ISB=/40, D.A.=TESTED DEVICE (EXPECT DELAYED COMMAND REJECT IN ISB)
(ISB=/C0 VALID FOR SOME DEVICE(S))
ALL INDICATORS OK?
MDI=$TUXX,T7A02,03,070240,ON
Y N

IF 'LOOP STEP TO STEP' OPTION IS 'ON' (OPTION BYTE 02, BIT 01), THIS STEP NEEDS THE PRECEDING STEP FOR SETUP.

052
EXCHANGE THE 4963 ATTACHMENT CARD.
MDI=$FIXT

053
SEND A PREPARE COMMAND - LEVEL 2 I/O CC=7?
MDI=$TUXX,T7A01,02,0708,EQ,
PLNG=6,PARM=600005
Y N

054
EXCHANGE THE 4963 ATTACHMENT CARD.
MDI=$FIXT

055

IF 'LOOP STEP TO STEP' OPTION IS 'ON' (OPTION BYTE 02, BIT 01), THIS STEP NEEDS THE PRECEDING STEP FOR SETUP.

WAS OPERATION FREE OF INTERRUPT(S)?
MDI=$TUXX,T7A02,02,0708,EQ
Y N
|
| 056
| EXCHANGE THE 4963 ATTACHMENT CARD.
| MDI=$FIXT
|
057
SEND AN INTERRUPTING COMMAND
FUNCTION = 00
I/O CC=7?
MDI=$TUXX,T7A03,02,0702,EQ,
PLNG=6,PARM=500000
Y N
|
| 058
| EXCHANGE THE 4963 ATTACHMENT CARD.
| MDI=$FIXT
|
059
INTERRUPT SHOULD OCCUR AT THIS TIME
INDICATORS SHOULD BE AS FOLLOWS (EXPECT DELAYED COMMAND REJECT IN ISB)
(ISB=/C0 VALID FOR SOME DEVICE(S))
ALL INDICATORS OK?
MDI=$TUXX,T7A02,03,070240,ON
Y N
| |
| |
| |
| |
| |
| |

| |
| |
| 060
| EXCHANGE THE 4963 ATTACHMENT
| CARD.
| MDI=$FIXT
|
061
RUN INTERRUPT INTERFACE TEST
RUNS OK?
MDI=$TUXX,T7A04,02,0000,EQ
Y N
|
| 062
| EXCHANGE THE 4963 ATTACHMENT
| CARD.
| MDI=$FIXT
|
063

IF 'LOOP STEP TO STEP' OPTION IS 'ON' (OPTION BYTE 02, BIT 01), THIS STEP NEEDS THE PRECEDING STEP FOR SETUP.

IS DEVICE READY?
MDI=$TUXX,T7A02,02,0008,OF
Y N
|
| 064
| DEVICE IS NOT READY
| GO TO MAP 7A78, ENTRY POINT E.
| MDI=$CALL,TYPE=XTRNL,MAP=7A78,
| EP=E
|
065
RUN START DIAGNOSTIC TEST(S).
DID TESTS RUN OK?
MDI=$TUXX,T7A05,01,00,EQ
Y N
|
| 066
| EXCHANGE THE 4963 ATTACHMENT
| CARD.
| MDI=$FIXT
|
|
|
|

|
|
067
FAILURE IS WITH CABLES OR COMMON
ADAPTER.
RECONNECT THE CABLES THEN,
LOAD AND EXECUTE MAP 7A10
MDI=$FIXT

CONTROLLER MAP

PAGE 1 OF 24

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP: ENTRY POINT	PAGE NUMBER	STEP NUMBER
7A00	A	1	003

EXIT POINTS

EXIT THIS MAP: PAGE NUMBER	STEP NUMBER	TO: MAP NUMBER	ENTRY POINT
2	008	7A80	A

```
001
ISSUE HIO COMMAND
MDI=$TUXX,T7A56,01,00,EQ
Y N
|
| 002
| NO IS NOT VALID
| MDI=$NVLD
|
003
(ENTRY POINT A)
TEST BASE FILE
MDI=$TUXX,T7A52,01,80,OF
Y N
|
| 004
| NOT BASE FILE
| MDI=$GOTO,TYPE=XTRNL,MAP=7A20,
| EP=A
|
005
TEST  TAG AND DATA BUS LINES, AND
THAT THE  FILE  WILL  RESPOND  TO
COMMANDS.
WRITE  TO  DIAGNOSTIC  WORD  #1
(INTERFACE  I/O  BUFFER).    READ
DIAGNOSTIC  WORD  #1  AND COMPARE
FOR CORRECT DATA.
DATA          PATTERNS          =
FFFF,AAAA,5555,1010
TEST P CKS,TIMEOUT
(STEP 005 CONTINUES)
```

PERFORMS FUNCTIONAL TESTS OF THE COMMON ADAPTER TO ENSURE IT IS OPERATING CORRECTLY.
LOGIC CARDS TESTED
A2-C2,A2-D2

(STEP 005 CONTINUED)
MDI=$TUXX,T7A13,02,0000,EQ
Y N
|
| 006
| TEST FILE NOT READY?
| MDI=$TUXX,T7A02,06,
| 000000000001,ON
| Y N
| |
| | 007
| | LOAD (C) MAP 7A10 IN MANUAL
| | MODE
| | MDI=$CALL,TYPE=XTRNL,
| | MAP=7A13,EP=A
| |
| 008
| GO TO POWER MAP 7A80,A
| GO TO MAP 7A80, ENTRY POINT A.
| MDI=$FIXT
|
009
TEST CABLE CONTINUITY.

A CABLE CONTINUITY LINE IS SUPPLIED THROUGH THE FILE CABLES AND IS CHECKED BY THE SYSTEM.

IS THE CABLE CONTINUITY GOOD?
MDI=$TUXX,T7A18,02,0080,OF,
PLNG=13,PARM=0002/A00065E5
Y N
|
| 010
| GO TO MAP 7A71,A
| MDI=$FIXT
|
011
IS CONTROL SAMPLE RECEIVED OK?
MDI=$TUXX,T7A02,02,0040,OF
Y N
|
| 012
| GO TO MAP7A77 ENTRY POINT A
| MDI=$FIXT
|
|
|
|

013
TEST GLOBAL TIME OUT.
FILE FAILURES MAY CAUSE THIS END
IS GLOBAL TIME OUT OK?
MDI=$TUXX,T7A38,03,000020,OF
Y N
|
| 014
| LOAD (C) MAP 7A10 IN MANUAL
| MODE
| MDI=$CALL,TYPE=XTRNL,MAP=7A13,
| EP=A
|
015
TO VERIFY THAT FILE CONTROL AREAS
WILL RECEIVE DATA AND RETURN DATA
TO SYSTEM CORRECTLY,
WRITE TO ALL FCB WORDS, READ FCB
WORDS AND VERIFY CORRECT DATA.
DATA PATTERN = 1212
DID THE TEST RUN OK?.
MDI=$TUXX,T7A14,02,0000,EQ
Y N
|
| 016
| LOAD (C) MAP 7A10 IN MANUAL
| MODE
| MDI=$CALL,TYPE=XTRNL,MAP=7A13,
| EP=A
|
017
TO FARTHER TEST TAG AND DATA BUS
LINES AND FILE RESPONSE TO
COMMANDS.
ISSUE CAP RESET, READ FCB ISW AND
ERROR STATUS WORD FOR NO ERRORS.
DID THE TEST RUN OK?.
MDI=$TUXX,T7A55,02,0700,ON,
PLNG=6,PARM=4F0000
Y N
| |
| |
| |
| |
| |
| |

```
018
LOAD (C) MAP 7A10 IN MANUAL
MODE
MDI=$CALL,TYPE=XTRNL,MAP=7A16,
EP=B

019
TEST THE SER/DES, THE SHIFT
REGISTER, AND THE CONTROLS TO
THESE PARTS.
LOAD ACC WITH 00, ADD 1 TO ACC,
WRT FCB 0 WD 4 LO
DID THE TEST RUN OK?.
MDI=$TUXX,T7A18,02,0001,ON,
PLNG=17,PARM=0003/40004C0065E5
Y N

020
LOAD (C) MAP 7A10 IN MANUAL
MODE
MDI=$CALL,TYPE=XTRNL,MAP=7A16,
EP=D

021
TEST THE SER/DES, THE SHIFT
REGISTER, AND THE CONTROLS TO
THESE PARTS.
LOAD ACC WITH 01, WRT TO FCB 0 WD
4 HI, WRT FCB 0 WD 4 LO
DID THE TEST RUN OK?.
MDI=$TUXX,T7A18,02,0101,EQ,
PLNG=17,PARM=0003/40016DE565E5
Y N

022
LOAD (C) MAP 7A10 IN MANUAL
MODE
MDI=$CALL,TYPE=XTRNL,MAP=7A16,
EP=D
```

```
023
TEST THE SER/DES, THE SHIFT
REGISTER, AND THE CONTROLS TO
THESE PARTS.
LOAD ACC WITH 00, WRT TO FCB 0 WD
4 LO, ADD 1 TO ACC, WRT FCB 0 WD
5 LO
DID THE TEST RUN OK?.
MDI=$TUXX,T7A18,02,0102,EQ,
PLNG=33,
PARM=0007/40016DE54C0065E461E4D80
065E5
Y N
|
| 024
| LOAD (C) MAP 7A10 IN MANUAL
| MODE
| MDI=$CALL,TYPE=XTRNL,MAP=7A16,
| EP=D
|
025
TEST THE SER/DES, THE SHIFT
REGISTER, AND THE CONTROLS TO
THESE PARTS.
WRT FILE SELECT REG, LOAD ACC
WITH 00, READ FILE SELECT REG TO
ACC, WRT ACC TO FCB 0 WD 4 LO
DID THE TEST RUN OK?.
MDI=$TUXX,T7A18,02,0055,ON,
PLNG=21,
PARM=0004/44554000430065E5
Y N
|
| 026
| LOAD (C) MAP 7A10 IN MANUAL
| MODE
| MDI=$CALL,TYPE=XTRNL,MAP=7A16,
| EP=D
|
|
|
|
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|
```

027
TEST THE SER/DES, THE SHIFT
REGISTER, AND THE CONTROLS TO
THESE PARTS.
WRT FILE SELECT REG, LOAD ACC
WITH 00, READ FILE SELECT REG TO
ACC, WRT ACC TO FCB 0 WD 4 LO
DID THE TEST RUN OK?.
MDI=$TUXX,T7A18,02,0055,ON,
PLNG=21,
PARM=0004/445540004300065E5
Y N
|
| 028
| LOAD (C) MAP 7A10 IN MANUAL
| MODE
| MDI=$CALL,TYPE=XTRNL,MAP=7A16,
| EP=D
|
029
TEST THE SER/DES, SHIFT REGISTER,
AND THE CONTROLS TO THESE PARTS.
DESELECT ALL FILES, READ REG 3
FOR INDEX AND SECTOR WRT ACC TO
FCB 0 WD 4 LO.
DID THE TEST RUN OK?.
MDI=$TUXX,T7A31,02,0000,ON,
PLNG=09,PARM=0001/9ADF
Y N
|
| 030
| NO IS NOT VALID
| MDI=$NVLD
|
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031
TEST THE SER/DES, SHIFT REGISTER,
AND THE CONTROLS TO THESE PARTS.
DESELECT ALL FILES,  READ  REG  3
FOR  INDEX  AND SECTOR WRT ACC TO
FCB 0 WD 4 LO.
DID THE TEST RUN OK?.
MDI=$TUXX,T7A55,02,0703,EQ,
PLNG=06,PARM=490908
Y N
|
| 032
| NO IS NOT VALID
| MDI=$NVLD
|
033
TEST THE SER/DES, SHIFT REGISTER,
AND THE CONTROLS TO THESE PARTS.
DESELECT ALL FILES,  READ  REG  3
FOR  INDEX  AND SECTOR WRT ACC TO
FCB 0 WD 4 LO.
DID THE TEST RUN OK?.
MDI=$TUXX,T7A18,02,0040,ON,
PLNG=13,PARM=0002/980065E5
Y N
|
| 034
| LOAD (C)  MAP  7A10  IN  MANUAL
| MODE
| MDI=$CALL,TYPE=XTRNL,MAP=7A16,
| EP=D
|
|
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G
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035
TO FARTHER TEST TAG AND DATA BUS LINES AND FILE RESPONSE TO COMMANDS.
ISSUE CAP RESET, READ FCB ISW AND ERROR STATUS WORD FOR NO ERRORS.
DID THE TEST RUN OK?.
MDI=$TUXX,T7A55,02,0700,ON,
PLNG=6,PARM=4F0000
Y N
|
| 036
| LOAD (C) MAP 7A10 IN MANUAL
| MODE
| MDI=$CALL,TYPE=XTRNL,MAP=7A16,
| EP=B
|
037
TO FARTHER TEST TAG AND DATA BUS LINES AND FILE RESPONSE TO COMMANDS.
ISSUE CAP RESET, READ FCB ISW AND ERROR STATUS WORD FOR NO ERRORS.
DID THE TEST RUN OK?.
MDI=$TUXX,T7A55,02,0700,ON,
PLNG=6,PARM=4D0000
Y N
|
| 038
| LOAD (C) MAP 7A10 IN MANUAL
| MODE
| MDI=$CALL,TYPE=XTRNL,MAP=7A16,
| EP=B
|
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039
TEST THE SER/DES, THE SHIFT
REGISTER, AND THE CONTROLS TO
THESE PARTS.
TEST READ ID FUNCTION IN CAP
DID THE TEST RUN OK?.
MDI=$TUXX,T7A30,02,0000,EQ,
PLNG=17,PARM=0003/92804400CA40
Y N
|
| 040
| NO IS NOT VALID
| MDI=$NVLD
|
041
TEST THE SER/DES, THE SHIFT
REGISTER, AND THE CONTROLS TO
THESE PARTS.
TEST READ ID FUNCTION IN CAP
DID THE TEST RUN OK?.
MDI=$TUXX,T7A31,02,0000,EQ,
PLNG=21,
PARM=0005/8200E37FEB7F8A00
Y N
|
| 042
| NO IS NOT VALID
| MDI=$NVLD
|
043
TEST THE SER/DES, THE SHIFT
REGISTER, AND THE CONTROLS TO
THESE PARTS.
TEST READ ID FUNCTION IN CAP
DID THE TEST RUN OK?.
MDI=$TUXX,T7A55,02,0703,EQ,
PLNG=06,PARM=490908
Y N
|
| 044
| NO IS NOT VALID
| MDI=$NVLD
|
|
|

045
TEST THE SER/DES, THE SHIFT
REGISTER, AND THE CONTROLS TO
THESE PARTS.
TEST READ ID FUNCTION IN CAP
DID THE TEST RUN OK?.
MDI=$TUXX,T7A31,02,0000,EQ,
PLNG=17,PARM=0003/8A80880065E5
Y N
|
| 046
| NO IS NOT VALID
| MDI=$NVLD
|
047
TEST THE SER/DES, THE SHIFT
REGISTER, AND THE CONTROLS TO
THESE PARTS.
TEST READ ID FUNCTION IN CAP
DID THE TEST RUN OK?.
MDI=$TUXX,T7A33,04,24924924,EQ,
PLNG=09,PARM=0001/0075
Y N
|
| 048
| CHECK IF ANY FILE ERROR BIT ON
| MDI=$TUXX,T7A02,02,FFFF,EQ
| Y N
| |
| | 049
| | LOAD (C) MAP 7A10 IN MANUAL
| | MODE
| | MDI=$CALL,TYPE=XTRNL,
| | MAP=7A16,EP=D
| |
| 050
| LOAD (C) MAP 7A20 IN MANUAL
| MODE
| POSSIBLE FILE ERROR
| MDI=$CALL,TYPE=XTRNL,MAP=7A20,
| EP=A
|
|
|
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|
|
051
TEST THE SER/DES, THE SHIFT
REGISTER, AND THE CONTROLS TO
THESE PARTS.
TEST READ ID EXTENDED FUNCTION IN
CAP
DID THE TEST RUN OK?.
MDI=$TUXX,T7A30,02,0000,EQ,
PLNG=17,PARM=0003/92804400CA40
Y N
|
| 052
| NO IS NOT VALID
| MDI=$NVLD
|
053
TEST THE SER/DES, THE SHIFT
REGISTER, AND THE CONTROLS TO
THESE PARTS.
TEST READ ID EXTENDED FUNCTION IN
CAP
DID THE TEST RUN OK?.
MDI=$TUXX,T7A31,02,0000,EQ,
PLNG=21,
PARM=0004/8203E37FEB7F8A00
Y N
|
| 054
| NO IS NOT VALID
| MDI=$NVLD
|
055
TEST THE SER/DES, THE SHIFT
REGISTER, AND THE CONTROLS TO
THESE PARTS.
TEST READ ID EXTENDED FUNCTION IN
CAP
DID THE TEST RUN OK?.
MDI=$TUXX,T7A55,02,0703,EQ,
PLNG=06,PARM=490908
Y N
| |
| |
| |
| |

| 056
| NO IS NOT VALID
| MDI=$NVLD
|
057
TEST THE SER/DES, THE SHIFT
REGISTER, AND THE CONTROLS TO
THESE PARTS.
TEST READ ID EXTENDED FUNCTION IN
CAP
DID THE TEST RUN OK?.
MDI=$TUXX,T7A31,02,0000,EQ,
PLNG=17,PARM=0003/8A80880065E5
Y N
|
| 058
| NO IS NOT VALID
| MDI=$NVLD
|
059
TEST THE SER/DES, THE SHIFT
REGISTER, AND THE CONTROLS TO
THESE PARTS.
TEST READ ID EXTENDED FUNCTION IN
CAP
DID THE TEST RUN OK?.
MDI=$TUXX,T7A33,04,24924924,EQ,
PLNG=09,PARM=0001/0075
Y N
|
| 060
| LOAD (C) MAP 7A10 IN MANUAL
| MODE
| MDI=$CALL,TYPE=XTRNL,MAP=7A16,
| EP=D
|
|
|
|
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|

061
TEST THE SER/DES, THE SHIFT REGISTER, AND THE CONTROLS TO THESE PARTS.
TEST READ DIAGNOSTIC DATA 1 FUNCTION IN CAP
DID THE TEST RUN OK?.
MDI=$TUXX,T7A30,02,0000,EQ,
PLNG=17,PARM=0003/928404400CA40
Y N
|
| 062
| NO IS NOT VALID
| MDI=$NVLD
|
063
TEST THE SER/DES, THE SHIFT REGISTER, AND THE CONTROLS TO THESE PARTS.
TEST READ DIAGNOSTIC DATA 1 FUNCTION IN CAP
DID THE TEST RUN OK?.
MDI=$TUXX,T7A31,02,0000,EQ,
PLNG=21,
PARM=0004/8234E37FEB7F8A00
Y N
|
| 064
| NO IS NOT VALID
| MDI=$NVLD
|
065
TEST THE SER/DES, THE SHIFT REGISTER, AND THE CONTROLS TO THESE PARTS.
TEST READ DIAGNOSTIC DATA 1 FUNCTION IN CAP
DID THE TEST RUN OK?.
MDI=$TUXX,T7A55,02,0703,EQ,
PLNG=06,PARM=490908
Y N
| |
| |
| |
| |

| 066
| NO IS NOT VALID
| MDI=$NVLD
|
067
TEST THE SER/DES, THE SHIFT
REGISTER, AND THE CONTROLS TO
THESE PARTS.
TEST READ DIAGNOSTIC DATA 1
FUNCTION IN CAP
DID THE TEST RUN OK?.
MDI=$TUXX,T7A31,02,0000,EQ,
PLNG=17,PARM=0003/8A80880065E5
Y N
|
| 068
| NO IS NOT VALID
| MDI=$NVLD
|
069
TEST THE SER/DES, THE SHIFT
REGISTER, AND THE CONTROLS TO
THESE PARTS.
TEST READ DIAGNOSTIC DATA 1
FUNCTION IN CAP
DID THE TEST RUN OK?.
MDI=$TUXX,T7A33,06,249249249249,
EQ,PLNG=09,PARM=0001/0075
Y N
|
| 070
| LOAD (C) MAP 7A10 IN MANUAL
| MODE
| MDI=$CALL,TYPE=XTRNL,MAP=7A16,
| EP=D
|
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|
071
TEST THE SER/DES AND SHIFT
REGISTER AND THE CONTROLS TO
THESE PARTS.
TEST READ DIAGNOSTIC DATA 2
FUNCTION IN CAP
DID THE TEST RUN OK?.
MDI=$TUXX,T7A30,02,0000,EQ,
PLNG=17,PARM=0003/92804400CA40
Y N
|
| 072
| NO IS NOT VALID
| MDI=$NVLD
|
073
TEST THE SER/DES AND SHIFT
REGISTER AND THE CONTROLS TO
THESE PARTS.
TEST READ DIAGNOSTIC DATA 2
FUNCTION IN CAP
DID THE TEST RUN OK?.
MDI=$TUXX,T7A31,02,0000,EQ,
PLNG=21,
PARM=0004/8238E37FEB7F8A00
Y N
|
| 074
| NO IS NOT VALID
| MDI=$NVLD
|
075
TEST THE SER/DES AND SHIFT
REGISTER AND THE CONTROLS TO
THESE PARTS.
TEST READ DIAGNOSTIC DATA 2
FUNCTION IN CAP
DID THE TEST RUN OK?.
MDI=$TUXX,T7A55,02,0703,EQ,
PLNG=06,PARM=490908
Y N
| |
| |
| |
| |

076
NO IS NOT VALID
MDI=$NVLD

077
TEST THE SER/DES AND SHIFT
REGISTER AND THE CONTROLS TO
THESE PARTS.
TEST READ DIAGNOSTIC DATA 2
FUNCTION IN CAP
DID THE TEST RUN OK?.
MDI=$TUXX,T7A31,02,0000,EQ,
PLNG=17,PARM=0003/8A80880065E5
Y N

078
NO IS NOT VALID
MDI=$NVLD

079
TEST THE SER/DES AND SHIFT
REGISTER AND THE CONTROLS TO
THESE PARTS.
TEST READ DIAGNOSTIC DATA 2
FUNCTION IN CAP
DID THE TEST RUN OK?.
MDI=$TUXX,T7A33,06,249249249249,
EQ,PLNG=13,PARM=0001/0075
Y N

080
LOAD (C) MAP 7A10 IN MANUAL
MODE
MDI=$CALL,TYPE=XTRNL,MAP=7A16,
EP=D

```
081
TEST THE SER/DES, THE SHIFT
REGISTER, AND THE CONTROLS TO
THESE PARTS.
TEST CRC GENERATION IN CAP
DID THE TEST RUN OK?.
MDI=$TUXX,T7A30,02,0000,EQ,
PLNG=33,
PARM=0007/40556D7F657F6D7E657E440
0CA40
Y N
|
| 082
| NO IS NOT VALID
| MDI=$NVLD
|
083
TEST THE SER/DES, THE SHIFT
REGISTER, AND THE CONTROLS TO
THESE PARTS.
TEST CRC GENERATION IN CAP
DID THE TEST RUN OK?.
MDI=$TUXX,T7A32,02,0000,EQ,
PLNG=25,
PARM=0005/8220E37FEB7F9ADF8A30
Y N
|
| 084
| NO IS NOT VALID
| MDI=$NVLD
|
085
TEST THE SER/DES, THE SHIFT
REGISTER, AND THE CONTROLS TO
THESE PARTS.
TEST CRC GENERATION IN CAP
DID THE TEST RUN OK?.
MDI=$TUXX,T7A55,02,0703,EQ,
PLNG=06,PARM=490B08
Y N
| |
| |
| |
| |
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| |
| |
| 086
| NO IS NOT VALID
| MDI=$NVLD
|
087
TEST THE SER/DES, THE SHIFT
REGISTER, AND THE CONTROLS TO
THESE PARTS.
TEST CRC GENERATION IN CAP
DID THE TEST RUN OK?.
MDI=$TUXX,T7A32,02,0000,EQ,
PLNG=17,PARM=0003/8A80880065E5
Y N
|
| 088
| NO IS NOT VALID
| MDI=$NVLD
|
089
TEST THE SER/DES, THE SHIFT
REGISTER, AND THE CONTROLS TO
THESE PARTS.
TEST CRC GENERATION IN CAP
DID THE TEST RUN OK?.
MDI=$TUXX,T7A32,02,0000,EQ,
PLNG=25,
PARM=0005/9A048200E37FEB7F8A30
Y N
|
| 090
| NO IS NOT VALID
| MDI=$NVLD
|
|
|
|
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|

091
TEST THE SER/DES, THE SHIFT
REGISTER, AND THE CONTROLS TO
THESE PARTS.
TEST CRC GENERATION IN CAP
DID THE TEST RUN OK?.
MDI=$TUXX,T7A55,02,0703,EQ,
PLNG=06,PARM=490B08
Y N
|
| 092
| NO IS NOT VALID
| MDI=$NVLD
|
093
TEST THE SER/DES, THE SHIFT
REGISTER, AND THE CONTROLS TO
THESE PARTS.
TEST CRC GENERATION IN CAP
DID THE TEST RUN OK?.
MDI=$TUXX,T7A32,02,0000,EQ,
PLNG=17,PARM=0003/8A80880065E5
Y N
|
| 094
| NO IS NOT VALID
| MDI=$NVLD
|
095
TEST THE SER/DES, THE SHIFT
REGISTER, AND THE CONTROLS TO
THESE PARTS.
TEST CRC GENERATION IN CAP
DID THE TEST RUN OK?.
MDI=$TUXX,T7A33,04,039A039A,EQ,
PLNG=09,PARM=0001/0075
Y N
| |
| |
| |
| |
| |
| |
| |
| |

```
| 096
| LOAD (C) MAP 7A10 IN MANUAL
| MODE
| MDI=$CALL,TYPE=XTRNL,MAP=7A16,
| EP=D
|
097
TEST THE SER/DES, THE SHIFT
REGISTER, AND THE CONTROLS TO
THESE PARTS.
TEST ID SCAN HIT FUNCTION IN CAP
DID THE TEST RUN OK?.
MDI=$TUXX,T7A30,02,0000,EQ,
PLNG=37,
PARM=0008/40246DFF409265FF40496DF
E402465FE
Y N
|
| 098
| NO IS NOT VALID
| MDI=$NVLD
|
099
TEST THE SER/DES, THE SHIFT
REGISTER, AND THE CONTROLS TO
THESE PARTS.
TEST ID SCAN HIT FUNCTION IN CAP
DID THE TEST RUN OK?.
MDI=$TUXX,T7A30,02,0000,EQ,
PLNG=17,PARM=0003/4400CA409280
Y N
|
| 100
| NO IS NOT VALID
| MDI=$NVLD
|
|
|
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|
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|
|
```

```
|
|
101
TEST THE SER/DES, THE SHIFT
REGISTER, AND THE CONTROLS TO
THESE PARTS.
TEST ID SCAN HIT FUNCTION IN CAP
DID THE TEST RUN OK?.
MDI=$TUXX,T7A31,02,0000,EQ,
PLNG=21,
PARM=0004/8214E37FEB7F8A00
Y N
|
| 102
| NO IS NOT VALID
| MDI=$NVLD
|
103
TEST THE SER/DES, THE SHIFT
REGISTER, AND THE CONTROLS TO
THESE PARTS.
TEST ID SCAN HIT FUNCTION IN CAP
DID THE TEST RUN OK?.
MDI=$TUXX,T7A55,02,0703,EQ,
PLNG=06,PARM=490908
Y N
|
| 104
| NO IS NOT VALID
| MDI=$NVLD
|
105
TEST THE SER/DES, THE SHIFT
REGISTER, AND THE CONTROLS TO
THESE PARTS.
TEST ID SCAN HIT FUNCTION IN CAP
DID THE TEST RUN OK?.
MDI=$TUXX,T7A31,02,0000,EQ,
PLNG=17,PARM=0003/8A80880065E5
Y N
|
| 106
| NO IS NOT VALID
| MDI=$NVLD
|
|
```

107
TEST THE SER/DES, THE SHIFT REGISTER, AND THE CONTROLS TO THESE PARTS.
TEST ID SCAN HIT FUNCTION IN CAP
DID THE TEST RUN OK?.
MDI=$TUXX,T7A18,02,0080,ON,
PLNG=13,PARM=0002/980065E5
Y N

108
LOAD (C) MAP 7A10 IN MANUAL MODE
MDI=$CALL,TYPE=XTRNL,MAP=7A16,
EP=D

109
TEST THE SER/DES, THE SHIFT REGISTER, AND THE CONTROLS TO THESE PARTS.
TEST NO ID SCAN HIT FUNCTION IN CONTROLLER
DID THE TEST RUN OK?.
MDI=$TUXX,T7A30,02,0000,EQ,
PLNG=37,
PARM=0008/40246DFF409365FF40496DF
E402465FE
Y N

110
NO IS NOT VALID
MDI=$NVLD

```
|
|
111
TEST THE SER/DES, THE SHIFT
REGISTER, AND THE CONTROLS TO
THESE PARTS.
TEST NO ID SCAN HIT FUNCTION IN
CONTROLLER
DID THE TEST RUN OK?.
MDI=$TUXX,T7A30,02,0000,EQ,
PLNG=17,PARM=0003/4400CA409280
Y N
|
| 112
| NO IS NOT VALID
| MDI=$NVLD
|
113
TEST THE SER/DES, THE SHIFT
REGISTER, AND THE CONTROLS TO
THESE PARTS.
TEST NO ID SCAN HIT FUNCTION IN
CONTROLLER
DID THE TEST RUN OK?.
MDI=$TUXX,T7A31,02,0000,EQ,
PLNG=21,
PARM=0004/8214E37FEB7F8A00
Y N
|
| 114
| NO IS NOT VALID
| MDI=$NVLD
|
115
TEST THE SER/DES, THE SHIFT
REGISTER, AND THE CONTROLS TO
THESE PARTS.
TEST NO ID SCAN HIT FUNCTION IN
CONTROLLER
DID THE TEST RUN OK?.
MDI=$TUXX,T7A55,02,0703,EQ,
PLNG=06,PARM=490908
Y N
| |
| |
| |
```

| |
| |
| 116
| NO IS NOT VALID
| MDI=$NVLD
|
117
TEST THE SER/DES, THE SHIFT REGISTER, AND THE CONTROLS TO THESE PARTS.
TEST NO ID SCAN HIT FUNCTION IN CONTROLLER
DID THE TEST RUN OK?.
MDI=$TUXX,T7A31,02,0000,EQ,
PLNG=17,PARM=0003/8A80880065E5
Y N
|
| 118
| NO IS NOT VALID
| MDI=$NVLD
|
119
TEST THE SER/DES, THE SHIFT REGISTER, AND THE CONTROLS TO THESE PARTS.
TEST NO ID SCAN HIT FUNCTION IN CONTROLLER
DID THE TEST RUN OK?.
MDI=$TUXX,T7A18,02,0080,OF,
PLNG=13,PARM=0002/910065E5
Y N
|
| 120
| LOAD (C) MAP 7A10 IN MANUAL
| MODE
| MDI=$CALL,TYPE=XTRNL,MAP=7A16,
| EP=D
|
121
GO TO MAP7A20
MDI=$GOTO,TYPE=XTRNL,MAP=7A20,
EP=A

TAG PARITY FAILURE MAP

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP ENTRY POINT	PAGE NUMBER	STEP NUMBER
7A10	A	1	001

001
(ENTRY POINT A)
CHECK ERROR SYMPTOM.

ANALYZE RESULT WORD TO DETERMINE FAILING FIELD REPLACEMENT UNIT .
CARDS TESTED:
A2-D2 AND A2-C2
- INSPECT AND RESEAT TOP CARD CONNECTORS.
BETWEEN A2-C2 AND A2-D2.
IF THIS FAILS TO CORRECT THE PROBLEM EXCHANGE BOARD A2 .
IF THIS FAILS TO REPAIR LOAD (C) MAP7A20
AND TOP CARD CONNECTOR(S).

CYCLE STEAL STATUS ERROR BIT OFF?
MDI=$TUXX,T7A02,04,00000008,OF
Y N
|
| 002
| GOTO ENTRY POINT B
| MDI=$GOTO,TYPE=INTRNL,EP=B
|
003
TAG/DATA BUS PARITY BIT OFF?
MDI=$TUXX,T7A02,04,00004000,OF
Y N
|
| 004
| GOTO ENTRY POINT B
| MDI=$GOTO,TYPE=INTRNL,EP=B
|
|
|
|
|
|

005
CHECK ERROR SYMPTOM.
RESPONSE TIMEOUT ERROR BIT OFF?
MDI=$TUXX,T7A02,04,00000002,OF
Y N

006
GOTO ENTRY POINT B
MDI=$GOTO,TYPE=INTRNL,EP=B

007
CHECK ERROR SYMPTOM.
LOST INTERRUPT ERROR BIT ON?
MDI=$TUXX,T7A02,04,00002000,ON
Y N

008
CHECK ERROR SYMPTOM.
DATA NOT COMPARE ERROR BIT ON?
MDI=$TUXX,T7A02,04,00100000,ON
Y N

009
EXCHANGE CARD(S)
- INSPECT AND RESEAT CABLES
BETWEEN ATTACH. AND 4963.
- EXCHANGE CARD -A2-C2.
- EXCHANGE CARD -A2-D2.
- INSPECT AND RESEAT TOP CARD
CONNECTORS.
BETWEEN A2-C2 AND A2-D2.
- EXCHANGE THE 4963 ATTACH.
CARD.
IF THIS FAILS TO REPAIR LOAD
(C) MAP7A20
MDI=$FIXT

010
GOTO ENTRY POINT A
MDI=$GOTO,TYPE=XTRNL,EP=A,
MAP=7A14

011
(ENTRY POINT B)
WRITE DIAG. REG 1
DATA/TAG BUS PARITY CHECK.

PROBE (VTL) THE FOLLOWING;

AT COMMON ADAPTER BOARD,

REQUEST OUT.....A5B04
ACKNOWLEDGE REQUEST OUT.....A5B05
STROBE OUT.....A5B06
TAG BUS BIT 0 .....A5D03
TAG BUS BIT 1 .....A5D04
ALL LINE(S) PULSING?

MDI=$QUXX,T7A28,REPT=L7A28,
PLNG=4,PARM=FFFF
Y N
|
| 012
| - INSPECT AND RESEAT CABLES
| BETWEEN ATTACH. AND 4963.
| - INSPECT AND RESEAT TOP CARD
| CONNECTORS.
| BETWEEN A2-C2 AND A2-D2.
| - EXCHANGE CARD -A2-C2.
| - EXCHANGE THE 4963 ATTACH.
| CARD.
| - EXCHANGE CARD -A2-D2.
| IF THIS FAILS TO REPAIR LOAD
| (C) MAP7A20
|
|
|
|
|
|
| MDI=$FIXT
|
|
|
|
|

THE 4963 ATTACH CARD TO BOARD A2
CABLES
ARE THE SAME. YOU CAN SWAP BOTH
ENDS
TO CHECK THE CABLES. IF THE
SYMPTOM CHANGES,
EXCHANGE THE CABLES.

013
(ENTRY POINT C)
WRITE DIAG. REG 1
DATA/TAG BUS PARITY CHECK.

PROBE (VTL) THE FOLLOWING;

AT COMMON ADAPTER BOARD,

TAG BUS BIT 4
..............A5D07.....DOWN
TAG BUS BIT 5
..............A5D09.....UP
TAG BUS BIT 6
..............A5D10.....UP
TAG BUS BIT 7
..............A5D11.....UP
ALL LINE(S) AS EXPECTED?

MDI=$QUXX,T7A28,REPT=L7A28,
PLNG=4,PARM=FFFF
Y N

014
- INSPECT AND RESEAT CABLES
BETWEEN ATTACH. AND 4963.
- EXCHANGE THE 4963 ATTACH.
CARD.
MDI=$FIXT

015
- INSPECT AND RESEAT CABLES
BETWEEN ATTACH. AND 4963.
- EXCHANGE CARD -A2-C2.
- EXCHANGE CARD -A2-D2.
- INSPECT AND RESEAT TOP CARD
CONNECTORS.
BETWEEN A2-C2 AND A2-D2.
- EXCHANGE THE 4963 ATTACH.
CARD.
IF THIS FAILS TO REPAIR LOAD (C)
MAP7A20

THE 4963 ATTACH CARD TO BOARD A2
CABLES
ARE THE SAME. YOU CAN SWAP BOTH
ENDS
TO CHECK THE CABLES. IF THE
SYMPTOM CHANGES,
EXCHANGE THE CABLES.

MDI=$FIXT

CONTROLLER MAP

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
7A10	A	1	001

001
(ENTRY POINT A)
CHECK ERROR SYMPTOM.

ANALYZES RESULT WORDS TO DETERMINE FAILING UNIT.
CARDS TESTED:
INSPECT AND RESEAT TOP CARD CONNECTORS.
BETWEEN A2-C2 AND A2-D2.
EXCHANGE CARD(S)
A2-D2 AND A2-C2
IF THIS FAILS TO CORRECT THE PROBLEM INSPECT AND RESEAT CABLES BETWEEN ATTACH. AND 4963.
IF THIS FAILS TO CORRECT THE PROBLEM EXCHANGE BOARD A2.
AND TOP CONNECTOR CABLES.

ERROR ON WRITE BIT OFF?
MDI=$TUXX,T7A02,02,0040,OF
Y N
|
| 002
| INSPECT AND RESEAT TOP CARD
| CONNECTORS.
| BETWEEN A2-C2 AND A2-D2.
| EXCHANGE CARD(S)
| A2-D2 AND A2-C2
| IF THIS FAILS TO CORRECT THE
| PROBLEM INSPECT AND RESEAT
| CABLES BETWEEN ATTACH. AND
| 4963.
| IF THIS FAILS TO CORRECT THE
| PROBLEM EXCHANGE BOARD A2.
| MDI=$FIXT
|
|
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003
CHECK ERROR SYMPTOM.
ERROR ON READ BIT OFF?
MDI=$TUXX,T7A02,02,0020,OF
Y N

004
INSPECT AND RESEAT TOP CARD
CONNECTORS.
BETWEEN A2-C2 AND A2-D2.
EXCHANGE CARD(S)
A2-D2 AND A2-C2
IF THIS FAILS TO CORRECT THE
PROBLEM INSPECT AND RESEAT
CABLES BETWEEN ATTACH. AND
4963.
IF THIS FAILS TO CORRECT THE
PROBLEM EXCHANGE BOARD A2.
MDI=$FIXT

005
CHECK ERROR SYMPTOM.
TAG/DATA BUS PARITY BIT OFF?
MDI=$TUXX,T7A02,04,00004000,OF
Y N

006
INSPECT AND RESEAT TOP CARD
CONNECTORS.
BETWEEN A2-C2 AND A2-D2.
EXCHANGE CARD(S)
A2-D2 AND A2-C2
IF THIS FAILS TO CORRECT THE
PROBLEM INSPECT AND RESEAT
CABLES BETWEEN ATTACH. AND
4963.
IF THIS FAILS TO CORRECT THE
PROBLEM EXCHANGE BOARD A2.
MDI=$FIXT

007
CHECK ERROR SYMPTOM.
DATA NOT COMPARE BIT ON?
MDI=$TUXX,T7A02,02,0010,ON
Y N
|
| 008
| GO TO MAP 7A13-A
| MDI=$GOTO,TYPE=XTRNL,EP=A,
| MAP=7A13
|
009
WRITE DIAGNOSTIC REG 1
DATA/TAG BUS PARITY CHECK.

PROBE THE FOLLOWING;

AT COMMON ADAPTER BOARD A2,

STROBE OUT.....A5B06
IS LINE PULSING ?
MDI=$QUXX,T7A28,REPT=L7A28,
PLNG=4,PARM=FFFF
Y N
|
| 010
| INSPECT AND RESEAT TOP CARD
| CONNECTORS.
| BETWEEN A2-C2 AND A2-D2.
| EXCHANGE CARD(S)
| A2-D2 AND A2-C2
| IF THIS FAILS TO CORRECT THE
| PROBLEM INSPECT AND RESEAT
| CABLES BETWEEN ATTACH. AND
| 4963.
| IF THIS FAILS TO CORRECT THE
| PROBLEM EXCHANGE BOARD A2.
| MDI=$FIXT
|
|
|
|
|
|
|

CONTROLLER MAP

PAGE 4 OF 4

011
INSPECT AND RESEAT TOP CARD
CONNECTORS.
BETWEEN A2-C2 AND A2-D2.
EXCHANGE CARD(S)
A2-D2 AND A2-C2
IF THIS FAILS TO CORRECT THE
PROBLEM INSPECT AND RESEAT
CABLES BETWEEN ATTACH. AND 4963.
IF THIS FAILS TO CORRECT THE
PROBLEM EXCHANGE BOARD A2.
MDI=$FIXT

CONTROLLER MAP

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP ENTRY POINT	PAGE NUMBER	STEP NUMBER
7A10	A	1	001
7A10	B	3	008
7A10	D	10	039
7A10	F	3	010

001
(ENTRY POINT A)
WR/RD FILE CONTROL BLOCK 0.
CHECK ERROR SYMPTOM.

PERFORMS FUNCTIONAL TESTS OF THE COMMON ADAPTER TO ENSURE IT IS OPERATING CORRECTLY.
CARDS TESTED:
A2-C2,A2-D2
AND/OR CONNECTOR CABLES.

IS ERROR ON WRITE BIT ON?
MDI=$TUXX,T7A02,02,0040,ON
Y N

002
WR/RD FILE CONTROL BLOCK 0.
CHECK ERROR SYMPTOM.
IS ERROR ON READ BIT ON?
MDI=$TUXX,T7A02,02,0020,ON
Y N

003
WR/RD FILE CONTROL BLOCK 0.
CHECK ERROR SYMPTOM.
IS DATA NOT COMPARE BIT ON?
MDI=$TUXX,T7A02,02,0010,ON
Y N

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2 2 2 2
A B C D

CONTROLLER MAP

004
INSPECT AND RESEAT CABLE TO ATTACHMENT CARD
INSPECT AND RESEAT TOP CARD CONNECTORS A2-C2 TO A2-D2
EXCHANGE CARD A2-C2
EXCHANGE CARD A2-D2
EXCHANGE 4963 ATTACHMENT CARD
MDI=$FIXT

005
INSPECT AND RESEAT CABLE TO ATTACHMENT CARD
INSPECT AND RESEAT TOP CARD CONNECTORS A2-C2 TO A2-D2
EXCHANGE CARD A2-D2
EXCHANGE CARD A2-C2
EXCHANGE 4963 ATTACHMENT CARD
MDI=$FIXT

006
INSPECT AND RESEAT CABLE TO ATTACHMENT CARD
INSPECT AND RESEAT TOP CARD CONNECTORS A2-C2 TO A2-D2
EXCHANGE CARD A2-C2
EXCHANGE 4963 ATTACHMENT CARD
EXCHANGE CARD A2-D2
MDI=$FIXT

007
INSPECT AND RESEAT CABLE TO ATTACHMENT CARD
INSPECT AND RESEAT TOP CARD CONNECTORS A2-C2 TO A2-D2
EXCHANGE CARD A2-C2
EXCHANGE 4963 ATTACHMENT CARD
EXCHANGE CARD A2-D2
MDI=$FIXT

```
008
(ENTRY POINT B)
TEST CURRENT AND PREVIOUS CYL #S
ARE THEY CORRECT?
MDI=$TUXX,T7A02,02,00000018,OF
Y N
|
| 009
| INSPECT AND RESEAT CABLE TO
| ATTACHMENT CARD
| INSPECT AND RESEAT TOP CARD
| CONNECTORS A2-C2 TO A2-D2
| EXCHANGE CARD A2-C2
| EXCHANGE CARD A2-D2
| EXCHANGE 4963 ATTACHMENT CARD
| MDI=$FIXT
|
010
(ENTRY POINT F)
TEST ERROR CONDITION IN CAP
NO END OP INTERRUPT BIT OF?
MDI=$TUXX,T7A02,02,00000020,OF
Y N
|
| 011
| INSPECT AND RESEAT CABLE TO
| ATTACHMENT CARD
| INSPECT AND RESEAT TOP CARD
| CONNECTORS A2-C2 TO A2-D2
| EXCHANGE CARD A2-C2
| EXCHANGE CARD A2-D2
| EXCHANGE 4963 ATTACHMENT CARD
| MDI=$FIXT
|
012
TEST ERROR CONDITION IN CAP
IS NOT VALID COMMAND ERROR OFF?
MDI=$TUXX,T7A02,06,000000000400,
OF
Y N
| |
| |
| |
| |
| |
| |
```

CONTROLLER MAP

PAGE 4 OF 10

013
INSPECT AND RESEAT CABLE TO
ATTACHMENT CARD
INSPECT AND RESEAT TOP CARD
CONNECTORS A2-C2 TO A2-D2
EXCHANGE CARD A2-C2
EXCHANGE 4963 ATTACHMENT CARD
EXCHANGE CARD A2-D2
MDI=$FIXT

014
TEST ERROR CONDITION IN CAP
IS COMMON INTERFACE P CHECK OFF?
MDI=$TUXX,T7A02,06,000000002000,
OF
Y N

015
TEST ERROR CONDITION IN CAP
TAG P CHECK WRAP BACK BIT OF?
MDI=$TUXX,T7A02,07,
00000000000010,OF
Y N

016
INSPECT AND RESEAT CABLE TO
ATTACHMENT CARD
INSPECT AND RESEAT TOP CARD
CONNECTORS A2-C2 TO A2-D2
EXCHANGE CARD A2-C2
EXCHANGE 4963 ATTACHMENT CARD
EXCHANGE CARD A2-D2
MDI=$FIXT

CONTROLLER MAP

PAGE 5 OF 10

017
INSPECT AND RESEAT CABLE TO
ATTACHMENT CARD
INSPECT AND RESEAT TOP CARD
CONNECTORS A2-C2 TO A2-D2
EXCHANGE CARD A2-C2
EXCHANGE CARD A2-D2
EXCHANGE 4963 ATTACHMENT CARD
MDI=$FIXT

018
TEST ERROR CONDITION IN CAP
IS TIME OUT HARDWARE CHECK BIT
OFF?
MDI=$TUXX,T7A02,06,000000000100,
OF
Y N

019
TEST ERROR CONDITION IN CAP
IS NOT VALID ROS ADDRESS BIT
OFF?
MDI=$TUXX,T7A02,07,
00000000000020,OF
Y N

020
INSPECT AND RESEAT CABLE TO
ATTACHMENT CARD
INSPECT AND RESEAT TOP CARD
CONNECTORS A2-C2 TO A2-D2
EXCHANGE CARD A2-C2
EXCHANGE 4963 ATTACHMENT CARD
EXCHANGE CARD A2-D2
MDI=$FIXT

021
TEST ERROR CONDITION IN CAP
IS NOT NORMAL RESET ERROR BIT
OFF
MDI=$TUXX,T7A02,07,
00000000000040,OF
Y N

022
INSPECT AND RESEAT CABLE TO
ATTACHMENT CARD
INSPECT AND RESEAT TOP CARD
CONNECTORS A2-C2 TO A2-D2
EXCHANGE CARD A2-C2
EXCHANGE 4963 ATTACHMENT CARD
EXCHANGE CARD A2-D2
MDI=$FIXT

023
INSPECT AND RESEAT CABLE TO
ATTACHMENT CARD
INSPECT AND RESEAT TOP CARD
CONNECTORS A2-C2 TO A2-D2
EXCHANGE CARD A2-D2
EXCHANGE CARD A2-C2
EXCHANGE 4963 ATTACHMENT CARD
MDI=$FIXT

024
TEST ERROR CONDITION IN CAP
IS COMMON ADAPTER P CHECK BIT OFF
MDI=$TUXX,T7A02,06,000000004000,
OF
Y N

025
TEST ERROR CONDITION IN CAP
IS PROCESSING UNIT P CHECK BIT
OFF?
MDI=$TUXX,T7A02,07,
00000000000001,OF
Y N
|
| 026
| INSPECT AND RESEAT CABLE TO
| ATTACHMENT CARD
| INSPECT AND RESEAT TOP CARD
| CONNECTORS A2-C2 TO A2-D2
| EXCHANGE CARD A2-C2
| EXCHANGE 4963 ATTACHMENT CARD
| EXCHANGE CARD A2-D2
| MDI=$FIXT
|
027
TEST ERROR CONDITION IN CAP
IS PROCESSING UNIT DATA BUFFER
PORT P CHECK ON?
MDI=$TUXX,T7A02,07,
00000000000004,OF
Y N
|
| 028
| INSPECT AND RESEAT CABLE TO
| ATTACHMENT CARD
| INSPECT AND RESEAT TOP CARD
| CONNECTORS A2-C2 TO A2-D2
| EXCHANGE CARD A2-C2
| EXCHANGE 4963 ATTACHMENT CARD
| EXCHANGE CARD A2-D2
| MDI=$FIXT
|
|
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|

029
INSPECT AND RESEAT CABLE TO ATTACHMENT CARD
INSPECT AND RESEAT TOP CARD CONNECTORS A2-C2 TO A2-D2
EXCHANGE CARD A2-D2
EXCHANGE CARD A2-C2
EXCHANGE 4963 ATTACHMENT CARD
MDI=$FIXT

030
TEST ERROR CONDITION IN CAP
62 PC INTFC ERROR BIT OFF?
MDI=$TUXX,T7A02,04,00000001,OF
Y N

031
TEST ERROR CONDITION IN CAP
62 PC CABLE CONTINUITY BIT OFF?
MDI=$TUXX,T7A02,07,
00000000000080,OF
Y N

032
EXECUTE MAP 7A20
MDI=$CALL,TYPE=XTRNL,
MAP=7A20,EP=A

033
TEST ERROR CONDITION IN CAP
62 PC NO CNTL SAMPLE REC BIT OFF?
MDI=$TUXX,T7A02,07,
00000000000040,OF
Y N

CONTROLLER MAP


```
| | |
| | |
| | |
| |. 034
| | INSPECT  AND  RESEAT CABLE TO
| | DISK DRIVE
| | INSPECT AND RESEAT  TOP  CARD
| | CONNECTORS A2-C2 TO A2-D2
| | EXCHANGE CARD A2-D2
| | EXCHANGE CARD A2-C2
| | MDI=$FIXT
| |
| 035
| TEST ERROR CONDITION IN CAP
| 62  PC  DAISY  BUS  P CHECK BIT
| OFF?
| MDI=$TUXX,T7A02,07,
| 00000000000020,OF
| Y N
| |
| | 036
| | INSPECT AND RESEAT  CABLE  TO
| | DISK DRIVE
| | INSPECT  AND  RESEAT TOP CARD
| | CONNECTORS A2-C2 TO A2-D2
| | EXCHANGE CARD A2-D2
| | EXCHANGE CARD A2-C2
| | MDI=$FIXT
| |
| 037
| EXECUTE MAP 7A20
| MDI=$CALL,TYPE=XTRNL,MAP=7A20,
| EP=A
|
038
INSPECT   AND   RESEAT  CABLE  TO
ATTACHMENT CARD
INSPECT   AND   RESEAT  TOP  CARD
CONNECTORS A2-C2 TO A2-D2
EXCHANGE CARD A2-D2
EXCHANGE CARD A2-D2
EXCHANGE 4963 ATTACHMENT CARD
MDI=$FIXT
```

039
(ENTRY POINT D)
INSPECT AND RESEAT CABLE TO ATTACHMENT CARD
INSPECT AND RESEAT TOP CARD CONNECTORS A2-C2 TO A2-D2
EXCHANGE CARD A2-C2
EXCHANGE CARD A2-D2
EXCHANGE 4963 ATTACHMENT CARD
IF THE ABOVE FAILS TO REPAIR THE PROBLEM
LOAD (C) MAP7A20 FOR FILE PROBLEM.
MDI=$FIXT

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
7A10	A	2	003

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
4	014	7A21	A
5	019	7A21	A
5	023	7A21	A
6	029	7A21	A
7	032	7A21	A
8	039	7A21	A
9	045	7A21	A
9	048	7A21	A
10	053	7A21	A
11	058	7A21	A
12	065	7A21	A
13	070	7A21	A
14	076	7A21	A
15	082	7A21	A
16	088	7A21	A
17	092	7A21	A
19	099	7A21	A
19	104	7A21	A
21	111	7A21	A
21	116	7A21	A
23	123	7A21	A
24	131	7A21	A
25	136	7A21	A
26	147	7A21	A
28	156	7A21	A
26	141	7A28	A
27	150	7A30	A
28	157	7A30	A
3	010	7A77	A
5	024	7A78	A
7	034	7A78	A
11	060	7A78	A
14	073	7A78	A
15	079	7A78	A
16	085	7A78	A

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
18	094	7A78	A
20	106	7A78	A
22	118	7A78	A
23	126	7A78	A
26	143	7A78	A
27	152	7A78	A

```
001
ISSUE HIO COMMAND
MDI=$TUXX,T7A56,01,00,EQ
Y N
|
| 002
| NO IS NOT VALID
| MDI=$NVLD
|
003
(ENTRY POINT A)
TEST IF THE FILE IS ATTACHED?
MDI=$TUXX,T7A50,01,80,OF
Y N
|
| 004
| NO FILE ATTACHED
| MDI=$FIXT
|
005
ISSUE A FILE RESET
MDI=$TUXX,T7A03,02,0703,EQ,
PLNG=6,PARM=4F0000
Y N
| |
| |
| |
| |
| |
| |
| |

3 3
A B
```

```
| 006
| NO IS NOT VALID GO TO NEXT
| STEP.
| MDI=$NVLD
|
007
ISSUE A RECALIBRATE TO THE FILE
DID THE RECALIBRATE FUNCTION OK ?
MDI=$TUXX,T7A06,01,82,EQ,PLNG=4,
PARM=0001
Y N
|
| 008
| NO IS NOT VALID GO TO NEXT
| STEP.
| MDI=$NVLD
|
009
CHECK GLOBAL TIMEOUT?
MDI=$TUXX,T7A02,06,000020000000,
OF
Y N
|
| 010
| GO TO MAP7A77-A
| GO TO MAP 7A77, ENTRY POINT A.
| MDI=$FIXT
|
011
IS INTERRUPT ACTIVE BEFORE
TIMEOUT?
MDI=$TUXX,T7A02,06,000000000100,
OF
Y N
|
| 012
| READ AND STORE THE DIAGNOSTIC
| SENSE BYTES FOR THE NEXT MAP.
| MDI=$TUXX,T7A08,01,D5,EQ,
| PLNG=1,PARM=@N
| Y N
| | |
| | |
| | |
| | |
| | |
```

013
NO IS NOT VALID GO TO NEXT STEP.
MDI=$NVLD

014
LOAD (C) MAP 7A20 IN MANUAL MODE
GO TO MAP 7A21, ENTRY POINT A.
MDI=$CALL,TYPE=XTRNL,MAP=7A21,EP=A

015

TIMEOUT INDICATES A DEFAULT TIME AFTER WHICH THE SYSTEM MUST ASSUME THAT INTERRUPT AND/OR CONTROL SAMPLE RECEIVED WILL NEVER BECOME ACTIVE.
MINIMUM TIMEOUT IS >3.5 SECONDS FOR START GMP FROM A FILE RECALIBRATE PLUS 20 SECONDS FOR START FROM FILE POWER ON.

IS 'CONTROL SAMPLE RECEIVED' ACTIVE INSIDE TIMEOUT PERIOD ?
MDI=$TUXX,T7A02,04,00000001,OF
Y N

016
IS 'CONTROL SAMPLE RECEIVED' ACTIVE INSIDE TIMEOUT PERIOD ?
MDI=$TUXX,T7A02,10,
0000000000000000040,OF
Y N

017
READ AND STORE THE DIAGNOSTIC SENSE BYTES FOR THE NEXT MAP.
MDI=$TUXX,T7A08,01,C3,EQ,
PLNG=1,PARM=@C
Y N

20MAY83 PN8327652
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```
| | |
| | |
| | |
| | |
| | 018
| | NO IS NOT VALID GO TO NEXT
| | STEP.
| | MDI=$NVLD
| |
| 019
| LOAD (C) MAP 7A20 IN MANUAL
| MODE
| GO TO MAP 7A21, ENTRY POINT A.
| MDI=$CALL,TYPE=XTRNL,MAP=7A21,
| EP=A
|
020
IS INTERRUPT RESET ?
MDI=$TUXX,T7A02,10,
00000000000000000010,0F
Y N
|
| 021
| READ AND STORE THE DIAGNOSTIC
| SENSE BYTES FOR THE NEXT MAP.
| MDI=$TUXX,T7A08,01,D5,EQ,
| PLNG=1,PARM=@N
| Y N
| |
| | 022
| | NO IS NOT VALID GO TO NEXT
| | STEP.
| | MDI=$NVLD
| |
| 023
| LOAD (C) MAP 7A20 IN MANUAL
| MODE
| GO TO MAP 7A21, ENTRY POINT A.
| MDI=$CALL,TYPE=XTRNL,MAP=7A21,
| EP=A
|
024
GO TO PARITY FAILURE MAP 7A78
ENTRY A.
GO TO MAP 7A78, ENTRY POINT A.
MDI=$FIXT
```

```
025
CHECK DISK SPEED                          DISK  SPEED IS CHECKED BEFORE ANY
(NOMINAL SPEED 3125RPM)                   DATA MOVE OPERATION IS PERFORMED
IS DISK SPEED IN 2.5% OF  NOMINAL
SPEED?
MDI=$TUXX,T7A12,06,800000000001,
OF
Y N
|
| 026
| TEST FILE NOT READY
| MDI=$TUXX,T7A02,06,
| 000000000101,OF
| Y N
| |
| | 027
| | READ AND STORE THE DIAGNOSTIC
| | SENSE BYTES FOR THE NEXT MAP.
| | MDI=$TUXX,T7A08,01,D5,EQ,
| | PLNG=1,PARM=@N
| | Y N
| | |
| | | 028
| | | NO  IS NOT VALID GO TO NEXT
| | | STEP.
| | | MDI=$NVLD
| | |
| | 029
| | LOAD (C) MAP 7A20  IN  MANUAL
| | MODE
| | GO TO MAP 7A21,
| | ENTRY POINT A.
| | MDI=$CALL,TYPE=XTRNL,
| | MAP=7A21,EP=A
| |
| 030
| READ  AND  STORE THE DIAGNOSTIC
| SENSE BYTES FOR THE NEXT MAP.
| MDI=$TUXX,T7A08,01,C4,EQ,
| PLNG=1,PARM=@D
| Y N
| | |
| | |
| | |
| | |                                  20MAY83    PN8327652
| | |
                                       ECA03143   PEC375609
7 7 7
K L M                                            MAP 7A20-6
```

```
| | |
| | |
| | |
| | 031
| | NO IS NOT VALID GO TO NEXT
| | STEP.
| | MDI=$NVLD
| |
| 032
| LOAD (C) MAP 7A20 IN MANUAL
| MODE
| GO TO MAP 7A21, ENTRY POINT A.
| MDI=$CALL,TYPE=XTRNL,MAP=7A21,
| EP=A
|
033

CHECK BUS WRAP BACK

IF WRAP BACK FAILS NOTE FAILURE
AND CONTINUE.

READ AND STORE SENSE.
CHECK PARITY OF BUS DATA


IS PARITY GOOD ?
MDI=$TUXX,T7A19,02,8000,OF
Y N
|
| 034
| GO TO PARITY FAILURE MAP 7A78
| ENTRY A.
| GO TO MAP 7A78, ENTRY POINT A.
| MDI=$FIXT
|
035
IS SENSE CORRECT?
MDI=$TUXX,T7A08,02,0082,ON
Y N
| |
| |
| |
| |
| |
| |
| |
| |
| |

8 8
N P
```

WRAP BACK TESTS USING TAGS'010' AND '011'
TYPICAL WRAP BYTES ARE '00' 'FF' AND 'E0'

THIS CHECKS TO SEE IF FILE IS READY, AT HOME AND CAN READ ID.
NOTE: CORRECT END OF MAP7A20 WITH WRONG WRAP BYTE WILL BE TESTED IN MAP7A51

```
| |
| 036
| (PARITY  BIT  IS SET WHEN BIT 3
| IS '1')
| (***1****)
| IS PARITY BIT SET?
| MDI=$TUXX,T7A02,04,00001000,ON
| Y N
| |
| | 037
| | READ AND STORE THE DIAGNOSTIC
| | SENSE BYTES FOR THE NEXT MAP.
| | MDI=$TUXX,T7A08,01,D5,EQ,
| | PLNG=1,PARM=@N
| | Y N
| | |
| | | 038
| | | NO IS NOT VALID GO TO  NEXT
| | | STEP.
| | | MDI=$NVLD
| | |
| | 039
| | LOAD  (C)  MAP 7A20 IN MANUAL
| | MODE
| | GO TO MAP 7A21,
| | ENTRY POINT A.
| | MDI=$CALL,TYPE=XTRNL,
| | MAP=7A21,EP=A
| |
| 040
| GO TO PARITY FAILURE  MAP  7A78
| ENTRY A.
| MDI=$FIXT
|
041
READ TRACK ID USING HEAD 1
IS TRACK ID CORRECT?
MDI=$TUXX,T7A06,02,0400,EQ,
PLNG=4,PARM=201C
Y N
| |
| |
| |
| |
| |
| |
  |
```

```
042
IS FILE READY OFF?
MDI=$TUXX,T7A02,06,000000000001,
OF
Y N
|
| 043
| READ AND STORE THE DIAGNOSTIC
| SENSE BYTES FOR THE NEXT MAP.
| MDI=$TUXX,T7A08,01,D5,EQ,
| PLNG=1,PARM=@N
| Y N
| |
| | 044
| | NO IS NOT VALID GO TO NEXT
| | STEP.
| | MDI=$NVLD
| |
| 045
| LOAD (C) MAP 7A20 IN MANUAL
| MODE
| GO TO MAP 7A21, ENTRY POINT A.
| MDI=$CALL,TYPE=XTRNL,MAP=7A21,
| EP=A
|
046
READ AND STORE THE DIAGNOSTIC
SENSE BYTES FOR THE NEXT MAP.
MDI=$TUXX,T7A08,01,C1,EQ,PLNG=1,
PARM=@A
Y N
|
| 047
| NO IS NOT VALID GO TO NEXT
| STEP.
| MDI=$NVLD
|
048
LOAD (C) MAP 7A20 IN MANUAL MODE
GO TO MAP 7A21, ENTRY POINT A.
MDI=$CALL,TYPE=XTRNL,MAP=7A21,
EP=A
```

```
049
SEEK TO TRACK 001.                          THIS CHECKS IF THE FILE CAN
CHECK AND STORE SENSE                       PERFORM SEEKS.
(CORRECT SENSE IS HEXADECIMAL  80
(10000000))
IS SENSE CORRECT?
MDI=$TUXX,T7A06,01,80,EQ,PLNG=09,
PARM=0000/0401
Y N
|
| 050
| (PARITY  BIT  IS SET WHEN BIT 3
| IS '1' )
| IS PARITY BIT SET?
| MDI=$TUXX,T7A02,06,
| 000000004000,ON
| Y N
| |
| | 051
| | READ AND STORE THE DIAGNOSTIC
| | SENSE BYTES FOR THE NEXT MAP.
| | MDI=$TUXX,T7A08,01,C6,EQ,
| | PLNG=1,PARM=@F
| | Y N
| | |
| | | 052
| | | NO IS NOT VALID GO TO  NEXT
| | | STEP.
| | | MDI=$NVLD
| | |
| | 053
| | LOAD  (C)  MAP 7A20 IN MANUAL
| | MODE
| | GO TO MAP 7A21,
| | ENTRY POINT A.
| | MDI=$CALL,TYPE=XTRNL,
| | MAP=7A21,EP=A
| |
| 054
| GO TO PARITY FAILURE  MAP  7A78
| ENTRY A.
| MDI=$FIXT
|
|
|                                          20MAY83    PN8327652

1                                          ECA03143   PEC375609
1
S                                                   MAP 7A20-10
```

|
|
055
READ TRACK ID USING HEAD 1
(TRACK 001 ID)
IS TRACK ID CORRECT?
MDI=$TUXX,T7A06,2,0401,EQ,PLNG=4,
PARM=201C
Y N
|
| 056
| READ AND STORE THE DIAGNOSTIC
| SENSE BYTES FOR THE NEXT MAP.
| MDI=$TUXX,T7A08,01,C1,EQ,
| PLNG=1,PARM=@A
| Y N
| |
| | 057
| | NO IS NOT VALID GO TO NEXT
| | STEP.
| | MDI=$NVLD
| |
| 058
| LOAD (C) MAP 7A20 IN MANUAL
| MODE
| GO TO MAP 7A21, ENTRY POINT A.
| MDI=$CALL,TYPE=XTRNL,MAP=7A21,
| EP=A
|
059
SEEK TO TRACK 000
CHECK AND STORE SENSE
CHECK PARITY OF BUS DATA
IS PARITY GOOD ?
MDI=$TUXX,T7A06,01,80,EQ,PLNG=09,
PARM=0000/0400
Y N
|
| 060
| GO TO PARITY FAILURE MAP 7A78
| ENTRY A.
| GO TO MAP 7A78, ENTRY POINT A.
| MDI=$FIXT
|
|
|
|

```
061
(CORRECT SENSE HEXADECIMAL 80
(10000000))
IS SENSE CORRECT?
MDI=$TUXX,T7A02,01,80,EQ
Y N
|
| 062
| (PARITY BIT IS SET WHEN BIT 3
| IS '1'.)
| IS PARITY BIT SET?
| MDI=$TUXX,T7A02,06,
| 000000004000,ON
| Y N
| |
| | 063
| | READ AND STORE THE DIAGNOSTIC
| | SENSE BYTES FOR THE NEXT MAP.
| | MDI=$TUXX,T7A08,01,C2,EQ,
| | PLNG=1,PARM=@B
| | Y N
| | |
| | | 064
| | | NO IS NOT VALID GO TO NEXT
| | | STEP.
| | | MDI=$NVLD
| | |
| | 065
| | LOAD (C) MAP 7A20 IN MANUAL
| | MODE
| | GO TO MAP 7A21,
| | ENTRY POINT A.
| | MDI=$CALL,TYPE=XTRNL,
| | MAP=7A21,EP=A
| |
| 066
| GO TO PARITY FAILURE MAP 7A78
| ENTRY A.
| MDI=$FIXT
|
|
|
|
|
|
```

|
|
067
READ TRACK ID USING HEAD 1
(TRACK 000 ID)
IS TRACK ID CORRECT?
MDI=$TUXX,T7A06,2,0400,EQ,PLNG=4,
PARM=201C
Y N
|
| 068
| READ AND STORE THE DIAGNOSTIC
| SENSE BYTES FOR THE NEXT MAP.
| MDI=$TUXX,T7A08,01,C1,EQ,
| PLNG=1,PARM=@A
| Y N
| |
| | 069
| | NO IS NOT VALID GO TO NEXT
| | STEP.
| | MDI=$NVLD
| |
| 070
| LOAD (C) MAP 7A20 IN MANUAL
| MODE
| GO TO MAP 7A21, ENTRY POINT A.
| MDI=$CALL,TYPE=XTRNL,MAP=7A21,
| EP=A
|
071
RECALIBRATE TO HOME
CHECK AND STORE SENSE
(CORRECT SENSE HEXADECIMAL 82
(10000010))
IS SENSE CORRECT?
MDI=$TUXX,T7A06,01,82,EQ,PLNG=4,
PARM=0001
Y N
| |
| |
| |
| |
| |
| |
| |
| |
| |

```
| |
| |
| 072
| IS PARITY GOOD ?
| MDI=$TUXX,T7A02,06,
| 000000004000,ON
| Y N
| |
| | 073
| | GO TO PARITY FAILURE MAP 7A78
| | ENTRY A.
| | GO TO MAP 7A78,
| | ENTRY POINT A.
| | MDI=$FIXT
| |
| 074
| READ AND STORE THE DIAGNOSTIC
| SENSE BYTES FOR THE NEXT MAP.
| MDI=$TUXX,T7A08,01,D9,EQ,
| PLNG=1,PARM=@R
| Y N
| |
| | 075
| | NO IS NOT VALID GO TO NEXT
| | STEP.
| | MDI=$NVLD
| |
| 076
| LOAD (C) MAP 7A20 IN MANUAL
| MODE
| GO TO MAP 7A21, ENTRY POINT A.
| MDI=$CALL,TYPE=XTRNL,MAP=7A21,
| EP=A
|
077
SEEK TO TRACK 128
CHECK AND STORE SENSE
(CORRECT SENSE IS HEXADECIMAL 80
(10000000))
IS SENSE CORRECT?
MDI=$TUXX,T7A06,01,80,EQ,PLNG=9,
PARM=0000/0480
Y N
| |
| |
| |
| |
```

THESE STEPS PERFORM SERVO CALIBRATION AND ACCESS SPEED CHECKS.

```
078
IS PARITY GOOD ?
MDI=$TUXX,T7A02,06,
000000004000,0F
Y N
| 079
| GO TO PARITY FAILURE MAP 7A78
| ENTRY A.
| GO TO MAP 7A78,
| ENTRY POINT A.
| MDI=$FIXT
080
READ AND STORE THE DIAGNOSTIC
SENSE BYTES FOR THE NEXT MAP.
MDI=$TUXX,T7A08,01,D6,EQ,
PLNG=1,PARM=@0
Y N
| 081
| NO IS NOT VALID GO TO NEXT
| STEP.
| MDI=$NVLD
082
LOAD (C) MAP 7A20 IN MANUAL
MODE
GO TO MAP 7A21, ENTRY POINT A.
MDI=$CALL,TYPE=XTRNL,MAP=7A21,
EP=A

083
RECALIBRATE TO HOME
CHECK AND STORE SENSE
(CORRECT SENSE HEXADECIMAL 82
(10000010))
IS SENSE CORRECT?
MDI=$TUXX,T7A06,01,82,EQ,PLNG=4,
PARM=0001
Y N
```

```
|
|
084
IS PARITY GOOD ?
MDI=$TUXX,T7A02,06,000000004000,
OF
Y N
|
| 085
| GO TO PARITY FAILURE MAP 7A78
| ENTRY A.
| GO TO MAP 7A78, ENTRY POINT A.
| MDI=$FIXT
|
086
READ AND STORE THE DIAGNOSTIC
SENSE BYTES FOR THE NEXT MAP.
MDI=$TUXX,T7A08,01,D9,EQ,PLNG=1,
PARM=@R
Y N
|
| 087
| NO IS NOT VALID GO TO NEXT
| STEP.
| MDI=$NVLD
|
088
LOAD (C) MAP 7A20 IN MANUAL MODE
GO TO MAP 7A21, ENTRY POINT A.
MDI=$CALL,TYPE=XTRNL,MAP=7A21,
EP=A
```

089
PERFORM SEEK SPEED CHECKS.

MINIMUM CONDITIONS ARE SEEK TIMINGS
1 TRACK < 9.0MSEC.
359 TRACKS < 70MSEC.
MANY SEEKS WHICH INCLUDE 1 AND 359 TRACK LENGTH SEEKS AND NOT LESS THAN 25 ACCESSES SHOULD HAVE AN AVERAGE ACCESS TIME OF < 27MSEC.

ARE SPEED CHECKS OK?
MDI=$TUXX,T7A11,01,80,OF
Y N
|
| 090
| READ AND STORE THE DIAGNOSTIC
| SENSE BYTES FOR THE NEXT MAP.
| MDI=$TUXX,T7A08,01,E2,EQ,
| PLNG=1,PARM=@S
| Y N
| |
| | 091
| | NO IS NOT VALID GO TO NEXT
| | STEP.
| | MDI=$NVLD
| |
| 092
| LOAD (C) MAP 7A20 IN MANUAL
| MODE
| GO TO MAP 7A21, ENTRY POINT A.
| MDI=$CALL,TYPE=XTRNL,MAP=7A21,
| EP=A
|
|
|
|
|
|
|
|
|
|
|

```
|
|
093
SEEK TO CE TRACK 359
CHECK AND STORE SENSE
CHECK PARITY OF BUS DATA
IS PARITY GOOD ?
MDI=$TUXX,T7A06,01,80,EQ,PLNG=9,
PARM=0000/0567
Y N
|
| 094
| GO  TO  PARITY FAILURE MAP 7A78
| ENTRY A.
| GO TO MAP 7A78, ENTRY POINT A.
| MDI=$FIXT
|
095
(CORRECT  SENSE  HEXADECIMAL  80
(10000000))
IS SENSE CORRECT?
MDI=$TUXX,T7A02,01,80,EQ
Y N
|
| 096
| (PARITY BIT IS SET WHEN  BIT  3
| IS '1'.)
| IS PARITY BIT SET?
| MDI=$TUXX,T7A02,06,
| 000000004000,0F
| Y N
| |
| | 097
| | READ AND STORE THE DIAGNOSTIC
| | SENSE BYTES FOR THE NEXT MAP.
| | MDI=$TUXX,T7A08,01,D6,EQ,
| | PLNG=1,PARM=00
| | Y N
| | |
| | | 098
| | | NO  IS NOT VALID GO TO NEXT
| | | STEP.
| | | MDI=$NVLD
| | |
| | |
| | |
```

THIS STEP PREPARES FOR FIRST FILE DATA OPERATION BY READING AND WRITING ON THE CE TRACK.

```
| | |
| | |
| | 099
| | LOAD (C) MAP 7A20  IN  MANUAL
| | MODE
| | GO TO MAP 7A21,
| | ENTRY POINT A.
| | MDI=$CALL,TYPE=XTRNL,
| | MAP=7A21,EP=A
| |
| 100
| GO  TO  PARITY FAILURE MAP 7A78
| ENTRY A.
| MDI=$FIXT
|
101
READ TRACK ID USING HEAD 1
(TRACK 359 ID)
IS TRACK ID CORRECT?
MDI=$TUXX,T7A06,02,0567,EQ,
PLNG=4,PARM=201C
Y N
|
| 102
| READ AND STORE  THE  DIAGNOSTIC
| SENSE BYTES FOR THE NEXT MAP.
| MDI=$TUXX,T7A08,01,C1,EQ,
| PLNG=1,PARM=@A
| Y N
| |
| | 103
| | NO  IS  NOT  VALID GO TO NEXT
| | STEP.
| | MDI=$NVLD
| |
| 104
| LOAD (C)  MAP  7A20  IN  MANUAL
| MODE
| GO TO MAP 7A21, ENTRY POINT A.
| MDI=$CALL,TYPE=XTRNL,MAP=7A21,
| EP=A
|
|
|
|
|
```

```
|
|
105
SEEK TO TRACK 000.                    THIS COMPLETES CHECK OF SEEK AND
CHECK AND STORE SENSE                 RECALIBRATE.
CHECK PARITY OF BUS DATA
IS PARITY GOOD ?
MDI=$TUXX,T7A06,01,80,EQ,PLNG=9,
PARM=0000/0400
Y N
|
| 106
| GO TO PARITY FAILURE  MAP  7A78
| ENTRY A.
| GO TO MAP 7A78, ENTRY POINT A.
| MDI=$FIXT
|
107
(CORRECT  SENSE IS HEXADECIMAL 80
(10000000))
IS SENSE CORRECT?
MDI=$TUXX,T7A02,01,80,EQ
Y N
|
| 108
| (PARITY BIT IS SET WHEN  BIT  3
| IS '1'.)
| IS PARITY BIT SET?
| MDI=$TUXX,T7A02,06,
| 000000004000,0F
| Y N
| |
| | 109
| | READ AND STORE THE DIAGNOSTIC
| | SENSE BYTES FOR THE NEXT MAP.
| | MDI=$TUXX,T7A08,01,C9,EQ,
| | PLNG=1,PARM=@I
| | Y N
| | |
| | | 110
| | | NO  IS NOT VALID GO TO NEXT
| | | STEP.
| | | MDI=$NVLD
| | |
| | |
| | |
```

```
| | |
| | |
| | 111
| | LOAD (C) MAP 7A20  IN  MANUAL
| | MODE
| | GO TO MAP 7A21,
| | ENTRY POINT A.
| | MDI=$CALL,TYPE=XTRNL,
| | MAP=7A21,EP=A
| |
| 112
| GO  TO  PARITY FAILURE MAP 7A78
| ENTRY A.
| MDI=$FIXT
|
113
READ TRACK ID USING HEAD 1
IS TRACK ID CORRECT?
MDI=$TUXX,T7A06,02,0400,EQ,
PLNG=04,PARM=201C
Y N
|
| 114
| READ AND STORE  THE  DIAGNOSTIC
| SENSE BYTES FOR THE NEXT MAP.
| MDI=$TUXX,T7A08,01,C1,EQ,
| PLNG=1,PARM=@A
| Y N
| |
| | 115
| | NO  IS  NOT  VALID GO TO NEXT
| | STEP.
| | MDI=$NVLD
| |
| 116
| LOAD (C)  MAP  7A20  IN  MANUAL
| MODE
| GO TO MAP 7A21, ENTRY POINT A.
| MDI=$CALL,TYPE=XTRNL,MAP=7A21,
| EP=A
|
|
|
|
|
|
```

```
|
|
117
SEEK TO TRACK 359
CHECK AND STORE SENSE
CHECK PARITY OF BUS DATA
IS PARITY GOOD ?
MDI=$TUXX,T7A06,01,80,EQ,PLNG=9,
PARM=0000/0567
Y N
|
| 118
| GO  TO  PARITY FAILURE MAP 7A78
| ENTRY A.
| GO TO MAP 7A78, ENTRY POINT A.
| MDI=$FIXT
|
119
(CORRECT SENSE 10000000 )
IS SENSE CORRECT?
MDI=$TUXX,T7A02,01,80,EQ
Y N
|
| 120
| (PARITY BIT IS SET WHEN  BIT  3
| IS '1'.)
| IS PARITY BIT SET?
| MDI=$TUXX,T7A02,04,00000100,ON
| Y N
| |
| | 121
| | READ AND STORE THE DIAGNOSTIC
| | SENSE BYTES FOR THE NEXT MAP.
| | MDI=$TUXX,T7A08,01,D6,EQ,
| | PLNG=1,PARM=@0
| | Y N
| | |
| | | 122
| | | NO  IS NOT VALID GO TO NEXT
| | | STEP.
| | | MDI=$NVLD
| | |
| | |
| | |
| | |
| | |
```

```
| | |
| | |
| | 123
| | LOAD (C) MAP 7A20  IN  MANUAL
| | MODE
| | GO TO MAP 7A21,
| | ENTRY POINT A.
| | MDI=$CALL,TYPE=XTRNL,
| | MAP=7A21,EP=A
| |
| 124
| GO  TO  PARITY FAILURE MAP 7A78
| ENTRY A.
| MDI=$FIXT
|
125
RECALIBRATE TO HOME.
CHECK PARITY OF BUS DATA
IS PARITY GOOD ?
MDI=$TUXX,T7A06,01,82,EQ,PLNG=04,
PARM=0001
Y N
|
| 126
| GO TO PARITY FAILURE  MAP  7A78
| ENTRY A.
| GO TO MAP 7A78, ENTRY POINT A.
| MDI=$FIXT
|
127
(CORRECT  SENSE IS HEXADECIMAL 82
(10000010))
IS SENSE CORRECT?
MDI=$TUXX,T7A02,01,82,EQ
Y N
|
| 128
| (PARITY BIT IS SET WHEN  BIT  3
| IS '1'.)
| IS PARITY BIT SET?
| MDI=$TUXX,T7A02,06,
| 000000004000,0F
| Y N
| | |
| | |
| | |
```

```
| | |
| | |
| | 129
| | READ AND STORE THE DIAGNOSTIC
| | SENSE BYTES FOR THE NEXT MAP.
| | MDI=$TUXX,T7A08,01,D9,EQ,
| | PLNG=1,PARM=@R
| | Y N
| | |
| | | 130
| | | NO  IS NOT VALID GO TO NEXT
| | | STEP.
| | | MDI=$NVLD
| | |
| | 131
| | LOAD (C) MAP 7A20  IN  MANUAL
| | MODE
| | GO TO MAP 7A21,
| | ENTRY POINT A.
| | MDI=$CALL,TYPE=XTRNL,
| | MAP=7A21,EP=A
| |
| 132
| GO  TO  PARITY FAILURE MAP 7A78
| ENTRY A.
| MDI=$FIXT
|
133
READ TRACK ID USING HEAD 1
(TRACK 000 ID)
IS TRACK ID CORRECT?
MDI=$TUXX,T7A06,02,0400,EQ,
PLNG=4,PARM=201C
Y N
|
| 134
| READ AND STORE  THE  DIAGNOSTIC
| SENSE BYTES FOR THE NEXT MAP.
| MDI=$TUXX,T7A08,01,C1,EQ,
| PLNG=1,PARM=@A
| Y N
| | |
| | |
| | |
| | |
| | |
```

```
| | |
| | |
| | 135
| | NO  IS  NOT  VALID GO TO NEXT
| | STEP.
| | MDI=$NVLD
| |
| 136
| LOAD (C)  MAP  7A20  IN  MANUAL
| MODE
| GO TO MAP 7A21, ENTRY POINT A.
| MDI=$CALL,TYPE=XTRNL,MAP=7A21,
| EP=A
|
137
RUN  RANDOM  SEEK PROGRAM READING
IDS.
CHECK SENSE  AFTER  EACH  COMMAND
COMPLETE.
LEAVE  TO  CORRECT  MAP  CHART IF
FAILURE OCCURS.
```

THIS STEP IS LAST VERIFY THAT FILE IS OPERATING CORRECTLY.

RANDOM SEEK PROGRAM SHOULD INCLUDE ODD AND EVEN ADDRESSES SELECTED OVER THE FULL CYLINDER RANGE. A MINIMUM OF 100 ADDRESSES SHOULD BE INCLUDED.

```
RANDOM SEEK PROGRAM RUN OK?
MDI=$TUXX,T7A09,02,00E0,0F
Y N
|
| 138
| IS THE SEEK OK ?
| MDI=$TUXX,T7A02,01,04,0F
| Y N
| |
| | 139
| | READ AND STORE THE DIAGNOSTIC
| | SENSE BYTES FOR THE NEXT MAP.
| | MDI=$TUXX,T7A08,01,E7,EQ,
| | PLNG=1,PARM=@X
| | Y N
| | |
| | | 140
| | | NO  IS NOT VALID GO TO NEXT
| | | STEP.
| | | MDI=$NVLD
| | |
| | |
| | |
```

```
| |
| |
| 141
| LOAD (C) MAP 7A20 IN MANUAL
| MODE
| GO TO MAP 7A28, ENTRY POINT A.
| MDI=$CALL,TYPE=XTRNL,MAP=7A28,
| EP=A
|
142
IS PARITY GOOD ?
MDI=$TUXX,T7A02,06,000000004000,
OF
Y N
|
| 143
| GO TO PARITY FAILURE MAP 7A78
| ENTRY A.
| GO TO MAP 7A78, ENTRY POINT A.
| MDI=$FIXT
|
144
IS TRACK ID CORRECT?
MDI=$TUXX,T7A02,02,0020,OF
Y N
|
| 145
| READ AND STORE THE DIAGNOSTIC
| SENSE BYTES FOR THE NEXT MAP.
| MDI=$TUXX,T7A08,01,C1,EQ,
| PLNG=1,PARM=@A
| Y N
| |
| | 146
| | NO IS NOT VALID GO TO NEXT
| | STEP.
| | MDI=$NVLD
| |
| 147
| LOAD (C) MAP 7A20 IN MANUAL
| MODE
| GO TO MAP 7A21, ENTRY POINT A.
| MDI=$CALL,TYPE=XTRNL,MAP=7A21,
| EP=A
|
|
```

```
| |
| |
| 148
| SHOULD NEVER GET HERE
| MDI=$GOTO,TYPE=INTRNL,EP=B,
| MAP=7A20
|
149
ARE FIXED HEADS USED ON THIS
FILE?
MDI=$TUXX,T7A08,04,00000400,ON
Y N
|
| 150
| GO TO MAP7A30
| LOAD (C) MAP 7A30 IN MANUAL
| MODE
| GO TO MAP 7A30, ENTRY POINT A.
| MDI=$GOTO,TYPE=XTRNL,MAP=7A30,
| EP=A
|
151
SEEK TO FIXED HEAD
CHECK AND STORE SENSE
CHECK PARITY OF BUS DATA
IS PARITY GOOD ?
MDI=$TUXX,T7A06,01,00,EQ,PLNG=9,
PARM=0000/41FF
Y N
|
| 152
| GO TO PARITY FAILURE MAP 7A78
| ENTRY A.
| GO TO MAP 7A78, ENTRY POINT A.
| MDI=$FIXT
|
153
READ TRACK ID USING FIXED HEAD
(TRACK 41FF ID)
IS TRACK ID CORRECT?
MDI=$TUXX,T7A06,02,41FF,EQ,
PLNG=4,PARM=201C
Y N
| |
| |
| |
```

```
| |
| |
| 154
| READ AND STORE THE DIAGNOSTIC
| SENSE BYTES FOR THE NEXT MAP.
| MDI=$TUXX,T7A08,01,C1,EQ,
| PLNG=1,PARM=@A
| Y N
| |
| | 155
| | NO IS NOT VALID GO TO NEXT
| | STEP.
| | MDI=$NVLD
| |
| 156
| LOAD (C) MAP 7A20 IN MANUAL
| MODE
| GO TO MAP 7A21, ENTRY POINT A.
| MDI=$CALL,TYPE=XTRNL,MAP=7A21,
| EP=A
|
157
GO TO MAP7A30
LOAD (C) MAP 7A30 IN MANUAL MODE
GO TO MAP 7A30, ENTRY POINT A.
MDI=$GOTO,TYPE=XTRNL,MAP=7A30,
EP=A
```

FAILURE ISOLATION MAP

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP ENTRY POINT	PAGE NUMBER	STEP NUMBER
7A20	A	3	001
7A20	B	21	114
7A40	A	3	001

EXIT POINTS

EXIT THIS MAP PAGE NUMBER	STEP NUMBER	TO MAP NUMBER	ENTRY POINT
21	116	7A22	C
3	005	7A23	E
4	007	7A25	I
6	025	7A27	J
18	099	7A70	A
5	018	7A70	B
15	077	7A70	B
18	097	7A70	B
20	108	7A70	B
22	123	7A70	B
25	141	7A70	B
25	142	7A70	B
26	146	7A70	B
29	169	7A70	B
29	171	7A70	B
30	173	7A70	B
32	189	7A70	B
33	191	7A70	B
5	016	7A70	C
7	029	7A70	C
11	055	7A70	C
11	056	7A70	C
12	060	7A70	C
15	081	7A70	C
20	109	7A70	C
23	126	7A70	C
27	153	7A70	C
32	186	7A70	C
33	196	7A70	C
12	061	7A70	D
23	127	7A70	D
9	040	7A70	E
10	047	7A70	E
13	066	7A70	E
16	082	7A70	E

20MAY83 PN8327655

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EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
33	193	7A70	E
34	203	7A70	E
34	201	7A70	I
20	111	7A70	J
25	144	7A70	J
27	157	7A70	J
35	204	7A72	A
16	084	7A72	C
17	090	7A72	C
27	158	7A72	D
23	130	7A72	E
24	137	7A72	E
25	140	7A72	E
8	035	7A72	F
9	041	7A72	F
10	050	7A72	F
11	054	7A72	F
11	057	7A72	F
12	062	7A72	F
19	106	7A72	F
33	194	7A72	F
16	083	7A72	I
16	088	7A72	I
17	091	7A72	I
6	020	7A72	J
24	136	7A72	J
30	176	7A72	K
18	096	7A72	M
6	021	7A72	O
4	011	7A72	Q
5	017	7A72	U
5	019	7A72	U
19	103	7A72	U
13	069	7A72	V
34	200	7A72	V

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
35	208	7A73	B
28	163	7A76	D
28	164	7A76	D
23	131	7A76	E
16	086	7A76	F
18	100	7A76	F
33	190	7A76	F
19	104	7A76	G
23	129	7A76	G
30	175	7A76	H
34	197	7A76	H
34	198	7A76	H
27	154	7A76	I
28	162	7A76	I
28	165	7A76	I
26	147	7A76	J
20	112	7A76	L
23	132	7A76	P
13	068	7A76	Q
8	036	7A76	R
9	044	7A76	R
13	065	7A76	R
13	067	7A76	R
15	078	7A76	R
15	079	7A76	R
27	156	7A76	S
31	181	7A76	S
35	206	7A76	S
30	174	7A76	T
35	207	7A76	T
7	030	7A76	U
9	038	7A76	U
9	043	7A76	U
20	113	7A77	A

```
001
(ENTRY POINT A)
TIME OUT OF 'CONTROL SAMPLE
RECEIVED'
IS ERROR HALT CODE = C ?
MDI=$TUXX,T7A10,01,C3,EQ
Y N
|
| 002
| 'NOT READY' INDICATED
| IS ERROR HALT CODE = N ?
| MDI=$TUXX,T7A02,01,D5,EQ
| Y N
| |
| | 003
| | MAP7A21-B
| | GO TO PAGE 21, STEP 114,
| | ENTRY POINT B.
| | MDI=$GOTO,TYPE=INTRNL,EP=B
| |
| 004
| TAG 7 BIT 4
| IS LINE PULSING ?
| MDI=$TUXX,T7A02,09,
| 0000000000000008,ON
| Y N
| |
| | 005
| | MAP7A23-E
| | GO TO MAP 7A23,
| | ENTRY POINT E.
| | MDI=$CALL,TYPE=XTRNL,EP=E,
| | MAP=7A23
| |
| 006
| STATUS BIT 5
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,02,0004,OF
| Y N
| | |
| | |
| | |
| | |
| | |
| | |
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```

```
| |
| |
| |
| 007
| MAP7A25-I
| GO TO MAP 7A25, ENTRY POINT I.
| MDI=$CALL,TYPE=XTRNL,EP=I,
| MAP=7A25
|
008
STATUS BIT 6
IS LINE DOWN ?
MDI=$TUXX,T7A02,02,0002,OF
Y N
|
| 009
| TAG 5 BIT 3
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,07,
| 0000100000010,OF
| Y N
| |
| | 010
| | STATUS BIT 1
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,02,0040,OF
| | Y N
| | |
| | | 011
| | | MAP7A72-Q
| | | GO TO MAP 7A72,
| | | ENTRY POINT Q.
| | | MDI=$FIXT
| | |
| | 012
| | STATUS BIT 7
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,02,0001,OF
| | Y N
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
```

```
013
TAG 7 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,05,0000000080,OF
Y N
|
| 014
| 'INTERRUPT' RECEIVED ?
| MDI=$TUXX,T7A02,14,
| 00000000000000000000000100,OF
| Y N
| |
| | 015
| | TAG 7 BIT 7
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,09,
| | 000000000100000001,OF
| | Y N
| | |
| | | 016
| | | MAP7A70-C
| | | GO TO MAP 7A70,
| | | ENTRY POINT C.
| | | MDI=$FIXT
| | |
| | 017
| | MAP7A72-U
| | GO TO MAP 7A72,
| | ENTRY POINT U.
| | MDI=$FIXT
| |
| 018
| MAP7A70-B
| GO TO MAP 7A70, ENTRY POINT B.
| MDI=$FIXT
|
019
MAP7A72-U
GO TO MAP 7A72, ENTRY POINT U.
MDI=$FIXT
```

```
| | |
| | | 020
| | | MAP7A72-J
| | | GO TO MAP 7A72,
| | | ENTRY POINT J.
| | | MDI=$FIXT
| | |
| | 021
| | MAP7A72-O
| | GO TO MAP 7A72, ENTRY POINT O.
| | MDI=$FIXT
| |
| 022
| TAG 7 BIT 7
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,09,
| 0000000001000000,OF
| Y N
| |
| | 023
| | TAG 7 BIT 3
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,09,
| | 0000000010000000,OF
| | Y N
| | |
| | | 024
| | | TAG 5 BIT 4
| | | IS LINE DOWN ?
| | | MDI=$TUXX,T7A02,09,
| | | 0000800000080000,OF
| | | Y N
| | | |
| | | | 025
| | | | MAP7A27-J
| | | | GO TO MAP 7A27,
| | | | ENTRY POINT J.
| | | | MDI=$CALL,TYPE=XTRNL,EP=J,
| | | | MAP=7A27
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | |
```

026
TAG 5 BIT 3
IS LINE DOWN ?
MDI=$TUXX,T7A02,09,
0000100000000100000,0F
Y N

027
TAG 7 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,09,
0000000080000000080,0F
Y N

028
TAG 6 BIT 5
IS LINE PULSING ?
MDI=$TUXX,T7A02,08,
0000000000000004,0N
Y N

029
MAP7A70-C
GO TO MAP 7A70,
ENTRY POINT C.
MDI=$FIXT

030
MAP7A76-U
GO TO MAP 7A76,
ENTRY POINT U.
MDI=$FIXT

031
TAG 5 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,07,
00008000000080,0F
Y N

032
TAG 5 BIT 2
IS LINE PULSING ?
MDI=$TUXX,T7A02,07,
00000000000020,ON
Y N
|
| 033
| TAG 6 BIT 5
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,09,
| 000000040000000400,OF
| Y N
| |
| | 034
| | TAG 6 BIT 5
| | IS LINE PULSING ?
| | MDI=$TUXX,T7A02,08,
| | 0000000000000040,ON
| | Y N
| | |
| | | 035
| | | MAP7A72-F
| | | GO TO MAP 7A72,
| | | ENTRY POINT F.
| | | MDI=$FIXT
| | |
| | 036
| | MAP7A76-R
| | GO TO MAP 7A76,
| | ENTRY POINT R.
| | MDI=$FIXT
| |
| 037
| TAG 5 BIT 0
| IS LINE PULSING ?
| MDI=$TUXX,T7A02,07,
| 00000000000080,ON
| Y N

```
| | |
| | |
| | |
| | |
| | 038
| | MAP7A76-U
| | GO TO MAP 7A76,
| | ENTRY POINT U.
| | MDI=$FIXT
| |
| 039
| TAG 6 BIT 1
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,08,
| 0000004000000040,0F
| Y N
| |
| | 040
| | MAP7A70-E
| | GO TO MAP 7A70,
| | ENTRY POINT E.
| | MDI=$FIXT
| |
| 041
| MAP7A72-F
| GO TO MAP 7A72, ENTRY POINT F.
| MDI=$FIXT
|
042
TAG 5 BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,07,
0000010000000l,0F
Y N
|
| 043
| MAP7A76-U
| GO TO MAP 7A76, ENTRY POINT U.
| MDI=$FIXT
|
044
MAP7A76-R
GO TO MAP 7A76, ENTRY POINT R.
MDI=$FIXT
```

045
TAG 5 BIT 2
IS LINE PULSING ?
MDI=$TUXX,T7A02,07,
00000000000020,ON
Y N
|
| 046
| TAG 6 BIT 4
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,08,
| 0000000800000008,OF
| Y N
| |
| | 047
| | MAP7A70-E
| | GO TO MAP 7A70,
| | ENTRY POINT E.
| | MDI=$FIXT
| |
| 048
| TAG 6 BIT 5
| IS LINE PULSING ?
| MDI=$TUXX,T7A02,08,
| 0000000000000004,ON
| Y N
| |
| | 049
| | TAG 5 BIT 1
| | IS LINE PULSING ?
| | MDI=$TUXX,T7A02,07,
| | 00000000000040,ON
| | Y N
| | |
| | | 050
| | | MAP7A72-F
| | | GO TO MAP 7A72,
| | | ENTRY POINT F.
| | | MDI=$FIXT

```
051
TAG 6 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,08,
0000008000000080,OF
Y N
|
| 052
| TAG 6 BIT 0
| IS LINE PULSING ?
| MDI=$TUXX,T7A02,08,
| 0000000000000080,ON
| Y N
| |
| | 053
| | WERE  ALL WRAP BACK CHECKS OK
| | ?
| | MDI=$TUXX,T7A02,06,
| | 000000000080,OF
| | Y N
| | |
| | | 054
| | | MAP7A72-F
| | | GO TO MAP 7A72,
| | | ENTRY POINT F.
| | | MDI=$FIXT
| | |
| | 055
| | MAP7A70-C
| | GO TO MAP 7A70,
| | ENTRY POINT C.
| | MDI=$FIXT
| |
| 056
| MAP7A70-C
| GO TO MAP 7A70, ENTRY POINT C.
| MDI=$FIXT
|
057
MAP7A72-F
GO TO MAP 7A72, ENTRY POINT F.
MDI=$FIXT
```

```
| 058
| TAG 6 BIT 0
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,08,
| 0000008000000080,OF
| Y N
| |
| | 059
| | TAG 5 BIT 1
| | IS LINE PULSING ?
| | MDI=$TUXX,T7A02,07,
| | 00000000000040,ON
| | Y N
| | |
| | | 060
| | | MAP7A70-C
| | | GO TO MAP 7A70,
| | | ENTRY POINT C.
| | | MDI=$FIXT
| | |
| | 061
| | MAP7A70-D
| | GO TO MAP 7A70,
| | ENTRY POINT D.
| | MDI=$FIXT
| |
| 062
| MAP7A72-F
| GO TO MAP 7A72, ENTRY POINT F.
| MDI=$FIXT
|
063
TAG 5 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,07,
00004000000040,OF
Y N
| |
| |
| |
| |
| |
| |
| |
```

```
| |
| | | |     PAGE  13 OF  35
| | | |
| | | |
| | | 064
| | | TAG 6 BIT 3
| | | IS LINE DOWN ?
| | | MDI=$TUXX,T7A02,08,
| | | 0000001000000010,0F
| | | Y N
| | | |
| | | | 065
| | | | MAP7A76-R
| | | | GO TO MAP 7A76,
| | | | ENTRY POINT R.
| | | | MDI=$FIXT
| | | |
| | | 066
| | | MAP7A70-E
| | | GO TO MAP 7A70,
| | | ENTRY POINT E.
| | | MDI=$FIXT
| | |
| | 067
| | MAP7A76-R
| | GO TO MAP 7A76,
| | ENTRY POINT R.
| | MDI=$FIXT
| |
| 068
| MAP7A76-Q
| GO TO MAP 7A76, ENTRY POINT Q.
| MDI=$FIXT
|
069
MAP7A72-V
GO TO MAP 7A72, ENTRY POINT V.
MDI=$FIXT
```

```
070
TAG 5 BIT 2
IS LINE PULSING ?
MDI=$TUXX,T7A02,07,
00000000000020,ON
Y N
|
| 071
| TAG 5 BIT 1
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,07,
| 00004000000040,OF
| Y N
| |
| | 072
| | TAG 5 BIT 1
| | IS LINE PULSING ?
| | MDI=$TUXX,T7A02,07,
| | 00000000000040,ON
| | Y N
| | |
| | | 073
| | | TAG 6 BIT 5
| | | IS LINE PULSING ?
| | | MDI=$TUXX,T7A02,08,
| | | 0000000000000004,ON
| | | Y N
| | | |
| | | | 074
| | | | TAG 6 BIT 5
| | | | IS LINE DOWN ?
| | | | MDI=$TUXX,T7A02,08,
| | | | 0000000400000004,OF
| | | | Y N
| | | | | |
| | | | | |
| | | | | |
| | | | | |
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| | | | | |
| | | | | |
| | | | | |
| | | |
```

```
| |
| |
| 075
| TAG 5 BIT 0
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,07,
| 00008000000080,0F
| Y N
| |
| | 076
| | TAG 6 BIT 1
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,08,
| | 0000004000000040,0F
| | Y N
| | |
| | | 077
| | | MAP7A70-B
| | | GO TO MAP 7A70,
| | | ENTRY POINT B.
| | | MDI=$FIXT
| | |
| | 078
| | MAP7A76-R
| | GO TO MAP 7A76,
| | ENTRY POINT R.
| | MDI=$FIXT
| |
| 079
| MAP7A76-R
| GO TO MAP 7A76, ENTRY POINT R.
| MDI=$FIXT
|
080
TAG 5 BIT 4
IS LINE DOWN ?
MDI=$TUXX,T7A02,07,
00000800000008,0F
Y N
|
| 081
| MAP7A70-C
| GO TO MAP 7A70, ENTRY POINT C.
| MDI=$FIXT
|
|
```

```
| | | | |
| | | | |
| | | 082
| | | MAP7A70-E
| | | GO TO MAP 7A70,
| | | ENTRY POINT E.
| | | MDI=$FIXT
| | |
| | 083
| | MAP7A72-I
| | GO TO MAP 7A72,
| | ENTRY POINT I.
| | MDI=$FIXT
| |
| 084
| MAP7A72-C
| GO TO MAP 7A72, ENTRY POINT C.
| MDI=$FIXT
|
085
'INTERRUPT' RECEIVED ?
MDI=$TUXX,T7A02,14,
00000000000000000000000100,OF
Y N
|
| 086
| MAP7A76-F
| GO TO MAP 7A76, ENTRY POINT F.
| MDI=$FIXT
|
087
TAG 6 BIT 5
IS LINE PULSING ?
MDI=$TUXX,T7A02,08,
0000000000000004,ON
Y N
|
| 088
| MAP7A72-I
| GO TO MAP 7A72, ENTRY POINT I.
| MDI=$FIXT
|
|
|
|
|
```

```
| |
| |
| 089
| TAG 6 BIT 0
| IS LINE PULSING ?
| MDI=$TUXX,T7A02,08,
| 0000000000000080,ON
| Y N
| |
| | 090
| | MAP7A72-C
| | GO TO MAP 7A72,
| | ENTRY POINT C.
| | MDI=$FIXT
| |
| 091
| MAP7A72-I
| GO TO MAP 7A72, ENTRY POINT I.
| MDI=$FIXT
|
092
STATUS BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,02,0080,OF
Y N
|
| 093
| STATUS BIT 4
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,02,0008,OF
| Y N
| |
| | 094
| | TAG 7 BIT 1
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,09,
| | 0000000040000040,OF
| | Y N
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
```

```
| |
| |
| 095
| TAG 7 BIT 5
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,09,
| 0000000004000000004,0F
| Y N
| |
| | 096
| | MAP7A72-M
| | GO TO MAP 7A72,
| | ENTRY POINT M.
| | MDI=$FIXT
| |
| 097
| MAP7A70-B
| GO TO MAP 7A70, ENTRY POINT B.
| MDI=$FIXT
|
098
STATUS BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,02,0001,0F
Y N
|
| 099
| MAP7A70-A
| GO TO MAP 7A70, ENTRY POINT A.
| MDI=$FIXT
|
100
MAP7A76-F
GO TO MAP 7A76, ENTRY POINT F.
MDI=$FIXT
```

```
|
|
101
TAG 5 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,07,
00004000000040,0F
Y N
|
| 102
| STATUS BIT 7
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,02,0001,0F
| Y N
| |
| | 103
| | MAP7A72-U
| | GO TO MAP 7A72,
| | ENTRY POINT U.
| | MDI=$FIXT
| |
| 104
| MAP7A76-G
| GO TO MAP 7A76, ENTRY POINT G.
| MDI=$FIXT
|
105
TAG 6 BIT 2
IS LINE DOWN ?
MDI=$TUXX,T7A02,08,
00000020000000020,0F
Y N
|
| 106
| MAP7A72-F
| GO TO MAP 7A72, ENTRY POINT F.
| MDI=$FIXT
|
|
|
|
|
|
|
|
|
```

```
| | |
| | |
| | 107
| | TAG 5 BIT 0
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,07,
| | 00008000000080,OF
| | Y N
| | |
| | | 108
| | | MAP7A70-B
| | | GO TO MAP 7A70,
| | | ENTRY POINT B.
| | | MDI=$FIXT
| | |
| | 109
| | MAP7A70-C
| | GO TO MAP 7A70,
| | ENTRY POINT C.
| | MDI=$FIXT
| |
| 110
| STATUS BIT 1
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,02,0040,OF
| Y N
| |
| | 111
| | MAP7A70-J
| | GO TO MAP 7A70,
| | ENTRY POINT J.
| | MDI=$FIXT
| |
| 112
| MAP7A76-L
| GO TO MAP 7A76, ENTRY POINT L.
| MDI=$FIXT
|
113
MAP7A77-A
GO TO MAP 7A77, ENTRY POINT A.
MDI=$FIXT
```

```
114
(ENTRY POINT B)
DISK SPEED OUT OF TOLERANCE?
IS ERROR HALT CODE = D ?
MDI=$TUXX,T7A02,01,C4,EQ
Y N
|
| 115
| STATUS BIT 7
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,02,0001,OF
| Y N
| |
| | 116
| | MAP7A22-C
| | GO TO MAP 7A22,
| | ENTRY POINT C.
| | MDI=$CALL,TYPE=XTRNL,
| | MAP=7A22,EP=C
| |
| 117
| DOES FILE FAIL TO READ I.D.
| IS ERROR HALT CODE = A ?
| MDI=$TUXX,T7A02,01,C1,EQ
| Y N
| |
| | 118
| | FAILS TO WRITE
| | IS ERROR HALT CODE = W ?
| | MDI=$TUXX,T7A02,01,E6,EQ
| | Y N
| | |
| | | 119
| | | FAILS TO SEEK  TO  TRACK  1
| | | FROM TRACK 0
| | | IS ERROR HALT CODE = F ?
| | | MDI=$TUXX,T7A02,01,C6,EQ
| | | Y N
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
```

```
|
|
120
SEEK SPEED TOO SLOW
IS ERROR HALT CODE = S ?
MDI=$TUXX,T7A02,01,E2,EQ
Y N
|
| 121
| TAG 5 BIT 1
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,07,
| 00004000000040,OF
| Y N
| |
| | 122
| | STATUS BIT 6
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,02,0002,OF
| | Y N
| | |
| | | 123
| | | MAP7A70-B
| | | GO TO MAP 7A70,
| | | ENTRY POINT B.
| | | MDI=$FIXT
| | |
| | 124
| | TAG 5 BIT 2
| | IS LINE PULSING ?
| | MDI=$TUXX,T7A02,07,
| | 00000000000020,ON
| | Y N
| | |
| | | 125
| | | TAG 6 BIT 0
| | | IS LINE DOWN ?
| | | MDI=$TUXX,T7A02,08,
| | | 0000008000000080,OF
| | | Y N
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
```

```
| | | | |
| | | | |
| | | | 126
| | | | MAP7A70-C
| | | | GO TO MAP 7A70,
| | | | ENTRY POINT C.
| | | | MDI=$FIXT
| | | |
| | | 127
| | | MAP7A70-D
| | | GO TO MAP 7A70,
| | | ENTRY POINT D.
| | | MDI=$FIXT
| | |
| | 128
| | DOES FILE FAIL TO SEEK OUT TO
| | 359
| | IS ERROR HALT CODE = 0 ?
| | MDI=$TUXX,T7A02,01,D6,EQ
| | Y N
| | |
| | | 129
| | | MAP7A76-G
| | | GO TO MAP 7A76,
| | | ENTRY POINT G.
| | | MDI=$FIXT
| | |
| | 130
| | MAP7A72-E
| | GO TO MAP 7A72,
| | ENTRY POINT E.
| | MDI=$FIXT
| |
| 131
| MAP7A76-E
| GO TO MAP 7A76, ENTRY POINT E.
| MDI=$FIXT
|
132
MAP7A76-P
GO TO MAP 7A76, ENTRY POINT P.
MDI=$FIXT
```

```
|
|
133
'INTERRUPT' RECEIVED ?
MDI=$TUXX,T7A02,14,
00000000000000000000000100,OF
Y N
|
| 134
| TAG 7 BIT 0
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,09,
| 0000000080000000,OF
| Y N
| |
| | 135
| | TAG 5 BIT 1
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,07,
| | 00004000000040,OF
| | Y N
| | |
| | | 136
| | | MAP7A72-J
| | | GO TO MAP 7A72,
| | | ENTRY POINT J.
| | | MDI=$FIXT
| | |
| | 137
| | MAP7A72-E
| | GO TO MAP 7A72,
| | ENTRY POINT E.
| | MDI=$FIXT
| |
| 138
| STATUS BIT 3
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,02,0010,OF
| Y N
| | |
| | |
| | |
| | |
| | |
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```

```
| | |
| | |
| | 139
| | STATUS BIT 6
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,02,0002,OF
| | Y N
| | |
| | | 140
| | | MAP7A72-E
| | | GO TO MAP 7A72,
| | | ENTRY POINT E.
| | | MDI=$FIXT
| | |
| | 141
| | MAP7A70-B
| | GO TO MAP 7A70,
| | ENTRY POINT B.
| | MDI=$FIXT
| |
| 142
| MAP7A70-B
| GO TO MAP 7A70, ENTRY POINT B.
| MDI=$FIXT
|
143
TAG 6 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,08,
0000008000000080,OF
Y N
|
| 144
| MAP7A70-J
| GO TO MAP 7A70, ENTRY POINT J.
| MDI=$FIXT
|
145
STATUS BIT 3
IS LINE DOWN ?
MDI=$TUXX,T7A02,02,0010,OF
Y N
| |
| |
| |
| |
```

```
| | |
| | |
| | 146
| | MAP7A70-B
| | GO TO MAP 7A70,
| | ENTRY POINT B.
| | MDI=$FIXT
| |
| 147
| MAP7A76-J
| GO TO MAP 7A76, ENTRY POINT J.
| MDI=$FIXT
|
148
STATUS BIT 4
IS LINE DOWN ?
MDI=$TUXX,T7A02,02,0008,OF
Y N
|
| 149
| TAG 7 BIT 1
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,09,
| 0000000040000040,OF
| Y N
| |
| | 150
| | TAG 7 BIT 6
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,09,
| | 0000000200000002,OF
| | Y N
| | |
| | | 151
| | | TAG 5 BIT 2
| | | IS LINE PULSING ?
| | | MDI=$TUXX,T7A02,07,
| | | 00000000000020,ON
| | | Y N
| | | | |
| | | | |
| | | | |
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```

```
| | |
| | |
| | 152
| | TAG 6 BIT 1
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,08,
| | 0000004000000040,0F
| | Y N
| | |
| | | 153
| | | MAP7A70-C
| | | GO TO MAP 7A70,
| | | ENTRY POINT C.
| | | MDI=$FIXT
| | |
| | 154
| | MAP7A76-I
| | GO TO MAP 7A76,
| | ENTRY POINT I.
| | MDI=$FIXT
| |
| 155
| TAG 7 BIT 5
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,09,
| 0000000004000000004,0F
| Y N
| |
| | 156
| | MAP7A76-S
| | GO TO MAP 7A76,
| | ENTRY POINT S.
| | MDI=$FIXT
| |
| 157
| MAP7A70-J
| GO TO MAP 7A70, ENTRY POINT J.
| MDI=$FIXT
|
158
MAP7A72-D
GO TO MAP 7A72, ENTRY POINT D.
MDI=$FIXT
```

```
|
|
159
TAG 7 BIT 2
IS LINE PULSING ?
MDI=$TUXX,T7A02,09,
0000000000000020,ON
Y N
|
| 160
| TAG 5 BIT 0
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,07,
| 00008000000080,OF
| Y N
| |
| | 161
| | TAG 5 BIT 0
| | IS LINE PULSING ?
| | MDI=$TUXX,T7A02,07,
| | 00000000000080,ON
| | Y N
| | |
| | | 162
| | | MAP7A76-I
| | | GO TO MAP 7A76,
| | | ENTRY POINT I.
| | | MDI=$FIXT
| | |
| | 163
| | MAP7A76-D
| | GO TO MAP 7A76,
| | ENTRY POINT D.
| | MDI=$FIXT
| |
| 164
| MAP7A76-D
| GO TO MAP 7A76, ENTRY POINT D.
| MDI=$FIXT
|
165
MAP7A76-I
GO TO MAP 7A76, ENTRY POINT I.
MDI=$FIXT
```

```
|
|
166
STATUS BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,02,0080,OF
Y N
|
| 167
| TAG 6 BIT 5
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,08,
| 0000000400000004,OF
| Y N
| |
| | 168
| | STATUS BIT 3
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,02,0010,OF
| | Y N
| | |
| | | 169
| | | MAP7A70-B
| | | GO TO MAP 7A70,
| | | ENTRY POINT B.
| | | MDI=$FIXT
| | |
| | 170
| | TAG 7 BIT 2
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,C9,
| | 0000000020000020,OF
| | Y N
| | |
| | | 171
| | | MAP7A70-B
| | | GO TO MAP 7A70,
| | | ENTRY POINT B.
| | | MDI=$FIXT
| | |
| | |
| | |
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```

```
| | | |
| | | |
| | | 172
| | | 'INTERRUPT' RECEIVED ?
| | | MDI=$TUXX,T7A02,14,
| | | 00000000000000000000000010
| | | 0,OF
| | | Y N
| | | |
| | | | 173
| | | | MAP7A70-B
| | | | GO TO MAP 7A70,
| | | | ENTRY POINT B.
| | | | MDI=$FIXT
| | | |
| | | 174
| | | MAP7A76-T
| | | GO TO MAP 7A76,
| | | ENTRY POINT T.
| | | MDI=$FIXT
| | |
| | 175
| | MAP7A76-H
| | GO TO MAP 7A76,
| | ENTRY POINT H.
| | MDI=$FIXT
| |
| 176
| MAP7A72-K
| GO TO MAP 7A72, ENTRY POINT K.
| MDI=$FIXT
|
177
TAG 7 BIT 2
IS LINE DOWN ?
MDI=$TUXX,T7A02,09,
0000000020000000020,OF
Y N
| |
| |
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| |
| |
```

```
|
|
178
TAG 5 BIT 0
IS LINE PULSING ?
MDI=$TUXX,T7A02,07,
00000000000080,ON
Y N
|
| 179
| TAG 7 BIT 3
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,09,
| 0000000010000000 10,OF
| Y N
| |
| | 180
| | STATUS BIT 4
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,02,0008,OF
| | Y N
| | |
| | | 181
| | | MAP7A76-S
| | | GO TO MAP 7A76,
| | | ENTRY POINT S.
| | | MDI=$FIXT
| | |
| | 182
| | 'INTERRUPT' RECEIVED ?
| | MDI=$TUXX,T7A02,14,
| | 00000000000000000000000000100,
| | OF
| | Y N
| | |
| | | 183
| | | TAG 5 BIT 1
| | | IS LINE DOWN ?
| | | MDI=$TUXX,T7A02,07,
| | | 00004000000040,OF
| | | Y N
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
```

```
|
|
184
TAG 6 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,08,
0000004000000040,OF
Y N
|
| 185
| STATUS BIT 6
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,02,0002,OF
| Y N
| |
| | 186
| | MAP7A70-C
| | GO TO MAP 7A70,
| | ENTRY POINT C.
| | MDI=$FIXT
| |
| 187
| TAG 7 BIT 0
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,09,
| 0000000080000080,OF
| Y N
| |
| | 188
| | STATUS BIT 3
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,02,0010,OF
| | Y N
| | |
| | | 189
| | | MAP7A70-B
| | | GO TO MAP 7A70,
| | | ENTRY POINT B.
| | | MDI=$FIXT
| | |
| | |
| | |
| | |
| | |
| | |
| | |
```

```
| | | |
| | | |
| | | 190
| | | MAP7A76-F
| | | GO TO MAP 7A76,
| | | ENTRY POINT F.
| | | MDI=$FIXT
| | |
| | 191
| | MAP7A70-B
| | GO TO MAP 7A70,
| | ENTRY POINT B.
| | MDI=$FIXT
| |
| 192
| TAG 5 BIT 7
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,07,
| 00000100000001,OF
| Y N
| |
| | 193
| | MAP7A70-E
| | GO TO MAP 7A70,
| | ENTRY POINT E.
| | MDI=$FIXT
| |
| 194
| MAP7A72-F
| GO TO MAP 7A72, ENTRY POINT F.
| MDI=$FIXT
|
195
STATUS BIT 5
IS LINE DOWN ?
MDI=$TUXX,T7A02,02,0004,OF
Y N
|
| 196
| MAP7A70-C
| GO TO MAP 7A70, ENTRY POINT C.
| MDI=$FIXT
|
|
|
|
```

```
| | | |
| | | |
| | | 197
| | | MAP7A76-H
| | | GO TO MAP 7A76,
| | | ENTRY POINT H.
| | | MDI=$FIXT
| | |
| | 198
| | MAP7A76-H
| | GO TO MAP 7A76,
| | ENTRY POINT H.
| | MDI=$FIXT
| |
| 199
| TAG 5 BIT 3
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,07,
| 00001000000010,OF
| Y N
| |
| | 200
| | MAP7A72-V
| | GO TO MAP 7A72,
| | ENTRY POINT V.
| | MDI=$FIXT
| |
| 201
| MAP7A70-I
| GO TO MAP 7A70, ENTRY POINT I.
| MDI=$FIXT
|
202
TAG 5 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,07,
00004000000040,OF
Y N
|
| 203
| MAP7A70-E
| GO TO MAP 7A70, ENTRY POINT E.
| MDI=$FIXT
|
|
|
```

```
| | |
| | |
| | 204
| | MAP7A72-A
| | GO TO MAP 7A72,
| | ENTRY POINT A.
| | MDI=$FIXT
| |
| 205
| STATUS BIT 4
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,02,0008,0F
| Y N
| |
| | 206
| | MAP7A76-S
| | GO TO MAP 7A76,
| | ENTRY POINT S.
| | MDI=$FIXT
| |
| 207
| MAP7A76-T
| GO TO MAP 7A76, ENTRY POINT T.
| MDI=$FIXT
|
208
MAP7A73-B
GO TO MAP 7A73, ENTRY POINT B.
MDI=$FIXT
```

FAILURE ISOLATION MAP

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
7A21	C	3	001
7A21	D	21	110

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
31	171	7A70	A
6	017	7A70	B
6	019	7A70	B
6	020	7A70	B
9	042	7A70	B
17	087	7A70	B
28	155	7A70	B
28	156	7A70	B
30	170	7A70	B
34	190	7A70	B
34	193	7A70	B
37	213	7A70	B
37	216	7A70	B
8	030	7A70	C
16	085	7A70	C
9	041	7A70	D
12	060	7A70	D
13	065	7A70	D
17	092	7A70	D
18	097	7A70	D
19	103	7A70	D
19	105	7A70	D
30	167	7A70	D
32	182	7A70	D
32	183	7A70	D
7	023	7A70	E
7	024	7A70	E
10	047	7A70	E
11	049	7A70	E
12	059	7A70	E
14	067	7A70	E
15	075	7A70	E
16	080	7A70	E
26	141	7A70	E
26	142	7A70	E

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EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
26	145	7A70	E
9	037	7A70	J
11	051	7A72	B
12	055	7A72	B
13	066	7A72	B
14	068	7A72	B
14	069	7A72	B
14	070	7A72	B
14	071	7A72	B
15	074	7A72	B
17	088	7A72	B
25	137	7A72	B
31	172	7A72	C
5	014	7A72	F
6	018	7A72	F
6	021	7A72	F
6	022	7A72	F
7	027	7A72	F
7	029	7A72	F
22	116	7A72	F
23	125	7A72	F
24	127	7A72	F
24	130	7A72	F
25	135	7A72	F
26	140	7A72	F
27	151	7A72	F
28	154	7A72	F
28	157	7A72	F
29	159	7A72	F
35	200	7A72	F
35	203	7A72	F
36	204	7A72	F
34	194	7A72	G
34	195	7A72	G
22	119	7A72	R

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
23	122	7A72	R
24	129	7A72	R
24	131	7A72	R
24	132	7A72	R
27	146	7A72	R
29	160	7A72	R
29	161	7A72	R
36	207	7A72	R
37	210	7A72	S
37	215	7A72	S
18	093	7A72	X
37	211	7A72	X
20	109	7A72	Z
18	098	7A76	D
18	099	7A76	D
20	106	7A76	E
20	107	7A76	E
20	108	7A76	E
7	025	7A76	F
16	079	7A76	F
16	083	7A76	F
22	118	7A76	F
30	165	7A76	F
30	168	7A76	F
32	178	7A76	F
32	181	7A76	F
33	184	7A76	F
33	187	7A76	F
34	191	7A76	F
35	197	7A76	F
35	202	7A76	F
8	033	7A76	M
36	206	7A76	M
8	032	7A76	N
10	048	7A76	N

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
11	052	7A76	N
9	039	7A76	R
16	084	7A76	U

```
001
(ENTRY POINT C)
FAILS TO WRITE
IS ERROR HALT CODE = W ?
MDI=$TUXX,T7A10,1,E6,EQ
Y N
|
| 002
| FAILS  TO  SEEK TO TRACK 1 FROM
| TRACK 0
| IS ERROR HALT CODE = F ?
| MDI=$TUXX,T7A02,1,C6,EQ
| Y N
| |
| | 003
| | MAP7A22D
| | GO TO PAGE 21, STEP 110,
| | ENTRY POINT D.
| | MDI=$GOTO,TYPE=INTRNL,EP=D
| |
| 004
| TAG 7 BIT 4
| IS LINE PULSING ?
| MDI=$TUXX,T7A02,9,
| 0000000000000008,ON
| Y N
| | |
| | |
| | |
| | |
| | |
| | |
| | |
  | |
```

```
005
TAG 6 BIT 5
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,
00000004000000004,OF
Y N
|
| 006
| TAG 7 BIT 7
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,9,
| 000000000100000001,OF
| Y N
| |
| | 007
| | TAG 5 BIT 0
| | IS LINE PULSING ?
| | MDI=$TUXX,T7A02,7,
| | 00000000000080,ON
| | Y N
| | |
| | | 008
| | | TAG 5 BIT 0
| | | IS LINE DOWN ?
| | | MDI=$TUXX,T7A02,7,
| | | 00008000000080,OF
| | | Y N
| | | |
| | | | 009
| | | | TAG 5 BIT 4
| | | | IS LINE PULSING ?
| | | | MDI=$TUXX,T7A02,7,
| | | | 00000000000008,ON
| | | | Y N
| | | | | |
| | | | | |
| | | | | |
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| | | | | |
```

```
010
TAG 5 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00004000000040,
OF
Y N
|
| 011
| TAG 6 BIT 1
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,8,
| 0000004000000040,OF
| Y N
| |
| | 012
| | TAG 6 BIT 6
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,8,
| | 0000000200000002,OF
| | Y N
| | |
| | | 013
| | | TAG 5 BIT 7
| | | IS LINE DOWN ?
| | | MDI=$TUXX,T7A02,7,
| | | 00000100000001,OF
| | | Y N
| | | |
| | | | 014
| | | | MAP7A72F
| | | | GO TO MAP 7A72,
| | | | ENTRY POINT F.
| | | | MDI=$FIXT
| | | |
| | | 015
| | | TAG 5 BIT 2
| | | IS LINE PULSING ?
| | | MDI=$TUXX,T7A02,7,
| | | 00000000000020,ON
| | | Y N
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
```

FAILURE ISOLATION

PAGE 6 OF 37

016
WERE ALL WRAP BACK CHECKS
OK ?
MDI=$TUXX,T7A02,06,
000000000080,0F
Y N

017
MAP7A70-B
GO TO MAP 7A70,
ENTRY POINT B.
MDI=$FIXT

018
MAP7A72F
GO TO MAP 7A72,
ENTRY POINT F.
MDI=$FIXT

019
MAP7A70-B
GO TO MAP 7A70,
ENTRY POINT B.
MDI=$FIXT

020
MAP7A70-B
GO TO MAP 7A70,
ENTRY POINT B.
MDI=$FIXT

021
MAP7A72F
GO TO MAP 7A72, ENTRY POINT F.
MDI=$FIXT

022
MAP7A72F
GO TO MAP 7A72, ENTRY POINT F.
MDI=$FIXT

```
| | | |
| | | | 023
| | | | MAP7A70-E
| | | | GO TO MAP 7A70,
| | | | ENTRY POINT E.
| | | | MDI=$FIXT
| | | |
| | | 024
| | | MAP7A70-E
| | | GO TO MAP 7A70,
| | | ENTRY POINT E.
| | | MDI=$FIXT
| | |
| | 025
| | MAP7A76F
| | GO TO MAP 7A76, ENTRY POINT F.
| | MDI=$FIXT
| |
| 026
| TAG 5 BIT 1
| IS LINE PULSING ?
| MDI=$TUXX,T7A02,7,00000000000040,
| ON
| Y N
| |
| | 027
| | MAP7A72F
| | GO TO MAP 7A72, ENTRY POINT F.
| | MDI=$FIXT
| |
| 028
| STATUS BIT 5
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,2,0004,0F
| Y N
| |
| | 029
| | MAP7A72F
| | GO TO MAP 7A72, ENTRY POINT F.
| | MDI=$FIXT
| |
| |
| |
| |
| |
| |
| |
| |
```

```
| | |
| | | 030
| | | MAP7A70-C
| | | GO TO MAP 7A70,
| | | ENTRY POINT C.
| | | MDI=$FIXT
| | |
| | 031
| | TAG 5 BIT 2
| | IS LINE PULSING ?
| | MDI=$TUXX,T7A02,7,
| | 00000000000020,ON
| | Y N
| | |
| | | 032
| | | MAP7A76N
| | | GO TO MAP 7A76,
| | | ENTRY POINT N.
| | | MDI=$FIXT
| | |
| | 033
| | MAP7A76M
| | GO TO MAP 7A76, ENTRY POINT M.
| | MDI=$FIXT
| |
| 034
| TAG 5 BIT 1
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,7,00004000000040,
| OF
| Y N
| |
| | 035
| | 'INTERRUPT' RECEIVED ?
| | MDI=$TUXX,T7A02,14,
| | 00000000000000000000000100,OF
| | Y N
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | |
```

036
STATUS BIT 6
IS LINE DOWN ?
MDI=$TUXX,T7A02,2,0002,OF
Y N
|
| 037
| MAP7A70-J
| GO TO MAP 7A70, ENTRY POINT J.
| MDI=$FIXT
|
038
TAG 5 BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00000100000001,
OF
Y N
|
| 039
| MAP7A76R
| GO TO MAP 7A76, ENTRY POINT R.
| MDI=$FIXT
|
040
TAG 5 BIT 2
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000020,
ON
Y N
|
| 041
| MAP7A70-D
| GO TO MAP 7A70, ENTRY POINT D.
| MDI=$FIXT
|
042
MAP7A70-B
GO TO MAP 7A70, ENTRY POINT B.
MDI=$FIXT

```
043
TAG 5 BIT 1
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000040,
ON
Y N
|
| 044
| TAG 5 BIT 7
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,7,
| 00000100000001,OF
| Y N
| |
| | 045
| | TAG 5 BIT 0
| | IS LINE PULSING ?
| | MDI=$TUXX,T7A02,7,
| | 00000000000080,ON
| | Y N
| | |
| | | 046
| | | TAG 6 BIT 5
| | | IS LINE DOWN ?
| | | MDI=$TUXX,T7A02,8,
| | | 00000004000000004,OF
| | | Y N
| | | |
| | | | 047
| | | | MAP7A70-E
| | | | GO TO MAP 7A70,
| | | | ENTRY POINT E.
| | | | MDI=$FIXT
| | | |
| | | 048
| | | MAP7A76N
| | | GO TO MAP 7A76,
| | | ENTRY POINT N.
| | | MDI=$FIXT
| | |
| | |
| | |
| | |
| | |
| | |
```

049
MAP7A70-E
GO TO MAP 7A70,
ENTRY POINT E.
MDI=$FIXT

050
TAG 6 BIT 5
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,
0000000400000004,OF
Y N

051
MAP7A72B
GO TO MAP 7A72,
ENTRY POINT B.
MDI=$FIXT

052
MAP7A76N
GO TO MAP 7A76, ENTRY POINT N.
MDI=$FIXT

053
TAG 6 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,
0000004000000040,OF
Y N

054
TAG 7 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,9,
0000000800000080,OF
Y N

| |
| |
| 055
| MAP7A72B
| GO TO MAP 7A72, ENTRY POINT B.
| MDI=$FIXT
|
056
TAG 6 BIT 0
IS LINE PULSING ?
MDI=$TUXX,T7A02,8,
0000000000000080,ON
Y N
|
| 057
| TAG 5 BIT 7
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,7,
| 0000010000000 1,OF
| Y N
| |
| | 058
| | TAG 6 BIT 3
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,8,
| | 0000001000000010,OF
| | Y N
| | |
| | | 059
| | | MAP7A70-E
| | | GO TO MAP 7A70,
| | | ENTRY POINT E.
| | | MDI=$FIXT
| | |
| | 060
| | MAP7A70-D
| | GO TO MAP 7A70,
| | ENTRY POINT D.
| | MDI=$FIXT
| |
| |
| |
| |
| |
| |
| |

```
|
|
061
TAG 6 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,
0000008000000080,OF
Y N
|
| 062
| TAG 6 BIT 5
| IS LINE PULSING ?
| MDI=$TUXX,T7A02,8,
| 0000000000000004,ON
| Y N
| |
| | 063
| | TAG 6 BIT 3
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,8,
| | 0000001000000010,OF
| | Y N
| | |
| | | 064
| | | TAG 5 BIT 0
| | | IS LINE DOWN ?
| | | MDI=$TUXX,T7A02,7,
| | | 00008000000080,OF
| | | Y N
| | | |
| | | | 065
| | | | MAP7A70-D
| | | | GO TO MAP 7A70,
| | | | ENTRY POINT D.
| | | | MDI=$FIXT
| | | |
| | | 066
| | | MAP7A72B
| | | GO TO MAP 7A72,
| | | ENTRY POINT B.
| | | MDI=$FIXT
| | |
| | |
| | |
| | |
| | |
```

```
| | | | | |
| | | | | |
| | | | | 067
| | | | | MAP7A70-E
| | | | | GO TO MAP 7A70,
| | | | | ENTRY POINT E.
| | | | | MDI=$FIXT
| | | | |
| | | | 068
| | | | MAP7A72B
| | | | GO TO MAP 7A72,
| | | | ENTRY POINT B.
| | | | MDI=$FIXT
| | | |
| | | 069
| | | MAP7A72B
| | | GO TO MAP 7A72,
| | | ENTRY POINT B.
| | | MDI=$FIXT
| | |
| | 070
| | MAP7A72B
| | GO TO MAP 7A72,
| | ENTRY POINT B.
| | MDI=$FIXT
| |
| 071
| MAP7A72B
| GO TO MAP 7A72, ENTRY POINT B.
| MDI=$FIXT
|
072
TAG 5 BIT 2
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000020,
ON
Y N
| |
| |
| |
| |
| |
| |
| |
| |
| |
```

```
| |
| |
| 073
| TAG 6 BIT 3
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,8,
| 0000001000000010,OF
| Y N
| |
| | 074
| | MAP7A72B
| | GO TO MAP 7A72,
| | ENTRY POINT B.
| | MDI=$FIXT
| |
| 075
| MAP7A70-E
| GO TO MAP 7A70, ENTRY POINT E.
| MDI=$FIXT
|
076
TAG 5 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00008000000080,
OF
Y N
|
| 077
| TAG 5 BIT 7
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,7,
| 00000100000001,OF
| Y N
| |
| | 078
| | TAG 7 BIT 0
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,9,
| | 0000000080000000080,OF
| | Y N
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
```

```
| | |
| | |
| | 079
| | MAP7A76F
| | GO TO MAP 7A76,
| | ENTRY POINT F.
| | MDI=$FIXT
| |
| 080
| MAP7A70-E
| GO TO MAP 7A70, ENTRY POINT E.
| MDI=$FIXT
|
081
TAG 7 BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,9,
0000000001000000001,OF
Y N
|
| 082
| TAG 5 BIT 0
| IS LINE PULSING ?
| MDI=$TUXX,T7A02,7,
| 00000000000080,ON
| Y N
| |
| | 083
| | MAP7A76F
| | GO TO MAP 7A76,
| | ENTRY POINT F.
| | MDI=$FIXT
| |
| 084
| MAP7A76U
| GO TO MAP 7A76, ENTRY POINT U.
| MDI=$FIXT
|
085
MAP7A70-C
GO TO MAP 7A70, ENTRY POINT C.
MDI=$FIXT
```

```
| |
| |
| 086
| STATUS BIT 5
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,2,0040,OF
| Y N
| |
| | 087
| | MAP7A70-B
| | GO TO MAP 7A70,
| | ENTRY POINT B.
| | MDI=$FIXT
| |
| 088
| MAP7A72B
| GO TO MAP 7A72, ENTRY POINT B.
| MDI=$FIXT
|
089
STATUS BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,2,0080,OF
Y N
|
| 090
| 'INTERRUPT' RECEIVED ?
| MDI=$TUXX,T7A02,14,
| 00000000000000000000000000100,OF
| Y N
| |
| | 091
| | TAG 6 BIT 5
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,8,
| | 00000004000000004,OF
| | Y N
| | |
| | | 092
| | | MAP7A70-D
| | | GO TO MAP 7A70,
| | | ENTRY POINT D.
| | | MDI=$FIXT
| | |
| | |
| | |
```

```
| |
| |
| 093
| MAP7A72X
| GO TO MAP 7A72, ENTRY POINT X.
| MDI=$FIXT
|
094
STATUS BIT 4
IS LINE DOWN ?
MDI=$TUXX,T7A02,2,0008,OF
Y N
|
| 095
| TAG 5 BIT 0
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,7,
| 00008000000080,OF
| Y N
| |
| | 096
| | TAG 7 BIT 0
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,9,
| | 0000000080000000080,OF
| | Y N
| | |
| | | 097
| | | MAP7A70-D
| | | GO TO MAP 7A70,
| | | ENTRY POINT D.
| | | MDI=$FIXT
| | |
| | 098
| | MAP7A76D
| | GO TO MAP 7A76,
| | ENTRY POINT D.
| | MDI=$FIXT
| |
| 099
| MAP7A76D
| GO TO MAP 7A76, ENTRY POINT D.
| MDI=$FIXT
|
|
|
```

```
|
|
100
TAG 5 BIT 1
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000040,
ON
Y N
|
| 101
| TAG 7 BIT 0
| IS LINE PULSING ?
| MDI=$TUXX,T7A02,9,
| 0000000000000080,ON
| Y N
| |
| | 102
| | TAG 5 BIT 1
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,7,
| | 00004000000040,OF
| | Y N
| | |
| | | 103
| | | MAP7A70-D
| | | GO TO MAP 7A70,
| | | ENTRY POINT D.
| | | MDI=$FIXT
| | |
| | 104
| | TAG 6 BIT 5
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,8,
| | 00000004000000004,OF
| | Y N
| | |
| | | 105
| | | MAP7A70-D
| | | GO TO MAP 7A70,
| | | ENTRY POINT D.
| | | MDI=$FIXT
| | |
| | |
| | |
| | |
| | |
```

```
| | | |
| | | |
| | | 106
| | | MAP7A76E
| | | GO TO MAP 7A76,
| | | ENTRY POINT E.
| | | MDI=$FIXT
| | |
| | 107
| | MAP7A76E
| | GO TO MAP 7A76,
| | ENTRY POINT E.
| | MDI=$FIXT
| |
| 108
| MAP7A76E
| GO TO MAP 7A76, ENTRY POINT E.
| MDI=$FIXT
|
109
MAP7A72Z
GO TO MAP 7A72, ENTRY POINT Z.
MDI=$FIXT
```

```
110
(ENTRY POINT D)
FAILS TO SEEK  TO  TRACK  0  FROM
TRACK 1
IS ERROR HALT CODE = B ?
MDI=$TUXX,T7A10,1,C2,EQ
Y N
|
| 111
| TAG 6 BIT 5
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,8,
| 0000000400000004,OF
| Y N
| |
| | 112
| | DOES FILE FAIL TO READ I.D.
| | IS ERROR HALT CODE = A ?
| | MDI=$TUXX,T7A02,1,C1,EQ
| | Y N
| | |
| | | 113
| | | STATUS BIT 1
| | | IS LINE DOWN ?
| | | MDI=$TUXX,T7A02,2,0040,OF
| | | Y N
| | | |
| | | | 114
| | | | TAG 5 BIT 7
| | | | IS LINE DOWN ?
| | | | MDI=$TUXX,T7A02,7,
| | | | 00000100000001,OF
| | | | Y N
| | | | | |
| | | | | |
| | | | | |
| | | | | |
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| | | | | |
```

```
| |
| |
| 115
| STATUS BIT 5
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,2,0004,OF
| Y N
| |
| | 116
| | MAP7A72F
| | GO TO MAP 7A72,
| | ENTRY POINT F.
| | MDI=$FIXT
| |
| 117
| TAG 6 BIT 0
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,8,
| 0000008000000080,OF
| Y N
| |
| | 118
| | MAP7A76F
| | GO TO MAP 7A76,
| | ENTRY POINT F.
| | MDI=$FIXT
| |
| 119
| MAP7A72R
| GO TO MAP 7A72, ENTRY POINT R.
| MDI=$FIXT
|
120
TAG 7 BIT 3
IS LINE DOWN ?
MDI=$TUXX,T7A02,10,
0000000010000000010,OF
Y N
| |
| |
| |
| |
| |
| |
| |
| |
```

```
|
|
121
TAG 5 BIT 4
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00000800000008,
OF
Y N
|
| 122
| MAP7A72R
| GO TO MAP 7A72, ENTRY POINT R.
| MDI=$FIXT
|
123
TAG 5 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00008000000080,
OF
Y N
|
| 124
| STATUS BIT 5
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,2,0004,OF
| Y N
| |
| | 125
| | MAP7A72F
| | GO TO MAP 7A72,
| | ENTRY POINT F.
| | MDI=$FIXT
| |
| 126
| TAG 6 BIT 2
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,8,
| 0000002000000020,OF
| Y N
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
```

```
| | | |
| | | |
| | | 127
| | | MAP7A72F
| | | GO TO MAP 7A72,
| | | ENTRY POINT F.
| | | MDI=$FIXT
| | |
| | 128
| | TAG 7 BIT 2
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,9,
| | 0000000020000000020,0F
| | Y N
| | |
| | | 129
| | | MAP7A72R
| | | GO TO MAP 7A72,
| | | ENTRY POINT R.
| | | MDI=$FIXT
| | |
| | 130
| | MAP7A72F
| | GO TO MAP 7A72,
| | ENTRY POINT F.
| | MDI=$FIXT
| |
| 131
| MAP7A72R
| GO TO MAP 7A72, ENTRY POINT R.
| MDI=$FIXT
|
132
MAP7A72R
GO TO MAP 7A72, ENTRY POINT R.
MDI=$FIXT
```

```
|
|
133
TAG 5 BIT 1
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000040,
ON
Y N
|
| 134
| TAG 5 BIT 7
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,7,
| 00000100000001,OF
| Y N
| |
| | 135
| | MAP7A72F
| | GO TO MAP 7A72,
| | ENTRY POINT F.
| | MDI=$FIXT
| |
| 136
| TAG 5 BIT 1
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,7,
| 00004000000040,OF
| Y N
| |
| | 137
| | MAP7A72B
| | GO TO MAP 7A72,
| | ENTRY POINT B.
| | MDI=$FIXT
| |
| 138
| TAG 5 BIT 0
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,7,
| 00008000000080,OF
| Y N
| | |
| | |
| | |
| | |
| | |
```

```
| | |
| | |
| | 139
| | TAG 5 BIT 2
| | IS LINE PULSING ?
| | MDI=$TUXX,T7A02,7,
| | 00000000000020,ON
| | Y N
| | |
| | | 140
| | | MAP7A72F
| | | GO TO MAP 7A72,
| | | ENTRY POINT F.
| | | MDI=$FIXT
| | |
| | 141
| | MAP7A70-E
| | GO TO MAP 7A70,
| | ENTRY POINT E.
| | MDI=$FIXT
| |
| 142
| MAP7A70-E
| GO TO MAP 7A70, ENTRY POINT E.
| MDI=$FIXT
|
143
DOES FILE FAIL TO SEEK OUT TO 359
IS ERROR HALT CODE = 0 ?
MDI=$TUXX,T7A02,1,E2,EQ
Y N
|
| 144
| TAG 5 BIT 7
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,7,
| 00000100000001,OF
| Y N
| |
| | 145
| | MAP7A70-E
| | GO TO MAP 7A70,
| | ENTRY POINT E.
| | MDI=$FIXT
| |
| |
```

```
| |
| |
| 146
| MAP7A72R
| GO TO MAP 7A72, ENTRY POINT R.
| MDI=$FIXT
|
147
TAG 7 BIT 2
IS LINE DOWN ?
MDI=$TUXX,T7A02,9,
0000000020000020,OF
Y N
|
| 148
| TAG 6 BIT 1
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,8,
| 0000004000000040,OF
| Y N
| |
| | 149
| | TAG 6 BIT 0
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,8,
| | 0000008000000080,OF
| | Y N
| | |
| | | 150
| | | TAG 6 BIT 1
| | | IS LINE PULSING ?
| | | MDI=$TUXX,T7A02,8,
| | | 0000000000000040,ON
| | | Y N
| | | |
| | | | 151
| | | | MAP7A72F
| | | | GO TO MAP 7A72,
| | | | ENTRY POINT F.
| | | | MDI=$FIXT
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
```

```
| |
| |
| 152
| TAG 5 BIT 4
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,7,
| 00000800000008,OF
| Y N
| |
| | 153
| | TAG 5 BIT 7
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,7,
| | 00000100000001,OF
| | Y N
| | |
| | | 154
| | | MAP7A72F
| | | GO TO MAP 7A72,
| | | ENTRY POINT F.
| | | MDI=$FIXT
| | |
| | 155
| | MAP7A70-B
| | GO TO MAP 7A70,
| | ENTRY POINT B.
| | MDI=$FIXT
| |
| 156
| MAP7A70-B
| GO TO MAP 7A70, ENTRY POINT B.
| MDI=$FIXT
|
157
MAP7A72F
GO TO MAP 7A72, ENTRY POINT F.
MDI=$FIXT
```

```
| | |
| | |
| | 158
| | TAG 5 BIT 7
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,7,
| | 00000100000001,OF
| | Y N
| | |
| | | 159
| | | MAP7A72F
| | | GO TO MAP 7A72,
| | | ENTRY POINT F.
| | | MDI=$FIXT
| | |
| | 160
| | MAP7A72R
| | GO TO MAP 7A72,
| | ENTRY POINT R.
| | MDI=$FIXT
| |
| 161
| MAP7A72R
| GO TO MAP 7A72, ENTRY POINT R.
| MDI=$FIXT
|
162
TAG 5 BIT 0
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000080,
ON
Y N
|
| 163
| TAG 6 BIT 0
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,8,
| 0000008000000080,OF
| Y N
| | |
| | |
| | |
| | |
| | |
| | |
| | |
```

```
| |
| |
| 164
| TAG 5 BIT 1
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,7,
| 00004000000040,OF
| Y N
| |
| | 165
| | MAP7A76F
| | GO TO MAP 7A76,
| | ENTRY POINT F.
| | MDI=$FIXT
| |
| 166
| TAG 5 BIT 2
| IS LINE PULSING ?
| MDI=$TUXX,T7A02,7,
| 00000000000020,ON
| Y N
| |
| | 167
| | MAP7A70-D
| | GO TO MAP 7A70,
| | ENTRY POINT D.
| | MDI=$FIXT
| |
| 168
| MAP7A76F
| GO TO MAP 7A76, ENTRY POINT F.
| MDI=$FIXT
|
169
TAG 5 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00004000000040,
OF
Y N
|
| 170
| MAP7A70-B
| GO TO MAP 7A70, ENTRY POINT B.
| MDI=$FIXT
|
|
```

```
| | |
| | |
| | 171
| | MAP7A70-A
| | GO TO MAP 7A70,
| | ENTRY POINT A.
| | MDI=$FIXT
| |
| 172
| MAP7A72C
| GO TO MAP 7A72, ENTRY POINT C.
| MDI=$FIXT
|
173
TAG 7 BIT 4
IS LINE DOWN ?
MDI=$TUXX,T7A02,9,
0000000008000000008,OF
Y N
|
| 174
| TAG 5 BIT 1
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,7,
| 00004000000040,OF
| Y N
| |
| | 175
| | 'INTERRUPT' RECEIVED ?
| | MDI=$TUXX,T7A02,14,
| | 00000000000000000000000100,
| | OF
| | Y N
| | |
| | | 176
| | | TAG 6 BIT 3
| | | IS LINE DOWN ?
| | | MDI=$TUXX,T7A02,8,
| | | 00000010000000010,OF
| | | Y N
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
```

```
|
|
177
TAG 7 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,9,
0000000080000000080,OF
Y N
|
| 178
| MAP7A76F
| GO TO MAP 7A76, ENTRY POINT F.
| MDI=$FIXT
|
179
TAG 6 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,
0000004000000040,OF
Y N
|
| 180
| DOES  FILE  FAIL TO SEEK OUT TO
| 359
| IS ERROR HALT CODE = 0 ?
| MDI=$TUXX,T7A02,1,D6,EQ
| Y N
| |
| | 181
| | MAP7A76F
| | GO TO MAP 7A76,
| | ENTRY POINT F.
| | MDI=$FIXT
| |
| 182
| MAP7A70-D
| GO TO MAP 7A70, ENTRY POINT D.
| MDI=$FIXT
|
183
MAP7A70-D
GO TO MAP 7A70, ENTRY POINT D.
MDI=$FIXT
```

```
| |
| |
| 184
| MAP7A76F
| GO TO MAP 7A76, ENTRY POINT F.
| MDI=$FIXT
|
185
TAG 6 BIT 3
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,
0000001000000010,OF
Y N
|
| 186
| DOES FILE FAIL TO SEEK  OUT  TO
| 359
| IS ERROR HALT CODE = 0 ?
| MDI=$TUXX,T7A02,1,D6,EQ
| Y N
| |
| | 187
| | MAP7A76F
| | GO TO MAP 7A76,
| | ENTRY POINT F.
| | MDI=$FIXT
| |
| 188
| TAG 5 BIT 7
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,7,
| 00000100000001,OF
| Y N
| |
| | 189
| | TAG 7 BIT 0
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,9,
| | 0000000080000000,OF
| | Y N
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
```

```
| | | | |
| | | | |
| | | | 190
| | | | MAP7A70-B
| | | | GO TO MAP 7A70,
| | | | ENTRY POINT B.
| | | | MDI=$FIXT
| | | |
| | | 191
| | | MAP7A76F
| | | GO TO MAP 7A76,
| | | ENTRY POINT F.
| | | MDI=$FIXT
| | |
| | 192
| | TAG 5 BIT 2
| | IS LINE PULSING ?
| | MDI=$TUXX,T7A02,7,
| | 00000000000020,ON
| | Y N
| | |
| | | 193
| | | MAP7A70-B
| | | GO TO MAP 7A70,
| | | ENTRY POINT B.
| | | MDI=$FIXT
| | |
| | 194
| | MAP7A72G
| | GO TO MAP 7A72,
| | ENTRY POINT G.
| | MDI=$FIXT
| |
| 195
| MAP7A72G
| GO TO MAP 7A72, ENTRY POINT G.
| MDI=$FIXT
|
196
DOES FILE FAIL TO SEEK OUT TO 359
IS ERROR HALT CODE = 0 ?
MDI=$TUXX,T7A02,1,D6,EQ
Y N
| |
| |
| |
```

```
| |
| |
| 197
| MAP7A76F
| GO TO MAP 7A76, ENTRY POINT F.
| MDI=$FIXT
|
198
TAG 5 BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00000100000001,
OF
Y N
|
| 199
| TAG 6 BIT 4
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,8,
| 0000000800000008,OF
| Y N
| |
| | 200
| | MAP7A72F
| | GO TO MAP 7A72,
| | ENTRY POINT F.
| | MDI=$FIXT
| |
| 201
| TAG 6 BIT 3
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,8,
| 0000001000000010,OF
| Y N
| |
| | 202
| | MAP7A76F
| | GO TO MAP 7A76,
| | ENTRY POINT F.
| | MDI=$FIXT
| |
| 203
| MAP7A72F
| GO TO MAP 7A72, ENTRY POINT F.
| MDI=$FIXT
|
|
```

```
| | |
| | |
| | 204
| | MAP7A72F
| | GO TO MAP 7A72,
| | ENTRY POINT F.
| | MDI=$FIXT
| |
| 205
| TAG 5 BIT 1
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,7,
| 00004000000040,OF
| Y N
| |
| | 206
| | MAP7A76M
| | GO TO MAP 7A76,
| | ENTRY POINT M.
| | MDI=$FIXT
| |
| 207
| MAP7A72R
| GO TO MAP 7A72, ENTRY POINT R.
| MDI=$FIXT
|
208
TAG 5 BIT 1
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000040,
ON
Y N
|
| 209
| TAG 6 BIT 2
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,8,
| 00000020000000020,OF
| Y N
| | |
| | |
| | |
| | |
| | |
| | |
| | |
```

```
| | |
| | |
| | 210
| | MAP7A72S
| | GO TO MAP 7A72,
| | ENTRY POINT S.
| | MDI=$FIXT
| |
| 211
| MAP7A72X
| GO TO MAP 7A72, ENTRY POINT X.
| MDI=$FIXT
|
212
TAG 5 BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00000100000001,
OF
Y N
|
| 213
| MAP7A70-B
| GO TO MAP 7A70, ENTRY POINT B.
| MDI=$FIXT
|
214
TAG 6 BIT 2
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,
0000002000000020,OF
Y N
|
| 215
| MAP7A72S
| GO TO MAP 7A72, ENTRY POINT S.
| MDI=$FIXT
|
216
MAP7A70-B
GO TO MAP 7A70, ENTRY POINT B.
MDI=$FIXT
```

FAILURE ISOLATION MAP

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
7A21	E	3	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
33	187	7A24	H
3	002	7A26	F
13	063	7A70	B
17	087	7A70	B
29	166	7A70	B
32	180	7A70	B
32	184	7A70	B
33	186	7A70	B
5	014	7A70	C
8	031	7A70	C
7	030	7A70	C
7	029	7A70	C
9	038	7A70	C
12	058	7A70	C
17	090	7A70	C
21	112	7A70	C
28	159	7A70	C
29	163	7A70	C
30	168	7A70	C
30	170	7A70	C
31	176	7A70	C
6	023	7A70	D
6	021	7A70	E
8	032	7A70	E
16	077	7A70	E
16	083	7A70	E
17	088	7A70	E
22	120	7A72	F
26	142	7A72	F
10	047	7A72	P
11	050	7A72	P
3	005	7A72	T
28	157	7A72	Y
29	162	7A72	Y
29	164	7A72	Y

20MAY83 PN8327661

REVISED 1979 ECA03143 PEC877036

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
9	041	7A76	A
13	066	7A76	A
8	035	7A76	B
10	044	7A76	F
23	126	7A76	F
27	150	7A76	F
26	145	7A76	H
27	149	7A76	M
11	051	7A76	O
13	062	7A76	O
19	099	7A76	O
23	124	7A76	O
30	171	7A76	O
5	015	7A76	Q
24	129	7A76	Q
24	131	7A76	Q
26	147	7A76	Q
31	175	7A76	Q
31	177	7A76	Q
32	185	7A76	Q
4	011	7A76	R
6	019	7A76	R
6	022	7A76	R
12	055	7A76	R
12	060	7A76	R
16	082	7A76	R
17	084	7A76	R
18	096	7A76	R
20	107	7A76	R
21	110	7A76	R
21	111	7A76	R
22	119	7A76	R
23	125	7A76	R
24	130	7A76	R
25	138	7A76	R

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
26	146	7A76	R
28	155	7A76	R
32	181	7A76	R
9	040	7A76	U
13	065	7A76	U
16	078	7A76	U
16	080	7A76	U
17	085	7A76	U
18	091	7A76	U
18	093	7A76	U
18	095	7A76	U
20	103	7A76	U
20	108	7A76	U
20	109	7A76	U
22	118	7A76	U
25	134	7A76	U
25	139	7A76	U
25	140	7A76	U
26	141	7A76	U
4	012	7A79	A
7	028	7A79	A
8	036	7A79	A
10	046	7A79	A
12	057	7A79	A

```
001
(ENTRY POINT E)
STATUS BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A10,2,0040,OF
Y N
|
| 002
| MAP7A26F
| GO TO MAP 7A26, ENTRY POINT F.
| MDI=$GOTO,TYPE=XTRNL,EP=F,
| MAP=7A26
|
003
STATUS BIT 5
IS LINE DOWN ?
MDI=$TUXX,T7A02,2,0004,OF
Y N
|
| 004
| TAG 6 BIT 7
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,8,
| 0000000100000001,OF
| Y N
| |
| | 005
| | MAP7A72T
| | GO TO MAP 7A72,
| | ENTRY POINT T.
| | MDI=$FIXT
| |
| 006
| TAG 7 BIT 4
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,9,
| 0000000008000000008,OF
| Y N
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
  | | |
1
4 9 4
A B C
```

```
|
|
007
TAG 7 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,9,
0000000080000000,OF
Y N
|
| 008
| TAG 5 BIT 5
| IS LINE PULSING ?
| MDI=$TUXX,T7A02,7,
| 000C0000000004,ON
| Y N
| |
| | 009
| | TAG 5 BIT 3
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,7,
| | 00001000000010,OF
| | Y N
| | |
| | | 010
| | | TAG 6 BIT 6
| | | IS LINE PULSING ?
| | | MDI=$TUXX,T7A02,8,
| | | 0000000000000002,ON
| | | Y N
| | | |
| | | | 011
| | | | MAP7A76R
| | | | GO TO MAP 7A76,
| | | | ENTRY POINT R.
| | | | MDI=$FIXT
| | | |
| | | 012
| | | F08 GO TO POWER FAILURE MAP
| | | 7A79
| | | GO TO MAP 7A79,
| | | ENTRY POINT A.
| | | MDI=$FIXT
| | |
| | |
| | |
| | |
| | |                                    20MAY83    PN8327661
| | |
                                         ECA03143   PEC877036
8 5 5
D E F
```

FAILURE ISOLATION


```
| 013
| TAG 5 BIT 1
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,7,
| 00004000000040,OF
| Y N
| |
| | 014
| | MAP7A70-C
| | GO TO MAP 7A70,
| | ENTRY POINT C.
| | MDI=$FIXT
| |
| 015
| MAP7A76Q
| GO TO MAP 7A76, ENTRY POINT Q.
| MDI=$FIXT
|
016
TAG 6 BIT 1
IS LINE PULSING ?
MDI=$TUXX,T7A02,8,
0000000000000040,ON
Y N
|
| 017
| TAG 5 BIT 3
| IS LINE PULSING ?
| MDI=$TUXX,T7A02,7,
| 00000000000010,ON
| Y N
| |
| | 018
| | TAG 6 BIT 3
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,8,
| | 0000001000000010,OF
| | Y N
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
```

019
MAP7A76R
GO TO MAP 7A76,
ENTRY POINT R.
MDI=$FIXT

020
TAG 6 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,
0000004000000040,OF
Y N

021
MAP7A70-E
GO TO MAP 7A70,
ENTRY POINT E.
MDI=$FIXT

022
MAP7A76R
GO TO MAP 7A76,
ENTRY POINT R.
MDI=$FIXT

023
MAP7A70-D
GO TO MAP 7A70, ENTRY POINT D.
MDI=$FIXT

024
TAG 5 BIT 3
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000010,
ON
Y N

025
TAG 7 BIT 2
IS LINE DOWN ?
MDI=$TUXX,T7A02,9,
0000000020000000020,OF
Y N

026
TAG 7 BIT 2
IS LINE PULSING ?
MDI=$TUXX,T7A02,9,
0000000000000000020,ON
Y N

027
TAG 5 BIT 1
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,
00000000000040,ON
Y N

028
F08 GO TO POWER FAILURE MAP
7A79
GO TO MAP 7A79,
ENTRY POINT A.
MDI=$FIXT

029
MAP7A70-C
GO TO MAP 7A70,
ENTRY POINT C.
MDI=$FIXT

030
MAP7A70-C
GO TO MAP 7A70, ENTRY POINT C.
MDI=$FIXT

```
| | |
| | |
| | |
| | |
| | 031
| | MAP7A70-C
| | GO TO MAP 7A70,
| | ENTRY POINT C.
| | MDI=$FIXT
| |
| 032
| MAP7A70-E
| GO TO MAP 7A70, ENTRY POINT E.
| MDI=$FIXT
|
033
TAG 6 BIT 4
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,
0000000800000008,OF
Y N
|
| 034
| TAG 6 BIT 3
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,8,
| 0000001000000010,OF
| Y N
| |
| | 035
| | MAP7A76B
| | GO TO MAP 7A76,
| | ENTRY POINT B.
| | MDI=$FIXT
| |
| 036
| F08 GO TO POWER FAILURE MAP
| 7A79
| GO TO MAP 7A79, ENTRY POINT A.
| MDI=$FIXT
|
|
|
|
|
|
|
|
|
|
9
P
```

037
TAG 5 BIT 5
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,
00000400000004,OF
Y N

038
MAP7A70-C
GO TO MAP 7A70,
ENTRY POINT C.
MDI=$FIXT

039
TAG 5 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,
00004000000040,OF
Y N

040
MAP7A76U
GO TO MAP 7A76,
ENTRY POINT U.
MDI=$FIXT

041
MAP7A76A
GO TO MAP 7A76, ENTRY POINT A.
MDI=$FIXT

042
TAG 6 BIT 2
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,
00000020000020,OF
Y N

```
| |
| |
| |
| 043
| TAG 5 BIT 4
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,7,
| 00000800000008,OF
| Y N
| |
| | 044
| | MAP7A76F
| | GO TO MAP 7A76,
| | ENTRY POINT F.
| | MDI=$FIXT
| |
| 045
| TAG 5 BIT 7
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,7,
| 00000100000001,OF
| Y N
| |
| | 046
| | F08 GO TO POWER  FAILURE  MAP
| | 7A79
| | GO TO MAP 7A79,
| | ENTRY POINT A.
| | MDI=$FIXT
| |
| 047
| MAP7A72P
| GO TO MAP 7A72, ENTRY POINT P.
| MDI=$FIXT
|
048
TAG 7 BIT 2
IS LINE DOWN ?
MDI=$TUXX,T7A02,9,
0000000020000000020,OF
Y N
| |
| |
| |
| |
| |
| |
| |
```

```
049
TAG 5 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,
00004000000040,OF
Y N
|
| 050
| MAP7A72P
| GO TO MAP 7A72,
| ENTRY POINT P.
| MDI=$FIXT
|
051
MAP7A76O
GO TO MAP 7A76, ENTRY POINT O.
MDI=$FIXT

052
'INTERRUPT' RECEIVED ?
MDI=$TUXX,T7A02,14,
00000000000000000000000100,OF
Y N

053
TAG 5 BIT 4
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,
00000800000008,OF
Y N
|
| 054
| TAG 5 BIT 7
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,7,
| 00000100000001,OF
| Y N
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
```

055
MAP7A76R
GO TO MAP 7A76,
ENTRY POINT R.
MDI=$FIXT

056
TAG 5 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,
00004000000040,OF
Y N

057
F08 GO TO POWER FAILURE MAP
7A79
GO TO MAP 7A79,
ENTRY POINT A.
MDI=$FIXT

058
MAP7A70-C
GO TO MAP 7A70, ENTRY POINT C.
MDI=$FIXT

059
TAG 6 BIT 1
IS LINE PULSING ?
MDI=$TUXX,T7A02,8,
00000000000000040,ON
Y N

060
MAP7A76R
GO TO MAP 7A76, ENTRY POINT R.
MDI=$FIXT

| |
| |
| 061
| TAG 7 BIT 0
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,9,
| 000000008000000080,0F
| Y N
| |
| | 062
| | MAP7A760
| | GO TO MAP 7A76,
| | ENTRY POINT 0.
| | MDI=$FIXT
| |
| 063
| MAP7A70-B
| GO TO MAP 7A70, ENTRY POINT B.
| MDI=$FIXT
|
064
TAG 5 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00004000000040,
0F
Y N
|
| 065
| MAP7A76U
| GO TO MAP 7A76, ENTRY POINT U.
| MDI=$FIXT
|
066
MAP7A76A
GO TO MAP 7A76, ENTRY POINT A.
MDI=$FIXT

```
|
|
067
TAG 7 BIT 2
IS LINE DOWN ?
MDI=$TUXX,T7A02,9,
0000000020000000,OF
Y N
|
| 068
| TAG 6 BIT 2
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,8,
| 00000020000000,OF
| Y N
| |
| | 069
| | TAG 7 BIT 3
| | IS LINE PULSING ?
| | MDI=$TUXX,T7A02,9,
| | 0000000000000010,ON
| | Y N
| | |
| | | 070
| | | TAG 7 BIT 3
| | | IS LINE DOWN ?
| | | MDI=$TUXX,T7A02,9,
| | | 0000000010000010,OF
| | | Y N
| | | |
| | | | 071
| | | | TAG 5 BIT 0
| | | | IS LINE DOWN ?
| | | | MDI=$TUXX,T7A02,7,
| | | | 00008000000080,OF
| | | | Y N
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
|
  2 1 1 1 1
2 7 9 8 7 5
7 A A A A A
Z A B C D E
```

```
|
|
072
TAG 6 BIT 5
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,
00000004000000004,OF
Y N
|
| 073
| TAG 6 BIT 6
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,8,
| 00000002000000002,OF
| Y N
| |
| | 074
| | TAG 5 BIT 2
| | IS LINE PULSING ?
| | MDI=$TUXX,T7A02,7,
| | 00000000000020,ON
| | Y N
| | |
| | | 075
| | | TAG 5 BIT 7
| | | IS LINE DOWN ?
| | | MDI=$TUXX,T7A02,7,
| | | 00000100000001,OF
| | | Y N
| | | |
| | | | 076
| | | | TAG 5 BIT 1
| | | | IS LINE DOWN ?
| | | | MDI=$TUXX,T7A02,7,
| | | | 00004000000040,OF
| | | | Y N
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
```

```
| | |
| | |
| | 077
| | MAP7A70-E
| | GO TO MAP 7A70,
| | ENTRY POINT E.
| | MDI=$FIXT
| |
| 078
| MAP7A76U
| GO TO MAP 7A76, ENTRY POINT U.
| MDI=$FIXT
|
079
TAG 5 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00004000000040,
OF
Y N
|
| 080
| MAP7A76U
| GO TO MAP 7A76, ENTRY POINT U.
| MDI=$FIXT
|
081
TAG 5 BIT 0
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000080,
ON
Y N
|
| 082
| MAP7A76R
| GO TO MAP 7A76, ENTRY POINT R.
| MDI=$FIXT
|
083
MAP7A70-E
GO TO MAP 7A70, ENTRY POINT E.
MDI=$FIXT
```

```
| | | |
| | | |
| | | 084
| | | MAP7A76R
| | | GO TO MAP 7A76,
| | | ENTRY POINT R.
| | | MDI=$FIXT
| | |
| | 085
| | MAP7A76U
| | GO TO MAP 7A76,
| | ENTRY POINT U.
| | MDI=$FIXT
| |
| 086
| TAG 5 BIT 7
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,7,
| 00000100000001,OF
| Y N
| |
| | 087
| | MAP7A70-B
| | GO TO MAP 7A70,
| | ENTRY POINT B.
| | MDI=$FIXT
| |
| 088
| MAP7A70-E
| GO TO MAP 7A70, ENTRY POINT E.
| MDI=$FIXT
|
089
WERE ALL WRAP BACK CHECKS OK ?
MDI=$TUXX,T7A02,06,000000000080,
OF
Y N
|
| 090
| MAP7A70-C
| GO TO MAP 7A70, ENTRY POINT C.
| MDI=$FIXT
|
|
|
|
```

```
| |
| |
| 091
| MAP7A76U
| GO TO MAP 7A76, ENTRY POINT U.
| MDI=$FIXT
|
092
TAG 5 BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00000100000001,
OF
Y N
|
| 093
| MAP7A76U
| GO TO MAP 7A76, ENTRY POINT U.
| MDI=$FIXT
|
094
TAG 7 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,9,
0000000080000000,OF
Y N
|
| 095
| MAP7A76U
| GO TO MAP 7A76, ENTRY POINT U.
| MDI=$FIXT
|
096
MAP7A76R
GO TO MAP 7A76, ENTRY POINT R.
MDI=$FIXT
```

```
|
|
097
TAG 5 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00004000000040,
OF
Y N
|
| 098
| TAG 7 BIT 0
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,9,
| 0000000080000000080,OF
| Y N
| |
| | 099
| | MAP7A760
| | GO TO MAP 7A76,
| | ENTRY POINT 0.
| | MDI=$FIXT
| |
| 100
| TAG 5 BIT 4
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,7,
| 00000800000008,OF
| Y N
| |
| | 101
| | TAG 6 BIT 3
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,8,
| | 0000001000000010,OF
| | Y N
| | |
| | | 102
| | | TAG 6 BIT 1
| | | IS LINE PULSING ?
| | | MDI=$TUXX,T7A02,8,
| | | 0000000000000040,ON
| | | Y N
| | | | |
| | | | |
| | | | |
| | | | |
```

```
| |
| |
| 103
| MAP7A76U
| GO TO MAP 7A76, ENTRY POINT U.
| MDI=$FIXT
|
104
TAG 5 BIT 4
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000008,
ON
Y N
|
| 105
| TAG 5 BIT 7
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,7,
| 000C0100000001,OF
| Y N
| |
| | 106
| | TAG 6 BIT 6
| | IS LINE PULSING ?
| | MDI=$TUXX,T7A02,8,
| | 0000000000000002,ON
| | Y N
| | |
| | | 107
| | | MAP7A76R
| | | GO TO MAP 7A76,
| | | ENTRY POINT R.
| | | MDI=$FIXT
| | |
| | 108
| | MAP7A76U
| | GO TO MAP 7A76,
| | ENTRY POINT U.
| | MDI=$FIXT
| |
| 109
| MAP7A76U
| GO TO MAP 7A76, ENTRY POINT U.
| MDI=$FIXT
|
|
```

```
| | | |
| | | |
| | | 110
| | | MAP7A76R
| | | GO TO MAP 7A76,
| | | ENTRY POINT R.
| | | MDI=$FIXT
| | |
| | 111
| | MAP7A76R
| | GO TO MAP 7A76,
| | ENTRY POINT R.
| | MDI=$FIXT
| |
| 112
| MAP7A70-C
| GO TO MAP 7A70, ENTRY POINT C.
| MDI=$FIXT
|
113
TAG 6 BIT 6
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,
00000002000000002,OF
Y N
|
| 114
| TAG 6 BIT 6
| IS LINE PULSING ?
| MDI=$TUXX,T7A02,8,
| 00000000000000002,ON
| Y N
| |
| | 115
| | TAG 5 BIT 7
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,7,
| | 000001000000001,OF
| | Y N
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
```

```
| |
| |
| 116
| TAG 5 BIT 2
| IS LINE PULSING ?
| MDI=$TUXX,T7A02,7,
| 00000000000020,ON
| Y N
| |
| | 117
| | TAG 5 BIT 4
| | IS LINE PULSING ?
| | MDI=$TUXX,T7A02,7,
| | 00000000000008,ON
| | Y N
| | |
| | | 118
| | | MAP7A76U
| | | GO TO MAP 7A76,
| | | ENTRY POINT U.
| | | MDI=$FIXT
| | |
| | 119
| | MAP7A76R
| | GO TO MAP 7A76,
| | ENTRY POINT R.
| | MDI=$FIXT
| |
| 120
| MAP7A72F
| GO TO MAP 7A72, ENTRY POINT F.
| MDI=$FIXT
|
121
TAG 5 BIT 2
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000020,
ON
Y N
| |
| |
| |
| |
| |
| |
| |
```

```
| |
| |
| 122
| TAG 6 BIT 0
| IS LINE PULSING ?
| MDI=$TUXX,T7A02,8,
| 0000000000000080,ON
| Y N
| |
| | 123
| | TAG 6 BIT 1
| | IS LINE PULSING ?
| | MDI=$TUXX,T7A02,8,
| | 0000000000000040,ON
| | Y N
| | |
| | | 124
| | | MAP7A76O
| | | GO TO MAP 7A76,
| | | ENTRY POINT O.
| | | MDI=$FIXT
| | |
| | 125
| | MAP7A76R
| | GO TO MAP 7A76,
| | ENTRY POINT R.
| | MDI=$FIXT
| |
| 126
| MAP7A76F
| GO TO MAP 7A76, ENTRY POINT F.
| MDI=$FIXT
|
127
TAG 6 BIT 1
IS LINE PULSING ?
MDI=$TUXX,T7A02,8,
0000000000000040,ON
Y N
| |
| |
| |
| |
| |
| |
| |
```

```
| | |
| | |
| | 128
| | TAG 6 BIT 0
| | IS LINE PULSING ?
| | MDI=$TUXX,T7A02,8,
| | 0000000000000080,ON
| | Y N
| | |
| | | 129
| | | MAP7A76Q
| | | GO TO MAP 7A76,
| | | ENTRY POINT Q.
| | | MDI=$FIXT
| | |
| | 130
| | MAP7A76R
| | GO TO MAP 7A76,
| | ENTRY POINT R.
| | MDI=$FIXT
| |
| 131
| MAP7A76Q
| GO TO MAP 7A76, ENTRY POINT Q.
| MDI=$FIXT
|
132
TAG 6 BIT 0
IS LINE PULSING ?
MDI=$TUXX,T7A02,8,
0000000000000080,ON
Y N
|
| 133
| TAG 5 BIT 7
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,7,
| 0000100000001,OF
| Y N
| | |
| | |
| | |
| | |
| | |
| | |
| | |
```

```
| |
| |
| 134
| MAP7A76U
| GO TO MAP 7A76, ENTRY POINT U.
| MDI=$FIXT
|
135
TAG 5 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00008000000080,
OF
Y N
|
| 136
| TAG 5 BIT 4
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,7,
| 00000800000008,OF
| Y N
| |
| | 137
| | TAG 6 BIT 1
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,8,
| | 0000004000000040,OF
| | Y N
| | |
| | | 138
| | | MAP7A76R
| | | GO TO MAP 7A76,
| | | ENTRY POINT R.
| | | MDI=$FIXT
| | |
| | 139
| | MAP7A76U
| | GO TO MAP 7A76,
| | ENTRY POINT U.
| | MDI=$FIXT
| |
| 140
| MAP7A76U
| GO TO MAP 7A76, ENTRY POINT U.
| MDI=$FIXT
|
|
```

```
| | |
| | |
| | 141
| | MAP7A76U
| | GO TO MAP 7A76,
| | ENTRY POINT U.
| | MDI=$FIXT
| |
| 142
| MAP7A72F
| GO TO MAP 7A72, ENTRY POINT F.
| MDI=$FIXT
|
143
TAG 5 BIT 4
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00000800000008,
OF
Y N
|
| 144
| WERE ALL WRAP BACK CHECKS OK ?
| MDI=$TUXX,T7A02,06,
| 000000000080,OF
| Y N
| |
| | 145
| | MAP7A76H
| | GO TO MAP 7A76,
| | ENTRY POINT H.
| | MDI=$FIXT
| |
| 146
| MAP7A76R
| GO TO MAP 7A76, ENTRY POINT R.
| MDI=$FIXT
|
147
MAP7A76Q
GO TO MAP 7A76, ENTRY POINT Q.
MDI=$FIXT
```

```
|  |
|  |
| 148
| TAG 5 BIT 3
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,7,
| 00001000000010,OF
| Y N
| |
| | 149
| | MAP7A76M
| | GO TO MAP 7A76,
| | ENTRY POINT M.
| | MDI=$FIXT
| |
| 150
| MAP7A76F
| GO TO MAP 7A76, ENTRY POINT F.
| MDI=$FIXT
|
151
TAG 6 BIT 1
IS LINE PULSING ?
MDI=$TUXX,T7A02,8,
0000000000000040,ON
Y N
|
| 152
| TAG 7 BIT 4
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,9,
| 0000000008000000008,OF
| Y N
| |
| | 153
| | TAG 6 BIT 3
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,8,
| | 0000001000000010,OF
| | Y N
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
```

```
|
|
154
TAG 7 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,9,
0000000080000000080,OF
Y N
|
| 155
| MAP7A76R
| GO TO MAP 7A76, ENTRY POINT R.
| MDI=$FIXT
|
156
TAG 6 BIT 2
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,
0000002000000020,OF
Y N
|
| 157
| MAP7A72Y
| GO TO MAP 7A72, ENTRY POINT Y.
| MDI=$FIXT
|
158
TAG 5 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00004000000040,
OF
Y N
|
| 159
| MAP7A70-C
| GO TO MAP 7A70, ENTRY POINT C.
| MDI=$FIXT
|
|
|
|
|
|
|
|
|
|
```

```
| |
| |
| 160
| TAG 6 BIT 1
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,8,
| 0000004000000040,OF
| Y N
| |
| | 161
| | WERE ALL WRAP BACK CHECKS  OK
| | ?
| | MDI=$TUXX,T7A02,06,
| | 000000000080,OF
| | Y N
| | |
| | | 162
| | | MAP7A72Y
| | | GO TO MAP 7A72,
| | | ENTRY POINT Y.
| | | MDI=$FIXT
| | |
| | 163
| | MAP7A70-C
| | GO TO MAP 7A70,
| | ENTRY POINT C.
| | MDI=$FIXT
| |
| 164
| MAP7A72Y
| GO TO MAP 7A72, ENTRY POINT Y.
| MDI=$FIXT
|
165
STATUS BIT 4
IS LINE DOWN ?
MDI=$TUXX,T7A02,2,0008,OF
Y N
|
| 166
| MAP7A70-B
| GO TO MAP 7A70, ENTRY POINT B.
| MDI=$FIXT
|
|
|
```

```
| |
| |
| 167
| TAG 5 BIT 0
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,7,
| 00008000000080,OF
| Y N
| |
| | 168
| | MAP7A70-C
| | GO TO MAP 7A70,
| | ENTRY POINT C.
| | MDI=$FIXT
| |
| 169
| TAG 5 BIT 1
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,7,
| 00004000000040,OF
| Y N
| |
| | 170
| | MAP7A70-C
| | GO TO MAP 7A70,
| | ENTRY POINT C.
| | MDI=$FIXT
| |
| 171
| MAP7A760
| GO TO MAP 7A76, ENTRY POINT 0.
| MDI=$FIXT
|
172
TAG 5 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00004000000040,
OF
Y N
| |
| |
| |
| |
| |
| |
| |
```

```
| |
| |
| 173
| TAG 5 BIT 7
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,7,
| 0000010000000 1,OF
| Y N
| |
| | 174
| | TAG 6 BIT 2
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,8,
| | 0000002000000020,OF
| | Y N
| | |
| | | 175
| | | MAP7A76Q
| | | GO TO MAP 7A76,
| | | ENTRY POINT Q.
| | | MDI=$FIXT
| | |
| | 176
| | MAP7A70-C
| | GO TO MAP 7A70,
| | ENTRY POINT C.
| | MDI=$FIXT
| |
| 177
| MAP7A76Q
| GO TO MAP 7A76, ENTRY POINT Q.
| MDI=$FIXT
|
178
TAG 6 BIT 2
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,
0000002000000020,OF
Y N
| |
| |
| |
| |
| |
| |
| |
```

```
| |
| |
| 179
| TAG 6 BIT 3
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,8,
| 0000001000000010,OF
| Y N
| |
| | 180
| | MAP7A70-B
| | GO TO MAP 7A70,
| | ENTRY POINT B.
| | MDI=$FIXT
| |
| 181
| MAP7A76R
| GO TO MAP 7A76, ENTRY POINT R.
| MDI=$FIXT
|
182
TAG 5 BIT 2
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00002000000020,
OF
Y N
|
| 183
| TAG 6 BIT 1
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,8,
| 0000004000000040,OF
| Y N
| |
| | 184
| | MAP7A70-B
| | GO TO MAP 7A70,
| | ENTRY POINT B.
| | MDI=$FIXT
| |
| 185
| MAP7A76Q
| GO TO MAP 7A76, ENTRY POINT Q.
| MDI=$FIXT
|
|
```

```
| |
| |
| 186
| MAP7A70-B
| GO TO MAP 7A70, ENTRY POINT B.
| MDI=$FIXT
|
187
MAP7A24H
GO TO MAP 7A24, ENTRY POINT H.
MDI=$GOTO,TYPE=XTRNL,EP=H,
MAP=7A24
```

FAILURE ISOLATION MAP

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
7A23	G	3	001
7A23	H	6	018

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
9	039	7A70	B
12	054	7A70	B
13	059	7A70	B
13	064	7A70	B
14	069	7A70	B
15	072	7A70	B
17	091	7A70	B
5	015	7A70	C
7	027	7A70	C
7	028	7A70	C
8	032	7A70	C
16	080	7A70	C
19	100	7A70	C
21	113	7A70	C
22	117	7A70	C
22	119	7A70	C
8	030	7A70	E
18	098	7A70	E
4	007	7A72	F
8	033	7A72	F
9	040	7A72	F
11	050	7A72	F
11	052	7A72	F
14	068	7A72	F
14	071	7A72	F
17	086	7A72	F
17	089	7A72	F
20	106	7A72	F
20	108	7A72	F
21	112	7A72	F
3	005	7A72	H
4	011	7A72	H
4	013	7A72	H
10	042	7A72	U
10	044	7A72	U

20MAY83 PN8327664

REVISED 1979 ECA03143 PEC375609

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
15	075	7A72	U
4	008	7A76	A
4	012	7A76	A
5	016	7A76	B
5	017	7A76	C
18	095	7A76	F
18	097	7A76	F
20	109	7A76	K
11	049	7A76	O
12	055	7A76	O
13	061	7A76	O
14	067	7A76	O
16	084	7A76	O
17	088	7A76	O
18	092	7A76	O
7	023	7A76	R
7	026	7A76	R
19	101	7A76	R
19	104	7A76	R
22	120	7A76	R
22	121	7A76	R
22	122	7A76	R
10	043	7A76	U
13	060	7A76	U
15	074	7A76	U
16	079	7A76	U
16	082	7A76	U

```
001
(ENTRY POINT G)
TAG 6 BIT 3
IS LINE DOWN ?
MDI=$TUXX,T7A10,8,
0000001000000010,OF
Y N
|
| 002
| TAG 6 BIT 6
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,8,
| 0000000200000002,OF
| Y N
| |
| | 003
| | TAG 7 BIT 7
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,9,
| | 0000000001000000001,OF
| | Y N
| | |
| | | 004
| | | TAG 7 BIT 3
| | | IS LINE PULSING ?
| | | MDI=$TUXX,T7A02,9,
| | | 0000000000000000010,ON
| | | Y N
| | | |
| | | | 005
| | | | MAP7A72H
| | | | GO TO MAP 7A72,
| | | | ENTRY POINT H.
| | | | MDI=$FIXT
| | | |
| | | 006
| | | TAG 7 BIT 4
| | | IS LINE DOWN ?
| | | MDI=$TUXX,T7A02,9,
| | | 0000000008000000008,OF
| | | Y N
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
5 5 4 4 4
A B C D E
```

20MAY83 PN8327664

ECA03143 PEC375609

```
| | |
| | |
| | |
| | 007
| | MAP7A72F
| | GO TO MAP 7A72,
| | ENTRY POINT F.
| | MDI=$FIXT
| |
| 008
| MAP7A76A
| GO TO MAP 7A76, ENTRY POINT A.
| MDI=$FIXT
|
009
TAG 7 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,9,
0000000080000000,0F
Y N
|
| 010
| TAG 6 BIT 1
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,8,
| 0000004000000040,0F
| Y N
| |
| | 011
| | MAP7A72H
| | GO TO MAP 7A72,
| | ENTRY POINT H.
| | MDI=$FIXT
| |
| 012
| MAP7A76A
| GO TO MAP 7A76, ENTRY POINT A.
| MDI=$FIXT
|
013
MAP7A72H
GO TO MAP 7A72, ENTRY POINT H.
MDI=$FIXT
```

```
| | 014
| | STATUS BIT 6
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,2,0002,OF
| | Y N
| | |
| | | 015
| | | MAP7A70-C
| | | GO TO MAP 7A70,
| | | ENTRY POINT C.
| | | MDI=$FIXT
| | |
| | 016
| | MAP7A76B
| | GO TO MAP 7A76, ENTRY POINT B.
| | MDI=$FIXT
| |
017
MAP7A76C
GO TO MAP 7A76, ENTRY POINT C.
MDI=$FIXT
```

```
018
(ENTRY POINT H)
TAG 6 BIT 3
IS LINE DOWN ?
MDI=$TUXX,T7A10,8,
0000001000000010,OF
Y N
|
| 019
| TAG 7 BIT 7
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,9,
| 0000000000100000001,OF
| Y N
| |
| | 020
| | TAG 7 BIT 4
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,9,
| | 0000000000800000008,OF
| | Y N
| | |
| | | 021
| | | TAG 5 BIT 2
| | | IS LINE PULSING ?
| | | MDI=$TUXX,T7A02,7,
| | | 00000000000020,ON
| | | Y N
| | | |
| | | | 022
| | | | TAG 5 BIT 7
| | | | IS LINE DOWN ?
| | | | MDI=$TUXX,T7A02,7,
| | | | 00000100000001,OF
| | | | Y N
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
    | | | |
1 1
9 8 8 8 7 7
F G H J K L
```

```
| |
| |
| |
| 023
| MAP7A76R
| GO TO MAP 7A76, ENTRY POINT R.
| MDI=$FIXT
|
024
TAG 5 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00004000000040,
OF
Y N
|
| 025
| TAG 7 BIT 3
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,9,
| 0000000010000000010,OF
| Y N
| |
| | 026
| | MAP7A76R
| | GO TO MAP 7A76,
| | ENTRY POINT R.
| | MDI=$FIXT
| |
| 027
| MAP7A70-C
| GO TO MAP 7A70, ENTRY POINT C.
| MDI=$FIXT
|
028
MAP7A70-C
GO TO MAP 7A70, ENTRY POINT C.
MDI=$FIXT
```

```
| |
| | 029
| | TAG 5 BIT 7
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,7,
| | 00000100000001,OF
| | Y N
| | |
| | | 030
| | | MAP7A70-E
| | | GO TO MAP 7A70,
| | | ENTRY POINT E.
| | | MDI=$FIXT
| | |
| | 031
| | TAG 7 BIT 0
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,9,
| | 0000000080000080,OF
| | Y N
| | |
| | | 032
| | | MAP7A70-C
| | | GO TO MAP 7A70,
| | | ENTRY POINT C.
| | | MDI=$FIXT
| | |
| | 033
| | MAP7A72F
| | GO TO MAP 7A72, ENTRY POINT F.
| | MDI=$FIXT
| |
| 034
| TAG 5 BIT 1
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,7,00004000000040,
| OF
| Y N
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| |
```

035
TAG 5 BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00000100000001,
OF
Y N

036
TAG 7 BIT 7
IS LINE PULSING ?
MDI=$TUXX,T7A02,9,
0000000000000001,ON
Y N

037
TAG 6 BIT 2
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,
0000002000000020,OF
Y N

038
STATUS BIT 6
IS LINE DOWN ?
MDI=$TUXX,T7A02,2,0002,OF
Y N

039
MAP7A70-B
GO TO MAP 7A70,
ENTRY POINT B.
MDI=$FIXT

040
MAP7A72F
GO TO MAP 7A72,
ENTRY POINT F.
MDI=$FIXT

```
| | |
| | |
| | |
| | 041
| | TAG 5 BIT 2
| | IS LINE PULSING ?
| | MDI=$TUXX,T7A02,7,
| | 00000000000020,ON
| | Y N
| | |
| | | 042
| | | MAP7A72U
| | | GO TO MAP 7A72,
| | | ENTRY POINT U.
| | | MDI=$FIXT
| | |
| | 043
| | MAP7A76U
| | GO TO MAP 7A76,
| | ENTRY POINT U.
| | MDI=$FIXT
| |
| 044
| MAP7A72U
| GO TO MAP 7A72, ENTRY POINT U.
| MDI=$FIXT
|
045
TAG 5 BIT 4
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00000800000008,
OF
Y N
|
| 046
| TAG 6 BIT 4
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,8,
| 0000000800000008,OF
| Y N
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
```

|
|
047
TAG 7 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,9,
0000000080000000080,OF
Y N
|
| 048
| TAG 6 BIT 0
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,8,
| 000000800000080,OF
| Y N
| |
| | 049
| | MAP7A760
| | GO TO MAP 7A76,
| | ENTRY POINT 0.
| | MDI=$FIXT
| |
| 050
| MAP7A72F
| GO TO MAP 7A72, ENTRY POINT F.
| MDI=$FIXT
|
051
TAG 7 BIT 7
IS LINE PULSING ?
MDI=$TUXX,T7A02,9,
0000000000000000001,ON
Y N
|
| 052
| MAP7A72F
| GO TO MAP 7A72, ENTRY POINT F.
| MDI=$FIXT
|
|
|
|
|
|
|
|
|

```
| |
| |
| 053
| TAG 5 BIT 2
| IS LINE PULSING ?
| MDI=$TUXX,T7A02,7,
| 00000000000020,ON
| Y N
| |
| | 054
| | MAP7A70-B
| | GO TO MAP 7A70,
| | ENTRY POINT B.
| | MDI=$FIXT
| |
| 055
| MAP7A76O
| GO TO MAP 7A76, ENTRY POINT O.
| MDI=$FIXT
|
056
TAG 7 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,9,
0000000080000000,OF
Y N
|
| 057
| TAG 5 BIT 2
| IS LINE PULSING ?
| MDI=$TUXX,T7A02,7,
| 00000000000020,ON
| Y N
| |
| | 058
| | TAG 5 BIT 6
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,7,
| | 00000200000002,OF
| | Y N
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
```

```
| | | |
| | | |
| | | 059
| | | MAP7A70-B
| | | GO TO MAP 7A70,
| | | ENTRY POINT B.
| | | MDI=$FIXT
| | |
| | 060
| | MAP7A76U
| | GO TO MAP 7A76,
| | ENTRY POINT U.
| | MDI=$FIXT
| |
| 061
| MAP7A76O
| GO TO MAP 7A76, ENTRY POINT O.
| MDI=$FIXT
|
062
TAG 6 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,
0000008000000080,OF
Y N
|
| 063
| TAG 5 BIT 6
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,7,
| 00000200000002,OF
| Y N
| |
| | 064
| | MAP7A70-B
| | GO TO MAP 7A70,
| | ENTRY POINT B.
| | MDI=$FIXT
| |
| |
| |
| |
| |
| |
| |
| |
```

```
| |
| |
| 065
| TAG 7 BIT 7
| IS LINE PULSING ?
| MDI=$TUXX,T7A02,9,
| 0000000000000001,ON
| Y N
| |
| | 066
| | WERE  ALL WRAP BACK CHECKS OK
| | ?
| | MDI=$TUXX,T7A02,06,
| | 000000000080,OF
| | Y N
| | |
| | | 067
| | | MAP7A760
| | | GO TO MAP 7A76,
| | | ENTRY POINT 0.
| | | MDI=$FIXT
| | |
| | 068
| | MAP7A72F
| | GO TO MAP 7A72,
| | ENTRY POINT F.
| | MDI=$FIXT
| |
| 069
| MAP7A70-B
| GO TO MAP 7A70, ENTRY POINT B.
| MDI=$FIXT
|
070
TAG 7 BIT 7
IS LINE PULSING ?
MDI=$TUXX,T7A02,9,
0000000000000001,ON
Y N
|
| 071
| MAP7A72F
| GO TO MAP 7A72, ENTRY POINT F.
| MDI=$FIXT
|
|
```

```
072
MAP7A70-B
GO TO MAP 7A70,
ENTRY POINT B.
MDI=$FIXT

073
TAG 7 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,9,
0000000080000000,0F
Y N

074
MAP7A76U
GO TO MAP 7A76,
ENTRY POINT U.
MDI=$FIXT

075
MAP7A72U
GO TO MAP 7A72, ENTRY POINT U.
MDI=$FIXT

076
TAG 7 BIT 7
IS LINE PULSING ?
MDI=$TUXX,T7A02,9,
0000000000000001,ON
Y N

077
TAG 5 BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,
00000100000001,0F
Y N
```

```
| |
| |
| 078
| TAG 6 BIT 2
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,8,
| 0000002000000020,OF
| Y N
| |
| | 079
| | MAP7A76U
| | GO TO MAP 7A76,
| | ENTRY POINT U.
| | MDI=$FIXT
| |
| 080
| MAP7A70-C
| GO TO MAP 7A70, ENTRY POINT C.
| MDI=$FIXT
|
081
TAG 7 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,9,
0000000080000000,OF
Y N
|
| 082
| MAP7A76U
| GO TO MAP 7A76, ENTRY POINT U.
| MDI=$FIXT
|
083
TAG 6 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,
0000008000000080,OF
Y N
|
| 084
| MAP7A760
| GO TO MAP 7A76, ENTRY POINT 0.
| MDI=$FIXT
|
|
|
```

```
| |
| |
| 085
| TAG 5 BIT 2
| IS LINE PULSING ?
| MDI=$TUXX,T7A02,7,
| 00000000000020,ON
| Y N
| |
| | 086
| | MAP7A72F
| | GO TO MAP 7A72,
| | ENTRY POINT F.
| | MDI=$FIXT
| |
| 087
| TAG 6 BIT 2
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,8,
| 00000020000000020,OF
| Y N
| |
| | 088
| | MAP7A760
| | GO TO MAP 7A76,
| | ENTRY POINT 0.
| | MDI=$FIXT
| |
| 089
| MAP7A72F
| GO TO MAP 7A72, ENTRY POINT F.
| MDI=$FIXT
|
090
TAG 5 BIT 6
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00000200000002,
OF
Y N
|
| 091
| MAP7A70-B
| GO TO MAP 7A70, ENTRY POINT B.
| MDI=$FIXT
|
|
```

092
MAP7A76O
GO TO MAP 7A76, ENTRY POINT O.
MDI=$FIXT

093
TAG 5 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00004000000040,
OF
Y N

094
TAG 5 BIT 2
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,
00000000000020,ON
Y N

095
GO TO MAP 7A76,
ENTRY POINT F.
MDI=$FIXT

096
TAG 6 BIT 2
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,
0000002000000020,OF
Y N

097
GO TO MAP 7A76,
ENTRY POINT F.
MDI=$FIXT

098
MAP7A70-E
GO TO MAP 7A70, ENTRY POINT E.
MDI=$FIXT

```
| |
| |
| 099
| TAG 5 BIT 4
| IS LINE PULSING ?
| MDI=$TUXX,T7A02,7,
| 00000000000008,ON
| Y N
| |
| | 100
| | MAP7A70-C
| | GO TO MAP 7A70,
| | ENTRY POINT C.
| | MDI=$FIXT
| |
| 101
| MAP7A76R
| GO TO MAP 7A76, ENTRY POINT R.
| MDI=$FIXT
|
102
TAG 5 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00004000000040,
OF
Y N
|
| 103
| TAG 7 BIT 0
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,9,
| 0000000080000000080,OF
| Y N
| |
| | 104
| | MAP7A76R
| | GO TO MAP 7A76,
| | ENTRY POINT R.
| | MDI=$FIXT
| |
| |
| |
| |
| |
| |
```

```
| |
| |
| 105
| TAG 5 BIT 4
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,7,
| 00000800000008,OF
| Y N
| |
| | 106
| | MAP7A72F
| | GO TO MAP 7A72,
| | ENTRY POINT F.
| | MDI=$FIXT
| |
| 107
| TAG 5 BIT 2
| IS LINE PULSING ?
| MDI=$TUXX,T7A02,7,
| 00000000000020,ON
| Y N
| |
| | 108
| | MAP7A72F
| | GO TO MAP 7A72,
| | ENTRY POINT F.
| | MDI=$FIXT
| |
| 109
| MAP7A76K
| GO TO MAP 7A76, ENTRY POINT K.
| MDI=$FIXT
|
110
TAG 5 BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00000100000001,
OF
Y N
| |
| |
| |
| |
| |
| |
| |
```

```
| |
| |
| 111
| TAG 5 BIT 4
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,7,
| 00000800000008,OF
| Y N
| |
| | 112
| | MAP7A72F
| | GO TO MAP 7A72,
| | ENTRY POINT F.
| | MDI=$FIXT
| |
| 113
| MAP7A70-C
| GO TO MAP 7A70, ENTRY POINT C.
| MDI=$FIXT
|
114
TAG 5 BIT 2
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000020,
ON
Y N
|
| 115
| TAG 7 BIT 7
| IS LINE PULSING ?
| MDI=$TUXX,T7A02,9,
| 0000000000000001,ON
| Y N
| |
| | 116
| | TAG 7 BIT 4
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,9,
| | 0000000800000008,OF
| | Y N
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
```

```
| | | |
| | | |
| | | 117
| | | MAP7A70-C
| | | GO TO MAP 7A70,
| | | ENTRY POINT C.
| | | MDI=$FIXT
| | |
| | 118
| | TAG 5 BIT 0
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,7,
| | 00008000000080,0F
| | Y N
| | |
| | | 119
| | | MAP7A70-C
| | | GO TO MAP 7A70,
| | | ENTRY POINT C.
| | | MDI=$FIXT
| | |
| | 120
| | MAP7A76R
| | GO TO MAP 7A76,
| | ENTRY POINT R.
| | MDI=$FIXT
| |
| 121
| MAP7A76R
| GO TO MAP 7A76, ENTRY POINT R.
| MDI=$FIXT
|
122
MAP7A76R
GO TO MAP 7A76, ENTRY POINT R.
MDI=$FIXT
```

FAILURE ISOLATION MAP

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
7A21	I	3	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
25	142	7A70	B
26	150	7A70	B
5	018	7A70	C
6	022	7A70	C
8	036	7A70	C
9	042	7A70	C
10	045	7A70	C
10	048	7A70	C
11	055	7A70	C
14	071	7A70	C
17	091	7A70	C
17	094	7A70	C
18	099	7A70	C
29	164	7A70	C
8	034	7A70	D
12	063	7A70	D
18	100	7A70	D
20	109	7A70	D
24	136	7A70	D
6	019	7A70	E
6	021	7A70	E
10	049	7A70	E
22	125	7A70	E
23	128	7A70	E
26	147	7A70	E
20	112	7A70	K
20	114	7A70	K
3	003	7A72	E
7	029	7A72	F
8	037	7A72	F
11	054	7A72	F
14	074	7A72	F
14	076	7A72	F
15	082	7A72	F
15	083	7A72	F

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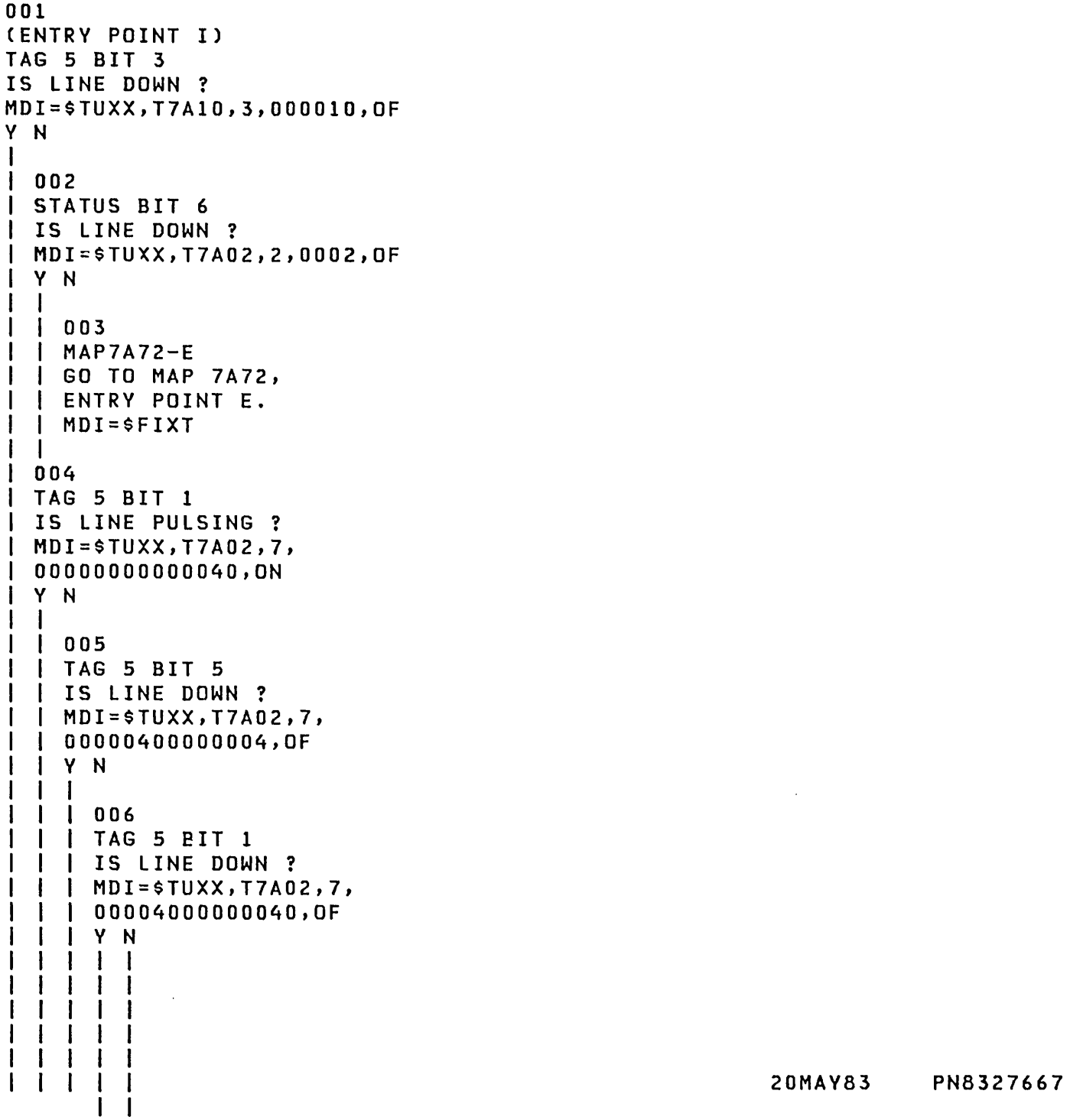
EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
21	119	7A72	F
22	126	7A72	F
23	130	7A72	F
24	138	7A72	F
25	141	7A72	F
25	143	7A72	F
28	157	7A72	F
28	159	7A72	F
28	160	7A72	F
28	163	7A72	F
4	012	7A72	P
11	056	7A72	P
12	058	7A72	P
12	062	7A72	P
5	017	7A76	F
8	035	7A76	F
12	059	7A76	F
23	131	7A76	F
29	165	7A76	F
15	081	7A76	K
16	084	7A76	K
7	028	7A76	O
10	044	7A76	O
10	047	7A76	O
4	010	7A76	Q
13	065	7A76	Q
17	093	7A76	Q
17	095	7A76	Q
20	108	7A76	Q
20	113	7A76	Q
4	011	7A76	R
6	023	7A76	R
7	030	7A76	R
10	050	7A76	R
13	066	7A76	R

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
14	072	7A76	R
15	077	7A76	R
19	103	7A76	R
19	105	7A76	R
23	129	7A76	R
25	140	7A76	R
26	149	7A76	R
27	155	7A76	R
28	158	7A76	R
18	098	7A76	U
19	104	7A76	U
21	120	7A76	U
26	148	7A76	U


001
(ENTRY POINT I)
TAG 5 BIT 3
IS LINE DOWN ?
MDI=$TUXX,T7A10,3,000010,OF
Y N
002
STATUS BIT 6
IS LINE DOWN ?
MDI=$TUXX,T7A02,2,0002,OF
Y N
003
MAP7A72-E
GO TO MAP 7A72,
ENTRY POINT E.
MDI=$FIXT
004
TAG 5 BIT 1
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,
00000000000040,ON
Y N
005
TAG 5 BIT 5
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,
0000400000004,OF
Y N
006
TAG 5 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,
00004000000040,OF
Y N

```
007
TAG 6 BIT 5
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,
00000004000000004,OF
Y N
|
| 008
| TAG 5 BIT 2
| IS LINE PULSING ?
| MDI=$TUXX,T7A02,7,
| 00000000000020,ON
| Y N
| |
| | 009
| | TAG 5 BIT 4
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,7,
| | 00000800000008,OF
| | Y N
| | |
| | | 010
| | | MAP7A76-Q
| | | GO TO MAP 7A76,
| | | ENTRY POINT Q.
| | | MDI=$FIXT
| | |
| | 011
| | MAP7A76-R
| | GO TO MAP 7A76,
| | ENTRY POINT R.
| | MDI=$FIXT
| |
| 012
| MAP7A72-P
| GO TO MAP 7A72, ENTRY POINT P.
| MDI=$FIXT
|
|
|
|
|
|
|
|
```

```
013
TAG 5 BIT 0
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000080,
ON
Y N
|
| 014
| TAG 5 BIT 4
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,7,
| 00000800000008,OF
| Y N
| |
| | 015
| | TAG 5 BIT 4
| | IS LINE PULSING ?
| | MDI=$TUXX,T7A02,7,
| | 00000000000008,ON
| | Y N
| | |
| | | 016
| | | TAG 6 BIT 1
| | | IS LINE DOWN ?
| | | MDI=$TUXX,T7A02,8,
| | | 0000004000000040,OF
| | | Y N
| | | |
| | | | 017
| | | | MAP7A76-F
| | | | GO TO MAP 7A76,
| | | | ENTRY POINT F.
| | | | MDI=$FIXT
| | | |
| | | 018
| | | MAP7A70-C
| | | GO TO MAP 7A70,
| | | ENTRY POINT C.
| | | MDI=$FIXT
| | |
| | |
| | |
| | |
| | |
| | |
```

```
| | | |
| | | | 019
| | | | MAP7A70-E
| | | | GO TO MAP 7A70,
| | | | ENTRY POINT E.
| | | | MDI=$FIXT
| | | |
| | | 020
| | | TAG 5 BIT 5
| | | IS LINE PULSING ?
| | | MDI=$TUXX,T7A02,7,
| | | 00000000000004,ON
| | | Y N
| | | |
| | | | 021
| | | | MAP7A70-E
| | | | GO TO MAP 7A70,
| | | | ENTRY POINT E.
| | | | MDI=$FIXT
| | | |
| | | 022
| | | MAP7A70-C
| | | GO TO MAP 7A70,
| | | ENTRY POINT C.
| | | MDI=$FIXT
| | |
| | 023
| | MAP7A76-R
| | GO TO MAP 7A76, ENTRY POINT R.
| | MDI=$FIXT
| |
| 024
| TAG 6 BIT 3
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,8,
| 0000001000000010,OF
| Y N
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
```

025
TAG 6 BIT 1
IS LINE PULSING ?
MDI=$TUXX,T7A02,8,
0000000000000040,ON
Y N

026
TAG 5 BIT 4
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,
00000800000008,OF
Y N

027
STATUS BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,2,0001,OF
Y N

028
MAP7A76-O
GO TO MAP 7A76,
ENTRY POINT O.
MDI=$FIXT

029
MAP7A72-F
GO TO MAP 7A72,
ENTRY POINT F.
MDI=$FIXT

030
MAP7A76-R
GO TO MAP 7A76, ENTRY POINT R.
MDI=$FIXT

```
|
|
031
TAG 6 BIT 5
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,
0000000400000004,OF
Y N
|
| 032
| STATUS BIT 7
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,2,0001,OF
| Y N
| |
| | 033
| | TAG 5 BIT 2
| | IS LINE PULSING ?
| | MDI=$TUXX,T7A02,7,
| | 0000000000020,ON
| | Y N
| | |
| | | 034
| | | MAP7A70-D
| | | GO TO MAP 7A70,
| | | ENTRY POINT D.
| | | MDI=$FIXT
| | |
| | 035
| | MAP7A76-F
| | GO TO MAP 7A76,
| | ENTRY POINT F.
| | MDI=$FIXT
| |
| 036
| MAP7A70-C
| GO TO MAP 7A70, ENTRY POINT C.
| MDI=$FIXT
|
037
MAP7A72-F
GO TO MAP 7A72, ENTRY POINT F.
MDI=$FIXT
```

```
038
TAG 6 BIT 5
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,
0000000400000004,OF
Y N
|
| 039
| TAG 5 BIT 0
| IS LINE PULSING ?
| MDI=$TUXX,T7A02,7,
| 00000000000080,ON
| Y N
| |
| | 040
| | TAG 5 BIT 4
| | IS LINE PULSING ?
| | MDI=$TUXX,T7A02,7,
| | 00000000000008,ON
| | Y N
| | |
| | | 041
| | | TAG 5 BIT 0
| | | IS LINE DOWN ?
| | | MDI=$TUXX,T7A02,7,
| | | 00008000000080,OF
| | | Y N
| | | |
| | | | 042
| | | | MAP7A70-C
| | | | GO TO MAP 7A70,
| | | | ENTRY POINT C.
| | | | MDI=$FIXT
| | | |
| | | 043
| | | STATUS BIT 7
| | | IS LINE DOWN ?
| | | MDI=$TUXX,T7A02,2,0001,OF
| | | Y N
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
```

FAILURE ISOLATION


```
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | 044
| | | | MAP7A76-0
| | | | GO TO MAP 7A76,
| | | | ENTRY POINT 0.
| | | | MDI=$FIXT
| | | |
| | | 045
| | | MAP7A70-C
| | | GO TO MAP 7A70,
| | | ENTRY POINT C.
| | | MDI=$FIXT
| | |
| | 046
| | TAG 7 BIT 2
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,9,
| | 0000000020000000020,0F
| | Y N
| | |
| | | 047
| | | MAP7A76-0
| | | GO TO MAP 7A76,
| | | ENTRY POINT 0.
| | | MDI=$FIXT
| | |
| | 048
| | MAP7A70-C
| | GO TO MAP 7A70,
| | ENTRY POINT C.
| | MDI=$FIXT
| |
| 049
| MAP7A70-E
| GO TO MAP 7A70, ENTRY POINT E.
| MDI=$FIXT
|
050
MAP7A76-R
GO TO MAP 7A76, ENTRY POINT R.
MDI=$FIXT
```

```
051
TAG 5 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00004000000040,
OF
Y N
|
| 052
| TAG 6 BIT 1
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,8,
| 0000004000000040,OF
| Y N
| |
| | 053
| | TAG 5 BIT 0
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,7,
| | 00008000000080,OF
| | Y N
| | |
| | | 054
| | | MAP7A72-F
| | | GO TO MAP 7A72,
| | | ENTRY POINT F.
| | | MDI=$FIXT
| | |
| | 055
| | MAP7A70-C
| | GO TO MAP 7A70,
| | ENTRY POINT C.
| | MDI=$FIXT
| |
| 056
| MAP7A72-P
| GO TO MAP 7A72, ENTRY POINT P.
| MDI=$FIXT
|
|
|
|
|
|
|
```

```
| 057
| TAG 6 BIT 1
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,8,
| 0000004000000040,OF
| Y N
| |
| | 058
| | MAP7A72-P
| | GO TO MAP 7A72,
| | ENTRY POINT P.
| | MDI=$FIXT
| |
| 059
| MAP7A76-F
| GO TO MAP 7A76, ENTRY POINT F.
| MDI=$FIXT
|
060
'INTERRUPT' RECEIVED ?
MDI=$TUXX,T7A02,14,
00000000000000000000000100,OF
Y N
|
| 061
| TAG 5 BIT 3
| IS LINE PULSING ?
| MDI=$TUXX,T7A02,7,
| 00000000000010,ON
| Y N
| |
| | 062
| | MAP7A72-P
| | GO TO MAP 7A72,
| | ENTRY POINT P.
| | MDI=$FIXT
| |
| 063
| MAP7A70-D
| GO TO MAP 7A70, ENTRY POINT D.
| MDI=$FIXT
|
|
|
|
```

```
|
| |          PAGE  13 OF  29
| |
| |
| 064
| TAG 5 BIT 4
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,7,
| 00000800000008,OF
| Y N
| |
| | 065
| | MAP7A76-Q
| | GO TO MAP 7A76,
| | ENTRY POINT Q.
| | MDI=$FIXT
| |
| 066
| MAP7A76-R
| GO TO MAP 7A76, ENTRY POINT R.
| MDI=$FIXT
|
067
TAG 5 BIT 4
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000008,
ON
Y N
|
| 068
| TAG 5 BIT 5
| IS LINE PULSING ?
| MDI=$TUXX,T7A02,7,
| 00000000000004,ON
| Y N
| |
| | 069
| | TAG 5 BIT 5
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,7,
| | 00000400000004,OF
| | Y N
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
```

| |
| |
| 070
| TAG 5 BIT 1
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,7,
| 00004000000040,OF
| Y N
| |
| | 071
| | MAP7A70-C
| | GO TO MAP 7A70,
| | ENTRY POINT C.
| | MDI=$FIXT
| |
| 072
| MAP7A76-R
| GO TO MAP 7A76, ENTRY POINT R.
| MDI=$FIXT
|
073
TAG 5 BIT 4
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00000800000008,
OF
Y N
|
| 074
| MAP7A72-F
| GO TO MAP 7A72, ENTRY POINT F.
| MDI=$FIXT
|
075
'INTERRUPT' RECEIVED ?
MDI=$TUXX,T7A02,14,
00000000000000000000000100,OF
Y N
|
| 076
| MAP7A72-F
| GO TO MAP 7A72, ENTRY POINT F.
| MDI=$FIXT
|
|
|
|
|

| |
| |
| 077
| MAP7A76-R
| GO TO MAP 7A76, ENTRY POINT R.
| MDI=$FIXT
|
078
WERE ALL WRAP BACK CHECKS OK ?
MDI=$TUXX,T7A02,06,000000000080,
OF
Y N
|
| 079
| TAG 5 BIT 1
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,7,
| 00004000000040,OF
| Y N
| |
| | 080
| | TAG 6 BIT 5
| | IS LINE PULSING ?
| | MDI=$TUXX,T7A02,8,
| | 0000000000000004,ON
| | Y N
| | |
| | | 081
| | | MAP7A76-K
| | | GO TO MAP 7A76,
| | | ENTRY POINT K.
| | | MDI=$FIXT
| | |
| | 082
| | MAP7A72-F
| | GO TO MAP 7A72,
| | ENTRY POINT F.
| | MDI=$FIXT
| |
| 083
| MAP7A72-F
| GO TO MAP 7A72, ENTRY POINT F.
| MDI=$FIXT
|
|
|

```
| | |
| | |
| 084
| MAP7A76-K
| GO TO MAP 7A76, ENTRY POINT K.
| MDI=$FIXT
|
085
TAG 6 BIT 1
IS LINE PULSING ?
MDI=$TUXX,T7A02,8,
0000000000000040,ON
Y N
|
| 086
| TAG 6 BIT 3
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,8,
| 0000001000000010,OF
| Y N
| | |
| | | 087
| | | TAG 5 BIT 0
| | | IS LINE PULSING ?
| | | MDI=$TUXX,T7A02,7,
| | | 00000000000080,ON
| | | Y N
| | | |
| | | | 088
| | | | TAG 6 BIT 1
| | | | IS LINE DOWN ?
| | | | MDI=$TUXX,T7A02,8,
| | | | 0000004000000040,OF
| | | | Y N
| | | | |
| | | | | 089
| | | | | TAG 6 BIT 5
| | | | | IS LINE PULSING ?
| | | | | MDI=$TUXX,T7A02,8,
| | | | | 0000000000000004,ON
| | | | | Y N
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
```

```
| |
| |
| 090
| TAG 5 BIT 1
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,7,
| 00004000000040,OF
| Y N
| |
| | 091
| | MAP7A70-C
| | GO TO MAP 7A70,
| | ENTRY POINT C.
| | MDI=$FIXT
| |
| 092
| TAG 6 BIT 0
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,8,
| 0000008000000080,OF
| Y N
| |
| | 093
| | MAP7A76-Q
| | GO TO MAP 7A76,
| | ENTRY POINT Q.
| | MDI=$FIXT
| |
| 094
| MAP7A70-C
| GO TO MAP 7A70, ENTRY POINT C.
| MDI=$FIXT
|
095
MAP7A76-Q
GO TO MAP 7A76, ENTRY POINT Q.
MDI=$FIXT
```

```
| |
| |
| 096
| TAG 5 BIT 2
| IS LINE PULSING ?
| MDI=$TUXX,T7A02,7,
| 00000000000020,ON
| Y N
| |
| | 097
| | TAG 6 BIT 0
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,8,
| | 0000008000000080,OF
| | Y N
| | |
| | | 098
| | | MAP7A76-U
| | | GO TO MAP 7A76,
| | | ENTRY POINT U.
| | | MDI=$FIXT
| | |
| | 099
| | MAP7A70-C
| | GO TO MAP 7A70,
| | ENTRY POINT C.
| | MDI=$FIXT
| |
| 100
| MAP7A70-D
| GO TO MAP 7A70, ENTRY POINT D.
| MDI=$FIXT
|
101
TAG 5 BIT 2
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000020,
ON
Y N
| |
| |
| |
| |
| |
| |
| |
```

```
| | |
| | |
| | 102
| | TAG 5 BIT 7
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,7,
| | 00000100000001,OF
| | Y N
| | |
| | | 103
| | | MAP7A76-R
| | | GO TO MAP 7A76,
| | | ENTRY POINT R.
| | | MDI=$FIXT
| | |
| | 104
| | MAP7A76-U
| | GO TO MAP 7A76,
| | ENTRY POINT U.
| | MDI=$FIXT
| |
| 105
| MAP7A76-R
| GO TO MAP 7A76, ENTRY POINT R.
| MDI=$FIXT
|
106
TAG 6 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,
0000004000000040,OF
Y N
|
| 107
| TAG 5 BIT 1
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,7,
| 00004000000040,OF
| Y N
| | |
| | |
| | |
| | |
| | |
| | |
| | |
```

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| | |
| | |
| | 108
| | MAP7A76-Q
| | GO TO MAP 7A76,
| | ENTRY POINT Q.
| | MDI=$FIXT
| |
| 109
| MAP7A70-D
| GO TO MAP 7A70, ENTRY POINT D.
| MDI=$FIXT
|
110
STATUS BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,2,0001,OF
Y N
|
| 111
| TAG 5 BIT 0
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,7,
| 00008000000080,OF
| Y N
| |
| | 112
| | MAP7A70-K
| | GO TO MAP 7A70,
| | ENTRY POINT K.
| | MDI=$FIXT
| |
| 113
| MAP7A76-Q
| GO TO MAP 7A76, ENTRY POINT Q.
| MDI=$FIXT
|
114
MAP7A70-K
GO TO MAP 7A70, ENTRY POINT K.
MDI=$FIXT
```

```
|
|
115
TAG 5 BIT 1
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000040,
ON
Y N
|
| 116
| TAG 5 BIT 0
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,7,
| 00008000000080,OF
| Y N
| |
| | 117
| | TAG 5 BIT 0
| | IS LINE PULSING ?
| | MDI=$TUXX,T7A02,7,
| | 00000000000080,ON
| | Y N
| | |
| | | 118
| | | TAG 5 BIT 1
| | | IS LINE DOWN ?
| | | MDI=$TUXX,T7A02,7,
| | | 00004000000040,OF
| | | Y N
| | | |
| | | | 119
| | | | MAP7A72-F
| | | | GO TO MAP 7A72,
| | | | ENTRY POINT F.
| | | | MDI=$FIXT
| | | |
| | | 120
| | | MAP7A76-U
| | | GO TO MAP 7A76,
| | | ENTRY POINT U.
| | | MDI=$FIXT
| | |
| | |
| | |
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```

```
|
|
121
'INTERRUPT' RECEIVED ?
MDI=$TUXX,T7A02,14,
00000000000000000000000100,OF
Y N
|
| 122
| TAG 6 BIT 5
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,8,
| 00000004000000004,OF
| Y N
| |
| | 123
| | TAG 5 BIT 2
| | IS LINE PULSING ?
| | MDI=$TUXX,T7A02,7,
| | 00000000000020,ON
| | Y N
| | |
| | | 124
| | | TAG 5 BIT 7
| | | IS LINE DOWN ?
| | | MDI=$TUXX,T7A02,7,
| | | 00000100000001,OF
| | | Y N
| | | |
| | | | 125
| | | | MAP7A70-E
| | | | GO TO MAP 7A70,
| | | | ENTRY POINT E.
| | | | MDI=$FIXT
| | | |
| | | 126
| | | MAP7A72-F
| | | GO TO MAP 7A72,
| | | ENTRY POINT F.
| | | MDI=$FIXT
| | |
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```

```
| | | |
| | | |
| | | 127
| | | TAG 6 BIT 2
| | | IS LINE DOWN ?
| | | MDI=$TUXX,T7A02,8,
| | | 0000002000000020,OF
| | | Y N
| | | |
| | | | 128
| | | | MAP7A70-E
| | | | GO TO MAP 7A70,
| | | | ENTRY POINT E.
| | | | MDI=$FIXT
| | | |
| | | 129
| | | MAP7A76-R
| | | GO TO MAP 7A76,
| | | ENTRY POINT R.
| | | MDI=$FIXT
| | |
| | 130
| | MAP7A72-F
| | GO TO MAP 7A72,
| | ENTRY POINT F.
| | MDI=$FIXT
| |
| 131
| MAP7A76-F
| GO TO MAP 7A76, ENTRY POINT F.
| MDI=$FIXT
|
132
TAG 6 BIT 3
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,
0000001000000010,OF
Y N
| |
| |
| |
| |
| |
| |
| |
| |
```

```
|
|
133
TAG 5 BIT 2
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000020,
ON
Y N
|
| 134
| STATUS BIT 7
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,2,0001,OF
| Y N
| |
| | 135
| | TAG 6 BIT 0
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,8,
| | 0000008000000080,OF
| | Y N
| | |
| | | 136
| | | MAP7A70-D
| | | GO TO MAP 7A70,
| | | ENTRY POINT D.
| | | MDI=$FIXT
| | |
| | 137
| | TAG 5 BIT 7
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,7,
| | 00000100000001,OF
| | Y N
| | |
| | | 138
| | | MAP7A72-F
| | | GO TO MAP 7A72,
| | | ENTRY POINT F.
| | | MDI=$FIXT
| | |
| | |
| | |
| | |
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| | |
```

```
| | | |
| | | |
| | | 139
| | | TAG 6 BIT 5
| | | IS LINE PULSING ?
| | | MDI=$TUXX,T7A02,8,
| | | 0000000000000004,ON
| | | Y N
| | | |
| | | | 140
| | | | MAP7A76-R
| | | | GO TO MAP 7A76,
| | | | ENTRY POINT R.
| | | | MDI=$FIXT
| | | |
| | | 141
| | | MAP7A72-F
| | | GO TO MAP 7A72,
| | | ENTRY POINT F.
| | | MDI=$FIXT
| | |
| | 142
| | MAP7A70-B
| | GO TO MAP 7A70,
| | ENTRY POINT B.
| | MDI=$FIXT
| |
| 143
| MAP7A72-F
| GO TO MAP 7A72, ENTRY POINT F.
| MDI=$FIXT
|
144
STATUS BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,2,0001,OF
Y N
| |
| |
| |
| |
| |
| |
| |
| |
| |
```

```
| |
| |
| 145
| TAG 6 BIT 5
| IS LINE PULSING ?
| MDI=$TUXX,T7A02,8,
| 0000000000000004,ON
| Y N
| |
| | 146
| | TAG 5 BIT 1
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,7,
| | 00004000000040,OF
| | Y N
| | |
| | | 147
| | | MAP7A70-E
| | | GO TO MAP 7A70,
| | | ENTRY POINT E.
| | | MDI=$FIXT
| | |
| | 148
| | MAP7A76-U
| | GO TO MAP 7A76,
| | ENTRY POINT U.
| | MDI=$FIXT
| |
| 149
| MAP7A76-R
| GO TO MAP 7A76, ENTRY POINT R.
| MDI=$FIXT
|
150
MAP7A70-B
GO TO MAP 7A70, ENTRY POINT B.
MDI=$FIXT
```

```
|
|
151
TAG 5 BIT 2
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000020,
ON
Y N
|
| 152
| TAG 5 BIT 0
| IS LINE PULSING ?
| MDI=$TUXX,T7A02,7,
| 00000000000080,ON
| Y N
| |
| | 153
| | TAG 6 BIT 5
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,8,
| | 0000000400000004,OF
| | Y N
| | |
| | | 154
| | | TAG 5 BIT 0
| | | IS LINE DOWN ?
| | | MDI=$TUXX,T7A02,7,
| | | 00008000000080,OF
| | | Y N
| | | |
| | | | 155
| | | | MAP7A76-R
| | | | GO TO MAP 7A76,
| | | | ENTRY POINT R.
| | | | MDI=$FIXT
| | | |
| | | 156
| | | TAG 6 BIT 5
| | | IS LINE PULSING ?
| | | MDI=$TUXX,T7A02,8,
| | | 0000000000000004,ON
| | | Y N
| | | | |
| | | | |
| | | | |
| | | | |
```

```
| | | | |
| | | | |
| | | | 157
| | | | MAP7A72-F
| | | | GO TO MAP 7A72,
| | | | ENTRY POINT F.
| | | | MDI=$FIXT
| | | |
| | | 158
| | | MAP7A76-R
| | | GO TO MAP 7A76,
| | | ENTRY POINT R.
| | | MDI=$FIXT
| | |
| | 159
| | MAP7A72-F
| | GO TO MAP 7A72,
| | ENTRY POINT F.
| | MDI=$FIXT
| |
| 160
| MAP7A72-F
| GO TO MAP 7A72, ENTRY POINT F.
| MDI=$FIXT
|
161
STATUS BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,2,0001,OF
Y N
|
| 162
| TAG 5 BIT 0
| IS LINE PULSING ?
| MDI=$TUXX,T7A02,7,
| 00000000000080,ON
| Y N
| |
| | 163
| | MAP7A72-F
| | GO TO MAP 7A72,
| | ENTRY POINT F.
| | MDI=$FIXT
| |
| |
| |
```

```
| |
| |
| 164
| MAP7A70-C
| GO TO MAP 7A70, ENTRY POINT C.
| MDI=$FIXT
|
165
MAP7A76-F
GO TO MAP 7A76, ENTRY POINT F.
MDI=$FIXT
```

FAILURE ISOLATION MAP

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
7A21	F	2	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
3	002	7A24	G
3	006	7A70	A
22	119	7A70	B
16	085	7A70	C
17	090	7A70	C
18	099	7A70	C
20	107	7A70	C
20	109	7A70	C
5	019	7A70	D
6	025	7A70	D
9	040	7A70	E
10	045	7A70	E
10	050	7A70	E
11	054	7A70	E
21	114	7A70	E
10	047	7A72	F
12	060	7A72	F
13	067	7A72	F
13	068	7A72	F
14	070	7A72	F
21	118	7A72	F
15	076	7A72	N
15	080	7A72	N
20	106	7A72	N
20	111	7A72	N
21	116	7A72	N
5	016	7A73	A
7	028	7A73	A
8	036	7A73	A
9	044	7A73	A
12	059	7A73	A
12	061	7A73	A
15	079	7A73	A
16	082	7A73	A
16	086	7A73	A

20MAY83 PN8327673

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EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
16	087	7A73	A
17	091	7A73	A
19	100	7A73	A
19	104	7A73	A
20	110	7A73	A
5	014	7A76	A
5	015	7A76	A
7	032	7A76	A
9	039	7A76	A
10	049	7A76	A
11	053	7A76	A
13	066	7A76	A
18	097	7A76	A
5	018	7A76	B
7	026	7A76	B
7	029	7A76	B
11	055	7A76	B
17	092	7A76	B
14	071	7A76	O
14	072	7A76	O
5	013	7A79	A
6	024	7A79	A
7	031	7A79	A
8	037	7A79	A
21	113	7A79	A

001
(ENTRY POINT F)
TAG 6 BIT 1
IS LINE PULSING ?
MDI=$TUXX,T7A10,8,
0000000000000040,ON
Y N
| |
| |
| |
| |
| |

3 3
A B

```
002
MAP7A24-G
GO TO MAP 7A24, ENTRY POINT G.
MDI=$GOTO,TYPE=XTRNL,EP=G,
MAP=7A24

003
TAG 7 BIT 3
IS LINE DOWN ?
MDI=$TUXX,T7A02,9,
0000000010000000010,OF
Y N

004
TAG 7 BIT 4
IS LINE DOWN ?
MDI=$TUXX,T7A02,9,
0000000008000000008,OF
Y N

005
STATUS BIT 4
IS LINE DOWN ?
MDI=$TUXX,T7A02,2,0008,OF
Y N

006
MAP7A70-A
GO TO MAP 7A70,
ENTRY POINT A.
MDI=$FIXT

007
TAG 6 BIT 4
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,
0000000800000008,OF
Y N
```

```
008
STATUS BIT 5
IS LINE DOWN ?
MDI=$TUXX,T7A02,2,0004,0F
Y N
|
| 009
| TAG 6 BIT 6
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,8,
| 0000000200000002,0F
| Y N
| |
| | 010
| | TAG 5 BIT 2
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,7,
| | 00002000000020,0F
| | Y N
| | |
| | | 011
| | | TAG 7 BIT 2
| | | IS LINE DOWN ?
| | | MDI=$TUXX,T7A02,9,
| | | 0000000020000000020,0F
| | | Y N
| | | |
| | | | 012
| | | | TAG 5 BIT 1
| | | | IS LINE DOWN ?
| | | | MDI=$TUXX,T7A02,7,
| | | | 00004000000040,0F
| | | | Y N
| | | | | |
| | | | | |
| | | | | |
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| | | | | |
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| | | | | |
| | | | | |
| | | | | |
6 5 5 5 5 5
G H J K L M
```

FAILURE ISOLATION


```
| | | | |
| | | | |
| | | | |
| | | | |
| | | | 013
| | | | F08  GO  TO POWER FAILURE
| | | | MAP 7A79
| | | | GO TO MAP 7A79,
| | | | ENTRY POINT A.
| | | | MDI=$FIXT
| | | |
| | | 014
| | | MAP7A76-A
| | | GO TO MAP 7A76,
| | | ENTRY POINT A.
| | | MDI=$FIXT
| | |
| | 015
| | MAP7A76-A
| | GO TO MAP 7A76,
| | ENTRY POINT A.
| | MDI=$FIXT
| |
| 016
| MAP7A73-A
| GO TO MAP 7A73, ENTRY POINT A.
| MDI=$FIXT
|
017
TAG 5 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00008000000080,
OF
Y N
|
| 018
| MAP7A76-B
| GO TO MAP 7A76, ENTRY POINT B.
| MDI=$FIXT
|
019
MAP7A70-D
GO TO MAP 7A70, ENTRY POINT D.
MDI=$FIXT
```

```
020
TAG 6 BIT 2
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,
0000002000000020,OF
Y N
|
| 021
| TAG 7 BIT 2
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,9,
| 00000002000000020,OF
| Y N
| |
| | 022
| | TAG 5 BIT 1
| | IS LINE PULSING ?
| | MDI=$TUXX,T7A02,7,
| | 00000000000040,ON
| | Y N
| | |
| | | 023
| | | TAG 5 BIT 1
| | | IS LINE DOWN ?
| | | MDI=$TUXX,T7A02,7,
| | | 00004000000040,OF
| | | Y N
| | | |
| | | | 024
| | | | F08 GO TO  POWER  FAILURE
| | | | MAP 7A79
| | | | GO TO MAP 7A79,
| | | | ENTRY POINT A.
| | | | MDI=$FIXT
| | | |
| | | 025
| | | MAP7A70-D
| | | GO TO MAP 7A70,
| | | ENTRY POINT D.
| | | MDI=$FIXT
| | |
| | |
| | |
| | |
| | |
| | |
7 7 7
N P Q
```

```
| | |
| | |
| | |
| | 026
| | MAP7A76-B
| | GO TO MAP 7A76,
| | ENTRY POINT B.
| | MDI=$FIXT
| |
| 027
| TAG 6 BIT 6
| IS LINE PULSING ?
| MDI=$TUXX,T7A02,8,
| 0000000000000002,ON
| Y N
| |
| | 028
| | MAP7A73-A
| | GO TO MAP 7A73,
| | ENTRY POINT A.
| | MDI=$FIXT
| |
| 029
| MAP7A76-B
| GO TO MAP 7A76, ENTRY POINT B.
| MDI=$FIXT
|
030
TAG 5 BIT 4
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00000800000008,
OF
Y N
|
| 031
| F08  GO  TO  POWER  FAILURE MAP
| 7A79
| GO TO MAP 7A79, ENTRY POINT A.
| MDI=$FIXT
|
032
MAP7A76-A
GO TO MAP 7A76, ENTRY POINT A.
MDI=$FIXT
```

```
|
|
033
TAG 5 BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00000100000001,
OF
Y N
|
| 034
| TAG 5 BIT 1
| IS LINE PULSING ?
| MDI=$TUXX,T7A02,7,
| 00000000000040,ON
| Y N
| |
| | 035
| | TAG 6 BIT 2
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,8,
| | 0000002000000020,OF
| | Y N
| | |
| | | 036
| | | MAP7A73-A
| | | GO TO MAP 7A73,
| | | ENTRY POINT A.
| | | MDI=$FIXT
| | |
| | 037
| | F08 GO TO POWER  FAILURE  MAP
| | 7A79
| | GO TO MAP 7A79,
| | ENTRY POINT A.
| | MDI=$FIXT
| |
| 038
| TAG 6 BIT 6
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,8,
| 0000000200000002,OF
| Y N
| | |
| | |
| | |
| | |
| | |                                          20MAY83    PN8327673
| | |
                                             ECA03143   PEC877036
9 9 9
R S T
```

```
039
MAP7A76-A
GO TO MAP 7A76,
ENTRY POINT A.
MDI=$FIXT

040
MAP7A70-E
GO TO MAP 7A70, ENTRY POINT E.
MDI=$FIXT

041
TAG 7 BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,9,
0000000001000000001,OF
Y N

042
TAG 7 BIT 3
IS LINE PULSING ?
MDI=$TUXX,T7A02,9,
0000000000000010,ON
Y N

043
TAG 6 BIT 6
IS LINE PULSING ?
MDI=$TUXX,T7A02,8,
0000000000000002,ON
Y N

044
MAP7A73-A
GO TO MAP 7A73,
ENTRY POINT A.
MDI=$FIXT
```

```
| 045
| MAP7A70-E
| GO TO MAP 7A70, ENTRY POINT E.
| MDI=$FIXT
|
046
TAG 7 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,9,
0000000080000000,0F
Y N
|
| 047
| MAP7A72-F
| GO TO MAP 7A72, ENTRY POINT F.
| MDI=$FIXT
|
048
TAG 6 BIT 6
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,
0000000200000002,0F
Y N
|
| 049
| MAP7A76-A
| GO TO MAP 7A76, ENTRY POINT A.
| MDI=$FIXT
|
050
MAP7A70-E
GO TO MAP 7A70, ENTRY POINT E.
MDI=$FIXT
```

FAILURE ISOLATION


```
| 051
| TAG 6 BIT 6
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,8,
| 0000000200000002,OF
| Y N
| |
| | 052
| | TAG 6 BIT 6
| | IS LINE PULSING ?
| | MDI=$TUXX,T7A02,8,
| | 0000000000000002,ON
| | Y N
| | |
| | | 053
| | | MAP7A76-A
| | | GO TO MAP 7A76,
| | | ENTRY POINT A.
| | | MDI=$FIXT
| | |
| | 054
| | MAP7A70-E
| | GO TO MAP 7A70,
| | ENTRY POINT E.
| | MDI=$FIXT
| |
| 055
| MAP7A76-B
| GO TO MAP 7A76, ENTRY POINT B.
| MDI=$FIXT
|
056
TAG 7 BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,9,
0000000001000000001,OF
Y N
| |
| |
| |
| |
| |
| |
| |
| |
```

| |
| |
| 057
| TAG 5 BIT 1
| IS LINE PULSING ?
| MDI=$TUXX,T7A02,7,
| 0000000000040,ON
| Y N
| |
| | 058
| | 'INTERRUPT' RECEIVED ?
| | MDI=$TUXX,T7A02,14,
| | 00000000000000000000000100,
| | OF
| | Y N
| | |
| | | 059
| | | MAP7A73-A
| | | GO TO MAP 7A73,
| | | ENTRY POINT A.
| | | MDI=$FIXT
| | |
| | 060
| | MAP7A72-F
| | GO TO MAP 7A72,
| | ENTRY POINT F.
| | MDI=$FIXT
| |
| 061
| MAP7A73-A
| GO TO MAP 7A73, ENTRY POINT A.
| MDI=$FIXT
|
062
TAG 7 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,9,
0000000080000000080,OF
Y N
| |
| |
| |
| |
| |
| |
| |
|

```
|
|
063
TAG 5 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00008000000080,
OF
Y N
|
| 064
| TAG 6 BIT 0
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,8,
| 0000008000000080,OF
| Y N
| |
| | 065
| | TAG 6 BIT 3
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,8,
| | 0000001000000010,OF
| | Y N
| | |
| | | 066
| | | MAP7A76-A
| | | GO TO MAP 7A76,
| | | ENTRY POINT A.
| | | MDI=$FIXT
| | |
| | 067
| | MAP7A72-F
| | GO TO MAP 7A72,
| | ENTRY POINT F.
| | MDI=$FIXT
| |
| 068
| MAP7A72-F
| GO TO MAP 7A72, ENTRY POINT F.
| MDI=$FIXT
|
|
|
|
|
|
|
```

```
| | |
| | |
| | 069
| | TAG 5 BIT 1
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,7,
| | 00004000000040,OF
| | Y N
| | | |
| | | | 070
| | | | MAP7A72-F
| | | | GO TO MAP 7A72,
| | | | ENTRY POINT F.
| | | | MDI=$FIXT
| | | |
| | | 071
| | | MAP7A76-O
| | | GO TO MAP 7A76,
| | | ENTRY POINT O.
| | | MDI=$FIXT
| | |
| | 072
| | MAP7A76-O
| | GO TO MAP 7A76, ENTRY POINT O.
| | MDI=$FIXT
| |
073
TAG 6 BIT 2
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,
0000002000000020,OF
Y N
|
| 074
| TAG 7 BIT 7
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,9,
| 0000000000100000001,OF
| Y N
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
```

```
|
|
075
STATUS BIT 5
IS LINE DOWN ?
MDI=$TUXX,T7A02,2,0004,OF
Y N
|
| 076
| MAP7A72-N
| GO TO MAP 7A72, ENTRY POINT N.
| MDI=$FIXT
|
077
TAG 5 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00004000000040,
OF
Y N
|
| 078
| TAG 6 BIT 4
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,8,
| 0000000800000008,OF
| Y N
| |
| | 079
| | MAP7A73-A
| | GO TO MAP 7A73,
| | ENTRY POINT A.
| | MDI=$FIXT
| |
| 080
| MAP7A72-N
| GO TO MAP 7A72, ENTRY POINT N.
| MDI=$FIXT
|
|
|
|
|
|
|
|
|
```

```
|
|
081
TAG 5 BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00000100000001,
OF
Y N
|
| 082
| MAP7A73-A
| GO TO MAP 7A73, ENTRY POINT A.
| MDI=$FIXT
|
083
'INTERRUPT' RECEIVED ?
MDI=$TUXX,T7A02,14,
00000000000000000000000100,OF
Y N
|
| 084
| TAG 6 BIT 4
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,8,
| 00000008000000008,OF
| Y N
| |
| | 085
| | MAP7A70-C
| | GO TO MAP 7A70,
| | ENTRY POINT C.
| | MDI=$FIXT
| |
| 086
| MAP7A73-A
| GO TO MAP 7A73, ENTRY POINT A.
| MDI=$FIXT
|
087
MAP7A73-A
GO TO MAP 7A73, ENTRY POINT A.
MDI=$FIXT
```

```
| |
| |
| 088
| TAG 6 BIT 6
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,8,
| 0000000200000002,OF
| Y N
| |
| | 089
| | TAG 7 BIT 0
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,4,
| | 0000000080000080,OF
| | Y N
| | |
| | | 090
| | | MAP7A70-C
| | | GO TO MAP 7A70,
| | | ENTRY POINT C.
| | | MDI=$FIXT
| | |
| | 091
| | MAP7A73-A
| | GO TO MAP 7A73,
| | ENTRY POINT A.
| | MDI=$FIXT
| |
| 092
| MAP7A76-B
| GO TO MAP 7A76, ENTRY POINT B.
| MDI=$FIXT
|
093
TAG 7 BIT 4
IS LINE DOWN ?
MDI=$TUXX,T7A02,9,
0000000008000008,OF
Y N
| |
| |
| |
| |
| |
| |
| |
```

```
|
|
094
TAG 6 BIT 6
IS LINE PULSING ?
MDI=$TUXX,T7A02,8,
0000000000000002,ON
Y N
|
| 095
| TAG 7 BIT 7
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,9,
| 0000000001000000001,OF
| Y N
| |
| | 096
| | STATUS BIT 5
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,2,0004,OF
| | Y N
| | |
| | | 097
| | | MAP7A76-A
| | | GO TO MAP 7A76,
| | | ENTRY POINT A.
| | | MDI=$FIXT
| | |
| | 098
| | TAG 5 BIT 1
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,7,
| | 00004000000040,OF
| | Y N
| | |
| | | 099
| | | MAP7A70-C
| | | GO TO MAP 7A70,
| | | ENTRY POINT C.
| | | MDI=$FIXT
| | |
| | |
| | |
| | |
| | |
| | |
```

```
| |
| |
| 100
| MAP7A73-A
| GO TO MAP 7A73, ENTRY POINT A.
| MDI=$FIXT
|
101
TAG 5 BIT 2
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00002000000020,
OF
Y N
|
| 102
| TAG 7 BIT 0
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,9,
| 0000000080000000080,OF
| Y N
| |
| | 103
| | TAG 5 BIT 1
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,7,
| | 00004000000040,OF
| | Y N
| | |
| | | 104
| | | MAP7A73-A
| | | GO TO MAP 7A73,
| | | ENTRY POINT A.
| | | MDI=$FIXT
| | |
| | 105
| | WERE  ALL WRAP BACK CHECKS OK
| | ?
| | MDI=$TUXX,T7A02,06,
| | 000000000080,OF
| | Y N
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
```

```
| | | |
| | | |
| | | 106
| | | MAP7A72-N
| | | GO TO MAP 7A72,
| | | ENTRY POINT N.
| | | MDI=$FIXT
| | |
| | 107
| | MAP7A70-C
| | GO TO MAP 7A70,
| | ENTRY POINT C.
| | MDI=$FIXT
| |
| 108
| TAG 5 BIT 7
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,7,
| 00000100000001,OF
| Y N
| |
| | 109
| | MAP7A70-C
| | GO TO MAP 7A70,
| | ENTRY POINT C.
| | MDI=$FIXT
| |
| 110
| MAP7A73-A
| GO TO MAP 7A73, ENTRY POINT A.
| MDI=$FIXT
|
111
MAP7A72-N
GO TO MAP 7A72, ENTRY POINT N.
MDI=$FIXT
```

```
| |
| |
| 112
| TAG 5 BIT 1
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,7,
| 00004000000040,OF
| Y N
| |
| | 113
| | F08 GO TO POWER FAILURE MAP
| | 7A79
| | GO TO MAP 7A79,
| | ENTRY POINT A.
| | MDI=$FIXT
| |
| 114
| MAP7A70-E
| GO TO MAP 7A70, ENTRY POINT E.
| MDI=$FIXT
|
115
TAG 5 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00004000000040,
OF
Y N
|
| 116
| MAP7A72-N
| GO TO MAP 7A72, ENTRY POINT N.
| MDI=$FIXT
|
117
TAG 7 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,9,
0000000080000000080,OF
Y N
|
| 118
| MAP7A72-F
| GO TO MAP 7A72, ENTRY POINT F.
| MDI=$FIXT
|
|
```

|
|
119
MAP7A70-B
GO TO MAP 7A70, ENTRY POINT B.
MDI=$FIXT

FAILURE ISOLATION MAP

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
7A21	J	3	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
5	016	7A70	A
12	057	7A70	A
13	061	7A70	A
13	064	7A70	A
17	087	7A70	A
12	056	7A70	B
24	132	7A70	B
22	118	7A70	C
4	008	7A70	D
5	013	7A70	D
6	020	7A70	D
9	042	7A70	D
15	073	7A70	D
15	074	7A70	D
16	080	7A70	D
16	083	7A70	D
19	101	7A70	D
22	114	7A70	D
22	116	7A70	D
23	123	7A70	D
24	134	7A70	D
7	030	7A70	E
8	033	7A70	E
14	067	7A70	E
16	082	7A70	E
16	084	7A70	E
17	088	7A70	E
17	089	7A70	E
18	092	7A70	E
19	102	7A70	E
20	107	7A70	E
22	117	7A70	E
23	121	7A70	E
24	128	7A70	E
24	129	7A70	E

20MAY83 PN8327676

REVISED 1979 ECA03143 PEC375609

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
24	130	7A70	E
4	010	7A72	B
4	009	7A76	F
4	012	7A76	F
5	015	7A76	F
6	021	7A76	F
8	032	7A76	F
8	035	7A76	F
9	039	7A76	F
9	041	7A76	F
10	046	7A76	F
11	052	7A76	F
11	050	7A76	Q
11	053	7A76	Q
14	072	7A76	Q
19	098	7A76	Q
20	106	7A76	Q
23	127	7A76	Q
25	135	7A76	Q
5	018	7A76	R
7	028	7A76	R
8	036	7A76	R
9	038	7A76	R
10	047	7A76	R
10	048	7A76	R
13	063	7A76	R
15	075	7A76	R
15	076	7A76	R
18	094	7A76	R
18	096	7A76	R
19	099	7A76	R
20	108	7A76	R
22	120	7A76	U

```
001
(ENTRY POINT J)
TAG 5 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A10,7,00008000000080,
OF
Y N
|
| 002
| 'INTERRUPT' RECEIVED ?
| MDI=$TUXX,T7A02,14,
| 00000000000000000000000100,OF
| Y N
| |
| | 003
| | TAG 5 BIT 2
| | IS LINE PULSING ?
| | MDI=$TUXX,T7A02,7,
| | 00000000000020,ON
| | Y N
| | |
| | | 004
| | | TAG 5 BIT 1
| | | IS LINE DOWN ?
| | | MDI=$TUXX,T7A02,7,
| | | 00004000000040,OF
| | | Y N
| | | |
| | | | 005
| | | | TAG 5 BIT 1
| | | | IS LINE PULSING ?
| | | | MDI=$TUXX,T7A02,7,
| | | | 00000000000040,ON
| | | | Y N
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
  | | | | |
```

```
| |
| 006
| TAG 6 BIT 1
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,8,
| 0000004000000040,OF
| Y N
| |
| | 007
| | TAG 6 BIT 5
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,8,
| | 0000000400000004,OF
| | Y N
| | |
| | | 008
| | | MAP7A70-D
| | | GO TO MAP 7A70,
| | | ENTRY POINT D.
| | | MDI=$FIXT
| | |
| | 009
| | MAP7A76-F
| | GO TO MAP 7A76,
| | ENTRY POINT F.
| | MDI=$FIXT
| |
| 010
| MAP7A72-B
| GO TO MAP 7A72, ENTRY POINT B.
| MDI=$FIXT
|
011
TAG 6 BIT 3
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,
0000001000000010,OF
Y N
|
| 012
| MAP7A76-F
| GO TO MAP 7A76, ENTRY POINT F.
| MDI=$FIXT
|
|
|                                                    20MAY83    PN8327676
|
                                                     ECA03143   PEC375609
```

	PAGE 5 OF 25

013
MAP7A70-D
GO TO MAP 7A70,
ENTRY POINT D.
MDI=$FIXT

014
TAG 6 BIT 3
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,
0000001000000010,OF
Y N

015
MAP7A76-F
GO TO MAP 7A76,
ENTRY POINT F.
MDI=$FIXT

016
MAP7A70-A
GO TO MAP 7A70, ENTRY POINT A.
MDI=$FIXT

017
TAG 5 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00004000000040,
OF
Y N

018
MAP7A76-R
GO TO MAP 7A76, ENTRY POINT R.
MDI=$FIXT

```
| |
| 019
| TAG 6 BIT 5
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,8,
| 0000000400000004,OF
| Y N
| |
| | 020
| | MAP7A70-D
| | GO TO MAP 7A70,
| | ENTRY POINT D.
| | MDI=$FIXT
| |
| 021
| MAP7A76-F
| GO TO MAP 7A76, ENTRY POINT F.
| MDI=$FIXT
|
022
TAG 7 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,9,
0000000080000000080,OF
Y N
|
| 023
| TAG 7 BIT 0
| IS LINE PULSING ?
| MDI=$TUXX,T7A02,9,
| 0000000000000000080,ON
| Y N
| |
| | 024
| | TAG 6 BIT 5
| | IS LINE PULSING ?
| | MDI=$TUXX,T7A02,8,
| | 0000000000000004,ON
| | Y N
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |                                    20MAY83    PN8327676
    | |
1 1                                        ECA03143   PEC375609
1 0 9 7
J K L M                                              MAP 7A27-6
```

```
025
TAG 5 BIT 1
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000040,
ON
Y N
|
| 026
| TAG 5 BIT 1
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,7,
| 00004000000040,OF
| Y N
| |
| | 027
| | TAG 5 BIT 7
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,7,
| | 00000100000001,OF
| | Y N
| | |
| | | 028
| | | MAP7A76-R
| | | GO TO MAP 7A76,
| | | ENTRY POINT R.
| | | MDI=$FIXT
| | |
| | 029
| | TAG 5 BIT 2
| | IS LINE PULSING ?
| | MDI=$TUXX,T7A02,7,
| | 00000000000020,ON
| | Y N
| | |
| | | 030
| | | MAP7A70-E
| | | GO TO MAP 7A70,
| | | ENTRY POINT E.
| | | MDI=$FIXT
| | |
| | |
| | |
| | |
| | |
| | |
| | |
```

```
| |
| |
| |
| 031
| TAG 6 BIT 3
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,8,
| 0000001000000010,0F
| Y N
| |
| | 032
| | MAP7A76-F
| | GO TO MAP 7A76,
| | ENTRY POINT F.
| | MDI=$FIXT
| |
| 033
| MAP7A70-E
| GO TO MAP 7A70, ENTRY POINT E.
| MDI=$FIXT
|
034
TAG 5 BIT 0
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000080,
ON
Y N
|
| 035
| MAP7A76-F
| GO TO MAP 7A76, ENTRY POINT F.
| MDI=$FIXT
|
036
MAP7A76-R
GO TO MAP 7A76, ENTRY POINT R.
MDI=$FIXT
```

```
| |
| |
| |
| 037
| TAG 6 BIT 5
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,8,
| 00000004000000004,0F
| Y N
| |
| | 038
| | MAP7A76-R
| | GO TO MAP 7A76,
| | ENTRY POINT R.
| | MDI=$FIXT
| |
| 039
| MAP7A76-F
| GO TO MAP 7A76, ENTRY POINT F.
| MDI=$FIXT
|
040
TAG 5 BIT 1
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000040,
ON
Y N
|
| 041
| MAP7A76-F
| GO TO MAP 7A76, ENTRY POINT F.
| MDI=$FIXT
|
042
MAP7A70-D
GO TO MAP 7A70, ENTRY POINT D.
MDI=$FIXT
```

```
043
TAG 6 BIT 5
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,
00000004000000004,OF
Y N
|
| 044
| TAG 5 BIT 0
| IS LINE PULSING ?
| MDI=$TUXX,T7A02,7,
| 00000000000080,ON
| Y N
| |
| | 045
| | TAG 5 BIT 1
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,7,
| | 00004000000040,OF
| | Y N
| | |
| | | 046
| | | MAP7A76-F
| | | GO TO MAP 7A76,
| | | ENTRY POINT F.
| | | MDI=$FIXT
| | |
| | 047
| | MAP7A76-R
| | GO TO MAP 7A76,
| | ENTRY POINT R.
| | MDI=$FIXT
| |
| 048
| MAP7A76-R
| GO TO MAP 7A76, ENTRY POINT R.
| MDI=$FIXT
|
|
|
|
|
|
|
|
```

| | PAGE 11 OF 25

049
TAG 5 BIT 0
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,
00000000000080,ON
Y N

050
MAP7A76-Q
GO TO MAP 7A76,
ENTRY POINT Q.
MDI=$FIXT

051
TAG 5 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,
00004000000040,OF
Y N

052
MAP7A76-F
GO TO MAP 7A76,
ENTRY POINT F.
MDI=$FIXT

053
MAP7A76-Q
GO TO MAP 7A76, ENTRY POINT Q.
MDI=$FIXT

054
TAG 5 BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00000100000001,
OF
Y N

```
| |
| |
| 055
| TAG 5 BIT 1
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,7,
| 00004000000040,OF
| Y N
| |
| | 056
| | MAP7A70-B
| | GO TO MAP 7A70,
| | ENTRY POINT B.
| | MDI=$FIXT
| |
| 057
| MAP7A70-A
| GO TO MAP 7A70, ENTRY POINT A.
| MDI=$FIXT
|
058
TAG 6 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,
00000080000000080,OF
Y N
|
| 059
| TAG 6 BIT 2
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,8,
| 00000020000000020,OF
| Y N
| |
| | 060
| | TAG 5 BIT 1
| | IS LINE PULSING ?
| | MDI=$TUXX,T7A02,7,
| | 00000000000040,ON
| | Y N
| | | |
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| | | |
| | | |
```

061
MAP7A70-A
GO TO MAP 7A70,
ENTRY POINT A.
MDI=$FIXT

062
TAG 5 BIT 0
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,
00000000000080,ON
Y N

063
MAP7A76-R
GO TO MAP 7A76,
ENTRY POINT R.
MDI=$FIXT

064
MAP7A70-A
GO TO MAP 7A70, ENTRY POINT A.
MDI=$FIXT

065
TAG 5 BIT 0
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000080,
ON
Y N

066
TAG 6 BIT 5
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,
00000004000000004,OF
Y N

```
| |
| |
| 067
| MAP7A70-E
| GO TO MAP 7A70, ENTRY POINT E.
| MDI=$FIXT
|
068
TAG 5 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00004000000040,
OF
Y N
|
| 069
| TAG 5 BIT 1
| IS LINE PULSING ?
| MDI=$TUXX,T7A02,7,
| 00000000000040,ON
| Y N
| |
| | 070
| | TAG 6 BIT 1
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,8,
| | 0000004000000040,OF
| | Y N
| | |
| | | 071
| | | TAG 6 BIT 3
| | | IS LINE DOWN ?
| | | MDI=$TUXX,T7A02,8,
| | | 0000001000000010,OF
| | | Y N
| | | |
| | | | 072
| | | | MAP7A76-Q
| | | | GO TO MAP 7A76,
| | | | ENTRY POINT Q.
| | | | MDI=$FIXT
| | | |
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| | | | |
| | | | |
| | | | 073
| | | | MAP7A70-D
| | | | GO TO MAP 7A70,
| | | | ENTRY POINT D.
| | | | MDI=$FIXT
| | | |
| | | 074
| | | MAP7A70-D
| | | GO TO MAP 7A70,
| | | ENTRY POINT D.
| | | MDI=$FIXT
| | |
| | 075
| | MAP7A76-R
| | GO TO MAP 7A76,
| | ENTRY POINT R.
| | MDI=$FIXT
| |
| 076
| MAP7A76-R
| GO TO MAP 7A76, ENTRY POINT R.
| MDI=$FIXT
|
077
TAG 6 BIT 5
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,
00000004000000004,0F
Y N
|
| 078
| TAG 5 BIT 1
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,7,
| 00004000000040,0F
| Y N
| | |
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```

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| |
| |
| 079
| TAG 5 BIT 1
| IS LINE PULSING ?
| MDI=$TUXX,T7A02,7,
| 00000000000040,ON
| Y N
| |
| | 080
| | MAP7A70-D
| | GO TO MAP 7A70,
| | ENTRY POINT D.
| | MDI=$FIXT
| |
| 081
| TAG 6 BIT 1
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,8,
| 0000004000000040,OF
| Y N
| |
| | 082
| | MAP7A70-E
| | GO TO MAP 7A70,
| | ENTRY POINT E.
| | MDI=$FIXT
| |
| 083
| MAP7A70-D
| GO TO MAP 7A70, ENTRY POINT D.
| MDI=$FIXT
|
084
MAP7A70-E
GO TO MAP 7A70, ENTRY POINT E.
MDI=$FIXT
```

```
| |
| |
| 085
| TAG 5 BIT 1
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,7,
| 00004000000040,0F
| Y N
| |
| | 086
| | TAG 6 BIT 1
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,8,
| | 00000040000000040,0F
| | Y N
| | |
| | | 087
| | | MAP7A70-A
| | | GO TO MAP 7A70,
| | | ENTRY POINT A.
| | | MDI=$FIXT
| | |
| | 088
| | MAP7A70-E
| | GO TO MAP 7A70,
| | ENTRY POINT E.
| | MDI=$FIXT
| |
| 089
| MAP7A70-E
| GO TO MAP 7A70, ENTRY POINT E.
| MDI=$FIXT
|
090
TAG 6 BIT 3
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,
00000010000000010,0F
Y N
| |
| |
| |
| |
| |
| |
| |
```

091
TAG 5 BIT 2
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000020,
ON
Y N

092
MAP7A70-E
GO TO MAP 7A70, ENTRY POINT E.
MDI=$FIXT

093
TAG 5 BIT 1
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000040,
ON
Y N

094
MAP7A76-R
GO TO MAP 7A76, ENTRY POINT R.
MDI=$FIXT

095
TAG 6 BIT 5
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,
00000004000000004,OF
Y N

096
MAP7A76-R
GO TO MAP 7A76, ENTRY POINT R.
MDI=$FIXT

```
| |
| |
| 097
| TAG 5 BIT 0
| IS LINE PULSING ?
| MDI=$TUXX,T7A02,7,
| 00000000000080,ON
| Y N
| |
| | 098
| | MAP7A76-Q
| | GO TO MAP 7A76,
| | ENTRY POINT Q.
| | MDI=$FIXT
| |
| 099
| MAP7A76-R
| GO TO MAP 7A76, ENTRY POINT R.
| MDI=$FIXT
|
100
TAG 6 BIT 5
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,
00000004000000004,0F
Y N
|
| 101
| MAP7A70-D
| GO TO MAP 7A70, ENTRY POINT D.
| MDI=$FIXT
|
102
MAP7A70-E
GO TO MAP 7A70, ENTRY POINT E.
MDI=$FIXT
```

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103
TAG 6 BIT 3
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,
0000001000000010,OF
Y N
|
| 104
| TAG 5 BIT 2
| IS LINE PULSING ?
| MDI=$TUXX,T7A02,7,
| 00000000000020,ON
| Y N
| |
| | 105
| | TAG 5 BIT 1
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,7,
| | 00004000000040,OF
| | Y N
| | |
| | | 106
| | | MAP7A76-Q
| | | GO TO MAP 7A76,
| | | ENTRY POINT Q.
| | | MDI=$FIXT
| | |
| | 107
| | MAP7A70-E
| | GO TO MAP 7A70,
| | ENTRY POINT E.
| | MDI=$FIXT
| |
| 108
| MAP7A76-R
| GO TO MAP 7A76, ENTRY POINT R.
| MDI=$FIXT
|
|
|
|
|
|
|
```

```
|
|
109
TAG 5 BIT 2
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000020,
ON
Y N
|
| 110
| TAG 5 BIT 1
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,7,
| 00004000000040,OF
| Y N
| |
| | 111
| | TAG 6 BIT 5
| | IS LINE PULSING ?
| | MDI=$TUXX,T7A02,8,
| | 0000000000000004,ON
| | Y N
| | |
| | | 112
| | | TAG 7 BIT 2
| | | IS LINE DOWN ?
| | | MDI=$TUXX,T7A02,9,
| | | 0000000020000020,OF
| | | Y N
| | | |
| | | | 113
| | | | TAG 5 BIT 1
| | | | IS LINE PULSING ?
| | | | MDI=$TUXX,T7A02,7,
| | | | 00000000000040,ON
| | | | Y N
| | | | | |
| | | | | |
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| | | |
| | | |
| | | 114
| | | MAP7A70-D
| | | GO TO MAP 7A70,
| | | ENTRY POINT D.
| | | MDI=$FIXT
| | |
| | 115
| | 'INTERRUPT' RECEIVED ?
| | MDI=$TUXX,T7A02,14,
| | 00000000000000000000000100,
| | OF
| | Y N
| | |
| | | 116
| | | MAP7A70-D
| | | GO TO MAP 7A70,
| | | ENTRY POINT D.
| | | MDI=$FIXT
| | |
| | 117
| | MAP7A70-E
| | GO TO MAP 7A70,
| | ENTRY POINT E.
| | MDI=$FIXT
| |
| 118
| MAP7A70-C
| GO TO MAP 7A70, ENTRY POINT C.
| MDI=$FIXT
|
119
TAG 5 BIT 1
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000040,
ON
Y N
|
| 120
| MAP7A76-U
| GO TO MAP 7A76, ENTRY POINT U.
| MDI=$FIXT
|
|
|
```

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| |
| |
| 121
| MAP7A70-E
| GO TO MAP 7A70, ENTRY POINT E.
| MDI=$FIXT
|
122
'INTERRUPT' RECEIVED ?
MDI=$TUXX,T7A02,14,
00000000000000000000000100,OF
Y N
|
| 123
| MAP7A70-D
| GO TO MAP 7A70, ENTRY POINT D.
| MDI=$FIXT
|
124
TAG 6 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,
0000004000000040,OF
Y N
|
| 125
| TAG 6 BIT 5
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,8,
| 0000000400000004,OF
| Y N
| |
| | 126
| | TAG 6 BIT 5
| | IS LINE PULSING ?
| | MDI=$TUXX,T7A02,8,
| | 0000000000000004,ON
| | Y N
| | |
| | | 127
| | | MAP7A76-Q
| | | GO TO MAP 7A76,
| | | ENTRY POINT Q.
| | | MDI=$FIXT
| | |
| | |
```

```
| | | |
| | | |
| | | 128
| | | MAP7A70-E
| | | GO TO MAP 7A70,
| | | ENTRY POINT E.
| | | MDI=$FIXT
| | |
| | 129
| | MAP7A70-E
| | GO TO MAP 7A70,
| | ENTRY POINT E.
| | MDI=$FIXT
| |
| 130
| MAP7A70-E
| GO TO MAP 7A70, ENTRY POINT E.
| MDI=$FIXT
|
131
TAG 5 BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00000100000001,
OF
Y N
|
| 132
| MAP7A70-B
| GO TO MAP 7A70, ENTRY POINT B.
| MDI=$FIXT
|
133
TAG 6 BIT 5
IS LINE PULSING ?
MDI=$TUXX,T7A02,8,
0000000000000004,ON
Y N
|
| 134
| MAP7A70-D
| GO TO MAP 7A70, ENTRY POINT D.
| MDI=$FIXT
|
|
|
|
```

|
|
135
MAP7A76-Q
GO TO MAP 7A76, ENTRY POINT Q.
MDI=$FIXT

INTERMITTENT HARD ERROR MAP

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
7A20	A	3	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
6	020	7A70	B
6	021	7A70	B
7	026	7A70	B
11	057	7A70	B
15	081	7A70	B
17	095	7A70	B
23	127	7A70	B
27	156	7A70	B
29	163	7A70	B
29	166	7A70	B
7	030	7A70	C
28	159	7A70	C
20	113	7A70	D
23	128	7A70	D
23	129	7A70	D
28	160	7A70	D
6	018	7A70	E
6	019	7A70	E
10	047	7A70	E
12	058	7A70	E
18	096	7A70	E
20	109	7A70	E
20	112	7A70	E
22	121	7A70	E
22	122	7A70	E
24	135	7A70	E
25	142	7A70	E
25	144	7A70	E
15	080	7A70	J
27	152	7A70	J
16	085	7A72	B
16	088	7A72	B
17	090	7A72	B
19	106	7A72	B
20	108	7A72	B

20MAY83 PN8327688

REVISED 1979 ECA03143 PEC375609

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
21	115	7A72	B
21	116	7A72	B
24	134	7A72	B
26	148	7A72	B
27	155	7A72	E
29	165	7A72	E
29	167	7A72	E
4	010	7A72	F
5	012	7A72	F
5	017	7A72	F
6	023	7A72	F
7	025	7A72	F
7	027	7A72	F
7	029	7A72	F
9	037	7A72	F
9	041	7A72	F
10	046	7A72	F
10	050	7A72	F
11	053	7A72	F
13	070	7A72	F
14	072	7A72	F
18	098	7A72	F
18	101	7A72	F
25	139	7A72	F
26	145	7A72	F
23	130	7A72	G
23	131	7A72	G
9	038	7A72	R
10	044	7A72	R
11	054	7A72	R
11	056	7A72	R
12	062	7A72	R
13	065	7A72	R
13	069	7A72	R
14	073	7A72	R

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
14	074	7A72	R
16	083	7A72	R
17	093	7A72	R
16	087	7A72	X
8	035	7A76	F
9	042	7A76	F
9	043	7A76	F
18	100	7A76	F
25	143	7A76	F
26	147	7A76	F
27	153	7A76	J
14	075	7A76	M
13	064	7A76	N
22	120	7A76	R

001
(ENTRY POINT A)

SEEK ERROR

STATUS BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A10,02,0001,OF
Y N
|
| 002
| TAG 7 BIT 4
| IS LINE PULSING ?
| MDI=$TUXX,T7A02,09,
| 0000000000000008,ON
| Y N
| |
| | 003
| | TAG 6 BIT 4
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,09,
| | 000000080000000800,OF
| | Y N
| | |
| | | 004
| | | TAG 5 BIT 7
| | | IS LINE DOWN ?
| | | MDI=$TUXX,T7A02,07,
| | | 00000100000001,OF
| | | Y N
| | | |
| | | | 005
| | | | TAG 5 BIT 1
| | | | IS LINE DOWN ?
| | | | MDI=$TUXX,T7A02,07,
| | | | 00004000000040,OF
| | | | Y N

```
006
TAG 7 BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,09,
0000000001000000001,OF
Y N
|
| 007
| TAG 6 BIT 1
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,09,
| 0000004000000004000,OF
| Y N
| |
| | 008
| | TAG 6 BIT 0
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,09,
| | 0000008000000008000,OF
| | Y N
| | |
| | | 009
| | | TAG 5 BIT 1
| | | IS LINE PULSING ?
| | | MDI=$TUXX,T7A02,07,
| | | 00000000000040,ON
| | | Y N
| | | |
| | | | 010
| | | | MAP 7A72-F
| | | | GO TO MAP 7A72,
| | | | ENTRY POINT F.
| | | | MDI=$FIXT
| | | |
| | | 011
| | | TAG 6 BIT 1
| | | IS LINE PULSING ?
| | | MDI=$TUXX,T7A02,09,
| | | 0000000000000004000,ON
| | | Y N
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
```

```
| |
| |
| |
| 012
| MAP 7A72-F
| GO TO MAP 7A72, ENTRY POINT F.
| MDI=$FIXT
|
013
TAG 5 BIT 4
IS LINE DOWN ?
MDI=$TUXX,T7A02,07,
00000800000008,0F
Y N
|
| 014
| TAG 6 BIT 6
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,09,
| 0000000200000200,0F
| Y N
| |
| | 015
| | TAG 5 BIT 0
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,07,
| | 00008000000080,0F
| | Y N
| | |
| | | 016
| | | TAG 5 BIT 4
| | | IS LINE PULSING ?
| | | MDI=$TUXX,T7A02,07,
| | | 00000000000008,0N
| | | Y N
| | | |
| | | | 017
| | | | MAP 7A72-F
| | | | GO TO MAP 7A72,
| | | | ENTRY POINT F.
| | | | MDI=$FIXT
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
```

INTERMITTENT ERROR

PAGE 6 OF 29

018
SERVO 2 CARD FAILURE
(A1-F2)
GO TO MAP 7A70,
ENTRY POINT E.
MDI=$FIXT

019
SERVO 2 CARD FAILURE
(A1-F2)
GO TO MAP 7A70,
ENTRY POINT E.
MDI=$FIXT

020
LOGIC 1 CARD FAILURE (A1-C2)
GO TO MAP 7A70,
ENTRY POINT B.
MDI=$FIXT

021
LOGIC 1 CARD FAILURE (A1-C2)
GO TO MAP 7A70, ENTRY POINT B.
MDI=$FIXT

022
TAG 5 BIT 2
IS LINE PULSING ?
MDI=$1UXX,T7A02,07,
00000000000020,ON
Y N

023
MAP 7A72-F
GO TO MAP 7A72, ENTRY POINT F.
MDI=$FIXT

```
G H R        4963 DISK FILE
4 4 6
             INTERMITTENT ERROR
| | |
| | |        PAGE   7 OF  29
| | |
| | |
| | 024
| | TAG 6 BIT 6
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,09,
| | 0000000200000000200,0F
| | Y N
| | |
| | | 025
| | | MAP 7A72-F
| | | GO TO MAP 7A72,
| | | ENTRY POINT F.
| | | MDI=$FIXT
| | |
| | 026
| | LOGIC 1 CARD FAILURE (A1-C2)
| | GO TO MAP 7A70,
| | ENTRY POINT B.
| | MDI=$FIXT
| |
| 027
| MAP 7A72-F
| GO TO MAP 7A72, ENTRY POINT F.
| MDI=$FIXT
|
028
STATUS BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,02,0040,0F
Y N
|
| 029
| MAP 7A72-F
| GO TO MAP 7A72, ENTRY POINT F.
| MDI=$FIXT
|
030
LOGIC 2 CARD FAILURE (A1-D2)
GO TO MAP 7A70, ENTRY POINT C.
MDI=$FIXT
```

```
031
TAG 5 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,07,
00008000000080,OF
Y N
|
| 032
| TAG 6 BIT 5
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,09,
| 0000000400000000400,OF
| Y N
| |
| | 033
| | STATUS BIT 1
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,02,0040,OF
| | Y N
| | |
| | | 034
| | | TAG 6 BIT 0
| | | IS LINE DOWN ?
| | | MDI=$TUXX,T7A02,09,
| | | 0000008000000008000,OF
| | | Y N
| | | |
| | | | 035
| | | | MAP 7A76-F
| | | | GO TO MAP 7A76,
| | | | ENTRY POINT F.
| | | | MDI=$FIXT
| | | |
| | | 036
| | | STATUS BIT 5
| | | IS LINE DOWN ?
| | | MDI=$TUXX,T7A02,02,0004,OF
| | | Y N
| | | | |
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S T U V W
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| | |
| | |
| | |
| | 037
| | MAP 7A72-F
| | GO TO MAP 7A72,
| | ENTRY POINT F.
| | MDI=$FIXT
| |
| 038
| MAP 7A72-R
| GO TO MAP 7A72, ENTRY POINT R.
| MDI=$FIXT
|
039
TAG 5 BIT 0
IS LINE PULSING ?
MDI=$TUXX,T7A02,07,
00000000000080,ON
Y N
|
| 040
| TAG 5 BIT 2
| IS LINE PULSING ?
| MDI=$TUXX,T7A02,07,
| 00000000000020,ON
| Y N
| |
| | 041
| | MAP 7A72-F
| | GO TO MAP 7A72,
| | ENTRY POINT F.
| | MDI=$FIXT
| |
| 042
| MAP 7A76-F
| GO TO MAP 7A76, ENTRY POINT F.
| MDI=$FIXT
|
043
MAP 7A76-F
GO TO MAP 7A76, ENTRY POINT F.
MDI=$FIXT
```

```
| | |
| | |
| | |
| | |
| | 044
| | MAP 7A72-R
| | GO TO MAP 7A72,
| | ENTRY POINT R.
| | MDI=$FIXT
| |
| 045
| STATUS BIT 1
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,02,0040,OF
| Y N
| |
| | 046
| | MAP 7A72-F
| | GO TO MAP 7A72,
| | ENTRY POINT F.
| | MDI=$FIXT
| |
| 047
| SERVO 2 CARD FAILURE (A1-F2)
| GO TO MAP 7A70, ENTRY POINT E.
| MDI=$FIXT
|
048
TAG 5 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,07,
00008000000080,OF
Y N
|
| 049
| TAG 5 BIT 1
| IS LINE PULSING ?
| MDI=$TUXX,T7A02,07,
| 00000000000040,ON
| Y N
| |
| | 050
| | MAP 7A72-F
| | GO TO MAP 7A72,
| | ENTRY POINT F.
| | MDI=$FIXT
| |
| |
| |
```

|
|
051
TAG 5 BIT 2
IS LINE PULSING ?
MDI=$TUXX,T7A02,07,
00000000000020,ON
Y N
|
| 052
| TAG 6 BIT 1
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,09,
| 0000004000000004000,OF
| Y N
| |
| | 053
| | MAP 7A72-F
| | GO TO MAP 7A72,
| | ENTRY POINT F.
| | MDI=$FIXT
| |
| 054
| MAP 7A72-R
| GO TO MAP 7A72, ENTRY POINT R.
| MDI=$FIXT
|
055
TAG 6 BIT 2
IS LINE DOWN ?
MDI=$TUXX,T7A02,09,
00000020000000002000,OF
Y N
|
| 056
| MAP 7A72-R
| GO TO MAP 7A72, ENTRY POINT R.
| MDI=$FIXT
|
057
LOGIC 1 CARD FAILURE (A1-C2)
GO TO MAP 7A70, ENTRY POINT B.
MDI=$FIXT

058
SERVO 2 CARD FAILURE (A1-F2)
GO TO MAP 7A70, ENTRY POINT E.
MDI=$FIXT

059
TAG 5 BIT 2
IS LINE PULSING ?
MDI=$TUXX,T7A02,07,
00000000000020,ON
Y N

060
TAG 5 BIT 4
IS LINE DOWN ?
MDI=$TUXX,T7A02,07,
00000800000008,OF
Y N

061
STATUS BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,02,0040,OF
Y N

062
MAP 7A72-R
GO TO MAP 7A72,
ENTRY POINT R.
MDI=$FIXT

063
TAG 5 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,07,
00004000000040,OF
Y N

```
| | |
| | |
| | 064
| | MAP 7A76-N
| | GO TO MAP 7A76,
| | ENTRY POINT N.
| | MDI=$FIXT
| |
| 065
| MAP 7A72-R
| GO TO MAP 7A72, ENTRY POINT R.
| MDI=$FIXT
|
066
TAG 5 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,07,
00008000000080,0F
Y N
|
| 067
| STATUS BIT 1
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,02,0040,0F
| Y N
| |
| | 068
| | TAG 5 BIT 1
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,07,
| | 00004000000040,0F
| | Y N
| | |
| | | 069
| | | MAP 7A72-R
| | | GO TO MAP 7A72,
| | | ENTRY POINT R.
| | | MDI=$FIXT
| | |
| | 070
| | MAP 7A72-F
| | GO TO MAP 7A72,
| | ENTRY POINT F.
| | MDI=$FIXT
| |
| |
```

```
071
STATUS BIT 5
IS LINE DOWN ?
MDI=$TUXX,T7A02,02,0004,OF
Y N
|
| 072
| MAP 7A72-F
| GO TO MAP 7A72,
| ENTRY POINT F.
| MDI=$FIXT
|
073
MAP 7A72-R
GO TO MAP 7A72,
ENTRY POINT R.
MDI=$FIXT
|
074
MAP 7A72-R
GO TO MAP 7A72,
ENTRY POINT R.
MDI=$FIXT
|
075
MAP 7A76-M
GO TO MAP 7A76, ENTRY POINT M.
MDI=$FIXT
|
076
TAG 7 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,09,
0000000080000000,OF
Y N
```

```
|
|
077
TAG 5 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,07,
00004000000040,0F
Y N
|
| 078
| TAG 5 BIT 7
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,07,
| 00000100000001,0F
| Y N
| |
| | 079
| | STATUS BIT 6
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,02,0002,0F
| | Y N
| | |
| | | 080
| | | LOGIC 1 CARD (A1-C2)
| | | OR  SYSTEM  ADAPTER/  CABLE
| | | FAILURE
| | | GO TO MAP 7A70,
| | | ENTRY POINT J.
| | | MDI=$FIXT
| | |
| | 081
| | LOGIC 1 CARD FAILURE (A1-C2)
| | GO TO MAP 7A70,
| | ENTRY POINT B.
| | MDI=$FIXT
| |
| 082
| STATUS BIT 1
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,02,0040,0F
| Y N
| | |
| | |
| | |
| | |
| | |
```

```
| |
| |
| 083
| MAP 7A72-R
| GO TO MAP 7A72, ENTRY POINT R.
| MDI=$FIXT
|
084
TAG 6 BIT 5
IS LINE DOWN ?
MDI=$TUXX,T7A02,09,
0000000400000000400,0F
Y N
|
| 085
| MAP 7A72-B
| GO TO MAP 7A72, ENTRY POINT B.
| MDI=$FIXT
|
086
TAG 5 BIT 0
IS LINE PULSING ?
MDI=$TUXX,T7A02,07,
00000000000080,ON
Y N
|
| 087
| MAP 7A72-X
| GO TO MAP 7A72, ENTRY POINT X.
| MDI=$FIXT
|
088
MAP 7A72-B
GO TO MAP 7A72, ENTRY POINT B.
MDI=$FIXT
```

```
|
|
089
TAG 5 BIT 2
IS LINE PULSING ?
MDI=$TUXX,T7A02,07,
00000000000020,ON
Y N
|
| 090
| MAP 7A72-B
| GO TO MAP 7A72, ENTRY POINT B.
| MDI=$FIXT
|
091
TAG 6 BIT 5
IS LINE DOWN ?
MDI=$TUXX,T7A02,09,
00000004000000400,OF
Y N
|
| 092
| STATUS BIT 1
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,02,0040,OF
| Y N
| |
| | 093
| | MAP 7A72-R
| | GO TO MAP 7A72,
| | ENTRY POINT R.
| | MDI=$FIXT
| |
| 094
| STATUS BIT 5
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,02,0004,OF
| Y N
| |
| | 095
| | LOGIC 1 CARD FAILURE (A1-C2)
| | GO TO MAP 7A70,
| | ENTRY POINT B.
| | MDI=$FIXT
| |
| |
```

```
| |
| |
| 096
| SERVO 2 CARD FAILURE (A1-F2)
| GO TO MAP 7A70, ENTRY POINT E.
| MDI=$FIXT
|
097
TAG 6 BIT 4
IS LINE DOWN ?
MDI=$TUXX,T7A02,09,
0000000800000000800,0F
Y N
|
| 098
| MAP 7A72-F
| GO TO MAP 7A72, ENTRY POINT F.
| MDI=$FIXT
|
099
TAG 5 BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,07,
00000100000001,0F
Y N
|
| 100
| MAP 7A76-F
| GO TO MAP 7A76, ENTRY POINT F.
| MDI=$FIXT
|
101
MAP 7A72-F
GO TO MAP 7A72, ENTRY POINT F.
MDI=$FIXT
```

```
|
|
102
TAG 5 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,07,
00004000000040,OF
Y N
|
| 103
| TAG 6 BIT 5
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,09,
| 0000000400000000400,OF
| Y N
| |
| | 104
| | TAG 6 BIT 0
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,09,
| | 0000008000000008000,OF
| | Y N
| | |
| | | 105
| | | TAG 5 BIT 0
| | | IS LINE DOWN ?
| | | MDI=$TUXX,T7A02,07,
| | | 00008000000080,OF
| | | Y N
| | | |
| | | | 106
| | | | MAP 7A72-B
| | | | GO TO MAP 7A72,
| | | | ENTRY POINT B.
| | | | MDI=$FIXT
| | | |
| | | 107
| | | TAG 6 BIT 3
| | | IS LINE DOWN ?
| | | MDI=$TUXX,T7A02,09,
| | | 0000001000000001000,OF
| | | Y N
| | | | |
| | | | |
| | | | |
| | | | |
```

```
| | |
| | |
| | 108
| | MAP 7A72-B
| | GO TO MAP 7A72,
| | ENTRY POINT B.
| | MDI=$FIXT
| |
| 109
| SERVO 2 CARD FAILURE (A1-F2)
| GO TO MAP 7A70, ENTRY POINT E.
| MDI=$FIXT
|
110
TAG 5 BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,07,
0000010000000l,OF
Y N
|
| 111
| TAG 6 BIT 3
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,09,
| 00000010000000l000,OF
| Y N
| |
| | 112
| | SERVO 2 CARD FAILURE (A1-F2)
| | GO TO MAP 7A70,
| | ENTRY POINT E.
| | MDI=$FIXT
| |
| 113
| SERVO 1 CARD FAILURE (A1-E2)
| GO TO MAP 7A70, ENTRY POINT D.
| MDI=$FIXT
|
|
|
|
|
|
|
|
|
|
```

```
| |
| |
| 114
| TAG 6 BIT 5
| IS LINE PULSING ?
| MDI=$TUXX,T7A02,09,
| 0000000000000400,ON
| Y N
| |
| | 115
| | MAP 7A72-B
| | GO TO MAP 7A72,
| | ENTRY POINT B.
| | MDI=$FIXT
| |
| 116
| MAP 7A72-B
| GO TO MAP 7A72, ENTRY POINT B.
| MDI=$FIXT
|
117
TAG 5 BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,07,
00000100000001,OF
Y N
|
| 118
| TAG 5 BIT 0
| IS LINE PULSING ?
| MDI=$TUXX,T7A02,07,
| 00000000000080,ON
| Y N
| |
| | 119
| | TAG 5 BIT 1
| | IS LINE PULSING ?
| | MDI=$TUXX,T7A02,07,
| | 00000000000040,ON
| | Y N
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
```

```
| | | |
| | | |
| | | 120
| | | MAP 7A76-R
| | | GO TO MAP 7A76,
| | | ENTRY POINT R.
| | | MDI=$FIXT
| | |
| | 121
| | SERVO 2 CARD FAILURE (A1-F2)
| | GO TO MAP 7A70,
| | ENTRY POINT E.
| | MDI=$FIXT
| |
| 122
| SERVO 2 CARD FAILURE (A1-F2)
| GO TO MAP 7A70, ENTRY POINT E.
| MDI=$FIXT
|
123
TAG 6 BIT 3
IS LINE DOWN ?
MDI=$TUXX,T7A02,09,
0000001000000001000,OF
Y N
|
| 124
| TAG 5 BIT 2
| IS LINE PULSING ?
| MDI=$TUXX,T7A02,07,
| 00000000000020,ON
| Y N
| |
| | 125
| | TAG 5 BIT 0
| | IS LINE PULSING ?
| | MDI=$TUXX,T7A02,07,
| | 00000000000080,ON
| | Y N
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
```

```
| | | |
| | | |
| | | 126
| | | TAG 6 BIT 1
| | | IS LINE DOWN ?
| | | MDI=$TUXX,T7A02,09,
| | | 0000004000000004000,OF
| | | Y N
| | | |
| | | | 127
| | | | LOGIC  1   CARD   FAILURE
| | | | (A1-C2)
| | | | GO TO MAP 7A70,
| | | | ENTRY POINT B.
| | | | MDI=$FIXT
| | | |
| | | 128
| | | SERVO    1   CARD   FAILURE
| | | (A1-E2)
| | | GO TO MAP 7A70,
| | | ENTRY POINT D.
| | | MDI=$FIXT
| | |
| | 129
| | SERVO 1 CARD FAILURE (A1-E2)
| | GO TO MAP 7A70,
| | ENTRY POINT D.
| | MDI=$FIXT
| |
| 130
| MAP 7A72-G
| GO TO MAP 7A72, ENTRY POINT G.
| MDI=$FIXT
|
131
MAP 7A72-G
GO TO MAP 7A72, ENTRY POINT G.
MDI=$FIXT
```

```
|
|
132
TAG 5 BIT 2
IS LINE PULSING ?
MDI=$TUXX,T7A02,07,
00000000000020,ON
Y N
|
| 133
| TAG 6 BIT 3
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,09,
| 0000001000000001000,OF
| Y N
| |
| | 134
| | MAP 7A72-B
| | GO TO MAP 7A72,
| | ENTRY POINT B.
| | MDI=$FIXT
| |
| 135
| SERVO 2 CARD FAILURE (A1-F2)
| GO TO MAP 7A70, ENTRY POINT E.
| MDI=$FIXT
|
136
TAG 5 BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,07,
00000100000001,OF
Y N
|
| 137
| TAG 6 BIT 3
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,09,
| 0000001000000001000,OF
| Y N
| | |
| | |
| | |
| | |
| | |
| | |
```

```
|
|
138
TAG 6 BIT 4
IS LINE DOWN ?
MDI=$TUXX,T7A02,09,
0000000800000000800,0F
Y N
|
| 139
| MAP 7A72-F
| GO TO MAP 7A72, ENTRY POINT F.
| MDI=$FIXT
|
140
TAG 5 BIT 0
IS LINE PULSING ?
MDI=$TUXX,T7A02,07,
00000000000080,ON
Y N
|
| 141
| TAG 6 BIT 5
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,09,
| 0000000400000000400,0F
| Y N
| |
| | 142
| | SERVO 2 CARD FAILURE (A1-F2)
| | GO TO MAP 7A70,
| | ENTRY POINT E.
| | MDI=$FIXT
| |
| 143
| MAP 7A76-F
| GO TO MAP 7A76, ENTRY POINT F.
| MDI=$FIXT
|
144
SERVO 2 CARD FAILURE (A1-F2)
GO TO MAP 7A70, ENTRY POINT E.
MDI=$FIXT
```

```
| | |
| | |
| | 145
| | MAP 7A72-F
| | GO TO MAP 7A72,
| | ENTRY POINT F.
| | MDI=$FIXT
| |
| 146
| TAG 5 BIT 0
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,07,
| 00008000000080,0F
| Y N
| |
| | 147
| | MAP 7A76-F
| | GO TO MAP 7A76,
| | ENTRY POINT F.
| | MDI=$FIXT
| |
| 148
| MAP 7A72-B
| GO TO MAP 7A72, ENTRY POINT B.
| MDI=$FIXT
|
149
STATUS BIT 6
IS LINE DOWN ?
MDI=$TUXX,T7A02,02,0002,0F
Y N
|
| 150
| TAG 7 BIT 0
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,09,
| 0000000080000000080,0F
| Y N
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
```

```
| |
| |
| 151
| TAG 6 BIT 0
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,09,
| 0000008000000008000,0F
| Y N
| |
| | 152
| | LOGIC 1 CARD (A1-C2)
| | OR   SYSTEM   ADAPTER/  CABLE
| | FAILURE
| | GO TO MAP 7A70,
| | ENTRY POINT J.
| | MDI=$FIXT
| |
| 153
| MAP 7A76-J
| GO TO MAP 7A76, ENTRY POINT J.
| MDI=$FIXT
|
154
STATUS BIT 3
IS LINE DOWN ?
MDI=$TUXX,T7A02,02,0010,0F
Y N
|
| 155
| MAP 7A72-E
| GO TO MAP 7A72, ENTRY POINT E.
| MDI=$FIXT
|
156
LOGIC 1 CARD FAILURE (A1-C2)
GO TO MAP 7A70, ENTRY POINT B.
MDI=$FIXT
```

```
|
|
157
TAG 5 BIT 2
IS LINE PULSING ?
MDI=$TUXX,T7A02,07,
00000000000020,ON
Y N
|
| 158
| TAG 6 BIT 0
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,09,
| 0000008000000008000,OF
| Y N
| |
| | 159
| | LOGIC 2 CARD FAILURE (A1-D2)
| | GO TO MAP 7A70,
| | ENTRY POINT C.
| | MDI=$FIXT
| |
| 160
| SERVO 1 CARD FAILURE (A1-E2)
| GO TO MAP 7A70, ENTRY POINT D.
| MDI=$FIXT
|
161
TAG 5 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,07,
00004000000040,OF
Y N
|
| 162
| STATUS BIT 3
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,02,0010,OF
| Y N
| | |
| | |
| | |
| | |
| | |
| | |
| | |
```

```
| | |
| | |
| | 163
| | LOGIC 1 CARD FAILURE (A1-C2)
| | GO TO MAP 7A70,
| | ENTRY POINT B.
| | MDI=$FIXT
| |
| 164
| TAG 7 BIT 0
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,09,
| 0000000080000000,0F
| Y N
| |
| | 165
| | MAP 7A72-E
| | GO TO MAP 7A72,
| | ENTRY POINT E.
| | MDI=$FIXT
| |
| 166
| LOGIC 1 CARD FAILURE (A1-C2)
| GO TO MAP 7A70, ENTRY POINT B.
| MDI=$FIXT
|
167
MAP 7A72-E
GO TO MAP 7A72, ENTRY POINT E.
MDI=$FIXT
```

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP ENTRY POINT	PAGE NUMBER	STEP NUMBER
7A20	A	1	003

EXIT POINTS

EXIT THIS MAP PAGE NUMBER	STEP NUMBER	TO MAP NUMBER	ENTRY POINT
4	019	7A21	A
5	025	7A21	A
7	035	7A21	A
8	041	7A21	A
6	030	7A40	A
9	045	7A40	A
5	021	7A69	A
7	037	7A69	A
8	042	7A78	A

001

THIS MAP USES TEST ROUTINES THAT READ AND TEST ALL HEADS ON THE CE TRACK AND FIXED HEAD TRACKS.

ISSUE HIO COMMAND
MDI=$TUXX,T7A56,01,00,EQ
Y N
|
| 002
| NO IS NOT VALID
| MDI=$NVLD
|
003
(ENTRY POINT A)
TEST IF THE FILE IS ATTACHED?
MDI=$TUXX,T7A50,01,80,OF
Y N
|
| 004
| NO FILE ATTACHED
| MDI=$FIXT
|
|
|
|
|
|
| 20MAY83 PN6840792
|
REVISED 1979 ECA03143 PEC466795

005
(ENTRY POINT B)
ARE THE CONFIGURATION JUMPERS OK?
MDI=$TUXX,T7A59,01,80,OF
Y N

006
CORRECT THE CONFIGURATION JUMPERS ON THE A2-C2 CARD.
IF JUMPERS ARE CORRECT, RUN 7A69 (VERIFY ENTIRE DISK, IDS AND DATA).
LOAD (C) MAP7A31 IN MANUAL MODE.
FILE SIZE IS 23MB
MDI=$FIXT

007
ARE THE CONFIGURATION JUMPERS OK?
MDI=$TUXX,T7A02,01,40,OF
Y N

008
CORRECT THE CONFIGURATION JUMPERS ON THE A2-C2 CARD.
IF JUMPERS ARE CORRECT, RUN 7A69 (VERIFY ENTIRE DISK, IDS AND DATA).
LOAD (C) MAP7A31 IN MANUAL MODE.
FILE SIZE IS 29MB
MDI=$FIXT

009
ARE THE CONFIGURATION JUMPERS OK?
MDI=$TUXX,T7A02,01,20,OF
Y N

```
| 010
| CORRECT    THE    CONFIGURATION
| JUMPERS ON THE A2-C2 CARD.
| IF  JUMPERS  ARE  CORRECT,  RUN
| 7A69 (VERIFY ENTIRE  DISK,  IDS
| AND DATA).
| LOAD  (C)  MAP7A31  IN   MANUAL
| MODE.
| FILE SIZE IS 58MB
| MDI=$FIXT
|
011
ARE THE CONFIGURATION JUMPERS OK?
MDI=$TUXX,T7A02,01,10,OF
Y N
|
| 012
| CORRECT    THE    CONFIGURATION
| JUMPERS ON THE A2-C2 CARD.
| IF  JUMPERS  ARE  CORRECT,  RUN
| 7A69  (VERIFY  ENTIRE DISK, IDS
| AND DATA).
| LOAD   (C)  MAP7A31  IN  MANUAL
| MODE.
| FILE SIZE IS 64MB
| MDI=$FIXT
|
013
ARE THE CONFIGURATION JUMPERS OK?
MDI=$TUXX,T7A02,01,08,OF
Y N
|
| 014
| CORRECT    THE    CONFIGURATION
| JUMPERS ON THE A2-C2 CARD.
| IF  JUMPERS  ARE  CORRECT,  RUN
| 7A69 (VERIFY ENTIRE  DISK,  IDS
| AND DATA).
| LOAD  (C)  MAP7A31  IN   MANUAL
| MODE.
| FILE NOT ATTACHED
| MDI=$FIXT
|
|
|                                    20MAY83    PN6840792
|
                                     ECA03143   PEC466795
```

```
015
RUN MOVEABLE HEADS TEST.
DID TEST RUN W/O ERROR ?
MDI=$TUXX,T7A37,01,00,EQ
Y N
|
| 016
| IS FILE READY?
| MDI=$TUXX,T7A02,06,
| 000020000001,OF
| Y N
| |
| | 017
| |                                        IF 'LOOP STEP TO STEP' OPTION IS
| |                                        'ON' (OPTION BYTE 02, BIT 01),
| |                                        THIS STEP NEEDS THE PRECEDING
| |                                        STEP FOR SETUP.
| | MDI=$TUXX,T7A08,01,D5,EQ,
| | PLNG=01,PARM=@N
| | Y N
| | |
| | | 018
| | | 'NO' IS NOT VALID, GO TO
| | | NEXT STEP.
| | | MDI=$NVLD
| | |
| | 019
| | LOAD (C) MAP7A30 IN MANUAL
| | MODE
| | FOR THIS ADDRESS.
| | GO TO MAP 7A21,
| | ENTRY POINT A.
| | MDI=$CALL,TYPE=XTRNL,EP=A,
| | MAP=7A21
| |
| 020
| IS TRACK ID OK?
| MDI=$TUXX,T7A02,01,80,OF
| Y N
| | |
| | |
| | |
| | |
| | |
| | |                                    20MAY83    PN6840792
| | |
                                         ECA03143   PEC466795
6 5 5
E F G
```

```
| |
| |
| |
| 021
| ID ERROR DISPLAY IT
| GO TO MAP 7A69, ENTRY POINT A.
| MDI=$STOP
|
022
IS TRACK ID OK?
MDI=$TUXX,T7A02,01,08,OF
Y N
|
| 023
|
|
|
|
| MDI=$TUXX,T7A08,01,C1,EQ,
| PLNG=01,PARM=@A
| Y N
| |
| | 024
| | 'NO' IS NOT VALID, GO TO NEXT
| | STEP.
| | MDI=$NVLD
| |
| 025
| LOAD (C) MAP7A30 IN MANUAL MODE
| FOR THIS ADDRESS.
| GO TO MAP 7A21, ENTRY POINT A.
| MDI=$CALL,TYPE=XTRNL,EP=A,
| MAP=7A21
|
026
BAD PARITY
MDI=$GOTO,TYPE=XTRNL,EP=A,
MAP=7A78
```

IF 'LOOP STEP TO STEP' OPTION IS 'ON' (OPTION BYTE 02, BIT 01), THIS STEP NEEDS THE PRECEDING STEP FOR SETUP.

027
DOES THIS UNIT HAVE FIXED HEADS ?
MDI=$TUXX,T7A08,03,000004,ON
Y N

028
VERIFY DATA RECORDS
TEST OK?
MDI=$TUXX,T7A96,02,8000,OF
Y N

029
A DATA OR SECTOR ERROR WAS
DETECTED WHILE VERIFYING THE
DISK. FOR MORE DETAILED
TESTING, RUN 7A69 (VERIFY
ENTIRE DISK, IDS AND DATA).
MDI=$FIXT

030
FILE TESTS OK EXCEPT FOR WRITE
LOAD (C) MAP7A40 IN MANUAL MODE
FOR THIS ADDRESS.
GO TO MAP 7A40, ENTRY POINT A.
MDI=$STOP

031
RUN FIXED HEADS TEST.
DID TEST RUN W/O ERROR ?
MDI=$TUXX,T7A28,01,00,EQ
Y N

032
IS FILE READY?
MDI=$TUXX,T7A02,06,
000020000001,OF
Y N

033

IF 'LOOP STEP TO STEP' OPTION IS 'ON' (OPTION BYTE 02, BIT 01), THIS STEP NEEDS THE PRECEDING STEP FOR SETUP.

MDI=$TUXX,T7A08,01,D5,EQ,
PLNG=01,PARM=@N
Y N

034
'NO' IS NOT VALID, GO TO NEXT STEP.
MDI=$NVLD

035
SET ERROR HALT CODE N
GO TO MAP 7A21, ENTRY POINT A.
MDI=$CALL,TYPE=XTRNL,EP=A,
MAP=7A21

036
IS TRACK ID OK?
MDI=$TUXX,T7A02,01,80,OF
Y N

037
ID ERROR DISPLAY IT - USE MAP7A69
GO TO MAP 7A69, ENTRY POINT A.
MDI=$STOP

038
IS TRACK ID OK?
MDI=$TUXX,T7A02,01,08,OF
Y N

4963 DISK UNIT SIZE AND HEAD TEST MAP


```
| | |
| | |
| | |
| | 039
| |
| |
| |
| |
| | MDI=$TUXX,T7A08,01,C1,EQ,
| | PLNG=01,PARM=@A
| | Y N
| | |
| | | 040
| | | 'NO' IS NOT VALID, GO TO
| | | NEXT STEP.
| | | MDI=$NVLD
| | |
| | 041
| | LOAD (C) MAP7A30 IN MANUAL
| | MODE
| | FOR THIS ADDRESS.
| | GO TO MAP 7A21,
| | ENTRY POINT A.
| | MDI=$CALL,TYPE=XTRNL,EP=A,
| | MAP=7A21
| |
| 042
| BAD PARITY
| GO TO MAP 7A78, ENTRY POINT A.
| MDI=$GOTO,TYPE=XTRNL,EP=A,
| MAP=7A78
|
043
VERIFY DATA RECORDS
TEST OK?
MDI=$TUXX,T7A96,02,8000,OF
Y N
|
| 044
| A DATA OR SECTOR ERROR WAS
| DETECTED WHILE VERIFYING THE
| DISK. FOR MORE DETAILED
| TESTING, RUN 7A69 (VERIFY
| ENTIRE DISK, IDS AND DATA).
| MDI=$FIXT
|
|
|
|
```

IF 'LOOP STEP TO STEP' OPTION IS 'ON' (OPTION BYTE 02, BIT 01), THIS STEP NEEDS THE PRECEDING STEP FOR SETUP.

045
FILE TESTS OK EXCEPT FOR WRITE
LOAD (C) MAP7A40 IN MANUAL MODE
FOR THIS ADDRESS.
GO TO MAP 7A40, ENTRY POINT A.
MDI=$STOP

HEAD TEST MAP

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
7A30	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
3	009	7A21	A
3	015	7A21	A
5	023	7A21	A
5	029	7A21	A
4	018	7A40	A
6	031	7A40	A
3	011	7A69	A
5	025	7A69	A
6	030	7A78	A

001
(ENTRY POINT A)

THIS IS AN MDI 'MANUAL MODE' MAP. (SEE DIAGNOSTIC SERVICE GUIDE 05.00.00).
TO USE IT: LOAD AND EXECUTE THE MAP PROGRAM (BXXXX WHERE XXXX=MAP#).
WHEN CE ACTION IS NEEDED DCP HALTS AND DISPLAYS MAP # AND STEP #. SEE THE HARD COPY MAP FOR THE CE ACTION.
ISSUE HIO COMMAND
MDI=$TUXX,T7A56,01,00,EQ
Y N
|
| 002
| NO IS NOT VALID
| MDI=$NVLD
|
|
|
|
|
|
|

THIS MAP USES TEST ROUTINES THAT READ AND TEST ALL HEADS ON THE CE TRACK AND FIXED HEAD TRACKS.

 20MAY83 PN6841898

REVISED 1979 ECA03143 PEC466795

```
|
|
|
|
003
TEST IF THE FILE IS ATTACHED?
MDI=$TUXX,T7A50,01,80,OF
Y N
|
| 004
| NO FILE ATTACHED
| MDI=$FIXT
|
005
RUN MOVEABLE HEADS TEST.
DID TEST RUN W/O ERROR ?
MDI=$TUXX,T7A37,01,00,EQ
Y N
|
| 006
| IS FILE READY?
| MDI=$TUXX,T7A02,06,
| 000020000001,OF
| Y N
| |
| | 007
| |                                      IF  'LOOP STEP TO STEP' OPTION I
| |                                      'ON' (OPTION BYTE  02,  BIT  01)
| |                                      THIS  STEP  NEEDS  THE  PRECEDIN
| |                                      STEP FOR SETUP.
| | MDI=$TUXX,T7A08,01,D5,EQ,
| | PLNG=01,PARM=∂N
| | Y N
| | |
| | | 008
| | | 'NO' IS NOT  VALID,  GO  TO
| | | NEXT STEP.
| | | MDI=$NVLD
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
4 3 3
B C D
```

HEAD TEST MAP

PAGE 3 OF 6

```
009
LOAD (C) MAP7A30 IN MANUAL MODE
FOR THIS ADDRESS.
GO TO MAP 7A21, ENTRY POINT A.
MDI=$CALL,TYPE=XTRNL,EP=A,
MAP=7A21

010
IS TRACK ID OK?
MDI=$TUXX,T7A02,01,80,OF
Y N

 011
 ID ERROR DISPLAY IT
 GO TO MAP 7A69, ENTRY POINT A.
 MDI=$STOP

012
IS TRACK ID OK?
MDI=$TUXX,T7A02,01,08,OF
Y N

 013

 MDI=$TUXX,T7A08,01,C1,EQ,
 PLNG=01,PARM=@A
 Y N
  014
  'NO' IS NOT VALID, GO TO NEXT
  STEP.
  MDI=$NVLD

 015
 LOAD (C) MAP7A30 IN MANUAL MODE
 FOR THIS ADDRESS.
 GO TO MAP 7A21, ENTRY POINT A.
 MDI=$CALL,TYPE=XTRNL,EP=A,
 MAP=7A21
```

IF 'LOOP STEP TO STEP' OPTION IS 'ON' (OPTION BYTE 02, BIT 01), THIS STEP NEEDS THE PRECEDING STEP FOR SETUP.

HEAD TEST MAP


```
| 016
| BAD PARITY
| MDI=$GOTO,TYPE=XTRNL,EP=A,
| MAP=7A78
|
017
DOES THIS UNIT HAVE FIXED HEADS ?
MDI=$TUXX,T7A08,03,000004,ON
Y N
|
| 018
| FILE TESTS OK EXCEPT FOR WRITE
| LOAD (C) MAP7A40 IN MANUAL MODE
| FOR THIS ADDRESS.
| GO TO MAP 7A40, ENTRY POINT A.
| MDI=$STOP
|
019
RUN FIXED HEADS TEST.
DID TEST RUN W/O ERROR ?
MDI=$TUXX,T7A28,01,00,EQ
Y N
|
| 020
| IS FILE READY?
| MDI=$TUXX,T7A02,06,
| 000020000001,0F
| Y N
| |
| | 021
| |                                          IF 'LOOP STEP TO STEP' OPTION IS
| |                                          'ON' (OPTION BYTE 02, BIT 01),
| |                                          THIS STEP NEEDS THE PRECEDING
| |                                          STEP FOR SETUP.
| | MDI=$TUXX,T7A08,01,D5,EQ,
| | PLNG=01,PARM=@N
| | Y N
| | |
| | | 022
| | | 'NO' IS NOT VALID, GO TO
| | | NEXT STEP.
| | | MDI=$NVLD
| | |
| | |
| | |
| | |
```

```
| 023
| SET ERROR HALT CODE N
| GO TO MAP 7A21, ENTRY POINT A.
| MDI=$CALL,TYPE=XTRNL,EP=A,
| MAP=7A21
|
024
IS TRACK ID OK?
MDI=$TUXX,T7A02,01,80,0F
Y N
|
| 025
| ID   ERROR  DISPLAY  IT  -  USE
| MAP7A69
| GO TO MAP 7A69, ENTRY POINT A.
| MDI=$STOP
|
026
IS TRACK ID OK?
MDI=$TUXX,T7A02,01,08,0F
Y N
|
| 027
|
|
|
| MDI=$TUXX,T7A08,01,C1,EQ,
| PLNG=01,PARM=@A
| Y N
| |
| | 028
| | 'NO' IS NOT VALID, GO TO NEXT
| | STEP.
| | MDI=$NVLD
| |
| 029
| LOAD (C) MAP7A30 IN MANUAL MODE
| FOR THIS ADDRESS.
| GO TO MAP 7A21, ENTRY POINT A.
| MDI=$CALL,TYPE=XTRNL,EP=A,
| MAP=7A21
|
|
|
|
```

IF 'LOOP STEP TO STEP' OPTION IS 'ON' (OPTION BYTE 02, BIT 01), THIS STEP NEEDS THE PRECEDING STEP FOR SETUP.

HEAD TEST MAP

PAGE 6 OF 6

030
BAD PARITY
GO TO MAP 7A78, ENTRY POINT A.
MDI=$GOTO,TYPE=XTRNL,EP=A,
MAP=7A78

031
FILE TESTS OK EXCEPT FOR WRITE
LOAD (C) MAP7A40 IN MANUAL MODE
FOR THIS ADDRESS.
GO TO MAP 7A40, ENTRY POINT A.
MDI=$STOP

WRITE TEST MAP

PAGE 1 OF 10

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP: ENTRY POINT	PAGE NUMBER	STEP NUMBER
7A20	A	1	001

EXIT POINTS

EXIT THIS MAP: PAGE NUMBER	STEP NUMBER	TO: MAP NUMBER	ENTRY POINT
3	009	7A21	A
5	019	7A21	A
7	031	7A21	A
8	041	7A21	A
4	015	7A22	C
8	037	7A22	C
9	047	7A51	A
10	049	7A51	A
10	052	7A51	A

001
(ENTRY POINT A)

THIS IS AN MDI 'MANUAL MODE' MAP.
(SEE DIAGNOSTIC SERVICE GUIDE 05.00.00).
TO USE IT: LOAD AND EXECUTE THE MAP PROGRAM (BXXXX WHERE XXXX=MAP#).
WHEN CE ACTION IS NEEDED DCP HALTS AND DISPLAYS MAP # AND STEP #. SEE THE HARD COPY MAP FOR THE CE ACTION.

```
*******************************
**********WARNING**************
* THIS MAP WRITES ON THE DISK,*
* CE TRACK(0167) AND ON FIXED *
* HEADS, IT MAY RESULT IN     *
* LOSS OF CUSTOMER DATA       *
*******************************
```

CE RESPONSE NECESSARY.
ISSUE HIO COMMAND
(STEP 001 CONTINUES)

(STEP 001 CONTINUED)
MDI=$TUXX,T7A56,01,00,EQ
Y N
|
| 002
| 'NO' IS NOT VALID, GO TO NEXT
| STEP.
| MDI=$NVLD
|
003

THIS MAP USES TEST ROUTINES THAT WRITE ON THE CE TRACK .

SOME HARDWARE FAILURES COULD CAUSE CUSTOMER DATA ON THESE TRACKS TO BE WRITTEN ON DURING EXECUTION OF THIS MAP.

BEFORE CONTINUING , INFORM THE CUSTOMER OF THIS, AND ENSURE THAT HIS DATA IS KEPT.

DO YOU WANT TO TEST MOVEABLE
HEADS ?
MDI=$QUES
Y N
|
| 004
| TEST DIAGNOSTIC BITS
| MDI=$GOTO,TYPE=INTRNL,EP=B
|
005
RUN MOVEABLE HEADS WRITE TEST.
MOVEABLE HEAD TEST.
DID TEST RUN W/O ERROR ?
MDI=$TUXX,T7A07,01,00,EQ
Y N
|
| 006
| IS TRACK ID CORRECT?
| MDI=$TUXX,T7A02,01,08,OF
| Y N

```
| 007
|                                          IF 'LOOP STEP TO STEP' OPTION IS
|                                          'ON' (OPTION BYTE 02, BIT 01),
|                                          THIS STEP NEEDS THE PRECEDING
|                                          STEP FOR SETUP.
| MDI=$TUXX,T7A08,01,C1,EQ,
| PLNG=01,PARM=@A
| Y N
| |
| | 008
| | 'NO' IS NOT VALID, GO TO NEXT
| | STEP.
| | MDI=$NVLD
| |
| 009
| SET ERROR HALT CODE A
| GO TO MAP 7A21, ENTRY POINT A.
| MDI=$CALL,TYPE=XTRNL,EP=A,
| MAP=7A21
|
010
IS PARITY GOOD ?
MDI=$TUXX,T7A02,01,40,OF
Y N
|
| 011
| BAD PARITY
| MDI=$GOTO,TYPE=XTRNL,MAP=7A78,
| EP=A
|
012
SENSE CORRECT AFTER WRITE?
MDI=$TUXX,T7A02,01,80,OF
Y N
| |
| |
| |
| |
| |
| |
| |
| |
| |
| |
| |                                                    20MAY83    PN8327670
| |
                                                     ECA03143   PEC375609
```

WRITE TEST MAP

PAGE 4 OF 10

013

IF 'LOOP STEP TO STEP' OPTION IS 'ON' (OPTION BYTE 02, BIT 01), THIS STEP NEEDS THE PRECEDING STEP FOR SETUP.

MDI=$TUXX,T7A08,01,E6,EQ,
PLNG=01,PARM=@W
Y N

014
'NO' IS NOT VALID, GO TO NEXT STEP.
MDI=$NVLD

015
SET ERROR HALT CODE W
GO TO MAP 7A22, ENTRY POINT C.
MDI=$CALL,TYPE=XTRNL,EP=A,
MAP=7A21

016
READ VERIFY OK?
DID TEST RUN W/O ERROR ?
MDI=$TUXX,T7A02,01,10,0F
Y N

017

IF 'LOOP STEP TO STEP' OPTION IS 'ON' (OPTION BYTE 02, BIT 01), THIS STEP NEEDS THE PRECEDING STEP FOR SETUP.

MDI=$TUXX,T7A08,01,E5,EQ,
PLNG=01,PARM=@V
Y N

018
'NO' IS NOT VALID, GO TO NEXT STEP.
MDI=$NVLD

PAGE 5 OF 10

019
SET ERROR HALT CODE V
GO TO MAP 7A21,
ENTRY POINT A.
MDI=$CALL,TYPE=XTRNL,EP=A,
MAP=7A21

020
SHOULD NEVER GET HERE
MDI=$FIXT

021
TEST SCAN DATA
DID TEST RUN W/O ERROR ?
MDI=$TUXX,T7A54,01,10,0F
Y N

022
SCAN TEST FAILED
EXCHANGE CARDS A2-D2,A2-C2
MDI=$FIXT

023
FIXED HEAD TEST
DOES THIS UNIT HAVE FIXED HEADS ?
MDI=$TUXX,T7A08,03,000004,ON
Y N

024
TEST DIAGNOSTIC BITS
MDI=$GOTO,TYPE=INTRNL,EP=B

025

THIS MAP USES TEST ROUTINES THAT WRITE ON THE FIXED HEAD TRACKS.

SOME HARDWARE FAILURES COULD CAUSE CUSTOMER DATA ON THESE TRACKS TO BE WRITTEN ON DURING EXECUTION OF THIS MAP.

BEFORE CONTINUING , INFORM THE CUSTOMER OF THIS, AND ENSURE THAT HIS DATA IS KEPT.

DO YOU WANT TO TEST FIXED HEADS ?
MDI=$QUES
Y N
|
| 026
| TEST DIAGNOSTIC BITS
| MDI=$GOTO,TYPE=INTRNL,EP=B
|
027
RUN FIXED HEADS TEST.
DID TEST RUN W/O ERROR ?
MDI=$TUXX,T7A17,01,00,EQ
Y N
|
| 028
| IS TRACK ID CORRECT?
| MDI=$TUXX,T7A02,01,08,0F
| Y N
| |
| | 029
| |
| |
| |
| |
| | MDI=$TUXX,T7A08,01,C1,EQ,
| | PLNG=01,PARM=@A
| | Y N

IF 'LOOP STEP TO STEP' OPTION IS 'ON' (OPTION BYTE 02, BIT 01), THIS STEP NEEDS THE PRECEDING STEP FOR SETUP.

WRITE TEST MAP


```
030
'NO' IS NOT VALID, GO TO NEXT
STEP.
MDI=$NVLD

031
SET ERROR HALT CODE A
GO TO MAP 7A21, ENTRY POINT A.
MDI=$CALL,TYPE=XTRNL,EP=A,
MAP=7A21

032
IS PARITY GOOD ?
MDI=$TUXX,T7A02,01,40,0F
Y N

033
BAD PARITY
MDI=$GOTO,TYPE=XTRNL,MAP=7A78,
EP=A

034
SENSE CORRECT AFTER WRITE?
MDI=$TUXX,T7A02,01,80,0F
Y N

035

MDI=$TUXX,T7A08,01,E6,EQ,
PLNG=01,PARM=@W
Y N

036
'NO' IS NOT VALID, GO TO NEXT
STEP.
MDI=$NVLD
```

IF 'LOOP STEP TO STEP' OPTION IS 'ON' (OPTION BYTE 02, BIT 01), THIS STEP NEEDS THE PRECEDING STEP FOR SETUP.

WRITE TEST MAP

PAGE 8 OF 10

```
037
SET ERROR HALT CODE W
GO TO MAP 7A22, ENTRY POINT C.
MDI=$CALL,TYPE=XTRNL,EP=A,
MAP=7A21

038
READ VERIFY OK?
DID TEST RUN W/O ERROR ?
MDI=$TUXX,T7A02,01,10,0F
Y N

039

MDI=$TUXX,T7A08,01,E5,EQ,
PLNG=01,PARM=@V
Y N

040
'NO' IS NOT VALID, GO TO NEXT
STEP.
MDI=$NVLD

041
SET ERROR HALT CODE V
GO TO MAP 7A21, ENTRY POINT A.
MDI=$CALL,TYPE=XTRNL,EP=A,
MAP=7A21

042
SHOULD NEVER GET HERE
MDI=$FIXT
```

IF 'LOOP STEP TO STEP' OPTION IS 'ON' (OPTION BYTE 02, BIT 01), THIS STEP NEEDS THE PRECEDING STEP FOR SETUP.

043
(ENTRY POINT B)
RECALIBRATE TO HOME
READ AND STORE DIAGNOSTIC SENSE
BYTES 5,6,7
(CORRECT CODES
SENSE '10000010'
BYTE 5 '11P11100'
BYTE 6 '0P0P0011' OR '0P010011'
BYTE 7 '111PP110'
ARE CODES CORRECT?
MDI=$TUXX,T7A06,1,82,EQ,PLNG=4,
PARM=0001
Y N

THIS IS A GOOD DEVICE END. THE FILE IS OPERATING CORRECTLY AS FAR AS THE MAP HAS TESTED. TO TEST THE WRITE FUNCTIONS GO TO MAP7A40. HOWEVER, A WRONG STATUS OR DIAGNOSTIC CODE INDICATES EITHER A FAILURE EXISTS OR ERROR DETERMINING HARDWARE IS FAILING.

| 044
| 'NO' IS NOT VALID, GO TO NEXT
| STEP.
| MDI=$NVLD
|
045
TEST DIAGNOSTIC BITS OK?
MDI=$TUXX,T7A08,13,
000000000000DC03E600205018,ON
Y N
|
| 046
| TEST DIAGNOSTIC BITS OK?
| MDI=$TUXX,T7A02,13,
| 000000000000DC13E600204018,ON
| Y N
| |
| | 047
| | POSSIBLE FAILURE EXISTS BUT
| | FILE OPERATING OK
| | GO TO MAP 7A51,
| | ENTRY POINT A.
| | MDI=$CALL,TYPE=XTRNL,
| | MAP=7A51,EP=A
| |
| |
| |
| |
| |
| |

WRITE TEST MAP

PAGE 10 OF 10

```
048
TEST DIAGNOSTIC BITS OK?
MDI=$TUXX,T7A02,13,
00000000000003AC0100DFBFE7,0F
Y N
 |
 | 049
 | POSSIBLE FAILURE EXISTS BUT
 | FILE OPERATING OK
 | GO TO MAP 7A51,
 | ENTRY POINT A.
 | MDI=$CALL,TYPE=XTRNL,
 | MAP=7A51,EP=A
 |
050
WRITE TESTS RAN W/O ERROR.
MDI=$FIXT
|
051
TEST DIAGNOSTIC BITS OK?
MDI=$TUXX,T7A02,13,
00000000000003AC0100DFAFE7,0F
Y N
|
| 052
| POSSIBLE FAILURE EXISTS BUT
| FILE OPERATING OK
| GO TO MAP 7A51, ENTRY POINT A.
| MDI=$CALL,TYPE=XTRNL,MAP=7A51,
| EP=A
|
053
WRITE TESTS RAN W/O ERROR.
MDI=$FIXT
```

DORMANT FAILURES MAP

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
7A20	A	1	001

001
(ENTRY POINT A)
TAG 7 BIT 2
IS LINE PULSING ?
MDI=$TUXX,T7A10,09,
0000000000000020,ON
Y N
|
| 002
| TAG 6 BIT 6
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,08,
| 0000000200000002,OF
| Y N
| |
| | 003
| | TAG 6 BIT 4
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,08,
| | 0000000800000008,OF
| | Y N
| | |
| | | 004
| | | TAG 6 BIT 3
| | | IS LINE PULSING ?
| | | MDI=$TUXX,T7A02,08,
| | | 0000000000000010,ON
| | | Y N
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1 1 REVISED 1979 ECA03143 PEC375609
8 7 3 2 2
A B C D E

DORMANT FAILURES

PAGE 2 OF 18

005
INSPECT AND RESEAT CABLES
BETWEEN BOARD A1 AND A2
EXCHANGE CARD
A1-F2,A1-E2,A1-D2,ACTUATOR
DRIVER CARD,A1-C2
MDI=$FIXT

006
TAG 6 BIT 5
IS LINE DOWN ?
MDI=$TUXX,T7A02,08,
0000000400000004,0F
Y N

007
INSPECT AND RESEAT CABLES
BETWEEN BOARD A1 AND A2
EXCHANGE CARD
A1-C2,A1-B2,A1-D2,A1-E2
MDI=$FIXT

008
PROBE VTL A1-C2S02
IS LINE DOWN ?
MDI=$QUES
Y N

009
PROBE VTL A1-F2G13
IS LINE DOWN ?
MDI=$QUES
Y N

DORMANT FAILURES

010
EXCHANGE CARD A1-D2
IF THIS CARD FAILS TO
REPAIR
EXCHANGE CARD A1-F2
IF THIS CARD FAILS TO
REPAIR
THERE IS PROBABLY A FAILURE
IN THE
DE SERVO TRACK.
EARLY REPLACEMENT OF THE
DISK ENCLOSURE
IS DESIRABLE.
MDI=$FIXT

011
INSPECT AND RESEAT CABLES
BETWEEN BOARD A1 AND A2
EXCHANGE CARD
A1-F2,A1-E2,A1-D2,ACTUATOR
DRIVER CARD,A1-C2
MDI=$FIXT

012
INSPECT AND RESEAT CABLES
BETWEEN BOARD A1 AND A2
EXCHANGE CARD
A1-C2,A1-B2,A1-D2,A1-E2
MDI=$FIXT

013
TAG 6 BIT 6
IS LINE PULSING ?
MDI=$TUXX,T7A02,08,
0000000000000002,ON
Y N

```
014
TAG 7 BIT 4
IS LINE PULSING ?
MDI=$TUXX,T7A02,09,
0000000000000008,ON
Y N
|
| 015
| TAG 7 BIT 5
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,09,
| 0000000004000004,OF
| Y N
| |
| | 016
| | TAG 6 BIT 1
| | IS LINE PULSING ?
| | MDI=$TUXX,T7A02,08,
| | 0000000000000020,ON
| | Y N
| | |
| | | 017
| | | SUSPECT   WRONG  DIAGNOSTIC
| | | SENSE
| | | RUN TEST (MAP7A40) AGAIN
| | | MDI=$FIXT
| | |
| | 018
| | PROBE VTL A1-C2M10
| | IS LINE PULSING ?
| | MDI=$QUES
| | Y N
| | |
| | | 019
| | | PROBE VTL A1-D2M04
| | | IS LINE PULSING ?
| | | MDI=$QUES
| | | Y N
| | | | |
| | | | |
| | | | |
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| | | | |
| | | | |
| | | | |
| | | | |
```

DORMANT FAILURES

020
INSPECT AND RESEAT CABLES
BETWEEN BOARD A1 AND A2
EXCHANGE CARD
A1-D2,A1-C2,A1-E2,A1-B2
MDI=$FIXT

021
INSPECT AND RESEAT CABLES
BETWEEN BOARD A1 AND A2
EXCHANGE CARD
A1-C2,A1-D2,BOARD A1
MDI=$FIXT

022
INSPECT AND RESEAT CABLES
BETWEEN BOARD A1 AND A2
EXCHANGE CARD
A1-C2,A1-B2,A1-D2,A1-E2
MDI=$FIXT

023
INSPECT AND RESEAT CABLES
BETWEEN BOARD A1 AND A2
EXCHANGE CARD
A1-C2,A1-B2,A1-D2,A1-E2
MDI=$FIXT

024
TAG 5 BIT 2
IS LINE PULSING ?
MDI=$TUXX,T7A02,07,
00000000000020,ON
Y N

025
TAG 5 BIT 3
IS LINE PULSING ?
MDI=$TUXX,T7A02,07,
00000000000010,ON
Y N

DORMANT FAILURES


```
026
PROBE VTL A1-C2G08
IS LINE PULSING ?
MDI=$QUES
Y N
|
| 027
| PROBE VTL A1-D2P05
| IS LINE PULSING ?
| MDI=$QUES
| Y N
| |
| | 028
| | INSPECT AND RESEAT CABLES
| | BETWEEN BOARD A1 AND A2
| | EXCHANGE CARD
| | A1-D2,A1-C2,A1-E2,A1-B2
| | MDI=$FIXT
| |
| 029
| INSPECT AND RESEAT CABLES
| BETWEEN BOARD A1 AND A2
| EXCHANGE CARD
| A1-C2,A1-D2,BOARD A1
| MDI=$FIXT
|
030
INSPECT AND RESEAT CABLES
BETWEEN BOARD A1 AND A2
EXCHANGE CARD
A1-C2,A1-B2,A1-D2,A1-E2
MDI=$FIXT

031
INSPECT AND RESEAT CABLES BETWEEN
BOARD A1 AND A2
EXCHANGE CARD
A1-C2,A1-B2,A1-D2,A1-E2
MDI=$FIXT
```

```
032
TAG 6 BIT 1
IS LINE PULSING ?
MDI=$TUXX,T7A02,08,
0000000000000040,ON
Y N
|
| 033
| PROBE VTL A1-C2B10
| IS LINE PULSING ?
| MDI=$QUES
| Y N
| |
| | 034
| | PROBE VTL A1-D2P02
| | IS LINE PULSING ?
| | MDI=$QUES
| | Y N
| | |
| | | 035
| | | INSPECT AND RESEAT CABLES
| | | BETWEEN BOARD A1 AND A2
| | | EXCHANGE CARD
| | | A1-D2,A1-C2,A1-E2,A1-B2
| | | MDI=$FIXT
| | |
| | 036
| | INSPECT AND RESEAT CABLES
| | BETWEEN BOARD A1 AND A2
| | EXCHANGE CARD
| | A1-C2,A1-D2,BOARD A1
| | MDI=$FIXT
| |
| 037
| INSPECT AND RESEAT CABLES
| BETWEEN BOARD A1 AND A2
| EXCHANGE CARD
| A1-C2,A1-B2,A1-D2,A1-E2
| MDI=$FIXT
|
|
|
|
|                                                    20MAY83    PN8327682
|
                                                     ECA03143   PEC375609
```

```
038
TAG 5 BIT 6
IS LINE DOWN ?
MDI=$TUXX,T7A02,07,
00000200000002,OF
Y N
|
| 039
| INSPECT   AND   RESEAT   CABLES
| BETWEEN BOARD A1 AND A2
| EXCHANGE CARD
| A1-C2,A1-B2,A1-D2,A1-E2
| MDI=$FIXT
|
040
TAG 7 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,09,
0000000080000000080,OF
Y N
|
| 041
| TAG 7 BIT 3
| IS LINE PULSING ?
| MDI=$TUXX,T7A02,09,
| 0000000000000000010,ON
| Y N
| |
| | 042
| | INSPECT  AND  RESEAT   CABLES
| | BETWEEN BOARD A1 AND A2
| | EXCHANGE CARD
| | A1-C2,A1-B2,A1-D2,A1-E2
| | MDI=$FIXT
| |
| 043
| TAG 5 BIT 0
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,07,
| 00008000000080,OF
| Y N
| | | |
| | | |
| | | |
| | | |
    |
1 1
7 6 9
V W X
```

```
|
|
044
TAG 5 BIT 4
IS LINE DOWN ?
MDI=$TUXX,T7A02,07,
00000800000008,OF
Y N
|
| 045
| TAG 7 BIT 6
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,09,
| 0000000020000002,OF
| Y N
| |
| | 046
| | TAG 5 BIT 1
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,07,
| | 00004000000040,OF
| | Y N
| | |
| | | 047
| | | TAG 5 BIT 7
| | | IS LINE DOWN ?
| | | MDI=$TUXX,T7A02,07,
| | | 00000100000001,OF
| | | Y N
| | | |
| | | | 048
| | | | PROBE VTL A1-C2U04
| | | | IS LINE DOWN ?
| | | | MDI=$QUES
| | | | Y N
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
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| | | | | |
| | | | | |
| | | | | |
| |
```

049
PROBE VTL A1-D2D09
IS LINE DOWN ?
MDI=$QUES
Y N

050
CHECK SEATING OF PROGRAM
JUMPERS ON CARD
INSPECT AND RESEAT CABLES
BETWEEN BOARD A1 AND A2
EXCHANGE CARD
A1-D2,A1-C2,A1-E2,A1-B2
MDI=$FIXT

051
INSPECT AND RESEAT CABLES
BETWEEN BOARD A1 AND A2
EXCHANGE CARD
A1-C2,A1-D2,BOARD A1
MDI=$FIXT

052
INSPECT AND RESEAT CABLES
BETWEEN BOARD A1 AND A2
EXCHANGE CARD
A1-C2,A1-B2,A1-D2,A1-E2
MDI=$FIXT

053
TAG 6 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,08,
0000008000000080,0F
Y N

054
PROBE VTL A1-C2D13
IS LINE DOWN ?
MDI=$QUES
Y N

```
| | |
| | |
| | 055
| | PROBE VTL A1-D2U11
| | IS LINE DOWN ?
| | MDI=$QUES
| | Y N
| | |
| | | 056
| | | INSPECT AND RESEAT CABLES
| | | BETWEEN BOARD A1 AND A2
| | | EXCHANGE CARD
| | | A1-D2,A1-C2,A1-E2,A1-B2
| | | MDI=$FIXT
| | |
| | 057
| | INSPECT AND RESEAT CABLES
| | BETWEEN BOARD A1 AND A2
| | EXCHANGE CARD
| | A1-C2,A1-D2,BOARD A1
| | MDI=$FIXT
| |
| 058
| INSPECT AND RESEAT CABLES
| BETWEEN BOARD A1 AND A2
| EXCHANGE CARD
| A1-C2,A1-B2,A1-D2,A1-E2
| MDI=$FIXT
|
059
TAG 7 BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,09,
0000000001000000001,0F
Y N
|
| 060
| PROBE VTL A1-C2U05
| IS LINE DOWN ?
| MDI=$QUES
| Y N
| | | |
| | | |
| | | |
| | | |
| | | |
```

```
| | |
| | |
| | 061
| | PROBE VTL A1-D2P04
| | IS LINE DOWN ?
| | MDI=$QUES
| | Y N
| | |
| | | 062
| | | INSPECT AND RESEAT CABLES
| | | BETWEEN BOARD A1 AND A2
| | | EXCHANGE CARD
| | | A1-D2,A1-C2,A1-E2,A1-B2
| | | MDI=$FIXT
| | |
| | 063
| | INSPECT AND RESEAT CABLES
| | BETWEEN BOARD A1 AND A2
| | EXCHANGE CARD
| | A1-C2,A1-D2,BOARD A1
| | MDI=$FIXT
| |
| 064
| INSPECT AND RESEAT CABLES
| BETWEEN BOARD A1 AND A2
| EXCHANGE CARD
| A1-C2,A1-B2,A1-D2,A1-E2
| MDI=$FIXT
|
065
TAG 5 BIT 5
IS LINE DOWN ?
MDI=$TUXX,T7A02,07,
00000400000004,OF
Y N
|
| 066
| TAG 6 BIT 2
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,08,
| 00000020000020,OF
| Y N
| | |
| | |
| | |
| | |
```

```
| |
| |
| 067
| INSPECT   AND   RESEAT   CABLES
| BETWEEN BOARD A1 AND A2
| EXCHANGE CARD
| A1-C2,A1-B2,A1-D2,A1-E2
| MDI=$FIXT
|
068
TAG 6 BIT 5
IS LINE DOWN ?
MDI=$TUXX,T7A02,08,
0000000400000004,0F
Y N
|
| 069
| INSPECT   AND   RESEAT   CABLES
| BETWEEN BOARD A1 AND A2
| EXCHANGE CARD
| A1-C2,A1-B2,A1-D2,A1-E2
| MDI=$FIXT
|
070
TAG 6 BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,08,
0000000100000001,0F
Y N
|
| 071
| TAG 7 BIT 1
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,09,
| 0000000040000040,0F
| Y N
| |
| | 072
| | TAG 7 BIT 2
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,09,
| | 0000000020000020,0F
| | Y N
| | | |
| | | |
| | | |
```

```
|
|
073
TAG 5 BIT 3
IS LINE DOWN ?
MDI=$TUXX,T7A02,07,
00001000000010,OF
Y N
|
| 074
| TAG 6 BIT 3
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,08,
| 00000010000000010,OF
| Y N
| |
| | 075
| | DATA WRAP OK?
| | MDI=$TUXX,T7A02,11,
| | 000000000800000000000,OF
| | Y N
| | |
| | | 076
| | | INSPECT  AND  RESEAT CABLES
| | | BETWEEN BOARD A1 AND A2
| | | EXCHANGE CARD
| | | A1-C2,A1-B2,A1-D2,A1-E2
| | | MDI=$FIXT
| | |
| | 077
| | THIS IS A GOOD DEVICE END
| | MDI=$FIXT
| |
| 078
| PROBE VTL A1-C2G07
| IS LINE DOWN ?
| MDI=$QUES
| Y N
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
```

```
| | | | |
| | | | |
| | | | 079
| | | | INSPECT AND RESEAT CABLES
| | | | BETWEEN BOARD A1 AND A2
| | | | EXCHANGE CARD
| | | | A1-C2,A1-B2,A1-D2,A1-E2
| | | | MDI=$FIXT
| | | |
| | | 080
| | | INSPECT AND  RESEAT  CABLES
| | | BETWEEN BOARD A1 AND A2
| | | EXCHANGE CARD
| | | A1-F2,A1-E2,A1-D2,ACTUATOR
| | | DRIVER CARD,A1-C2
| | | MDI=$FIXT
| | |
| | 081
| | INSPECT  AND  RESEAT   CABLES
| | BETWEEN BOARD A1 AND A2
| | EXCHANGE CARD
| | A1-C2,A1-B2,A1-D2,A1-E2
| | MDI=$FIXT
| |
| 082
| INSPECT   AND   RESEAT   CABLES
| BETWEEN BOARD A1 AND A2
| EXCHANGE CARD
| A1-C2,A1-B2,A1-D2,A1-E2
| MDI=$FIXT
|
083
INSPECT AND RESEAT CABLES BETWEEN
BOARD A1 AND A2
EXCHANGE CARD
A1-C2,A1-B2,A1-D2,A1-E2
MDI=$FIXT
```

084
INSPECT AND RESEAT
CABLES BETWEEN BOARD A1
AND A2
EXCHANGE CARD
A1-C2,A1-B2,A1-D2,A1-E2
MDI=$FIXT

085
INSPECT AND RESEAT CABLES
BETWEEN BOARD A1 AND A2
EXCHANGE CARD
A1-C2,A1-B2,A1-D2,A1-E2
MDI=$FIXT

086
INSPECT AND RESEAT CABLES
BETWEEN BOARD A1 AND A2
EXCHANGE CARD
A1-D2,A1-C2,A1-E2,A1-B2
MDI=$FIXT

087
INSPECT AND RESEAT CABLES
BETWEEN BOARD A1 AND A2
EXCHANGE CARD
A1-C2,A1-B2,A1-D2,A1-E2
MDI=$FIXT

088
INSPECT AND RESEAT CABLES
BETWEEN BOARD A1 AND A2
EXCHANGE CARD
A1-C2,A1-B2,A1-D2,A1-E2
MDI=$FIXT

089
INSPECT AND RESEAT CABLES BETWEEN
BOARD A1 AND A2
EXCHANGE CARD
A1-C2,A1-B2,A1-D2,A1-E2
MDI=$FIXT

```
| | |
| | |
| | |
| | 090
| | INSPECT AND RESEAT CABLES
| | BETWEEN BOARD A1 AND A2
| | EXCHANGE CARD
| | A1-C2,A1-B2,A1-D2,A1-E2
| | MDI=$FIXT
| |
| 091
| INSPECT AND RESEAT CABLES
| BETWEEN BOARD A1 AND A2
| EXCHANGE CARD
| A1-F2,A1-E2,A1-D2,ACTUATOR
| DRIVER CARD,A1-C2
| MDI=$FIXT
|
092
TAG 6 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,08,
0000004000000040,0F
Y N
|
| 093
| TAG 6 BIT 3
| IS LINE PULSING ?
| MDI=$TUXX,T7A02,08,
| 0000001000000010,ON
| Y N
| |
| | 094
| | INSPECT AND RESEAT CABLES
| | BETWEEN BOARD A1 AND A2
| | EXCHANGE CARD
| | A1-F2,A1-E2,A1-D2,ACTUATOR
| | DRIVER CARD,A1-C2
| | MDI=$FIXT
| |
| |
| |
| |
| |
| |
| |
```

```
095
PROBE VTL A1-C2U11
IS LINE DOWN ?
MDI=$QUES
Y N
|
| 096
| INSPECT AND RESEAT CABLES
| BETWEEN BOARD A1 AND A2
| EXCHANGE CARD
| A1-C2,A1-B2,A1-D2,A1-E2
| MDI=$FIXT
|
097
INSPECT AND RESEAT CABLES
BETWEEN BOARD A1 AND A2
EXCHANGE CARD
A1-F2,A1-E2,A1-D2,ACTUATOR
DRIVER CARD,A1-C2
MDI=$FIXT
|
098
INSPECT AND RESEAT CABLES
BETWEEN BOARD A1 AND A2
EXCHANGE CARD
A1-C2,A1-B2,A1-D2,A1-E2
MDI=$FIXT
|
099
INSPECT AND RESEAT CABLES BETWEEN
BOARD A1 AND A2
EXCHANGE CARD
A1-E2,A1-D2,A1-F2,A1-C2,A1-B2
MDI=$FIXT
```

SCOPE LOOP MAP

001
(ENTRY POINT A)

THIS IS AN MDI 'MANUAL MODE' MAP.
(SEE DIAGNOSTIC SERVICE GUIDE
05.00.00).
TO USE IT: LOAD AND EXECUTE THE
MAP PROGRAM (BXXXX WHERE
XXXX=MAP#).
WHEN CE ACTION IS NEEDED, DCP
HALTS AND DISPLAYS MAP # AND STEP
#. SEE THE HARD COPY MAP FOR THE
CE ACTION.

READ DEVICE ID SCOPE LOOP
VERIFY SCOPE IMAGE SEE
MAINTENANCE LOGIC DIAGRAMS X.X
THEN ENTER '1' ON CONSOLE TO
CONTINUE.
MDI=$QUXX,T7A20,REPT=TS03
Y N
|
| 002
| END OF SCOPE LOOP
| MDI=$STOP
|
003
CYCLE STEAL STATUS SCOPE LOOP
VERIFY SCOPE IMAGE SEE
MAINTENANCE LOGIC DIAGRAMS X.X
THEN ENTER '1' ON CONSOLE TO
CONTINUE.
MDI=$QUXX,T7A27,REPT=TS19
Y N
|
| 004
| END OF SCOPE LOOP
| MDI=$STOP
|
|
|
|
|
|
|

SCOPE LOOP MAP

PAGE 2 OF 3

005
RECALIBRATE SCOPE LOOP
VERIFY SCOPE IMAGE SEE
MAINTENANCE LOGIC DIAGRAMS X.X
THEN ENTER '1' ON CONSOLE TO
CONTINUE.
MDI=$QUXX,T7A21,REPT=TS10
Y N

006
END OF SCOPE LOOP
MDI=$STOP

007
SEEK SCOPE LOOP
VERIFY SCOPE IMAGE SEE
MAINTENANCE LOGIC DIAGRAMS X.X
THEN ENTER '1' ON CONSOLE TO
CONTINUE.
MDI=$QUXX,T7A22,REPT=TS11
Y N

008
END OF SCOPE LOOP
MDI=$STOP

009
READ SECTOR ID SCOPE LOOP
VERIFY SCOPE IMAGE SEE
MAINTENANCE LOGIC DIAGRAMS X.X
THEN ENTER '1' ON CONSOLE TO
CONTINUE.
MDI=$QUXX,T7A23,REPT=TS15
Y N

010
END OF SCOPE LOOP
MDI=$STOP

```
011
WRITE SECTOR ID SCOPE LOOP
VERIFY     SCOPE     IMAGE    SEE
MAINTENANCE  LOGIC  DIAGRAMS  X.X
THEN  ENTER  '1'  ON  CONSOLE  TO
CONTINUE.
MDI=$QUXX,T7A24,REPT=TS16
Y N
|
| 012
| END OF SCOPE LOOP
| MDI=$STOP
|
013
WRITE DATA SCOPE LOOP
VERIFY     SCOPE     IMAGE    SEE
MAINTENANCE  LOGIC  DIAGRAMS  X.X
THEN  ENTER  '1'  ON  CONSOLE  TO
CONTINUE.
MDI=$QUXX,T7A25,REPT=TS18
Y N
|
| 014
| END OF SCOPE LOOP
| MDI=$STOP
|
015
READ DATA SCOPE LOOP
VERIFY     SCOPE     IMAGE    SEE
MAINTENANCE  LOGIC  DIAGRAMS  X.X
THEN  ENTER  '1'  ON  CONSOLE  TO
CONTINUE.
MDI=$QUXX,T7A26,REPT=TS17
Y N
|
| 016
| END OF SCOPE LOOP
| MDI=$STOP
|
017
END OF SCOPE LOOP
MDI=$STOP
```

SINGLE REPLACEMENT

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
7A21	A	1	001
7A21	B	3	002
7A21	C	4	007
7A21	D	5	008
7A21	E	6	009
7A21	F	7	014
7A21	H	8	015
7A21	I	9	016
7A21	J	10	017
7A21	K	12	018

001
(ENTRY POINT A)

PROBABLE FAILURE IS THE A1-B2 CARD
EXCHANGE DATA CHANNEL CARD.
LOCATION:- A1-B2
MIM REFERENCE:- 3-20.

IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST ENTRY POINT A
FAILING FIELD REPLACEMENT UNITS MAY BE:
CARD A1-B2
CARD A1-C2
CARD A1-D2
CARD A1-E2
ACTUATOR DRIVER CARD
CARD A1-F2
CARD A2-C2
CARD A2-D2
INSPECT AND RESEAT CABLES AT
(STEP 001 CONTINUES)

 20MAY83 PN8327692

REVISED 1979 ECA03143 PEC375609

(STEP 001 CONTINUED)
BOARD A1--RESEAT AS REQUIRED.
DE

002
(ENTRY POINT B)
CHECK A2VC2-D FOR 8.5 VDC.
(7.8 TO 8.5)
VOLTAGE OK?
Y N
|
| 003
| POWER DOWN
|
| CHECK CONTINUITY OF CABLE TO
| A2VC2-D.
| CABLE CONTINUITY OK?
| Y N
| |
| | 004
| | EXCHANGE CABLE.
| |
| 005
| EXCHANGE POWER SUPPLY.
|
006
SPECIAL CHECKS:
CHECK SEATING OF JUMPERS ON CARD.
CHECK CABLES FROM A1A3 TO A2B2
FOR OPENS AND SHORTS. EXCHANGE
AS REQUIRED.

PROBABLE FAILURE IS THE A1-C2
CARD
EXCHANGE LOGIC 1 CARD.
LOCATION:- A1-C2
MIM REFERENCE:- 3-20.

IF FAILS TO REPAIR SEE FIELD
REPLACEMENT UNIT LIST ENTRY POINT
A

007
(ENTRY POINT C)

PROBABLE FAILURE IS THE A1-D2 CARD
EXCHANGE LOGIC 2 CARD.

LOCATION:- A1-D2

MIM REFERENCE:- 3-20.

SPECIAL CHECKS:-
CHECK SEATING OF JUMPERS ON CARD.

IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST ENTRY POINT A

008
(ENTRY POINT D)

PROBABLE FAILURE IS THE A1-E2 CARD
EXCHANGE SERVO 1 CARD.

LOCATION:- A1-E2

MIM REFERENCE:- 3-20.

IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST ENTRY POINT A

009
(ENTRY POINT E)
CHECK A1VC1-C FOR +12 VDC.
VOLTAGE OK?
Y N
|
| 010
| POWER DOWN
|
| CHECK CONTINUITY OF CABLE TO
| A1VC1-C.
| CABLE CONTINUITY OK?
| Y N
| |
| | 011
| | EXCHANGE CABLE.
| |
| 012
| EXCHANGE POWER SUPPLY.
|
013
SPECIAL CHECKS:-
CHECK SEATING OF JUMPERS ON CARD.

PROBABLE FAILURE IS THE A1-F2
CARD
EXCHANGE SERVO 2 CARD.
LOCATION: A1-F2
MIM REFERENCE:- 3-20.

IF FAILS TO REPAIR SEE FIELD
REPLACEMENT UNIT LIST ENTRY POINT
A

014
(ENTRY POINT F)

SPECIAL CHECKS:-
CHECK VOLTAGE CROSS-OVER CONTACTS VC7, VC8 AND VC10
METER CONTINUITY ON BOARD A1 BETWEEN VC10-D AND VC5-C AND VC10-C AND VC5-D
(FAILURE MAY HAVE CAUSED DAMAGE TO BOARD CONDUCTORS.)

EXCHANGE ACTUATOR COIL DRIVER CARD.
LOCATION:- A1-GATE
MIM REFERENCE:- 3-20.

IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST ENTRY POINT A

015
(ENTRY POINT H)
SPECIAL CHECKS:-

.VOLTAGE CHECKS -
+6V A2D03 AND T1B06
-4V A2D06 AND T1B04.
-8V A2B10, A2B12, A2D09 AND A2D13

.CHECK VOLTAGE CROSSOVER CONTACTS
-
VC3, VC5, VC6, VC9 AND VC10.

.CHECK LOCKOUT LEVER IS FULLY
DISENGAGED.

PROBABLE FAILURE IS THE DE OR
CABLES TO THE A1 BOARD
EXCHANGE DISK ENCLOSURE UNIT.

MIM REFERENCE:- SECTION 3.5 AND
3.6

IF FAILS TO REPAIR SEE FIELD
REPLACEMENT UNIT LIST ENTRY POINT
A

016
(ENTRY POINT I)
SPECIAL CHECKS:-

MAINTENANCE LOGIC DIAGRAMS
REFERENCE: SF537.

.CHECK SEATING OF SYSTEM CABLE
A1-A5
.CHECK CONTINUITY OF SYSTEM
CABLES
(A1-A3,A1-A4,AND A1-A5) AND
.CHECK FOR SHORT CIRCUIT TO
GROUND
A1-A5B08 (+ NRZ DATA TO SYSTEM)
A1-A5B10 (- WRITE DATA)
A1-A5D03 (+ WRITE GATE RETURN)
A1-A5D05 (- FAST SYNC)
A1-A5D10 (1F READ CLOCK TO
SYSTEM)
A1-A5D12 (1F WRITE CLOCK TO
SYSTEM)

PROBABLE FAILURE IS THE A1-B2
CARD OR A2-C2 AND A2-D2 OR THE
CABLES BETWEEN THE FILE AND THE
CONTROLLER.
EXCHANGE DATA CHANNEL CARD.
LOCATION:- A1-B2

EXCHANGE A2-C2 AND A2-D2 CARDS.

IF FAILS TO REPAIR SEE FIELD
REPLACEMENT UNIT LIST ENTRY POINT
A

017
(ENTRY POINT J)
SPECIAL CHECKS:-

MAINTENANCE LOGIC DIAGRAMS
REFERENCE: SF537.

.CHECK SEATING OF SYSTEM CABLES
A1-A3, A1-A4 AND A1-A5
.CHECK CONTINUITY OF SYSTEM
CABLES
(A1-A3, A1-A4 AND A1-A5) AND
.CHECK FOR SHORT CIRCUIT TO
GROUND
A1-A5B03 (- CONTROL SAMPLE)
A1-A5B04 (- INTERUPT)
A1-A5B12 (+ DRIVER DEGATE)
A1-A5D04 (- DATA SELECT)
A1-A5D06 (- RESET ERROR)
A1-A5D09 (- READ)
A1-A5D11 (- WRITE)

A1-A3B02 AND A1-A4B02 (- TAG 2)
A1-A3B03 AND A1-A4B03 (- TAG 1)
A1-A3B04 AND A1-A4B04 (- TAG 0)
A1-A3B05 AND A1-A4B05 (- TAG
PARITY)
A1-A3B12 AND A1-A4B12 (- CONTROL
SAMPLE REC)
A1-A3D04 AND A1-A4D04 (- CONTROL
BUS 0)
A1-A3D05 AND A1-A4D05 (- CONTROL
BUS 1)
A1-A3D06 AND A1-A4D06 (- CONTROL
BUS 2)
A1-A3D07 AND A1-A4D07 (- CONTROL
BUS 3)
A1-A3D09 AND A1-A4D09 (- CONTROL
BUS 4)
A1-A3D10 AND A1-A4D10 (- CONTROL
BUS 5)
A1-A3D11 AND A1-A4D11 (- CONTROL
(STEP 017 CONTINUES)

(STEP 017 CONTINUED)
BUS 6)
A1-A3D12 AND A1-A4D12 (- CONTROL BUS 7)
A1-A3D13 AND A1-A4D13 (- CONTROL BUS PARITY)

PROBABLE FAILURE IS THE A1-C2 CARD OR A2-C2 AND A2-D2 OR THE CABLES BETWEEN THE FILE AND THE CONTROLLER.
EXCHANGE LOGIC 1 CARD.
LOCATION:- A1-C2

EXCHANGE A2-C2 AND A2-D2 CARDS.

IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST ENTRY POINT A

018
(ENTRY POINT K)
SPECIAL CHECKS:-

MAINTENANCE LOGIC DIAGRAMS
REFERENCE: SF537.

.CHECK SEATING OF SYSTEM CABLE
A1-A5
.CHECK CONTINUITY OF SYSTEM
CABLES
(A1-A3, A1-A4 AND A1-A5) AND
.CHECK FOR SHORT CIRCUIT TO
GROUND
A1-A5B04 (- SYSTEM SECTOR)
A1-A5B09 (- SECTOR PULSES
MISSING)
A1-A5D07 (- SYSTEM INDEX)

PROBABLE FAILURE IS THE A1-D2
CARD OR A2-C2 AND A2-D2 OR THE
CABLES BETWEEN THE FILE AND THE
CONTROLLER.
EXCHANGE LOGIC 2 CARD.
LOCATION:- A1-D2
MIM REFERENCE:- 3-20.

EXCHANGE A2-C2 AND A2-D2 CARDS.

IF FAILS TO REPAIR SEE FIELD
REPLACEMENT UNIT LIST ENTRY POINT
A

CABLE CONTINUITY

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP ENTRY POINT	PAGE NUMBER	STEP NUMBER
7A10	A	1	001

001
(ENTRY POINT A)
POWER OFF

REMOVE COVER FROM FILE 0 (SEE MIM 3.1.1)
REMOVE A2-C2 CARD

METER FOR CONTINUITY FROM
A2-B2D02 TO GND.
IS CONTINUITY OK?
Y N

002
EXCHANGE OR REPAIR BOARD A2

003
METER FOR CONTINUITY FROM
A2-B2D02 TO B2B13.
IS CONTINUITY OF CHAIN CABLE OK?
Y N

004
METER FOR CONTINUITY FROM,
A2-B2D02 TO A1-A3D02.
A2-B2B13 TO A1-A3B13.
IS CONTINUITY TO BOARD A1 OF
THE FILE OK?
Y N

CHECK THE JUMPER(S) ON A2 BOARD
REFERENCE MIM SECTION 2.13
* NOTE FOR ALL CONTINUITY CHECKS USE THE RX1 SCALE AND CHECK THE READING FOR LESS THAN 2 OHMS

20MAY83 PN8327693

REVISED 1979

ECA03143 PEC375609

6 2 2
A B C

CABLE CONTINUITY

PAGE 2 OF 13

005
INSPECT AND RESEAT CABLE A2-B2
TO A1-A3.

006
METER FOR CONTINUITY FROM,
A1-A3D02 TO A1-A4D02.
A1-A3B13 TO A1-A4B13.
IS CONTINUITY OF BOARD A1 OK?
Y N

007
EXCHANGE OR REPAIR BOARD A1

008
IS THIS THE LAST FILE IN THE
SYSTEM?
Y N

009
REMOVE COVER FROM FILE 1 (SEE
MIM 3.1.1)
METER FOR CONTINUITY FROM FILE
0 TO FILE 1
FILE0 A1-A4D02 TO FILE1
A1-A3D02.
FILE0 A1-A4B13 TO FILE1
A1-A3B13.
IS CONTINUITY OF CABLE FILE0 TO
FILE1 OK?
Y N

010
INSPECT AND RESEAT CABLE FROM
FILE0 A1-A4 TO FILE1 A1-A3

CABLE CONTINUITY

PAGE 3 OF 13

011
METER FOR CONTINUITY ON BOARD A1 FILE 1.
A1-A4D02 TO A1-A3D02.
A1-A4B13 TO A1-A3B13.
IS CONTINUITY OF BOARD A1 OF FILE 1 OK
Y N

012
EXCHANGE OR REPAIR BOARD A1

013
IS THIS THE LAST FILE IN THE SYSTEM?
Y N

014
REMOVE COVER FROM FILE 2 (SEE MIM 3.1.1)
METER FOR CONTINUITY FROM FILE 1 TO FILE 2
FILE1 A1-A4D02 TO FILE2 A1-A3D02.
FILE1 A1-A4B13 TO FILE2 A1-A3B13.
IS CONTINUITY OF CABLE FILE1 TO FILE2 OK?
Y N

015
INSPECT AND RESEAT CABLE FROM FILE1 A1-A4 TO FILE2 A1-A3

016
METER FOR CONTINUITY ON BOARD A1 FILE 2.
A1-A3D02 TO A1-A4D02.
A1-A3B13 TO A1-A4B13.
IS CONTINUITY OF BOARD A1 FILE -2 OK?
Y N

017
EXCHANGE OR REPAIR BOARD A1

018
IS THIS THE LAST FILE IN THE SYSTEM?
Y N

019
REMOVE COVER FROM FILE 3 (SEE MIM 3.1.1)
METER FOR CONTINUITY FROM FILE 2 TO FILE 3
FILE2 A1-A4D02 TO FILE3 A1-A3D02.
FILE2 A1-A4B13 TO FILE3 A1-A3B13.
IS CONTINUITY OF CABLE FILE2 TO FILE3 OK?
Y N

020
INSPECT AND RESEAT CABLE A1-A4 TO A1-A3.

CABLE CONTINUITY

PAGE 5 OF 13

021
METER FOR CONTINUITY ON
BOARD A1 FILE 3.
A1-A3D02 TO A1-A4D02.
A1-A3B13 TO A1-A4B13.
IS CONTINUITY OF BOARD A1
OF FILE 3 OK?
Y N

022
EXCHANGE OR REPAIR BOARD
A1

023
RESEAT TERMINATOR CARD
A1-A1A4.
IF FAILS TO REPAIR
EXCHANGE TERMINATOR CARD
A1-A4

024
RESEAT TERMINATOR CARD
A1-A1A4.
IF FAILS TO REPAIR
EXCHANGE TERMINATOR CARD
A1-A4

025
RESEAT TERMINATOR CARD A1-A1A4.
IF FAILS TO REPAIR
EXCHANGE TERMINATOR CARD A1-A4

026
RESEAT TERMINATOR CARD A1-A1A4.
IF FAILS TO REPAIR
EXCHANGE TERMINATOR CARD A1-A4

CABLE CONTINUITY

PAGE 6 OF 13

027
METER FOR CONTINUITY FROM,
A2-B2B13 TO A2-C2M07.
CK FOR CONTINUITY OF DEDICATED
CABLE(S)
IS THE CONTINUITY OK?
Y N

028
METER FOR CONTINUITY FROM,
A2-B2B13 TO A2-B3D13.
CK CONTINUITY OF CABLE
IS THE CONTINUITY OK?
Y N

029
METER FOR CONTINUITY FROM,
A2-B2B13 TO A2-B3B02.
CK CONTINUITY OF BOARD A2
IS THE CONTINUITY OK?
Y N

030
EXCHANGE OR REPAIR BOARD A2

031
METER FOR CONTINUITY FROM,
A2-B3B02 TO A1-A5B02.
CK CONTINUITY TO BOARD A1 OF
FILE 0
IS THE CONTINUITY OK?
Y N

032
INSPECT AND RESEAT CABLE
A2-B3 TO A1-A5.

CABLE CONTINUITY

PAGE 7 OF 13

033
METER FOR CONTINUITY FROM,
A2-B3B02 TO A1-A5D13.
CK CONTINUITY OF BOARD A1 OF
FILE 0
IS THE CONTINUITY OK?
Y N

034
EXCHANGE OR REPAIR BOARD A1

035
INSPECT AND RESEAT CABLE A2-B3
TO A1-A5.

036
IS THIS THE LAST FILE IN THE
SYSTEM?
Y N

037
METER FOR CONTINUITY FROM,
A2-B3D13 TO A2-B4D13.
CK CONTINUITY OF CABLE TO FILE
#1
IS THE CONTINUITY OK?
Y N

038
METER FOR CONTINUITY FROM,
A2-B3D13 TO A2-B4B02.
CK CONTINUITY OF BOARD A2
IS THE CONTINUITY OK?
Y N

039
EXCHANGE OR REPAIR BOARD A2

CABLE CONTINUITY

040
REMOVE COVER FROM FILE 1 (SEE MIM 3.1.1)
METER FOR CONTINUITY FROM DISK CONTROLLER TO FILE 1
A2-B4B02 TO A1-A5B02.
CK CONTINUITY TO BOARD A1 OF FILE 1
IS THE CONTINUITY OK?
Y N

041
INSPECT AND RESEAT CABLE A2-B4 TO FILE 1 A1-A5.

042
METER FOR CONTINUITY FROM DISK CONTROLLER TO FILE 1.
A2-B4B02 TO A1-A5D13.
CK CONTINUITY OF BOARD A1 OF FILE 1
IS THE CONTINUITY OK?
Y N

043
EXCHANGE OR REPAIR BOARD A1

044
INSPECT AND RESEAT CABLE A2-B4 TO FILE 1 A1-A5.

045
IS THIS THE LAST FILE IN THE SYSTEM?
Y N

046
METER FOR CONTINUITY FROM,
A2-B4D13 TO A2-A4B02.
CK CONTINUITY OF CABLE TO FILE #2
IS THE CONTINUITY OK?
Y N
|
| 047
| METER FOR CONTINUITY FROM,
| A2-B4D13 TO A2-A4D13.
| CK CONTINUITY OF BOARD A2
| IS THE CONTINUITY OK?
| Y N
| |
| | 048
| | EXCHANGE OR REPAIR BOARD A2
| |
| 049
| REMOVE COVER FROM FILE 2 (SEE
| MIM 3.1.1)
| METER FOR CONTINUITY FROM DISK
| CONTROLLER TO FILE 2.
| A2-A4D13 TO A1-A5D13.
| CK CONTINUITY TO BOARD A1 OF
| FILE 2
| IS THE CONTINUITY OK?
| Y N
| |
| | 050
| | INSPECT AND RESEAT CABLE
| | A2-A4 TO FILE 2 A1-A5.
| |
| 051
| METER FOR CONTINUITY FROM DISK
| CONTROLLER TO FILE 2.
| A2-A4D13 TO A1-A5B02.
| CK CONTINUITY OF BOARD A1 OF
| FILE 2
| IS THE CONTINUITY OK?
| Y N

CABLE CONTINUITY

052
EXCHANGE OR REPAIR BOARD A1

053
INSPECT AND RESEAT CABLE A2-A4
TO FILE 2 A1-A5.

054
IS THIS THE LAST FILE IN THE
SYSTEM?
Y N

055
METER FOR CONTINUITY FROM,
A2-A4B02 TO A2-A3B02.
CK CONTINUITY OF CABLE TO FILE
#3
IS THE CONTINUITY OK?
Y N

056
METER FOR CONTINUITY FROM,
A2-A4B02 TO A2-A3D13.
CK CONTINUITY OF BOARD A2
IS THE CONTINUITY OK?
Y N

057
EXCHANGE OR REPAIR BOARD A2

058
REMOVE COVER FROM FILE 3 (SEE
MIM 3.1.1)
METER FOR CONTINUITY FROM
DISK CONTROLLER TO FILE 3.
A2-A3D13 TO A1-A5D13.
CK CONTINUITY TO BOARD A1 OF
FILE 3
IS THE CONTINUITY OK?
Y N

059
INSPECT AND RESEAT CABLE
A2-A3 TO FILE 3 A1-A5.

060
METER FOR CONTINUITY FROM
DISK CONTROLLER TO FILE 3.
A2-A3D13 TO A1-A5B02.
CK CONTINUITY OF BOARD A1 OF
FILE 3
IS THE CONTINUITY OK?
Y N

061
EXCHANGE OR REPAIR BOARD A1

062
INSPECT AND RESEAT CABLE
A2-A3 TO FILE 3 A1-A5.

063
EXCHANGE OR REPAIR BOARD A2

064
CHECK JUMPERS ON BOARD A2.
IF FAILS TO REPAIR
EXCHANGE BOARD A2

(STEP 064 CONTINUES)

CONTROLLER CONTINUITY CONNECTIONS

WITH THE NUMBER OF FILES INSTALLED THE WIRING MUST BE INSTALLED AS FOLLOWS.

FILES	A2B02-A2D02	A2B03-A2D03	A2B04-A2D04
1	YES	NO	NO
2	NO	YES	NO
3	NO	NO	YES
4	NO	NO	NO

(STEP 064 CONTINUES)

(STEP 064 CONTINUED)

065
CHECK JUMPERS ON BOARD A2.
IF FAILS TO REPAIR
EXCHANGE BOARD A2

(STEP 064 CONTINUED)

CONTROLLER CONTINUITY CONNECTIONS

WITH THE NUMBER OF FILES INSTALLED THE WIRING MUST BE INSTALLED AS FOLLOWS.

FILES	A2B02-A2D02	A2B03-A2D03	A2B04-A2D04
1	YES	NO	NO
2	NO	YES	NO
3	NO	NO	YES
4	NO	NO	NO

066
CHECK CONNECTIONS ON BOARD A2.
IF FAILS TO REPAIR
EXCHANGE BOARD A2

CONTROLLER CONTINUITY CONNECTIONS

WITH THE NUMBER OF FILES INSTALLED THE WIRING MUST BE INSTALLED AS FOLLOWS.

FILES	A2B02-A2D02	A2B03-A2D03	A2B04-A2D04
1	YES	NO	NO
2	NO	YES	NO
3	NO	NO	YES
4	NO	NO	NO

(STEP 066 CONTINUES)

(STEP 066 CONTINUES)

(STEP 066 CONTINUED)

067
METER FOR CONTINUITY FROM,
A2-C2M07 TO GND.
CK CONTINUITY
IS THE CONTINUITY OK?
Y N

068
YOU HAVE FOUND NO REPAIR CHECK
AGAIN
GO TO ENTRY POINT A

069
EXCHANGE A2-C2 OR A2-D2
OR BOARD A2

(STEP 066 CONTINUED)

---- ---- ---- ---

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP: ENTRY POINT	PAGE NUMBER	STEP NUMBER
7A21	A	2	001
7A21	B	3	004
7A21	C	5	009
7A21	D	6	012
7A21	E	7	015
7A21	F	9	022
7A21	G	26	111
7A21	H	28	116
7A21	I	31	125
7A21	J	32	126
7A21	K	33	131
7A21	L	35	136
7A21	M	36	139
7A21	N	38	148
7A21	O	39	151
7A21	P	40	154
7A21	Q	42	159
7A21	R	43	162
7A21	S	45	169
7A21	T	46	172
7A21	U	48	177
7A21	V	51	186
7A21	X	52	189
7A21	Y	53	192
7A21	Z	55	197

EXIT POINTS

EXIT THIS MAP: PAGE NUMBER	STEP NUMBER	TO: MAP NUMBER	ENTRY POINT
9	024	7A73	A

 20MAY83 PN8327694

REVISED 1979 ECA03143 PEC877036

001
(ENTRY POINT A)

FAILING FIELD REPLACEMENT UNITS
AT THIS POINT ARE:

FIELD REPLACEMENT UNIT	PROBABLE
SERVO 2 CARD (A1-F2)	63
ACTUATOR DRIVER CARD	37

INSPECT AND RESEAT CABLES ON A1
BOARD OF THE FAILING FILE

TO ISOLATE FARTHER:

POWER OFF

METER RESISTANCE (1 OHM RANGE)
A1-F2S05 TO A1-F2U08
IS RESISTANCE LESS THAN 10 OHMS?
Y N
|
| 002
| EXCHANGE ACTUATOR DRIVER CARD
| ON A1 GATE
| SEE MIM. SEC 3.20
| IF FAILS TO REPAIR RE-INSTALL
| ORIGINAL CARD
| EXCHANGE CARD A1-F2
|
003
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR RE-INSTALL
ORIGINAL CARD
EXCHANGE ACTUATOR DRIVER CARD ON
A1 GATE
SEE MIM. SEC 3.20

BOARD A1 NETS FOR THIS MAP:
(SEE BOARD A1 NETLIST TABLES -
MAP7A75)
F2-23

004
(ENTRY POINT B)

THIS MAP ISOLATES SERVO PROBLEMS

FAILING FIELD REPLACEMENT UNITS
AT THIS POINT ARE:

FIELD REPLACEMENT UNIT	PROBABLE
SERVO 2 CARD (A1-F2)	65
SERVO 1 CARD (A1-E2)	24
ACTUATOR DRIVER CARD	10
LOGIC 2 CARD (A1-D2)	1

INSPECT AND RESEAT CABLES ON A1
BOARD OF THE FAILING FILE

TO ISOLATE FARTHER:

SWITCH PROBE TO MST1

PROBE MST1 A1-E2J05 (- CTR RUN)
ARE ANY PROBE LIGHTS ON?
Y N
|
| 005
| EXCHANGE CARD A1-E2
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT B.
|
006
PROBE MST1 A1-E2J10 (+ ENABLE
DATA)
IS LINE DOWN?
Y N
| |
| |
| |
| |
| |
| |
| |
| |
| |
| |
| |

BOARD A1 NETS FOR THIS MAP:
(SEE BOARD A1 NETLIST TABLES -
MAP7A75)

PAGE 4 OF 55

007
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR RE-INSTALL
ORIGINAL CARD
EXCHANGE CARD A1-E2
IF FAILS TO REPAIR RE-INSTALL
ORIGINAL CARD
EXCHANGE ACTUATOR DRIVER CARD
ON A1 GATE
SEE MIM. SEC 3.20
IF FAILS TO REPAIR RE-INSTALL
ORIGINAL CARD
EXCHANGE CARD A1-D2

008
EXCHANGE CARD A1-E2
IF FAILS TO REPAIR RE-INSTALL
ORIGINAL CARD
EXCHANGE ACTUATOR DRIVER CARD ON
A1 GATE
SEE MIM. SEC 3.20
IF FAILS TO REPAIR SEE FIELD
REPLACEMENT UNIT LIST - ENTRY
POINT B.

009
(ENTRY POINT C)

FAILING FIELD REPLACEMENT UNITS
AT THIS POINT ARE:

FIELD REPLACEMENT UNIT	PROBABLE
SERVO 2 CARD (A1-F2)	49
LOGIC 1 CARD (A1-C2)	30
LOGIC 2 CARD (A1-D2)	21

INSPECT AND RESEAT CABLES ON A1
BOARD OF THE FAILING FILE

TO ISOLATE FARTHER:

SWITCH PROBE TO MULTI

PROBE VTL A1-F2S07 (- SEEK
COMPLETE)
IS LINE UP?
Y N
|
| 010
| EXCHANGE CARD A1-D2
| IF FAILS TO REPAIR RE-INSTALL
| ORIGINAL CARD
| EXCHANGE CARD A1-F2
| IF FAILS TO REPAIR RE-INSTALL
| ORIGINAL CARD
| EXCHANGE CARD A1-C2
|
011
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR SEE FIELD
REPLACEMENT UNIT LIST - ENTRY
POINT C.

012
(ENTRY POINT D)

FAILING FIELD REPLACEMENT UNITS AT THIS POINT ARE:

FIELD REPLACEMENT UNIT	PROBABLE
LOGIC 2 CARD (A1-D2)	58
LOGIC 1 CARD (A1-C2)	42

INSPECT AND RESEAT CABLES ON A1 BOARD OF THE FAILING FILE

TO ISOLATE FARTHER:

SWITCH PROBE TO MULTI

PROBE VTL A1-C2G10 (+ SERVO PROTECT)
IS LINE PULSING?
Y N
|
| 013
| EXCHANGE CARD A1-D2
| IF FAILS TO REPAIR RE-INSTALL
| ORIGINAL CARD
| EXCHANGE CARD A1-C2
|
014
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR RE-INSTALL ORIGINAL CARD
EXCHANGE CARD A1-C2

BOARD A1 NETS FOR THIS MAP:
(SEE BOARD A1 NETLIST TABLES - MAP7A75)
D2-44

015
(ENTRY POINT E)

FAILING FIELD REPLACEMENT UNITS
AT THIS POINT ARE:

FIELD REPLACEMENT UNIT	PROBABLE
LOGIC 1 CARD (A1-C2)	60
LOGIC 2 CARD (A1-D2)	40

INSPECT AND RESEAT CABLES ON A1
BOARD OF THE FAILING FILE

TO ISOLATE FARTHER:

SWITCH PROBE TO MULTI

PROBE VTL A1-D2J13 (- SEEK
COMPLETE)
IS LINE DOWN?
Y N
|
| 016
| EXCHANGE CARD A1-D2
| IF FAILS TO REPAIR RE-INSTALL
| ORIGINAL CARD
| EXCHANGE CARD A1-C2
|
017
ADD JUMPER BETWEEN A1-C2D07 AND
A1-D2D08
PROBE VTL A1-D2J13 (- SEEK
COMPLETE)
IS LINE DOWN?
Y N
| |
| |
| |
| |
| |
| |
| |
| |
| |
| |
| |

BOARD A1 NETS FOR THIS MAP:
(SEE BOARD A1 NETLIST TABLES -
MAP7A75)
C2-05, D2-26

PAGE 8 OF 55

018
EXCHANGE CARD A1-C2
REMOVE JUMPER
IF FAILS TO REPAIR RE-INSTALL
ORIGINAL CARD
EXCHANGE CARD A1-D2
EXCHANGE CARD A2-C2
EXCHANGE CARD A2-D2

019
POWER DOWN

CHECK CABLE AT A1A5 FOR OPENS AND
SHORTS. EXCHANGE AS REQUIRED.
WAS CABLE OK?
Y N

020
VERIFY REPAIR.

021
EXCHANGE CARD A1-D2
REMOVE JUMPER
IF FAILS TO REPAIR RE-INSTALL
ORIGINAL CARD
EXCHANGE CARD A1-C2

022
(ENTRY POINT F)
ENSURE ACTUATOR LOCKOUT IS DISENGAGED

OBSERVE DISK PULLEY

IS DISK PULLEY TURNING?
Y N
|
| 023
| POWER OFF
|
| POWER ON AND WAIT 30 SECONDS
| IS DISK PULLEY TURNING AFTER 30 SECONDS?
| Y N
| |
| | 024
| | GO TO MAP7A73A
| | GO TO MAP 7A73,
| | ENTRY POINT A.
| |
| 025
| RUN DIAGNOSTICS MAP7A20
|
026
(ENTRY POINT W)

FAILING FIELD REPLACEMENT UNITS AT THIS POINT ARE:

FIELD REPLACEMENT UNIT	PROBABLE
SERVO 2 CARD (A1-F2)	54
LOGIC 2 CARD (A1-D2)	20
LOGIC 1 CARD (A1-C2)	16
ACTUATOR DRIVER CARD	8
SERVO 1 CARD (A1-E2)	1
CARD (A1-B2)	
CARD (A2-C2)	
CARD (A2-D2)	
BOARD A1--EXCHANGE AS REQUIRED	

(STEP 026 CONTINUES)

BOARD A1 NETS FOR THIS MAP:
(SEE BOARD A1 NETLIST TABLES - MAP7A75)
C2-09, C2-11, D2-02, D2-21, D2-39, D2-47, F2-04, F2-05, F2-18, F2-21, F2-24, F2-28

(STEP 026 CONTINUED)
DE UNIT 1

(NOTE: THERE IS LESS THAN A 1% PROBABLE THAT DAMAGE TO THE ACTUATOR IN THE DISK ENCLOSURE (DE) CAN CAUSE YOU TO ENTER THIS MAP. EXCHANGE DE ONLY AFTER ALL OTHER FIELD REPLACEMENT UNITS HAVE BEEN TRIED)
INSPECT AND RESEAT CABLES ON A1 BOARD OF THE FAILING FILE

TO ISOLATE FARTHER:

SWITCH PROBE TO MULTI

PROBE VTL A1-C2J05 (+ OUT)
IS LINE DOWN?
Y N
|
| 027
| PROBE VTL A1-C2U06 (- ABS TRACK
| ADDRESS 1)
| IS LINE UP?
| Y N
| |
| | 028
| | PROBE VTL A1-C2U06 (- ABS
| | TRACK ADDRESS 1)
| | IS LINE PULSING?
| | Y N
| | |
| | | 029
| | | PROBE VTL A1-D2G13 (+
| | | NORMAL ERROR)
| | | IS LINE PULSING?
| | | Y N

030
PROBE VTL A1-D2B05 (- ABS TRACK ADDRESS 1)
IS LINE UP?
Y N

031
METER VOLTAGE (6V RANGE)
A1-D2J07 (POS)
A1-D2D08 (NEG)
IS VOLTAGE IN RANGE -0.1 TO +0.6V?
Y N

032
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT W.

033
PROBE VTL A1-C2D13 (+ BEHIND HOME)
IS LINE DOWN?
Y N

034
PROBE VTL A1-D2M08 (- CALIBRATE ADDRESS)
IS LINE UP?
Y N

035
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR
RE-INSTALL ORIGINAL CARD
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT W.

036
ADD JUMPER A1-F2P11 TO A1-F2P08
METER VOLTAGES (60V RANGE)
A1-F2M04 (POS) TO A1-F2P08
(NEG)
A1-F2M05 (POS) TO A1-F2P08
(NEG)
ARE BOTH VOLTAGES MORE THAN
20V?
Y N

037
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR RE-INSTALL
ORIGINAL CARD
EXCHANGE CARD A1-F2
REMOVE JUMPER(S).
IF FAILS TO REPAIR SEE FIELD
REPLACEMENT UNIT LIST - ENTRY
POINT W.

038
REMOVE JUMPER(S).
EXCHANGE ACTUATOR DRIVER CARD
ON A1 GATE
SEE MIM. SEC 3.20
IF FAILS TO REPAIR SEE FIELD
REPLACEMENT UNIT LIST - ENTRY
POINT W.

039
PROBE VTL A1-D2M08 (- CALIBRATE
ADDRESS)
IS LINE UP?
Y N

040
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR
RE-INSTALL ORIGINAL CARD
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR SEE
FIELD REPLACEMENT UNIT
LIST - ENTRY POINT W.

041
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR
RE-INSTALL ORIGINAL CARD
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR SEE
FIELD REPLACEMENT UNIT LIST
- ENTRY POINT W.

042
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR SEE FIELD
REPLACEMENT UNIT LIST - ENTRY
POINT W.

043
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR RE-INSTALL
ORIGINAL CARD
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR SEE FIELD
REPLACEMENT UNIT LIST - ENTRY
POINT W.

044
PROBE VTL A1-D2M08 (- CALIBRATE
ADDRESS)
IS LINE UP?
Y N

045
PROBE VTL A1-C2S05 (- COUNT DWN
2 TRACKS)
IS LINE PULSING?
Y N

046
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR SEE FIELD
REPLACEMENT UNIT LIST - ENTRY
POINT W.

047
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR SEE FIELD
REPLACEMENT UNIT LIST - ENTRY
POINT W.

048
PROBE VTL A1-D2G13 (+ NORMAL
ERROR)
IS LINE PULSING?
Y N

049
PROBE VTL A1-C2D13 (+ BEHIND
HOME)
IS LINE DOWN?
Y N

050
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR SEE FIELD
REPLACEMENT UNIT LIST - ENTRY
POINT W.

051
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR SEE FIELD
REPLACEMENT UNIT LIST - ENTRY
POINT W.

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| |
| |
| 052
| PROBE VTL A1-C2D13 (+ BEHIND
| HOME)
| IS LINE DOWN?
| Y N
| |
| | 053
| | EXCHANGE CARD A1-D2
| | IF FAILS TO REPAIR RE-INSTALL
| | ORIGINAL CARD
| | EXCHANGE CARD A1-C2
| | IF FAILS TO REPAIR SEE FIELD
| | REPLACEMENT UNIT LIST - ENTRY
| | POINT W.
| |
| 054
| EXCHANGE CARD A1-C2
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT W.
|
055
PROBE VTL A1-D2G13 (+ NORMAL
ERROR)
IS LINE DOWN?
Y N
|
| 056
| EXCHANGE CARD A1-D2
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT W.
|
057
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR SEE FIELD
REPLACEMENT UNIT LIST - ENTRY
POINT W.
```

058
PROBE VTL A1-C2U06 (- ABS TRACK ADDRESS 1)
IS LINE UP?
Y N

059
PROBE VTL A1-D2U11 (+ BEHIND HOME)
IS LINE DOWN?
Y N

060
PROBE VTL A1-C2D13 (+ BEHIND HOME)
IS LINE DOWN?
Y N

061
PROBE VTL A1-D2B05 (- ABS TRACK ADDRESS 1)
IS LINE UP?
Y N

062
METER VOLTAGE (6V RANGE)
A1-D2B09 (POS)
A1-D2D08 (NEG)
IS VOLTAGE IN RANGE +0.3V TO -0.3V?
Y N

063
METER VOLTAGE (6V RANGE)
A1-D2D08 (POS)
A1-D2B09 (NEG)
IS VOLTAGE MORE THAN 4.5V?
Y N

064
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR SEE FIELD
REPLACEMENT UNIT LIST - ENTRY
POINT W.

065
EXCHANGE ACTUATOR DRIVER CARD
ON A1 GATE
SEE MIM. SEC 3.20
IF FAILS TO REPAIR SEE FIELD
REPLACEMENT UNIT LIST - ENTRY
POINT W.

066
METER VOLTAGE (60V RANGE)
A1-F2U07 (POS)
A1-F2P08 (NEG)
IS VOLTAGE MORE THAN 10V?
Y N

067
EXCHANGE ACTUATOR DRIVER CARD
ON A1 GATE
SEE MIM. SEC 3.20
IF FAILS TO REPAIR SEE FIELD
REPLACEMENT UNIT LIST - ENTRY
POINT W.

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| | | |
| | | |
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| | | 068
| | | EXCHANGE CARD A1-C2
| | | IF    FAILS    TO    REPAIR
| | | RE-INSTALL ORIGINAL CARD
| | | EXCHANGE CARD A1-D2
| | | IF    FAILS    TO    REPAIR
| | | RE-INSTALL ORIGINAL CARD
| | | EXCHANGE CARD A1-F2
| | | IF  FAILS  TO  REPAIR   SEE
| | | FIELD REPLACEMENT UNIT LIST
| | | - ENTRY POINT W.
| | |
| | 069
| | EXCHANGE CARD A1-D2
| | IF  FAILS TO REPAIR SEE FIELD
| | REPLACEMENT UNIT LIST - ENTRY
| | POINT W.
| |
| 070
| EXCHANGE CARD A1-F2
| IF FAILS TO  REPAIR  SEE  FIELD
| REPLACEMENT  UNIT  LIST - ENTRY
| POINT W.
|
071
PROBE   VTL  A1-D2G13  (+  NORMAL
ERROR)
IS LINE PULSING?
Y N
|
| 072
| PROBE VTL  A1-C2D13  (+  BEHIND
| HOME)
| IS LINE DOWN?
| Y N
| | | |
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| |
| 073
| METER VOLTAGE (6V RANGE)
| A1-F2M08 (POS)
| A1-F2P08 (NEG)
| IS VOLTAGE IN RANGE -0.3V TO
| +0.3V?
| Y N
| |
| | 074
| | EXCHANGE CARD A1-F2
| | IF FAILS TO REPAIR SEE FIELD
| | REPLACEMENT UNIT LIST - ENTRY
| | POINT W.
| |
| 075
| EXCHANGE ACTUATOR DRIVER CARD
| ON A1 GATE
| SEE MIM. SEC 3.20
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT W.
|
076
PROBE VTL A1-C2U06 (- ABS TRACK
ADDRESS 1)
IS LINE PULSING?
Y N
|
| 077
| METER VOLTAGE (6V RANGE)
| A1-D2B09 (POS)
| A1-D2D08 (NEG)
| IS VOLTAGE IN RANGE -0.3V TO
| +0.3V?
| Y N
| |
| | 078
| | EXCHANGE CARD A1-F2
| | IF FAILS TO REPAIR SEE FIELD
| | REPLACEMENT UNIT LIST - ENTRY
| | POINT W.
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| | |
| | 079
| | METER VOLTAGE (60V RANGE)
| | A1-F2U07 (POS)
| | A1-F2P08 (NEG)
| | IS VOLTAGE MORE THAN 10V?
| | Y N
| | |
| | | 080
| | | EXCHANGE ACTUATOR DRIVER
| | | CARD ON A1 GATE
| | | SEE MIM. SEC 3.20
| | | IF FAILS TO REPAIR SEE
| | | FIELD REPLACEMENT UNIT LIST
| | | - ENTRY POINT W.
| | |
| | 081
| | EXCHANGE CARD A1-F2
| | IF FAILS TO REPAIR SEE FIELD
| | REPLACEMENT UNIT LIST - ENTRY
| | POINT W.
| |
| 082
| EXCHANGE CARD A1-C2
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT W.
|
083
PROBE VTL A1-C2U06 (- ABS TRACK
ADDRESS 1)
IS LINE PULSING?
Y N
|
| 084
| EXCHANGE CARD A1-F2
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT W.
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| 085
| EXCHANGE CARD A1-C2
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT W.
|
086
PROBE VTL A1-F2P11 (+ NOT IN
DRIVE)
IS LINE UP?
Y N
|
| 087
| PROBE VTL A1-D2G13 (+ NORMAL
| ERROR)
| IS LINE PULSING?
| Y N
| |
| | 088
| | PROBE VTL A1-F2P11 (+ NOT IN
| | DRIVE)
| | IS LINE PULSING?
| | Y N
| | |
| | | 089
| | | PROBE VTL A1-D2U11 (+
| | | BEHIND HOME)
| | | IS LINE DOWN?
| | | Y N
| | | |
| | | | 090
| | | | EXCHANGE CARD A1-D2
| | | | IF FAILS TO REPAIR
| | | | RE-INSTALL ORIGINAL CARD
| | | | EXCHANGE CARD A1-E2
| | | | IF FAILS TO REPAIR SEE
| | | | FIELD REPLACEMENT UNIT
| | | | LIST - ENTRY POINT W.
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| | 091
| | EXCHANGE CARD A1-F2
| | IF FAILS TO REPAIR SEE FIELD
| | REPLACEMENT UNIT LIST - ENTRY
| | POINT W.
| |
| 092
| METER VOLTAGE (6V RANGE)
| A1-D2B09 (POS)
| A1-D2D08 (NEG)
| IS VOLTAGE IN RANGE -0.3V TO
| +0.3V?
| Y N
| |
| | 093
| | EXCHANGE CARD A1-F2
| | IF FAILS TO REPAIR SEE FIELD
| | REPLACEMENT UNIT LIST - ENTRY
| | POINT W.
| |
| 094
| EXCHANGE CARD A1-D2
| IF FAILS TO REPAIR RE-INSTALL
| ORIGINAL CARD
| EXCHANGE CARD A1-F2
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT W.
|
095
METER VOLTAGE (6V RANGE)
A1-F2P08 (POS)
A1-F2P04 (NEG)
IS VOLTAGE MORE THAN 4.0V?
Y N
|
| 096
| EXCHANGE CARD A1-D2
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT W.
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| |
| 097
| EXCHANGE CARD A1-F2
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT W.
|
098
PROBE VTL A1-C2D13 (+ BEHIND
HOME)
IS LINE DOWN?
Y N
|
| 099
| PROBE VTL A1-D2U11 (+ BEHIND
| HOME)
| IS LINE DOWN?
| Y N
| |
| | 100
| | EXCHANGE CARD A1-D2
| | IF FAILS TO REPAIR SEE FIELD
| | REPLACEMENT UNIT LIST - ENTRY
| | POINT W.
| |
| 101
| EXCHANGE CARD A1-F2
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT W.
|
102
METER VOLTAGE (60V RANGE)
A1-F2U07 (POS)
A1-F2P08 (NEG)
IS VOLTAGE MORE THAN 10V?
Y N
| |
| |
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| |
| 103
| POWER DOWN
|
| CHECK CABLE AT A1A2 FOR OPENS
| AND SHORTS. EXCHANGE AS
| REQUIRED.
| WAS CABLE OK?
| Y N
| |
| | 104
| | VERIFY REPAIR.
| |
| 105
| EXCHANGE ACTUATOR DRIVER CARD
| ON A1 GATE
| SEE MIM. SEC 3.20
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT W.
|
106
METER VOLTAGE (6V RANGE)
A1-D2J07 (POS)
A1-D2J08 (NEG)
IS VOLTAGE IN RANGE 0V TO 0.5V?
Y N
|
| 107
| EXCHANGE ACTUATOR DRIVER CARD
| ON A1 GATE
| SEE MIM. SEC 3.20
| AND
| EXCHANGE CARD A1-F2
|
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT W.
|
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|
|
108
POWER DOWN

CHECK CABLE ON A1 BOARD FOR OPENS AND SHORTS. EXCHANGE AS REQUIRED.
WAS CABLE OK?
Y N
|
| 109
| VERIFY REPAIR.
|
110
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR RE-INSTALL ORIGINAL CARD
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT W.

111
(ENTRY POINT G)

FAILING FIELD REPLACEMENT UNITS
AT THIS POINT ARE:

FIELD REPLACEMENT UNIT PROBABLE:
LOGIC 1 CARD (A1-C2) 21
CARD (A1-B2)
CARD (A1-D2)
CARD (A1-E2)
ACTUATOR DRIVER CARD
CARD (A1-F2)
CARD (A2-C2)
CARD (A2-D2)
INSPECT AND RESEAT CABLES ON A1
BOARD OF THE FAILING FILE
DE UNIT 79

TO ISOLATE FARTHER:

ENSURE ACTUATOR LOCK IS FULLY
DISENGAGED.
WAS LOCK DISENGAGED?
Y N
|
| 112
| FULLY DISENGAGE LOCK
| RUN DIAGNOSTIC PROGRAMS MAP7A20
| DIAGNOSTICS RUN OK?
| Y N
| |
| | 113
| | EXCHANGE CARD A1-C2
| | IF FAILS TO REPAIR RE-INSTALL
| | ORIGINAL CARD
| | EXCHANGE DE UNIT
| | IF FAILS TO REPAIR SEE FIELD
| | REPLACEMENT UNIT LIST - ENTRY
| | POINT G.
| |
| |
| |
| |

| |
| |
| 114
| RETURN SYSTEM TO CUSTOMER
|
115
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR RE-INSTALL ORIGINAL CARD
EXCHANGE DE UNIT
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT G.

116
(ENTRY POINT H)

FAILING FIELD REPLACEMENT UNITS
AT THIS POINT ARE:

FIELD REPLACEMENT UNIT	PROBABLE
SERVO 2 CARD (A1-F2)	43
LOGIC 2 CARD (A1-D2)	24
CARD (A1-B2)	
CARD (A1-D2)	
CARD (A1-E2)	
ACTUATOR DRIVER CARD	
CARD (A2-C2)	
CARD (A2-D2)	

INSPECT AND RESEAT CABLES ON A1
BOARD OF THE FAILING FILE
DE UNIT 33

TO ISOLATE FARTHER:

POWER OFF

METER RESISTANCE BETWEEN A1-F2J08
AND A1-F2J05
IS RESISTANCE MORE THAN 150 OHMS?
Y N
|
| 117
| DISCONNECT VC3
| (REFERENCE SF570)
| METER RESISTANCE OF DE
| RESISTORS (1X OHM RANGE)
| VC3-C TO VC3-D
| IS RESISTANCE MORE THAN 150
| OHMS?
| Y N

BOARD A1 NETS FOR THIS MAP:
(SEE BOARD A1 NETLIST TABLES -
MAP7A75)
F2-02

2 2 2
9 9 9
A A A
S T U

| | |
| | |
| | 118
| | THE PROBLEM IS BAD DE TRIMMER
| | RESISTORS.
| | EXCHANGE DE UNIT
| | IF FAILS TO REPAIR SEE FIELD
| | REPLACEMENT UNIT LIST - ENTRY
| | POINT H.
| |
| 119
| THE PROBLEM IS A SHORT TO
| GROUND ON THE DE TRIMMER
| RESISTOR CABLE
| REPAIR OR EXCHANGE AS REQUIRED.
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT H.
|
120
ADD JUMPER A1-D2P07 TO A1-D2P08
POWER ON

SWITCH PROBE TO MULTI

PROBE VTL A1-F2B04 (+ SERVO CLOCK
SS)
IS LINE PULSING?
Y N
|
| 121
| EXCHANGE CARD A1-F2
| REMOVE JUMPER(S).
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT H.
|
122
PROBE VTL A1-D2G05 (+ SERVO CLOCK
SS)
IS LINE PULSING?
Y N
| |
| |
| |
| |

| |
| |
| 123
| EXCHANGE BOARD A1.
|
124
CHECK SEATING OF JUMPERS ON CARD
EXCHANGE CARD A1-D2
REMOVE JUMPER(S).
IF FAILS TO REPAIR SEE FIELD
REPLACEMENT UNIT LIST - ENTRY
POINT H.

125
(ENTRY POINT I)

FAILING FIELD REPLACEMENT UNITS
AT THIS POINT ARE:

FIELD REPLACEMENT UNIT	PROBABLE
SERVO 2 CARD (A1-F2)	70
LOGIC 2 CARD (A1-D2)	30

INSPECT AND RESEAT CABLES ON A1
BOARD OF THE FAILING FILE

EXCHANGE CARD A1-F2
IF FAILS TO REPAIR RE-INSTALL
ORIGINAL CARD
EXCHANGE CARD A1-D2

BOARD A1 NETS FOR THIS MAP:
(SEE BOARD A1 NETLIST TABLES -
MAP7A75)
D2-11

126
(ENTRY POINT J)

REF SF500 PAGES FOR PINS

FAILING FIELD REPLACEMENT UNITS
AT THIS POINT ARE:

FIELD REPLACEMENT UNIT	PROBABLE
LOGIC 1 CARD (A1-C2)	59
LOGIC 2 CARD (A1-D2)	41

INSPECT AND RESEAT CABLES ON A1
BOARD OF THE FAILING FILE

TO ISOLATE FARTHER:

METER CONTINUITY OF CABLE
A1-A3B05
IS CONTINUITY OK?
Y N
|
| 127
| REPAIR OR EXCHANGE A1-A3 CABLE.
|
128
METER CONTINUITY OF CABLE
A1-A5B04
IS CONTINUITY OK?
Y N
|
| 129
| REPAIR OR EXCHANGE A1-A5 CABLE.
|
130
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR RE-INSTALL
ORIGINAL CARD
EXCHANGE CARD A1-D2

131
(ENTRY POINT K)

FAILING FIELD REPLACEMENT UNITS
AT THIS POINT ARE:

FIELD REPLACEMENT UNIT	PROBABLE
DA CHAN CARD (A1-B2)	42
LOGIC 1 CARD (A1-C2)	30
ACTUATOR DRIVER CARD	04
CARD (A1-D2)	
CARD (A1-E2)	
CARD (A1-F2)	
CARD (A2-C2)	
CARD (A2-D2)	

INSPECT AND RESEAT CABLES ON A1 BOARD OF THE FAILING FILE
DE UNIT 24

TO ISOLATE FARTHER:

SWITCH PROBE TO MST1

PROBE MST1 A1-B2B10 (- RD FIXED HDS)
IS LINE DOWN?
Y N
|
| 132
| EXCHANGE CARD A1-B2
| IF FAILS TO REPAIR RE-INSTALL ORIGINAL CARD
| EXCHANGE DE UNIT
| IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT K.
|
|
|
|
|
|
|
|

BOARD A1 NETS FOR THIS MAP:
(SEE BOARD A1 NETLIST TABLES - MAP7A75)
B2-08, B2-09

133
TO FIND WHICH HEAD IS SELECTED PROBE THE PINS SHOWN IN TABLE 3. IF THE CONDITIONS MATCH, THAT HEAD IS SELECTED.

TABLE 3

	PROBE VTL		PROBE MST1	
HEAD	B2M07	B2M08	B2P04	B2M04
0	U	D	U	U
1	U	D	U	D
2	U	D	D	U
3	U	D	D	D
4	D	U	U	U
5	D	U	U	D
6	D	U	D	U
7	D	U	D	D

NOTE: D=DOWN,U=UP

IS A VALID HEAD SELECTED?
Y N

134
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR RE-INSTALL ORIGINAL CARD
EXCHANGE CARD A1-B2
IF FAILS TO REPAIR RE-INSTALL ORIGINAL CARD
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT K.

135
EXCHANGE CARD A1-B2
IF FAILS TO REPAIR RE-INSTALL ORIGINAL CARD
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR RE-INSTALL ORIGINAL CARD
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT K.

136
(ENTRY POINT L)

FAILING FIELD REPLACEMENT UNITS AT THIS POINT ARE:

FIELD REPLACEMENT UNIT	PROBABLE
LOGIC 1 CARD (A1-C2)	59
LOGIC 2 CARD (A1-D2)	41

INSPECT AND RESEAT CABLES ON A1 BOARD OF THE FAILING FILE

TO ISOLATE FARTHER:

SWITCH PROBE TO MULTI

PROBE VTL A1-C2D05 (- RESET CALIBRATION)
IS LINE UP?
Y N
|
| 137
| EXCHANGE CARD A1-C2
| IF FAILS TO REPAIR RE-INSTALL
| ORIGINAL CARD
| EXCHANGE CARD A1-D2
|
138
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR RE-INSTALL
ORIGINAL CARD
EXCHANGE CARD A1-C2

BOARD A1 NETS FOR THIS MAP:
(SEE BOARD A1 NETLIST TABLES - MAP7A75)
C2-03

139
(ENTRY POINT M)

FAILING FIELD REPLACEMENT UNITS
AT THIS POINT ARE:

FIELD REPLACEMENT UNIT	PROBABLE
DA CHAN CARD (A1-B2)	78
LOGIC 1 CARD (A1-C2)	10
DISK CNTRL A2-C2,A2-D2	1
CABLES TO THE DISK	1
CARD (A1-D2)	
CARD (A1-E2)	
ACTUATOR DRIVER CARD	
CARD (A1-F2)	

INSPECT AND RESEAT CABLES ON A1
BOARD OF THE FAILING FILE
DE UNIT 9

TO ISOLATE FARTHER:

SWITCH PROBE TO MULTI

PROBE VTL A1-B2D11 (MARS SAFETY)
IS LINE DOWN?
Y N
|
| 140
| PROBE VTL A1-C2S11 (- SERVO
| UNSAFE)
| IS LINE DOWN?
| Y N
| |
| | 141
| | PROBE VTL A1-C2M11 (+ DATA
| | UNSAFE)
| | (IF NO LIGHTS TEST FOR DOWN
| | LEVEL ON MST2/1)
| | IS LINE DOWN?
| | Y N

BOARD A1 NETS FOR THIS MAP:
(SEE BOARD A1 NETLIST TABLES - MAP7A75)
B2-03, B2-05, C2-06, C2-29

```
| | | |
| | | |
| | | 142
| | | EXCHANGE CARD A1-B2
| | | IF   FAILS  TO  REPAIR  SEE
| | | FIELD REPLACEMENT UNIT LIST
| | | - ENTRY POINT M.
| | |
| | 143
| | METER VOLTAGE (6VOLT RANGE)
| | A1-B2B12 (POS)
| | A1-B2D08 (NEG)
| | IS VOLTAGE IN RANGE 5V TO 6V?
| | Y N
| | |
| | | 144
| | | EXCHANGE CARD A1-B2
| | | IF   FAILS  TO  REPAIR  SEE
| | | FIELD REPLACEMENT UNIT LIST
| | | - ENTRY POINT M.
| | |
| | 145
| | EXCHANGE CARD A1-C2
| | IF FAILS TO REPAIR SEE  FIELD
| | REPLACEMENT UNIT LIST - ENTRY
| | POINT M.
| |
| 146
| EXCHANGE CARD A1-C2
| IF  FAILS  TO REPAIR RE-INSTALL
| ORIGINAL CARD
| EXCHANGE CARD A1-B2
| IF FAILS TO  REPAIR  SEE  FIELD
| REPLACEMENT  UNIT  LIST - ENTRY
| POINT M.
|
147
EXCHANGE CARD A1-B2
IF  FAILS  TO  REPAIR  RE-INSTALL
ORIGINAL CARD
EXCHANGE DE UNIT
IF  FAILS  TO  REPAIR  SEE  FIELD
REPLACEMENT  UNIT  LIST  -  ENTRY
POINT M.
```

148
(ENTRY POINT N)

FAILING FIELD REPLACEMENT UNITS
AT THIS POINT ARE:

FIELD REPLACEMENT UNIT	PROBABLE
LOGIC 1 CARD (A1-C2)	59
LOGIC 2 CARD (A1-D2)	41

INSPECT AND RESEAT CABLES ON A1
BOARD OF THE FAILING FILE

TO ISOLATE FARTHER:

SWITCH PROBE TO MULTI

PROBE VTL A1-C2S03 (+ BYTE CNT
BIT 16)
IS LINE PULSING?
Y N
|
| 149
| EXCHANGE CARD A1-D2
| IF FAILS TO REPAIR RE-INSTALL
| ORIGINAL CARD
| EXCHANGE CARD A1-C2
|
150
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR RE-INSTALL
ORIGINAL CARD
EXCHANGE CARD A1-D2

BOARD A1 NETS FOR THIS MAP:
(SEE BOARD A1 NETLIST TABLES -
MAP7A75)
D2-40

151
(ENTRY POINT 0)

FAILING FIELD REPLACEMENT UNITS
AT THIS POINT ARE:

FIELD REPLACEMENT UNIT	PROBABLE
LOGIC 1 CARD (A1-C2)	59
LOGIC 2 CARD (A1-D2)	41

INSPECT AND RESEAT CABLES ON A1
BOARD OF THE FAILING FILE

TO ISOLATE FARTHER:

SWITCH PROBE TO MULTI

PROBE VTL A1-C2S07 (- SET SEEK)
IS LINE UP?
Y N
|
| 152
| EXCHANGE CARD A1-C2
| IF FAILS TO REPAIR RE-INSTALL
| ORIGINAL CARD
| EXCHANGE CARD A1-D2
|
153
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR RE-INSTALL
ORIGINAL CARD
EXCHANGE CARD A1-C2

BOARD A1 NETS FOR THIS MAP:
(SEE BOARD A1 NETLIST TABLES - MAP7A75)
C2-27

154
(ENTRY POINT P)

FAILING FIELD REPLACEMENT UNITS AT THIS POINT ARE:

FIELD REPLACEMENT UNIT	PROBABLE
LOGIC 1 CARD (A1-C2)	50
LOGIC 2 CARD (A1-D2)	41
SERVO 2 CARD (A1-F2)	9

ENSURE ACTUATOR LOCKOUT IS DISENGAGED

(NOTE: THERE IS A LESS THAN 1% PROBABLE THAT DAMAGE TO THE ACTUATOR IN THE DISK ENCLOSURE CAN CAUSE YOU TO ENTER THIS MAP. EXCHANGE DE ONLY AFTER ALL OTHER FIELD REPLACEMENT UNITS HAVE BEEN TRIED)
INSPECT AND RESEAT CABLES ON A1 BOARD OF THE FAILING FILE

TO ISOLATE FARTHER:

SWITCH PROBE TO MULTI

PROBE VTL A1-C2D07 (- TAG 001 CLOCK 2)
IS LINE UP?
Y N
|
| 155
| EXCHANGE CARD A1-C2
| IF FAILS TO REPAIR RE-INSTALL ORIGINAL CARD
| EXCHANGE CARD A1-D2
| IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT P.
|
|
|

BOARD A1 NETS FOR THIS MAP:
(SEE BOARD A1 NETLIST TABLES - MAP7A75)
C2-05

|
|
156
PROBE VTL A1-C2P11 (- SEEK COMPLETE)
IS LINE DOWN?
Y N
|
| 157
| CHECK SEATING OF JUMPERS ON CARD A1-D2
| IF FAILS TO REPAIR
| EXCHANGE CARD A1-D2
| IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT P.
|
158
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR RE-INSTALL ORIGINAL CARD
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT P.

159
(ENTRY POINT Q)

FAILING FIELD REPLACEMENT UNITS
AT THIS POINT ARE:

FIELD REPLACEMENT UNIT	PROBABLE
LOGIC 1 CARD (A1-C2)	59
LOGIC 2 CARD (A1-D2)	41

INSPECT AND RESEAT CABLES ON A1
BOARD OF THE FAILING FILE

TO ISOLATE FARTHER:

SWITCH PROBE TO MULTI

PROBE VTL A1-D2P07 (+ BRAKE
APPLIED)
IS LINE UP?
Y N
|
| 160
| EXCHANGE CARD A1-C2
| IF FAILS TO REPAIR RE-INSTALL
| ORIGINAL CARD
| EXCHANGE CARD A1-D2
|
161
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR RE-INSTALL
ORIGINAL CARD
EXCHANGE CARD A1-C2

BOARD A1 NETS FOR THIS MAP:
(SEE BOARD A1 NETLIST TABLES -
MAP7A75)
D2-35

162
(ENTRY POINT R)

FAILING FIELD REPLACEMENT UNITS AT THIS POINT ARE:

FIELD REPLACEMENT UNIT	PROBABLE
LOGIC 1 CARD (A1-C2)	65
LOGIC 2 CARD (A1-D2)	35

INSPECT AND RESEAT CABLES ON A1 BOARD OF THE FAILING FILE

TO ISOLATE FARTHER:

SWITCH PROBE TO MULTI

PROBE VTL A1-D2D05 (- COUNT UP 2 TRKS)
IS LINE PULSING?
Y N
|
| 163
| EXCHANGE CARD A1-D2
| IF FAILS TO REPAIR RE-INSTALL
| ORIGINAL CARD
| EXCHANGE CARD A1-C2
|
164
PROBE VTL A1-D2D07 (- COUNT DOWN 2 TRKS)
IS LINE PULSING?
(NOTE: OBSERVE FOR 1 MINUTE)
Y N
|
| 165
| IS LINE UP?
| Y N

BOARD A1 NETS FOR THIS MAP:
(SEE BOARD A1 NETLIST TABLES - MAP7A75)
C2-09, D2-06, D2-08

```
| | |
| | |
| | 166
| | EXCHANGE CARD A1-D2
| | IF FAILS TO REPAIR RE-INSTALL
| | ORIGINAL CARD
| | EXCHANGE CARD A1-C2
| |
| 167
| EXCHANGE CARD A1-C2
| IF  FAILS  TO REPAIR RE-INSTALL
| ORIGINAL CARD
| EXCHANGE CARD A1-D2
|
168
EXCHANGE CARD A1-C2
IF  FAILS  TO  REPAIR  RE-INSTALL
ORIGINAL CARD
EXCHANGE CARD A1-D2
```

169
(ENTRY POINT S)

FAILING FIELD REPLACEMENT UNITS
AT THIS POINT ARE:

FIELD REPLACEMENT UNIT	PROBABLE
LOGIC 1 CARD (A1-C2)	74
LOGIC 2 CARD (A1-D2)	26

INSPECT AND RESEAT CABLES ON A1
BOARD OF THE FAILING FILE

TO ISOLATE FARTHER:

SWITCH PROBE TO MULTI

PROBE VTL A1-D2U02 (+ OUT)
IS LINE DOWN?
Y N
|
| 170
| EXCHANGE CARD A1-C2
| IF FAILS TO REPAIR RE-INSTALL
| ORIGINAL CARD
| EXCHANGE CARD A1-D2
|
171
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR RE-INSTALL
ORIGINAL CARD
EXCHANGE CARD A1-C2

BOARD A1 NETS FOR THIS MAP:
(SEE BOARD A1 NETLIST TABLES - MAP7A75)
C2-11

172
(ENTRY POINT T)

FAILING FIELD REPLACEMENT UNITS
AT THIS POINT ARE:

FIELD REPLACEMENT UNIT	PROBABLE
SERVO 2 CARD (A1-F2)	70
LOGIC 2 CARD (A1-D2)	30

INSPECT AND RESEAT CABLES ON A1
BOARD OF THE FAILING FILE

TO ISOLATE FARTHER:

SWITCH PROBE TO MULTI

PROBE VTL A1-D2G02 (- SEL DEMOD
Q2)
IS LINE DOWN?
Y N
|
| 173
| PROBE VTL A1-D2J06 (- SEL DEMOD
| N2)
| IS LINE PULSING?
| Y N
| |
| | 174
| | EXCHANGE CARD A1-D2
| | IF FAILS TO REPAIR RE-INSTALL
| | ORIGINAL CARD
| | EXCHANGE CARD A1-F2
| |
| 175
| EXCHANGE CARD A1-F2
| IF FAILS TO REPAIR RE-INSTALL
| ORIGINAL CARD
| EXCHANGE CARD A1-D2
|
|
|
|
|
|

BOARD A1 NETS FOR THIS MAP:
(SEE BOARD A1 NETLIST TABLES -
MAP7A75)
D2-13

|
|
176
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR RE-INSTALL
ORIGINAL CARD
EXCHANGE CARD A1-F2

177
(ENTRY POINT U)

FAILING FIELD REPLACEMENT UNITS
AT THIS POINT ARE:

FIELD REPLACEMENT UNIT	PROBABLE
LOGIC 1 CARD (A1-C2)	73
LOGIC 2 CARD (A1-D2)	16
DA CHAN CARD (A1-B2)	6
SERVO 2 CARD (A1-F2)	5

INSPECT AND RESEAT CABLES ON A1
BOARD OF THE FAILING FILE

BOARD A1 NETS FOR THIS N=MAP:
(SEE BOARD A1 NETLIST TABLES -
MAP7A75)
C2-01, C2-07, C2-12, C2-19, C2-25,
D2-02, D2-06, D2-08, D2-30, D2-46,

TO ISOLATE FARTHER:

PROBE PINS FOR HEAD 1 SELECTED
AS SHOWN BELOW

	PROBE MST1		PROBE VTL		
MODELS	A2B03	A2B04	A2B06	A2B05	A2B02
23/29MB	D	U	D	U	*
58/64MB	D	U	D	U	U

* INDICATES PIN IS NOT USED.
D=DOWN,U=UP

BOARD A1 NETS FOR THIS MAP:
(SEE BOARD A1 NETLIST TABLES -
MAP7A75)
C2-01, C2-07, C2-12, C2-19,
C2-25,
D2-02, D2-06, D2-08, D2-30, D2-46

(STEP 177 CONTINUES)

(STEP 177 CONTINUED)

ARE LEVELS CORRECT?
Y N
|
| 178
| PROBE PINS FOR HEAD 1 SELECTED
| AS SHOWN BELOW
|

PROBE VTL			
B2P07	B2P05	B2P10	B2P06
D	U	U	U

|
| ARE LEVELS CORRECT?
| Y N
| |
| | 179
| | EXCHANGE CARD A1-C2
| | IF FAILS TO REPAIR SEE FIELD
| | REPLACEMENT UNIT LIST - ENTRY
| | POINT U.
| |
| 180
| EXCHANGE CARD A1-B2
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT U.
|
181
PROBE VTL A1-C2S05 (- CNT DOWN 2
TRKS)
PROBE VTL A1-C2S06 (- CNT UP 2
TRKS)
ARE BOTH LINES UP?
Y N
|
| 182
| EXCHANGE CARD A1-D2
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT U.
|
|
|

|
|
183
PROBE VTL A1-C2U06 (- ABS TRACK ADDRESS 1)
IS LINE UP?
Y N
|
| 184
| EXCHANGE CARD A1-D2
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT U.
|
185
CHECK SEATING OF JUMPERS ON CARD A1-D2
IF FAILS TO REPAIR
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR RE-INSTALL ORIGINAL CARD
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT U.

186
(ENTRY POINT V)

FAILING FIELD REPLACEMENT UNITS
AT THIS POINT ARE:

FIELD REPLACEMENT UNIT	PROBABLE
LOGIC 2 CARD (A1-D2)	44
LOGIC 1 CARD (A1-C2)	32
DA CHAN CARD (A1-B2)	25

INSPECT AND RESEAT CABLES ON A1
BOARD OF THE FAILING FILE

TO ISOLATE FARTHER:

SWITCH PROBE TO MULTI

PROBE VTL A1-C2J02 (- AGC FREEZE)
IS LINE UP?
Y N
|
| 187
| EXCHANGE CARD A1-D2
| IF FAILS TO REPAIR RE-INSTALL
| ORIGINAL CARD
| EXCHANGE CARD A1-B2
| IF FAILS TO REPAIR RE-INSTALL
| ORIGINAL CARD
| EXCHANGE CARD A1-C2
|
188
EXCHANGE CARD A1-B2
IF FAILS TO REPAIR RE-INSTALL
ORIGINAL CARD
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR RE-INSTALL
ORIGINAL CARD
EXCHANGE CARD A1-D2

BOARD A1 NETS FOR THIS MAP:
(SEE BOARD A1 NETLIST TABLES - MAP7A75)
D2-18

189
(ENTRY POINT X)

FAILING FIELD REPLACEMENT UNITS
AT THIS POINT ARE:

FIELD REPLACEMENT UNIT	PROBABLE
SERVO 2 CARD (A1-F2)	88
LOGIC 2 CARD (A1-D2)	12

INSPECT AND RESEAT CABLES ON A1
BOARD OF THE FAILING FILE

TO ISOLATE FARTHER:

SWITCH PROBE TO MULTI

PROBE VTL A1-D2U12 (- N/2 ERROR)
IS LINE DOWN?
Y N
|
| 190
| EXCHANGE CARD A1-D2
| IF FAILS TO REPAIR RE-INSTALL
| ORIGINAL CARD
| EXCHANGE CARD A1-F2
|
191
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR RE-INSTALL
ORIGINAL CARD
EXCHANGE CARD A1-D2

BOARD A1 NETS FOR THIS MAP:
(SEE BOARD A1 NETLIST TABLES - MAP7A75)
F2-18

192
(ENTRY POINT Y)

FAILING FIELD REPLACEMENT UNITS
AT THIS POINT ARE:

FIELD REPLACEMENT UNIT	PROBABLE
LOGIC 2 CARD (A1-D2)	35
CARD (A1-B2)	
CARD (A1-C2)	
CARD (A1-E2)	
ACTUATOR DRIVER CARD	
CARD (A2-C2)	
CARD (A2-D2)	

INSPECT AND RESEAT CABLES ON A1
BOARD OF THE FAILING FILE
DE UNIT 65

TO ISOLATE FARTHER:

SWITCH PROBE TO MULTI

ENSURE ACTUATOR LOCK IS FULLY
DISENGAGED

IS ACTUATOR LOCK DISENGAGED?
Y N
|
| 193
| FULLY DISENGAGE ACTUATOR LOCK
| LOAD (C) MAP 7A20 FOR THIS FILE
| DO DIAGNOSTICS RUN OK?
| Y N
| |
| | 194
| | EXCHANGE CARD A1-D2
| | IF FAILS TO REPAIR RE-INSTALL
| | ORIGINAL CARD
| | IF FAILS TO REPAIR SEE FIELD
| | REPLACEMENT UNIT LIST - ENTRY
| | POINT Y.
| |
| |
| |

| |
| |
| 195
| RETURN SYSTEM TO CUSTOMER
|
196
PROBABLE DE UNIT FAILURE
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR RE-INSTALL ORIGINAL CARD
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT Y.

197
(ENTRY POINT Z)

FAILING FIELD REPLACEMENT UNITS
AT THIS POINT ARE:

FIELD REPLACEMENT UNIT	PROBABLE
SERVO 1 CARD (A1-E2)	74
SERVO 2 CARD (A1-F2)	26

INSPECT AND RESEAT CABLES ON A1
BOARD OF THE FAILING FILE

EXCHANGE CARD A1-E2
IF FAILS TO REPAIR RE-INSTALL
ORIGINAL CARD
EXCHANGE CARD A1-F2

BOARD A1 NETS FOR THIS MAP:
(SEE BOARD A1 NETLIST TABLES -
MAP7A75)
F2-03

DISK FAILURE

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP ENTRY POINT	PAGE NUMBER	STEP NUMBER
7A21	A	1	001
7A21	B	13	054

EXIT POINTS

EXIT THIS MAP PAGE NUMBER	STEP NUMBER	TO MAP NUMBER	ENTRY POINT
5	015	7A70	H
16	072	7A74	B

001
(ENTRY POINT A)

FAILING FIELD REPLACEMENT UNITS
AT THIS POINT:

FIELD REPLACEMENT UNIT	PROBABLE
MECHANICAL DRIVE (BELT,MOTOR,BRAKE)	64
SERVO 2 CARD (A1-F2)	13
LOGIC 2 CARD (A1-D2)	8
SERVO 1 CARD (A1-E2)	7

CARD A1-D2, A1C2
ACTUATOR DRIVER CARD
CARD A2-C2, A2D2
INSPECT AND RESEAT CABLES AT
BOARD A1--EXCHANGE AS REQUIRED

DE UNIT 8

TO ISOLATE MORE:

NOTE. RESET THE THERMAL TRIP ON
THE DRIVE MOTOR WHEN EXITING THIS
MAP.

POWER OFF

CHECK THE FOLLOWING:
(STEP 001 CONTINUES)

 20MAY83 PN6826995

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(STEP 001 CONTINUED)
1. DRIVE BELT BROKEN OR OFF THE PULLEYS.
(INSTALL WITH SMOOTH SIDE IN CONTACT WITH PULLEY)
2. LOOSE PARTS IN OR AROUND THE DRIVE BELT GUARD.
3. LOOSE CABLE CONNECTIONS FROM POWER SUPPLY TO DRIVE MOTOR, J2 CONNECTOR ON SUPPLY.
ALL CORRECT?

```
Y N
|
| 002
| REPAIR OR EXCHANGE AS REQUIRED.
|
003
```

INSPECT THE DRIVE BELT FOR CORRECT TENSION AND GENERAL CONDITION. (SEE MIM 2.5).
IS THE DRIVE BELT IN GOOD CONDITION AND HAVE CORRECT TENSION.?

```
Y N
|
| 004
| ALIGN THE DRIVE BELT AND  CHECK
| THE TENSION.  EXCHANGE THE BELT
| IF IN POOR CONDITION.
| (SEE MIM SECTION 3.35).
|
3
A
```

DISK FAILURE

005
ADD A JUMPER FROM A1-D2G10 TO A1-D2D08.
ADD A JUMPER FROM A1-D2G11 TO A1-D2J08.

SWITCH MOTOR SW ON THE POWER SUPPLY OFF, TURN DRIVE POWER SW ON.
TURN THE DRIVE MOTOR PULLEY CLOCKWISE BY HAND, TO TEST FOR BINDS OR BRAKE APPLIED.
---------->
IS THE MOTOR FREE TO TURN?
Y N

006
REMOVE THE JUMPER FROM A1-D2G10 TO A1-D2D08
INSPECT THE BRAKE ASSEMBLY (SEE MIM SECTION 2.5 FOR LOCATION).
IS THE BRAKE PAD CLEAR OF THE SPINDLE PULLEY?
Y N

007
MEASURE THE FOLLOWING VOLTAGES:
1. BRAKE COIL TERMINAL 1 TO GROUND.
2. BRAKE COIL TERMINAL 2 TO GROUND.
ARE THEY BOTH 24V ?
Y N

008
IS EITHER ONE OF THEM 24V ?
Y N

CAUTION

OBSERVE THE ROTATION ARROW SHOWN ON THE BELT GUARD COVER AND KEEP THE ROTATION OF THE SPINDLE TO A MINIMUM. FAILURE TO DO SO MAY RESULT IN DISK ENCLOSURE DAMAGE.

DISK FAILURE

009
THE PROBLEM IS ONE OF THE FOLLOWING:

. AN OPEN CIRCUIT BETWEEN BRAKE COIL TERMINAL 2 AND VC3-B.
. AN OPEN CIRCUIT BETWEEN VC3-B AND VC5-B ON THE A1 BOARD.
. AN OPEN CIRCUIT 24V LINE FROM THE SYSTEM
REPAIR OR EXCHANGE AS REQUIRED.
REF MAP7A80-B

010
THE PROBLEM IS AN OPEN CIRCUIT BRAKE COIL.
REPAIR OR EXCHANGE AS REQUIRED.

011
MEASURE THE VOLTAGE BETWEEN A1-G2D10 AND GROUND.
IS IT 24V ?
Y N

012
THE PROBLEM IS ONE OF THE FOLLOWING:

. AN OPEN CIRCUIT BETWEEN BRAKE COIL TERMINAL 1 AND VC3-A.
. AN OPEN CIRCUIT BETWEEN VC3-A AND A1-D2G10 ON THE A1 BOARD.
REPAIR OR EXCHANGE AS REQUIRED.

013
EXCHANGE THE BRAKE MAGNET ASSEMBLY.

DISK FAILURE

014
REMOVE THE DRIVE BELT BY PIVOTING THE DRIVE MOTOR UPWARD.
TURN THE DISK SPINDLE PULLEY CLOCKWISE, BY HAND, TO TEST FOR BINDS.
---------->
IS THE DISK SPINDLE FREE TO TURN?
Y N

015
EXCHANGE THE DE UNIT.
GO TO MAP 7A70,
ENTRY POINT H.

016
EXCHANGE THE DRIVE MOTOR ASSEMBLY. (SEE MIM SECTION 3.30).

017
POWER OFF

RESET THE THERMAL CUT OUT ON THE DRIVE MOTOR

TURN THE MOTOR SW ON THE POWER SUPPLY ON
POWER-ON.
OBSERVE THE DRIVE MOTOR.
IS THE DRIVE MOTOR TURNING?
Y N

018
MEASURE THE 240 VAC BETWEEN TERMINALS TB1-1 AND TB1-2.
IS THE VOLTAGE 200 TO 240 VAC?
Y N

CAUTION

OBSERVE THE ROTATION ARROW SHOWN ON THE BELT GUARD COVER AND KEEP THE ROTATION OF THE SPINDLE TO A MINIMUM. FAILURE TO DO SO MAY RESULT IN DISK ENCLOSURE DAMAGE.

DISK FAILURE

019
POWER OFF
REMOVE THE JUMPERS.

REMOVE CROSS OVER VC5 ON BOARD A1.
METER RX1 SCALE
A1-D2G11 TO A1-B5A14
IS RESISTANCE LESS THAN 2 OHMS?
Y N

020
REPAIR OR EXCHANGE BOARD A1

021
THE PROBLEM IS ONE OF THE FOLLOWING:

. AN OPEN CIRCUIT + BRAKE APPLIED LINE BETWEEN VC5-A AND THE SYSTEM
REF MAP7A80 G
. 240V MISSING FROM THE SYSTEM
.
REPAIR OR EXCHANGE AS REQUIRED.

022
FAILING FIELD REPLACEMENT UNITS AT THIS POINT:

DRIVE MOTOR
START RELAY

TO ISOLATE MORE:
POWER OFF
METER CONTINUITY
ON START RELAY BETWEEN TERMINALS 3 AND 4
IS CONTINUITY OK?
Y N

DISK FAILURE

023
EXCHANGE THE START RELAY

024
METER CONTINUITY
ON START RELAY BETWEEN
TERMINALS 1 AND 3
IS CONTINUITY OK?
Y N

025
EXCHANGE DRIVE MOTOR ASSEMBLY

026
METER VOLTAGE (600VAC RANGE)
ON START RELAY BETWEEN
TERMINALS 2 AND 4
POWER ON
IS READING 0 VOLTS IMMEDIATELY
AFTER SWITCHED ON?
Y N

027
EXCHANGE THE START RELAY

028
EXCHANGE DRIVE MOTOR ASSEMBLY

029
SWITCH PROBE TO MULTI.
PROBE VTL A1-D2G07 (CNTR. 5
0.0.S.).
IS THE LINE UP?
Y N

030
PROBE VTL A1-D2B13 (OSC. EARLY
).
IS THE LINE UP?
Y N

031
PROBE VTL A1-D2J02 (OSC. LATE).
IS THE LINE PULSING?
Y N
|
| 032
| POWER DOWN
|
| CHECK CABLE AT A1A2 FOR OPENS
| AND SHORTS. EXCHANGE AS
| REQUIRED.
| WAS CABLE OK?
| Y N
| |
| | 033
| | REMOVE JUMPERS
| | VERIFY REPAIR.
| |
| 034
| EXCHANGE CARD A1-E2.
| REMOVE JUMPER(S).
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT A.
|
035
REMOVE JUMPER(S).
EXCHANGE CARD A1-D2.
IF FAILS TO REPAIR INSTALL
ORIGINAL CARD
EXCHANGE CARD A1-E2.
IF FAILS TO REPAIR SEE FIELD
REPLACEMENT UNIT LIST - ENTRY
POINT A.

036
POWER OFF.
REMOVE CARD F2.
MEASURE THE RESISTANCE BETWEEN
PINS A1-F2J05 AND A1-F2D08.
IS THE RESISTANCE LESS THAN 50
OHMS?
Y N
|
| 037
| INSTALL CARD A1-F2
| JUMPER A1-F2P02 TO A1-F2P08.
| POWER ON
| REMOVE JUMPER ON A1-F2P02
| RUN DIAGNOSTIC MAP7A20 AGAIN
| DIAGNOSTIC PROGRAM RUN OK?
| Y N
| |
| | 038
| | EXCHANGE CARD A1-D2.
| | REMOVE THE JUMPER FROM
| | A1-D2G10 TO A1-D2D08.
| | REMOVE THE JUMPER FROM
| | A1-D2G11 TO A1-D2J08.
| | IF FAILS TO REPAIR SEE FIELD
| | REPLACEMENT UNIT LIST - ENTRY
| | POINT A.
| |
| 039
| EXCHANGE CARD A1-F2.
| REMOVE THE JUMPER FROM A1-D2G10
| TO A1-D2D08.
| REMOVE THE JUMPER FROM A1-D2G11
| TO A1-D2J08.
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT A.
|
|
|
|
|
|
|

DISK FAILURE

040
EXCHANGE THE DE UNIT.
REMOVE THE JUMPER FROM A1-D2G10 TO A1-D2D08.
REMOVE THE JUMPER FROM A1-D2G11 TO A1-D2J08.

041
RUN DIAGNOSTIC PROGRAM MAP7A20 AGAIN
DIAGNOSTIC PROGRAM RUN OK?
Y N

042
HAS DRIVE MOTOR THERMAL TRIPPED AGAIN
Y N

043
POWER OFF

REMOVE THE JUMPER FROM A1-D2G10 TO A1-D2D08.
REMOVE THE JUMPER FROM A1-D2G11 TO A1-D2J08.
PROBE VTL A1-F2P02 (- PWR ON DELAY)
POWER ON

IS LINE DOWN FOR APPROXIMATELY 15 TO 20 SECONDS?
Y N

044
EXCHANGE CARD A1-F2.
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT A.

045
EXCHANGE CARD A1-D2.
EXCHANGE CARD A1-F2.
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT A.

046
POWER OFF
METER CONTINUITY
ON START RELAY BETWEEN TERMINALS 2 AND 4
IS CONTINUITY OK?
Y N

047
EXCHANGE DRIVE MOTOR ASSEMBLY

048
EXCHANGE THE START RELAY

049
REMOVE JUMPER(S).
POWER OFF
ADD A JUMPER FROM A1-F2P02 TO A1-F2P08.
POWER-OFF MOTOR SW ON PWR SUPPLY, POWER ON.
INSPECT THE BRAKE ASSEMBLY (SEE MIM SECTION 2.5 FOR LOCATION).
IS THE BRAKE PAD CLEAR OF THE SPINDLE PULLEY?
Y N

050
EXCHANGE CARD A1-D2.
REMOVE JUMPER(S).
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT A.

|
|
051
POWER OFF
METER CONTINUITY
ON START RELAY BETWEEN TERMINALS
2 AND 4
IS CONTINUITY OK?
Y N
|
| 052
| EXCHANGE DRIVE MOTOR ASSEMBLY
|
053
EXCHANGE THE START RELAY

054
(ENTRY POINT B)
THIS MAP ISOLATES FAILURES CAUSED BY OUT OF TOLERANCE DISK SPEED.

FAILING FIELD REPLACEMENT UNITS AT THIS POINT:

FIELD REPLACEMENT UNIT	PROBABLE
MECHANICAL DRIVE (BELT,MOTOR,BRAKE)	64
LOGIC 2 CARD (A1-D2)	24
4963 CNTRL A2-C2,A2-D2	2
CABLES TO DISK	2
DE UNIT	2

TO ISOLATE MORE:

PROBE VTL A1-A5D07 (- SYSTEM INDEX)
IS LINE PULSING?
Y N

Y:
055
PROBE VTL A1-D2S13 (- SYSTEM SECTOR)
IS LINE PULSING?
Y N

Y:
056
EXCHANGE CARD A1-D2.

N:
057
REPAIR OR EXCHANGE BOARD A1

|
|
058
POWER OFF

CHECK CONTINUITY THROUGH CABLE
A1-A5 CONDUCTOR D07 (METER RX1
SCALE)
(SEE MIM SECTION 3.3).
IS RESISTANCE LESS THAN 2 OHMS?
Y N
|
| 059
| EXCHANGE CABLE A1-A5
|
060
CHECK CONDITION AND TENSION OF
DRIVE BELT
(SEE MIM SECTION 2.5).
IS THE BELT OK?
Y N
|
| 061
| REPAIR AS NECESSARY
| (SEE MIM SECTION 3.35).
|
062
EXCHANGE CARDS A2-D2,A2-C2
POWER ON

RUN DIAGNOSTIC PROGRAM MAP7A20
AGAIN
DOES DIAGNOSTIC PROGRAM STILL
FAIL?
Y N
|
| 063
| VERIFY THE REPAIR.
|
|
|
|
|
|
|
|
|

|
|
064
METER VOLTAGE (600V AC)
TB1-1 TO TB1-2
(RANGES 175 TO 259V OR 87.5 TO
128V)
IS VOLTAGE IN RANGE?
Y N
|
| 065
| POWER DOWN
|
| CHECK CABLE AT A1A2 FOR OPENS
| AND SHORTS. EXCHANGE AS
| REQUIRED.
| WAS CABLE OK?
| Y N
| |
| | 066
| | REMOVE JUMPERS
| | VERIFY REPAIR.
| |
| 067
| GO TO SYSTEM POWER MAPS
| 7A80-B
|
068
IS AN OSCILLOSCOPE AVAILABLE?
Y N
|
| 069
| POWER DOWN
|
| CHECK CABLE AT A1A2 FOR OPENS
| AND SHORTS. EXCHANGE AS
| REQUIRED.
| WAS CABLE OK?
| Y N
| |
| | 070
| | REMOVE JUMPERS
| | VERIFY REPAIR.
| |
| |
| |
| |

071
EXCHANGE CARD A1-D2

072
AN OSCILLOSCOPE IS REQUIRED TO
ISOLATE FARTHER
GO TO MAP 7A74, ENTRY POINT B.

OSCILLOSCOPE

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
7A73	B	8	028
7A76	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	002	7A70	F
7	026	7A70	F
7	027	7A70	F
9	031	7A73	A
9	036	7A73	A
10	041	7A73	A
10	044	7A73	A

001
(ENTRY POINT A)
(REF MLD SF599 FOR FIGURES)

(FROM MAP 7A76I)
TO ISOLATE FARTHER:

THIS MAP ISOLATES DATA UNSAFE PROBLEMS CAUSED BY FAILURE OF DATA SERVO.

POWER OFF.

METER THE RESISTANCE OF THE FOLLOWING
1. F2M12 (POS) TO F2G02 (NEG)
2. F2U07 (POS) TO F2G02 (NEG)
3. F2U08 (POS) TO F2U04 (NEG)
4. F2U08 (POS) TO F2U02 (NEG)
ARE ALL THE RESISTANCES IN THE RANGE 160 OHMS TO 260 OHMS?
Y N

 20MAY83 PN8327679

REVISED 1979 ECA03143 PEC877036

OSCILLOSCOPE

PAGE 2 OF 10

002
EXCHANGE ACTUATOR COIL DRIVER CARD
GO TO MAP 7A70, ENTRY POINT F.

003
POWER ON
WAIT 20 SECONDS FOR POWER ON
RESET

METER VOLTAGES (6V RANGE)
A1-E2D02 (POS) TO A1-E2D08 (NEG)
A1-E2B03 (POS) TO A1-E2D08 (NEG)
ARE BOTH VOLTAGES HIGHER THAN 3.0V?
Y N

004
EXCHANGE CARD A1-E2

OSCILLOSCOPE

PAGE 3 OF 10

005
USE 1X PROBES

PLACE OSCILLOSCOPE CHANNEL 1 PROBE ON A1-D2J09
PLACE OSCILLOSCOPE CHANNEL 2 PROBE ON A1-D2J10
PLACE OSCILLOSCOPE EXT. TRIG PROBE ON A1-D2S10
SET OSCILLOSCOPE CONTROLS AS IN TABLE

HORIZ DISPLAY	A
MAG	OFF
A SWEEP LENGTH	FULL
A TIME BASE	5US/DIV
MODE	ALT
TRIGGER SOURCE	EXT
CH 1 VOLTS/DIV	2V/DIV
CH 2 VOLTS/DIV	2V/DIV
A SWEEP MODE	NORMAL TRIG
A TRIG SLOPE	-
A TRIG COUPLING	AC
TRIG	NORMAL
A TRIG LEVEL	0
A TRIG HF STAB	0
INVERT	IN

SWITCH CHAN 1 INPUT TO GND AND ADJUST POSITION UNTIL THE CENTER LINE IS GROUND
SWITCH CHAN 1 INPUT TO DC

SWITCH CHAN 2 INPUT TO GND AND ADJUST POSITION UNTIL THE BOTTOM LINE IS GROUND
SWITCH CHAN 2 INPUT TO DC
ADJUST A TRIGGERING LEVEL TO
(STEP 005 CONTINUES)

(STEP 005 CONTINUED)
DISPLAY TRACE
ADJUST POSITION CONTROL TO START
TRACE AT LEFT HAND LINE.
DOES DISPLAY COMPARE WITH FIG 1
(REF SF599 FOR FIG 1)
Y N
|
| 006
| EXCHANGE CARD A1-D2
|
007
MOVE CHAN 2 PROBE TO D2U13
(+ENABLE MARK DETECT).
SET MODE TO CHAN 2.
DOES DISPLAY COMPARE WITH FIG 2
(REF SF599 FOR FIG 2)
Y N
|
| 008
| EXCHANGE CARD A1-D2
|
009
MOVE CHAN 1 PROBE TO E2B03 (
DATA.A).
SET CHAN 1 V/DIV TO 50MV.
SWITCH CHAN 1 INPUT TO AC

SET MODE TO CHAN 1.

COMPARE SERVO GAIN FIELD IN FIG 4
WITH DISPLAY (REF SF599 FOR FIG
4).
IS SERVO GAIN FIELD CORRECT?
Y N
|
| 010
| EXCHANGE CARD A1-B2
| IF FAILS TO REPAIR INSTALL
| ORIGINAL CARD
| EXCHANGE DE UNIT
|
|
|
|
|
|

OSCILLOSCOPE

PAGE 5 OF 10

011
MOVE CHAN 2 PROBE TO E2D02 (DATA.B).
SET CHAN 2 V/DIV TO 50MV.
SWITCH MODE TO CHAN 2.
SWITCH CHAN 2 INPUT TO GND AND ADJUST POSITION UNTIL THE CENTER LINE IS GROUND
SWITCH CHAN 2 INPUT TO AC

PULL INVERT SWITCH.
COMPARE SERVO GAIN FIELD IN FIG 4 WITH DISPLAY (REF SF599 FOR FIG 4).
IS SERVO GAIN FIELD CORRECT?
Y N

012
EXCHANGE CARD A1-B2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE DE UNIT

013
MOVE CHAN 1 PROBE TO E2G03 (+VCO INHIBIT).
SET MODE TO CHAN 1.
SET CHAN 1 INPUT TO DC.
SET CHAN 1 V/DIV TO 1V.
DOES DISPLAY COMPARE WITH FIG 3 (REF SF599 FOR FIG 3)
Y N

014
DOES DISPLAY COMPARE WITH FIG 7 (REF SF599)
Y N

OSCILLOSCOPE

PAGE 6 OF 10

015
MOVE CHAN 1 PROBE TO E2J05
(CTR RUN).
DOES DISPLAY COMPARE WITH FIG
8 (REF SF599)
Y N

016
EXCHANGE CARD A1-E2

017
EXCHANGE CARD A1-B2

018
EXCHANGE CARD A1-E2

019
MOVE CHAN 1 PROBE TO E2G08 (2F
BURST).
SET MODE TO CHAN 1.
SET CHAN 1 V/DIV TO 1V.
DOES DISPLAY COMPARE WITH FIG 5
(REF SF599)
Y N

020
IS DISPLAY A VALID MST1 LEVEL
(-0.8V TO -1.8V)?
Y N

021
EXCHANGE CARD A1-E2

022
EXCHANGE CARD A1-B2

6

OSCILLOSCOPE

PAGE 7 OF 10

023
MOVE CHAN 1 PROBE TO E2B13 (DATA P.E.S.).
SET CHAN 1 V/DIV TO .2V.
SET A TIME BASE TO 2MS.
MOVE EXT TRIG PROBE TO D2S13 (SYSTEM INDEX.).
ADJUST A TRIGGERING LEVEL TO DISPLAY TRACE
DOES DISPLAY COMPARE WITH FIG 6 (REF SF599)
Y N

024
EXCHANGE CARD A1-E2

025
USE GENERAL LOGIC PROBE

SWITCH PROBE TO MULTI
PROBE A1-E2J13 (+DATA OFF TRACK)
IS LINE DOWN?
Y N

026
EXCHANGE CARD A1-E2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE ACTUATOR COIL DRIVER CARD
(5%)
GO TO MAP 7A70, ENTRY POINT F.

027
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE ACTUATOR COIL DRIVER CARD
(5%)
GO TO MAP 7A70, ENTRY POINT F.

028
(ENTRY POINT B)

(FROM MAP 7A73B)

TO ISOLATE FARTHER:

THIS MAP CHECKS THE DISK SPEED BY MEASURING TIME BETWEEN - SYSTEM INDEX PULSES
- SYSTEM INDEX PULSES SHOULD BE + OR - 0.6MS APART.

PLACE OSCILLOSCOPE PROBE ON A-A1D2S13 (- SYSTEM INDEX)
SET OSCILLOSCOPE CONTROLS AS IN TABLE

B SWEEP MODE	B STARTS AFTER TIME DELAY
HORIZ DISPLAY	A
MAG	OFF
A SWEEP LENGTH	FULL
A TIME BASE	2MS/DIV
MODE	CH 1
TRIGGER	CH 1 ONLY
CH 1 VOLTS/DIV	2 (X1 PROBE) 0.2 (X10 PROBE)
A SWEEP MODE	AUTO TRIG
A TRIG SLOPE	-
A TRIG COUPLING	AC
A TRIG SOURCE	INT
A TRIG LEVEL	0
A TRIG HF STAB	0

SWITCH CHAN 1 INPUT TO GND AND ADJUST POSITION UNTIL THE CENTER LINE IS GROUND
SWITCH CHAN 1 INPUT TO DC
ADJUST HORIZ POS UNTIL FIRST PULSE IS ON LEFT DIVISION
(STEP 028 CONTINUES)

```
(STEP 028 CONTINUED)
IS SECOND PULSE BETWEEN 18.6  AND
19.8MS AFTER FIRST PULSE?
Y N
|
| 029
| IS THIS A NEW MACHINE?
| Y N
| |
| | 030
| | IS PULSE EARLY?
| | Y N
| | |
| | | 031
| | | DISK SPEED TOO SLOW
| | | GO TO MAP 7A73,
| | | ENTRY POINT A.
| | |
| | 032
| | EXCHANGE CARD A1-D2
| |
| 033
| CHECK FOR CORRECT MOTOR RATING
| IS MOTOR RATING CORRECT?
| Y N
| |
| | 034
| | EXCHANGE WRONG PART
| | VERIFY DISK SPEED
| |
| 035
| IS PULSE EARLY?
| Y N
| |
| | 036
| | DISK SPEED TOO SLOW
| | GO TO MAP 7A73,
| | ENTRY POINT A.
| |
| 037
| EXCHANGE CARD A1-D2
|
|
|
|
|                                                    20MAY83    PN8327679

1                                                   ECA03143   PEC877036
0
J                                                              MAP 7A74-9
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OSCILLOSCOPE

PAGE 10 OF 10

038
SWITCH B TIME BASE TO 0.2MS
SWITCH HORIZ DISPLAY TO A INTEN DURING B
ADJUST DELAY TIME MULTIPLIER UNTIL THE RIGHT HAND DIVISION OF THE TRACE IS INTENSIFIED
SWITCH HORIZ DISPLAY TO DELAYED SWEEP (B)
IS THE PULSE BETWEEN 0.6 AND 1.8MS FROM START OF TRACE?
Y N

039
IS THE PULSE AFTER 1.8MS FROM START OF TRACE
Y N

040
EXCHANGE CARD A1-D2

041
DISK SPEED TOO SLOW
GO TO MAP 7A73, ENTRY POINT A.

042
DOES PULSE TIMING CHANGE?
Y N

043
DISK SPEED OK

044
DISK SPEED IS CHANGING.
GO TO MAP 7A73, ENTRY POINT A.

WIRING CHECKS ON BOARD A A1

TABLE A2

ID	NET	NET NAME
01	A2B07 B2D11 T1D09	MARS SAFETY
02	A2B08 B2G03 T1B03	CENTER TAPS
03	A2D02 B2P12 T1D13	+ DATA SELECT GATED
04	A2D04 B2D06 T2D02	ACTUATOR I/O LINE B
05	A2D05 B2D05 T2B02	ACTUATOR I/O LINE A
06	A2D06	- 4 VOLTS
07	A2D10 F2D06	+ SERVO PREAMP O/P
08	A2D11 F2D05	- SERVO PREAMP O/P
09	A2D12	GROUND

TABLE A3

ID	NET	NET NAME
01	A3B02 A4B02 C2M09	- TAG 2
02	A3B03 A4B03 C2M07	- TAG 1
03	A3B04 A4B04 C2P07	- TAG 0
04	A3B05 A4B05 C2M08	- TAG PARITY
05	A3B07 A3B08 A3B09 A3D03 A4B07 A4B08 A4B09	+ 5V FOR TERMINATOR CARD
06	A3B13 A4B13	SYSTEM CONTINUITY CHECK
07	A3D02 A4D02	SYSTEM CONTINUITY CHECK
08	A3D04 A4D04 C2M04	- CONTROL BUS 0
09	A3D05 A4D05 C2P02	- CONTROL BUS 1
10	A3D06 A4D06 C2M03	- CONTROL BUS 2
11	A3D07 A4D07 C2M02	- CONTROL BUS 3
12	A3D08	GROUND
13	A3D09 A4D09 C2M05	- CONTROL BUS 4
14	A3D10 A4D10 C2P06	- CONTROL BUS 5
15	A3D11 A4D11 C2P05	- CONTROL BUS 6
16	A3D12 A4D12 C2M06	- CONTROL BUS 7
17	A3D13 A4D13 C2P04	- CONTROL BUS PARITY

TABLE A5

ID	NET	NET NAME
01	A5B02 A5D13	CONTINUITY CHECKS
02	A5B03 C2G09	- CONTROL SAMPLE
03	A5B07 A5B13 A5D02 A5D08	GROUND
04	A5B10 B2U02	- WRITE DATA
05	A5B12 C2B03	+ DRIVER DEGATE
06	A5B13 A5B07 A5D02 A5D08	GROUND
07	A5D04 C2J13	- DATA SELECT
08	A5D05 B2S02	- FAST SYNC
09	A5D06 C2S10 D2P13	- RESET ERROR
10	A5D09 C2J11	- READ
11	A5D11 C2G12	- WRITE

TABLE B2

ID	NET	NET NAME
01	B2B02 E2B03	BUFFERED ANALOG DATA A
02	B2B03 E2D02	BUFFERED ANALOG DATA B
03	B2B12 A2D03 T1B06	MARS POSITIVE SUPPLY
04	B2D07 A2D07 T1D04	WRITE CURRENT
05	B2G10 C2M11	+ DATA UNSAFE
06	B2J07 A5D03	+ WRITE GATE RETURN
07	B2M04 A2B03 T1B05	HEAD SELECT A
08	B2M07 T1D05	- CHIP SELECT 5
09	B2M08 T1D02	- CHIP SELECT 4
10	B2M09 A2B02	- CHIP SELECT 3
11	B2M11 A2B05	- CHIP SELECT 2
12	B2P04 A2B04 T1D03	HEAD SELECT B
13	B2P09 A2B06	- CHIP SELECT 1
14	B2P11 E2G08	DATA SERVO 2F BURST
15	B2S07 A5B08	+ NRZ DATA TO SYSTEM
16	B2U07 A5D10	1F READ CLOCK TO SYS
17	B2U11 A5D12	1F WRITE CLOCK TO SYS
18	B2U12 D2J05	1F WR CLK UNGTD TO PLO

TABLE C2

ID	NET	NET NAME
01	C2B13 D2S04	+ SHIFT
02	C2D02 D2B02	+ DESIRED VELOCITY
03	C2D05 D2P11	- RESET CALIBRATION
04	C2D06 A5B04	- INTERRUPT
05	C2D07 D2S09	- TAG 001.CLOCK 2
06	C2D09 B2M05 D2J04	- FIXED HEAD SELECT
07	C2G02 B2P06	- HEAD SELECT 8
08	C2G04 D2P12	- GO HOME BIT
09	C2G05 D2M08	- CALIBRATION ADDRESS
10	C2G11 B2J06	+ WRITE BLOCK
11	C2J05 D2U02	+ OUT
12	C2J06 B2P10	- HEAD SELECT 4
13	C2J12 B2J12	+ READ SELECT
14	C2M02 A3D07 A4D07	- CONTROL BUS BIT 3
15	C2M03 A3D06 A4D06	- CONTROL BUS BIT 2
16	C2M04 A3D04 A4D04	- CONTROL BUS BIT 0
17	C2M05 A3D09 A4D09	- CONTROL BUS BIT 4
18	C2M06 A3D12 A4D12	- CONTROL BUS BIT 7
19	C2M12 D2P09	+ HEAD 1 SELECTED
20	C2P02 A3D05 A4D05	- CONTROL BUS 1
21	C2P04 A3D13 A4D13	- CONTROL BUS PARITY
22	C2P05 A3D11 A4D11	- CONTROL BUS 6
23	C2P06 A3D10 A4D10	- CONTROL BUS 5
24	C2P09 A3B12 A4B12	- CONTROL SAMPLE RCVD
25	C2P10 B2P05	- HEAD SELECT 2
26	C2P12 B2P07	- HEAD SELECT 1
27	C2S07 D2M12	- SET SEEK
28	C2S09 E2J06 F2B03	- EVEN
29	C2S11 B2M02	- SERVO UNSAFE
30	C2S12 A2B13	+ DATA SELECT GATED
31	C2U09 B2M03	+ COMMON RESET
32	C2U12 B2G13	+ WRITE SELECT

BOARD NETLIST TABLES

PAGE 4 OF 8

TABLE D2

ID	NET	NET NAME
01	D2B03 C2D11	+ LIN REG N OF EVEN TRK
02	D2B05 C2U06	- ABS TRACK ADDRESS 1
03	D2B08 C2B02	PROFILE GAIN VOLTAGE
04	D2B10 C2D04	+ QUARTER TRACK (REL)
05	D2B13 E2G07	- OSC EARLY
06	D2D05 C2S06	- COUNT UP 2 TRACKS
07	D2D06 C2J07 F2S13	+ OUT DIRECTION
08	D2D07 C2S05	- COUNT DOWN 2 TRACKS
09	D2D09 C2U04	+ ROS D/A ERROR
00	D2D10 C2B04	+ HALF TRACK (REL)
11	D2D11 F2S08	+ SEEK
12	D2D13 E2D11	+ HEAD CHANGE GATE
13	D2G02 F2B09	- SELECT DEMOD Q2
14	D2G03 F2B08	- SELECT DEMOD Q1
15	D2G04 F2D09	- SELECT DEMOD N1 (TP)
16	D2G07 C2U10	+ CTR 5 IN SYNC
17	D2G08 A5B09	- SECTOR PULSES MISSING
18	D2G09 B2B04 C2J02 T2B13	- AGC FREEZE
19	D2G10 B3A14(VC3-A)	BRAKE COIL (1)
20	D2G11 B5A14(VC5-A)	BRAKE APPLIED TO SYS
21	D2G13 F2B12	+ NORMAL ERROR
22	D2J02 E2J07	- OSC LATE
23	D2J06 F2B10	- SELECT DEMOD N2
24	D2J09 E2G10	+ SHIFT REG CLOCK
25	D2J10 E2J04	+ ENABLE SERVO SAMPLE
26	D2J13 C2P11 F2S07	- SEEK COMPLETE
27	D2M02 C2S02	+ MISSING SERVO SIG LTCH
28	D2M03 C2J09	- MISSING CLOCK ERR LTCH
29	D2M04 C2M10	PULSING AND O/P
30	D2M07 C2S08	+ NOT READY
31	D2M13	+ SEEK TIMEOUT (TP)
32	D2P02 C2B10	MISSING CLOCKS/2
33	D2P04 C2U05	+ ILLEGAL MOVE
34	D2P05 C2G08	- INDEX SECTOR PULSES
35	D2P07 C2B08 F2M02	+ BRAKE APPLIED (LOGIC)
36	D2P08 E5A01(VC9-C)	GND (COMP COIL)
37	D2P10 C2U07	+ HOME
38	D2S05 F2P05	- SELECT INTERGRATOR
39	D2S07 C2M13 F2P11	+ NOT IN DRIVE

40	D2S08 C2S03	+	BYTE CTR BIT 16
41	D2S10 A5B05	-	SYSTEM SECTOR
42	D2S13 A5D07 T2D11	-	SYSTEM INDEX
43	D2U04 F2P07	+	SELECT INTERGRATOR
44	D2U06 C2G10 T2D10	+	SERVO PROTECT WRITE
45	D2U07 C2U02 F2M13	+	NOT OUT DRIVE
46	D2U10 C2B06	-	GO HOME OR P.O.F.L.
47	D2U11 C2D13	+	BEHIND HOME
48	D2U13 E2G04	+	ENABLE MARK DETECT

TABLE E2

ID	NET		NET NAME
01	E2B12 E2G05	+	POS ZERO XING
02	E2B13 F2P06		DATA PES
03	E2D09 C2G03	-	OUTSIDE AGC WINDOW
04	E2G03 B2U06	+	SERVO VCO INHIBIT
05	E2G05 E2B12	+	POS ZERO XING
06	E2G12 B2M10		2F WRITE CLOCK
07	E2J13 C2G13 T2D06	+	OFF DATA TRACK

BOARD NETLIST TABLES

TABLE F2

ID	NET	NET NAME
01	F2B04 D2G05	+ SERVO CLOCK SS
02	F2B07 E2B04	VPT I REF
03	F2D02 E2D13	DEDICATED SW PES
04	F2D11 D2B07	- Q/2 ERROR
05	F2D13 D2S12	+ N/2 ERROR
06	F2G03 C2G07	+ LOW COIL CURRENT
07	F2G05 T2B09	ON TRK THRESHOLD CNTL
08	F2G12 C2B12 E2G13 T2D06	+ ON TRACK
09	F2G13 D2P06	+ MISSING SERVO CLOCK
10	F2J04 C2U11	- BAD AGC LEVEL
11	F2J05 B3E14(VC3-C)	CLK THRESHOLD
12	F2J08 B4E01(VC3-D)	GROUND (DE ADJ RES)
13	F2J09 T2B10	HYBRID PES N
14	F2J10 E2D10 F2D10 F2P10 F2U10	- 7 VOLTS
15	F2J11 F2G09	HYBRID PES (OUT)
16	F2M04 E4E14(VC9-B) E5E14(VC10-B)	VCM FINISH
17	F2M05 E5A01(VC9-A) E6E01(VC10-A)	VCM START
18	F2M08 D2U12	- N/2 ERROR
19	F2M12 E3E01(VC7-A)	BASE PNP OUT
20	F2P02 C2S13 D2U09	- POWER ON DELAY
21	F2S02 D2J07	+ Q/2 ERROR
22	F2S04 A2B10 A2B12 A2D09 A2D13	SPA 8 VOLTS
23	F2S05 E3E14(VC8-B)	CSR OUT
24	F2S10 D2B09	COIL CURRENT SIGNAL
25	F2U02 E3A01(VC7-C)	BASE NPN OUT
26	F2U04 E2E14(VC7-B)	BASE NPN IN
27	F2U05 E4E01(VC8-A)	CSR IN
28	F2U07 E2A14(VC7-D)	BASE PNP IN

BOARD NETLIST TABLES

TABLE T1

ID	NET	NET NAME
01	T1B03 A2B08 B2G03	CENTER TAPS
02	T1B07 B2D10 T2B07	FXDHD I/O LINE A
03	T1B08 B2D09 T2D07	FXDHD I/O LINE B
04	T1D09 A2B07 B2D11	MARS SAFETY

TABLE T2

ID	NET	NET NAME
01	T2B12 B2G09	- SAT SQUELCH
02	T2D04 B2G12	+ WRITE DC
03	T2D05 B2J04	+ DISABLE TRANSITION ERR
04	T2D09 F2U13	- SERVO OFFSET INJECTION

TABLE VC (CROSSOVER CONNECTORS)

ID	NET	NET NAME
01	B2A01(VC1-B) F2G10	- POWER GOOD
02	B2A14(VC2-A) B4A14 B5E01	GROUND
03	B3E01(VC2-D)	GROUND
04	B4A01(VC3-B) B6A01	BRAKE COIL (2)
05	B6A01(VC5-B) B4A01	BRAKE COIL/24V BRAKE
06	B6E01(VC5-D) E6A01 F2S09	GND(+ 24 VOLTS)
07	E4A14(VC9-D) D2D04	COMPENSATION COIl

TABLE V - (VOLTAGE NETS)

ID	NET	NET NAME
01	B2E14(VC2-C) B4E14	+ 5 VOLTS
	F2D03 F2J03 F2P03 F3U03	
	E2D03 E2J03	
	D2D03 D2J03 D2P03 D3U03	
	C2D03 C2J03 C2P03 C3U03	
	B2D03 B2J03 B2P03 B3U03	
	D1C11 A3D03	
02	B3A01(VC2-B) B5A01	- 4 VOLTS
	F2B06 F2G06 F2M06 F2S06	
	E2B06 E2G06	
	B2B06 B2G06 B2M06 B2S06	
	E1A13 A1D13 A2D06	
03	B1E14(VC1-C)	+ 12 VOLTS
	F2B11 F2M11 F2M11 F2S11 F2B05	
	E2B11	
	E2B11 D2B11 C2B11 B2B11 F1A13	
04	B2E01(VC1-D)	- 12 VOLTS
	F2D12 F2M12 F2M12 F2S12	
	E2D12 D2D12 C2D12 B2S12	
	B2D12 F1B11	
05	B5E14(VC5-C) E5A14 D2S02 F2G02	+ 24 VOLTS

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ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
XXXX	DC	116	514
7A21	A	2	001
7A21	B	6	018
7A21	C	7	023
7A21	D	9	032
7A21	E	11	039
7A21	F	14	050
7A21	G	22	083
7A21	H	24	088
7A21	I	44	183
7A21	J	49	208
7A21	K	51	215
7A21	L	52	218
7A21	M	53	221
7A21	N	55	228
7A21	O	56	231
7A21	P	62	260
7A21	Q	65	267
7A21	R	72	302
7A21	S	95	431
7A21	T	102	452
7A21	U	108	471

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
15	056	7A70	H
27	101	7A70	H
32	124	7A70	H
32	125	7A70	H
37	154	7A70	H
41	176	7A70	H
46	198	7A70	H
47	200	7A70	H
48	206	7A70	H
48	207	7A74	A

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001
(ENTRY POINT A)

FAILING FIELD REPLACEMENT UNITS
AT THIS POINT :

FIELD REPLACEMENT UNIT	PROBABLE
SERVO 1 CARD (A1-E2)	42
DA CHAN CARD (A1-B2)	29
LOGIC 2 CARD (A1-D2)	19
SERVO 2 CARD (A1-F2)	6
DISK CNTL. A2-C2,A2-D2	2

INSPECT AND RESEAT CABLES ON THE A1 BOARD OF THE FAILING FILE

DE	1

INSPECT DISK DRIVE BELT.

TO ISOLATE FARTHER:

POWER OFF

RESEAT CABLE A1-A2.

POWER ON

CALL DIAGNOSTIC MAP7A20 FOR FAILING ADDRESS
DO DIAGNOSTIC ROUTINES STILL FAIL?
Y N
|
| 002
| PROBE MST1 A1-F2P09 (POWER GOOD)
| IS LINE DOWN?
| Y N

PAGE 3 OF 119

003
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR SEE FIELD
REPLACEMENT UNIT LIST - ENTRY
POINT A.

004
VERIFY THE REPAIR

005
PROBE MST1 A1-E2G12 (2F WRITE
CLOCK)
IS LINE PULSING?
Y N

006
EXCHANGE CARD A1-E2
IF FAILS TO REPAIR SEE FIELD
REPLACEMENT UNIT LIST - ENTRY
POINT A.

007
SWITCH PROBE TO MULTI

PROBE VTL A1-D2J05 (1F WRITE
CLOCK)
IS LINE PULSING?
Y N

008
EXCHANGE CARD A1-B2
IF FAILS TO REPAIR SEE FIELD
REPLACEMENT UNIT LIST - ENTRY
POINT A.
REMOVE JUMPER(S).

PAGE 4 OF 119

009
DO THE FOLLOWING IN ORDER:

1. POWER OFF
2. ADD JUMPER A1-F2P02 TO A1-F2P08
3. POWER ON
4. REMOVE JUMPER A1-F2P02 TO A1-F2P08
5. CALL DIAGNOSTIC MAP7A20 FOR FAILING ADDRESS

DO DIAGNOSTIC ROUTINES RUN ERROR FREE?
Y N

010
POWER OFF.

TEST CONTINUITY OF 'BRAKE APPLIED' LINE FOR THIS FILE.
REFERENCE MAINTENANCE LOGIC DIAGRAMS VOL 1 (SF500 PAGES) FOR LOCATION OF OTHER END
IS CONTINUITY CORRECT?
Y N

011
REPAIR OR EXCHANGE AS REQUIRED.

012
POWER ON.
IS DISK DRIVE MOTOR TURNING?
Y N

013
GO TO MAP 7A73
ENTRY POINT = A

PAGE 5 OF 119

014
CHECK SEATING OF JUMPERS ON A1-D2 CARD
IF FAILS TO REPAIR
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE CARD A1-E2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT A.
REMOVE JUMPER(S).

015
POWER OFF.

TEST CONTINUITY OF 'BRAKE APPLIED' LINE FOR THIS FILE.
REFERENCE MAINTENANCE LOGIC DIAGRAMS VOL 1 (SF500 PAGES) FOR LOCATION OF OTHER END
IS CONTINUITY CORRECT?
Y N

016
REPAIR OR EXCHANGE AS REQUIRED.

017
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT A.

018
(ENTRY POINT B)

FAILING FIELD REPLACEMENT UNITS
AT THIS POINT :

FIELD REPLACEMENT UNIT	PROBABLE
SERVO 2 CARD (A1-F2)	22
INSPECT AND RESEAT CABLES ON THE A1 BOARD OF THE FAILING FILE DE UNIT	78

TO ISOLATE FARTHER:

METER VOLTAGE (15V RANGE)
A1-F2D08 (POS)
A1-A2B10 (NEG)
IS VOLTAGE IN RANGE 7 TO 9 VOLTS?
Y N
|
| 019
| POWER OFF
| METER CONTINUITY OF A1- BOARD
| NET
| A2B10 TO A2B12 TO A2D09 TO
| A2D13 TO F2S04
| IS RESISTANCE LESS THAN 2 OHMS?
| Y N
| |
| | 020
| | EXCHANGE BOARD A1
| |
| 021
| EXCHANGE CARD A1-F2
|
022
GO TO MAP 7A73
ENTRY POINT = A

BOARD A NETS FOR THIS MAP:
(SEE BOARD NETLIST TABLES - MAP7A75)
A2-07, A2-08, F2-22

023
(ENTRY POINT C)

FAILING FIELD REPLACEMENT UNITS
AT THIS POINT :

FIELD REPLACEMENT UNIT	PROBABLE
SERVO 2 CARD (A1-F2)	86
PWR SUPPLY (-12V)	14

INSPECT AND RESEAT CABLES ON THE
A1 BOARD OF THE FAILING FILE

TO ISOLATE FARTHER:

POWER OFF

RESEAT CABLE A1-A2. AND A1-T1
(IF PRESENT)
POWER ON

METER VOLTAGE (15V RANGE)
A1-F2U08 (POS)
A1-F2U10 (NEG)
IS VOLTAGE IN RANGE 6 TO 8V?
Y N
|
| 024
| METER VOLTAGE (15V RANGE)
| A1-F2U08 (POS)
| A1-F2U12 (NEG)
| IS VOLTAGE IN RANGE 10.5 TO
| 13.5V?
| Y N
| |
| | 025
| | METER VOLTAGE (15V RANGE)
| | A1-F2U08 (POS)
| | VC1-D (NEG)
| | IS VOLTAGE IN RANGE 10.5 TO
| | 13.5V?
| | Y N

```
          ---- ---- ---- ---
| | | |
| | | |    PAGE   8 OF 119
| | | |
| | | |
| | | 026
| | | TRACE MISSING -12VOLT LINE
| | | REFERENCE SF500 PAGES
| | |
| | 027
| | EXCHANGE BOARD A1
| |
| 028
| EXCHANGE CARD A1-F2
|
029
POWER OFF.
METER CONTINUITY OF BOARD A NET
F2U10  TO F2P10 TO F2J10 TO F2D10
TO E2D10
IS RESISTANCE LESS THAN 2 OHMS?
Y N
|
| 030
| EXCHANGE BOARD A1
|
031
EXCHANGE CARD A1-F2
```

032
(ENTRY POINT D)

FAILING FIELD REPLACEMENT UNITS
AT THIS POINT :

FIELD REPLACEMENT UNIT	PROBABLE
SERVO 2 CARD (A1-F2)	94
LOGIC 1 CARD (A1-C2)	3
SERVO 1 CARD (A1-E2)	3

INSPECT AND RESEAT CABLES ON THE
A1 BOARD OF THE FAILING FILE

TO ISOLATE FARTHER:

PROBE VTL A1-C2B12 (+ ON TRACK)
IS LINE DOWN?
Y N
|
| 033
| PROBE VTL A1-C2B12 (+ ON TRACK)
| IS LINE PULSING?
| Y N
| |
| | 034
| | EXCHANGE CARD A1-C2
| | IF FAILS TO REPAIR SEE FIELD
| | REPLACEMENT UNIT LIST - ENTRY
| | POINT D.
| |
| 035
| EXCHANGE CARD A1-F2
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT D.
|
036
PROBE VTL A1-E2G13 (+ ON TRACK)
IS LINE UP?
Y N
| |
| |
| |
| |
| |

BOARD A NETS FOR THIS MAP:
(SEE BOARD NETLIST TABLES - MAP7A75)
F2-07, F2-08

PAGE 10 OF 119

037
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR INSTALL
ORIGINAL CARD
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR INSTALL
ORIGINAL CARD
EXCHANGE CARD A1-E2

038
EXCHANGE CARD A1-E2
IF FAILS TO REPAIR SEE FIELD
REPLACEMENT UNIT LIST - ENTRY
POINT D.

039
(ENTRY POINT E)

FAILING FIELD REPLACEMENT UNITS
AT THIS POINT :

FIELD REPLACEMENT UNIT	PROBABLE
DA CHAN CARD (A1-B2)	52
SERVO 1 CARD (A1-E2)	16
LOGIC 1 CARD (A1-C2)	16
DISK CNTL. A2-C2,A2-D2	8
CABLES TO THE FILE	8

INSPECT AND RESEAT CABLES ON THE A1 BOARD OF THE FAILING FILE

TO ISOLATE FARTHER:

CAUTION
ADDING THE FOLLOWING JUMPER MAY EFFECT OPERATION OF OTHER FILES. ENSURE OTHER FILES ARE NOT USED UNTIL JUMPER IS REMOVED.

ADD JUMPER A1-A5D04 TO A1-B2U08
PROBE VTL A1-C2U12 (+ WRITE SELECT)
IS LINE UP?
Y N
|
| 040
| ADD JUMPER A1-C2G12 TO A1-C2J08
| PROBE VTL A1-C2U12 (+ WRITE
| SELECT)
| IS LINE UP?
| Y N
| |
| | 041
| | EXCHANGE CARD A1-C2
| | IF FAILS TO REPAIR SEE FIELD
| | REPLACEMENT UNIT LIST - ENTRY
| | POINT E.
| | REMOVE JUMPER(S).
| |
| |
| |

BOARD A NETS FOR THIS MAP:
(SEE BOARD NETLIST TABLES - MAP7A75)
A5-04, A5-09, A5-11, C2-32, E2-02

042
PROBE MST1 A1-E2B13 (DATA PES)
IS LINE PULSING?
Y N
|
| 043
| SWITCH PROBE TO MULTI
| PROBE
| A1-A5B10....DOWN...(WRITE DATA)
| A1-A5D11....DOWN...(WRITE)
| A1-A5D06....UP.....(RESET
| ERROR)
| ARE ALL LINES CORRECT?
| Y N
| |
| | 044
| | POWER DOWN
| |
| | CHECK CABLE AT A1A5 FOR OPENS
| | AND SHORTS. EXCHANGE AS
| | REQUIRED.
| | WAS CABLE OK?
| | Y N
| | |
| | | 045
| | | VERIFY REPAIR.
| | |
| | 046
| | EXCHANGE CARD(S) A2-C2,A2-D2
| | IF FAILS TO REPAIR INSTALL
| | ORIGINAL CARD
| | EXCHANGE CABLE ENTERING AT
| | A1-A5.
| | IF FAILS TO REPAIR SEE FIELD
| | REPLACEMENT UNIT LIST - ENTRY
| | POINT E.
| | REMOVE JUMPER(S).
| |
| |
| |
| |
| |
| |
| |
| |

047
EXCHANGE CARD A1-B2
IF FAILS TO REPAIR INSTALL
ORIGINAL CARD
EXCHANGE CARD A1-E2
IF FAILS TO REPAIR SEE FIELD
REPLACEMENT UNIT LIST - ENTRY
POINT E.
REMOVE JUMPER(S).

048
EXCHANGE CARD A1-E2
IF FAILS TO REPAIR SEE FIELD
REPLACEMENT UNIT LIST - ENTRY
POINT E.
REMOVE JUMPER(S).

049
EXCHANGE CARD A1-C2
REMOVE JUMPER(S).
IF FAILS TO REPAIR SEE FIELD
REPLACEMENT UNIT LIST - ENTRY
POINT E.

050
(ENTRY POINT F)

FAILING FIELD REPLACEMENT UNITS
AT THIS POINT :

FIELD REPLACEMENT UNIT	PROBABLE
SERVO 2 CARD (A1-F2)	24
LOGIC 1 CARD (A1-C2)	24
LOGIC 2 CARD (A1-D2)	17
DA CHAN CARD (A1-B2)	15
SERVO 1 CARD (A1-E2)	12
DISK CNTL. A2-C2,A2-D2	4
CABLES TO THE FILE	3

INSPECT AND RESEAT CABLES ON THE
A1 BOARD OF THE FAILING FILE
DE UNIT 1

TO ISOLATE FARTHER:

PROBE VTL A1-C2B13 (- SHIFT)
(OBSERVE FOR 1 MINUTE)
IS LINE PULSING?
Y N

| 051
| ARE ANY PROBE LIGHTS ON ?
| Y N
| |
| | 052
| | EXCHANGE CARD A1-C2
| | IF FAILS TO REPAIR SEE FIELD
| | REPLACEMENT UNIT LIST - ENTRY
| | POINT F.

BOARD A NETS FOR THIS MAP:
(SEE BOARD NETLIST TABLES - MAP7A75)
A2-03, A5-07, B2-17, C2-01, C2-27, C2-30, D2-13, D2-39, D2-45, F2-02, F2-03, F2-05, VC-07

053
CAUTION
ADDING THE FOLLOWING JUMPER MAY EFFECT OPERATION OF OTHER FILES. ENSURE OTHER FILES ARE NOT USED UNTIL JUMPER IS REMOVED.

ADD JUMPER A1-A5D04 TO A1-A5D08

PROBE VTL A1-B2U11 (1F WRITE CLOCK)
IS LINE PULSING?
Y N
|
| 054
| PROBE VTL A1-B2P12 (+ DATA SELECT GATED)
| IS LINE UP?
| Y N
| |
| | 055
| | POWER OFF
| |
| | REMOVE JUMPER(S).
| |
| | METER CONTINUITY (RX1 SCALE)
| | A1-A2D02 TO A1-A2B13
| | IS RESISTANCE LESS THAN 2 OHMS?
| | Y N
| | |
| | | 056
| | | RESEAT CABLE A1-A2
| | | IF THIS FAILS TO REPAIR
| | | (NOTE: A TEMPORARY REPAIR
| | | IS TO ADD A JUMPER FROM
| | | A1-B2P12 TO C2S12)
| | | GO TO MAP 7A70,
| | | ENTRY POINT H.

057
METER CONTINUITY (RX1 SCALE)
A1-C2S12 TO A1-A2B13
A1-A2D02 TO A1-B2P12
IS RESISTANCE LESS THAN 2 OHMS?
Y N
|
| 058
| REPAIR OR EXCHANGE BOARD A1
|
059
REMOVE JUMPER A1-A5D04 TO A5D08

METER CONTINUITY (RX1 SCALE)
A1-A5D04 TO A1-C2J13
IS RESISTANCE LESS THAN 2 OHMS?
Y N
|
| 060
| REPAIR OR EXCHANGE BOARD A1
|
061
METER (RX1 SCALE) THROUGH CABLE
A1-A5 PIN D04
REFERENCE MAINTENANCE LOGIC
DIAGRAMS VOL 1 (SF500 PAGES) FOR
LOCATION OF OTHER END
IS RESISTANCE LESS THAN 2 OHMS?
Y N
|
| 062
| EXCHANGE CABLE ENTERING AT
| A1-A5.
|
|
|
|
|
|
|
|
|
|
|

063
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR INSTALL
ORIGINAL CARD
EXCHANGE CARD A1-B2
IF FAILS TO REPAIR INSTALL
ORIGINAL CARD
IF FAILS TO REPAIR SEE FIELD
REPLACEMENT UNIT LIST - ENTRY
POINT F.

064
POWER OFF.

REMOVE JUMPER(S).

EXCHANGE CARD A1-B2
IF FAILS TO REPAIR INSTALL
ORIGINAL CARD
EXCHANGE CABLE ENTERING AT
A1-A5.
IF FAILS TO REPAIR SEE FIELD
REPLACEMENT UNIT LIST - ENTRY
POINT F.

065
REMOVE JUMPER(S).

SWITCH PROBE TO MST1

PROBE MST1
A1-B2S11 (- INCREASE)
AND A1-B2S12 (- DECREASE)
ARE BOTH LINES PULSING?
Y N

066
EXCHANGE CARD A1-B2
IF FAILS TO REPAIR SEE FIELD
REPLACEMENT UNIT LIST - ENTRY
POINT F.

067
SWITCH PROBE TO MULTI

PROBE VTL A1-C2B13 (- SHIFT)
IS LINE UP?
Y N
|
| 068
| METER VOLTAGE (6V RANGE)
| A1-D2D04 (POS)
| A1-D2D08 (NEG)
| IS VOLTAGE IN RANGE 1.0 TO
| 1.6V?
| Y N
| |
| | 069
| | POWER OFF
| |
| | DISCONNECT CARD A1-D2
| |
| | METER RESISTANCE (RX10 RANGE)
| | A1-D2D04 TO A1-D2D08
| | IS RESISTANCE MORE THAN 200
| | OHMS?
| | Y N
| | |
| | | 070
| | | IF FAILS TO REPAIR SEE
| | | FIELD REPLACEMENT UNIT LIST
| | | - ENTRY POINT F.
| | |
| | 071
| | EXCHANGE CARD A1-D2
| | IF FAILS TO REPAIR SEE FIELD
| | REPLACEMENT UNIT LIST - ENTRY
| | POINT F.
| |
| |
| |
| |
| |
| |
| |
| |
|

072
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE CARD A1-E2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT F.

073
POWER OFF

TEST CABLE A1-A5 FOR SHORT TO GROUND ON THE FOLLOWING PINS
A5 PIN B05
A5 PIN D11
CHECK THE RESISTANCE (RX1) OF THE ABOVE LINES
REFERENCE MAINTENANCE LOGIC DIAGRAMS VOL 1 (SF500 PAGES) FOR LOCATION OF OTHER END
IS CABLE OK?
Y N

074
EXCHANGE CABLE ENTERING AT A1-A5.

075
CHECK SEATING OF JUMPERS ON CARD A1-D2
IF FAILS TO REPAIR
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT F.

076
SWITCH PROBE TO MST1

PROBE MST1 A1-B2U10 (DATA S.S.)
IS LINE PULSING?
Y N

077
EXCHANGE CARD A1-B2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT F.

078
PROBE MST1 A1-B2S11 AND A1-B2S12
TEST BOTH PINS FOR A VALID MST-1 LEVEL (BOTH LIGHTS OFF INDICATES A BAD LEVEL)
ARE BOTH PINS AT A VALID MST-1 LEVEL?
Y N

079
EXCHANGE CARD A1-B2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT F.

080
SWITCH PROBE TO MULTI

PROBE VTL A1-C2B13 (- SHIFT)
IS LINE SLOW PULSING?
Y N

| 081
| EXCHANGE CARD A1-F2
| IF FAILS TO REPAIR INSTALL
| ORIGINAL CARD
| EXCHANGE CARD A1-E2
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT F.

082
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR SEE FIELD
REPLACEMENT UNIT LIST - ENTRY
POINT F.

083
(ENTRY POINT G)

FAILING FIELD REPLACEMENT UNITS
AT THIS POINT :

FIELD REPLACEMENT UNIT	PROBABLE
LOGIC 1 CARD (A1-C2)	57
LOGIC 2 CARD (A1-D2)	39
DISK CNTL. A2-C2,A2-D2	2
CABLES TO THE FILE	2

INSPECT AND RESEAT CABLES ON THE
A1 BOARD OF THE FAILING FILE

TO ISOLATE FARTHER:

PROBE VTL A1-D2P10 (+ HOME)
IS LINE DOWN?
Y N
|
| 084
| POWER OFF.
| TEST CABLE CONTINUITY OF LINES:
| A1-A3D04 AND A1-A4D04
| REFERENCE MAINTENANCE LOGIC
| DIAGRAMS VOL 1 (SF500 PAGES)
| FOR LOCATION OF OTHER END
| IS RESISTANCE LESS THAN 2 OHMS?
| Y N
| |
| | 085
| | EXCHANGE FAILING CABLE.
| | IF FAILS TO REPAIR SEE FIELD
| | REPLACEMENT UNIT LIST - ENTRY
| | POINT G.
| |
| 086
| EXCHANGE CARD A1-C2
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT G.
|
|
|

BOARD A NETS FOR THIS MAP:
(SEE BOARD NETLIST TABLES -
MAP7A75)
D2-37

087
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT G.

088
(ENTRY POINT H)

FAILING FIELD REPLACEMENT UNITS
AT THIS POINT :

FIELD REPLACEMENT UNIT	PROBABLE
DA CHAN CARD (A1-B2)	49
LOGIC 1 CARD (A1-C2)	21
SERVO 2 CARD (A1-F2)	6
SERVO 1 CARD (A1-E2)	4
DISK CNTL. A2-C2,A2-D2	3
CABLES TO THE FILE	3
LOGIC 2 CARD (A1-D2)	3

INSPECT AND RESEAT CABLES ON THE
A1 BOARD OF THE FAILING FILE
ACTUATOR DRIVER CARD
DE UNIT 11

TO ISOLATE FARTHER:

PROBE VTL A1-A5D04 (- DATA
SELECT)
IS LINE DOWN?
Y N
|
| 089
| THE PROBLEM IS - DATA SELECT
| MISSING FROM THE DISK CNTL
| INSPECT AND RESEAT CABLES ON
| THE A1 BOARD OF THE FAILING
| FILE
| EXCHANGE CARD(S) A2-C2,A2-D2
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT H.
|
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|
|
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|

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|
|
090
PROBE VTL A1-A5B05 (- SYSTEM
SECTOR)
IS LINE PULSING?
Y N
|
| 091
| POWER OFF
|
| DISCONNECT CABLE A1-A5
| POWER ON
| PROBE VTL A1-D2S10 (- SYSTEM
| SECTOR)
| IS LINE PULSING?
| Y N
| |
| | 092
| | EXCHANGE CARD A1-D2
| | INSTALL CABLE A1-A5
| | IF FAILS TO REPAIR SEE FIELD
| | REPLACEMENT UNIT LIST - ENTRY
| | POINT H.
| |
| 093
| INSTALL CABLE A1-A5
| EXCHANGE CARD(S) A2-C2,A2-D2
| IF FAILS TO REPAIR INSTALL
| ORIGINAL CARD
| EXCHANGE CABLE ENTERING AT
| A1-A5.
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT H.
|
094
PROBE VTL A1-A5D12 (1F WRITE
CLOCK TO SYSTEM)
IS LINE PULSING?
Y N
| |
| |
| |
| |
| |
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095
PROBE VTL A1-C2S12 (+ DATA SELECT GATED)
IS LINE UP?
Y N

096
POWER OFF.
DISCONNECT CABLE A2.
POWER ON.
WAIT 30 SECONDS.
PROBE VTL A1-C2S12 (+ DATA SELECT GATED)
IS LINE DOWN?
Y N

097
THE PROBLEM IS A SHORT TO GROUND ON CABLE A2 PIN B13 OR A BAD B2 CARD.
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT H.

098
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT H.

099
PROBE VTL A1-B2P12 (+ DATA SELECT GATED)
IS LINE UP?
Y N

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| |
| |
| 100
| POWER OFF
| METER CONTINUITY (RX1 SCALE)
| A1-C2S12 TO A1-B2P12
| IS RESISTANCE LESS THAN 2 OHMS?
| Y N
| |
| | 101
| | NOTE A TEMPORARY REPAIR IS TO
| | ADD A JUMPER FROM A1-C2S12 TO
| | A1-B2P12
| | GO TO MAP 7A70,
| | ENTRY POINT H.
| |
| 102
| EXCHANGE CARD A1-B2
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT H.
|
103
POWER OFF.
DISCONNECT CABLE A1-A5
POWER ON.
WAIT 30 SECONDS.
PROBE VTL A1-B2P12 (+ DATA SELECT
GATED)
IS LINE PULSING?
Y N
|
| 104
| POWER OFF
| METER CONTINUITY (RX1 SCALE)
| A1-A5D12 TO A1-B2U11
| IS RESISTANCE LESS THAN 2 OHMS?
| Y N
| |
| | 105
| | REPAIR OR EXCHANGE A1- BOARD
| |
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| | |
| | 106
| | EXCHANGE CARD A1-B2
| | IF FAILS TO REPAIR SEE  FIELD
| | REPLACEMENT UNIT LIST - ENTRY
| | POINT H.
| |
| 107
| INSTALL CABLE A1-A5
| EXCHANGE CARD(S) A2-C2,A2-D2
| IF  FAILS  TO  REPAIR  INSTALL
| ORIGINAL CARD
| EXCHANGE  CABLE  ENTERING  AT
| A1-A5.
| IF  FAILS  TO  REPAIR SEE FIELD
| REPLACEMENT UNIT LIST  -  ENTRY
| POINT H.
|
108
PROBE  VTL  A1-B2P09 (CHIP SELECT
1)
IS LINE DOWN?
Y N
|
| 109
| PROBE  VTL  A1-B2P06  (-  HEAD
| SELECT 4), AND A1-B2P10 (- HEAD
| SELECT 8)
| ARE BOTH LINES UP?
| Y N
| |
| | 110
| | EXCHANGE CARD A1-C2
| | IF FAILS TO REPAIR SEE  FIELD
| | REPLACEMENT UNIT LIST - ENTRY
| | POINT H.
| |
| 111
| PROBE  VTL  A1-B2M05  (-  FIXED
| HEAD SELECT)
| IS LINE DOWN?
| Y N
| | |
| | |
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| | |
| | |
| | 112
| | EXCHANGE CARD A1-B2
| | IF FAILS TO REPAIR SEE FIELD
| | REPLACEMENT UNIT LIST - ENTRY
| | POINT H.
| |
| 113
| INSPECT FOR LOOSE CABLES AT
| A1-T1 AND A1-A2.
| ARE THE CABLES SEATED
| CORRECTLY?
| Y N
| |
| | 114
| | RESEAT THE CABLES.
| | IF FAILS TO REPAIR
| | EXHCANGE CARD (A1-C2)
| |
| | IF FAILS TO REPAIR SEE FIELD
| | REPLACEMENT UNIT LIST - ENTRY
| | POINT H.
| |
| 115
| EXCHANGE CARD A1-C2
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT H.
|
116
PROBE VTL A1-C2B06 (- GO HOME)
IS LINE UP?
Y N
|
| 117
| EXCHANGE CARD A1-D2
| IF FAILS TO REPAIR INSTALL
| ORIGINAL CARD
| EXCHANGE CARD A1-C2
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT H.
|
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|
|
118
SWITCH PROBE TO MST1

PROBE MST1 A1-B2P04 (HEAD SELECT
B)
IS LINE UP?
Y N
|
| 119
| TO FIND WHICH HEAD IS SELECTED
| PROBE THE PINS SHOWN IN TABLE
| 1.
| IF THE CONDITIONS MATCH, THAT
| HEAD IS SELECTED.
| NOTE:
| MODELS 23 AND 29
| PROBE ONLY THE PINS INSIDE THE
| ASTERISKS(***)
| MODELS 58 AND 64
| PROBE ALL THE PINS
|
| TABLE 1 BOARD A1

	PROBE MST1	PROBE VTL
HEAD	A2B03 A2B04	A2B06 A2B05 A2B02
0	U U	D U * U
1	D U	D U * U
2	U D	D U * U
3	D D	D U * U
4	U U	U D * U
5	D U	U D * U
**********		
6	U D	U D U
7	D D	U D U
8	U U	U U D
9	D U	U U D
A	U D	U U D

| NOTE: D=DOWN,U=UP.
| IS A HEAD SELECTED?
| Y N

120
EXCHANGE CARD A1-B2
IF FAILS TO REPAIR SEE FIELD
REPLACEMENT UNIT LIST - ENTRY
POINT H.

121
NOTE HEAD SELECTED FROM TABLE 1

PROBE PINS FOR THE HEAD SELECTED
AS SHOWN IN TABLE BELOW

TABLE 2 BOARD A1

	PROBE VTL			
HEAD	B2P07	B2P05	B2P10	B2P06
0	U	U	U	U
1	D	U	U	U
2	U	D	U	U
3	D	D	U	U
4	U	U	D	U
5	D	U	D	U
6	U	D	D	U
7	D	D	D	U
8	U	U	U	D
9	D	U	U	D
A	U	D	U	D
B	D	D	U	D

NOTE: D=DOWN,U=UP.

PHYSICAL HEAD B IS NOT PRESENT
BUT A HEAD
POSITION B IS A SPARE INPUT ON
THE DISK
ACTUATOR. THE CODE FOR HEAD B IS
FORCED
WHEN AN UNSAFE CONDITION IS
SENSED.
HEAD B IS VALID FOR TABLE 2
ARE THE LEVELS CORRECT?
Y N

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| | |
| | |
| | 122
| | EXCHANGE CARD A1-B2
| | IF  FAILS TO REPAIR SEE FIELD
| | REPLACEMENT UNIT LIST - ENTRY
| | POINT H.
| |
| 123
| IS HEAD 3 SELECTED?
| Y N
| |
| | 124
| | EXCHANGE CARD A1-C2
| | IF FAILS  TO  REPAIR  INSTALL
| | ORIGINAL CARD
| | GO TO MAP 7A70,
| | ENTRY POINT H.
| |
| 125
| EXCHANGE CARD A1-B2
| IF  FAILS  TO  REPAIR   INSTALL
| ORIGINAL CARD
| EXCHANGE CARD A1-C2
| IF  FAILS  TO  REPAIR   INSTALL
| ORIGINAL CARD
| GO TO MAP 7A70, ENTRY POINT H.
|
126
METER VOLTAGE (6V RANGE)
A1-B2U13 (POS)
A1-B2P08 (NEG)
IS VOLTAGE LESS THAN 0.5V?
Y N
|
| 127
| PROBE  MST1  A1-B2U06  (+ SERVO
| INHIBIT VCO)
| IS LINE PULSING?
| Y N
| | |
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| | |
| | |
| | 128
| | EXCHANGE CARD A1-E2
| | IF FAILS TO REPAIR SEE  FIELD
| | REPLACEMENT UNIT LIST - ENTRY
| | POINT H.
| |
| 129
| EXCHANGE CARD A1-B2
| IF  FAILS  TO  REPAIR SEE FIELD
| REPLACEMENT UNIT LIST  -  ENTRY
| POINT H.
|
130
SWITCH PROBE TO MULTI

PROBE VTL A1-A5D09 (- READ)
IS LINE UP?
Y N
|
| 131
| EXCHANGE CARD A1-C2
| IF  FAILS  TO  REPAIR SEE FIELD
| REPLACEMENT UNIT LIST  -  ENTRY
| POINT H.
|
132
PROBE  VTL A1-C2G06 (- TAG 001 NO
FXED HDS)
IS LINE UP?
Y N
|
| 133
| EXCHANGE CARD A1-C2
| IF FAILS TO  REPAIR  SEE  FIELD
| REPLACEMENT  UNIT  LIST - ENTRY
| POINT H.
|
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134
SWITCH PROBE TO MST1

PROBE MST1 A1-B2P13 AND A1-B2S09
ARE BOTH LINES PULSING?
Y N

| 135
| EXCHANGE CARD A1-B2
| IF FAILS TO REPAIR INSTALL
| ORIGINAL CARD
| EXCHANGE CARD A1-D2

136
SWITCH PROBE TO MULTI

PROBE VTL A1-A5B08 (+ NRZ DATA TO
SYSTEM)
IS LINE PULSING?
Y N

| 137
| PROBE VTL A1-B2S07 (+ NRZ DATA
| TO SYSTEM)
| IS LINE PULSING?
| Y N
| | 138
| | EXCHANGE CARD A1-B2
| | IF FAILS TO REPAIR INSTALL
| | ORIGINAL CARD
| | EXCHANGE CABLE ENTERING AT
| | A1-A5.
| | IF FAILS TO REPAIR SEE FIELD
| | REPLACEMENT UNIT LIST - ENTRY
| | POINT H.
| 139
| REPAIR OR EXCHANGE BOARD A1

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|
|
140
PROBE   VTL  A1-A5D07  (-  SYSTEM
INDEX)
IS LINE PULSING?
Y N
|
| 141
| PROBE VTL  A1-D2S13  (-  SYSTEM
| INDEX)
| IS LINE PULSING?
| Y N
| |
| | 142
| | EXCHANGE CARD A1-D2
| | EXCHANGE  CABLE  ENTERING  AT
| | A1-A5.
| | IF FAILS TO REPAIR SEE  FIELD
| | REPLACEMENT UNIT LIST - ENTRY
| | POINT H.
| |
| 143
| REPAIR OR EXCHANGE BOARD A1
|
144
METER THE FOLLOWING VOLTAGES
  POS          NEG           RANGE
 A1-B2G02  A1-B2J08    1.2V TO 1.9V
 A1-B2J02  A1-B2J08    1.2V TO 1.9V
ARE ALL VOLTAGES IN RANGE?
Y N
|
| 145
| EXCHANGE CARD A1-B2
| IF  FAILS  TO  REPAIR SEE FIELD
| REPLACEMENT UNIT LIST  -  ENTRY
| POINT H.
|
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|
146
SWITCH PROBE TO MST1

PROBE MST1 A1-E2B13 (DATA PES)
ARE ANY OF THE PROBE LIGHTS ON?
Y N
|
| 147
| SWITCH PROBE TO MULTI
|
| PROBE VTL A1-B2U07 (1F CLOCK TO
| SYSTEM)
| IS LINE PULSING?
| Y N
| |
| | 148
| | EXCHANGE CARD A1-B2
| | EXCHANGE  CABLE  ENTERING  AT
| | A1-A5.
| | IF FAILS TO REPAIR SEE  FIELD
| | REPLACEMENT UNIT LIST - ENTRY
| | POINT H.
| |
| 149
| IS  LOOP ON DIAGNOSTIC SECTIONS
| AVAILABLE?
| Y N
| |
| | 150
| | PROBE VTL
| | A1-A5D05 (- FAST SYNC)
| | A1-A5D09 (- READ)
| | ARE BOTH LINES UP?
| | Y N
| | |
| | | 151
| | | EXCHANGE CARD A2-D2 IN BASE
| | | FILE
| | |
| | |
| | |
| | |
| | |
| | |
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|
|
152
TEST CONTINUITY (RX1) THROUGH
CABLE A1-A5 OF PINS
A1-A5D04 (DATA SELECT)
A1-A5D05 (FAST SYNC)
A1-A5D07 (SYSTEM INDEX)
A1-A5D09 (READ)
REFERENCE MAINTENANCE LOGIC
DIAGRAMS VOL 1 (SF500 PAGES) FOR
LOCATION OF OTHER END
IS RESISTANCE LESS THAN 2 OHMS?
Y N
|
| 153
| EXCHANGE CABLE ENTERING AT
| A1-A5.
|
154
EXCHANGE CARD A1-B2
IF FAILS TO REPAIR INSTALL
ORIGINAL CARD
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR INSTALL
ORIGINAL CARD
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR INSTALL
ORIGINAL CARD
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR INSTALL
ORIGINAL CARD
EXCHANGE DE UNIT
GO TO MAP 7A70, ENTRY POINT H.

155

LOOP DIAGNOSTIC PROGRAM (MAP7A20 OR MAP7A40)
(SEE NOTE TO THE RIGHT)

'NOTE' IF MAP7A20 WAS RUN IN MANUAL MODE BEFORE THIS MAP, LOOP 7A20 ON STEP 41. IF MAP7A30 WAS RUN LOOP 7A30 ON STEP 15. IF MAP7A40 WAS RUN LOOP 7A40 ON STEP 5.
REF MAP 0010 SECTION 04.02.01 STEP 9

PROBE VTL A1-B2S02 (- FAST SYNC)

IS LINE PULSING?
Y N

156
POWER OFF

METER RX1 SCALE A1-A5 CABLE FOR SHORT TO GROUND
A1-A5D04 TO A1-A5D08 (DATA SELECT)
A1-A5D05 TO A1-A5D08 (FAST SYNC)
A1-A5D07 TO A1-A5D08 (SYSTEM INDEX)
A1-A5D12 TO A1-A5D08 (1F WRITE TO SYSTEM)
CHECK THE CONTINUITY OF THE ABOVE LINES
REFERENCE MAINTENANCE LOGIC DIAGRAMS VOL 1 (SF500 PAGES) FOR LOCATION OF OTHER END
IS CABLE OK?
Y N

157
EXCHANGE CABLE ENTERING AT A1-A5.

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| |
| |
| 158
| METER  RX1  SCALE  A1-A5D05  TO
| A1-B2S02
| IS RESISTANCE LESS THAN 2 OHMS?
| Y N
| |
| | 159
| | REPAIR OR EXCHANGE BOARD A1
| |
| 160
| EXCHANGE CARD A1-B2
| IF  FAILS  TO  REPAIR SEE FIELD
| REPLACEMENT UNIT LIST  -  ENTRY
| POINT H.
|
161
PROBE VTL A1-C2J11 (- READ)
IS LINE PULSING?
Y N
|
| 162
| PROBE VTL A1-A5D09 (- READ)
| IS LINE PULSING?
| Y N
| |
| | 163
| | EXCHANGE CARD(S) A2-C2,A2-D2
| | IF  FAILS  TO  REPAIR INSTALL
| | ORIGINAL CARD
| | EXCHANGE  CABLE  ENTERING  AT
| | A1-A5.
| | IF  FAILS TO REPAIR SEE FIELD
| | REPLACEMENT UNIT LIST - ENTRY
| | POINT H.
| |
| 164
| EXCHANGE BOARD A1
|
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|
|
165
PROBE   VTL   A1-B2J12   (+  READ
SELECT)
IS LINE PULSING?
Y N
|
| 166
| PROBE   VTL  A1-C2J12  (+  READ
| SELECT)
| IS LINE PULSING?
| Y N
| |
| | 167
| | EXCHANGE CARD A1-C2
| | IF FAILS  TO  REPAIR  INSTALL
| | ORIGINAL CARD
| | EXCHANGE CARD A1-B2
| | IF  FAILS TO REPAIR SEE FIELD
| | REPLACEMENT UNIT LIST - ENTRY
| | POINT H.
| |
| 168
| EXCHANGE BOARD A1
|
169
PROBE VTL A1-C2B05 (- TAG OIO CS)
IS LINE PULSING?
Y N
|
| 170
| EXCHANGE CARD A1-C2
| IF FAILS TO  REPAIR  SEE  FIELD
| REPLACEMENT  UNIT  LIST - ENTRY
| POINT H.
|
171
PROBE VTL A1-B2U07 (1F READ CLOCK
TO SYSTEM)
IS LINE PULSING?
Y N
| |
| |
| |
| |
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| |
| |
| 172
| EXCHANGE CARD A1-B2
| EXCHANGE   CABLE   ENTERING  AT
| A1-A5.
| IF FAILS TO  REPAIR  SEE  FIELD
| REPLACEMENT  UNIT  LIST - ENTRY
| POINT H.
|
173
SWITCH PROBE TO MST1

PROBE MST1 A1-A2B04 (HEAD  SELECT
B)
IS LINE PULSING?
Y N
|
| 174
| SWITCH PROBE TO MULTI
|
| PROBE  VTL  A1-B2P05  (-   HEAD
| SELECT 2), AND A1-B2P07 (- HEAD
| SELECT 1)
| ARE BOTH LINES PULSING?
| Y N
| |
| | 175
| | EXCHANGE CARD A1-C2
| | IF  FAILS TO REPAIR SEE FIELD
| | REPLACEMENT UNIT LIST - ENTRY
| | POINT H.
| |
| 176
| EXCHANGE CARD A1-B2
| IF   FAILS  TO  REPAIR  INSTALL
| ORIGINAL CARD
| EXCHANGE DE UNIT
| GO TO MAP 7A70, ENTRY POINT H.
|
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| |
| 177
| PROBE VTL A1-A5D10 (1F READ
| CLOCK TO SYSTEM)
| IS LINE PULSING?
| Y N
| |
| | 178
| | EXCHANGE BOARD A1
| |
| 179
| EXCHANGE CABLE ENTERING AT
| A1-A5.
| PROBABLE DE FAILURE
| (95% PROBABLE)
|
| EXCHANGE CARD A1-B2
| IF FAILS TO REPAIR INSTALL
| ORIGINAL CARD
| EXCHANGE CARD A1-C2
| IF FAILS TO REPAIR INSTALL
| ORIGINAL CARD
| EXCHANGE CARD A1-F2
| IF FAILS TO REPAIR INSTALL
| ORIGINAL CARD
|
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT H.
|
180
METER VOLTAGE (6V RANGE)
A1-B2S10 (POS)
A1-B2U08 (NEG)
IS VOLTAGE IN RANGE 1.5 TO 2.5V?
Y N
|
| 181
| EXCHANGE CARD A1-B2
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT H.
|
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182

EXCHANGE CARD A1-E2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE CARD A1-B2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT H.

183
(ENTRY POINT I)

FAILING FIELD REPLACEMENT UNITS
AT THIS POINT :

FIELD REPLACEMENT UNIT	PROBABLE
SERVO 1 CARD (A1-E2)	72
DA CHAN CARD (A1-B2)	13
LOGIC 2 CARD (A1-D2)	5
ACTUATOR DRIVER CARD	3
LOGIC 1 CARD (A1-C2)	2
SERVO 2 CARD (A1-F2)	1

INSPECT AND RESEAT CABLES ON THE
A1 BOARD OF THE FAILING FILE

CARD (A2-C2)	
CARD (A2-D2)	
DE UNIT	4

TO ISOLATE FARTHER:

METER VOLTAGE (15V RANGE)
A1-B2B12 (POS)
A1-B2D08 (NEG).
IS THE VOLTAGE IN THE RANGE 5V TO
7V?
Y N
|
| 184
| EXCHANGE CARD A1-B2
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT I.
|
185
PROBE VTL A1-D2J09 (+ SK CLOCK)
IS LINE PULSING?
Y N
| |
| |
| |
| |
| |
| |

BOARD A NETS FOR THIS MAP:
(SEE BOARD NETLIST TABLES -
MAP7A75)
A2-04, A2-05, B2-14, C2-08,
D2-21, D2-24, D2-25, D2-48,
E2-04, E2-05, F2-08

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| |
| |
| 186
| EXCHANGE CARD A1-D2
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT I.
|
187
PROBE VTL A1-D2J10 (+ ENABLE
SERVO SAMPLE)
IS LINE PULSING?
Y N
|
| 188
| EXCHANGE CARD A1-D2
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT I.
|
189
PROBE VTL A1-D2U13 (+ ENABLE MARK
DETECT)
IS LINE PULSING?
Y N
|
| 190
| EXCHANGE CARD A1-D2
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT I.
|
191
SWITCH PROBE TO MST1

PROBE MST1 A1-B2U06 (+ SERVO
INHIBIT VCO)
IS LINE PULSING?
Y N
| |
| |
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| |
| |
| 192
| POWER DOWN
|
| CHECK CABLE AT A1A2 FOR OPENS
| AND SHORTS. EXCHANGE AS
| REQUIRED.
| WAS CABLE OK?
| Y N
| |
| | 193
| | VERIFY REPAIR.
| |
| 194
| EXCHANGE CARD A1-E2
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT I.
|
195
PROBE MST1 A1-B2P11 (2F BURST)
IS LINE PULSING?
Y N
|
| 196
| EXCHANGE CARD A1-B2
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT I.
|
197
METER VOLTAGE (6V RANGE)
A1-B2D08 (POS)
A1-B2D06 (NEG)
IS VOLTAGE IN RANGE 0.3V TO 0.8V?
Y N
|
| 198
| EXCHANGE CARD A1-B2
| IF FAILS TO REPAIR INSTALL
| ORIGINAL CARD
| EXCHANGE DE UNIT
| GO TO MAP 7A70, ENTRY POINT H.
|
|
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|
|
199
METER VOLTAGE (6V RANGE)
A1-B2D08 (POS)
A1-B2D05 (NEG)
IS VOLTAGE IN RANGE 0.3V TO 0.8V?
Y N
|
| 200
| EXCHANGE CARD A1-B2
| IF FAILS TO REPAIR INSTALL
| ORIGINAL CARD
| EXCHANGE DE UNIT
| GO TO MAP 7A70, ENTRY POINT H.
|
201
METER VOLTAGE (6V RANGE)
A1-B2D08 (POS)
A1-B2B08 (NEG)
IS VOLTAGE IN RANGE 1.1V TO 1.5V?
Y N
|
| 202
| POWER OFF
|
| METER RX1 SCALE A1-B2D08 TO
| A1-C2D08
| IS RESISTANCE LESS THAN 2 OHMS?
| Y N
| |
| | 203
| | REPAIR OR EXCHANGE BOARD A1
| |
| 204
| EXCHANGE CARD A1-B2
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT I.
|
205
IS AN OSCILLOSCOPE AVAILABLE?
Y N
| |
| |
| |
```

| |
| |
| 206
| EXCHANGE CARD A1-E2
| (73%)
| IF FAILS TO REPAIR INSTALL
| ORIGINAL CARD
| EXCHANGE CARD A1-B2
| (14%)
| IF FAILS TO REPAIR INSTALL
| ORIGINAL CARD
| EXCHANGE CARD A1-D2
| (7%)
| IF FAILS TO REPAIR INSTALL
| ORIGINAL CARD
| EXCHANGE CARD A1-C2
| (2%)
| IF FAILS TO REPAIR INSTALL
| ORIGINAL CARD
| EXCHANGE ACTUATOR DRIVER CARD
| ON A1-GATE
| SEE SEC 2 OF MIM FOR LOCATION.
| (1%)
| IF FAILS TO REPAIR INSTALL
| ORIGINAL CARD
| EXCHANGE CARD A1-F2
| (1%)
| IF FAILS TO REPAIR INSTALL
| ORIGINAL CARD
| GO TO MAP 7A70, ENTRY POINT H.
|
207
GO TO SCOPE MAPS
GO TO MAP 7A74, ENTRY POINT A.

208
(ENTRY POINT J)

FAILING FIELD REPLACEMENT UNITS
AT THIS POINT :

FIELD REPLACEMENT UNIT	PROBABLE
LOGIC 1 CARD (A1-C2)	56
LOGIC 2 CARD (A1-D2)	38
DISK CNTL. A2-C2,A2-D2	3
CABLES TO THE FILE	3

INSPECT AND RESEAT CABLES ON THE A1 BOARD OF THE FAILING FILE

TO ISOLATE FARTHER:

PROBE VTL A1-C2U07 (+ HOME)
IS LINE DOWN?
Y N
|
| 209
| PROBE VTL A1-C2M04 (- CONTROL BUS BIT 0)
| IS LINE DOWN?
| Y N
| |
| | 210
| | PROBE VTL A1-C2G04 (- GO HOME)
| | IS LINE UP?
| | Y N
| | |
| | | 211
| | | EXCHANGE CARD A1-C2
| | | IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT J.

BOARD A NETS FOR THIS MAP:
(SEE BOARD NETLIST TABLES - MAP7A75)
D2-37

20MAY83 PN8327695

ECA03143 PEC466795

5 5 5
0 0 0
B B B
V W X

	212
	EXCHANGE CARD A1-D2
	IF FAILS TO REPAIR SEE FIELD
	REPLACEMENT UNIT LIST - ENTRY
	POINT J.
	213
	EXCHANGE CARD A1-C2
	IF FAILS TO REPAIR SEE FIELD
	REPLACEMENT UNIT LIST - ENTRY
	POINT J.

214
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR SEE FIELD
REPLACEMENT UNIT LIST - ENTRY
POINT J.

215
(ENTRY POINT K)

FAILING FIELD REPLACEMENT UNITS
AT THIS POINT :

FIELD REPLACEMENT UNIT	PROBABLE
SERVO 2 CARD (A1-F2)	49
LOGIC 1 CARD (A1-C2)	30
LOGIC 2 CARD (A1-D2)	21

INSPECT AND RESEAT CABLES ON THE A1 BOARD OF THE FAILING FILE

TO ISOLATE FARTHER:

PROBE VTL A1-C2U02 (- OUT DRIVE)
IS LINE DOWN?
Y N
|
| 216
| EXCHANGE CARD A1-F2
| IF FAILS TO REPAIR INSTALL
| ORIGINAL CARD
| EXCHANGE CARD A1-C2
| IF FAILS TO REPAIR INSTALL
| ORIGINAL CARD
| EXCHANGE CARD A1-D2
|
217
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT K.

BOARD A NETS FOR THIS MAP:
(SEE BOARD NETLIST TABLES - MAP7A75)
D2-45

218
(ENTRY POINT L)

FAILING FIELD REPLACEMENT UNITS
AT THIS POINT :

FIELD REPLACEMENT UNIT	PROBABLE
LOGIC 1 CARD (A1-C2)	58
DA CHAN CARD (A1-B2)	22
LOGIC 2 CARD (A1-D2)	20

INSPECT AND RESEAT CABLES ON THE
A1 BOARD OF THE FAILING FILE

TO ISOLATE FARTHER:

PROBE VTL A1-B2M05 (- REPAIRED
HEAD SELECT)
IS LINE DOWN?
Y N
|
| 219
| EXCHANGE CARD A1-B2
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT L.
|
220
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR INSTALL
ORIGINAL CARD
EXCHANGE CARD A1-B2
IF FAILS TO REPAIR INSTALL
ORIGINAL CARD
EXCHANGE CARD A1-D2

BOARD A NETS FOR THIS MAP:
(SEE BOARD NETLIST TABLES -
MAP7A75)
C2-06

221
(ENTRY POINT M)

FAILING FIELD REPLACEMENT UNITS
AT THIS POINT :

FIELD REPLACEMENT UNIT	PROBABLE
SERVO 2 CARD (A1-F2)	70
LOGIC 2 CARD (A1-D2)	30

POWER DOWN

CHECK CABLE AT A1A3 FOR OPENS AND SHORTS. EXCHANGE AS REQUIRED.
WAS CABLE OK?
Y N
|
| 222
| VERIFY REPAIR.
|
223
TO ISOLATE FARTHER:

POWER UP
WAIT 20 SECONDS.
PROBE VTL A1-F2B08 (- SEL DEMOD Q1), AND A1-F2D09 (- SEL DEMOD N1)
ARE BOTH LINES PULSING?
Y N
|
| 224
| CHECK SEATING OF JUMPERS ON CARD A1-D2
| IF FAILS TO REPAIR EXCHANGE CARD A1-D2
| IF FAILS TO REPAIR INSTALL ORIGINAL CARD
| EXCHANGE CARD A1-F2
|
|
|
|
|

BOARD A NETS FOR THIS MAP:
(SEE BOARD NETLIST TABLES - MAP7A75)
D2-14, D2-15, D2-23

225
PROBE VTL A1-F2B10 (- SEL DEMOD N2), AND A1-F2B09 (- SEL DEMOD Q2)
ARE BOTH LINES PULSING?
Y N

226
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE CARD A1-F2

227
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE CARD A1-D2

228
(ENTRY POINT N)

FAILING FIELD REPLACEMENT UNITS
AT THIS POINT :

FIELD REPLACEMENT UNIT	PROBABLE
LOGIC 1 CARD (A1-C2)	63
SERVO 2 CARD (A1-F2)	25
SERVO 1 CARD (A1-E2)	12

INSPECT AND RESEAT CABLES ON THE A1 BOARD OF THE FAILING FILE

TO ISOLATE FARTHER:

PROBE VTL A1-C2S09 (- EVEN)
IS LINE DOWN?
Y N
|
| 229
| EXCHANGE CARD A1-F2
| IF FAILS TO REPAIR INSTALL
| ORIGINAL CARD
| EXCHANGE CARD A1-E2
| IF FAILS TO REPAIR INSTALL
| ORIGINAL CARD
| EXCHANGE CARD A1-C2
|
230
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT N.

BOARD A NETS FOR THIS MAP:
(SEE BOARD NETLIST TABLES - MAP7A75)
C2-28

231
(ENTRY POINT 0)

FAILING FIELD REPLACEMENT UNITS
AT THIS POINT :

FIELD REPLACEMENT UNIT	PROBABLE
LOGIC 2 CARD (A1-D2)	39
LOGIC 1 CARD (A1-C2)	30
SERVO 2 CARD (A1-F2)	24
ACTUATOR DRIVER CARD	6
CARD (A1-B2)	
CARD (A1-E2)	
CARD (A2-C2)	
CARD (A2-D2)	

INSPECT AND RESEAT CABLES ON THE A1 BOARD OF THE FAILING FILE
DE 1

TO ISOLATE FARTHER:

ENSURE ACTUATOR LOCK IS DISENGAGED
WAS ACTUATOR LOCK DISENGAGED?
Y N
|
| 232
| FULLY DISENGAGE ACTUATOR LOCK
| RUN DIAGNOSTIC PROGRAMS
| (MAP7A20)
|
233
PROBE VTL A1-D2G03 (- SEL DEMOD Q1)
IS LINE DOWN?
Y N
| |
| |
| |
| |
| |
| |
| |
| |

BOARD A NETS FOR THIS MAP:
(SEE BOARD NETLIST TABLES - MAP7A75)
D2-01, D2-14, D2-23

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|
|
234
PROBE VTL A1-D2M05 (+ QUAD ERROR)
IS LINE DOWN?
Y N
|
| 235
| PROBE VTL A1-D2D06 (+ OUT
| DIRECTION)
| IS LINE DOWN?
| Y N
| |
| | 236
| | PROBE VTL A1-C2D11 (+ LIN REG
| | N OF EVEN TRK)
| | IS LINE DOWN?
| | Y N
| | |
| | | 237
| | | PROBE VTL A1-D2M05 (+ QUAD
| | | ERROR)
| | | IS LINE PULSING?
| | | Y N
| | | |
| | | | 238
| | | | EXCHANGE CARD A1-C2
| | | | IF FAILS TO REPAIR
| | | | INSTALL ORIGINAL CARD
| | | | IF FAILS TO REPAIR SEE
| | | | FIELD REPLACEMENT UNIT
| | | | LIST - ENTRY POINT 0.
| | | |
| | | 239
| | | EXCHANGE CARD A1-D2
| | | IF FAILS TO REPAIR SEE
| | | FIELD REPLACEMENT UNIT LIST
| | | - ENTRY POINT 0.
| | |
| | 240
| | EXCHANGE CARD A1-C2
| | IF FAILS TO REPAIR SEE FIELD
| | REPLACEMENT UNIT LIST - ENTRY
| | POINT 0.
| |
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| 241
| EXCHANGE CARD A1-D2
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT 0.
|
242
PROBE VTL A1-F2B08 (- SEL DEMOD
Q1)
IS LINE DOWN?
Y N
|
| 243
| PROBE VTL A1-C2G04 (- GO HOME)
| IS LINE DOWN?
| Y N
| |
| | 244
| | EXCHANGE CARD A1-D2
| | IF FAILS TO REPAIR SEE FIELD
| | REPLACEMENT UNIT LIST - ENTRY
| | POINT 0.
| |
| 245
| PROBE VTL A1-D2J06 (- SEL DEMOD
| N2)
| IS LINE DOWN?
| Y N
| |
| | 246
| | EXCHANGE CARD A1-D2
| | IF FAILS TO REPAIR INSTALL
| | ORIGINAL CARD
| | EXCHANGE CARD A1-F2
| | IF FAILS TO REPAIR SEE FIELD
| | REPLACEMENT UNIT LIST - ENTRY
| | POINT 0.
| |
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| | |
| | 247
| | EXCHANGE CARD A1-D2
| | IF  FAILS TO REPAIR SEE FIELD
| | REPLACEMENT UNIT LIST - ENTRY
| | POINT 0.
| |
| 248
| EXCHANGE ACTUATOR  DRIVER  CARD
| ON A1-GATE
| SEE SEC 2 OF MIM FOR LOCATION.
| IF  FAILS  TO  REPAIR SEE FIELD
| REPLACEMENT UNIT LIST  -  ENTRY
| POINT 0.
|
249
PROBE VTL A1-C2G04 (- GO HOME)
IS LINE DOWN?
Y N
|
| 250
| PROBE VTL A1-C2D11 (+ LIN REG N
| OF EVEN TRK)
| IS LINE DOWN?
| Y N
| |
| | 251
| | EXCHANGE CARD A1-F2
| | IF  FAILS TO REPAIR SEE FIELD
| | REPLACEMENT UNIT LIST - ENTRY
| | POINT 0.
| |
| 252
| EXCHANGE CARD A1-D2
| IF   FAILS  TO  REPAIR  INSTALL
| ORIGINAL CARD
| EXCHANGE CARD A1-F2
| IF FAILS TO  REPAIR  SEE  FIELD
| REPLACEMENT  UNIT  LIST - ENTRY
| POINT 0.
|
|
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|
|
253
PROBE VTL A1-C2D10 (+ RELEASE
TRACK ADDRESS)
IS LINE DOWN?
Y N
|
| 254
| EXCHANGE CARD A1-C2
| IF FAILS TO REPAIR INSTALL
| ORIGINAL CARD
| EXCHANGE CARD A1-D2
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT 0.
|
255
PROBE VTL A1-D2J06 (- SEL DEMOD
Q1)
IS LINE DOWN?
Y N
|
| 256
| EXCHANGE CARD A1-D2
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT 0.
|
257
ADD JUMPER A1-F2P11 TO A1-F2P08

METER VOLTAGE (6V RANGE)
A1-F2U04 (POS)
A1-F2U05 (NEG)
IS VOLTAGE MORE THAN 2V?
Y N
| |
| |
| |
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| |
| |
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| |
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| |
| |
| 258
| REMOVE JUMPER(S).
| EXCHANGE CARD A1-D2
| IF FAILS TO REPAIR INSTALL
| ORIGINAL CARD
| EXCHANGE CARD A1-C2
| IF FAILS TO REPAIR INSTALL
| ORIGINAL CARD
| EXCHANGE CARD A1-F2
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT 0.
|
259
REMOVE JUMPER(S).
EXCHANGE ACTUATOR DRIVER CARD ON
A1-GATE
SEE SEC 2 OF MIM FOR LOCATION.
IF FAILS TO REPAIR SEE FIELD
REPLACEMENT UNIT LIST - ENTRY
POINT 0.

260
(ENTRY POINT P)

THIS MAP ISOLATES SLOW SEEKING FAILURES.
REFERENCE MAINTENANCE LOGIC DIAGRAMS PAGE SF570A FOR VC CONNECTOR PINS
FAILING FIELD REPLACEMENT UNITS AT THIS POINT :

FIELD REPLACEMENT UNIT	PROBABLE
LOGIC 1 CARD (A1-C2)	67
LOGIC 2 CARD (A1-D2)	27
CARD (A1-B2)	
CARD (A1-E2)	
ACTUATOR DRIVER CARD	6
CARD (A1-F2)	
CARD (A2-C2)	
CARD (A2-D2)	

INSPECT AND RESEAT CABLES ON THE A1 BOARD OF THE FAILING FILE
DE UNIT 6

TO ISOLATE FARTHER:

METER VOLTAGE (6V RANGE)
A1-C2B02 (POS)
A1-C2D08 (NEG)
IS VOLTAGE MORE THAN 1.5 VOLTS?
Y N
| |
| |
| |
| |
| |
| |
| |
| |
| |
| |
| |
| |
| |

6 6
3 3
C C
J K

BOARD A NETS FOR THIS MAP:
(SEE BOARD NETLIST TABLES - MAP7A75)
C2-02, D2-03

```
| |
| |
| 261
| POWER OFF.                              -------------------
| METER RESISTANCE (RX1 SCALE)            ------- .  WIRE
| VC9-D TO VC9-C.                         | C A |_ ENTRY
|                                         | D B | .  SIDE
|                                         -------
|                                         -------------------
|                                         SEE MAINTENANCE LOGIC MANUAL PAGE
|                                         SF570A
| IS RESISTANCE IN RANGE 300 TO
| 400 OHMS?
| Y N
| |
| | 262
| | IF FAILS TO REPAIR SEE FIELD
| | REPLACEMENT UNIT LIST - ENTRY
| | POINT P.
| |
| 263
| EXCHANGE CARD A1-D2
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT P.
|
264
DISCONNECT CONNECTOR VC-9               -------------------
(DO NOT POWER OFF)                      ------- .  WIRE
METER VOLTAGE (6V RANGE)                | C A |_ ENTRY
A1-C2D02 (POS)                          | D B | .  SIDE
A1-C2D08 (NEG)                          -------
                                        -------------------
                                        SEE MAINTENANCE LOGIC MANUAL PAGE
                                        SF570A
IS VOLTAGE 0 VOLTS?
Y N
|
| 265
| EXCHANGE CARD A1-D2
| RECONNECT VC-9
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT P.
|
|
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|
|
266
RECONNECT VC-9
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT P.

267
(ENTRY POINT Q)

FAILING FIELD REPLACEMENT UNITS AT THIS POINT :

FIELD REPLACEMENT UNIT	PROBABLE
SERVO 2 CARD (A1-F2)	68
SERVO 1 CARD (A1-E2)	13
LOGIC 2 CARD (A1-D2)	7
LOGIC 1 CARD (A1-C2)	7
ACTUATOR DRIVER CARD	3
DA CHAN CARD (A1-B2)	3

INSPECT AND RESEAT CABLES ON THE A1 BOARD OF THE FAILING FILE

TO ISOLATE FARTHER:

METER VOLTAGE (6V RANGE)
A1-E2B07 (NEG)
A1-E2D08 (POS)
IS VOLTAGE MORE THAN 1.8V?
Y N
|
| 268
| CHECK SEATING OF JUMPERS ON CARD A1-E2
| IF FAILS TO REPAIR
| EXCHANGE CARD A1-E2
| IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT Q.
|
269
PROBE VTL A1-F2G03 (+ COIL CURRENT LOW)
IS LINE PULSING?
Y N
| |
| |
| |
| |
| |
| |

BOARD A NETS FOR THIS MAP:
(SEE BOARD NETLIST TABLES - MAP7A75)
D2-07, E2-02, F2-04, F2-13, F2-15, F2-26

```
|
|
270
PROBE   VTL   A1-C2J07   (+   OUT
DIRECTION)
IS LINE UP?
Y N
|
| 271
| EXCHANGE CARD A1-D2
| IF   FAILS  TO  REPAIR  INSTALL
| ORIGINAL CARD
| EXCHANGE CARD A1-C2
| IF   FAILS  TO  REPAIR  INSTALL
| ORIGINAL CARD
| EXCHANGE CARD A1-F2
| IF FAILS TO  REPAIR  SEE  FIELD
| REPLACEMENT  UNIT  LIST - ENTRY
| POINT Q.
|
272
PROBE   VTL   A1-F2G03   (+  COIL
CURRENT LOW)
IS LINE DOWN?
Y N
|
| 273
| EXCHANGE ACTUATOR  DRIVER  CARD
| ON A1-GATE
| SEE SEC 2 OF MIM FOR LOCATION.
| IF  FAILS  TO  REPAIR   INSTALL
| ORIGINAL CARD
| EXCHANGE CARD A1-F2
| IF  FAILS  TO  REPAIR SEE FIELD
| REPLACEMENT UNIT LIST  -  ENTRY
| POINT Q.
|
274
EXCHANGE CARD A1-F2
IF  FAILS  TO  REPAIR  SEE  FIELD
REPLACEMENT  UNIT  LIST  -  ENTRY
POINT Q.
```

```
|
|
275
PROBE VTL A1-E2J13 (+ OFF DATA
TRACK)
IS LINE DOWN?
Y N
|
| 276
| PROBE VTL A1-C2J07 (+ OUT
| DIRECTION)
| IS LINE UP?
| Y N
| |
| | 277
| | PROBE VTL A1-C2J07 (+ OUT
| | DIRECTION)
| | IS LINE PULSING?
| | Y N
| | |
| | | 278
| | | EXCHANGE CARD A1-D2
| | | IF FAILS TO REPAIR SEE
| | | FIELD REPLACEMENT UNIT LIST
| | | - ENTRY POINT Q.
| | |
| | 279
| | METER VOLTAGE (6 VOLT RANGE)
| | A1-F2U08 (POS)
| | A1-F2U11 (NEG)
| | IS VOLTAGE MORE THAN 0.6V?
| | Y N
| | |
| | | 280
| | | EXCHANGE CARD A1-F2
| | | IF FAILS TO REPAIR SEE
| | | FIELD REPLACEMENT UNIT LIST
| | | - ENTRY POINT Q.
| | |
| | 281
| | EXCHANGE CARD A1-E2
| | IF FAILS TO REPAIR SEE FIELD
| | REPLACEMENT UNIT LIST - ENTRY
| | POINT Q.
| |
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| |
| 282
| SWITCH PROBE TO MST1
|
| PROBE MST1  A1-E2B10  (-  RESET
| CAP)
| IS LINE PULSING?
| Y N
| |
| | 283
| | EXCHANGE CARD A1-F2
| | IF  FAILS TO REPAIR SEE FIELD
| | REPLACEMENT UNIT LIST - ENTRY
| | POINT Q.
| |
| 284
| METER VOLTAGE (6V RANGE DC)
| A1-D2D08 (POS)
| A1-D2B07 (NEG)
| IS   VOLTAGE  BETWEEN  0.4  AND
| 0.9V?
| Y N
| |
| | 285
| | EXCHANGE CARD A1-E2
| | IF FAILS TO REPAIR SEE  FIELD
| | REPLACEMENT UNIT LIST - ENTRY
| | POINT Q.
| |
| 286
| EXCHANGE CARD A1-F2
| IF  FAILS  TO  REPAIR SEE FIELD
| REPLACEMENT UNIT LIST  -  ENTRY
| POINT Q.
|
287
METER VOLTAGE (6V RANGE DC)
A1-F2U08 (NEG)
A1-F2U04 (POS)
IS VOLTAGE BETWEEN 0.5 AND 0.9V?
Y N
| |
| |
| |
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| |
| |
| 288
| METER VOLTAGE (6V RANGE DC)
| A1-D2D08 (POS)
| A1-D2B07 (NEG)
| IS VOLTAGE BETWEEN 0.4 AND
| 0.9V?
| Y N
| |
| | 289
| | EXCHANGE CARD A1-F2
| | IF FAILS TO REPAIR INSTALL
| | ORIGINAL CARD
| | EXCHANGE CARD A1-D2
| | IF FAILS TO REPAIR SEE FIELD
| | REPLACEMENT UNIT LIST - ENTRY
| | POINT Q.
| |
| 290
| EXCHANGE ACTUATOR DRIVER CARD
| ON A1-GATE
| SEE SEC 2 OF MIM FOR LOCATION.
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT Q.
|
291
METER VOLTAGE (6V RANGE DC)
A1-D2D08 (POS)
A1-D2B07 (NEG)
IS VOLTAGE BETWEEN 0.4 AND 0.9V?
Y N
|
| 292
| METER VOLTAGE (6V RANGE DC)
| A1-D2D08 (POS)
| A1-E2B07 (NEG)
| IS VOLTAGE BETWEEN 1.7 AND
| 2.3V?
| Y N
| | |
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| |
| 293
| EXCHANGE CARD A1-E2
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT Q.
|
294
METER VOLTAGE (6V RANGE DC)
A1-D2D08 (NEG)
A1-E2B13 (POS)
IS VOLTAGE BETWEEN -0.2 AND
+0.2V?
Y N
|
| 295
| EXCHANGE CARD A1-F2
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT Q.
|
296
METER VOLTAGE (6V RANGE AC)
A1-D2D08 (NEG)
A1-E2B13 (POS)
IS VOLTAGE LESS THAN 0.2V?
Y N
|
| 297
| EXCHANGE CARD A1-F2
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT Q.
|
298
PROBE VTL A1-C2M05 (- CONTROL BUS
BIT 4)
OBSERVE FOR 1 MINUTE.
IS LINE PULSING?
Y N
| |
| |
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	299
	EXCHANGE CARD A1-C2
	IF FAILS TO REPAIR SEE FIELD
	REPLACEMENT UNIT LIST - ENTRY
	POINT Q.
	300
	EXCHANGE CARD A1-E2
	IF FAILS TO REPAIR SEE FIELD
	REPLACEMENT UNIT LIST - ENTRY
	POINT Q.

301
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR SEE FIELD
REPLACEMENT UNIT LIST - ENTRY
POINT Q.

302
(ENTRY POINT R)

FAILING FIELD REPLACEMENT UNITS
AT THIS POINT :

FIELD REPLACEMENT UNIT	PROBABLE
SERVO 2 CARD (A1-F2)	47
ACTUATOR DRIVER CARD	25
LOGIC 2 CARD (A1-D2)	11
SERVO 1 CARD (A1-E2)	4
LOGIC 1 CARD (A1-C2)	1
CARD (A1-B2)	
CARD (A2-C2)	
CARD (A2-D2)	

INSPECT AND RESEAT CABLES ON THE A1 BOARD OF THE FAILING FILE
DE UNIT 12

TO ISOLATE FARTHER:

ENSURE ACTUATOR LOCK IS FULLY DISENGAGED
WAS ACTUATOR LOCK DISENGAGED?
Y N
|
| 303
| FULLY DISENGAGE ACTUATOR LOCK.
| RUN DIAGNOSTIC PROGRAMS
| (MAP7A20)
|
304
METER VOLTAGE (6V RANGE)
A1-E2B07 (NEG)
A1-E2D08 (POS)
IS VOLTAGE MORE THAN 1.8V?
Y N
| |
| |
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| |
| |
| |
| |

BOARD A NETS FOR THIS MAP:
(SEE BOARD NETLIST TABLES - MAP7A75)
D2-15, D2-16, D2-43, F2-19, F2-24, F2-25, F2-27, V-05

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| |
| |
| 305
| CHECK SEATING OF JUMPERS ON
| CARD A1-E2
| IF FAILS TO REPAIR
| EXCHANGE CARD A1-E2
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT R.
|
306
PROBE VTL A1-D2U07 (- OUT DRIVE)
IS LINE UP?
Y N
|
| 307
| PROBE VTL A1-D2G08 (- SECTOR
| PULSES MISSING)
| IS LINE UP?
| Y N
| |
| | 308
| | PROBE VTL A1-D2G04 (- SEL
| | DEMOD N1)
| | IS LINE PULSING?
| | Y N
| | |
| | | 309
| | | PROBE VTL A1-F2P05 (- SEL
| | | INTEGRATOR)
| | | IS LINE DOWN?
| | | Y N
| | | |
| | | | 310
| | | | PROBE VTL A1-D2S07 (- IN
| | | | DRIVE)
| | | | IS LINE UP?
| | | | Y N
| | | | | |
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|
311
ADD JUMPER A1-D2M11 TO A1-D2P08
PROBE VTL A1-D2S07 (- IN DRIVE)
AND D2U07 (- OUT DRIVE)
ARE BOTH LINES DOWN
Y N
|
| 312
| IS ONE LINE PULSING BUT NOT
| BOTH?
| Y N
| |
| | 313
| | DO THE FOLLOWING IN ORDER:
| |
| | 1. REMOVE JUMPER A1-D2M11 TO
| | A1-D2P08
| | 2. ADD JUMPER A1-F2P02 TO
| | A1-F2P08
| | 3. ADD JUMPER A1-D2S06 TO
| | A1-D2U08
| | 4. REMOVE JUMPER A1-F2P02 TO
| | A1-F2P08
| | 5. REMOVE JUMPER A1-D2S06 TO
| | A1-D2U08
| | 6. CALL DIAGNOSTIC MAP7A20 .
| | DO DIAGNOSTIC ROUTINES RUN
| | ERROR FREE?
| | Y N
| | |
| | | 314
| | | METER A1VC5-C FOR +24 VDC.
| | | IS VOLTAGE OK (22.1 TO 24)?
| | | Y N
| | | | |
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| |
| 315
| POWER OFF.
|
| METER CONTINUITY OF CABLE TO
| A1VC5-C.
| IS CONTINUITY OK?
| Y N
| |
| | 316
| | EXCHANGE CABLE.
| |
| 317
| EXCHANGE POWER SUPPLY.
|
318
POWER OFF

REMOVE CARD A1-F2

METER RESISTANCE (RX1 SCALE)
BETWEEN A1-F2M04 AND A1-F2M05.
IS RESISTANCE LESS THAN 30 OHMS?
Y N
|
| 319
| GO TO ENTRY POINT = DC IN THIS
| MAP TO CHECK ALL DC VOLTAGES.
| RETURN HERE IF ALL VOLTAGES ARE
| CORRRECT.
|
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT R.
|
320
METER CONTINUITY (RX1 SCALE)
VC-5D TO A1-F2S09
IS RESISTANCE LESS THAN 2 OHMS?
Y N
|
| 321
| REPAIR OR EXCHANGE BOARD A1
|
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| | |
| | |
| | 322
| | METER CONTINUITY (RX1 SCALE)
| | VC5-D TO POWER SUPPLY P4
| | PIN-28 (-24V RETURN)
| | REFERENCE MAINTENANCE LOGIC
| | DIAGRAMS PAGE SF545
| | IS RESISTANCE LESS THAN 2
| | OHMS?
| | Y N
| | |
| | | 323
| | | REPAIR AS NECESSARY
| | | INSTALL A1-F2
| | |
| | 324
| | EXCHANGE ACTUATOR DRIVER CARD
| | ON A1-GATE
| | SEE SEC 2 OF MIM FOR
| | LOCATION.
| | AND
| | EXCHANGE CARD A1-F2
| | IF FAILS TO REPAIR SEE FIELD
| | REPLACEMENT UNIT LIST - ENTRY
| | POINT R.
| |
| 325
| EXCHANGE CARD A1-D2
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT R.
|
326
METER A1VC1-C FOR +12 VDC.
IS VOLTAGE OK (11 TO 12)?
Y N
| |
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| | | |
| | | 327
| | | POWER OFF.
| | |
| | | METER CONTINUITY OF CABLE
| | | TO A1VC1-C.
| | | IS CONTINUITY OK?
| | | Y N
| | | |
| | | | 328
| | | | EXCHANGE CABLE.
| | | |
| | | 329
| | | EXCHANGE POWER SUPPLY.
| | |
| | 330
| | EXCHANGE CARD A1-D2
| | REMOVE JUMPER(S).
| | IF FAILS TO REPAIR SEE FIELD
| | REPLACEMENT UNIT LIST - ENTRY
| | POINT R.
| |
| 331
| EXCHANGE CARD A1-D2
| REMOVE JUMPER(S).
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT R.
|
332
METER VOLTAGE
A1-F2M05 (POS)
A1-F2P08 (NEG)
IS VOLTAGE IN RANGE 1V TO 2V?
Y N
|
| 333
| METER VOLTAGE
| A1-F2U02 (POS)
| A1-F2P08 (NEG)
| IS VOLTAGE LESS THAN 0.7V?
| Y N
| | |
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| |
| 334
| POWER OFF
|
| REMOVE CARD A1-F2
|
| METER RESISTANCE (RX1 SCALE)
| BETWEEN A1-F2M04 AND A1-F2M05.
| IS RESISTANCE LESS THAN 30
| OHMS?
| Y N
| |
| | 335
| | EXCHANGE CARD (A1-F2)
| | IF FAILS TO REPAIR SEE FIELD
| | REPLACEMENT UNIT LIST - ENTRY
| | POINT R.
| |
| 336
| EXCHANGE ACTUATOR DRIVER CARD
| ON A1-GATE
| SEE SEC 2 OF MIM FOR LOCATION.
| INSTALL A1-F2
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT R.
|
337
METER VOLTAGE (60V RANGE)
A1-F2M12 (NEG)
A1-F2P08 (POS)
IS VOLTAGE LESS THAN 18V?
Y N
|
| 338
| EXCHANGE CARD A1-F2
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT R.
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| | |
| | 339
| | POWER OFF
| |
| | REMOVE CARD A1-F2
| |
| | METER RESISTANCE (RX1 SCALE)
| | BETWEEN A1-F2M04 AND
| | A1-F2M05.
| | IS RESISTANCE LESS THAN 30
| | OHMS?
| | Y N
| | |
| | | 340
| | | EXCHANGE CARD (A1-F2)
| | | IF FAILS TO REPAIR SEE
| | | FIELD REPLACEMENT UNIT LIST
| | | - ENTRY POINT R.
| | |
| | 341
| | EXCHANGE ACTUATOR DRIVER CARD
| | ON A1-GATE
| | SEE SEC 2 OF MIM FOR
| | LOCATION.
| | IF FAILS TO REPAIR SEE FIELD
| | REPLACEMENT UNIT LIST - ENTRY
| | POINT R.
| |
| 342
| EXCHANGE CARD A1-F2
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT R.
|
343
EXCHANGE CARD (A1-F2)
IF FAILS TO REPAIR SEE FIELD
REPLACEMENT UNIT LIST - ENTRY
POINT R.
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| 344
| METER VOLTAGE (6V RANGE)
| A1-F2M05 (POS)
| A1-F2P08 (NEG)
| IS VOLTAGE MORE THAN 3 VOLTS?
| Y N
| |
| | 345
| | GO TO ENTRY POINT = DC IN
| | THIS MAP TO CHECK ALL DC
| | VOLTAGES.
| | RETURN HERE IF ALL VOLTAGES
| | ARE CORRRECT.
| |
| | EXCHANGE CARD A1-E2
| | IF FAILS TO REPAIR SEE FIELD
| | REPLACEMENT UNIT LIST - ENTRY
| | POINT R.
| |
| 346
| EXCHANGE CARD A1-F2
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT R.
|
347
PROBE VTL A1-F2B12 (+ NORMAL
ERROR)
IS LINE PULSING?
Y N
|
| 348
| PROBE VTL A1-F2B12 (+ NORMAL
| ERROR)
| IS LINE UP?
| Y N
| | |
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349
PROBE   VTL   A1-F2G03   (+  COIL
CURRENT LOW)
IS LINE PULSING?
Y N
|
| 350
| PROBE VTL A1-D2S07 (- IN DRIVE)
| IS LINE UP?
| Y N
| |
| | 351
| | PROBE   VTL  A1-F2G12  (+  ON
| | TRACK)
| | IS LINE UP?
| | Y N
| | |
| | | 352
| | | EXCHANGE   ACTUATOR  DRIVER
| | | CARD ON A1-GATE
| | | SEE   SEC   2  OF  MIM  FOR
| | | LOCATION.
| | | IF   FAILS  TO  REPAIR  SEE
| | | FIELD REPLACEMENT UNIT LIST
| | | - ENTRY POINT R.
| | |
| | 353
| | EXCHANGE CARD A1-F2
| | IF FAILS TO REPAIR SEE  FIELD
| | REPLACEMENT UNIT LIST - ENTRY
| | POINT R.
| |
| 354
| METER VOLTAGE (15V RANGE)
| A1-D2D02 (NEG)
| A1-D2D08 (POS)
| IS VOLTAGE MORE THAN 6.0V?
| Y N
| | |
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| | | | 355
| | | | EXCHANGE CARD A1-F2
| | | | IF FAILS TO REPAIR SEE
| | | | FIELD REPLACEMENT UNIT
| | | | LIST - ENTRY POINT R.
| | | |
| | | 356
| | | EXCHANGE CARD A1-D2
| | | IF FAILS TO REPAIR SEE
| | | FIELD REPLACEMENT UNIT LIST
| | | - ENTRY POINT R.
| | |
| | 357
| | EXCHANGE CARD A1-D2
| | IF FAILS TO REPAIR SEE FIELD
| | REPLACEMENT UNIT LIST - ENTRY
| | POINT R.
| |
| 358
| EXCHANGE CARD A1-D2
| IF FAILS TO REPAIR INSTALL
| ORIGINAL CARD
| EXCHANGE CARD A1-F2
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT R.
|
359
METER VOLTAGE (60V RANGE)
A1-F2M05 (POS)
A1-F2P08 (NEG)
IS VOLTAGE MORE THAN 10V ?
Y N
|
| 360
| METER VOLTAGE (6V RANGE)
| A1-F2M04 (POS)
| A1-F2P08 (NEG)
| IS VOLTAGE MORE THAN 2V ?
| Y N
| | |
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| | |
| | 361
| | EXCHANGE CARD A1-D2
| | IF  FAILS TO REPAIR SEE FIELD
| | REPLACEMENT UNIT LIST - ENTRY
| | POINT R.
| |
| 362
| EXCHANGE CARD A1-F2
| IF FAILS TO  REPAIR  SEE  FIELD
| REPLACEMENT  UNIT  LIST - ENTRY
| POINT R.
|
363
METER VOLTAGE (6V RANGE)
A1-F2M04 (POS)
A1-F2P08 (NEG)
IS VOLTAGE MORE THAN 5V ?
Y N
|
| 364
| PROBE VTL A1-D2B03 (+ LIN REG N
| OF EVEN TRK)
| IS LINE UP?
| Y N
| |
| | 365
| | METER VOLTAGE (6V RANGE)
| | A1-D2D02 (NEG)
| | A1-D2D08 (POS)
| | IS VOLTAGE MORE THAN 2V ?
| | Y N
| | |
| | | 366
| | | EXCHANGE   ACTUATOR  DRIVER
| | | CARD ON A1-GATE
| | | SEE   SEC   2  OF  MIM  FOR
| | | LOCATION.
| | | IF   FAILS  TO  REPAIR  SEE
| | | FIELD REPLACEMENT UNIT LIST
| | | - ENTRY POINT R.
| | |
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| | | 367
| | | EXCHANGE CARD A1-D2
| | | IF   FAILS  TO  REPAIR  SEE
| | | FIELD REPLACEMENT UNIT LIST
| | | - ENTRY POINT R.
| | |
| | 368
| | EXCHANGE CARD A1-F2
| | IF FAILS TO REPAIR SEE  FIELD
| | REPLACEMENT UNIT LIST - ENTRY
| | POINT R.
| |
| 369
| EXCHANGE CARD A1-D2
| IF  FAILS  TO  REPAIR SEE FIELD
| REPLACEMENT UNIT LIST  -  ENTRY
| POINT R.
|
370
PROBE  VTL  A1-D2G08  (-   SECTOR
PULSES MISSING)
IS LINE UP?
Y N
|
| 371
| PROBE VTL A1-F2B03 (- EVEN)
| IS LINE DOWN?
| Y N
| |
| | 372
| | EXCHANGE CARD A1-F2
| | IF  FAILS TO REPAIR SEE FIELD
| | REPLACEMENT UNIT LIST - ENTRY
| | POINT R.
| |
| 373
| PROBE VTL A1-F2J04 (-  BAD  AGC
| LEVEL)
| IS LINE UP?
| Y N
| | |
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| |
| 374
| EXCHANGE CARD A1-F2
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT R.
|
375
SWITCH PROBE TO MST1

PROBE MST1 A1-E2B09 (- G )
IS LINE DOWN?
Y N
|
| 376
| PROBE MST1 A1-E2B09 (- G )
| OBSERVE FOR ONE MINUTE
| IS LINE PULSING?
| Y N
| |
| | 377
| | SWITCH PROBE TO MULTI
| |
| | PROBE VTL A1-F2G03 (+ COIL
| | CURRENT LOW)
| | IS LINE DOWN?
| | Y N
| | |
| | | 378
| | | PROBE VTL A1-D2U04 (+ SEL
| | | INTEGRATOR)
| | | IS LINE UP?
| | | Y N
| | | |
| | | | 379
| | | | CHECK SEATING OF JUMPERS
| | | | ON CARD A1-D2
| | | | IF FAILS TO REPAIR
| | | | EXCHANGE CARD A1-D2
| | | | IF FAILS TO REPAIR SEE
| | | | FIELD REPLACEMENT UNIT
| | | | LIST - ENTRY POINT R.
| | | |
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|
380
PROBE VTL A1-D2U06 (+ SERVO
PROTECT)
IS LINE PULSING?
Y N
|
| 381
| METER VOLTAGE(60V RANGE)
| A1-F2U07 (POS)
| A1-F2U08 (NEG)
| IS THE VOLTAGE MORE THAN 10.0V?
| Y N
| |
| | 382
| | EXCHANGE ACTUATOR DRIVER CARD
| | ON A1-GATE
| | SEE SEC 2 OF MIM FOR
| | LOCATION.
| | IF FAILS TO REPAIR SEE FIELD
| | REPLACEMENT UNIT LIST - ENTRY
| | POINT R.
| |
| 383
| METER VOLTAGE (6V RANGE)
| A1-D2S03 (POS)
| A1-D2U08 (NEG)
| IS THE VOLTAGE LESS THAN 0.8V?
| Y N
| |
| | 384
| | EXCHANGE ACTUATOR DRIVER CARD
| | ON A1-GATE
| | SEE SEC 2 OF MIM FOR
| | LOCATION.
| | IF FAILS TO REPAIR INSTALL
| | ORIGINAL CARD
| | EXCHANGE CARD A1-F2
| | IF FAILS TO REPAIR SEE FIELD
| | REPLACEMENT UNIT LIST - ENTRY
| | POINT R.
| |
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| |
| 385
| EXCHANGE ACTUATOR DRIVER CARD
| ON A1-GATE
| SEE SEC 2 OF MIM FOR LOCATION.
| IF FAILS TO REPAIR INSTALL
| ORIGINAL CARD
| EXCHANGE CARD A1-D2
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT R.
|
386
SWITCH PROBE TO MST1

PROBE MST1 A1-E2J12 (2F WRITE
CLOCK)
IS LINE PULSING?
Y N
|
| 387
| CHECK SEATING OF JUMPERS ON
| CARD A1-E2
| IF FAILS TO REPAIR
| EXCHANGE CARD A1-E2
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT R.
|
388
SWITCH PROBE TO MULTI

PROBE VTL A1-D2B03 (+ LIN REG N
OF EVEN TRK)
IS LINE PULSING?
Y N
|
| 389
| EXCHANGE CARD A1-E2
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT R.
|
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| | |
| | |
| | 390
| | CHECK SEATING OF JUMPERS ON
| | CARD A1-D2
| | IF FAILS TO REPAIR
| | EXCHANGE CARD A1-D2
| | IF FAILS TO REPAIR SEE FIELD
| | REPLACEMENT UNIT LIST - ENTRY
| | POINT R.
| |
| 391
| METER VOLTAGE (6V RANGE)
| A1-E2B13 (NEG)
| A1-E2D08 (POS)
| IS THE VOLTAGE MORE THAN 4.0V?
| Y N
| |
| | 392
| | EXCHANGE ACTUATOR DRIVER CARD
| | ON A1-GATE
| | SEE SEC 2 OF MIM FOR
| | LOCATION.
| | IF FAILS TO REPAIR INSTALL
| | ORIGINAL CARD
| | EXCHANGE CARD A1-F2
| | IF FAILS TO REPAIR SEE FIELD
| | REPLACEMENT UNIT LIST - ENTRY
| | POINT R.
| |
| 393
| EXCHANGE CARD A1-E2
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT R.
|
394
SWITCH PROBE TO MULTI

PROBE VTL A1-F2G03 (+ COIL
CURRENT LOW)
IS LINE DOWN?
Y N
| |
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| |
| |
| 395
| PROBE VTL A1-F2S12 (+ NSW)
| IS LINE DOWN?
| Y N
| |
| | 396
| | EXCHANGE CARD A1-D2
| | IF FAILS TO REPAIR SEE FIELD
| | REPLACEMENT UNIT LIST - ENTRY
| | POINT R.
| |
| 397
| SWITCH PROBE TO MST1
|
| PROBE MST1 A1-E2B09 (- G)
| IS LINE PULSING?
| Y N
| |
| | 398
| | EXCHANGE CARD A1-E2
| | IF FAILS TO REPAIR SEE FIELD
| | REPLACEMENT UNIT LIST - ENTRY
| | POINT R.
| |
| 399
| EXCHANGE CARD A1-F2
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT R.
|
400
PROBE VTL A1-F2E12 (+ NORMAL
ERROR)
IS LINE PULSING?
Y N
|
| 401
| EXCHANGE CARD A1-F2
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT R.
|
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| | |
| | |
| | 402
| | EXCHANGE CARD A1-E2
| | IF FAILS TO REPAIR SEE  FIELD
| | REPLACEMENT UNIT LIST - ENTRY
| | POINT R.
| |
| 403
| EXCHANGE CARD A1-E2
| IF  FAILS  TO  REPAIR SEE FIELD
| REPLACEMENT UNIT LIST  -  ENTRY
| POINT R.
|
404
PROBE  VTL  A1-D2G04 (- SEL DEMOD
N1)
IS LINE PULSING?
Y N
|
| 405
| PROBE VTL  A1-D2S10  (-  SYSTEM
| SECTOR)
| IS LINE PULSING?
| Y N
| |
| | 406
| | EXCHANGE CARD A1-D2
| | (95%)
| | IF  FAILS  TO  REPAIR INSTALL
| | ORIGINAL CARD
| | EXCHANGE CARD A1-C2
| | IF FAILS TO REPAIR SEE  FIELD
| | REPLACEMENT UNIT LIST - ENTRY
| | POINT R.
| |
| 407
| PROBE VTL A1-F2G12 (+ ON TRACK)
| IS LINE UP?
| Y N
| | |
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| 408
| EXCHANGE CARD A1-D2
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT R.
|
409
PROBE VTL A1-D2U04 (+ SEL
INTEGRATOR)
IS LINE UP?
Y N
|
| 410
| EXCHANGE CARD A1-D2
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT R.
|
411
PROBE VTL A1-F2S12 (+ NSW)
IS LINE DOWN?
Y N
|
| 412
| METER VOLTAGE (6V RANGE)
| A1-D2S03 (POS)
| A1-D2U08 (NEG)
| IS VOLTAGE MORE THAN 1.1V?
| Y N
| |
| | 413
| | METER VOLTAGE (6V RANGE)
| | A1-F2U05 (POS)
| | A1-F2U08 (NEG)
| | IS VOLTAGE MORE THAN 1.0V?
| | Y N
| | |
| | | 414
| | | EXCHANGE CARD A1-D2
| | | IF FAILS TO REPAIR SEE
| | | FIELD REPLACEMENT UNIT LIST
| | | - ENTRY POINT R.
| | |
| | |
```

| |
| |
| 415
| EXCHANGE ACTUATOR DRIVER CARD
| ON A1-GATE
| SEE SEC 2 OF MIM FOR LOCATION.
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT R.
|
416
PROBE VTL A1-D2G08 (- SECTOR
PULSES MISSING)
IS LINE UP?
Y N
|
| 417
| EXCHANGE CARD A1-F2
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT R.
|
418
ADD JUMPER A1-F2P11 TO A1-F2P08

METER VOLTAGE (60V RANGE)
A1-F2M05 (POS)
A1-F2P08 (NEG)
IS THE VOLTAGE MORE THAN 10V?
Y N
|
| 419
| EXCHANGE CARD A1-E2
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT R.
|
420
EXCHANGE ACTUATOR DRIVER CARD ON
A1-GATE
SEE SEC 2 OF MIM FOR LOCATION.
IF FAILS TO REPAIR SEE FIELD
REPLACEMENT UNIT LIST - ENTRY
POINT R.

```
| |
| |
| 421
| POWER OFF
| METER RESISTANCE (RX1 SCALE)
| A1-F2U05 TO F2U08)
| A1-F2S05 TO F2U08)
| ARE  BOTH RESISTANCES LESS THAN
| 10 OHMS?
| Y N
| |
| | 422
| | EXCHANGE ACTUATOR DRIVER CARD
| | ON A1-GATE
| | SEE   SEC   2   OF   MIM  FOR
| | LOCATION.
| | IF FAILS TO REPAIR SEE  FIELD
| | REPLACEMENT UNIT LIST - ENTRY
| | POINT R.
| |
| 423
| EXCHANGE CARD A1-F2
| IF  FAILS  TO  REPAIR SEE FIELD
| REPLACEMENT UNIT LIST  -  ENTRY
| POINT R.
|
424
PROBE VTL A1-F2B03 (- EVEN)
IS LINE DOWN?
Y N
|
| 425
| EXCHANGE CARD A1-E2
| IF  FAILS  TO  REPAIR SEE FIELD
| REPLACEMENT UNIT LIST  -  ENTRY
| POINT R.
|
426
SWITCH PROBE TO MST1

PROBE MST1 A1-B2U10 (DATA S.S.)
IS LINE PULSING?
Y N
| |
| |
| |
```

| |
| |
| 427
| EXCHANGE CARD A1-B2
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT R.
|
428
METER THE FOLLOWING VOLTAGES (6V
RANGE)
A1-B2S11 (NEG) TO A1-B2U08 (POS)
A1-B2S12 (NEG) TO A1-B2U08 (POS)
ARE BOTH VOLTAGES MORE THAN 0.5V?
Y N
|
| 429
| EXCHANGE CARD A1-B2
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT R.
|
430
EXCHANGE ACTUATOR DRIVER CARD ON
A1-GATE
SEE SEC 2 OF MIM FOR LOCATION.
IF FAILS TO REPAIR INSTALL
ORIGINAL CARD
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR SEE FIELD
REPLACEMENT UNIT LIST - ENTRY
POINT R.

431
(ENTRY POINT S)

FAILING FIELD REPLACEMENT UNITS
AT THIS POINT :

FIELD REPLACEMENT UNIT	PROBABLE
DA CHAN CARD (A1-B2)	46
LOGIC 1 CARD (A1-C2)	8

INSPECT AND RESEAT CABLES ON THE
A1 BOARD OF THE FAILING FILE
CARD (A1-D2)
CARD (A1-E2)
ACTUATOR DRIVER CARD
CARD (A1-F2)
CARD (A2-C2)
CARD (A2-D2)
DE UNIT 46

TO ISOLATE FARTHER:

METER VOLTAGE (15V RANGE)
A1-B2D08 (POS)
A1-B2D04 (NEG)
IS VOLTAGE IN RANGE 10.5V TO
13.5V?
Y N
|
| 432
| EXCHANGE CARD A1-B2
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT S.
|
433
METER VOLTAGE (6V RANGE)
A1-B2D08 (POS)
A1-B2D07 (NEG)
IS VOLTAGE IN RANGE 3.5V TO 4.5V?
Y N
| |
| |
| |
| |

BOARD A NETS FOR THIS MAP:
(SEE BOARD NETLIST TABLES -
MAP7A75)
A2-02, B2-02, B2-04, B2-08,
B2-10, B2-13, C2-10, T2-01, V-04

| |
| |
| 434
| EXCHANGE CARD A1-B2
| IF FAILS TO REPAIR INSTALL
| ORIGINAL CARD
| EXCHANGE DE UNIT
| (1% PROBABLE)
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT S.
|
435
INSPECT FOR LOOSE CABLES AT A1-T1
AND A1-A2.
ARE THE CABLES SEATED CORRECTLY?
Y N
|
| 436
| RESEAT THE CABLES.
|
437
PROBE THE PINS SHOWN IN TABLE 4

TABLE 4

PROBE MST1	PROBE VTL
A2B03	A2B04	A2B06	A2B05	A2B02
D	D	U	U	D

NOTE: D=DOWN,U=UP.
ARE THE LEVELS CORRECT?
Y N
| |
| |
| |
| |
| |
| |
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| |
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| |
| |

438

TO FIND WHICH HEAD IS SELECTED
PROBE THE PINS SHOWN IN TABLE 1.
IF THE CONDITIONS MATCH, THAT
HEAD IS SELECTED.
NOTE:
MODELS 23 AND 29
PROBE ONLY THE PINS INSIDE THE
ASTERISKS(***)
MODELS 58 AND 64
PROBE ALL THE PINS

TABLE 1 BOARD A1

	PROBE MST1		PROBE VTL		
HEAD	A2B03	A2B04	A2B06	A2B05	A2B02
0	U	U	D	U *	U
1	D	U	D	U *	U
2	U	D	D	U *	U
3	D	D	D	U *	U
4	U	U	U	D *	U
5	D	U	U	D *	U
**********					
6	U	D	U	D	U
7	D	D	U	D	U
8	U	U	U	U	D
9	D	U	U	U	D
A	U	D	U	U	D

NOTE: D=DOWN,U=UP.

IS A VALID HEAD SELECTED?

Y N

439

PROBE PINS AS SHOWN IN TABLE 2

TABLE 2 BOARD A1

	PROBE VTL			
HEAD	B2P07	B2P05	B2P10	B2P06
0	U	U	U	U
1	D	U	U	U
2	U	D	U	U
3	D	D	U	U
4	U	U	D	U
5	D	U	D	U
6	U	D	D	U
7	D	D	D	U
8	U	U	U	D
9	D	U	U	D
A	U	D	U	D
B	D	D	U	D

NOTE: D=DOWN,U=UP.

PHYSICAL HEAD B IS NOT PRESENT BUT A HEAD
POSITION B IS A SPARE INPUT ON THE DISK
ACTUATOR. THE CODE FOR HEAD B IS FORCED
WHEN AN UNSAFE CONDITION IS SENSED.
HEAD B IS VALID FOR TABLE 2
IS A VALID HEAD SELECTED?
Y N

440
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT S.

```
| | |
| | |
| | 441
| |
| | GO TO PAGE 100, STEP 447,
| | ENTRY POINT ZZ.
| |
| 442
| EXCHANGE CARD A1-B2
| IF FAILS TO REPAIR INSTALL
| ORIGINAL CARD
|
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT S.
|
443
PROBE VTL A1-C2G12 (+ DATA
UNSAFE)
IS LINE UP?
Y N
|
| 444
| POWER OFF
|
| CHECK FOR SHORT ON A1-A5D11
| IS LINE SHORTED ?
| Y N
| |
| | 445
| | EXCHANGE CARD(S) A2-C2,A2-D2
| | IF FAILS TO REPAIR SEE FIELD
| | REPLACEMENT UNIT LIST - ENTRY
| | POINT S.
| |
| 446
| TRACE NET A1-C2G12 TO A1-A5D11
| THRU CABLE
|
|
|
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|
|
|
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447
(ENTRY POINT ZZ)

POWER OFF

METER RESISTANCE (RX10 SCALE)
A1-A2D04 TO A1-A2D05
IS RESISTANCE LESS THAN 300 OHMS?
Y N

448
IF FAILS TO REPAIR SEE FIELD
REPLACEMENT UNIT LIST - ENTRY
POINT S.

449
POWER ON

ADD JUMPER A1-C2G11 TO A1-C2J08
LOOP DIAGNOSTIC PROGRAM (MAP7A40
STEP 7)
REF MAP 0010 SECTION 04.02.01
STEP 9

PROBE VTL A1-C2M11 (+ DATA
UNSAFE)
IS LINE UP?
Y N

450
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR SEE FIELD
REPLACEMENT UNIT LIST - ENTRY
POINT S.

|
451
EXCHANGE CARD A1-B2
IF FAILS TO REPAIR INSTALL A1-B2

REMOVE JUMPER(S).

IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT S.

452
(ENTRY POINT T)

FAILING FIELD REPLACEMENT UNITS
AT THIS POINT :

FIELD REPLACEMENT UNIT	PROBABLE
DA CHAN CARD (A1-L2)	34
LOGIC 1 CARD (A1-C2)	12

INSPECT AND RESEAT CABLES ON THE
A1 BOARD OF THE FAILING FILE

CARD (A1-D2)	
CARD (A1-E2)	
ACTUATOR DRIVER CARD	
CARD (A1-F2)	
CARD (A2-C2)	
CARD (A2-D2)	
DE UNIT	54

TO ISOLATE FARTHER:

INSPECT FOR LOOSE CABLES AT A1-A2
AND A1-T1.
ARE THE CABLES SEATED CORRECTLY?.
Y N
|
| 453
| RESEAT THE CABLES.
|
|
|
|
|
|
|
|
|
|
|
|
|
|
|
|
|

BOARD A NETS FOR THIS MAP:
(SEE BOARD NETLIST TABLES -
MAP7A75)
B2-07, B2-10, B2-11, B2-12,
B2-13, C2-06, V-03

454

TO FIND WHICH HEAD IS SELECTED
PROBE THE PINS SHOWN IN TABLE 1.
IF THE CONDITIONS MATCH, THAT
HEAD IS SELECTED.
NOTE:
MODELS 23 AND 29
PROBE ONLY THE PINS INSIDE THE
ASTERISKS(***)
MODELS 58 AND 64
PROBE ALL THE PINS

TABLE 1 BOARD A1

	PROBE MST1		PROBE VTL		
HEAD	A2B03	A2B04	A2B06	A2B05	A2B02
0	U	U	D	U *	U
1	D	U	D	U *	U
2	U	D	D	U *	U
3	D	D	D	U *	U
4	U	U	U	D *	U
5	D	U	U	D *	U
**********					
6	U	D	U	D	U
7	D	D	U	D	U
8	U	U	U	U	D
9	D	U	U	U	D
A	U	D	U	U	D

NOTE: D=DOWN,U=UP.

IS A VALID HEAD SELECTED?

Y N

455
PROBE PINS AS SHOWN IN TABLE 2

TABLE 2 BOARD A1

	PROBE VTL			
HEAD	B2P07	B2P05	B2P10	B2P06
0	U	U	U	U
1	D	U	U	U
2	U	D	U	U
3	D	D	U	U
4	U	U	D	U
5	D	U	D	U
6	U	D	D	U
7	D	D	D	U
8	U	U	U	D
9	D	U	U	D
A	U	D	U	D
B	D	D	U	D

NOTE: D=DOWN,U=UP.

PHYSICAL HEAD B IS NOT PRESENT BUT A HEAD
POSITION B IS A SPARE INPUT ON THE DISK
ACTUATOR. THE CODE FOR HEAD B IS FORCED
WHEN AN UNSAFE CONDITION IS SENSED.
HEAD B IS VALID FOR TABLE 2
IS A VALID HEAD SELECTED?
Y N

456
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT T.

| |
| 457
| EXCHANGE CARD A1-B2
| (95%)
| IF FAILS TO REPAIR INSTALL
| ORIGINAL CARD
| EXCHANGE CARD A1-C2
| IF FAILS TO REPAIR INSTALL
| ORIGINAL CARD
|
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT T.
|
458
IS LOOP ON DIAGNOSTIC SECTIONS
AVAILABLE?
Y N
|
| 459
| EXCHANGE CARD A1-B2
| IF FAILS TO REPAIR INSTALL
| ORIGINAL CARD
| EXCHANGE CARD A1-C2
| IF FAILS TO REPAIR INSTALL
| ORIGINAL CARD
|
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT T.
|
460
LOOP DIAGNOSTIC PROGRAM MAP7A20
OR MAP7A40
SEE NOTE AT RIGHT

SWITCH PROBE TO MST1
PROBE MST1 A1-B2P04 (HEAD SELECT
B)

(NOTE: DOWN LIGHT MAY REMAIN OFF
BUT UP LIGHT WILL PULSE IF LINE
IS PULSING)
(STEP 460 CONTINUES)

'NOTE' IF MAP7A20 WAS RUN IN
MANUAL MODE BEFORE THIS MAP, LOOP
7A20 ON STEP 41. IF MAP7A30 WAS
RUN LOOP 7A30 ON STEP 15. IF
MAP7A40 WAS RUN LOOP 7A40 ON STEP
5
REF MAP 0010 SECTION 04.02.01
STEP 9

(STEP 460 CONTINUED)
IS LINE PULSING?
Y N
|
| 461
| EXCHANGE CARD A1-B2
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT T.
|
462
DOES FILE HAVE FIXED HEADS?
Y N
|
| 463
| PROBE VTL A1-C2G02 (- HEAD
| SELECT 8)
| (OBSERVE FOR 1 MINUTE)
| IS LINE PULSING?
| Y N
| |
| | 464
| | EXCHANGE CARD A1-C2
| | IF FAILS TO REPAIR SEE FIELD
| | REPLACEMENT UNIT LIST - ENTRY
| | POINT T.
| |
| 465
| EXCHANGE CARD A1-B2
| IF FAILS TO REPAIR INSTALL
| ORIGINAL CARD
| EXCHANGE CARD A1-C2
| IF FAILS TO REPAIR INSTALL
| ORIGINAL CARD
|
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT T.
|
|
|
|
|
|

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|
466
LOOP DIAGNOSTIC PROGRAM (MAP7A40)
STEP 27

PROBE VTL A1-B2M07 (CHIP SELECT
5)
AND A1-B2M08 (CHIP SELECT 4)
(OBSERVE FOR 1 MINUTE)
ARE BOTH LINES PULSING?
Y N
|
| 467
| PROBE VTL A1-C2G02 (- HEAD
| SELECT 8)
| (OBSERVE FOR 1 MINUTE)
| IS LINE PULSING?
| Y N
| |
| | 468
| | EXCHANGE CARD A1-C2
| | IF FAILS TO REPAIR SEE FIELD
| | REPLACEMENT UNIT LIST - ENTRY
| | POINT T.
| |
| 469
| EXCHANGE CARD A1-B2
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT T.
|
470
EXCHANGE CARD A1-B2
IF FAILS TO REPAIR INSTALL
ORIGINAL CARD
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR INSTALL
ORIGINAL CARD

IF FAILS TO REPAIR SEE FIELD
REPLACEMENT UNIT LIST - ENTRY
POINT T.
```

'NOTE' IF MAP7A40 IS RUN IN LOOP MODE HERE THE ROUTINE WRITES ON THE FIXED HEADS. CHECK WITH THE CUSTOMER FIRST.
REF MAP 0010 SECTION 04.02.01
STEP 9

471
(ENTRY POINT U)

FAILING FIELD REPLACEMENT UNITS
AT THIS POINT :

FIELD REPLACEMENT UNIT	PROBABLE
LOGIC 2 CARD (A1-D2)	48
LOGIC 1 CARD (A1-C2)	23
SERVO 2 CARD (A1-F2)	22
SERVO 1 CARD (A1-E2)	7

INSPECT AND RESEAT CABLES ON THE
A1 BOARD OF THE FAILING FILE

TO ISOLATE FARTHER:

METER VOLTAGE (6V RANGE)
A1-E2B07 (NEG)
A1-E2D08 (POS)
IS THE VOLTAGE MORE THAN 1.8V?
Y N
|
| 472
| CHECK SEATING OF JUMPERS ON
| CARD A1-E2
| IF FAILS TO REPAIR
| EXCHANGE CARD A1-E2
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT U.
|
473
PROBE VTL A1-F2G03 (+ COIL
CURRENT LOW)
IS LINE PULSING?
Y N
| |
| |
| |
| |
| |
| |
| |

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|
474
PROBE VTL A1-D2B04 (VEL>PROFILE)
IS LINE DOWN?
Y N
|
| 475
| PROBE  VTL  A1-C2D10 (+ RELEASE
| TRACK ADDRESS)
| IS LINE DOWN?
| Y N
| |
| | 476
| | EXCHANGE CARD A1-D2
| | IF FAILS TO REPAIR SEE  FIELD
| | REPLACEMENT UNIT LIST - ENTRY
| | POINT U.
| |
| 477
| METER VOLTAGE (6V RANGE)
| A1-C2D02 (POS)
| A1-C2D08 (NEG)
| IS THE VOLTAGE LESS THAN 0.5V?
| Y N
| |
| | 478
| | EXCHANGE CARD A1-D2
| | IF  FAILS TO REPAIR SEE FIELD
| | REPLACEMENT UNIT LIST - ENTRY
| | POINT U.
| |
| 479
| METER VOLTAGE (6V RANGE)
| A1-D2S03 (POS)
| A1-D2D08 (NEG)
| IS THE VOLTAGE LESS THAN 0.8V?
| Y N
| |
| | 480
| | EXCHANGE CARD A1-C2
| | IF FAILS TO REPAIR SEE  FIELD
| | REPLACEMENT UNIT LIST - ENTRY
| | POINT U.
| |
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| |
| 481
| PROBE VTL A1-D2U06 (+ SERVO
| PROTECT)
| IS LINE PULSING?
| Y N
| |
| | 482
| | EXCHANGE CARD A1-D2
| | IF FAILS TO REPAIR INSTALL
| | ORIGINAL CARD
| | EXCHANGE CARD A1-C2
| | IF FAILS TO REPAIR SEE FIELD
| | REPLACEMENT UNIT LIST - ENTRY
| | POINT U.
| |
| 483
| EXCHANGE CARD A1-D2
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT LIST - ENTRY
| POINT U.
|
484
PROBE VTL A1-D2B03 (+ LIN REG N
OF EVEN TRK)
IS LINE UP?
Y N
|
| 485
| PROBE VTL A1-D2M10 (+ REL TRK
| ADR 128)
| IS LINE DOWN?
| Y N
| |
| | 486
| | EXCHANGE CARD A1-C2
| | IF FAILS TO REPAIR SEE FIELD
| | REPLACEMENT UNIT LIST - ENTRY
| | POINT U.
| |
| |
| |
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|
487
PROBE  VTL  A1-D2U06   (+   SERVO
PROTECT)
IS LINE PULSING?
Y N
|
| 488
| PROBE  VTL  A1-C2D10 (+ RELEASE
| TRACK ADDRESS)
| IS LINE DOWN?
| Y N
| |
| | 489
| | EXCHANGE CARD A1-D2
| | IF FAILS TO REPAIR SEE  FIELD
| | REPLACEMENT UNIT LIST - ENTRY
| | POINT U.
| |
| 490
| SWITCH PROBE TO MST1
| PROBE MST A1-E2B09 (- G)
| IS LINE PULSING?
| Y N
| |
| | 491
| | METER VOLTAGE (6V RANGE)
| | A1-C2D02 (POS)
| | A1-C2D08 (NEG)
| | IS  THE  VOLTAGE  LESS   THAN
| | 0.5V?
| | Y N
| | |
| | | 492
| | | EXCHANGE CARD A1-C2
| | | IF  FAILS TO REPAIR INSTALL
| | | ORIGINAL CARD
| | | EXCHANGE CARD A1-E2
| | | IF   FAILS  TO  REPAIR  SEE
| | | FIELD REPLACEMENT UNIT LIST
| | | - ENTRY POINT U.
| | |
| | |
| | |
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| | |
| | 493
| | METER VOLTAGE (6V RANGE)
| | A1-D2S03 (POS)
| | A1-D2U08 (NEG)
| | IS   THE  VOLTAGE  MORE  THAN
| | 1.0V?
| | Y N
| | | |
| | | 494
| | | EXCHANGE CARD A1-D2
| | | IF FAILS TO REPAIR  INSTALL
| | | ORIGINAL CARD
| | | EXCHANGE CARD A1-F2
| | | IF  FAILS  TO  REPAIR   SEE
| | | FIELD REPLACEMENT UNIT LIST
| | | - ENTRY POINT U.
| | | |
| | 495
| | EXCHANGE CARD A1-C2
| | IF  FAILS TO REPAIR SEE FIELD
| | REPLACEMENT UNIT LIST - ENTRY
| | POINT U.
| |
| 496
| EXCHANGE CARD A1-C2
| IF FAILS TO  REPAIR  SEE  FIELD
| REPLACEMENT  UNIT  LIST - ENTRY
| POINT U.
|
497
PROBE VTL A1-F2P11 (- IN DRIVE)
IS LINE UP?
Y N
|
| 498
| EXCHANGE CARD A1-D2
| IF FAILS TO  REPAIR  SEE  FIELD
| REPLACEMENT  UNIT  LIST - ENTRY
| POINT U.
|
|
|
|
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|
499
PROBE MST A1-E2B09 (- G)
IS LINE PULSING?
Y N
|
| 500
| PROBE VTL  A1-D2G08  (-  SECTOR
| PULSES MISSING)
| IS LINE UP?
| Y N
| |
| | 501
| | EXCHANGE CARD A1-D2
| | IF  FAILS TO REPAIR SEE FIELD
| | REPLACEMENT UNIT LIST - ENTRY
| | POINT U.
| |
| 502
| METER VOLTAGE (6V RANGE)
| A1-C2D02 (POS)
| A1-C2D08 (NEG)
| IS THE VOLTAGE LESS THAN 0.5V?
| Y N
| |
| | 503
| | EXCHANGE CARD A1-E2
| | IF FAILS TO REPAIR SEE  FIELD
| | REPLACEMENT UNIT LIST - ENTRY
| | POINT U.
| |
| 504
| METER VOLTAGE (6V RANGE)
| A1-D2S03 (POS)
| A1-D2U08 (NEG)
| IS THE VOLTAGE MORE THAN 0.8V?
| Y N
| |
| | 505
| | EXCHANGE CARD A1-D2
| | IF  FAILS TO REPAIR SEE FIELD
| | REPLACEMENT UNIT LIST - ENTRY
| | POINT U.
| |
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| | | |
| | | 506
| | | EXCHANGE CARD A1-F2
| | | IF   FAILS  TO  REPAIR  SEE
| | | FIELD REPLACEMENT UNIT LIST
| | | - ENTRY POINT U.
| | |
| | 507
| | EXCHANGE CARD A1-D2
| | IF FAILS TO REPAIR SEE  FIELD
| | REPLACEMENT UNIT LIST - ENTRY
| | POINT U.
| |
| 508
| EXCHANGE CARD A1-E2
| IF  FAILS  TO  REPAIR SEE FIELD
| REPLACEMENT UNIT LIST  -  ENTRY
| POINT U.
|
509
PROBE  VTL  A1-F2B12  (+   NORMAL
ERROR)
OBSERVE FOR 1 MINUTE.)
IS LINE PULSING?
Y N
|
| 510
| PROBE  VTL  A1-D2J13  (-   SEEK
| COMPLETE)
| IS LINE DOWN?
| Y N
| |
| | 511
| | EXCHANGE CARD A1-D2
| | IF  FAILS TO REPAIR SEE FIELD
| | REPLACEMENT UNIT LIST - ENTRY
| | POINT U.
| |
| 512
| EXCHANGE CARD A1-F2
| IF FAILS TO  REPAIR  SEE  FIELD
| REPLACEMENT  UNIT  LIST - ENTRY
| POINT U.
|
```

|
513
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR SEE FIELD
REPLACEMENT UNIT LIST - ENTRY
POINT U.

514
(ENTRY POINT DC)
SET THE MULTIMETER DC VOLTS SCALE TO APPROXIMATELY 25 PERCENT MORE THAN THE NOMINAL VOLTAGE INDICATED ON THE CHART.

POWER ON.

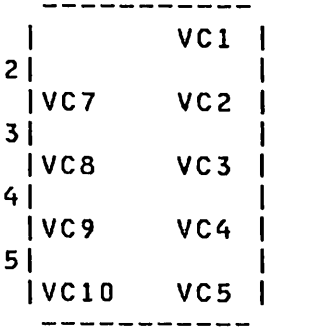
CONNECT THE POSITIVE TEST LEAD OF THE MULTIMETER TO THE CONNECTOR PIN INDICATED ON THE CHART AND THE NEGATIVE TEST LEAD OF THE MULTIMETER TO THE CONNECTOR PIN INDICATED ON THE CHART.
NOTE: FOR MINUS VOLTAGES (-4,-12,-5) THE PROBE LEADS ARE REVERSED TO PERMIT A POSITIVE READING ON THE METER.

SEE CHARTS ON THE FOLLOWING TWO PAGES.

(STEP 514 CONTINUES)

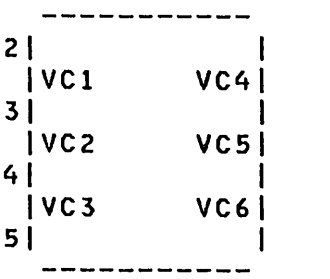
(STEP 514 CONTINUED)

BOARD (A1)



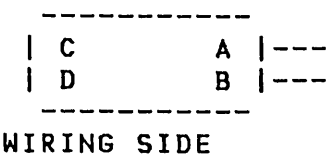
PIN SIDE VIEW
PICTURE MIM 2.15

BOARD (A2)



PIN SIDE VIEW
BOARD IN HORIZONTAL POSITION.
PICTURE MIM 2.10

BOARD CONNECTOR



WIRING SIDE

(STEP 514 CONTINUES)

(STEP 514 CONTINUED)

NOMINAL VOLTAGE	MINIMUM VOLTAGE	NEGATIVE TEST LEAD	POSITIVE TEST LEAD
+ 5.0	+ 4.60	A1 VC2-A	A1 VC2-C
		A1 VC4-A	A1 VC4-C
		A2 VC3-A	A2 VC3-C
		A2 VC3-D	A2 VC3-B
		A2 VC2-A	A2 VC2-B
		A2 VC1-A	A2 VC1-B
		A2 VC4-C	A2 VC4-D
		A2 VC5-C	A2 VC5-D
		A2 VC6-C	A2 VC6-D
+12.0	+11.04	A1 VC2-D	A1 VC1-C
+24.0	+22.08	A1 VC5-D	A1 VC5-C
- 4.0	- 3.68	A1 VC2-B	A1 VC2-D
		A1 VC2-B	A1 VC2-A
		A1 VC4-B	A1 VC4-A
		A1 VC4-B	A1 VC4-D
-12.0	-11.04	A1 VC1-D	A1 VC4-A
		A1 VC1-D	A1 VC2-A
- 5.0	- 4.55	A2 VC2-C	A2 VC2-A
+ 8.5	+ 7.82	A2 VC1-A	A2 VC2-D

ARE THE VOLTAGES OK AS INDICATED
ON THE CHART?
Y N
|
| 515
| POWER DOWN.
| CHECK CABLE AT FAILING VOLTAGE
| LOCATION FOR OPENS AND SHORTS.
| IS CABLE OK?
| Y N
| | |
| | |

```
| | |
| | 516
| | REPAIR OR EXCHANGE  CABLE  AS
| | REQUIRED.
| | VERIFY REPAIR.
| |
| 517
| EXCHANGE POWER SUPPLY.
|
518
RETURN  TO THE STEP THAT SENT YOU
HERE TO CHECK THE VOLTAGES.
```

PAGE 1 OF 4

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP ENTRY POINT	PAGE NUMBER	STEP NUMBER
7A21	A	1	001

001
(ENTRY POINT A)

THIS MAP ISOLATES FAILURES THAT CAUSE NO COMMUNICATION BETWEEN FILE AND SYSTEM ADAPTER

FAILING FIELD REPLACEMENT UNITS AT THIS POINT ARE:

FIELD REPLACEMENT UNIT	PROBABLE
LOGIC 1 CARD (A1-C2)	53
DISK CNTL A2-C2,A2-D2	20
LOGIC 2 CARD (A1-D2)	10
SERVO 2 CARD (A1-F2)	3
DA CHAN CARD (A1-B2)	2
CABLES FROM DISK CNTL	12

TO FARTHER ISOLATE :
ARE ALL FILES TURNED ON?
Y N
|
| 002
| TURN ALL FILES ON, THEN RUN
| DIAGNOSTICS.
|
003
ARE ALL FILES POWERED UP (IS LED ON)?
Y N
| |
| |
| |
| |

 20MAY83 PN8327696

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2 2
A B

PAGE 2 OF 4

004
GO TO MAP 7A80 FOR POWERED OFF FILE

005
CHECK FOR +5 VOLTS TO FILE
METER VOLTAGE BETWEEN A1-B2D03 (POS) AND A1-B2D08 (NEG)
IS VOLTAGE BETWEEN +4.5 TO +5.5 ?
Y N

006
GO TO MAP 7A80 EP=A FOR FAILING FILE

007
PROBE VTL A1-C2B03 (+ DEGATE BUS)
IS LINE DOWN?
Y N

008
POWER OFF

CHECK CONTINUITY THROUGH CABLE
A1-A5
A1-A5B12 (INTERFACE DEGATE)
REFERENCE SF503-SF508 FOR PIN LOCATIONS
IS CONTINUITY CORRECT?
Y N

009
REPAIR OR EXCHANGE CABLE A1-A5
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT PROBABLE TABLE AT ENTRY POINT A.

| |
| | PAGE 3 OF 4
| |
| |
| 010
| EXCHANGE CARDS A2-D2,A2-C2
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT PROBABLE TABLE
| AT ENTRY POINT A.
|
011
POWER OFF

CHECK CONTINUITY OF CABLE LINES
CHECKING CONTROL SAMPLE LINE
A2-B2B12 TO A1-A3B12 (FILE 0)
TO A1-A3B12 (FILE 1)
TO A1-A3B12 (FILE 2)
TO A1-A3B12 (FILE 3)

A2-B3B03 TO A1-A5B03 (FILE 0)
A2-B4B03 TO A1-A5B03 (FILE 1)
A2-A4B03 TO A1-A5B03 (FILE 2)
A2-A3B03 TO A1-A5B03 (FILE 3)
IS CONTINUITY CORRECT?
Y N
|
| 012
| EXCHANGE FAILING CABLE
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT PROBABLE TABLE
| AT ENTRY POINT A.
|
013
POWER ON

PROBE VTL A1-D2U09 (PWR ON
DELAYED)
IS LINE UP?
Y N
|
| 014
| EXCHANGE CARD A1-F2
| IF FAILS TO REPAIR SEE FIELD
| REPLACEMENT UNIT PROBABLE TABLE
| AT ENTRY POINT A.
|
|
|
|

015
PROBE VTL A1-B2M10 (2F WRITE CLOCK)
PROBE VTL A1-B2U07 (1F READ CLOCK)
PROBE VTL A1-B2U11 (1F WRITE CLOCK)
PROBE VTL A1-B2U12 (1F WRITE CLOCK)
ARE LINES PULSING?
Y N

016
EXCHANGE CARD A1-B2
EXCHANGE CARD A1-E2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT PROBABLE TABLE AT ENTRY POINT A.

017
CHECK SEATING OF JUMPERS ON CARD A1-C2
IF FAILS TO REPAIR
EXCHANGE CARD A1-C2
95% PROBABLE
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT PROBABLE TABLE AT ENTRY POINT A.

THESE CLOCK LINES ARE USED BY THE A2-C2 AND A2-D2 CARDS. WHEN THEY ARE NOT PULSING THE CONTROLLER DOES NOT RUN WHICH CAUSES TIME OUT CONDITIONS

PARITY FAILURE

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
7A20	A	1	001

001
(ENTRY POINT A)
THIS MAP ISOLATES PARITY/INTERUPT FAILURES CAUSED BY THE DSF.

PROBE VTL A1-C2U13 (+ PARITY ERROR TP)
IS LINE UP?
Y N
|
| 002
| PROBE VTL A1-C2B08 (+ BRAKE APPLIED)
| IS LINE DOWN?
| Y N
| |
| | 003
| | EXCHANGE A1-D2 CARD
| | IF IT FAILS TO REPAIR THE PROBLEM
| | EXCHANGE A1-C2 CARD
| |
| 004
| POWER DOWN
|
| CHECK CABLE AT A1A3 FOR OPENS AND SHORTS. EXCHANGE AS REQUIRED.
| WAS CABLE OK?
| Y N
		20MAY83 PN8327697
		REVISED 1979 ECA03143 PEC375609

NOTE* CABLE PROBLEMS MAY DIRECT YOU INTO THIS MAP. CHECK ALL FILE(S) INSTALLED. IF NOT ABLE TO ISOLATE WITH THIS MAP GOTO MAP7A91.

005
VERIFY REPAIR.

006
EXCHANGE A1-C2 CARD
IF IT FAILS TO REPAIR THE
PROBLEM
EXCHANGE A2-C2 CARD
IF IT FAILS TO REPAIR THE
PROBLEM
EXCHANGE A1-D2 CARD

007
POWER OFF

CHECK CONTINUITY OF A1 BOARD
CONDUCTORS:

A3B02	TO A4B02	TO C2M09
A3B03	TO A4B03	TO C2M07
A3B04	TO A4B04	TO C2P07
A3B05	TO A4B05	TO C2M08
A3D04	TO A4D04	TO C2M04
A3D05	TO A4D05	TO C2P02
A3D06	TO A4D06	TO C2M03
A3D07	TO A4D07	TO C2M02
A3D09	TO A4D09	TO C2M05
A3D10	TO A4D10	TO C2P06
A3D11	TO A4D11	TO C2P05
A3D12	TO A4D12	TO C2M06
A3D13	TO A4D13	TO C2P04

IS CONTINUITY OK?
Y N

008
EXCHANGE OR REPAIR BOARD A1

009
POWER DOWN

CHECK CABLE AT A1A3 FOR OPENS AND
SHORTS. EXCHANGE AS REQUIRED.
WAS CABLE OK?
Y N
|
| 010
| VERIFY REPAIR.
|
011
EXCHANGE A1-C2 CARD.
IF IT FAILS TO REPAIR THE PROBLEM
EXCHANGE A2-C2 CARD.

POWER SUPPLY FAILURE

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
7A21	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	004	7A70	F

001
(ENTRY POINT A)
POWER OFF

ADD JUMPERS
A1-D2G10 TO A1-D2J08
A1-D2G11 TO A1-C2J08

REMOVE THE CARDS
A1-B2, A1-C2, A1-D2, A1-E2 AND
A1-F2

POWER ON
DID FILE POWER DOWN?
Y N
|
| 002
| INSTALL CARDS ONE AT A TIME TO
| FIND FAILING CARD
| REPAIR AS NECESSARY
|
| REMOVE JUMPERS
|

2
A

003
POWER OFF

REMOVE ACTUATOR DRIVER CARD
CROSSOVER CONNECTORS GATE A1

POWER ON
DID FILE POWER DOWN?
Y N
|
| 004
| EXCHANGE ACTUATOR DRIVER CARD
| GATE A1
|
| REMOVE JUMPERS
| GO TO MAP 7A70, ENTRY POINT F.
|
005
POWER OFF

REMOVE ALL REMAINING BOARD A1
CROSSOVER CONNECTORS

CHECK FOR SHORT TO GROUND AT
FOLLOWING PINS:

+5 VOLTS F2D03

-4 VOLTS F2B06

+12 VOLTS F2B11

-12 VOLTS F2D12

+24 VOLTS F3B02
ARE ANY PINS SHORT TO GROUND?
Y N
| |
| |
| |
| |
| |
| |
| |
| |
| |

POWER SUPPLY FAILURE

006
SUSPECT DISK UNIT POWER SUPPLY CABLES.

REMOVE JUMPERS

GO TO POWER SUPPLY MAP .
MAP7A80-B

007
EXCHANGE BOARD A1

REMOVE JUMPERS

PAGE 1 OF 69

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP ENTRY POINT	PAGE NUMBER	STEP NUMBER
XXXX	A	1	001
XXXX	B	35	121
XXXX	C	27	094
XXXX	D	50	149
XXXX	E	53	156
XXXX	F	55	161
XXXX	G	56	162
XXXX	H	57	163
XXXX	J	58	164
XXXX	L	59	167
XXXX	M	63	179
XXXX	N	61	173
XXXX	P	59	165
XXXX	BB	66	190
XXXX	CC	44	134
XXXX	DD	7	021

EXIT POINTS

EXIT THIS MAP PAGE NUMBER	STEP NUMBER	TO MAP NUMBER	ENTRY POINT
4	010	1471	A
23	077	7A73	A
19	067	7A73	A
68	196	7A73	A
23	078	7A76	A
24	081	7A76	A
45	136	7A79	A
46	141	7A79	A
20	070	7A81	A
17	053	7A81	B
18	061	7A81	B
34	120	7A81	B
42	130	7A81	B
60	169	7A81	B
62	175	7A81	B
67	192	7A81	B

001
(ENTRY POINT A)
POWER ON ALL SERIES/1 UNITS
OBSERVE ALL SAFETY RULES.
ENSURE THAT THE 4963 AC POWER CABLE IS CONNECTED TO THE CUSTOMER'S AC POWER OUTLET OR OR TO THE 4997 POWER OUTLET. ENSURE THAT THE CUSTOMER'S AC POWER OUTLET OR 4997 CIRCUIT BREAKER IS SWITCHED ON.
TIME THE POWER GOOD LED TO DETERMINE THE CORRECT ENTRY POINT. SWITCH ON THE FAILING 4963 AC POWER SWITCH.
(STEP 001 CONTINUES)

20MAY83 PN6826996

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(STEP 001 CONTINUED)
IS THE POWER GOOD LED INDICATOR LIGHTED CONTINUOUSLY FOR MORE THAN 30 SECONDS?
Y N
|
| 002
| DOES THE POWER GOOD LED COME ON IN FIVE SECONDS OR LESS AND THEN GO OFF IN TWENTY OR THIRTY SECONDS?
| Y N
| |
| | 003
| | DOES THE POWER GOOD LED COME ON FOR ONE TO THREE SECONDS AND THEN GO OFF?
| | Y N
| | |
| | | 004
| | | DOES THE POWER GOOD LED FLASH STEADILY AT A ONE HERTZ RATE?
| | | Y N
| | | |
| | | | 005
| | | | THEN THE POWER GOOD LED IS OFF.
| | | | OBSERVE ALL SAFETY RULES.
| | | | SWITCH OFF THE 4963 AC POWER SWITCH.
| | | | REMOVE THE 4963 COVER. (SEE MIM 3.1.1).
| | | | ENSURE THAT THE 4963 AC POWER CABLE IS CONNECTED TO THE CUSTOMER'S AC POWER OUTLET OR TO THE 4997 POWER SOCKET.
| | | | ENSURE THAT THE CUSTOMER'S AC POWER OUTLET SWITCH OR THE 4997 CIRCUIT BREAKER IS SWITCHED ON. SWITCH ON
| | | | (STEP 005 CONTINUES)
| | | |
| | | |

(STEP 005 CONTINUED)
THE 4963 AC POWER SWITCH.
ARE ONE OR MORE OF THE FAN MOTORS RUNNING FOR EVEN A SHORT TIME (TWO SECONDS)?
Y N

006

DANGER

THE VOLTAGE TO BE MEASURED IS DANGEROUS. BE CAREFUL TO ENSURE YOUR SAFETY. DO NOT TOUCH THE NOT INSULATED PARTS OF THE MULTIMETER PROBES.

SWITCH OFF THE 4963 AC POWER SWITCH. DISCONNECT THE 4963 AC POWER CABLE FROM THE CUSTOMER'S AC POWER OUTLET OR FROM THE 4997 POWER OUTLET.
SET THE MULTIMETER SCALE TO AT LEAST 250 VOLTS AC.
CONNECT THE TEST LEADS OF THE MULTIMETER TO THE CUSTOMER'S AC POWER OUTLET OR TO THE 4997 POWER SOCKET.
IS THE VOLTAGE APPROXIMATELY THE RATED 4963 INPUT VOLTAGE?
Y N

007
CHECK TO ENSURE THAT THE 4997 CIRCUIT BREAKER IS IN THE POWER ON POSITION OR REQUEST THE CUSTOMER TO CHECK IF HIS CIRCUIT BREAKER IS IN THE POWER ON POSITION. IF THE CUSTOMER HAS AC FUSES REQUEST THAT HE CHECK TO SEE IF THE FUSES ARE GOOD.
NOW IS THE VOLTAGE AT THE CUSTOMER'S AC POWER OUTLET OR THE 4997 POWER SOCKET APPROXIMATELY THE RATED 4963 INPUT VOLTAGE?
Y N

008
WAS THE 4963 AC POWER CABLE IN A 4997 AC POWER SOCKET?
Y N

009
INFORM THE CUSTOMER THAT HE HAS AN AC POWER OUTLET FAILURE. VERIFY THE REPAIR.

010
GO TO MAP 1471, ENTRY POINT A.

011
REMOVE THE TEST LEADS OF THE MULTIMETER FROM THE AC OUTLET. CONNECT THE 4963 AC POWER CABLE TO THE CUSTOMER'S AC POWER OUTLET OR TO THE 4997 POWER SOCKET. SWITCH ON THE 4963 AC POWER SWITCH.
DOES THE 4963 TRIP THE 4997 CIRCUIT BREAKER OR THE CUSTOMER'S CIRCUIT BREAKER OR BLOW THE CUSTOMER'S AC FUSES?
Y N

PAGE 5 OF 69

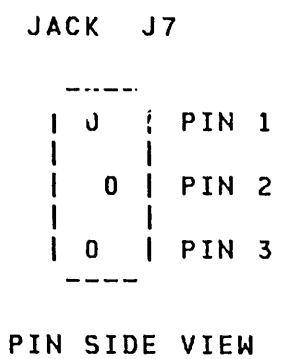
012
DOES THE POWER GOOD LED NOW LIGHT STEADILY FOR MORE THAN 30 SECONDS?
Y N

013
GO TO PAGE 27, STEP 094, ENTRY POINT C.

014
VERIFY THE REPAIR.

015
SHORT CIRCUIT IN THE 4963 POWER DISTRIBUTION SYSTEM OR POWER SUPPLY.
ENSURE THAT THE 4963 AC POWER CABLE IS DISCONNECTED FROM THE CUSTOMER'S AC POWER OUTLET OR FROM THE 4997 POWER SOCKET.
ENSURE THAT THE 4963 AC POWER SWITCH IS SWITCHED ON AND THAT THE AC INPUT CONNECTOR P7 IS DISCONNECTED AT CONNECTOR J7 ON THE POWER SUPPLY.
REMOVE THE AC FUSES FROM THE POWER SUPPLY. SET THE MULTIMETER SCALE TO APPROXIMATELY ONE OHM.
CONNECT ONE TEST LEAD TO ONE END OF THE FUSE AND THE OTHER TEST LEAD TO THE OTHER END OF THE FUSE.
MEASURE THE RESISTANCE OF BOTH FUSES.
ARE BOTH RESISTANCES LESS THAN ONE OHM?
Y N

016
SET THE MULTIMETER SCALE TO APPROXIMATELY 10K OHMS. CONNECT ONE TEST LEAD OF THE MULTIMETER TO PIN 1 OF THE AC POWER SUPPLY, JACK J7, AND THE OTHER LEAD TO PIN 3 OF J7. ALSO MEASURE THE RESISTANCE BETWEEN PIN 1 AND PIN 2 AND THEN THE RESISTANCE BETWEEN PIN 2 AND PIN 3.



ARE ANY OF THESE RESISTANCES LESS THAN 200K OHMS?
Y N

017
EXCHANGE THE AC FUSES IN THE POWER SUPPLY. INSPECT THE 4963 FOR AN INDICATION OF A SHORT CIRCUIT SUCH AS BURNED WIRES OR A SMELL OF BURNED MATERIAL. SWITCH OFF THE 4963 AC ON/OFF SWITCH. RECONNECT PLUG P7 TO J7 ON THE POWER SUPPLY. RECONNECT THE 4963 AC POWER CABLE TO THE CUSTOMER'S POWER OUTLET OR THE 4997 POWER SOCKET. SWITCH ON THE 4963 AC ON/OFF SWITCH.
DOES THE 4963 OPERATE CORRECTLY?
Y N

018
GO TO PAGE 7, STEP 021, ENTRY POINT DD.

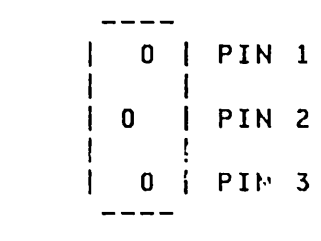
019
INSTALL ALL COVERS. VERIFY THE REPAIR.

PAGE 7 OF 69

020
THERE IS A SHORT CIRCUIT IN THE POWER SUPPLY. EXCHANGE THE POWER SUPPLY. (SEE MIM 3.2.1). VERIFY THE REPAIR.

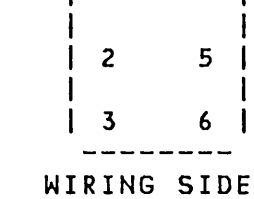
021
(ENTRY POINT DD)
CHECK FOR A SHORT CIRCUIT IN THE POWER INPUT CABLE.
SET THE MULTIMETER SCALE TO APPROXIMATELY 10K OHMS.
CONNECT ONE TEST LEAD OF THE MULTIMETER TO PIN 1 OF THE AC CABLE CONNECTOR P7 AND THE CTHER TEST LEAD OF THE MULTIMETER TO PIN 3 OF THE AC CABLE CONNECTOR P7.
THE FIGURE OF THE CONNECTOR SHOWN BELOW IDENTIFIES THE CONNECTOR PINS.
DID THE MULTIMETER INDICATE A RESISTANCE OF MORE THAN 200K OHMS?
Y N

CONNECTOR P7



022
THERE IS A SHORT CIRCUIT IN THE AC DISTRIBUTION SYSTEM. REMOVE THE AC POWER ON/OFF SWITCH FROM THE PROTECTIVE COVER AND EXTEND IT FORWARD.
DISCONNECT TERMINAL 3 AND TERMINAL 6 OF THE 4963 AC POWER SWITCH.
CONNECT ONE MULTIMETER TEST LEAD TO PIN 3 OF THE CABLE CONNECTOR AND THE OTHER TEST LEAD OF THE MULTIMETER TO PIN 6 OF THE CABLE CONNECTOR.
(STEP 022 CONTINUES)

AC POWER ON/OFF SWITCH



WIRING SIDE

(STEP 022 CONTINUED)
IS THE INDICATED RESISTANCE MORE THAN 200K OHMS?
Y N
|
| 023
| REMOVE THE "4963 AC POWER SWITCH TO POWER SUPPLY" CABLE AND INSTALL A NEW CABLE. (SEE MIM 3.2).
| VERIFY THE REPAIR.
|
024
DISCONNECT THE CABLE FROM TERMINAL 2 AND TERMINAL 5 OF THE 4963 AC POWER SWITCH.
CONNECT ONE TEST LEAD OF THE MULTIMETER TO TERMINAL 2 OF THE SWITCH AND THE OTHER TEST LEAD OF THE MULTIMETER TO TERMINAL 5 OF THE SWITCH.
NOTE THE RESISTANCE INDICATED BY THE MULTIMETER.
CONNECT ONE TEST LEAD OF THE MULTIMETER TO TERMINAL 3 OF SWITCH AND THE OTHER TEST LEAD OF THE MULTIMETER TO TERMINAL 6 OF THE SWITCH.
NOTE THE RESISTANCE INDICATED BY THE MULTIMETER.
ARE THE RESISTANCES MORE THAN 200K OHMS?
Y N
|
| 025
| REMOVE THE 4963 AC POWER SWITCH AND INSTALL A NEW SWITCH. (SEE MIM 3.2).
| VERIFY THE REPAIR.
|
|
|
|
|
|
|
|

026
REMOVE THE AC FILTER BOX COVER. DISCONNECT THE "4963 AC FILTER TO AC POWER SWITCH" CABLE. CONNECT ONE TEST LEAD OF THE MULTIMETER TO ONE OF THE DISCONNECTED CABLE CONDUCTORS AND THE OTHER TEST LEAD OF THE MULTIMETER TO THE OTHER DISCONNECTED CABLE CONDUCTOR OF THE "4963 AC POWER FILTER TO AC POWER SWITCH" CABLE. IS THE RESISTANCE MORE THAN 200K OHMS?
Y N

027
REMOVE THE "4963 AC POWER FILTER TO 4963 AC POWER SWITCH" CABLE AND INSTALL A NEW CABLE. (SEE MIM 3.2). VERIFY THE REPAIR.

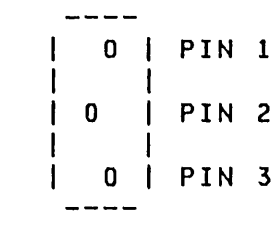
028
REMOVE THE 4963 AC POWER FILTERS FROM THE 4963. (SEE MIM 3.2). DISCONNECT THE "4963 AC POWER OUTLET TO AC POWER FILTER" CABLE FROM THE TERMINAL OF EACH FILTER. CONNECT ONE TEST LEAD OF THE MULTIMETER TO ONE TERMINAL OF THE FILTER AND THE OTHER TEST LEAD OF THE MULTIMETER TO THE BODY (CASE) OF THE FILTER. DO THIS FOR EACH FILTER. IS THE RESISTANCE OF THE FILTERS MORE THAN 200K OHMS?
Y N

PAGE 10 OF 69

029
INSTALL A NEW FILTER IN PLACE OF THE ONE THAT HAS A LOW RESISTANCE. (SEE MIM 3.2).
INSTALL THE 4963 AC POWER FILTERS AND CORRECTLY CONNECT ALL CABLE CONNECTIONS.
INSTALL THE 4963 AC POWER SWITCH HOUSING. VERIFY THE REPAIR.

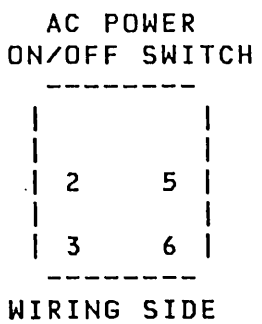
030
REMOVE THE "AC POWER OUTLET TO AC POWER FILTER" CABLE AND INSTALL A NEW CABLE. (SEE MIM 3.2).
INSTALL THE 4963 AC POWER FILTERS AND CORRECTLY CONNECT ALL CABLE CONNECTIONS.
INSTALL THE 4963 AC POWER SWITCH HOUSING. VERIFY THE REPAIR.

031
CONNECT ONE TEST LEAD OF THE MULTIMETER TO PIN 2 OF THE AC CABLE CONNECTOR P7 AND THE OTHER TEST LEAD TO PIN 1 OF THE AC CABLE CONNECTOR P7.



DID THE MULTIMETER INDICATE A RESISTANCE OF MORE THAN 200K OHMS?
Y N

|
|
032
THERE IS A SHORT CIRCUIT IN THE AC DISTRIBUTION SYSTEM. REMOVE THE AC POWER ON/OFF SWITCH FROM THE PROTECTIVE COVER AND EXTEND IT FORWARD.
DISCONNECT TERMINAL 3 OF THE 4963 AC POWER SWITCH.
CONNECT ONE MULTIMETER TEST LEAD TO PIN 3 OF THE CABLE CONNECTOR AND THE OTHER TEST LEAD OF THE MULTIMETER TO GROUND.
IS THE INDICATED RESISTANCE MORE THAN 200K OHMS?
Y N
|
| 033
| REMOVE THE "4963 AC POWER SWITCH TO POWER SUPPLY" CABLE AND INSTALL A NEW CABLE. (SEE MIM 3.2).
| VERIFY THE REPAIR.
|
034
REMOVE THE AC FILTER BOX COVER.
DISCONNECT THE "4963 AC FILTER TO AC POWER SWITCH" CABLE. THIS IS A BLACK OR BROWN WIRE. CONNECT ONE TEST LEAD OF THE MULTIMETER TO THE DISCONNECTED CABLE CONDUCTORS AND THE OTHER TEST LEAD OF THE MULTIMETER TO GROUND.
IS THE RESISTANCE MORE THAN 200K OHMS?
Y N
|
| 035
| REMOVE THE "4963 AC POWER FILTER TO 4963 AC POWER SWITCH" CABLE AND INSTALL A NEW CABLE. (SEE MIM 3.2). VERIFY THE REPAIR.
|
|
|

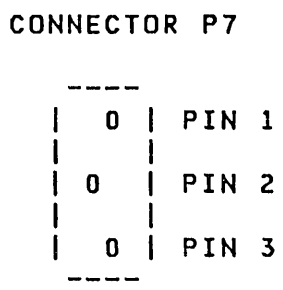


036
REMOVE THE 4963 AC POWER FILTER FROM THE 4963. (SEE MIM 3.2).
DISCONNECT THE "4963 AC POWER OUTLET TO AC POWER FILTER" CABLE FROM THE TERMINAL OF EACH FILTER.
CONNECT ONE TEST LEAD OF THE MULTIMETER TO ONE TERMINAL OF THE FILTER AND THE OTHER TEST LEAD OF THE MULTIMETER TO THE BODY (CASE) OF THE FILTER.
IS THE RESISTANCE OF THE FILTER MORE THAN 200K OHMS?
Y N

037
INSTALL A NEW FILTER IN PLACE OF THE ONE THAT HAS A LOW RESISTANCE. (SEE MIM 3.2).
INSTALL THE 4963 AC POWER FILTERS AND CORRECTLY CONNECT ALL CABLE CONNECTIONS.
INSTALL THE 4963 AC POWER SWITCH HOUSING. VERIFY THE REPAIR.

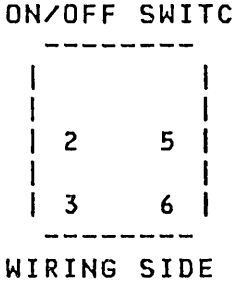
038
REMOVE THE "AC POWER OUTLET TO AC POWER FILTER" CABLE AND INSTALL A NEW CABLE. (SEE MIM 3.2).
INSTALL THE 4963 AC POWER FILTERS AND CORRECTLY CONNECT ALL CABLE CONNECTIONS.
INSTALL THE 4963 AC POWER SWITCH HOUSING. VERIFY THE REPAIR.

039
CONNECT ONE TEST LEAD OF THE MULTIMETER TO PIN 2 OF THE AC CABLE CONNECTOR P7 AND THE OTHER TEST LEAD TO PIN 3 OF THE AC CABLE CONNECTOR J7.



DID THE MULTIMETER INDICATE A RESISTANCE OF MORE THAN 200K OHMS?
Y N

040
THERE IS A SHORT CIRCUIT IN THE AC DISTRIBUTION SYSTEM. REMOVE THE AC POWER ON/OFF SWITCH FROM THE PROTECTIVE COVER AND EXTEND IT FORWARD.
DISCONNECT TERMINAL 6 OF THE 4963 AC POWER SWITCH.
CONNECT ONE MULTIMETER TEST LEAD TO PIN 6 OF THE CABLE CONNECTOR AND THE OTHER TEST LEAD OF THE MULTIMETER TO GROUND.
IS THE INDICATED RESISTANCE MORE THAN 200K OHMS?
Y N



041
REMOVE THE "4963 AC POWER SWITCH TO POWER SUPPLY" CABLE AND INSTALL A NEW CABLE. (SEE MIM 3.2).
VERIFY THE REPAIR.

042
REMOVE THE AC FILTER BOX COVER.
DISCONNECT THE "4963 AC FILTER TO AC POWER SWITCH" CABLE. THIS IS A WHITE OR BLUE WIRE. CONNECT ONE TEST LEAD OF THE MULTIMETER TO THE DISCONNECTED CABLE CONDUCTOR AND THE OTHER TEST LEAD OF THE MULTIMETER TO GROUND.
IS THE RESISTANCE MORE THAN 200K OHMS?
Y N

043
REMOVE THE "4963 AC POWER FILTER TO 4963 AC POWER SWITCH" CABLE AND INSTALL A NEW CABLE. (SEE MIM 3.2). VERIFY THE REPAIR.

044
REMOVE THE 4963 AC POWER FILTER FROM THE 4963. (SEE MIM 3.2).
DISCONNECT THE "4963 AC POWER OUTLET TO AC POWER FILTER" CABLE FROM THE TERMINAL OF EACH FILTER.
CONNECT ONE TEST LEAD OF THE MULTIMETER TO ONE TERMINAL OF THE FILTER AND THE OTHER TEST LEAD OF THE MULTIMETER TO THE BODY (CASE) OF THE FILTER.
IS THE RESISTANCE OF THE FILTER MORE THAN 200K OHMS?
Y N

045
INSTALL A NEW FILTER IN PLACE OF THE ONE THAT HAS A LOW RESISTANCE. (SEE MIM 3.2).
INSTALL THE 4963 AC POWER FILTERS AND CORRECTLY CONNECT ALL CABLE CONNECTIONS.
INSTALL THE 4963 AC POWER SWITCH HOUSING. VERIFY THE REPAIR.

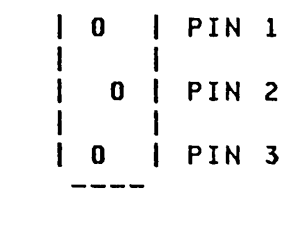
046
REMOVE THE "AC POWER OUTLET TO AC POWER FILTER" CABLE AND INSTALL A NEW CABLE. (SEE MIM 3.2).
INSTALL THE 4963 AC POWER FILTERS AND CORRECTLY CONNECT ALL CABLE CONNECTIONS.
INSTALL THE 4963 AC POWER SWITCH HOUSING. VERIFY THE REPAIR.

047
CONNECT ONE TEST LEAD OF THE MULTIMETER TO PIN 1 OF THE AC POWER SUPPLY JACK P7 AND THE OTHER TEST LEAD TO PIN 3 OF THE AC POWER SUPPLY JACK J7.
DID THE MULTIMETER INDICATE A RESISTANCE OF MORE THAN 200K OHMS?
Y N

048
THERE IS A SHORT CIRCUIT IN THE POWER SUPPLY. EXCHANGE THE POWER SUPPLY. (SEE MIM 3.2.1).
VERIFY THE REPAIR.

049
CONNECT ONE TEST LEAD OF THE MULTIMETER TO PIN 2 OF THE AC POWER SUPPLY JACK J7 AND THE OTHER TEST LEAD TO PIN 1 OF THE AC POWER SUPPLY JACK J7.

JACK J7



PIN SIDE VIEW

DID THE MULTIMETER INDICATE A RESISTANCE OF MORE THAN 200K OHMS?
Y N

050
THERE IS A SHORT CIRCUIT IN THE POWER SUPPLY. EXCHANGE THE POWER SUPPLY. (SEE MIM 3.2.1). VERIFY THE REPAIR.

051
CONNECT ONE TEST LEAD OF THE MULTIMETER TO PIN 2 OF THE AC POWER SUPPLY JACK P7 AND THE OTHER TEST LEAD TO PIN 3 OF THE AC POWER SUPPLY JACK J7.
DID THE MULTIMETER INDICATE A RESISTANCE OF MORE THAN 200K OHMS?
Y N

052
THERE IS A SHORT CIRCUIT BETWEEN PHASE AND NEUTRAL IN THE POWER SUPPLY. EXCHANGE THE POWER SUPPLY. (SEE MIM 3.2.1). VERIFY THE REPAIR.

053
GO TO MAP 7A81, ENTRY POINT B.

054
SWITCH OFF THE 4963 AC POWER SWITCH.
DISCONNECT THE 4963 AC POWER CABLE TO THE CUSTOMER'S AC POWER OUTLET OR TO THE 4997 POWER SOCKET.
REMOVE THE AC FUSES FROM THE 4963 POWER SUPPLY. SET THE MULTIMETER SCALE TO APPROXIMATELY ONE OHM SCALE. CONNECT ONE TEST LEAD TO ONE END OF THE FUSE AND THE OTHER TEST LEAD TO THE OTHER END OF THE FUSE. MEASURE THE RESISTANCE OF BOTH FUSES.
ARE BOTH RESISTANCES LESS THAN ONE OHM?
Y N

055
EXCHANGE THE AC FUSES IN THE POWER SUPPLY. INSPECT THE 4963 FOR ANY INDICATION OF A SHORT CIRCUIT SUCH AS BURNED WIRES OR A SMELL OF BURNED MATERIAL.
IS THERE AN INDICATION OF A SHORT CIRCUIT?
Y N

056
VERIFY THE REPAIR.

057
REPAIR THE SHORT CIRCUIT.
VERIFY THE REPAIR.

058
GO TO PAGE 27, STEP 094,
ENTRY POINT C.

PAGE 18 OF 69

059
SWITCH OFF THE 4963 AC POWER SWITCH. DISCONNECT THE DC DISTRIBUTION CABLE P4 FROM J4 ON THE POWER SUPPLY.

CAUTION

SWITCH OFF THE 4963 DISC MOTOR SWITCH.
SWITCH ON THE 4963 AC POWER SWITCH.
IS THE POWER GOOD LED LIGHTED THAT IS LOCATED NEXT TO THE AC ON/OFF SWITCH?
Y N

060
DISCONNECT CONNECTOR P8 FROM J8 ON THE POWER SUPPLY.
IS THE POWER GOOD LED LIGHTED ON THE POWER SUPPLY?
Y N

061
GO TO MAP 7A81, ENTRY POINT B.

062
GO TO PAGE 53, STEP 156, ENTRY POINT E.

|
|
063
SWITCH OFF THE 4963 AC POWER SWITCH.
CONNECT THE DC DISTRIBUTION CABLE P4 TO J4 ON THE POWER SUPPLY.

CAUTION

SWITCH OFF THE 4963 DISC MOTOR SWITCH (S1).
CONNECT JUMPER, PN 8326945, FROM D2G10 TO D08, AND D2G11 TO D08 OF THE A1 (DE) BOARD.
SWITCH ON THE 4963 AC POWER SWITCH.
IS THE POWER GOOD LED LIGHTED THAT IS LOCATED NEXT TO THE AC ON/OFF SWITCH?
Y N
|
| 064
| GO TO PAGE 35, STEP 121,
| ENTRY POINT B.
|
065
SWITCH ON THE MOTOR SERVICE SWITCH(S1)
DOES THE DISC MOTOR COME ON AND TURN THE DISC?
Y N
|
| 066
| RESET THE MOTOR THERMAL SWITCH
| LOCATED ON THE DRIVE MOTOR
| CASE.
| DOES THE DISC COME ON AND TURN
| THE DISC?
| Y N
| |
| | 067
| | GO TO MAP 7A73,
| | ENTRY POINT A.
| |
| |

068
RUN DIAGNOSTIC PROGRAM
MAP7A20

069
RUN DIAGNOSTIC PROGRAM
MAP7A20

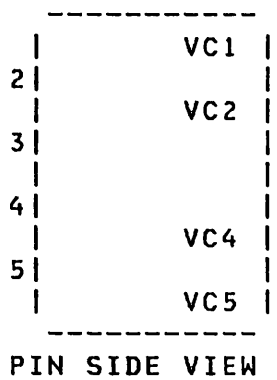
070
GO TO MAP 7A81, ENTRY POINT A.

071
OBSERVE ALL SAFETY RULES. SWITCH OFF THE 4963 AC POWER SWITCH. ENSURE THAT THE 4963 AC POWER CABLE IS DISCONNECTED FROM THE CUSTOMER'S AC POWER OUTLET OR THE 4997 POWER OUTLET. DISCONNECT, FROM THE DE (DISC ELECTRONICS) A1 BOARD, CONNECTORS VC1, VC2, VC4, AND VC5. IF WORKING WITH A BASE FILE 4963, DISCONNECT FROM THE (DISK CONTROLLER) A2 BOARD, CONNECTORS VC1, VC2, VC3, VC4, VC5, AND VC6. DISCONNECT CONNECTOR P4 FROM THE POWER SUPPLY. SET THE MULTIMETER TO THE RX1 OHMS SCALE. CONNECT THE MULTIMETER TEST LEADS TO THE CONNECTOR PINS INDICATED BY THE CHART BELOW.

SIGNAL NAME	IND. RES. BY THE METER	POS. METER TEST LEAD TO	NEG. METER TEST LEAD TO	ENTRY POINT AND PAGE
THERMAL SWITCH	LESS THAN 0.25 OHMS	CONN. P4, PIN 26	CONN. P4, PIN 27	D 21

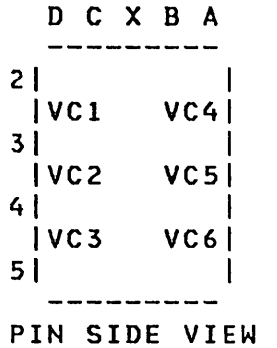
(STEP 071 CONTINUES)

DE BOARD (A1)



PIN SIDE VIEW

DC BOARD (A2)



PIN SIDE VIEW
(STEP 071 CONTINUES)

(STEP 071 CONTINUED)

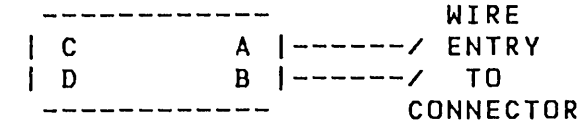
POWER GOOD	LESS THAN 0.25 OHMS	CONN. P4, PIN 14	CONN. DE VC1-B	F 23
BRAKE APPLIED	LESS THAN 0.25 OHMS	CONN. P4, PIN 35	CONN. DE VC5-A	G 24

ARE THE RESISTANCES AS INDICATED ON THE CHART?

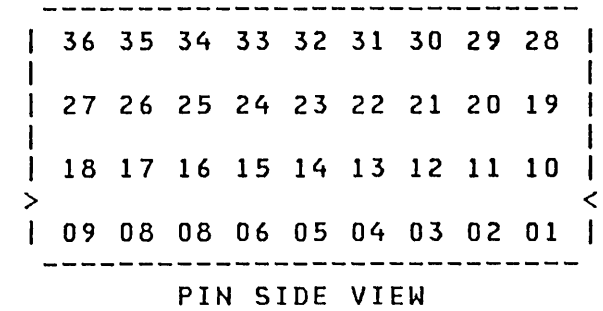
Y N

(STEP 071 CONTINUED)

BOARD CONNECTOR

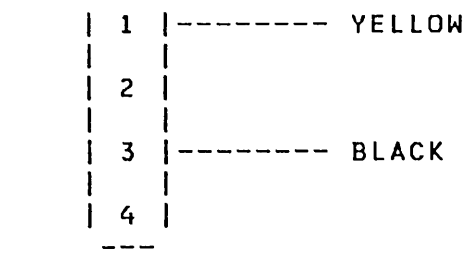


CONNECTOR P4



PIN SIDE VIEW

CONNECTOR P8



| |
| |
| 072
| GO TO THE CORRECT ENTRY POINT
| AND PAGE AS LISTED IN THE
| CHART.
|
073

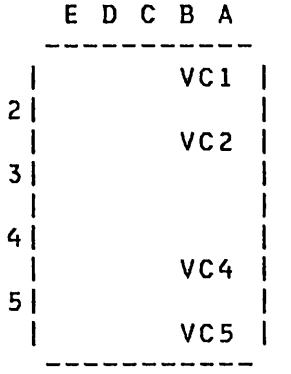
CAUTION

SWITCH OFF THE C.E. MOTOR SERVICE SWITCH (S1) ON THE POWER SUPPLY.
CONNECT THE 4963 A.C. POWER CABLE TO THE CUSTOMER A.C. OUTLET OR THE 4997 A.C. OUTLET.
SWITCH ON THE 4963 A.C. POWER SWITCH (CONNECTOR P4 IS STILL DISCONNECTED FROM THE POWER SUPPLY)
DOES THE 4963 POWER GOOD LED NEXT TO THE A.C. ON/OFF SWITCH NOW LIGHT STEADILY?
Y N
|
| 074
| GO TO MAP 7A81, ENTRY POINT B.
|
075
SWITCH OFF THE 4963 AC POWER SWITCH. PLUG CONNECTOR P4 INTO J4 ON THE POWER SUPPLY. CONNECT ALL DISK CONTROLLER (DC) AND DISC ELECTRONIC (DE) BOARD CONNECTORS. CONNECT JUMPER P/N 8326945 FROM D2G10 TO D08, AND D2G11 TO D08 OF THE DE BOARD (A1). SWITCH ON THE MOTOR SERVICE SWITCH (S1). SWITCH ON THE 4963 A.C. POWER SWITCH.
(STEP 075 CONTINUES)

(STEP 075 CONTINUED)
DOES THE DISC MOTOR COME ON AND TURN THE DISC?
Y N
|
| 076
| RESET THE MOTOR THERMAL SWITCH LOCATED ON THE DRIVE MOTOR CASE.
| DOES THE DISC MOTOR COME ON AND TURN THE DISC?
| Y N
| |
| | 077
| | GO TO MAP 7A73, ENTRY POINT A.
| |
| 078
| GO TO MAP 7A76, ENTRY POINT A.
|
079
MEASURE THE VOLTAGE FROM DE VC1 PIN B TO A1-D2D08

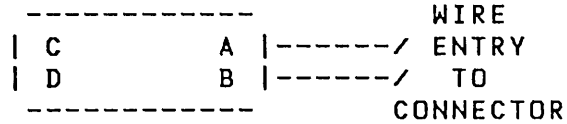
(STEP 079 CONTINUES)

DE BOARD (A1)



PIN SIDE VIEW

BOARD CONNECTOR



(STEP 079 CONTINUES)

(STEP 079 CONTINUED)

DOES VOLTAGE MEASURE +0.0 TO 0.4 VOLTS?
Y N

080
CHECK FOR LOOSE OR BROKEN WIRES OR CONNECTORS, EXCHANGE THE POWER SUPPLY VERIFY THE REPAIR

081
GO TO MAP 7A76, ENTRY POINT A.

082
IS THE CE MOTOR SERVICE SWITCH (S1) ON THE POWER SUPPLY IN THE ON POSITION?
Y N

083
SWITCH OFF THE 4963 AC POWER SWITCH. SWITCH ON THE CE MOTOR SERVICE SWITCH (S1) ON THE POWER SUPPLY. SWITCH ON THE 4963 AC POWER SWITCH. VERIFY THE REPAIR.

084
SWITCH OFF THE 4963 AC POWER SWITCH. VISUALLY CHECK TO ENSURE THAT THE AC CONNECTOR P2 IS MATED ON THE POWER SUPPLY AND THE MOTOR TERMINAL BLOCK TB3 AND THE CONNECTORS VC1 AND VC3 ARE MATED ON THE DE BOARD.
ARE THE CONNECTORS MATED?
Y N

(STEP 079 CONTINUED)
WIRING SIDE

| |
| |
| 085
| PLUG IN THE UNMATED CONNECTORS
| IN THE CORRECT POSITION.
| SWITCH ON THE 4963 AC POWER
| SWITCH. VERIFY THE REPAIR.
|
086
ENSURE THE 4963 AC ON/OFF SWITCH IS SWITCHED OFF. DISCONNECT CONNECTOR P4 FROM J4 ON THE POWER SUPPLY.

CAUTION

SWITCH OFF THE CE MOTOR SERVICE SWITCH (S1) ON THE POWER SUPPLY.
SWITCH ON THE 4963 AC POWER SWITCH.
DOES THE POWER GOOD LED LOCATED NEXT TO THE AC ON/OFF SWITCH NOW LIGHT STEADILY?
Y N
|
| 087
| RESEAT ALL CONNECTORS AND
| RETURN THE CE MOTOR SERVICE
| SWITCH (S1) TO THE ON POSITION.
| GO TO PAGE 35, STEP 121,
| ENTRY POINT B.
|
088
SWITCH OFF THE 4963 A.C. POWER SWITCH, AND RESEAT ALL CONNECTORS AND RETURN THE CE MOTOR SWITCH (S1) TO THE ON POSITION.
GO TO PAGE 66, STEP 190,
ENTRY POINT BB.

089
SWITCH OFF THE 4963 AC POWER SWITCH.
DOES THE 4963 SWITCH OFF?
Y N

090
THE AC ON/OFF SWITCH HAS FAILED. REMOVE THE 4963 AC POWER CABLE FROM THE 4997 POWER SOCKET OR FROM THE CUSTOMER'S AC POWER OUTLET. REMOVE AND EXCHANGE THE 4963 AC ON/OFF SWITCH. (SEE MIM 3.2). VERIFY THE REPAIR.

091
VISUALLY CHECK TO ENSURE THAT THE DC CONNECTOR IS MATED ON THE POWER SUPPLY (P4) AND THE DC CONNECTORS ARE MATED ON THE DE BOARD (VC2, VC4, VC7, VC8, VC9, VC10).
ARE THE CONNECTORS MATED?
Y N

092
PLUG IN THE UNMATED CONNECTORS IN THE CORRECT POSITION. SWITCH ON THE 4963 AC POWER SWITCH. VERIFY THE REPAIR.

093
GO TO PAGE 35, STEP 121, ENTRY POINT B.

094
(ENTRY POINT C)

DANGER

THE VOLTAGE TO BE MEASURED IS DANGEROUS. BE CAREFUL TO ENSURE YOUR SAFETY. DO NOT TOUCH THE NOT INSULATED PARTS OF THE MULTIMETER TEST PROBES.

ENSURE THAT THE 4963 AC POWER SWITCH IS OFF AND THE AC POWER CABLE IS DISCONNECTED FROM THE 4997 POWER SOCKET OR THE CUSTOMER'S AC POWER OUTLET.
SET THE MULTIMETER SCALE TO AT LEAST 250 VOLTS AC.
USE THE RELAY EXTENSION TOOL PN 450458 TO CONVERT THE ALLIGATOR CLIP TEST LEADS OF THE MULTIMETER TO PROBES, OR USE A 50 MILLIMETRE (2 INCH) LENGTH OF WIRE FROM WHICH THE INSULATION HAS BEEN REMOVED AT BOTH ENDS. ENSURE THE AC FUSES F1 AND F2 ARE REMOVED FROM THE POWER SUPPLY FUSE HOLDERS. (SEE MIM 3.2).
INSERT THE PROBES TO THE BOTTOM OF THE EMPTY AC FUSE HOLDERS ON THE POWER SUPPLY.

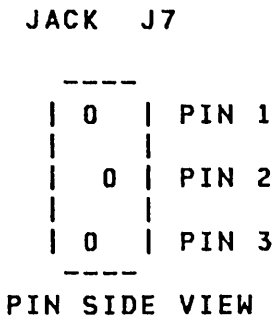
CAUTION

BE CAREFUL NOT TO MAKE A SHORT TO THE 4963 FRAME OR TO ANY OTHER CONDUCTOR.
CONNECT THE 4963 AC POWER CABLE TO THE CUSTOMER'S AC POWER OUTLET OR TO THE 4997 POWER SOCKET.
SWITCH ON THE 4963 AC POWER SWITCH.
(STEP 094 CONTINUES)

(STEP 094 CONTINUED)
IS THE VOLTAGE APPROXIMATELY THE RATED 4963 INPUT VOLTAGE?
Y N
|
| 095
| OPEN CIRCUIT IN THE POWER INPUT CABLE. THERE IS AN OPEN CIRCUIT OR TOO MUCH RESISTANCE IN THE AC DISTRIBUTION SYSTEM.
| SWITCH OFF THE 4963 POWER SWITCH. DISCONNECT THE AC POWER CABLE FROM THE CUSTOMER'S AC POWER OUTLET OR THE 4997 POWER SOCKET. REMOVE THE PROBES FROM THE BOTTOM OF THE AC FUSE HOLDERS.
| SET THE MULTIMETER TO APPROXIMATELY A ONE OHM SCALE.
| CONNECT ONE TEST LEAD OF THE MULTIMETER WITH AN ALLIGATOR CLIP TO THE PRONG OF THE 4963 AC POWER CABLE PLUG. CONNECT THE OTHER TEST LEAD OF THE MULTIMETER TO A RELAY EXTENSION TOOL PN 450458 AND INSERT IT TO THE BOTTOM OF THE EMPTY AC FUSE HOLDER F1 ON THE POWER SUPPLY.
| ENSURE THE AC POWER SWITCH IS IN THE ON POSITION.
| NOW ATTACH THE TEST LEAD OF THE MULTIMETER WITH AN ALLIGATOR CLIP TO THE OTHER PRONG OF THE 4963 A.C. POWER CABLE PLUG.
| DOES THE MULTIMETER INDICATE THAT ONE OF THE RESISTANCES IS LESS THAN ONE OHM?
| Y N

096

THE AC CONDUCTOR PATH HAS TOO MUCH RESISTANCE OR IS OPEN. DISCONNECT THE AC INPUT CONNECTOR P7 FROM J7 ON THE POWER SUPPLY. (SEE MIM 3.2). CONNECT ONE TEST LEAD OF THE MULTIMETER TO J7, PIN 1 AND THE OTHER TEST LEAD INSERTED IN THE BOTTOM OF FUSE HOLDER F1 ON THE POWER SUPPLY.



DOES THE MULTIMETER INDICATE A RESISTANCE LESS THAN ONE OHM?

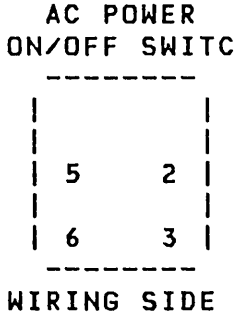
Y N

097

REPAIR THE OPEN FROM THE FUSE HOLDER TO J7, OR EXCHANGE THE POWER SUPPLY. (SEE MIM 3.2.1). VERIFY THE REPAIR.

098

REMOVE THE AC ON/OFF SWITCH FROM THE FRONT OF THE PROTECTIVE COVER. CONNECT ONE TEST LEAD OF THE MULTIMETER TO CONNECTOR 3 OF THE ON/OFF SWITCH AND THE OTHER TEST LEAD TO CONNECTOR P7, PIN 1.



DOES THE MULTIMETER INDICATE A RESISTANCE LESS THAN ONE OHM?

Y N

3 3
0 0
A A
M N

| |
| |
| 099
| EXCHANGE THE AC POWER CABLE
| BETWEEN THE ON/OFF SWITCH AND
| THE POWER SUPPLY.
| VERIFY THE REPAIR.
|
100
CONNECT ONE TEST LEAD OF THE MULTIMETER TO CONNECTOR 3 OF THE ON/OFF SWITCH AND THE OTHER TEST LEAD TO CONNECTOR 2 OF THE ON/OFF SWITCH. SWITCH THE AC SWITCH OFF AND ON.
WHEN THE AC SWITCH IS IN THE ON POSITION DOES THE MULTIMETER INDICATE A RESISTANCE LESS THAN ONE OHM?
Y N
|
| 101
| EXCHANGE THE 4963 AC ON/OFF
| SWITCH. VERIFY THE REPAIR.
|
102
REMOVE THE AC FILTER BOX COVER.
CONNECT ONE TEST LEAD OF THE MULTIMETER TO CONNECTOR 2 OF THE ON/OFF SWITCH AND THE OTHER TEST LEAD TO THE TOP TERMINAL OF THE A.C. FILTER CAPACITORS.
DOES THE MULTIMETER INDICATE ONE OF THE RESISTANCES IS LESS THAN ONE OHM?
Y N
|
| 103
| EXCHANGE THE AC POWER CABLE
| BETWEEN THE AC ON/OFF SWITCH
| AND THE FILTER CAPACITOR BOX.
| VERIFY THE REPAIR.
|
|
|
|

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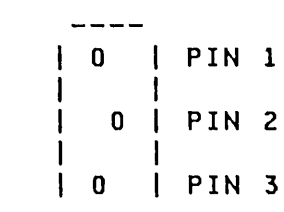
| |
| |
| 104
| REMOVE THE AC POWER CABLE
| FILTER. CONNECT ONE TEST LEAD
| OF THE MULTIMETER TO A TERMINAL
| OF THE FILTER CAPACITOR AND THE
| OTHER TEST LEAD TO THE OTHER
| TERMINAL OF THE FILTER
| CAPACITOR.
| DOES THE MULTIMETER INDICATE A
| RESISTANCE LESS THAN ONE OHM?
| Y N
| |
| | 105
| | EXCHANGE THE AC FILTER
| | CAPACITOR. VERIFY THE
| | REPAIR.
| |
| 106
| EXCHANGE THE AC POWER CABLE
| BETWEEN THE AC FILTER BOX AND
| THE AC POWER CABLE PLUG.
| VERIFY THE REPAIR.
|
107
CONNECT ONE TEST LEAD OF THE
MULTIMETER WITH AN ALLIGATOR CLIP
TO THE PRONG OF THE 4963 AC POWER
CABLE PLUG. INSERT THE OTHER
TEST LEAD WITH THE RELAY
EXTENSION TOOL TO THE BOTTOM OF
FUSE HOLDER F2 ON THE POWER
SUPPLY. ENSURE THAT THE AC POWER
SWITCH IS IN THE ON POSITION.
NOW ATTACH THE TEST LEAD OF THE
MULTIMETER WITH AN ALLIGATOR CLIP
TO THE OTHER PRONG OF THE 4963
A.C. POWER CABLE PLUG.
DOES THE MULTIMETER INDICATE THAT
ONE OF THE RESISTANCES IS LESS
THAN ONE OHM?
Y N
| |
| |
| |
```

108

THE AC CONDUCTOR PATH HAS TOO MUCH RESISTANCE OR IS OPEN. DISCONNECT THE AC INPUT CONNECTOR P7 FROM J7 ON THE POWER SUPPLY. CONNECT ONE TEST LEAD OF THE MULTIMETER TO J7, PIN 3 AND THE OTHER TEST LEAD INSERTED IN THE BOTTOM OF FUSE HOLDER F2 ON THE POWER SUPPLY.

JACK J7



PIN SIDE VIEW

DOES THE MULTIMETER INDICATE A RESISTANCE LESS THAN ONE OHM?

Y N

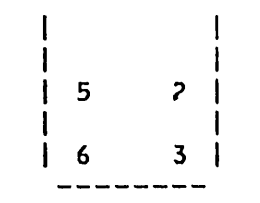
109

REPAIR THE OPEN FROM THE FUSE HOLDER TO J7, OR EXCHANGE THE POWER SUPPLY. (SEE MIM 3.2.1). VERIFY THE REPAIR.

110

REMOVE THE AC ON/OFF SWITCH FROM THE FRONT OF THE PROTECTIVE COVER. CONNECT ONE TEST LEAD OF THE MULTIMETER TO CONNECTOR 6 OF THE ON/OFF SWITCH AND THE OTHER TEST LEAD TO CONNECTOR P7, PIN 3.

AC POWER ON/OFF SWITCH



WIRING SIDE

DOES THE MULTIMETER INDICATE A RESISTANCE LESS THAN ONE OHM?

Y N

| |
| |
| 111
| EXCHANGE THE AC POWER CABLE
| BETWEEN THE ON/OFF SWITCH AND
| THE POWER SUPPLY.
| VERIFY THE REPAIR.
|
112
CONNECT ONE TEST LEAD OF THE MULTIMETER TO CONNECTOR 5 OF THE ON/OFF SWITCH AND THE OTHER TEST LEAD TO CONNECTOR 6 OF THE ON/OFF SWITCH. SWITCH THE AC SWITCH OFF AND ON.
WHEN THE AC SWITCH IS IN THE ON POSITION DOES THE MULTIMETER INDICATE A RESISTANCE LESS THAN ONE OHM?
Y N
|
| 113
| EXCHANGE THE 4963 AC ON/OFF
| SWITCH. VERIFY THE REPAIR.
|
114
REMOVE THE AC FILTER BOX COVER.
CONNECT ONE TEST LEAD OF THE MULTIMETER TO CONNECTOR 5 OF THE ON/OFF SWITCH AND THE OTHER TEST LEAD TO THE TOP TERMINAL OF THE A.C. FILTER CAPACITORS.
DOES THE MULTIMETER INDICATE ONE OF THE RESISTANCES IS LESS THAN ONE OHM?
Y N
|
| 115
| EXCHANGE THE AC POWER CABLE
| BETWEEN THE AC ON/OFF SWITCH
| AND THE FILTER CAPACITOR BOX.
| VERIFY THE REPAIR.
|
|
|
|

116
REMOVE THE AC POWER CABLE FILTER. CONNECT ONE TEST LEAD OF THE MULTIMETER TO A TERMINAL OF THE FILTER CAPACITOR AND THE OTHER TEST LEAD TO THE OTHER TERMINAL OF THE FILTER CAPACITOR.
DOES THE MULTIMETER INDICATE A RESISTANCE LESS THAN ONE OHM?
Y N

117
EXCHANGE THE AC FILTER CAPACITOR. VERIFY THE REPAIR.

118
EXCHANGE THE AC POWER CABLE BETWEEN THE AC FILTER BOX AND THE AC POWER CABLE PLUG. VERIFY THE REPAIR.

119
VERIFY THE REPAIR.

120
SWITCH OFF THE 4963 POWER SWITCH. DISCONNECT THE AC POWER CABLE FROM THE CUSTOMER'S AC POWER OUTLET OR THE 4997 POWER SOCKET. REMOVE THE PROBES FROM THE BOTTOM OF THE AC FUSE HOLDERS.
GO TO MAP 7A81, ENTRY POINT B.

121
(ENTRY POINT B)

POWER OFF THE FILE AND PUT THE A2 GATE IN THE SERVICE POSITION (REFER TO MIM 3.7.1). PROBE D5B03 OR D5B13 (-POR). POWER ON THE FILE.
PROBE POINT SHOULD GO FROM THE DOWN LEVEL TO THE UP LEVEL IN 9 TO 15 SECONDS.
DID THE PROBE POINT GO FROM THE DOWN LEVEL TO THE UP LEVEL IN 9 TO 15 SECONDS?
Y N
|
| 122
| POWER OFF THE FILE AND UNPLUG THE THREE WIRES CONNECTING THE POR DELAY CIRCUIT TO THE A2 BOARD (LOGIC PAGES SF509 AND SF544). NOTE THE LOCATION OF EACH WIRE.
| PROBE D5B03 OR D5B13(-POR).
| POWER ON THE FILE. PROBE POINT SHOULD GO FROM THE DOWN LEVEL TO THE UP LEVEL IN 1 TO 5 SECONDS.
| DID THE PROBE POINT GO FROM THE DOWN LEVEL TO THE UP LEVEL IN 1 TO 5 SECONDS?
| Y N
| |
| | 123
| | RECONNECT THE THREE LEADS FROM THE POR DELAY CIRCUIT TO THE A2 BOARD (LOGIC PAGES SF509 AND SF544).
| | GO TO PAGE 37, STEP 126, ENTRY POINT B1.
| |
| |
| |
| |

| |
| |
| 124
| REPLACE THE POR DELAY CIRCUIT .
| VERIFY THE REPAIR.
|
125
GO TO PAGE 37, STEP 126,
ENTRY POINT B1.

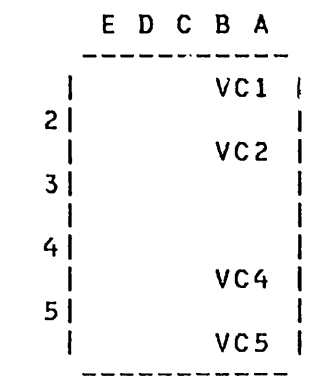
126
(ENTRY POINT B1)

OBSERVE ALL SAFETY RULES.
SWITCH OFF THE 4963 AC POWER SWITCH. ENSURE THAT THE 4963 AC POWER CABLE IS DISCONNECTED FROM THE CUSTOMER'S AC POWER OUTLET OR THE 4997 POWER SOCKET.
DISCONNECT, FROM THE DE (DISK ELECTRONICS) BOARD, CONNECTORS VC1, VC2, VC4, VC5.
DISCONNECT, FROM THE DISK CONTROLLER (A2) BOARD, CONNECTORS VC1, VC2, VC3, VC4, VC5, VC6.
DISCONNECT THE "POWER ON RESET" CONNECTOR FROM C4B02 ON THE DC BOARD. SOME 4963 MODELS CONTAIN 'POWER ON RESET' IN CONNECTOR DC-VC1-D. DISCONNECT CONNECTOR P4 AND P8 FROM THE POWER SUPPLY.
SET THE MULTIMETER TO THE RX1 OHMS SCALE.
CONNECT THE MULTIMETER TEST LEADS TO CONNECTOR PINS INDICATED BY THE CHART BELOW.

SIGNAL NAME	IND. RES. BY THE METER	POS. METER TEST LEAD TO	NEG. METER TEST LEAD TO	ENTRY POINT AND PAGE
POWER ON RESET	LESS THAN 0.25 OHMS	CONN. P4, PIN 6	SLIP ON CONN. AT DC PIN C4B02 OR DC VC1-D	F 23
(BASE FILE ONLY)				

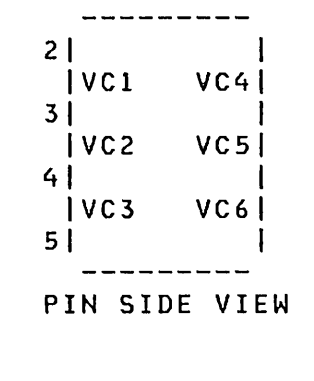
(STEP 126 CONTINUES)

DE BOARD (A1)



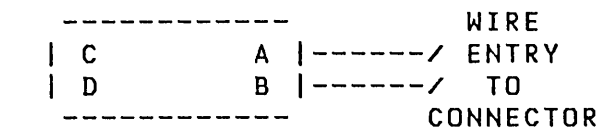
PIN SIDE VIEW

DC BOARD (A2)



PIN SIDE VIEW

BOARD CONNECTOR



(STEP 126 CONTINUES)

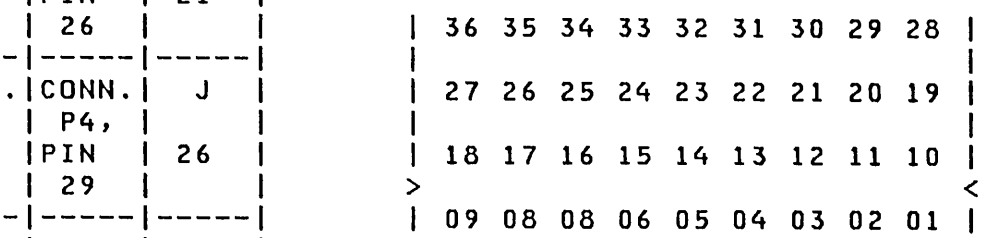
(STEP 126 CONTINUED)

THERMAL SWITCH	LESS THAN 0.25 OHMS	CONN. P4, PIN 27	CONN. P4, PIN 26	D 21
JUMPER	LESS THAN 0.25 OHMS	CONN. P4, PIN 36	CONN. P4, PIN 29	J 26
POWER GOOD	LESS THAN 0.25 OHMS	CONN. P4, PIN 14	CONN. DE-VC1-B	F 23
BRAKE APPLIED	LESS THAN 0.25 OHMS	CONN. P4, PIN 35	CONN. DE-VC5-A	G 24
GROUND (GREEN YELLOW WIRE	LESS THAN 0.25 OHMS	FAN DC GATE	POWER SUPPLY FRAME	H 25
	LESS THAN 0.25 OHMS	DRIVE MOTOR CASE	POWER SUPPLY FRAME	H 25
	LESS THAN 0.25 OHMS	FAN DE GATE	POWER SUPPLY FRAME	H 25
	LESS THAN 0.25 OHMS	DE ELEC. GATE	POWER SUPPLY FRAME	H 25

SET THE MULTIMETER TO THE
(STEP 126 CONTINUES)

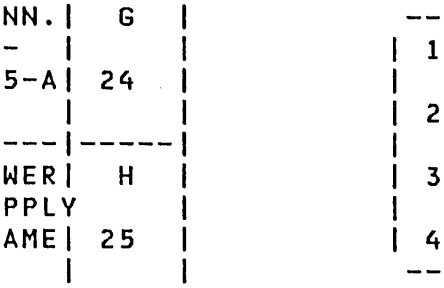
(STEP 126 CONTINUED)

CONNECTOR P4



PIN SIDE VIEW

CONNECTOR P8



(STEP 126 CONTINUED)
RX100K OHMS SCALE.
CONNECT THE MULTIMETER TEST LEADS TO CONNECTOR P8 PINS INDICATED BY CHART BELOW.
NOTE! THAT THE RESISTANCE OF THE LED IS DEPENDANT ON THE TYPE OF MULTIMETER BEING USED.

LED	MORE THAN 5K OHMS BUT LESS THAN 40K	CONN. P8, PIN 1	CONN. P8, PIN 3	E 22
	MORE THAN 40K OHMS	CONN. P8, PIN 3	CONN. P8, PIN 1	E 22

ARE THE RESISTANCES AS INDICATED ON THE CHART?
Y N

127
GO TO THE CORRECT ENTRY POINT AND PAGE AS INDICATED AT THE RIGHT SIDE OF THE ABOVE CHART.

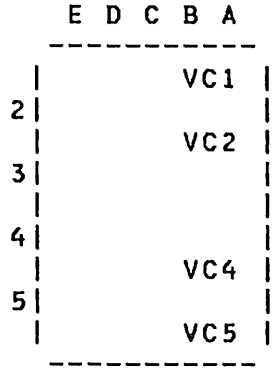
128

SWITCH OFF THE 4963 AC POWER SWITCH. ENSURE THAT THE 4963 AC POWER CABLE IS CONNECTED TO THE CUSTOMER'S AC POWER OUTLET OR TO THE 4997 POWER SOCKET AND THAT THE CUSTOMER'S AC POWER OUTLET SWITCH OR THE 4997 CIRCUIT BREAKER IS SWITCHED ON. PLUG(S) P4 AND P8 SHOULD BE PLUGGED IN AT THIS TIME.

CAUTION

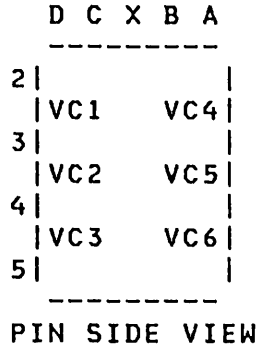
SWITCH OFF THE 4963 DISC MOTOR SWITCH WHICH IS LOCATED ON THE POWER SUPPLY. CONNECT JUMPER PART NUMBER 8326945 FROM D2G10 TO D08 AND D2G11 TO D08 OF THE DE BOARD (A1).
DISCONNECT FROM THE DE BOARD (A1), CONNECTORS VC1, VC2, VC4, AND VC5. IF WORKING WITH A BASE FILE DISCONNECT FROM FROM THE DC BOARD (A2), CONNECTORS VC1, VC2, VC3, VC4, VC5, AND VC6.
(USE A LENGTH OF NUMBER 22 SOLID WIRE, APPROXIMATELY ONE INCH LONG, INSERTED INTO THE PIN OF THE CONNECTOR. CONNECT THE ALLIGATOR CLIP TO THIS WIRE.)
ON CONNECTOR DE VC5 PLACE A LENGTH OF NUMBER 22 SOLID WIRE BETWEEN CONNECTOR POSITIONS A AND D.
SET THE MULTIMETER DC VOLTS SCALE TO APPROXIMATELY 25 PERCENT MORE THAN THE NOMINAL VOLTAGE INDICATED ON THE CHART.
SWITCH ON THE 4963 AC POWER SWITCH.
CONNECT THE POSITIVE TEST LEAD OF
(STEP 128 CONTINUES)

DE BOARD (A1)



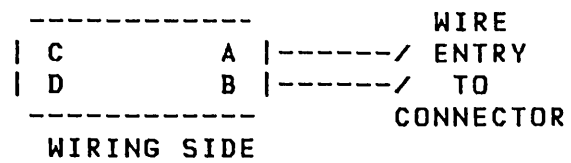
PIN SIDE VIEW

DC BOARD (A2)



PIN SIDE VIEW

BOARD CONNECTOR



(STEP 128 CONTINUED)
THE MULTIMETER TO THE CONNECTOR PIN INDICATED ON THE CHART AND THE NEGATIVE TEST LEAD OF THE MULTIMETER TO THE CONNECTOR PIN INDICATED ON THE CHART. NOTE A BASE FILE WILL HAVE BOTH DE AND DC (BOARD A1 A2) CONNECTOR POSITIONS. AN EXPANSION FILE HAS ONLY DE (BOARD A1) CONNECTOR POSITIONS.
NOTE* FOR MINUS VOLTAGES (-4,-12,-5) THE PROBE LEADS ARE REVERSED TO PERMIT A POSITIVE READING ON THE METER.

NOMINAL VOLTAGE	MINIMUM VOLTAGE	NEG. TEST LEAD	POS. TEST LEAD
+ 5.0	+ 4.60	DE	DE
		VC2-A	VC2-C
		VC4-A	VC4-C
		DC	DC
		VC3-A	VC3-C
		VC3-D	VC3-B
		VC2-A	VC2-B
		VC1-A	VC1-B
		VC4-C	VC4-D
		VC5-C	VC5-D
		VC6-C	VC6-D
+12.0	+11.04	DE	DE
		VC2-D	VC1-C
+24.0	+22.08	DE	DE
		VC5-D	VC5-C
- 4.0	- 3.68	DE	DE
		VC2-B	VC2-D
		VC2-B	VC2-A
		VC4-B	VC4-A

(STEP 128 CONTINUES)

(STEP 128 CONTINUED)

		VC4-B	VC4-D
-12.0	-11.04	DE VC1-D VC1-D	DE VC4-A VC2-A
- 5.0	- 4.55	DC VC2-C	DC VC2-A
+ 8.5	+ 7.82	DC VC1-A	DC VC2-D

ARE THE VOLTAGES AS INDICATED ON THE CHART?
Y N

129
HAVE YOU TESTED THE POWER SUPPLY IN MAP 7A81 AND DETERMINED THAT IT IS OPERATING CORRECTLY?
Y N

130
GO TO MAP 7A81, ENTRY POINT B.

131
REPAIR OR EXCHANGE THE CABLE AND CONNECTOR THAT DOES NOT HAVE THE VOLTAGE INDICATED ON THE CHART. VERIFY THE REPAIR.

|
|
132
CONNECT ALL CABLES IN THE 4963.
ENSURE THAT EACH CABLE OF THE 4963 IS CORRECTLY CONNECTED TO ITS CORRECT CONNECTOR. ENSURE THE 4963 AC POWER CABLE IS CONNECTED TO THECUSTOMER'S AC POWER OUTLET OR TO THE 4997 POWER SOCKET. ENSURE THAT THE CUSTOMER'S AC POWER OUTLET OR THE 4997 CIRCUIT BREAKER IS SWITCHED ON.

CAUTION

ENSURE THE THE 4963 DISC MOTOR SWITCH WHICH IS LOCATED ON THE POWER SUPPLY IS SWITCHED OFF, AND JUMPER, PART NUMBER 8326945 IS CONNECTED FROM D2G10 TO D2D08 AND D2G11 TO E2D08 OF THE A1 (DE) BOARD.
SET THE MULTIMETER DC VOLTS SCALE TO APPROXIMATELY 25 PERCENT MORE THAN THE MAXIMUM VOLTAGE INDICATED ON THE CHART.
SWITCH ON THE 4963 AC POWER SWITCH.
DOES THE 4963 POWER ON?
Y N
|
| 133
| GO TO MAP7A81 ENTRY POINT C
|
|
|
|
|
|
|
|
|
|
|
|

134
(ENTRY POINT CC)

CONNECT THE POSITIVE TEST LEAD OF THE MULTIMETER TO THE CONNECTOR PIN INDICATED ON THE CHART AND THE NEGATIVE TEST LEAD OF THE MULTIMETER TO THE CONNECTOR PIN INDICATED ON THE CHART. NOTE A BASE FILE WILL HAVE BOTH DE AND DC (BOARD A1 A2) CONNECTOR POSITIONS. AN EXPANSION FILE HAS ONLY DE (BOARD A1) CONNECTOR POSITIONS.
NOTE* FOR MINUS VOLTAGES (-4,-12,-5) THE PROBE LEADS ARE REVERSED TO PERMIT A POSITIVE READING ON THE METER.

NOMINAL VOLTAGE	MINIMUM VOLTAGE	MAXIMUM VOLTAGE	NEGATIVE TEST LEAD	POSITIVE TEST LEAD
+ 5.0	+ 4.60	+ 5.50	DE F2 D08 DC D2 D08	DE F2 P03 DC D2 D03
+12.0	+11.04	+12.96	DE F2 D08 DE B2 D08	DE F2 S11 DE B2 B11
+24.0	+22.08	+25.92	DE F2 S09	DE F2 G02
- 4.0	- 3.68	- 4.32	DE F2 M06	DE F2 D08
-12.0	-11.04	-12.96	DE F2 U12	DE F2 D08
- 5.0	- 4.55	- 5.45	DC D2 B06	DC D2 D08
+ 8.5	+ 7.82	+ 9.18	DC D2 D08	DC D2 B11
POWER ON RESET	+ 3.00	+ 5.50	DC D2 D08	SLIP ON CONNECTOR AT DC PIN

(STEP 134 CONTINUES)

(STEP 134 CONTINUED)

			DC C4-B02 OR VC1-D

ARE THE VOLTAGES AS INDICATED ON THE CHART?

Y N

135
IS THE 4963 YOU ARE REPAIRING A BASE UNIT?
Y N

136
THE 4963 IS AN EXPANSION UNIT.
GO TO MAP 7A79, ENTRY POINT A.

137
SWITCH OFF THE 4963 AC POWER SWITCH. CONNECT THE DC BOARD (A2) CONNECTORS VC1, VC2, VC3, VC4, VC5, AND VC6. SWITCH ON THE 4963 AC POWER SWITCH.
DOES THE 4963 POWER UP NOW?
Y N

138
THERE IS A SHORT CIRCUIT IN THE DC BOARD, DC CARDS, OR FLAT CABLES. SWITCH OFF THE 4963 AC POWER SWITCH. REMOVE THE DC CARDS AND THE FLAT CABLES FROM THE DC BOARD (A2). SWITCH ON THE 4963 AC POWER SWITCH.
DOES THE 4963 POWER UP NOW?
Y N

	139
	THERE IS A SHORT CIRCUIT IN THE DC BOARD. REPAIR THE SHORT CIRCUIT OR EXCHANGE THE DC BOARD. VERIFY THE REPAIR.
140	
THERE IS A SHORT CIRCUIT ON ONE OF THE DC CARDS, FLAT CABLES OR CHAIN CABLE TERMINATOR CARD. SWITCH OFF THE 4963 AC POWER. RECONNECT EACH CARD AND FLAT CABLE ONE AT A TIME. SWITCH ON THE 4963 AC POWER SWITCH AFTER EACH EVENT.	
CAUTION	
ALWAYS REMOVE AC POWER BEFORE CONNECTING ANY CARD OR FLAT CABLE.	
EXCHANGE THE CARD OR PART THAT CAUSES THE 4963 POWER SUPPLY TO SWITCH OFF. IF THE CHAIN CABLE CAUSES THIS PROBLEM THE SHORT CIRCUIT MAY BE IN AN EXPANSION UNIT OR THE TERMINATOR CARD. VERIFY THE REPAIR.	
141	
THERE IS A POSSIBLE SHORT CIRCUIT ON THE DISK ELECTRONICS (DE) BOARD, DE FLAT CABLES, OR DE CARDS. GO TO MAP 7A79, ENTRY POINT A.	

142
ARE ALL OF THE FAN MOTORS RUNNING?
Y N

143
GO TO PAGE 59, STEP 165, ENTRY POINT P.

144
CHECK FOR TOO MUCH AC RIPPLE ON THE DC VOLTAGES. CONNECT THE POSITIVE TEST LEAD OF THE OSCILLOSCOPE TO THE CONNECTOR PIN INDICATED ON THE CHART AND THE NEGATIVE TEST LEAD TO THE CONNECTOR PIN INDICATED.
NOTE A BASE FILE WILL HAVE BOTH DE AND DC (BOARD A1 A2) CONNECTOR POSITIONS. AN EXPANSION FILE HAS ONLY DE (BOARD A1) CONNECTOR POSITIONS.

NOMINAL VOLTAGE	MAXIMUM RIPPLE PEAK TO PEAK	NEGATIVE TEST LEAD	POSITIVE TEST LEAD
+ 5.0	0.3V	DE F2 D08 DC D2 D08	DE F2 P03 DC D2 D03
+12.0	0.7V	DE F2 D08 DE B2 D08	DE F2 S11 DE B2 B11
+24.0	1.0V	DE F2 S09	DE F2 G02
- 4.0	0.3V	DE F2 D08	DE F2 M06
-12.0	0.7V	DE F2 D08	DE F2 U12
- 5.0	0.3V	DC D2 D08	DC D2 B06

(STEP 144 CONTINUES)

(STEP 144 CONTINUED)

+ 8.5	0.5V	DC D2 D08	DC D2 B11

IS THE PEAK TO PEAK RIPPLE VOLTAGE LESS THAN THE VALUE INDICATED ON THE CHART?
Y N
|
| 145
| TIGHTEN ALL CAPACITOR SCREWS ON THE POWER SUPPLY PRINTED CIRCUIT BOARD (REFERENCE SF530). MEASURE THE PEAK TO PEAK VOLTAGES IN THE CHART ABOVE.
| IS THE PEAK TO PEAK RIPPLE VOLTAGE LESS THAN THE VALUE INDICATED ON THE CHART?
| Y N
| |
| | 146
| | EXCHANGE THE POWER SUPPLY. (SEE MIM 3.2) VERIFY THE
| | REPAIR.
| |
| 147
| VERIFY THE REPAIR.
|
148
IF ALL OF THE VOLTAGES AND RESISTANCES ARE PRESENT AND AS INDICATED ON THE CHART, AND RIPPLE VOLTAGES ARE NOT MORE THAN VALUES LISTED ON THE CHART THERE IS NO PROBLEM IN THE POWER SUPPLY OR IN THE VOLTAGE DISTRIBUTION SYSTEM.
THERE IS A FAILURE IN THE 4963 DISC ENCLOSURE OR COMMON ADAPTER. SWITCH OFF THE 4963 AC POWER MOTOR SWITCH CONNECT ALL POWER SUPPLY CONNECTORS.
(STEP 148 CONTINUES)

(STEP 148 CONTINUED)
INSTALL ANY POWER SUPPLY OR SWITCH COVERS
SWITCH ON THE 4963 DISC MOTOR SWITCH.
SWITCH ON THE 4963 AC POWER SWITCH.
RUN MAP7A20 FOR THE FAILING DRIVE.

149

(ENTRY POINT D)

IF YOU ARE WORKING ON A BASE 4963.
REMOVE THE A2 GATE FAN TO REACH THE THERMAL SWITCH. (SEE MIM 3.7).
CONNECT THE POSITIVE TEST LEAD OF THE MULTIMETER TO CONNECTOR P4, PIN 26 AND THE NEGATIVE TEST LEAD OF THE MULTIMETER TO ONE TERMINAL OF THE THERMAL SWITCH. NOTE THE RESISTANCE THAT IS INDICATED ON THE MULTIMETER, THEN MOVE THE NEGATIVE TEST LEAD OF THE MULTIMETER TO THE OTHER TERMINAL OF THE THERMAL SWITCH.
IS ONE OR BOTH OF THE INDICATED RESISTANCES LESS THAN 0.25 OHMS?
Y N
|
| 150
| REPAIR THE 4963 DC POWER CABLE
| OR REMOVE THE CABLE AND INSTALL
| A NEW CABLE.
| RESEAT ALL CABLE CONNECTORS.
| INSTALL THE A2 GATE FAN.
| VERIFY THE REPAIR.
|
|
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151
CONNECT THE POSITIVE TEST LEAD OF THE MULTIMETER TO CONNECTOR P4, PIN 27 AND THE NEGATIVE TEST LEAD OF THE MULTIMETER TO ONE TERMINAL OF THE THERMAL SWITCH. NOTE THE RESISTANCE THAT IS INDICATED ON THE MULTIMETER, THEN MOVE THE NEGATIVE TEST LEAD OF THE MULTIMETER TO THE OTHER TERMINAL OF THE THERMAL SWITCH.
IS ONE OF THE INDICATED RESISTANCES LESS THAN 0.25 OHMS?
Y N

152
REPAIR THE 4963 DC POWER CABLE OR REMOVE THE CABLE AND INSTALL A NEW CABLE.
RESEAT ALL CABLE CONNECTORS.
INSTALL THE A2 GATE FAN.
VERIFY THE REPAIR.

153
CONNECT THE MULTIMETER TEST LEAD TO ONE TERMINAL OF THE THERMAL SWITCH AND THE OTHER MULTIMETER TEST LEAD TO THE OTHER TERMINAL OF THE THERMAL SWITCH. MEASURE THE RESISTANCE.
IS IT LESS THAN 0.25 OHMS?
Y N

154
REMOVE THERMAL SWITCH AND INSTALL A NEW SWITCH. (SEE MIM 3.7.1.2). INSTALL A2 GATE FAN. (SEE MIM 3.7).
RESEAT ALL CABLE CONNECTORS.
VERIFY THE REPAIR.

|
|
155
THERMAL SWITCH MUST HAVE
ACTIVATED BECAUSE OF THERMAL
PROBLEM AND RETURNED TO 0.25 OHM
RESISTANCE AFTER COOLING.
RESEAT ALL CABLE CONNECTORS.
GO TO PAGE 59, STEP 165,
ENTRY POINT P.

156

(ENTRY POINT E)

REMOVE THE "POWER GOOD" LED FROM ITS SOCKET. (SEE MIM 3.2).
SET THE MULTIMETER TO THE RX1 OHMS SCALE.
CONNECT THE POSITIVE TEST LEAD OF THE MULTIMETER TO CONNECTOR P8, PIN 1 AND THE NEGATIVE TEST LEAD OF THE MULTIMETER TO ONE PIN OF THE "POWER GOOD" LED SOCKET.
NOTE THE RESISTANCE THAT IS INDICATED ON THE MULTIMETER, THEN MOVE THE NEGATIVE TEST LEAD OF THE MULTIMETER TO THE OTHER PIN OF THE "POWER GOOD" LED SOCKET.
IS ONE OF THE INDICATED RESISTANCES LESS THAN 0.25 OHMS?
Y N

157
REPAIR THE 4963 DC POWER CABLE OR REMOVE THE CABLE AND INSTALL A NEW CABLE.
INSTALL THE "POWER GOOD" LED IN ITS SOCKET. VERIFY THE REPAIR.

158
SET THE MULTIMETER TO THE RX1 OHMS SCALE.
CONNECT THE POSITIVE TEST LEAD OF THE MULTIMETER TO CONNECTOR P8, PIN 3 AND THE NEGATIVE TEST LEAD OF THE MULTIMETER TO ONE PIN OF THE "POWER GOOD" LED SOCKET.
NOTE THE RESISTANCE THAT IS INDICATED ON THE MULTIMETER, THEN MOVE THE NEGATIVE TEST LEAD OF THE MULTIMETER TO THE OTHER PIN OF THE "POWER GOOD" LED SOCKET.
IS ONE OF THE INDICATED RESISTANCES LESS THAN 0.25 OHMS?
Y N

159
REPAIR THE 4963 DC POWER CABLE OR REMOVE THE CABLE AND INSTALL A NEW CABLE.
INSTALL THE "POWER GOOD" LED IN ITS SOCKET. VERIFY THE REPAIR.

160
REMOVE THE LED AND INSTALL A NEW ONE. VERIFY THE REPAIR.

161
(ENTRY POINT F)
REPAIR THE 4963 DC POWER CABLE OR REMOVE THE CABLE AND INSTALL A NEW CABLE. VERIFY THE REPAIR.

162
(ENTRY POINT G)
REPAIR THE 4963 DC POWER CABLE OR REMOVE THE CABLE AND INSTALL A NEW CABLE. VERIFY THE REPAIR

163
(ENTRY POINT H)
REPAIR THE 4963 GROUND WIRES OR REMOVE THE CABLE AND INSTALL A NEW CABLE. VERIFY THE REPAIR

164
(ENTRY POINT J)
REPAIR THE 4963 DC POWER CABLE OR REMOVE THE CABLE AND INSTALL A NEW CABLE. VERIFY THE REPAIR

165
(ENTRY POINT P)
ENSURE THAT THE 4963 DISC MOTOR SWITCH IS SWITCHED OFF.
CONNECT THE 4963 AC POWER CABLE INTO THE CUSTOMER'S AC POWER OUTLET OR INTO THE 4997 POWER SOCKET.
ENSURE THAT THE CUSTOMER'S AC POWER OUTLET OR THE 4997 CIRCUIT BREAKER IS SWITCHED ON.
SWITCH ON THE 4963 AC POWER SWITCH.
ARE BOTH OF THE FAN MOTORS RUNNING?
Y N

166
CHECK THE DE GATE FAN.
IS THE FAN RUNNING?
Y N

167
(ENTRY POINT L)

DANGER

THE VOLTAGE TO BE MEASURED IS DANGEROUS. BE CAREFUL TO ENSURE YOUR SAFETY. DO NOT TOUCH THE NOT INSULATED PARTS OF THE MULTIMETER TEST PROBES.

CONNECT ONE TEST LEAD OF THE MULTIMETER TO TERMINAL TB4-1 AND THE OTHER TEST LEAD OF THE MULTIMETER TO TERMINAL TB4-2.
(STEP 167 CONTINUES)

(STEP 167 CONTINUED)
IS THE VOLTAGE APPROXIMATELY THE 4963 INPUT VOLTAGE RATING?
Y N

168

DANGER

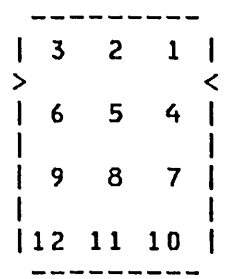
THE VOLTAGE TO BE MEASURED IS DANGEROUS. BE CAREFUL TO ENSURE YOUR SAFETY. DO NOT TOUCH THE NOT INSULATED PARTS OF THE MULTIMETER TEST PROBES.

SWITCH OFF THE 4963 AC POWER SWITCH.
DISCONNECT THE "POWER SUPPLY TO FAN" AC POWER CABLE FROM THE POWER SUPPLY.
CONNECT ONE TEST LEAD OF THE MULTIMETER TO JACK J2, PIN 5 AND THE OTHER TEST LEAD OF THE MULTIMETER TO JACK J2, PIN 6.
SWITCH ON THE 4963 AC POWER SWITCH.
IS THE INDICATED VOLTAGE APPROXIMATELY THE 4963 INPUT VOLTAGE RATING?
Y N

169
GO TO MAP 7A81, ENTRY POINT B.

170
SWITCH OFF THE 4963 AC POWER SWITCH.
REPAIR THE "POWER SUPPLY TO FAN" POWER CABLE OR REMOVE THE THE CABLE AND INSTALL A NEW CABLE. VERIFY THE REPAIR.

JACK J2



171
SWITCH OFF THE 4963 AC POWER SWITCH.
REMOVE THE DE GATE FAN AND REPAIR IT OR INSTALL A NEW FAN.
VERIFY THE REPAIR.

172
CHECK THE A2 GATE FAN.
IS THE FAN RUNNING?
Y N

173
(ENTRY POINT N)

DANGER

THE VOLTAGE TO BE MEASURED IS DANGEROUS. BE CAREFUL TO ENSURE YOUR SAFETY. DO NOT TOUCH THE NOT INSULATED PARTS OF THE MULTIMETER TEST PROBES.

CONNECT ONE TEST LEAD OF THE MULTIMETER TO TERMINAL TB2-1 AND THE OTHER TEST LEAD OF THE MULTIMETER TO TERMINAL TB2-4.
IS THE VOLTAGE APPROXIMATELY THE 4963 INPUT VOLTAGE RATING?
Y N

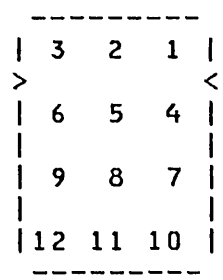
|
|
174

DANGER

THE VOLTAGE TO BE MEASURED IS DANGEROUS. BE CAREFUL TO ENSURE YOUR SAFETY. DO NOT TOUCH THE NOT INSULATED PARTS OF THE MULTIMETER TEST PROBES.

SWITCH OFF THE 4963 AC POWER SWITCH.
DISCONNECT THE "POWER SUPPLY TO FAN" AC POWER CABLE FROM THE POWER SUPPLY.
SWITCH ON THE 4963 AC POWER SWITCH.
CONNECT ONE TEST LEAD OF THE MULTIMETER TO JACK J2, PIN 2 AND THE OTHER TEST LEAD OF THE MULTIMETER TO JACK J2, PIN 3.
IS THE VOLTAGE APPROXIMATELY THE 4963 INPUT VOLTAGE RATING?
Y N
|
| 175
| GO TO MAP 7A81, ENTRY POINT B.
|
176
SWITCH OFF THE 4962 AC POWER SWITCH.
REPAIR THE "POWER SUPPLY TO FAN" POWER CABLE OR REMOVE THE THE CABLE AND INSTALL A NEW CABLE.
VERIFY THE REPAIR.

JACK J2



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| | |
| | |
| | 177
| | SWITCH OFF THE 4963 AC POWER
| | SWITCH.
| | REMOVE THE A2 GATE FAN AND
| | REPAIR IT OR INSTALL A NEW
| | FAN. VERIFY THE REPAIR.
| |
| 178
| GO TO STEP 179,
| ENTRY POINT M.
|
179
(ENTRY POINT M)
IS EITHER THE DE OR CONTROLLER
(A2) FAN AIR EXHAUST OR AIR ENTRY
STOPPED?
Y N
|
| 180
| IS THE DE FAN RUNNING SLOWER
| THAN NORMAL?
| Y N
| |
| | 181
| | IS THE CONTROLLER FAN RUNNING
| | SLOWER THAN NORMAL?
| | Y N
| | |
| | | 182
| | | CHECK FOR TOO MUCH HEAT IN
| | | THE 4963.
| | | IS THE AIR TEMPERATURE
| | | ENTERING THE 4963 HIGHER
| | | THAN 40.6 DEGREES C (105
| | | DEGREES F)?
| | | Y N
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
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```

		183 CHECK THE REAR FAN EXHAUST OUTLET BEHIND THE 4963. IS THE FAN EXHAUST OUTLET IN THE EMC COVER STOPPED WHEN THE 4963 IS IN THE OPERATING POSITION? Y N
		|
		184 CHECK THE PARTS IN THE 4963 TO DETERMINE IF THEY ARE GENERATING TOO MUCH HEAT. CHECK THE POWER SUPPLY, DRIVE MOTOR, FANS, CIRCUIT CARDS, AND DISK ENCLOSURE. EXCHANGE THE FAILING PART. VERIFY THE REPAIR,
		|
		185 REMOVE WHATEVER IS STOPPING THE FAN EXHAUST AT THE REAR OF THE EMC COVER. VERIFY THE REPAIR.
		|
		186 THIS TEMPERATURE IS MORE THAN THE FUNCTIONAL SPECIFICATION LIMIT FOR THE 4963. TAKE CORRECTIVE ACTION TO DECREASE THIS TEMPERATURE. VERIFY THE REPAIR.
		|
	187 GO TO PAGE 61, STEP 173, ENTRY POINT N.	
	|	
188 GO TO PAGE 59, STEP 167, ENTRY POINT L.		

189
CLEAR THE OBSTRUCTION FROM THE AIR PATH. VERIFY THE REPAIR.

190
(ENTRY POINT BB)

DANGER

THE VOLTAGE TO BE MEASURED IS DANGEROUS.BE CAREFUL TO ENSURE YOUR SAFETY. DO NOT TOUCH THE NOT INSULATED PARTS OF THE MULTIMETER TEST PROBES.
SWITCH OFF THE 4963 AC POWER SWITCH.
SWITCH ON THE 4963 DISC MOTOR SWITCH WHICH IS LOCATED ON THE POWER SUPPLY,

CAUTION

BE CAREFUL NOT TO MAKE A SHORT CIRCUIT TO THE FRAME OR TO ANY OTHER CONDUCTOR.

SET THE MULTIMETER TO AT LEAST 250 VOLTS ON THE AC VOLTS SCALE.
CONNECT ONE TEST LEAD OF THE MULTIMETER TO TB3-1 AND THE OTHER TEST LEAD OF THE MULTIMETER TO TB3-2.
SWITCH ON THE 4963 AC POWER SWITCH.
RESET THE MULTIMETER TO A LOWER AC VOLTS SCALE, IF NECESSARY.
NOTE THE VOLTAGE INDICATED ON THE MULTIMETER.
SWITCH OFF THE 4963 AC POWER SWITCH.
WAS THE VOLTAGE APPROXIMATELY THE 4963 INPUT VOLTAGE RATING?

Y N
| |
| |
| |
| |
| |

|
|
191

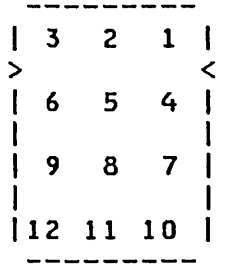
DANGER

THE VOLTAGE TO BE MEASURED IS DANGEROUS. BE CAREFUL TO ENSURE YOUR SAFETY.
DO NOT TOUCH THE NOT INSULATED PARTS OF THE MULTIMETER TEST PROBES.
SWITCH OFF THE 4963 AC POWER SWITCH.
DISCONNECT THE AC CABLE FROM THE POWER SUPPLY AT CONNECTOR J2.
SWITCH ON THE 4963 AC POWER SWITCH.
SWITCH ON THE 4963 DISC MOTOR SWITCH.
CONNECT ONE TEST LEAD OF THE MULTIMETER TC JACK J2, PIN 10 AND THE OTHER TEST LEAD OF THE MULTIMETER TO JACK J2, PIN 4.

CAUTION

BE CAREFUL NOT TO MAKE A SHORT CIRCUIT TO THE 4963 FRAME OR TO ANY OTHER CONDUCTOR.
IS THE VOLTAGE APPROXIMATELY THE 4963 INPUT VOLTAGE RATING?
Y N
|
| 192
| GO TO MAP 7A81, ENTRY POINT B.
|
|
|
|
|
|
|
|
|

JACK J2



193
SWITCH OFF THE 4963 AC POWER SWITCH.
REPAIR THE "POWER SUPPLY TO FAN AND 4963 DISC MOTOR" CABLE OR REMOVE THE CABLE AND INSTALL A NEW CABLE. VERIFY THE REPAIR.

194
ENSURE CONNECTOR P4 IS CONNECTED TO JACK J4 ON THE POWER SUPPLY AND ALL CONNECTORS ARE CONNECTED TO BOARD A1 AND BOARD A2.
CONNECT JUMPER, PN 8326945, FROM D2G10 TO D08 AND D2G11 TO D08 OF THE A1 (DE) BOARD.
SWITCH ON THE MOTOR SERVICE SWITCH (S1). SWITCH ON THE 4963 AC POWER SWITCH.
DOES THE DISC MOTOR COME ON AND TURN THE DISC?
Y N

195
RESET THE MOTOR THERMAL SWITCH LOCATED ON THE DRIVE MOTOR CASE.
DOES THE DISC MOTOR COME ON AND TURN THE DISC?
Y N

196
GO TO MAP 7A73,
ENTRY POINT A.

197
RUN DIAGNOSTIC PROGRAM MAP7A20
REMOVE JUMPERS AFTER RUNNING MAPS, AND VERIFYING REPAIRS.

198
RUN DIAGNOSTIC PROGRAM MAP7A20
REMOVE JUMPERS AFTER RUNNING
MAPS, AND VERIFYING REPAIRS.

---- ----- ------ ---

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP ENTRY POINT	PAGE NUMBER	STEP NUMBER
XXXX	A	1	001
XXXX	B	3	008
XXXX	C	17	043

EXIT POINTS

EXIT THIS MAP PAGE NUMBER	STEP NUMBER	TO MAP NUMBER	ENTRY POINT
9	024	7A80	B

001

(ENTRY POINT A)

THIS IS A PAPER ONLY MAP. THERE IS NO COMMON MAP PROGRAM. (SEE DIAGNOSTIC SERVICE GUIDE 05.00.00).

1) BEFORE TROUBLESHOOTING THE POWER SUPPLY, THE 4963 COVER MUST BE REMOVED. (SEE MIM 3.1.1).

DANGER

SWITCH OFF THE 4963 AC POWER SWITCH.

REMOVE THE FRONT SCREEN. RELAY K1 MAY NOT BE CORRECTLY SEATED DISCONNECT RELAY K1 AND SEAT TIGHTLY. INSTALL THE FRONT SCREEN. (SEE SF546). SWITCH ON THE 4963 AC POWER SWITCH. WAIT 5 SECONDS.
(STEP 001 CONTINUES)

(STEP 001 CONTINUED)
IS THE LED ON THE POWER SUPPLY SWITCHING ON AND OFF AT APPROXIMATELY A ONE HERTZ RATE?
Y N
|
| 002
| VERIFY THE REPAIR.
|
003

DANGER

SWITCH OFF THE 4963 AC POWER SWITCH.

REMOVE THE FRONT SCREEN BY REMOVING TWO SCREWS. REMOVE TIME DELAY RELAY K1 AND INSTALL A NEW RELAY. (SEE MIM 3.2.9, SF546). INSTALL THE FRONT SCREEN.
IS THE LED ON THE POWER SUPPLY SWITCHING ON AND OFF AT APPROXIMATELY A ONE HERTZ RATE?
Y N
|
| 004
| IS THE LED ON THE POWER SUPPLY ON CONSTANT?
| Y N
| |
| | 005
| | GO TO PAGE 3, STEP 008, ENTRY POINT B.
| |
| 006
| VERIFY THE REPAIR.
|
007
REMOVE THE POWER SUPPLY AND INSTALL A NEW POWER SUPPLY. (SEE MIM 3.2.1). VERIFY THE REPAIR.

008

(ENTRY POINT B)

THIS IS A PAPER ONLY MAP. THERE IS NO COMMON MAP PROGRAM. (SEE DIAGNOSTIC SERVICE GUIDE 05.00.00).

1) BEFORE TROUBLESHOOTING THE POWER SUPPLY, THE 4963 COVER MUST BE REMOVED. (SEE MIM 3.1.1)

2) WHEN IT IS NECESSARY TO REMOVE OR INSTALL THE POWER SUPPLY IN THE 4963, SEE MIM 3.2.1 FOR THE PROCEDURE.

3) USE THE RELAY EXTENSION TOOL, PN 450458, TO CONVERT THE ALLIGATOR CLIP TEST LEADS OF THE MULTIMETER TO PROBES, OR USE A 50 MILLIMETRE (2 INCH) LENGTH OF WIRE FROM WHICH THE INSULATION HAS BEEN REMOVED AT BOTH ENDS.

4) FOR ALL DC VOLTAGE MEASUREMENTS, ONE MULTIMETER LEAD SHOULD BE CONNECTED TO THE FRAME WHICH IS GROUND.

CAUTION

SWITCH OFF THE 4963 AC POWER SWITCH.

DISCONNECT THE DC POWER OUTPUT CONNECTOR P4 FROM J4. DISCONNECT THE LED CONNECTOR P8 FROM J8. DISCONNECT THE AC POWER OUTPUT CONNECTOR P2 FROM J2 ON THE POWER

(STEP 008 CONTINUES)

(STEP 008 CONTINUED)
SUPPLY. (SEE SF546). CONNECT THE AC INPUT POWER CONNECTOR P7 TO J7 ON THE POWER SUPPLY.
SWITCH ON THE 4963 AC POWER SWITCH.
WAIT 5 SECONDS.
IS THE LED ON THE POWER SUPPLY LIGHTED (SEE SF546)?
Y N

009

DANGER

SWITCH OFF THE 4963 AC POWER SWITCH.

SET THE MULTIMETER TO THE RX1 OHMS SCALE. REMOVE EACH FUSE FROM THE POWER SUPPLY AND MEASURE ITS RESISTANCE. (SEE MIM 3.2.2, SF546).
IS THE RESISTANCE OF EITHER FUSE MORE THAN ONE OHM?
Y N

010
INSTALL BOTH FUSES. CONNECT TEST POINT TP1 TO TEST POINT TP2 (GROUND) USING ONE WIRE OF BRAKE APPLIED JUMPER PN 8326945. (SEE SF546). ENSURE THAT NEITHER END OF THE OTHER WIRE IS TOUCHING ANY OTHER PART OF THE POWER SUPPLY. SWITCH ON THE 4963 AC POWER SWITCH. WAIT 5 SECONDS.

(STEP 010 CONTINUES)

J4

28	29	30	31	32	33	34	35	36
19	20	21	22	23	24	25	26	27
10	11	12	13	14	15	16	17	18
01	02	03	04	05	06	07	08	09

CONNECT RED LEAD TO LISTED TERMINAL.
CONNECT BLACK LEAD TO
(STEP 010 CONTINUES)

(STEP 010 CONTINUED)

IS AT LEAST +22V DC PRESENT AT CONNECTOR J4, TERMINAL 23?
Y N

011
SWITCH OFF THE 4963 AC POWER SWITCH FOR AT LEAST ONE SECOND. SWITCH ON THE 4963 AC POWER SWITCH WHILE CHECKING CONNECTOR J4, TERMINAL 23.
WAS AT LEAST +22V DC PRESENT FOR APPROXIMATELY TWO OR THREE SECONDS?
Y N

012
REMOVE JUMPER FROM TP1 AND TP2. REPEATEDLY SWITCH OFF THE 4963 AC POWER SWITCH FOR AT LEAST ONE SECOND, AND THEN SWITCH ON THE 4963 AC POWER SWITCH WHILE MEASURING THE OTHER VOLTAGES IN TABLE ONE.

(STEP 012 CONTINUES)

(STEP 010 CONTINUED)
FRAME(GROUND).
SWITCH POLARITY SWITCH TO + OR - AS NEEDED.

TABLE ONE
DC OUTPUT VOLTAGES

NOMINAL VOLTAGE	MINIMUM VOLTAGE	J4 TERMINALS
+ 5.0	+ 4.67	7, 8, 9,
+ 5.0	+ 4.67	15, 16, 17, 18, 24, 25
+ 8.5	+ 7.82	30
+12.0	+11.04	32
+24.0	+22.08	23, 31
- 4.0	- 3.68	4, 5
- 5.0	- 4.55	34
-12.0	-11.04	33

(STEP 012 CONTINUED)
IS ANY VOLTAGE HIGHER THAN ITS MINIMUM VALUE FOR EVEN A SHORT TIME?
Y N

013

DANGER

SWITCH OFF THE 4963 AC POWER SWITCH.

REMOVE THE FRONT SCREEN BY REMOVING TWO SCREWS. INSPECT THE TERMINALS OF CONNECTORS P1 AND P3. INSPECT JUMPERS J5 AND J6. TIGHTEN ANY LOOSE TERMINALS OR CONNECT ANY DISCONNECTED TERMINALS. (SEE SF546, SF547). INSTALL THE SCREEN. INSTALL BOTH FUSES.
REMOVE THE TRANSFORMER SHIELD BY LOOSENING TWO SCREWS.
INSPECT THE TERMINALS OF TB1 AND RESONANT CAPACITOR C1 AND RECONNECT OR TIGHTEN ANY LOOSE TERMINALS. INSTALL THE TRANSFORMER SHIELD.
SWITCH ON THE 4963 AC POWER SWITCH. WAIT FIVE SECONDS.
IS THE LED ON THE POWER SUPPLY LIGHTED?
Y N

7 7 7
E F G

PAGE 7 OF 18

014

DANGER

SWITCH OFF THE 4963 AC POWER SWITCH.

REMOVE THE FRONT SCREEN BY REMOVING TWO SCREWS. REMOVE TIME DELAY RELAY K1 AND INSTALL A NEW RELAY. (SEE MIM 3.2.9, SF546). INSTALL THE FRONT SCREEN. SWITCH ON THE 4963 AC POWER SWITCH. IS THE LED ON THE POWER SUPPLY LIGHTED?
Y N

015
A FAILURE EXISTS IN THE PRIMARY SECTION. REMOVE THE POWER SUPPLY AND INSTALL A NEW POWER SUPPLY. (SEE MIM 3.2.1). VERIFY THE REPAIR.

016
VERIFY THE REPAIR.

017
A LOOSE CONNECTION CAUSED THE FAILURE. VERIFY THE REPAIR.

018
ONE OR MORE VOLTAGES, INCLUDING +24V DC, ARE FAILING. REMOVE THE POWER SUPPLY AND INSTALL A NEW POWER SUPPLY. (SEE MIM 3.2.1). VERIFY THE REPAIR.

PAGE 8 OF 18

019

DANGER

SWITCH OFF THE 4963 AC POWER SWITCH.

REMOVE THE FRONT SCREEN BY REMOVING TWO SCREWS. REMOVE HOLD RELAY K2, AND INSTALL A NEW RELAY. INSTALL THE FRONT SCREEN. (SEE MIM 3.2.9, SF546).
REMOVE JUMPER FROM TP1 AND TP2. VERIFY THE REPAIR.

020
A VOLTAGE OTHER THAN +24V DC IS FAILING OR THE VOLTAGE SENSING CIRCUIT IS FAILING.
REMOVE THE POWER SUPPLY AND INSTALL A NEW POWER SUPPLY. (SEE MIM 3.2.1). VERIFY THE REPAIR.

021
REMOVE THE FRONT SCREEN BY REMOVING TWO SCREWS. REMOVE THE TRANSFORMER SHIELD BY LOOSENING TWO SCREWS. (SEE SF546).
IS THERE ANY BURNING OR OTHER DAMAGE IN THE PRIMARY AREA OR AROUND THE TRANSFORMER?
Y N

PAGE 9 OF 18

022
INSTALL THE FRONT SCREEN.
INSTALL TRANSFORMER SHIELD.
REMOVE EACH FUSE THAT HAS A RESISTANCE OF MORE THAN ONE OHM AND INSTALL A GOOD FUSE. (SEE MIM 3.2.2, SF546). ENSURE THAT THE DISK MOTOR SWITCH IS ON.
SWITCH ON THE 4963 AC POWER SWITCH.
IS THE LED ON THE POWER SUPPLY (SEE SF546) LIGHTED?
Y N

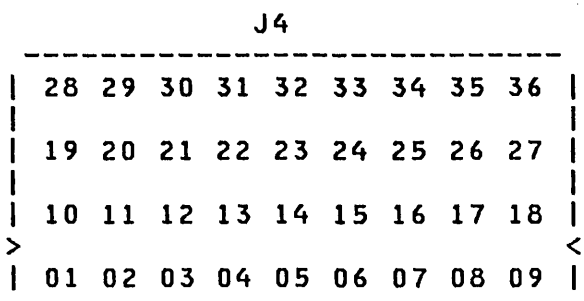
023
SHORT CIRCUIT IN THE POWER SUPPLY. REMOVE POWER SUPPLY AND INSTALL A NEW POWER SUPPLY. (SEE MIM 3.2.1).
VERIFY THE REPAIR.

024
POSSIBLE SHORT CIRCUIT IN AC OR DC DISTRIBUTION CABLES OR LOADS.
GO TO MAP 7A80, ENTRY POINT B.

025
POWER SUPPLY HAS BEEN DAMAGED.
REMOVE THE POWER SUPPLY AND INSTALL A NEW POWER SUPPLY. (SEE MIM 3.2.1). VERIFY THE REPAIR.

PAGE 10 OF 18

026
ENSURE THAT THE VOLTAGE SENSING CIRCUIT CORRECTLY RESPONDS TO A SIMULATED FAILURE: CONNECT THE -5V PRESENT AT CONNECTOR J4, TERMINAL 34, TO THE POWER SUPPLY FRAME FOR A SHORT TIME USING ONE MULTIMETER TEST LEAD THAT HAS BEEN CHANGED TO A PROBE WITH THE RELAY EXTENSION TOOL. (SEE SF546).



CONNECT RED LEAD TO LISTED TERMINAL.
CONNECT BLACK LEAD TO FRAME(GROUND).
SWITCH POLARITY SWITCH TO + OR - AS NEEDED.

DID THE LED ON THE POWER SUPPLY SWITCH OFF?
Y N

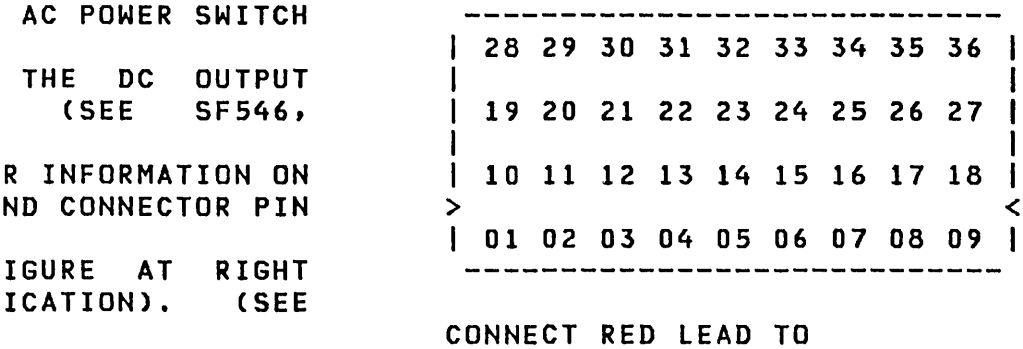
027
BAD VOLTAGE SENSING CIRCUIT. REMOVE POWER SUPPLY AND INSTALL A NEW POWER SUPPLY. (SEE MIM 3.2.1). VERIFY THE REPAIR.

028
REMOVE THE FRAME CONNECTION. SWITCH THE 4963 AC POWER OFF, THEN ON. WAIT 5 SECONDS. SIMULATE AN APPLIED BRAKE OR TOO MUCH HEAT BY CONNECTING THE JUMPER TERMINAL AT CONNECTOR J4, TERMINAL 36, TO THE POWER SUPPLY FRAME FOR FIVE SECONDS.
DID THE LED ON THE POWER SUPPLY SWITCH OFF?
Y N

029
BAD VOLTAGE SENSING CIRCUIT. REMOVE THE POWER SUPPLY AND INSTALL A NEW POWER SUPPLY. (SEE MIM 3.2.1). VERIFY THE REPAIR.

030
REMOVE THE FRAME CONNECTION. SWITCH THE 4963 AC POWER SWITCH OFF, THEN ON.
MEASURE ALL OF THE DC OUTPUT VOLTAGES AT J4 (SEE SF546, SF547).
USE TABLE 1 FOR INFORMATION ON CORRECT VOLTAGE AND CONNECTOR PIN IDENTIFICATION.
(SEE CONNECTOR FIGURE AT RIGHT FOR PIN IDENTIFICATION). (SEE SF546).
NOTE; FOR THIS STEP ALL VOLTAGES ARE PERMITTED TO BE HIGH SINCE THE LOAD CONNECTOR P4 IS DISCONNECTED, IN MAP 7A80 THESE VOLTAGES WILL BE MEASURED WITH P4 CONNECTED.

J4



CONNECT RED LEAD TO LISTED TERMINAL.
CONNECT BLACK LEAD TO FRAME(GROUND).
SWITCH POLARITY SWITCH TO + OR - AS NEEDED.

TABLE ONE
DC OUTPUT VOLTAGES

NOMINAL VOLTAGE	MINIMUM VOLTAGE	J4 TERMINALS
+ 5.0	+ 4.67	7, 8. 9,
+ 5.0	+ 4.67	15, 16, 17, 18, 24, 25
+ 8.5	+ 7.82	30
+12.0	+11.04	32
+24.0	+22.08	23, 31

(STEP 030 CONTINUES)

(STEP 030 CONTINUES)

(STEP 030 CONTINUED)

(STEP 030 CONTINUED)

- 4.0	- 3.68	4, 5
- 5.0	- 4.55	34
-12.0	-11.04	33

ARE ALL VOLTAGES ABOVE THE MINIMUM VALUES AS INDICATED IN TABLE ONE?

Y N

|

| 031
| REMOVE BAD POWER SUPPLY AND INSTALL A NEW POWER SUPPLY. (SEE MIM 3.2.1). VERIFY THE REPAIR.

|

032

MEASURE THE LOGIC SIGNALS. THE MULTIMETER SHOULD INDICATE VOLTAGES AS SHOWN IN TABLE TWO. (SEE SF546).

TABLE TWO
LOGIC SIGNALS

SIGNAL NAME	MAX. VOLT.	MIN. VOLT.	TERM.	CONN.
LED ANODE	+ 3.0	+ 2.0	1 OR 4	J8
LED CATHODE	+ 0.4	+ 0.0	2 OR 3	
POWER GOOD	+ 0.4	+ 0.0	14	J4
POWER ON RESET	+ 5.5	+ 4.5	6	
THERMO-STAT	+ 0.4	+ 0.0	27	
JUMPER	+ 0.8	+ 0.4	36	

(STEP 032 CONTINUES)

(STEP 032 CONTINUES)

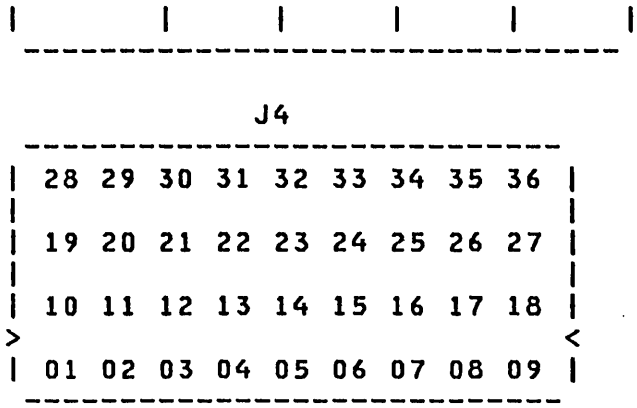
(STEP 032 CONTINUED)

ARE ALL OF THE LOGIC SIGNALS GOOD?

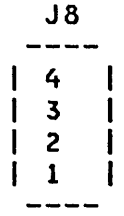
Y N

| 033
| REMOVE THE POWER SUPPLY AND INSTALL A NEW POWER SUPPLY. (SEE MIM 3.2.1). VERIFY THE REPAIR.

(STEP 032 CONTINUED)



CONNECT RED LEAD TO LISTED TERMINAL.
CONNECT BLACK LEAD TO FRAME(GROUND).
SWITCH POLARITY SWITCH TO + OR - AS NEEDED.



034

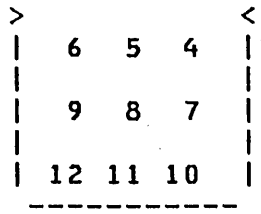
DANGER

USE CAUTION WHEN MEASURING.

SWITCH OFF THE 4963 DISK MOTOR SWITCH WHICH IS LOCATED ON THE POWER SUPPLY. MEASURE THE FAN VOLTAGES BETWEEN THE POINTS INDICATED ON TABLE THREE. THE VOLTAGES SHOULD APPROXIMATELY EQUAL THE 4963 AC INPUT VOLTAGE. (SEE SF546, SF547).

TABLE THREE
AC VOLTAGES

CA GATE FAN	CONN. TERM. J2, PINS 2, 3
DE GATE FAN	CONN. TERM. J2, PINS 5, 6
DISK MOTOR	CONN. TERM. J2, PINS 10, 4



ARE THE FAN VOLTAGES PRESENT?
Y N

035
REMOVE THE POWER SUPPLY AND INSTALL A NEW POWER SUPPLY. (SEE MIM 3.2.1). VERIFY THE REPAIR.

036
IS THE DISK MOTOR AC VOLTAGE APPROXIMATELY ZERO VOLTS?
Y N

037
REMOVE THE DISK MOTOR SWITCH
AND EXCHANGE WITH A NEW SWITCH
(SEE MIM 3.2.11,SF546, SF547)
VERIFY THE REPAIR.

038
SWITCH ON THE 4963 DISK MOTOR
SWITCH.
IS THE 4963 DISK MOTOR AC VOLTAGE
APPROXIMATELY EQUAL TO THE AC
LINE VOLTAGE?
Y N

039

DANGER

SWITCH OFF THE 4963 DISK AC
POWER SWITCH.

REMOVE THE FRONT SCREEN BY
REMOVING TWO SCREWS. INSPECT
THE WIRES CONNECTING P3 TO THE
DISK MOTOR SWITCH S1. RESEAT
OR CONNECT ANY LOOSE OR
DISCONNECTED TERMINALS. (SEE
SF546, SF547).
INSTALL THE SCREEN. SWITCH ON
THE 4963 DISK AC POWER SWITCH.
IS THE 4963 DISK MOTOR AC
VOLTAGE NOW PRESENT?
Y N

040
REMOVE THE DISK MOTOR SWITCH AND EXCHANGE WITH A NEW SWITCH (SEE MIM 3.2.11,SF546, SF547)
RECONNECT ALL DISCONNECTED CABLES (SF546)
VERIFY THE REPAIR.

041
VERIFY THE REPAIR.

042
NO FAILURE FOUND IN THE POWER SUPPLY.

CAUTION

SWITCH OFF THE 4963 DISK AC POWER SWITCH.

CONNECT ALL DISCONNECTED CABLES (SF546)
GO TO MAP7A80 ENTRY POINT B.

043

(ENTRY POINT C)

DANGER

SWITCH OFF THE 4963 DISK AC POWER SWITCH.

REMOVE THE TRANSFORMER SHIELD BY LOOSENING TWO SCREWS CHECK BOTH TERMINALS OF THE RESONANT CAPACITOR (C1) (SEE SF546) AND RECONNECT ANY LOOSE OR DISCONNECTED WIRES.
WAS EITHER WIRE LOOSE OR DISCONNECTED?
Y N
|
| 044
| (SEE SF546). LOOSEN THE RESONANT CAPACITOR (C1) TERMINAL COVERS AND MOVE AWAY FROM THE TERMINALS ON TO THE RED LEADS. DISCONNECT THE RED LEADS FROM THE CAPACITOR. SET THE MULTIMETER TO THE RX100 SCALE. MEASURE THE RESISTANCE FROM ONE RED LEAD TO THE OTHER. IS THE RESISTANCE LESS THAN 1000 OHMS?
| Y N
| |
| | 045
| | THE RESONANT WINDING OF THE TRANSFORMER IS OPEN. REMOVE THE POWER SUPPLY AND INSTALL A NEW POWER SUPPLY. (SEE MIM 3.2.1). VERIFY THE REPAIR.
| |
| |
| |
| |
| |
| |

046
SET THE MULTIMETER TO THE LARGEST OHMS SCALE. WHILE OBSERVING THE MULTIMETER NEEDLE TOUCH THE BLACK LEAD TO ONE RESONANT CAPACITOR (C1) TERMINAL AND TOUCH THE RED LEAD TO THE OTHER TERMINAL. THEN SWAP THE MULTIMETER LEADS TO THE CAPACITOR TERMINALS.
WAS THERE ANY MULTIMETER NEEDLE MOVEMENT?
Y N

047
THE RESONANT CAPACITOR IS NOT GOOD. REMOVE THE POWER SUPPLY AND INSTALL A NEW POWER SUPPLY. (SEE MIM 3.2.1). VERIFY THE REPAIR.

048
NO FAILURE FOUND IN THE RESONANT CIRCUIT OF THE POWER SUPPLY.
GO TO MAP7A80 ENTRY POINT CC

049
ENSURE THAT BOTH TERMINAL COVERS HAVE BEEN REMOVED ON THE RESONANT CAPACITOR. ATTACH THE TRANSFORMER SHIELD, TIGHTENING TWO SCREWS. REMOVE THE BRAKE APPLIED JUMPER FROM THE DISK (A1-D2G10,D2D11) ELECTRONICS BACK PANEL. VERIFY THE REPAIR.

---- --- ---

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP ENTRY POINT	PAGE NUMBER	STEP NUMBER
0020	A	1	001

EXIT POINTS

EXIT THIS MAP PAGE NUMBER	STEP NUMBER	TO MAP NUMBER	ENTRY POINT
1	002	2570	A
2	004	2570	A

001
(ENTRY POINT A)

THIS IS A PAPER ONLY MAP. THERE IS NO ASSOCIATED MAP PROGRAM. (SEE DIAGNOSTIC SERVICE GUIDE 05.00.00).

POWER ON 4963. WAIT 16 SECONDS FOR READY.
PUSH LOAD KEY ON THE PROGRAMMER CONSOLE.

WHEN X'00E0' IS DISPLAYED, THE IPL SEQUENCE HAS NOT RECEIVED A RESPONSE FROM THE LOAD SOURCE.

DO THE LAMPS CONTAIN OTHER THAN X'0E00' ?
Y N
|
| 002
| MICRO DIAGNOSTIC PROBLEM
| GO TO MAP 2570, ENTRY POINT A.
|
003
DO THE LAMPS CONTAIN OTHER THAN X'0E05' ?
Y N
| |
| |
| |
| |
| |

 20MAY83 PN6826998

| |

REVISED 1979 ECA03143 PEC375609

PAGE 2 OF 6

004
MICRO DIAGNOSTIC PROBLEM
GO TO MAP 2570, ENTRY POINT A.

005
(ENTRY POINT F)
WHEN X'00E0' IS DISPLAYED , THE IPL SEQUENCE SENT HAS NOT RECEIVED A RESPONSE FROM THE LOAD SOURCE.
ARE THE LAMPS OTHER THAN X'00E0'
?
Y N

006
PROBE IPL LINE(S04) AT THE IPL 4963 ATTACHMENT CARD INTERFACE.
IS IT UP (NOT ACTIVE)?
Y N

007
EXCHANGE THE ROS CARD
VERIFY THE REPAIR.
IPL LINE WAS GENERATED BUT THE PROCESSING UNIT DID NOT RECOGNIZE IT.

(IF 4953 PROCESSING UNIT EXCHANGE THE PROCESSING UNIT CARD.)
VERIFY THE REPAIR.

008
PROBE IIPL LINE(P07) AT THE 4963 IPL ATTACHMENT CARD INTERFACE.
IS IT DOWN (ACTIVE)?
Y N

PAGE 3 OF 6

009
PROBE IIPL(P07) AT THE PROCESSING UNIT CARD INTERFACE. SEE THE PROCESSING UNIT ALD, MAINTENANCE LOGIC DIAGRAMS VOLUME 01.
IS IT DOWN (ACTIVE)?
Y N

010
EXCHANGE THE ROS CARD
VERIFY THE REPAIR.
IIPL NOT AT PROCESSING UNIT OUTPUT.

(IF 4953 PROCESSING UNIT EXCHANGE THE PROCESSING UNIT CARD.)
VERIFY THE REPAIR.

011
CARD FILE PROBLEM OR IF 4963 LOAD DEVICE ATTACH CARD IS IN AN EXPANSION CARD FILE ENCLOSURE , IT COULD BE A CABLE PROBLEM.

012
VERIFY THAT THE PRIMARY/ALTERNATE SWITCH IS GOOD.
GO TO MAP 1071, ENTRY POINT E.

WHEN YOU RETURN , PROBE THE CORRECT STATUS BUS BIT(0 OR 1) AT THE IPL 4963 INTERFACE.
PRIMARY=BIT 0(J13) AND ALTERNATE=BIT 1(G13).
IS IT DOWN (ACTIVE)?
Y N

PAGE 4 OF 6

013
VERIFY THAT THE IPL JUMPERS ON THE 4963 ATTACHMENT CARD COMPARE WITH CONSOLE IPL SOURCE SELECTION.
SEE 4963 MIM , PARAGRAPH 2.4.
DO THEY COMPARE ?
Y N

014
CORRECT IT AND RETRY IPL SEQUENCE.

015
PROBE THE CORRECT STATUS BUS BIT AT THE PROCESSING UNIT CARD INTERFACE.

PRIMARY=BIT 0(J13) AND
ALTERNATE=BIT 1(G13).

SEE THE PROCESSING UNIT ALD, MAINTENANCE LOGIC DIAGRAMS VOLUME 01.
IS IT DOWN (ACTIVE) THERE?
Y N

016
EXCHANGE THE ROS CARD
VERIFY THE REPAIR.
STATUS BITS 0/1 NOT CORRECT FROM PROCESSING UNIT.

(IF 4953 PROCESSING UNIT EXCHANGE THE PROCESSING UNIT CARD.)
VERIFY THE REPAIR.

017
CABLE OR CARD FILE PROBLEM

PAGE 5 OF 6

018
PROBE SYSTEM RESET AT 4963 ATTACHMENT CARD INTERFACE (M05) WHILE PRESSING IPL KEY ON THE PROGRAMMER CONSOLE.
DID SYSTEM RESET PULSE ?
Y N

Y:
019
CHECK FOR SAME CONDITION AT THE PROCESSING UNIT CARD INTERFACE.
SEE THE PROCESSING UNIT ALD, MAINTENANCE LOGIC DIAGRAMS VOLUME 01.
CHECK CABLES AND CARD FILE FOR CAUSE OF PROBLEM.

020
EXCHANGE 4963 ATTACH CARD.
VERIFY THE REPAIR.

N:
USE GENERAL LOGIC PROBE IN 'LATCH DOWN' MODE.
SET OTHER SWITCH FOR 'MULTI' LEVEL.

021
RUN 4963 MAPS.
SEE PROLOG 7A00 PARAGRAPH 0.0.
ANY ERROR?
Y N

Y:
022
A VARIABLE NUMBER OF RECORDS CAN BE READ ON IPL DEPENDING ON THE CONTENTS OF THE LAST WORD OF THE 1ST 256-BYTE RECORD READ. IF THE RECORD COUNT IN THIS WORD IS NOT ZERO ENSURE TO VERIFY THAT THE EXTRA RECORDS TO BE READ ON IPL CAN BE READ. REFER TO THE 4963 MIM, PARAGRAPH 2.4 FOR MORE INSTRUCTION OF THE 4963 VARIABLE IPL FUNCTION.
(STEP 022 CONTINUES)

N:

PAGE 6 OF 6

(STEP 022 CONTINUED)
EXECUTE MAP7A69 (MANUAL MODE MAP) TO VERIFY THAT ALL IPL RECORDS CAN BE READ. IF A SECTOR IS FOUND TO BE BAD ASSIGN IT TO AN ALTERNATE SECTOR. AFTER ALL THE IPL RECORDS HAVE BEEN VERIFIED RETRY IPL SEQUENCE. IF IPL STILL FAILS, EXCHANGE THE 4963 ATTACHMENT CARD.

023
REPAIR THE 4963 THEN RETRY TO IPL FROM THE 4963.

MINI-MAP

PAGE 1 OF 7

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
XXXX	A	1	001
XXXX	B	6	024

001
(ENTRY POINT A)

THIS MAP ISOLATES FAILURES THAT CAUSE MANY CALL OUT(S) BY THE MAPS RUN

DO THE FOLLOWING ITEM(S)

1-PUT FILE 0 INTO THE SERVICE POSITION.
2-REMOVE THE EMC COVER
3-REFER TO PAGE SF537 OF THE MAINTENANCE LOGIC MANUAL FOR CABLE NETS AFFECTED

POWER OFF
TO MAKE A SINGLE FILE CONFIGURATION, REMOVE CABLES A2-A3,A2-A4,A2-B4 FROM BOARD A2. REMOVE CABLE A1-A4 AND INSERT TERMINATOR CARD PN 5861353 INTO A1-A4 OF THE BASE FILE.

POWER ON
LOAD (C) MAP7A20 FOR FILE 0
DOES THE MAP RUN WITHOUT ERROR?
Y N

NOTE: THE TERMINATOR CARD IS LOCATED IN THE LAST FILE POSITION A1-A4 OR A1-A3.

 20MAY83 PN6841120

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3 2
A B

002
POWER OFF
RECORD THE FAILING STEP FROM MAP7A20.
REMOVE CABLES A2-B2,A2-B3 FROM BOARD A2.
INSERT CABLE FROM A1-A4 INTO A2-B2.
(CABLE D ON SF537, FROM FILE 1)
INSERT CABLE FROM A2-B4 INTO A2-B3.
(CABLE C ON SF537, FROM FILE 1)
REMOVE CABLE A1-A4 OF FILE 1 AND INSERT TERMINATOR CARD PN 5861353 INTO A1-A4 OF FILE 1.

POWER ON
LOAD (C) MAP7A20 FOR FILE 0
DOES THE MAP RUN WITHOUT ERROR?
Y N
|
| 003
| EXCHANGE A2-C2,A2-D2 CARDS
|
| RUN MAP7A20 FOR FILE 0
| DOES THE MAP RUN WITHOUT ERROR?
| Y N
| |
| | 004
| | EXCHANGE BOARD A2
| | RETURN SUBSYSTEM TO ORIGINAL
| | CONFIGURATION
| |
| 005
| RETURN SUBSYSTEM TO ORIGINAL
| CONFIGURATION
|
006
FILE 0 IS BAD
RECONNECT FILE 0 AND CONFIGURE A2-C2 CARD
RUN MAP7A20 AND FOLLOW THE MAPS

NOTE: THIS PUTS FILE 1 AS FILE 0. CHECK THE CONFIGURATION JUMPER(S) ON CARD A2-C2 TO VERIFY THAT FILE 0 NOW EQUALS FILE 1 FOR THIS STEP.

MINI-MAP

PAGE 3 OF 7

007
POWER OFF
CONFIGURE A2-C2 CARD SO ALL FILE
CONFIGURATION JUMPER(S) ARE EQUAL
TO THE FILE 0 JUMPER(S)
MOVE CABLE A2-B3 TO A2-B4
POWER ON
LOAD (C) MAP7A20 FOR FILE 1
DOES THE MAP RUN WITHOUT ERROR?
Y N

008
EXCHANGE A2-C2,A2-D2 CARDS

RUN MAP7A20 FOR FILE 1
DOES THE MAP RUN WITHOUT ERROR?
Y N

009
EXCHANGE BOARD A2
RETURN SUBSYSTEM TO ORIGINAL
CONFIGURATION

010
VERIFY REPAIR
RETURN SUBSYSTEM TO ORIGINAL
CONFIGURATION

011
IS THIS THE LAST FILE ADDRESS?
Y N

012
POWER OFF

MOVE CABLE A2-B4 TO A2-A4
POWER ON
LOAD (C) MAP7A20 FOR FILE 2
DOES THE MAP RUN WITHOUT ERROR?
Y N

013
EXCHANGE A2-C2,A2-D2 CARDS

RUN MAP7A20 FOR FILE 2
DOES THE MAP RUN WITHOUT ERROR?
Y N

014
EXCHANGE BOARD A2
RETURN SUBSYSTEM TO ORIGINAL CONFIGURATION

015
VERIFY REPAIR
RETURN SUBSYSTEM TO ORIGINAL CONFIGURATION

016
IS THIS THE LAST FILE ADDRESS?
Y N

017
POWER OFF

MOVE CABLE A2-A4 TO A2-A3
POWER ON
LOAD (C) MAP7A20 FOR FILE 3
DOES THE MAP RUN WITHOUT ERROR?
Y N

018
EXCHANGE A2-C2,A2-D2 CARDS

RUN MAP7A20 FOR FILE 3
DOES THE MAP RUN WITHOUT ERROR?
Y N

019
EXCHANGE BOARD A2
RETURN SUBSYSTEM TO ORIGINAL CONFIGURATION

MINI-MAP

PAGE 5 OF 7

020
VERIFY REPAIR
RETURN SUBSYSTEM TO
ORIGINAL CONFIGURATION

021
GO TO ENTRY POINT B

022
GO TO ENTRY POINT B

023
GO TO ENTRY POINT B

024
(ENTRY POINT B)
POWER OFF

CONFIGURE A2-C2 CARD TO ORIGINAL CONFIGURATION
MOVE CABLE A2-A3 TO A2-B3
INSERT CABLE A2-B4 FROM FILE 1.
REMOVE TERMINATOR CARD FROM A1-A4 OF FILE 0 AND INSERT CABLE REMOVED BEFORE.
REMOVE CABLE A1-A4 OF FILE 1 AND INSERT TERMINATOR CARD PN 5861353 INTO A1-A4 OF FILE 1.

POWER ON
LOAD (C) MAP7A20 FOR FILE 1
DOES THE MAP RUN WITHOUT ERROR?
Y N
|
| 025
| PROBLEM IS WITH FILE 1, FOLLOW
| THE MAPS
|
026
IS THIS THE LAST FILE ADDRESS?
Y N
|
| 027
| POWER OFF
| REMOVE TERMINATOR CARD FROM
| A1-A4 OF FILE 1 AND INSERT
| CABLE REMOVED BEFORE.
| REMOVE CABLE A1-A4 OF FILE 2
| AND INSERT TERMINATOR CARD PN
| 5861353 INTO A1-A4 OF FILE 2.
|
| POWER ON
| LOAD (C) MAP7A20 FOR FILE 2
| DOES THE MAP RUN WITHOUT ERROR?
| Y N

7 7 7
J K L

MINI-MAP

PAGE 7 OF 7

028
PROBLEM IS WITH FILE 2,
FOLLOW THE MAPS

029
IS THIS THE LAST FILE ADDRESS?
Y N

030
POWER OFF
REMOVE TERMINATOR CARD FROM
A1-A4 OF FILE 2 AND INSERT
CABLE REMOVED BEFORE.
INSERT TERMINATOR CARD PN
5861353 INTO A1-A4 OF FILE 3.

POWER ON
LOAD (C) MAP7A20 FOR FILE 3
DOES THE MAP RUN WITHOUT
ERROR?
Y N

031
PROBLEM IS WITH FILE 3,
FOLLOW THE MAPS

032
PROBLEM WAS A LOOSE CABLE
RUN MAPS TO VERIFY

033
PROBLEM WAS A LOOSE CABLE
RUN MAPS TO VERIFY

034
PROBLEM WAS A LOOSE CABLE
RUN MAPS TO VERIFY