IBM

Displaywriter System

Maintenance Analysis Procedures

Revised February, 1983
S241-6250-6

IBM 6360 Diskette Unit
IBM 6580 Display Station
Communications

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SAFETY PRECAUTIONS

All IBM Customer Service Representatives are expected to take every safety precaution possible and observe the following saftey practices when servicing IBM equipment.

Mechanical Safety:

1. *Safety glasses must be worn.*
2. *All safety devices, such as guards, shields, signs, ground wires, etc., must be restored after maintenance. When a guard or shield is removed to observe or make an adjustment, that shield must be replaced when work in the area is completed.*
3. *Watches, rings, necklaces, ID bracelets, etc., must be removed when servicing the machine.*
4. *Care must be used when working near moving parts. Keep hair away from moving parts. Avoid wearing loose clothing that might be caught in the machine. Shirt sleeves must be kept buttoned or rolled above the elbows. Ties must be tucked in the shirt or have a tie clasp approximately three inches from the end. Tie chains are not recommended.*

Electrical Safety:

1. *The equipment referenced in this manual may use high voltages. Check voltage labels!*
2. *Safety glasses must be worn when checking energized circuits.*
3. *If a circuit is disconnected for servicing or parts replacement, it must be reconnected and tested before allowing the use of the machine.*
4. *Power should be removed from the machine for servicing whenever possible. Remember, when checking voltages, avoid contacting ground potential, such as metal floor strips, machine frame, etc.*
5. *Meter continuity checks should be used instead of voltage checks whenever possible.*
6. *Do not apply power to any part, component, or subassembly when it is not physically mounted in the machine, or in its approved service position.*

General Safety:

1. *Each Customer Service Representative is responsible to be certain no action on his/her part makes the product unsafe or exposes customer personnel to hazards.*
2. *Store the removed machine covers in a safe, out of the way place where no one can trip over them.*
3. *If you must leave the machine in a down condition, always install the covers and disconnect the power before leaving the customer's office.*
4. *Always place CSR tool kit away from walk areas where no one can trip over it.*
5. *Maintain safe conditions in the area of the machine while performing and after completing maintenance.*
6. *Before starting the equipment, make sure fellow CSRs and customer personnel are not in a hazardous position.*
7. *All the machine covers must be in place before the machine is returned to the customer.*

***Note:** Refer to the Safety CEMs relating to this product(s) for further safety precautions.*

MAP REFERENCE TABLE

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MAP	TITLE
0001	TABLE OF CONTENTS
0002	INTRODUCTION
0009	START-OF-CALL
0010	SYSTEM ENTRY
0011	900 ERROR CODES
0015	ERROR LED STATUS
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0019	ERROR CODE (03,06,08,09)
1005	KEYBOARD ENTRY
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2210	LED MEMORY ISOLATION
2220	MEMORY ERROR CODE
2230	POWER SUPPLY MEMORY
4011	CABLE SENSE REPAIR-CONN. 0
4012	RECEIVE REPAIR-CONN. 6A
4013	TRANSMIT REPAIR-CONN. 6A
4211	SHARING INTERRUPT REPAIR
4212	SHARING INTERRUPT REPAIR
4213	CABLE SENSE REPAIR-CONN. 6A
4214	RECEIVE REPAIR-CONN. 6A
4215	TRANSMIT REPAIR-CONN. 6A
4216	CABLE SENSE REPAIR-CONN. 6B
4217	RECEIVE REPAIR-CONN. 6B
4218	TRANSMIT REPAIR-CONN. 6B
5011	CABLE SENSE REPAIR-CONN. 0
5012	RECEIVE REPAIR-CONN. 0
5013	TRANSMIT REPAIR-CONN. 0
5030	FREQUENCY DRIFT
6010	POWER SUPPLY
7010	COMMUNICATIONS
7020	INTERNAL EIA CABLE
7030	INTERNAL COMMUNICATIONS CABLE
7060	PORT 4 NO VOLTAGE
7061	P4A/P4B NO VOLTAGE
7062	FEATURE CARD POWER
8020	RNA START
8021	READ ID ERROR
8022	DISKETTE DRIVE NOT READY
8025	UNSAFE WRITE CONDITION
8026	NO INDEX PULSES
8028	SEEK ERROR
8030	NOT WRITING/WRITE ERRORS
8032	CARD AND CABLE WRAP ERRORS
8060	DISKETTE UNIT +5 VDC POWER
8061	DISKETTE UNIT +24 VDC POWER
8062	DISKETTE UNIT -5 VDC POWER
8064	DISKETTE UNIT A/C POWER
8065	DC SHORT FAILURE
9010	BLANK DISPLAY
9020	DISPLAY ADAPTER
9030	NO VIDEO DATA
9040	DISTORTED DISPLAY IMAGE
9050	NO CONTRAST ADJUSTMENT

CHART CONTINUES

CHART CONTINUED

MAP	TITLE
9109	LARGE DISPLAY INDICATOR
9110	LARGE DISPLAY ENTRY
9112	LARGE DISPLAY DISTORTED SHAPE
9115	LARGE DISPLAY IMAGE QUALITY
9165	LARGE DISPLAY AC POWER

APPENDIX	TITLE
APPENDIX A	DISPLAY IMAGE FIGURES
APPENDIX B	DISPLAY IMAGE FIGURES
APPENDIX C	CUSTOMER PRINT
APPENDIX D	GLOSSARY

INTRODUCTION

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M A P S (MAINTENANCE ANALYSIS PROCEDURES)

1. THESE MAPS ARE USED FOR TWO REASONS.

   a. They aid in diagnosing System failures.

   b. They aid in learning Diagnostic Procedures

2. STEPS FOR USING MAPS.

   a. You should have received a Service Request Number when notified of the Call. The Service Request Number is used to determine which FRU to bring.

   b. Make a quick visual check for problems (loose or broken parts, loose connectors, etc.) A visual check may be quicker than a MAP diagnosis.

   c. You should begin in the Start-of-Call MAP. The Start-of-Call MAP will send you to an area MAP, determined by your Service Request Number or to the System Entry MAP if you do not have a Service Request Number.

   d. These MAPs aid in finding problems. An instruction or question can be read wrong. If the problem is not solved, you should start again in the MAPs and read each step very carefully. If you go through the MAPs a second time and you still have not solved the problem, it may be because the machine has two problems or an intermittent problem. The EC levels of the MAPs may not be correct. Verify the EC Level of the MAPs. If this does not solve the problem and you cannot repair it, follow your normal escalation procedure.

   e. ESCALATION PROCEDURE

      When it is necessary to follow your normal escalation procedure, you should be prepared in the following way:

      1) The type of jobs or functions that fail should be listed.

      2) You should know the sequence leading to the failure.

      3) You should have the History Card available with all options, EC levels and CEMs listed.

3. BASIC MAP INFORMATION:

   a. A MAP aids you in finding a problem by using questions concerning the System symptoms. Each question is written so it can be answered YES or NO. When you answer "YES" or "NO" to a question, the MAP will lead you to a fix, a question, or another MAP.

   b. At the start of each MAP, an Entry and Exit Table specifies the locations in the MAPs of any Entry or Exit Points.

DIAGNOSTIC PROCEDURES

INTRODUCTION: VOLTAGE, GROUND AND CONTINUITY READINGS

The following text describes some SAFETY Procedures. It has information on voltage, ground and continuity readings. Unless you understand these MAPs, read the information below before you go to the Start-of-Call MAP.

CAUTION

ALWAYS POWER-OFF WHEN CHECKING THE PRIMARY POWER FUSE, DISCONNECTING OR CONNECTING ANY ELECTRICAL PART, UNLESS OTHERWISE DIRECTED. IT IS A GOOD IDEA TO REMOVE POWER WHEN CHECKING ANY FUSE.

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4. VOLTAGE READINGS

   a. Every time a voltage reading is requested in these MAPs, the readings are to be taken with the CE Meter (PN 9900628). If a different meter is used in a World Trade Country, that Country must check the readings with their meter and make a conversion table if necessary. All AC voltages must be accurate to plus or minus 10% (WT: plus 8%, minus 12%).

   b. All DC voltages must be accurate to plus or minus 10%. Unless stated otherwise, all connectors should be connected normally when a voltage reading is taken.

   c. The AC line voltage on U.S. machines should be between 104 (ac) volts and 127 (ac) volts. On GBG/I machines, the voltage will differ by Country.

5. GROUND CHECKS

   a. To check a ground point, measure between the ground point and a known voltage source. The reading must equal the voltage on that source if the ground is good. Continuity readings may be used to check grounds, but measure to a known ground point. Use the lowest ohm scale and check for less than two (2.0) ohms.

CAUTION

ALWAYS REMOVE POWER BEFORE TAKING A CONTINUITY READING.

6. CONTINUITY READINGS

   a. When taking continuity readings, back circuits can affect the reading. If necessary, disconnect connectors. An open circuit will read over range (A one with no decimal point or zeros). A circuit with good continuity will read less than two (2.0) ohms.

CARD/CABLE REPLACEMENT PROCEDURES

7. VOLTAGE READINGS

   a. Voltage readings should be made at the suspected failing Electronics Card, if the normal map procedures were not successful. The voltage readings must be within the limits, as stated in the Product Support Manual.

8. CARD/CABLE RESEATING

   a. Reseat the suspected failing Electronics Card before replacing it.

   b. Reseat the suspected failing cable before replacing it.

MAP 0009

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ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP ENTRY POINT	PAGE NUMBER	STEP NUMBER
No entries in this table			

EXIT POINTS

EXIT THIS MAP PAGE NUMBER	STEP NUMBER	TO MAP NUMBER	ENTRY POINT
1	004	0010	A
2	012	0010	A
5	020	0010	A
5	024	0010	A

001

(ENTRY POINT A)

Do you have a Service Request Number?
Y N

SERVICE NOTE: Reinsert the suspected failing Electronic Card or Cable, prior to installing a new part.

002

Do you suspect any specific area of failing?
Y N

003

Is the Operator available?
Y N

004

You are now directed to go to the System Entry MAP.

GO TO MAP 0010, ENTRY POINT A.

005

Instruct the Operator to use the Problem Determination Package (Problem Determination Guide and Problem Determination Diskette) to generate a Service Request Number.

Locate the Service Request Number in the Service Request Number Table and go to the MAP indicated or execute the MDI indicated.

006

Is the problem easy to identify? (loose keytops, knobs, covers, cables, etc.)
Y N

007

Do you suspect a Paper Handling problem?
Y N

3 2 2 2
A B C D

008

Do you suspect the Printer?
Y N

009

Do you suspect the Mag Card?
Y N

010

Do you suspect a Communications problem?
Y N

011

Do you suspect a Shared Resource problem?
Y N

012

You are now directed to go to the System Entry MAP.

GO TO MAP 0010, ENTRY POINT A.

013

Load the DISPLAYWRITER SYSTEM DIAGNOSTICS.

Select MDIs.

Select Shared Resource ID "f" or "g".

Run Shared Resource Tests.

014

Make sure all the cables from the Media Module are attached.

POWER-ON the System.

Load the DISPLAYWRITER SYSTEM COMMUNICATIONS DIAGNOSTICS.

Select the Communications ID "j".

Run Communications Tests.

015

Make sure the Mag Card Cable is attached.

POWER-ON the System.

POWER-ON the Mag Card.

Load the DISPLAYWRITER SYSTEM MAG CARD UNIT DIAGNOSTICS.

Select MDIs.

Select Mag Card ID "i".

Run Mag Card Tests.

016

Make sure the Printer Cable is attached.

POWER-ON the System.

POWER-ON the Printer.

Load the DISPLAYWRITER SYSTEM DIAGNOSTICS.

Select MDIs.

Select Printer ID "e".

Run Printer Tests.

017

Load the DISPLAYWRITER SYSTEM DIAGNOSTICS.

Select MDIs.

Select Paper Handling ID "h".

Run Paper Handling Tests.

018

Repair or Replace parts as necessary.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

019 Service Request Number	System Area or Device	MAP No. or MDI ID
000001	Memory	c
000001	Keyboard ID	NOTE *
000001	Mag Card	i
000001	Communications	j
000001	Printer	e
000001	Shared Printer (Secondary)	g
000001	Shared Printer (Primary)	f
000001	Sheet Feed	h
000001	Tractor Feed	h
000001	3277 Emulation	k
000002	Call operator for specific information.	N/A
000800	LED A,B or C "ON"	6010
000800	LED D,E,F,G or H "ON"	0015
000801	Post-CRT Code "01"	1010
000801	Post-CRT Code "02"	1010
000801	Post-CRT Code "03"	0019
000801	Post-CRT Code "04"	8032
000801	Post-CRT Code "05"	8032
000801	Post-CRT Code "06"	0019
000801	Post-CRT Code "08"	0019
000801	Post-CRT Code "09"	0019
000900	*900* FFF0	0011
000900	*900* FFF1	0011
000900	*900* FFF2	0011
000900	*900* FFF3	0011
000900	*900* FFF4	0011
000900	*900* FFFA	0011
000900	*900* FFFB	0011
000900	*900* FFFF	0011
000900	*900* Other	N/A
000900	*903*	N/A
000900	*90B*	d
010016	Keyboard	NOTE *
021000	Memory	c
021001	Memory	c
021002	Memory	c
050002	Printer Link	e
050100	Printer	e
051025	Printer	e
052002	Printwheel Printer	e
052007	Printwheel Printer	e
052008	Printwheel Printer	e
052010	Printwheel Printer	e
052011	Printwheel Printer	e
052012	Printwheel Printer	e
052013	Printwheel Printer	e
052014	Printwheel Printer	e
052015	Printwheel Printer	e
052025	Printer	e
052026	Printer	e
061000	3277 Emulation	k
090000	Display	0010
091004	Display	0010
110001	Keyboard	NOTE *
110004	Keyboard	NOTE *
110013	Keyboard	NOTE *

(Step 019 continues)

(Step 019 continued)

019 Service Request Number	System Area or Device	MAP No. or MDI ID
110014	Keyboard	NOTE *
111001	Keyboard	NOTE *
111002	Keyboard	NOTE *
120001	System	0010
120004	Memory	c
120005	Memory	c
120006	Memory	c
120007	Memory	c
120011	System	c
120012	System	c
130001	Mag Card	i
130005	Mag Card	i
130006	Mag Card	i
131001	Mag Card	i
131002	Mag Card	i
131021	Mag Card	i
131022	Mag Card	i
131023	Mag Card	i
140002	Printer Sharing	g
140004	Printer Sharing	g
142001	Printer Sharing	f
150001	Printer Link	e
150004	Printer Link	e
151017	5215 Printer	e
151018	5215 Printer	e
151024	5215 Printer	e
152016	Printer	e
152021	Printer	e
153006	Printer	e
160001	Power Supply	0010
161002	3277 Emulation	k
170001	Communications	j
170701	Communications	j
170721	Communications	j
170722	Communications	j
170723	Communications	j
180001	Diskette	d
180015	Diskette	d
180025	Diskette	d
181015	Diskette	d
190001	Display	9020
190002	Display	9040
190004	Display	9020
190005	Display	a
191001	Display	a
191002	Display	0010
191003	Display	0010
191005	Display	a
210007	Keyboard	NOTE *
210010	Keyboard	0010
220008	Memory	c
220009	Memory	c
220010	Memory	0010
231004	Mag Card	i
231006	Mag Card	i
240001	See SR# 540001	
251008	5215 Printer	e
251019	5215 Printer	e
251021	5215 Printer	e
252001	Printwheel Printer	e
252017	Printer	e

(Step 019 continues)

(Step 019 continued)

Service Request Number	System Area or Device	MAP No. or MDI ID
252019	Printer	e
252020	Printer	e
252022	Printer	e
252024	Printer	e
253005	Printer	e
253007	Printer	e
254002	Printer	e
254003	Printer	e
270701	Communications	j
270702	Communications	j
270743	Communications	j
270764	Communications	j
270775	Communications	j
270786	Communications	j
270807	Communications	j
271002	Communications	j
280005	Diskette	d
281037	Diskette	d
290003	Display	0010
310008	Keyboard	NOTE *
310009	Keyboard	NOTE *
310012	Keyboard	NOTE *
310015	Keyboard	NOTE *
321011	Memory	c
321012	Memory	c
321021	Memory	c
321022	Memory	c
321023	Memory	c
321024	Memory	c
321025	Memory	c
321031	Memory	c
321032	Memory	c
321033	Memory	c
321034	Memory	c
321035	Memory	c
322002	Memory	c
331003	Mag Card	i
331007	Mag Card	i
331011	Mag Card	i
331016	Mag Card	i
332101	Mag Card	i
332103	Mag Card	i
332202	Mag Card	i
332203	Mag Card	i
332301	Mag Card	i
332302	Mag Card	i
332303	Mag Card	i
332401	Mag Card	i
332402	Mag Card	i
332403	Mag Card	i
332503	Mag Card	i
332603	Mag Card	i
332703	Mag Card	i
332803	Mag Card	i
332903	Mag Card	i
342002	Printer Sharing	f
342003	Printer Sharing	f
342004	Printer Sharing	f
352003	Printwheel Printer	e
352004	Printwheel Printer	e
352005	Printwheel Printer	e

(Step 019 continues)

(Step 019 continued)

Service Request Number	System Area or Device	MAP No. or MDI ID
352018	Printer	e
352023	Printer	e
354001	Tractor Feed	e
361001	3277 Emulation	k
370753	Communications	j
371001	Communications	j
380004	Diskette	d
380006	Diskette	d
380007	Diskette	d
380026	Diskette	d
380033	Diskette	d
380037	Diskette	d
381004	Diskette	d
381006	Diskette	8020
381026	Diskette	d
381027	Diskette	d
381028	Diskette	d
381031	Diskette	d
381033	Diskette	d
422000	Memory	c
422001	Memory	c
430002	Mag Card	i
430007	Mag Card	i
431005	Mag Card	i
431012	Mag Card	i
431013	Mag Card	i
431014	Mag Card	i
431018	Mag Card	i
431020	Mag Card	i
432001	Mag Card	i
432002	Mag Card	i
432004	Mag Card	i
432501	Mag Card	i
432601	Mag Card	i
432701	Mag Card	i
432801	Mag Card	i
432901	Mag Card	i
453003	Sheet Feed	e
453004	Sheet Feed	e
461003	3277 Emulation	k
480008	Diskette	d
480009	Diskette	d
480016	Diskette	d
480024	Diskette	d
480034	Diskette	d
481008	Diskette	d
481009	Diskette	d
481016	Diskette	d
481034	Diskette	d
531008	Mag Card	i
531010	Mag Card	i
532003	Mag Card	i
532102	Mag Card	i
540001	Printer Sharing	g
540003	Printer Sharing	g
553001	Sheet Feed	e
553002	Sheet Feed	e
580010	Diskette	d
581010	Diskette	d
581011	Diskette	d
630004	Mag Card	i

(Step 019 continues)

(Step 019 continued)

Service Request Number	System Area or Device	MAP No. or MDI ID
632201	Mag Card	i
652009	Printwheel Printer	e
680011	Diskette	d
680017	Diskette	8020
681017	Diskette	8020
730003	Mag Card	i
731015	Mag Card	i
731017	Mag Card	i
731019	Mag Card	i
732300	Mag Card	i
732400	Mag Card	i
752006	Printwheel Printer	e
777777	Communications	j
780018	Diskette	8020
780035	Diskette	8020
781018	Diskette	8020
781035	Diskette	8020
832200	Mag Card	i
880013	Diskette	8020
880036	Diskette	8020
881013	Diskette	8020
881036	Diskette	8020
888888	Customer made PDG error	
900004	Multiple Fault	0010
931009	Mag Card	i
932100	Mag Card	i
932500	Mag Card	i
932600	Mag Card	i
932700	Mag Card	i
932800	Mag Card	i
932900	Mag Card	i
951001	5215 Printer	e
951020	5215 Printer	e
951022	5215 Printer	e
951023	5215 Printer	e
953008	Printer	e
980014	Diskette	d
980019	Diskette	8020
981019	Diskette	8020

****** NOTE SECTION: ******

This is a keyboard MDI optional load procedure, not a map step.

****

LOAD PROCEDURE

Load DISPLAYWRITER SYSTEM DIAGNOSTICS.
Open and close disk handle,
MDIs will load.
Open and close disk handle,
keyboard tests will load.

TABLE 1 MAP 0009

(Step 019 continues)

(Step 019 continued)

Is your Service Request Number in the Table?

Y N

| 020

| You are now directed to go to the System Entry MAP.

| GO TO MAP 0010, ENTRY POINT A.

021

Does the Service Request Number appear in the Table more than once?

Y N

| 022

| Go to the MAP indicated or execute the MDI listed in the Service Request Table.

023

Does the additional information you received match any of the additional information listed for that Service Request Number?

Y N

| 024

| You are now directed to go to the System Entry MAP.

| GO TO MAP 0010, ENTRY POINT A.

025

Go to the MAP indicated or execute the MDI listed in the Service Request Table.

MAP 0010

PAGE 1 OF 6

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP ENTRY POINT	PAGE NUMBER	STEP NUMBER
ALL MAPS RETURN TO MAP 0010			

EXIT POINTS

EXIT THIS MAP PAGE NUMBER	STEP NUMBER	TO MAP NUMBER	ENTRY POINT
4	028	0015	A
3	023	0017	A
3	024	0017	A
4	027	0017	A
4	029	6010	A
5	043	8020	A
5	044	8020	A
6	054	8020	A
3	015	8064	A
5	039	9020	A
3	022	9030	A
4	033	9040	A
4	034	9109	A
5	040	9109	A
3	018	9165	A

001

(ENTRY POINT A)

POWER-OFF.

Remove any Diskette that may be in the Drive.

POWER-ON.

Wait 20 seconds for BAT to complete.

Turn the Display Brightness and Contrast Control Knobs fully clockwise.

Is the IBM LOGO visible on the Display?
Y N

002

Is an Error Code displayed at the bottom of the screen?
Y N

003

Check the LED Indicators.

Are there any LED Indicators ON?
(A,B,C,D,E,F,G,H)
Y N

4 4 3 2
A B C D

004

Check to see if the Fan in the Electronic Module is running.

Is the Fan in the Electronic Module running?
Y N

005

It appears that AC Power is not present at the Power Supply.

POWER-OFF.

Remove the Primary Power Fuse from Panel 2.

Using the lowest ohms range, check the continuity (less than 2 ohms) of the Fuse.

Is the Power Supply Fuse bad?
Y N

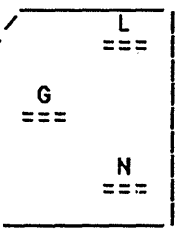
006

DANGER

HIGH VOLTAGE IS PRESENT AT THE POWER CORD CONNECTOR.

Disconnect the Power Cord Connector (9) at Panel 2.

Power Cord Connector (9) configuration.



Using the 200(ac) voltage range, measure the voltage at Power Cord Connector (9).

Connector Pins	(ac) Voltage Range
L to G	104 to 127 volts
L to N	104 to 127 volts

(WT-GBG/I refer to Voltage Chart in (Step 006 continues)

(Step 006 continued)
the Product Support Manual.)

Is the voltage in the correct voltage range?
Y N

007

Disconnect the Power Cord Connector from the wall outlet.

Using the 200(ac) voltage range, measure the voltage at the outlet.

Is the voltage in the correct voltage range?
Y N

008

Inform the Customer.

009

Install a new Power Cord.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

010

POWER-OFF.

Install a new base Power Supply.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

011

Install a new Fuse.

POWER-ON.

Is the Fan in the Electronic Module running?
Y N

012

Is there a Large Display Module connected to the Electronic Module?
Y N

013

POWER-OFF.

Disconnect the Diskette Unit AC(output) Cable Connector (8) at Panel 2.

Install a new Fuse.

POWER-ON.

Is the Fan in the Electronic Module running?
Y N

014

POWER-OFF.

Install a new base Power Supply.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

015

The Problem is in the Diskette Area.

You are now directed to go to the Diskette Unit A/C Power Failure MAP.

GO TO MAP 8064, ENTRY POINT A.

016

POWER-OFF.

Disconnect the Large Display Module Cable Connector (12) at the Electronic Module, Panel 2.

Install a new fuse.

POWER-ON.

Is the Fan in the Electronic Module running?
Y N

017

POWER-OFF.

Install a new base Power Supply.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

018

You are now directed to go to the Large Display AC Power MAP.

GO TO MAP 9165, ENTRY POINT A.

019

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

020

Is the Display Screen totally blank? (no illumination)
Y N

021

Is there a Large Display Module connected to the Electronic Module?
Y N

022

You are now directed to go to the Display No Video Data MAP.

GO TO MAP 9030, ENTRY POINT A.

023

You are now directed to go to the LED Status MAP.

GO TO MAP 0017, ENTRY POINT A.

024

You are now directed to go to the LED Status MAP.

GO TO MAP 0017, ENTRY POINT A.

025

Are any of the A, B or C LED Indicators ON?
Y N

SYSTEM ENTRY MAP

MAP 0010

PAGE 4 OF 6

026

POWER-OFF.

Position the Electronic Module so the LED Indicators may be easily observed.

While observing the LED Indicators, POWER-ON.

At the start, did all the LED Indicators light?
Y N

027

You are now directed to go to the LED Status MAP.

GO TO MAP 0017, ENTRY POINT A.

028

You are now directed to go to the Error LED Status MAP.

GO TO MAP 0015, ENTRY POINT A.

029

You are now directed to go to the Power Supply MAP.

GO TO MAP 6010, ENTRY POINT A.

030

Select the Error Code in the following Chart and go to the indicated MAP.

Post-CRT Error Code Table

Error Code	LED Code DEFGH	MAP Number	Entry Point
01	00110	1005	A
02	00110	1005	A
03	00111	0019	A
04	01000	8032	A
05	01000	8032	A
06	01001	0019	A
08	01010	0019	A
09	01100	0019	A

031

Adjust the Brightness Control to obtain a correct visual level.

Compare the Display Image to the Picture of a normal Display in Figure 1, Appendix A or Figure 1, Appendix B for a large Display.

Does the Display Image look normal? (Ignore any characters in the lower left corner.)
Y N

032

Is there a Large Display Module connected to the Electronic Module?
Y N

033

You are now directed to go to the Display Distorted Image MAP.

GO TO MAP 9040, ENTRY POINT A.

034

You are now directed to go to the Large Display Indicator MAP.

GO TO MAP 9109, ENTRY POINT A.

035

The Diskette Unit may have one or two Diskette Drives.

Check the left Diskette Drive first.

Load the DISPLAYWRITER SYSTEM DIAGNOSTICS in the left Diskette Drive.

Did a readable CE Diagnostic Function Selection Menu appear on the Screen?
Y N

036

Is the IBM LOGO still visible on the Display?
Y N

037

Is the Display Screen totally blank? (no illumination)
Y N

038

Is there a Large Display Module connected to the Electronic Module?
Y N

039

You are now directed to go to the Display Display Adapter MAP.

GO TO MAP 9020, ENTRY POINT A.

040

You are now directed to go to the Large Display Indicator MAP.

GO TO MAP 9109, ENTRY POINT A.

041

POWER-OFF.

POWER-ON.

Load a known good Diskette.

Is the Display Screen totally blank? (no illumination)
Y N

042

Obtain a new DISPLAYWRITER SYSTEM DIAGNOSTIC diskette.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

043

You are now directed to go to the RNA Start MAP.

GO TO MAP 8020, ENTRY POINT A.

044

The Problem is in the Diskette Area.

You are now directed to go to the RNA Start MAP.

GO TO MAP 8020, ENTRY POINT A.

045

Can you select the MDI function and load it?
Y N

046

Turn the Diskette Load Lever to the left, then to the right.

The DISPLAYWRITER SYSTEM DIAGNOSTICS Procedures (MDIs) will load.

Repeat the above procedure and the Keyboard Diagnostic procedures (MDIs) will load.

Follow the instructions on the Display.

047

The System may have two Diskette Drives, left and right.

Does the System have a right Diskette Drive?
Y N

048

Are there any LED Indicators ON? (A,B,C,D,E,F,G,H)
Y N

049

Run all MDI unit tests required for your configuration.

If no unit tests failed, run the System Exerciser.

If no trouble is found, and you think the System is working correctly, return it to the customer.

If you think there is still a problem, go to the Intermittent Problem Diagnostic Approach section in the Product Support Manual.

050

Are any of the A, B or C LED Indicators ON?
Y N

051

POWER-OFF.

Install a new System Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

052

POWER-OFF.

Install a new base Power Supply.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

053

Select Diskette ID "d".

Run Diskette Tests.

Remove the DISPLAYWRITER SYSTEM DIAGNOSTICS from the left Diskette Drive.

POWER-OFF, then POWER-ON the System.

Load the DISPLAYWRITER SYSTEM DIAGNOSTICS in the right Diskette Drive.

Did a readable CE Diagnostic Function Selection Menu appear on the Screen?
Y N

054

The Problem is in the Diskette Area.

You are now directed to go to the RNA Start MAP.

GO TO MAP 8020, ENTRY POINT A.

055

Are there any LED Indicators ON? (A,B,C,D,E,F,G,H)
Y N

056

Select MDIs.

Run all MDI unit tests required for your configuration.

If no unit tests failed, run the System Exerciser.

If no trouble is found, and you think the System is working correctly, return it to the customer.

If you think there is still a problem, go to the Intermittent Problem Diagnostic Approach section in the Product Support Manual.

057

Are any of the A, B or C LED Indicators ON?
Y N

058

POWER-OFF.

Install a new System Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

059

POWER-OFF.

Install a new base Power Supply.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0009	A	1	001

001
(ENTRY POINT A)

Do you have Error Code "900 FFFA"?
Y N

002

ERROR CODES
900 FFF0
900 FFF1
900 FFF2
900 FFF3
900 FFF4
900 FFFB
900 FFFF

Is the "900" Error Code shown on the screen listed in the Error Code Chart on this page?
Y N

003

Follow your normal escalation procedure.

004

POWER-OFF.

Install a new System Card.

POWER-ON.

Load the DISPLAYWRITER SYSTEM DIAGNOSTICS.

Do you have a "900" Error Code again?
Y N

005

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

006

POWER-OFF.

Reinstall the Original System Card.

Install a new Memory Card in the correct position.(If the Memory Configuration is made up of multiple Memory Cards, one Memory Card at a time may have to be installed to correct the problem.), (Refer to the Product Support Manual (PSM) or Information Card for Memory Card Type Identification Information.)

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

007

POWER-OFF.

Install a new Memory Card in the correct position.(If the Memory Configuration is made up of multiple Memory Cards, one Memory Card at a time may have to be installed to correct the problem.), (Refer to the Product Support Manual (PSM) or Information Card for Memory Card Type Identification Information.)

POWER-ON.

Load the DISPLAYWRITER SYSTEM DIAGNOSTICS.

Do you have a "900" Error Code again?
Y N

008

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

009

POWER-OFF.

Reinstall the Original Memory Card(s) in the correct position(s).

Install a new System Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

MAP 0015

PAGE 1 OF 10

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP ENTRY POINT	PAGE NUMBER	STEP NUMBER
0009	A	1	001
0010	A	1	001

EXIT POINTS

EXIT THIS MAP PAGE NUMBER	STEP NUMBER	TO MAP NUMBER	ENTRY POINT
5	043	2210	A
6	052	2210	A
8	067	2210	A
8	075	2210	A
9	084	2210	A
3	016	9109	A

001
(ENTRY POINT A)

This MAP locates the failing part when an error occurs during the POWER-ON sequence.

The Error LED Indicators are marked by (D,E,F,G,H).

Where: 0=OFF, 1=ON

*** NOTE ***

When the "D" indicator is on, the other indicators are meaningless.

The question below has two parts. If you can answer EITHER part yes, answer the question yes.

Is the "D" indicator "ON"

or

do the Error Indicators (D,E,F,G,H) equal (0,1,1,1,1)?
Y N

002

Do the Error Indicators (D,E,F,G,H) equal (0,0,0,0,1)?
Y N

003

Do the Error Indicators (D,E,F,G,H) equal (0,0,0,1,0)?
Y N

004

Do the Error Indicators (D,E,F,G,H) equal (0,0,0,1,1)?
Y N

9 8 6 5 2
A B C D E

005

Do the Error Indicators (D,E,F,G,H) equal (0,1,1,1,0)?
Y N

006

Do the Error Indicators (D,E,F,G,H) equal (0,0,1,0,0)?
Y N

007

Do the Error Indicators (D,E,F,G,H) equal (0,0,1,0,1)?
Y N

008

Select the Displayed Error Code or if it is not readable, select the LED Error Code in the following Chart and go to the indicated MAP.

Post-CRT Error Code Table

Error Code	LED Code DEFGH	MAP Number	Entry Point
01	00110	1005	A
02	00110	1005	A
03	00111	0019	A
04	01000	8032	A
05	01000	8032	A
06	01001	0019	A
08	01010	0019	A
09	01100	0019	A

009

POWER-OFF.

Disconnect the Display Module Connector (2).

POWER-ON.

Wait about 10 seconds, then check the Error Indicators.

Did the BAT fail with Error Indicators (D,E,F,G,H) equal (0,0,1,0,1)?
Y N

4 3 3
F G H J

010

Is there a Large Display Module connected to the Electronic Module?
Y N

011

Using the 20(dc) voltage range, measure from Pin 2 (ground) to Pin 7 (+5V) of the Internal Distribution Cable Connector (2) (pin side).

Is the voltage reading between +4.6 volts and +5.5 volts?
Y N

012

Using the 20(dc) voltage range, measure from frame ground to Pin 8 of the Internal Distribution Cable Connector (P2).

Is the voltage reading between +4.6 volts and +5.5 volts?
Y N

013

POWER-OFF.

Install a new base Power Supply.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

014

POWER-OFF.

Install a new Internal Distribution Cable.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

015

POWER-OFF.

Install a new Display Module.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

3
K

016

POWER-OFF.

Reconnect the Display Module Cable Connector (2).

You are now directed to go to the Large Display Indicator MAP.

GO TO MAP 9109, ENTRY POINT A.

017

Has a new Display Adapter Card been installed?
Y N

018

POWER-OFF.

Install a new Display Adapter Card.

Reconnect the Display Module Cable Connector (2).

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

019

Do you have Cards plugged in slot "A" or "C" of the Electronic Module Distribution Board?
Y N

020

POWER-OFF.

Reinstall the original Display Adapter Card.

Install a new System Card.

Reconnect the Display Module Cable Connector (2).

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

L

021

POWER-OFF.

Reinstall the original Display Adapter Card.

Reconnect the Display Module Cable Connector (2).

Remove the Card(s) from slot(s) "A" and/or "C".

POWER-ON.

Do the Error Indicators (D,E,F,G,H) equal (0,0,1,0,1)?
Y N

022

POWER-OFF.

Reinstall one of the removed Cards.

POWER-ON.

If the Error Indicators (D,E,F,G,H) = (0,0,1,0,1), the Card just reinstalled is defective. If not, repeat this procedure until the failing Card is identified.

Exchange the failing Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

023

POWER-OFF.

Install a new System Card.

Reinstall Card(s) in slot(s) "A" and/or "C".

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

024

Has a new Display Adapter Card been installed?
Y N

025

POWER-OFF.

Install a new Display Adapter Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

4
M

026

Do you have Cards plugged in slot "A" or "C" of the Electronic Module Distribution Board?
Y N

027

POWER-OFF.

Install a new Electronic Module Distribution Board.

Reinstall the original Display Adapter Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

028

POWER-OFF.

Remove the Card(s) from slot(s) "A" and/or "C".

POWER-ON.

Do the Error Indicators (D,E,F,G,H) equal (0,0,1,0,0)?
Y N

029

POWER-OFF.

Reinstall one of the removed Cards.

POWER-ON.

If the Error Indicators (D,E,F,G,H) = (0,0,1,0,0), the Card just reinstalled is defective. If not, repeat this procedure until the failing Card is identified.

Exchange the failing Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

030

POWER-OFF.

Install a new Electronic Module Distribution Board.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

031

Is the Memory Size Suffix a letter "F" or "G" ? (Refer to the Product Support Manual (PSM) or Information Card for Memory Card Type Identification Information.)
Y N

032

Has a New Memory Card been installed in slot "E"?
Y N

033

POWER-OFF.

Install a new Memory Card in slot "E".

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

034

Has a new System Card been installed?
Y N

035

POWER-OFF.

Install a new System Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

036

POWER-OFF.

Remove the Display Adapter Card and any card or cards in slot(s) "A","C" and "F".

POWER-ON.

Do the Error Indicators (D,E,F,G,H) equal (0,1,1,1,0)?
Y N

037

POWER-OFF.

Reinstall one of the removed Cards.

POWER-ON.

If the Error Indicators (D,E,F,G,H) = (0,1,1,1,0), the Card just reinstalled is defective. If not, repeat this procedure until the failing Card is identified.

Exchange the failing Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

038

Do you have a Memory Card in slot "F"?
Y N

039

POWER-OFF.

Install a new Electronic Module Distribution Board.

Reinstall all the original cards.

Reconnect all the cable connectors.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

040

POWER-OFF.

Remove the Memory Card in slot "F".

POWER-ON.

Do the Error Indicators (D,E,F,G,H) equal (0,1,1,1,0)?
Y N

041

POWER-OFF.

Install a new Memory Card in slot "F".

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

042

POWER-OFF.

Install a new Electronic Module Distribution Board.

Reinstall all the original cards.

Reconnect all the cable connectors.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

043

You are now directed to go to the LED Memory Isolation MAP.

GO TO MAP 2210, ENTRY POINT A.

044

Has a new System Card been installed?
Y N

045

POWER-OFF.

Install a new System Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

046

Is the Memory Size Suffix a letter "F" or "G" ? (Refer to the Product Support Manual (PSM) or Information Card for Memory Card Type Identification Information.)
Y N

047

POWER-OFF.

Remove all cards from the Electronic Module Distribution Board except the Display Adapter Card.

Reinstall the original System Card.

POWER-ON.

Do the Error Indicators (D,E,F,G,H) equal (0,0,0,1,1)?
Y N

048

POWER-OFF.

Reinstall one of the removed Cards.

POWER-ON.

If the Error Indicators (D,E,F,G,H) = (0,0,0,1,1), the Card just reinstalled is defective. If not, repeat this procedure until the failing Card is identified.

Exchange the failing Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

049

POWER-OFF.

Remove the Display Adapter Card and install the Memory Card in slot "E".

POWER-ON.

Do the Error Indicators (D,E,F,G,H) equal (0,0,0,1,1)?
Y N

050

POWER-OFF.

Install a new Display Adapter Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

051

POWER-OFF.

Install a new Electronic Module Distribution Board.

Reinstall all the original cards.

Reconnect all the cable connectors.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

052

You are now directed to go to the LED Memory Isolation MAP.

GO TO MAP 2210, ENTRY POINT A.

053

Is the Memory Size Suffix a letter "F" or "G" ? (Refer to the Product Support Manual (PSM) or Information Card for Memory Card Type Identification Information.)
Y N

054

Has a New Memory Card been installed in slot "E"?
Y N

055

POWER-OFF.

Install a new Memory Card in slot "E".

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

056

Using the 20(dc) voltage range, measure from frame ground to the pins in the following Chart.

Conn.	Pin	Voltage Range
E1	11	+4.6 to +5.5
E1	13	-4.6 to -5.5
E1	15	+8.245 to +8.925
E1	20	+11.04 to +13.20
E2	11	+4.6 to +5.5
E2	13	-4.6 to -5.5
E2	15	+8.245 to +8.925
E2	20	+11.04 to +13.20
E3	11	+4.6 to +5.5
E4	11	+4.6 to +5.5

Were all the voltage measurements correct?
Y N

057

POWER-OFF.

Test Conditions:

a. Position the Electronic Module Distribution Board to permit access for making voltage measurements on Connector (A1).

b. All cables are to be connected.

c. All cards are to be in place.

POWER-ON.

Using the 20(dc) voltage range, measure from each pin in the following Chart to frame ground at the Power Supply Case.

Pin	Voltage Range
3	-0.1 to +0.1
4	-0.1 to +0.1
5	-0.1 to +0.1
6	-0.1 to +0.1
8	-11.04 to -13.20
9	+4.6 to +5.5
10	+4.6 to +5.5
11	+4.6 to +5.5
12	+4.6 to +5.5
13	-4.6 to -5.5
15	+8.245 to +8.925
16	-0.1 to +0.1
17	-0.1 to +0.1
18	-0.1 to +0.1
20	+11.04 to +13.20
21	+4.6 to +5.5
22	+4.6 to +5.5
23	+4.6 to +5.5
24	+4.6 to +5.5

Were all the voltage measurements correct?
Y N

Y Z

058

POWER-OFF.

Disconnect System Power Cable Connectors P1 and A1.

Using the lowest ohms range, check the continuity of each wire in the System Power Cable.

Refer to the Product Support Manual for pin assignments.

Was the cable continuity correct? (less than 2 ohms)
Y N

059

Install a new System Power Cable.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

060

Install a new base Power Supply.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

061

POWER-OFF.

Install a new Electronic Module Distribution Board.

Reinstall all the original cards.

Reconnect all the cable connectors.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

062

Do you have a Memory Card in slot "F"?
Y N

063

POWER-OFF.

Install a new System Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

064

Has a new System Card been installed?
Y N

8 8
A A
A B

ERROR LED STATUS MAP

MAP 0015

065

POWER-OFF.

Install a new System Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

066

POWER-OFF.

Install a new Memory Card in slot "F".

Reinstall all the original cards.

Reconnect all the cable connectors.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

067

You are now directed to go to the LED Memory Isolation MAP.

GO TO MAP 2210, ENTRY POINT A.

068

Do you have a card present in slot "C" on the System Electronic Module Distribution Board?

Y N

069

Is the Memory Size Suffix a letter "F" or "G" ? (Refer to the Product Support Manual (PSM) or Information Card for Memory Card Type Identification Information.)

Y N

070

Has a New Memory Card been installed in slot "E"?

Y N

071

POWER-OFF.

Install a new Memory Card in slot "E".

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

072

Has a new System Card been installed?

Y N

073

POWER-OFF.

Install a new System Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

074

POWER-OFF.

Install a new Electronic Module Distribution Board.

Reinstall all the original cards.

Reconnect all the cable connectors.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

075

You are now directed to go to the LED Memory Isolation MAP.

GO TO MAP 2210, ENTRY POINT A.

076

POWER-OFF.

Remove the Card located in slot "C", on the Electronic Module Distribution Board.

POWER-ON.

Do the Error Indicators (D,E,F,G,H) equal (0,0,0,0,1)?

Y N

077

POWER-OFF.

Install a new Card in slot "C".

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

078

Is the Memory Size Suffix a letter "F" or "G" ? (Refer to the Product Support Manual (PSM) or Information Card for Memory Card Type Identification Information.)
Y N

079

Has a New Memory Card been installed in slot "E"?
Y N

080

POWER-OFF.

Reinstall the original card in slot "C".

Install a new Memory Card in slot "E".

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

081

Has a new System Card been installed?
Y N

082

POWER-OFF.

Reinstall the original card in slot "C".

Install a new System Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

083

POWER-OFF.

Install a new Electronic Module Distribution Board.

Reinstall all the original cards.

Reconnect all the cable connectors.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

084

POWER-OFF.

Reinstall the Original Card in slot "C".

POWER-ON.

You are now directed to go to the LED Memory Isolation MAP.

GO TO MAP 2210, ENTRY POINT A.

085

Has a new System Card been installed?
Y N

086

POWER-OFF.

Install a new System Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

087

POWER-OFF.

Test Conditions:

a. Position the Electronic Module Distribution Board to permit access for making voltage measurements on Connector (A1).

b. All cables are to be connected.

c. All cards are to be in place.

POWER-ON.

Using the 20(dc) voltage range, measure from each pin in the following Chart to frame ground at the Power Supply Case.

(Step 087 continues)

(Step 087 continued)

Pin	Voltage Range
3	-0.1 to +0.1
4	-0.1 to +0.1
5	-0.1 to +0.1
6	-0.1 to +0.1
8	-11.04 to -13.20
9	+4.6 to +5.5
10	+4.6 to +5.5
11	+4.6 to +5.5
12	+4.6 to +5.5
13	-4.6 to -5.5
15	+8.245 to +8.925
16	-0.1 to +0.1
17	-0.1 to +0.1
18	-0.1 to +0.1
20	+11.04 to +13.20
21	+4.6 to +5.5
22	+4.6 to +5.5
23	+4.6 to +5.5
24	+4.6 to +5.5

Were all the voltage measurements correct?
Y N

088

POWER-OFF.

Disconnect System Power Cable Connectors P1 and A1.

Using the lowest ohms range, check the continuity of each wire in the System Power Cable.

Refer to the Product Support Manual for pin assignments.

Was the cable continuity correct? (less than 2 ohms)
Y N

089

Install a new System Power Cable.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

090

Install a new base Power Supply.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

091

POWER-OFF.

Install a new Electronic Module Distribution Board.

Reinstall all the original cards.

Reconnect all the cable connectors.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

A
H

MAP 0015-10

MAP 0017

PAGE 1 OF 3

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP: ENTRY POINT	PAGE NUMBER	STEP NUMBER
0010	A	1	001

EXIT POINTS

EXIT THIS MAP: PAGE NUMBER	STEP NUMBER	TO: MAP NUMBER	ENTRY POINT
3	019	9010	A
3	020	9109	A

001
(ENTRY POINT A)

POWER-OFF.

Position the Electronic Module so the LED Indicators may be easily observed.

While observing the LED Indicators, POWER-ON.

At the start, did all the LED Indicators light?
Y N

002

Did "A","B" or "C" fail to light?
Y N

003

Using the 20(dc) voltage range, measure from frame ground to Pin 8 of the LED Assembly Cable Connector (S2) for +4.6 volts to +5.5 volts.

Is the voltage reading between +4.6 volts and +5.5 volts?
Y N

004

Using the 20(dc) voltage range, measure from frame ground to the Pins in the following Chart.

SYSTEM POWER CABLE (A1)

Pin	Voltage Range
9	+4.6 to +5.5
10	+4.6 to +5.5
11	+4.6 to +5.5
12	+4.6 to +5.5
22	+4.6 to +5.5
23	+4.6 to +5.5
24	+4.6 to +5.5

Is the voltage reading between +4.6 volts and +5.5 volts?
Y N

3 2 2 2 2
A B C D E

LED STATUS MAP

MAP 0017

PAGE 2 OF 3

005

POWER-OFF.

Using the lowest ohms range, measure the continuity of each wire in the System Power Cable (P1 to A1).

Refer to the Product Support Manual for pin assignments.

Was the cable continuity correct? (less than 2 ohms)
Y N

006

Install a new System Power Cable.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

007

Install a new base Power Supply.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

008

POWER-OFF.

Install a new System Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

009

POWER-OFF.
Use a CE Meter lead for a jumper.

CAUTION

Do NOT ground Pin 8. It is +5 volts.

Connect each Pin of LED Assembly Cable Connector (S2) in the Chart to frame ground.

POWER-ON.

Verify that the respective LED Indicator lights.

Pin	LED
2	D
3	E
5	F
6	G
7	H

(Step 009 continues)

(Step 009 continued)

Did each LED Indicator light?
Y N

010

POWER-OFF.

Install a new LED Indicator Assembly.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

011

POWER-OFF.

Install a new System Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

012

Using the 20(dc) voltage range, measure from frame ground to Pin 5 of the LED Assembly Cable Connector (L1) (still connected to the Power Supply) for +15.0 volts to +16.0 volts.

Record the measurement.

Was the voltage +15 volts to +16 volts?
Y N

013

POWER-OFF.

Install a new base Power Supply.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

014

Using the 20(dc) voltage range, measure from frame ground to Pins 1, 2 and 3 of the LED Assembly Cable Connector (L1).

Record the voltage measurements.

Were all measurements 1.2 volts less than Pin 5?
Y N

015

POWER-OFF.

Install a new LED Indicator Assembly.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

A F
1 2

LED STATUS MAP

MAP 0017

PAGE 3 OF 3

016

POWER-OFF.

Install a new base Power Supply.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

017

It should take ten (10) to twenty (20) seconds after POWER-ON for all LED Indicators to disappear.

Was it less than ten (10) seconds?
Y N

018

Is there a Large Display Module connected to the Electronic Module?
Y N

019

You are now directed to go to the Display Blank Screen MAP.

GO TO MAP 9010, ENTRY POINT A.

020

You are now directed to go to the Large Display Indicator MAP.

GO TO MAP 9109, ENTRY POINT A.

021

POWER-OFF.

Install a new System Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

MAP 0019

PAGE 1 OF 5

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0009	A	1	001
0010	A	1	001
0015	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	008	2220	A
2	014	2220	A
3	027	2220	A
4	034	2220	A
5	042	2220	A
5	049	2220	A

001
(ENTRY POINT A)

Was the Error Code 03?
Y N

002

Was the Error Code 06?
Y N

003

Was the Error Code 08?
Y N

004

Was the Error Code 09?
Y N

005

You should not be in this MAP without an Error Code. Return to MAP 0010, Entry Point A, the System Entry MAP.

006

Is the Memory Size Suffix a letter "F" or "G" ? (Refer to the Product Support Manual (PSM) or Information Card for Memory Card Type Identification Information.)
Y N

2 2 2 2 2
A B C D E

ERROR CODE

MAP 0019

PAGE 2 OF 5

007

This Error Code may occur with multiple failures.

POWER-OFF.

Install a new Memory Card in slot E.

POWER-ON.

If you get an Error Code 09, reinstall the original Memory Card.

Install a new Display Adapter Card.

POWER-ON.

If you get an Error Code 09, reinstall the original Display Adapter Card.

Install a new Electronic Module Distribution Board.

POWER-ON.

If you get an Error Code 09, reinstall the original Electronic Module Distribution Board.

Install a new System Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

008

You are now directed to go to the Memory Error Code MAP.

GO TO MAP 2220, ENTRY POINT A.

009

POWER-OFF.

Install a new System Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

010

Have you installed a new System Card?
Y N

011

POWER-OFF.

Install a new System Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

012

Is the Memory Size Suffix a letter "F" or "G" ? (Refer to the Product Support Manual (PSM) or Information Card for Memory Card Type Identification Information.)
Y N

013

POWER-OFF.

Reinstall the original System Card.

Install a new Memory Card in slot "E".

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

014

POWER-OFF.

Reinstall the original System Card.

POWER-ON.

You are now directed to go to the Memory Error Code MAP.

GO TO MAP 2220, ENTRY POINT A.

015

POWER-OFF.

Disconnect the Diskette Unit Signal Cable Connector (5) at Panel 1.

POWER-ON.

Did you get Error Code 03 again?
Y N

016

Do you have a Communications Feature Card in the Media Module?
Y N

017

POWER-OFF.

Install a new Diskette Adapter Card.

Reconnect the Diskette Unit Signal Cable Connector (5) at Panel 1.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

018

POWER-OFF.

Remove the Communications Feature Card.

Reconnect the Diskette Unit Signal Cable Connector (5) at Panel 1.

POWER-ON.

Did you get Error Code 03 again?
Y N

019

POWER-OFF.

Install a new Communications Feature Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

020

POWER-OFF.

Install a new Diskette Adapter Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

021

POWER-OFF.

Reconnect the Diskette Unit Signal Cable Connector (5) at Panel 1.

Do you have a card present in slot "C" on the System Electronic Module Distribution Board?
Y N

022

Do you have a Communications Feature Card in the Base Electronics Module?
Y N

023

Have you installed a new System Card?
Y N

024

Install a new System Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

025

Is the Memory Size Suffix a letter "F" or "G" ? (Refer to the Product Support Manual (PSM) or Information Card for Memory Card Type Identification Information.)
Y N

026

Reinstall the original System Card.

Install a new Memory Card in slot "E".

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

027

POWER-OFF.

Reinstall the original System Card.

POWER-ON.

You are now directed to go to the Memory Error Code MAP.

GO TO MAP 2220, ENTRY POINT A.

028

Remove the Communications Feature Card.

POWER-ON.

Did you get Error Code 03 again?
Y N

029

POWER-OFF.

Install a new Communications Feature Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

030

Have you installed a new System Card?
Y N

031

POWER-OFF.

Reinstall the Communications Feature Card.

Install a new System Card.

Reconnect the Diskette Unit Signal Cable Connector (5) at Panel 1.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

032

Is the Memory Size Suffix a letter "F" or "G" ? (Refer to the Product Support Manual (PSM) or Information Card for Memory Card Type Identification Information.)
Y N

033

POWER-OFF.

Reinstall the Communications Feature Card.

Reinstall the original System Card.

Install a new Memory Card in slot "E".

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

034

POWER-OFF.

Reinstall the Communications Feature Card.

Reinstall the original System Card.

POWER-ON.

You are now directed to go to the Memory Error Code MAP.

GO TO MAP 2220, ENTRY POINT A.

035

Remove the Card located in slot "C", on the Electronic Module Distribution Board.

POWER-ON.

Did you get Error Code 03 again?
Y N

036

POWER-OFF.

Install a new Card in slot "C".

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

037

Do you have a Communications Feature Card in the Base Electronics Module?
Y N

038

Have you installed a new System Card?
Y N

039

POWER-OFF.

Reinstall the original card in slot "C".

Install a new System Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

040

Is the Memory Size Suffix a letter "F" or "G" ? (Refer to the Product Support Manual (PSM) or Information Card for Memory Card Type Identification Information.)
Y N

041

POWER-OFF.

Reinstall the original card in slot "C".

Install a new Memory Card in slot "E".

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

042

POWER-OFF.

Reinstall the Original Card in slot "C".

POWER-ON.

You are now directed to go to the Memory Error Code MAP.

GO TO MAP 2220, ENTRY POINT A.

043

POWER-OFF.

Reinstall the original card in slot "C".

Remove the Communications Feature Card.

POWER-ON.

Did you get Error Code 03 again?
Y N

044

POWER-OFF.

Install a new Communications Feature Card.

Reconnect the Diskette Unit Signal Cable Connector (5) at Panel 1.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

045

Have you installed a new System Card?
Y N

046

POWER-OFF.

Reinstall the Communications Feature Card.

Install a new System Card.

Reconnect the Diskette Unit Signal Cable Connector (5) at Panel 1.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

047

Is the Memory Size Suffix a letter "F" or "G" ? (Refer to the Product Support Manual (PSM) or Information Card for Memory Card Type Identification Information.)
Y N

048

POWER-OFF.

Reinstall the Communications Feature Card.

Reinstall the original System Card.

Install a new Memory Card in slot "E".

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

049

POWER-OFF.

Reinstall the Communications Feature Card.

Reinstall the original System Card.

POWER-ON.

You are now directed to go to the Memory Error Code MAP.

GO TO MAP 2220, ENTRY POINT A.

MAP 1005

PAGE 1 OF 1

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP: ENTRY POINT	PAGE NUMBER	STEP NUMBER
0009	A	1	001
0010	A	1	001
0015	A	1	001

EXIT POINTS

EXIT THIS MAP: PAGE NUMBER	STEP NUMBER	TO: MAP NUMBER	ENTRY POINT
1	002	1010	A
1	003	1015	A

001
(ENTRY POINT A)

This MAP is entered from the Post-CRT Error Code Table in MAP 0010 (System Entry MAP).

Do you have a thin keyboard that has adjustable tilt buttons located on either side of the keyboard?
Y N
|
| 002
|
| You are now directed to go to Keyboard "A" Entry Map.
| GO TO MAP 1010, ENTRY POINT A.
|
003

You are now directed to go to Keyboard "B" Entry Map.
GO TO MAP 1015, ENTRY POINT A.

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP: ENTRY POINT	PAGE NUMBER	STEP NUMBER
1005	A	1	001

001
(ENTRY POINT A)

Was the Error Code 01 or (01 and 02)?
Y N

002

Error Code 02.

Have you installed a new Keyboard Logic Card?
Y N

003

POWER-OFF.

Install a new Keyboard Logic Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

004

POWER-OFF.

Disconnect the Keyboard Module Cable Connector (7) at Panel 1.

Using the lowest ohms scale, measure the continuity of each wire in the Keyboard Module Cable.

Refer to the Product Support Manual (Keyboard Module "A") for pin assignments.

Does the meter indicate continuity? (two ohms or less)
Y N

005

Repair or install a new Keyboard Module Cable.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

006

Disconnect the Internal Distribution Cable Connectors (P2 and B1).

Using the lowest ohms scale, measure the continuity of each wire between Connectors (P2/B1) and the Internal Distribution Cable Connector (7).

Refer to the Product Support Manual for pin assignments.

Does the meter indicate continuity? (two ohms or less)
Y N

007

Repair or install a new Internal Distribution Cable.

Reconnect all the cable connectors.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

008

Install a new System Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

009

Is the Keyboard Module Cable Connector (7) connected?
Y N

010

POWER-OFF.

Reconnect the Keyboard Module Cable Connector (7) at Panel 1.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

011

POWER-OFF.

Disconnect the Keyboard Module Cable Connector (7) at Panel 1.

Jumper Pin 1 to Pin 12 of the Internal Distribution Cable Connector (7) at Panel 1.

Refer to the Product Support Manual for pin assignments.

POWER-ON.

Observe Failure.

Did you stop with an Error Code 02 on the display screen?
Y N

012

POWER-OFF.

Remove the jumper from Pins 1 and 12 of the Keyboard Module Cable Connector (7) at Panel 1.

Disconnect the Internal Distribution Cable Connectors (P2 and B1).

Using the lowest ohms scale, measure the continuity of each wire between Connectors (P2/B1) and the Internal Distribution Cable Connector (7).

Refer to the Product Support Manual for pin assignments.

Does the meter indicate continuity? (two ohms or less)
Y N

013

Repair or install a new Internal Distribution Cable.

Reconnect the Keyboard Module Cable Connector (7) at Panel 1.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

014

Install a new System Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

015

POWER-OFF.

Remove the jumper from Pins 1 and 12 of the Keyboard Module Cable Connector (7) at Panel 1.

POWER-ON.

Using the 20 (DC) voltage scale, measure from frame ground to pin 11 of the Internal Distribution Cable Connector (7) at Panel 1 for + 4.5 volts to + 5.5 volts.

Is the voltage reading between + 4.5 volts and + 5.5 volts?
Y N

016

Using the 20 (DC) voltage scale, measure from frame ground to Pin 3 of the Internal Distribution Connector (P2) for + 4.5 volts to + 5.5 volts.

Is the voltage reading between + 4.5 volts and + 5.5 volts?
Y N

017

POWER-OFF.

Install a new base Power Supply.

Reconnect the Keyboard Module Cable Connector (7) at Panel 1.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

018

POWER-OFF.

Repair or install a new Internal Distribution Cable.

Reconnect the Keyboard Module Cable Connector (7) at Panel 1.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

019

POWER-OFF.

Using the 200 ohms scale, measure the resistance from frame ground to Pins 10 and 12 of the Internal Distribution Cable Connector (7).

Was the resistance less than 2.0 ohms?
Y N

020

Repair or install a new Internal Distribution Cable.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

021

Using the lowest ohms scale, measure the continuity of each wire in the Keyboard Module Cable.

Refer to the Product Support Manual (Keyboard Module "A") for pin assignments.

Does the meter indicate continuity?
(two ohms or less)
Y N

022

Repair or install a new Keyboard Module Cable.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

023

Reconnect the Keyboard Module Cable Connector (7) at Panel 1.

Have you installed a new Keyboard Logic Card?
Y N

024

Install a new Keyboard Logic Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

025

Install a new System Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

KEYBOARD "A" SPEAKER CHECK

MAP 1011

PAGE 1 OF 1

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP ENTRY POINT	PAGE NUMBER	STEP NUMBER
1070	A	1	001

001
(ENTRY POINT A)

POWER-OFF.

Using the lowest ohms scale, measure the continuity of each wire in the Keyboard Module Cable.

Refer to the Product Support Manual (Keyboard Module "A") for pin assignments.

Does the meter indicate continuity?
(two ohms or less)
Y N

002

Repair or install a new Keyboard Module Cable.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

003

Disconnect the Internal Distribution Cable Connectors (P2 and B1).

Using the lowest ohms scale, measure the continuity of each wire between Connectors (P2/B1) and the Internal Distribution Cable Connector (7).

Refer to the Product Support Manual for pin assignments.

Does the meter indicate continuity?
(two ohms or less)
Y N

004

Repair or install a new Internal Distribution Cable.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

005

Install a new System Card.

Reconnect all the cable connectors.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

KEYBOARD "A" CABLE MAP

MAP 1012

PAGE 1 OF 1

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP: ENTRY POINT	PAGE NUMBER	STEP NUMBER
1070	A	1	001

001
(ENTRY POINT A)

POWER-OFF.

Remove pins 3 and 10 from the Keyboard Cable Connector at the Keyboard Logic Card.

Reinstall the Keyboard Cable Connector onto the Keyboard Logic Card.

POWER-ON.

Using the 20 (DC) voltage scale, measure from Keyboard frame ground to pins 3 and 10 on the Keyboard Logic Card for + 4.5 volts to + 5.5 volts.

Is the voltage reading between + 4.5 volts and + 5.5 volts?
Y N

002

POWER-OFF.

Install a new Keyboard Logic Card.

Reinsert pins 3 and 10 in the Keyboard Module Cable Connector at the Keyboard Logic Card.

Reconnect all the cable connectors.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

003

POWER-OFF.

Disconnect B1 from the Electronics Module Distribution Board.

Using the lowest ohm scale, measure from wires 3 and 10 to ground.

Is either wire 3 or 10 shorted to ground?
Y N

004

Install a new System Card.

Reinsert pins 3 and 10 in the Keyboard Module Cable Connector at the Keyboard Logic Card.

Reconnect all the cable connectors.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

005

Disconnect the Keyboard Module Cable Connector (7) at Panel 1.

Using the lowest ohm scale, measure from wires 3 and 10 to ground.

Is either wire 3 or 10 shorted to ground?
Y N

006

Repair or install a new Internal Distribution Cable.

Reinsert pins 3 and 10 in the Keyboard Module Cable Connector at the Keyboard Logic Card.

Reconnect all the cable connectors.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

007

Repair or install a new Keyboard Module Cable.

Reconnect all the cable connectors.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
7070	A	1	001

001
(ENTRY POINT A)

Is there a Communications Keylock on the Displaywriter system?
Y N

002

POWER-OFF.

Install a new System Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

003

Is the Communications Keylock ON?
Y N

004

Turn the Communications Keylock ON.

Load the Displaywriter System Diagnostics diskette.

Select the MDIs on the Function Selection menu.

Run Communications MDIs.

005

POWER-OFF.

Disconnect the Internal Distribution Cable Connector (B1) from the Electronics Module Distribution Board.

Using the lowest ohms range, measure from the Internal Distribution Cable Connector Pin 13A to frame ground.

Does the meter indicate continuity?
(two ohms or less)
Y N

006

POWER-OFF.

Install a new System Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

007

Disconnect either wire from the Communications Keylock.

Is the continuity still correct? (less than 2 ohms)
Y N

008

Install a new Communications Keylock.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

009

Repair or install a new Internal Distribution Cable.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
7070	A	1	001

001
(ENTRY POINT A)

POWER-OFF.

Disconnect the Internal Distribution Cable Connector (B1) from the Electronics Module Distribution Board.

Using the lowest ohms range, measure from the Internal Distribution Cable Connector Pin 13A to frame ground.

Does the meter indicate continuity?
(two ohms or less)
Y N

002

Are both wires connected to the Communications Keylock?
Y N

003

Reconnect the wires to the terminals of the Communications Keylock.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

004

Using the lowest ohms range, measure the continuity across the Communications Keylock terminals.

Does the meter indicate continuity?
(two ohms or less)
Y N

005

Install a new Communications Keylock.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

006

Using the lowest ohms range, measure the continuity from the Communications Keylock terminal to ground.

Does the meter indicate continuity?
(two ohms or less)
Y N

007

Repair of install a new ground wire assembly.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

008

Repair or install a new Internal Distribution Cable.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

009

Install a new System Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1005	A	1	001

001
(ENTRY POINT A)

Was the Error Code 01 or (01 and 02)?
Y N

002

Error Code 02.

Have you installed a new Keyboard Assembly?
Y N

003

POWER-OFF.

Install a new Keyboard Assembly.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

004

POWER-OFF.

Disconnect the Keyboard Module Cable Connector (7) at Panel 1.

Using the lowest ohms scale, measure the continuity of each wire in the Keyboard Module Cable.

Refer to the Product Support Manual (Keyboard Module "B") for pin assignments.

Does the meter indicate continuity?
(two ohms or less)
Y N

005

Repair or install a new Keyboard Module Cable.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

006

Disconnect the Internal Distribution Cable Connectors (P2 and B1).

Using the lowest ohms scale, measure the continuity of each wire between Connectors (P2/B1) and the Internal Distribution Cable Connector (7).

Refer to the Product Support Manual for pin assignments.

Does the meter indicate continuity?
(two ohms or less)
Y N

007

Repair or install a new Internal Distribution Cable.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

008

Install a new System Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

009

Is the Keyboard Module Cable Connector (7) connected?
Y N

010

POWER-OFF.

Reconnect the Keyboard Module Cable Connector (7) at Panel 1.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

011

POWER-OFF.

Disconnect the Keyboard Module Cable Connector (7) at Panel 1.

Jumper Pin 1 to Pin 12 of the Internal Distribution Cable Connector (7) at Panel 1.

Refer to the Product Support Manual for pin assignments.

POWER-ON.

Observe Failure.

Did you stop with an Error Code 02 on the display screen?
Y N

012

POWER-OFF.

Remove the jumper from Pins 1 and 12 of the Keyboard Module Cable Connector (7) at Panel 1.

Disconnect the Internal Distribution Cable Connectors (P2 and B1).

Using the lowest ohms scale, measure the continuity of each wire between Connectors (P2/B1) and the Internal Distribution Cable Connector (7).

Refer to the Product Support Manual for pin assignments.

Does the meter indicate continuity? (two ohms or less)
Y N

013

Repair or install a new Internal Distribution Cable.

Reconnect the Keyboard Module Cable Connector (7) at Panel 1.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

014

Install a new System Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

015

POWER-OFF.

Remove the jumper from Pins 1 and 12 of the Keyboard Module Cable Connector (7) at Panel 1.

POWER-ON.

Using the 20 (DC) voltage scale, measure from frame ground to pin 11 of the Internal Distribution Cable Connector (7) at Panel 1 for + 4.5 volts to + 5.5 volts.

Is the voltage reading between + 4.5 volts and + 5.5 volts?
Y N

016

Using the 20 (DC) voltage scale, measure from frame ground to Pin 3 of the Internal Distribution Connector (P2) for + 4.5 volts to + 5.5 volts.

Is the voltage reading between + 4.5 volts and + 5.5 volts?
Y N

017

POWER-OFF.

Install a new base Power Supply.

Reconnect the Keyboard Module Cable Connector (7) at Panel 1.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

018

POWER-OFF.

Repair or install a new Internal Distribution Cable.

Reconnect the Keyboard Module Cable Connector (7) at Panel 1.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

019

POWER-OFF.

Using the 200 ohms scale, measure the resistance from frame ground to Pins 10 and 12 of the Internal Distribution Cable Connector (7).

Was the resistance less than 2.0 ohms?
Y N

020

Repair or install a new Internal Distribution Cable.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

021

Using the lowest ohms scale, measure the continuity of each wire in the Keyboard Module Cable.

Refer to the Product Support Manual (Keyboard Module "B") for pin assignments.

Does the meter indicate continuity?
(two ohms or less)
Y N

022

Repair or install a new Keyboard Module Cable.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

023

Reconnect the Keyboard Module Cable Connector (7) at Panel 1.

Have you installed a new Keyboard Assembly?
Y N

024

Install a new Keyboard Assembly.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

025

Install a new System Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

KEYBOARD "B" SPEAKER CHECK

MAP 1016

PAGE 1 OF 1

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP ENTRY POINT	PAGE NUMBER	STEP NUMBER
1170	A	1	001

001
(ENTRY POINT A)

POWER-OFF.

Using the lowest ohms scale, measure the continuity of each wire in the Keyboard Module Cable.

Refer to the Product Support Manual (Keyboard Module "B") for pin assignments.

Does the meter indicate continuity?
(two ohms or less)
Y N

002

Repair or install a new Keyboard Module Cable.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

003

Disconnect the Internal Distribution Cable Connectors (P2 and B1).

Using the lowest ohms scale, measure the continuity of each wire between Connectors (P2/B1) and the Internal Distribution Cable Connector (7).

Refer to the Product Support Manual for pin assignments.

Does the meter indicate continuity?
(two ohms or less)
Y N

004

Repair or install a new Internal Distribution Cable.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

A

005

Install a new System Card.

Reconnect all the cable connectors.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

KEYBOARD "B" CABLE MAP

MAP 1017

PAGE 1 OF 1

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP ENTRY POINT	PAGE NUMBER	STEP NUMBER
1170	A	1	001

001
(ENTRY POINT A)

POWER-OFF.

Remove pins 3 and 11 from the Keyboard Cable Connector at the Keyboard Assembly Circuit Card.

Reinstall the Keyboard Cable Connector onto the Keyboard Assembly Circuit Card.

POWER-ON.

Using the 20 (DC) voltage scale, measure from Keyboard frame ground to pad 3 and 11 on the back of the Keyboard Assembly Circuit Card for + 4.5 volts to + 5.5 volts.

Is the voltage reading between + 4.5 and + 5.5 volts?
Y N

002

POWER-OFF.

Install a new Keyboard Assembly.

Reinsert pins 3 and 11 in the Keyboard Module Cable Connector at the Keyboard Assembly Circuit Card.

Reconnect all the cable connectors.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

003

POWER-OFF.

Disconnect B1 from the Electronics Module Distribution Board.

Using the lowest ohms scale, measure from wires 3 and 11 to ground.

Is either wire 3 or 11 shorted to ground?
Y N

004

Install a new System Card.

Reinsert pins 3 and 11 in the Keyboard Module Cable Connector at the Keyboard Assembly Circuit Card.

Reconnect all the cable connectors.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

005

Disconnect the Keyboard Module Cable Connector (7) at Panel 1.

Using the lowest ohms scale, measure from wires 3 and 11 to ground.

Is either wire 3 or 11 shorted to ground?
Y N

006

Repair or install a new Internal Distribution Cable.

Reinsert pins 3 and 11 in the Keyboard Module Cable Connector at the Keyboard Assembly Circuit Card.

Reconnect all the cable connectors.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

007

Repair or install a new Keyboard Module Cable.

Reconnect all the cable connectors.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

LED MEMORY ISOLATION MAP

MAP 2210

PAGE 1 OF 13

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP: ENTRY POINT	PAGE NUMBER	STEP NUMBER
0015	A	1	001

001
(ENTRY POINT A)

Do the Error Indicators (D,E,F,G,H) equal (0,0,0,0,1)?
Y N

002

Do the Error Indicators (D,E,F,G,H) equal (0,0,0,1,0)?
Y N

003

Do the Error Indicators (D,E,F,G,H) equal (0,0,0,1,1)?
Y N

004

Do the Error Indicators (D,E,F,G,H) equal (0,1,1,1,0)?
Y N

005

Select the Displayed Error Code or if it is not readable, select the LED Error Code in the following Chart and go to the indicated MAP.

Post-CRT Error Code Table

Error Code	LED Code DEFGH	MAP Number	Entry Point
01	00110	1005	A
02	00110	1005	A
03	00111	0019	A
04	01000	8032	A
05	01000	8032	A
06	01001	0019	A
08	01010	0019	A
09	01100	0019	A

1
1 7 4
A B C D

D MAP 2210-1

006

Has a new Memory Control Card been installed?
Y N

007

POWER-OFF.

Install a new Memory Control Card in slot "E".

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

008

Has a new Memory Card been installed in Position 1?
Y N

009

POWER-OFF.

Reinstall the Original Memory Control Card.

Install a new Memory Card in Position 1.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

010

Is there a Memory Card in Position 2?
Y N

011

Has a new System Card been installed?
Y N

012

POWER-OFF.

Reinstall the Original Memory Card in Position 1.

Install a new System Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

2 2
E F

013

POWER-OFF.

Remove the Display Adapter Card and any card or cards in slot(s) "A" and "C".

POWER-ON.

Do the Error Indicators (D,E,F,G,H) equal (0,1,1,1,0)?
Y N

014

POWER-OFF.

Reinstall one of the removed Cards.

POWER-ON.

If the Error Indicators (D,E,F,G,H) = (0,1,1,1,0), the Card just reinstalled is defective. If not, repeat this procedure until the failing Card is identified.

Exchange the failing Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

015

POWER-OFF.

Install a new Electronic Module Distribution Board.

Reinstall all the original cards.

Reconnect all the cable connectors.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

016

Has a new Memory Card been installed in Position 2?
Y N

G H

017

POWER-OFF.

Reinstall the Original Memory Card in Position 1.

Install a new Memory Card in Position 2.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

018

Are there any Memory Cards remaining in Position(s) 3,4,5 or 6?
Y N

019

Has a new System Card been installed?
Y N

020

POWER-OFF.

Reinstall the Original Memory Card in Position 2.

Install a new System Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

021

POWER-OFF.

Remove the Display Adapter Card and any card or cards in slot(s) "A" and "C".

POWER-ON.

Do the Error Indicators (D,E,F,G,H) equal (0,1,1,1,0)?
Y N

3 3 3
J K L

022

POWER-OFF.

Reinstall one of the removed Cards.

POWER-ON.

If the Error Indicators (D,E,F,G,H) = (0,1,1,1,0), the Card just reinstalled is defective. If not, repeat this procedure until the failing Card is identified.

Exchange the failing Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

023

POWER-OFF.

Install a new Electronic Module Distribution Board.

Reinstall all the original cards.

Reconnect all the cable connectors.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

024

POWER-OFF.

Reinstall the Original Memory Card in Position 2.

Remove the Memory Card(s) from Position(s) 3,4,5 and 6 if present.

POWER-ON.

Do the Error Indicators (D,E,F,G,H) equal (0,1,1,1,0)?
Y N

025

POWER-OFF.

One of the Memory Card(s) in Position(s) 3,4,5 or 6 is defective.

Reinstall the card(s) one card at a time until the failing card is isolated.

Exchange the failing Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

026

Has a new System Card been installed?
Y N

027

POWER-OFF.

Reinstall any Memory Card(s) removed from Position(s) 3,4,5 or 6.

Install a new System Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

028

POWER-OFF.

Remove the Display Adapter Card and any card or cards in slot(s) "A" and "C".

POWER-ON.

Do the Error Indicators (D,E,F,G,H) equal (0,1,1,1,0)?
Y N

029

POWER-OFF.

Reinstall one of the removed Cards.

POWER-ON.

If the Error Indicators (D,E,F,G,H) = (0,1,1,1,0), the Card just reinstalled is defective. If not, repeat this procedure until the failing Card is identified.

Exchange the failing Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

030

POWER-OFF.

Install a new Electronic Module Distribution Board.

Reinstall all the original cards.

Reconnect all the cable connectors.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

031

POWER-OFF.

Remove all cards from the Electronic Module Distribution Board except the Display Adapter Card.

Reinstall the original System Card.

POWER-ON.

Do the Error Indicators (D,E,F,G,H) equal (0,0,0,1,1)?
Y N

032

Was one of the cards removed from the Electronic Module Distribution Board plugged into slot "A"?
Y N

033

Was one of the cards removed from the Electronic Module Distribution Board plugged into slot "C"?
Y N

034

POWER-OFF.

Reinstall the Original Memory Control Card.

POWER-ON.

Do the Error Indicators (D,E,F,G,H) equal (0,0,0,1,1)?
Y N

035

POWER-OFF.

Reinstall the Original Memory Card in Position 1.

POWER-ON.

If the Error Indicators (D,E,F,G,H) = (0,0,0,1,1), the Card just reinstalled is defective. If not, Reinstall the card(s) in Position(s) 2,3,4,5 and 6, one card at a time until the failing card is isolated.

Exchange the failing Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

036

POWER-OFF.

Install a new Memory Control Card in slot "E".

Reinstall the remaining original card(s).

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

037

POWER-OFF.

Reinstall the original card in slot "C".

POWER-ON.

Do the Error Indicators (D,E,F,G,H) equal (0,0,0,1,1)?
Y N

038

POWER-OFF.

Reinstall the Original Memory Control Card.

POWER-ON.

Do the Error Indicators (D,E,F,G,H) equal (0,0,0,1,1)?
Y N

039

POWER-OFF.

Reinstall the Original Memory Card in Position 1.

POWER-ON.

If the Error Indicators (D,E,F,G,H) = (0,0,0,1,1), the Card just reinstalled is defective. If not, Reinstall the card(s) in Position(s) 2,3,4,5 and 6, one card at a time until the failing card is isolated.

Exchange the failing Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

040

POWER-OFF.

Install a new Memory Control Card in slot "E".

Reinstall the remaining original card(s).

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

041

POWER-OFF.

Install a new Card in slot "C".

Reinstall the remaining original card(s).

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

042

POWER-OFF.

Reinstall the original card in slot "A".

POWER-ON.

Do the Error Indicators (D,E,F,G,H) equal (0,0,0,1,1)?
Y N

043

Was one of the cards removed from the Electronic Module Distribution Board plugged into slot "C"?
Y N

044

POWER-OFF.

Reinstall the Original Memory Control Card.

POWER-ON.

Do the Error Indicators (D,E,F,G,H) equal (0,0,0,1,1)?
Y N

6
U V W X

045

POWER-OFF.

Reinstall the Original Memory Card in Position 1.

POWER-ON.

If the Error Indicators (D,E,F,G,H) = (0,0,0,1,1), the Card just reinstalled is defective. If not, Reinstall the card(s) in Position(s) 2,3,4,5 and 6, one card at a time until the failing card is isolated.

Exchange the failing Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

046

POWER-OFF.

Install a new Memory Control Card in slot "E".

Reinstall the remaining original card(s).

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

047

POWER-OFF.

Reinstall the original card in slot "C".

POWER-ON.

Do the Error Indicators (D,E,F,G,H) equal (0,0,0,1,1)?
Y N

048

POWER-OFF.

Reinstall the Original Memory Control Card.

POWER-ON.

Do the Error Indicators (D,E,F,G,H) equal (0,0,0,1,1)?
Y N

6
6 6 A
Y Z A

MEMORY LED MAP

MAP 2210

049

POWER-OFF.

Reinstall the Original Memory Card in Position 1.

POWER-ON.

If the Error Indicators (D,E,F,G,H) = (0,0,0,1,1), the Card just reinstalled is defective. If not, Reinstall the card(s) in Position(s) 2,3,4,5 and 6, one card at a time until the failing card is isolated.

Exchange the failing Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

050

POWER-OFF.

Install a new Memory Control Card in slot "E".

Reinstall the remaining original card(s).

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

051

POWER-OFF.

Install a new Card in slot "C".

Reinstall the remaining original card(s).

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

052

POWER-OFF.

Install a new Card in slot "A".

Reinstall the remaining original card(s).

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

053

POWER-OFF.

Remove the Display Adapter Card and install the Memory Control Card in slot "E". Reinstall all of the Memory Card(s) in Position(s) 1,2,3,4,5 or 6.

POWER-ON.

Do the Error Indicators (D,E,F,G,H) equal (0,0,0,1,1)?

Y N

054

POWER-OFF.

Install a new Display Adapter Card.

Reinstall the remaining original card(s).

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

055

POWER-OFF.

Remove the Memory Card(s) from Position(s) 2,3,4,5 and 6 if present.

POWER-ON.

Do the Error Indicators (D,E,F,G,H) equal (0,0,0,1,1)?

Y N

056

POWER-OFF.

Reinstall the Original Memory Card in Position 2.

POWER-ON.

If the Error Indicators (D,E,F,G,H) = (0,0,0,1,1), the card just reinstalled is defective. If not, reinstall the Memory Card(s) one card at a time until the failing card is isolated.

Exchange the failing Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

057

POWER-OFF.

Install a new Electronic Module Distribution Board.

Reinstall all the original cards.

Reconnect all the cable connectors.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

058

Has a new Memory Control Card been installed?
Y N

059

POWER-OFF.

Install a new Memory Control Card in slot "E".

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

060

Has a new Memory Card been installed in Position 1?
Y N

061

POWER-OFF.

Reinstall the Original Memory Control Card.

Install a new Memory Card in Position 1.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

062

Is there a Memory Card in Position 2?
Y N

063

Using the 20(dc) voltage range, measure from frame ground to the pins in the following Chart.

Conn.	Pin	Voltage Range
E1	11	+4.6 to +5.5
E1	13	-4.6 to -5.5
E1	15	+8.245 to +8.925
E1	20	+11.04 to +13.20
E2	11	+4.6 to +5.5
E2	13	-4.6 to -5.5
E2	15	+8.245 to +8.925
E2	20	+11.04 to +13.20
E3	11	+4.6 to +5.5
E4	11	+4.6 to +5.5

Were all the voltage measurements correct?
Y N

064

POWER-OFF.

Test Conditions:

a. Position the Electronic Module Distribution Board to permit access for making voltage measurements on Connector (A1).

b. All cables are to be connected.

c. All cards are to be in place.

POWER-ON.

Using the 20(dc) voltage range, measure from each pin in the following Chart to frame ground at the Power Supply Case.

Pin	Voltage Range
3	-0.1 to +0.1
4	-0.1 to +0.1
5	-0.1 to +0.1
6	-0.1 to +0.1
8	-11.04 to -13.20
9	+4.6 to +5.5
10	+4.6 to +5.5
11	+4.6 to +5.5

----- CHART CONTINUES ------

(Step 064 continues)

(Step 064 continued)

CHART CONTINUED

Pin	Voltage Range
12	+4.6 to +5.5
13	-4.6 to -5.5
15	+8.245 to +8.925
16	-0.1 to +0.1
17	-0.1 to +0.1
18	-0.1 to +0.1
20	+11.04 to +13.20
21	+4.6 to +5.5
22	+4.6 to +5.5
23	+4.6 to +5.5
24	+4.6 to +5.5

Were all the voltage measurements correct?
Y N

065

POWER-OFF.

Disconnect System Power Cable Connectors P1 and A1.

Using the lowest ohms range, check the continuity of each wire in the System Power Cable.

Refer to the Product Support Manual for pin assignments.

Was the cable continuity correct? (less than 2 ohms)
Y N

066

Install a new System Power Cable.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

067

Install a new base Power Supply.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

A
F

A A A
C E F
7 7

068

POWER-OFF.

Install a new Electronic Module Distribution Board.

Reinstall all the original cards.

Reconnect all the cable connectors.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

069

POWER-OFF.

Reinstall the Original Memory Card in Position 1.

Install a new System Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

070

Has a new Memory Card been installed in Position 2?
Y N

071

POWER-OFF.

Reinstall the Original Memory Card in Position 1.

Install a new Memory Card in Position 2.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

072

Are there any Memory Cards remaining in Position(s) 3,4,5 or 6?
Y N

1
0 9
A A
G H

073

Using the 20(dc) voltage range, measure from frame ground to the pins in the following Chart.

Conn.	Pin	Voltage Range
E1	11	+4.6 to +5.5
E1	13	-4.6 to -5.5
E1	15	+8.245 to +8.925
E1	20	+11.04 to +13.20
E2	11	+4.6 to +5.5
E2	13	-4.6 to -5.5
E2	15	+8.245 to +8.925
E2	20	+11.04 to +13.20
E3	11	+4.6 to +5.5
E4	11	+4.6 to +5.5

Were all the voltage measurements correct?
Y N

074

POWER-OFF.

Test Conditions:

a. Position the Electronic Module Distribution Board to permit access for making voltage measurements on Connector (A1).

b. All cables are to be connected.

c. All cards are to be in place.

POWER-ON.

Using the 20(dc) voltage range, measure from each pin in the following Chart to frame ground at the Power Supply Case.

Pin	Voltage Range
3	-0.1 to +0.1
4	-0.1 to +0.1
5	-0.1 to +0.1
6	-0.1 to +0.1
8	-11.04 to -13.20
9	+4.6 to +5.5

----- CHART CONTINUES ------

(Step 074 continues)

(Step 074 continued)

----- CHART CONTINUED ------

Pin	Voltage Range
10	+4.6 to +5.5
11	+4.6 to +5.5
12	+4.6 to +5.5
13	-4.6 to -5.5
15	+8.245 to +8.925
16	-0.1 to +0.1
17	-0.1 to +0.1
18	-0.1 to +0.1
20	+11.04 to +13.20
21	+4.6 to +5.5
22	+4.6 to +5.5
23	+4.6 to +5.5
24	+4.6 to +5.5

Were all the voltage measurements correct?
Y N

075

POWER-OFF.

Disconnect System Power Cable Connectors P1 and A1.

Using the lowest ohms range, check the continuity of each wire in the System Power Cable.

Refer to the Product Support Manual for pin assignments.

Was the cable continuity correct? (less than 2 ohms)
Y N

076

Install a new System Power Cable.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

077

Install a new base Power Supply.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

078

POWER-OFF.

Install a new Electronic Module Distribution Board.

Reinstall all the original cards.

Reconnect all the cable connectors.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

079

POWER-OFF.

Reinstall the Original Memory Card in Position 2.

Install a new System Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

080

POWER-OFF.

Reinstall the Original Memory Card in Position 2.

Remove the Memory Card(s) from Position(s) 3,4,5 and 6 if present.

POWER-ON.

Do the Error Indicators (D,E,F,G,H) equal (0,0,0,1,0)?
Y N

081

POWER-OFF.

One of the Memory Card(s) in Position(s) 3,4,5 or 6 is defective.

Reinstall the card(s) one card at a time until the failing card is isolated.

Exchange the failing Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

082

Using the 20(dc) voltage range, measure from frame ground to the pins in the following Chart.

Conn.	Pin	Voltage Range
E1	11	+4.6 to +5.5
E1	13	-4.6 to -5.5
E1	15	+8.245 to +8.925
E1	20	+11.04 to +13.20
E2	11	+4.6 to +5.5
E2	13	-4.6 to -5.5
E2	15	+8.245 to +8.925
E2	20	+11.04 to +13.20
E3	11	+4.6 to +5.5
E4	11	+4.6 to +5.5

Were all the voltage measurements correct?
Y N

083

POWER-OFF.

Test Conditions:

a. Position the Electronic Module Distribution Board to permit access for making voltage measurements on Connector (A1).

b. All cables are to be connected.

c. All cards are to be in place.

POWER-ON.

Using the 20(dc) voltage range, measure from each pin in the following Chart to frame ground at the Power Supply Case.

Pin	Voltage Range
3	-0.1 to +0.1
4	-0.1 to +0.1
5	-0.1 to +0.1
6	-0.1 to +0.1
8	-11.04 to -13.20
9	+4.6 to +5.5
10	+4.6 to +5.5
11	+4.6 to +5.5

CHART CONTINUES

(Step 083 continues)

(Step 083 continued)

CHART CONTINUED

Pin	Voltage Range		
12	+4.6	to	+5.5
13	-4.6	to	-5.5
15	+8.245	to	+8.925
16	-0.1	to	+0.1
17	-0.1	to	+0.1
18	-0.1	to	+0.1
20	+11.04	to	+13.20
21	+4.6	to	+5.5
22	+4.6	to	+5.5
23	+4.6	to	+5.5
24	+4.6	to	+5.5

Were all the voltage measurements correct?
Y N

084

POWER-OFF.

Disconnect System Power Cable Connectors P1 and A1.

Using the lowest ohms range, check the continuity of each wire in the System Power Cable.

Refer to the Product Support Manual for pin assignments.

Was the cable continuity correct? (less than 2 ohms)
Y N

085

Install a new System Power Cable.

Reinstall any Memory Card(s) removed from Position(s) 3,4,5 or 6.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

086

Install a new base Power Supply.

Reinstall any Memory Card(s) removed from Position(s) 3,4,5 or 6.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

A
N

A A A
1 M N
1
0

087

POWER-OFF.

Install a new Electronic Module Distribution Board.

Reinstall all the original cards.

Reconnect all the cable connectors.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

088

POWER-OFF.

Reinstall any Memory Card(s) removed from Position(s) 3,4,5 or 6.

Install a new System Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

089

Has a new Memory Control Card been installed?
Y N

090

POWER-OFF.

Install a new Memory Control Card in slot "E".

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

091

Has a new Memory Card been installed in Position 1?
Y N

092

POWER-OFF.

Reinstall the Original Memory Control Card.

Install a new Memory Card in Position 1.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

1
2
A
P

093

Is there a Memory Card in Position 2?
Y N

094

Has a new System Card been installed?
Y N

095

POWER-OFF.

Reinstall the Original Memory Card in Position 1.

Install a new System Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

096

POWER-OFF.

Install a new Electronic Module Distribution Board.

Reinstall all the original cards.

Reconnect all the cable connectors.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

097

Has a new Memory Card been installed in Position 2?
Y N

098

POWER-OFF.

Reinstall the Original Memory Card in Position 1.

Install a new Memory Card in Position 2.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

099

Are there any Memory Cards remaining in Position(s) 3,4,5 or 6?
Y N

100

Has a new System Card been installed?
Y N

101

POWER-OFF.

Reinstall the Original Memory Card in Position 2.

Install a new System Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

102

POWER-OFF.

Install a new Electronic Module Distribution Board.

Reinstall all the original cards.

Reconnect all the cable connectors.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

103

POWER-OFF.

Reinstall the Original Memory Card in Position 2.

Remove the Memory Card(s) from Position(s) 3,4,5 and 6 if present.

POWER-ON.

Do the Error Indicators (D,E,F,G,H) equal (0,0,0,0,1)?
Y N

104

POWER-OFF.

One of the Memory Card(s) in Position(s) 3,4,5 or 6 is defective.

Reinstall the card(s) one card at a time until the failing card is isolated.

Exchange the failing Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

105

Has a new System Card been installed?
Y N

106

POWER-OFF.

Reinstall any Memory Card(s) removed from Position(s) 3,4,5 or 6.

Install a new System Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

107

POWER-OFF.

Install a new Electronic Module Distribution Board.

Reinstall all the original cards.

Reconnect all the cable connectors.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP: ENTRY POINT	PAGE NUMBER	STEP NUMBER
0019	A	1	001

001
(ENTRY POINT A)

Was the Error Code 03?
Y N

002

Was the Error Code 06?
Y N

003

Was the Error Code 09?
Y N

004

You should not be in this MAP without an Error Code. Return to MAP 0010, Entry Point A, the System Entry MAP.

005

This Error Code may occur with multiple failures.

POWER-OFF.

Install a new Display Adapter Card.

POWER-ON.

If you get an Error Code 09, reinstall the original Display Adapter Card.

Install a new Electronic Module Distribution Board.

POWER-ON.

If you get an Error Code 09, reinstall the original Electronic Module Distribution Board.

(Step 005 continues)

3 3
A B

(Step 005 continued)
Install a new System Card.

POWER-ON.

Was the Error Code 09?
Y N

006

The card removed was defective.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

007

Are there any memory card(s) in Position(s) 3,4,5 or 6?
Y N

008

POWER-OFF.

Reinstall the original System Card.

Install a new Memory Control Card in slot "E".

POWER-ON.

Was the Error Code 09?
Y N

009

The card removed was defective.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

010

Is there a Memory Card in Position 2?
Y N

011

POWER-OFF.

Reinstall the Original Memory Control Card.

Install a new Memory Card in Position 1.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

2 2
C D

MEMORY ERROR CODE

MAP 2220

PAGE 2 OF 4

012

POWER-OFF.

Install a new Memory Card in Position 1.

Remove the Memory Card(s) from Position(s) 3,4,5 and 6 if present.

POWER-ON.

Was the Error Code 09?
Y N

013

The card removed was defective.

Reinstall any Memory Card(s) removed from Position(s) 3,4,5 or 6.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

014

POWER-OFF.

Install a new Memory Card in Position 2.

Reinstall the Original Memory Card in Position 1.

Reinstall any Memory Card(s) removed from Position(s) 3,4,5 or 6.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

015

POWER-OFF.

Remove the Memory Card(s) from Position(s) 3,4,5 and 6 if present.

POWER-ON.

Was the Error Code 09?
Y N

MAP 2220-2

016

One of the Memory Card(s) in Position(s) 3,4,5 or 6 is defective.

Reinstall the card(s) one card at a time until the failing card is isolated.

Exchange the failing Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

017

POWER-OFF.

Install a new Memory Control Card in slot "E".

POWER-ON.

Was the Error Code 09?
Y N

018

The card removed was defective.

Reinstall any Memory Card(s) removed from Position(s) 3,4,5 or 6.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

019

POWER-OFF.

Reinstall the Original Memory Control Card.

Install a new Memory Card in Position 1.

POWER-ON.

Was the Error Code 09?
Y N

020

POWER-OFF.

Reinstall any Memory Card(s) removed from Position(s) 3,4,5 or 6.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

021

POWER-OFF.

Install a new Memory Card in Position 2.

Reinstall the Original Memory Card in Position 1.

Reinstall any Memory Card(s) removed from Position(s) 3,4,5 or 6.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

022

Has a new Memory Control Card been installed?
Y N

023

POWER-OFF.

Install a new Memory Control Card in slot "E".

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

024

Is there a Memory Card in Position 2?
Y N

025

POWER-OFF.

Reinstall the Original Memory Control Card.

Install a new Memory Card in Position 1.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

026

POWER-OFF.

Remove the Memory Card(s) from Position(s) 3,4,5 and 6 if present.

Reinstall the Original Memory Control Card.

Install a new Memory Card in Position 1.

POWER-ON.

Was the Error Code 06?
Y N

027

POWER-OFF.

Reinstall any Memory Card(s) removed from Position(s) 3,4,5 or 6.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

028

POWER-OFF.

Reinstall the Original Memory Card in Position 1.

Reinstall any Memory Card(s) removed from Position(s) 3,4,5 or 6.

Install a new Memory Card in Position 2.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

029

Has a new Memory Control Card been installed?
Y N

030

POWER-OFF.

Install a new Memory Control Card in slot "E".

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

031

Is there a Memory Card in Position 2?
Y N

032

POWER-OFF.

Reinstall the Original Memory Control Card.

Install a new Memory Card in Position 1.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

033

POWER-OFF.

Remove the Memory Card(s) from Position(s) 3,4,5 and 6 if present.

Reinstall the Original Memory Control Card.

Install a new Memory Card in Position 1.

POWER-ON.

Was the Error Code 03?
Y N

034

POWER-OFF.

Reinstall any Memory Card(s) removed from Position(s) 3,4,5 or 6.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

035

POWER-OFF.

Reinstall the Original Memory Card in Position 1.

Reinstall any Memory Card(s) removed from Position(s) 3,4,5 or 6.

Install a new Memory Card in Position 2.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

POWER SUPPLY MEMORY MAP

MAP 2230

PAGE 1 OF 3

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
6010	A	1	001

001
(ENTRY POINT A)

POWER-OFF (Wait 8 seconds).

Reinstall the Original Memory Control Card.

POWER-ON.

Are the "A" and/or "B" LED Indicators ON?
Y N

002

POWER-OFF (Wait 8 seconds).

Reinstall the Original Memory Card in Position 1.

POWER-ON.

Are the "A" and/or "B" LED Indicators ON?
Y N

003

Was there a Memory Card in Position 2?
Y N

004

Was any Card(s) plugged into slot(s) "A" and/or "C".
Y N

005

All of the Card(s) should now be reinstalled.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

006

Do you have more than one Card left?
Y N

007

POWER-OFF (Wait 8 seconds).

REPLACE REMAINING CARD

Reconnect all the cable connectors.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

008

One of the remaining Cards is shorted.

POWER-OFF (Wait 8 seconds).

Reinstall the original Cards one at a time.

POWER-ON.

When the "A" and/or "B" LED Indicators come on.

The last Card installed is the one with a short.

Exchange the failing Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

009

POWER-OFF (Wait 8 seconds).

Reinstall the Original Memory Card in Position 2.

POWER-ON.

Are the "A" and/or "B" LED Indicators ON?
Y N

010

Were there any Memory Cards in Position(s) 3,4,5 or 6?
Y N

011

Was any Card(s) plugged into slot(s) "A" and/or "C".
Y N

012

All of the Card(s) should now be reinstalled.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

POWER/MEMORY MAP

MAP 2230

PAGE 2 OF 3

013

Do you have more than one Card left?
Y N

014

POWER-OFF (Wait 8 seconds).

REPLACE REMAINING CARD

Reconnect all the cable connectors.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

015

One of the remaining Cards is shorted.

POWER-OFF (Wait 8 seconds).

Reinstall the original Cards one at a time.

POWER-ON.

When the "A" and/or "B" LED Indicators come on.

The last Card installed is the one with a short.

Exchange the failing Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

016

POWER-OFF (Wait 8 seconds).

Reinstall the Memory Card(s) one card at a time until all the Memory Card(s) have been reinstalled. If the A and/or B Indicator(s) come on, the memory card just reinstalled is defective.

Was any Card(s) plugged into slot(s) "A" and/or "C".
Y N

017

All of the Card(s) should now be reinstalled.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

MAP 2230-2

018

Do you have more than one Card left?
Y N

019

POWER-OFF (Wait 8 seconds).

REPLACE REMAINING CARD

Reconnect all the cable connectors.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

020

One of the remaining Cards is shorted.

POWER-OFF (Wait 8 seconds).

Reinstall the original Cards one at a time.

POWER-ON.

When the "A" and/or "B" LED Indicators come on.

The last Card installed is the one with a short.

Exchange the failing Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

021

POWER-OFF.

Install a new Memory Card in Position 2.

Reinstall the remaining original card(s).

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

022

POWER-OFF.

Install a new Memory Card in Position 1.

Reinstall the remaining original card(s).

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

023

POWER-OFF.

Install a new Memory Control Card in slot "E".

Reinstall the remaining original card(s).

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

CABLE SENSE REPAIR-CONN. 0

MAP 4011

PAGE 1 OF 1

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
4070	A	1	001

001
(ENTRY POINT A)

POWER-OFF the work station.

Disconnect the Internal Distribution Cable from Position B1 of the Electronic Module Distribution Board.

Using the lowest ohms range,
measure from Pin B1-7B in the Internal Distribution Cable to Frame Ground.

Does the meter indicate a short?
(two ohms or less)
Y N

002

The following is a list of all repair actions which might be necessary to correct the failure. The list is ordered from the most probable failure first to the least probable last.

Each repair action should be performed one at a time until the failure is corrected.

1. Install a new System Card.

2. Repair the Internal Distribution Cable or install a new Internal Distribution Cable.

3. Install a new Electronic Module Distribution Board.

Reconnect the Internal Distribution Cable to Position B1 of the Electronic Module Distribution Board.

POWER-ON the work station.

Load the DISPLAYWRITER SYSTEM DIAGNOSTICS then,
select MDIs on the Function Selection Menu,
and then press ENTER when the Device Selection Menu appears.

A series of tests will automatically begin to run to verify the fix and further instructions will be given.

A MAP 4011-1

003
Repair the Internal Distribution Cable or install a new Internal Distribution Cable.

Reconnect the Internal Distribution Cable to Position B1 of the Electronic Module Distribution Board.

POWER-ON the work station.

Load the DISPLAYWRITER SYSTEM DIAGNOSTICS then,
select MDIs on the Function Selection Menu,
and then press ENTER when the Device Selection Menu appears.

A series of tests will automatically begin to run to verify the fix and further instructions will be given.

A MAP 4011-1

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
4070	A	1	001

001
(ENTRY POINT A)

POWER-OFF the work station.

Disconnect the Internal Distribution Cable from Position B1 of the Electronic Module Distribution Board.

Using the lowest ohms range,
measure between Pin 3 on Rear Panel Connector 0 (Zero) and Pin B1-8B in the Internal Distribution Cable and then,
measure between Pin 4 on Rear Panel Connector 0 (Zero) and Pin B1-9B in the Internal Distribution Cable.

Does the meter indicate continuity for both of these measurements?
(two ohms or less)
Y N

002
Repair the Internal Distribution Cable or install a new Internal Distribution Cable.

Reconnect the Internal Distribution Cable to Position B1 of the Electronic Module Distribution Board.

Reconnect the Printer Sharing Cable to Rear Panel Connector 0 (Zero).

POWER-ON the work station.

Load the DISPLAYWRITER SYSTEM DIAGNOSTICS then,
select MDIs on the Function Selection Menu,
and then press ENTER when the Device Selection Menu appears.

A series of tests will automatically begin to run to verify the fix and further instructions will be given.

003

The following is a list of all repair actions which might be necessary to correct the failure. The list is ordered from the most probable failure first to the least probable last.

Each repair action should be performed one at a time until the failure is corrected.

1. Install a new System Card.

2. Repair the Internal Distribution Cable or install a new Internal Distribution Cable.

3. Install a new Electronic Module Distribution Board.

Reconnect the Internal Distribution Cable to Position B1 of the Electronic Module Distribution Board.

Reconnect the Printer Sharing Cable to Rear Panel Connector 0 (Zero).

POWER-ON the work station.

Load the DISPLAYWRITER SYSTEM DIAGNOSTICS then,
select MDIs on the Function Selection Menu,
and then press ENTER when the Device Selection Menu appears.

A series of tests will automatically begin to run to verify the fix and further instructions will be given.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
4070	A	1	001

001
(ENTRY POINT A)

POWER-OFF the work station.

Disconnect the Internal Distribution Cable from Position B1 of the Electronic Module Distribution Board.

Using the lowest ohms range,
measure between Pin 1 on Rear Panel Connector 0 (Zero) and Pin B1-10B in the Internal Distribution Cable and then,
measure between Pin 2 on Rear Panel Connector 0 (Zero) and Pin B1-12B in the Internal Distribution Cable.

Does the meter indicate continuity for both of these measurements?
(two ohms or less)
Y N

| 002
| Repair the Internal Distribution Cable or install a new Internal Distribution Cable.
|
| Reconnect the Internal Distribution Cable to Position B1 of the Electronic Module Distribution Board.
|
| Reconnect the Printer Sharing Cable to Rear Panel Connector 0 (Zero).
|
| POWER-ON the work station.
|
| Load the DISPLAYWRITER SYSTEM DIAGNOSTICS then,
| select MDIs on the Function Selection Menu,
| and then press ENTER when the Device Selection Menu appears.
|
| A series of tests will automatically begin to run to verify the fix and further instructions will be given.

003

The following is a list of all repair actions which might be necessary to correct the failure. The list is ordered from the most probable failure first to the least probable last.

Each repair action should be performed one at a time until the failure is corrected.

1. Install a new System Card.

2. Repair the Internal Distribution Cable or install a new Internal Distribution Cable.

3. Install a new Electronic Module Distribution Board.

Reconnect the Internal Distribution Cable to Position B1 of the Electronic Module Distribution Board.

Reconnect the Printer Sharing Cable to Rear Panel Connector 0 (Zero).

POWER-ON the work station.

Load the DISPLAYWRITER SYSTEM DIAGNOSTICS then,
select MDIs on the Function Selection Menu,
and then press ENTER when the Device Selection Menu appears.

A series of tests will automatically begin to run to verify the fix and further instructions will be given.

MAP 4211

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
4270	A	1	001

001
(ENTRY POINT A)

The following is a list of all repair actions which might be necessary to correct the failure. The list is ordered from the most probable failure first to the least probable last.

Each repair action should be performed one at a time until the failure is corrected.

1. Install a new System Card.

2. Install a new Printer Sharing Card.

3. Install a new Electronic Module Distribution Board.

POWER-ON the work station.

Load the DISPLAYWRITER SYSTEM DIAGNOSTICS then,
select MDIs on the Function Selection Menu,
and then press ENTER when the Device Selection Menu appears.

A series of tests will automatically begin to run to verify the fix and further instructions will be given.

MAP 4212

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
4270	A	1	001

001
(ENTRY POINT A)

The following is a list of all repair actions which might be necessary to correct the failure. The list is ordered from the most probable failure first to the least probable last.

Each repair action should be performed one at a time until the failure is corrected.

1. Install a new Printer Sharing Card.

2. Install a new System Card.

3. Install a new Electronic Module Distribution Board.

POWER-ON the work station.

Load the DISPLAYWRITER SYSTEM DIAGNOSTICS then,
select MDIs on the Function Selection Menu,
and then press ENTER when the Device Selection Menu appears.

A series of tests will automatically begin to run to verify the fix and further instructions will be given.

CABLE SENSE REPAIR-CONN. 6A

MAP 4213

PAGE 1 OF 1

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
4270	A	1	001

001
(ENTRY POINT A)

POWER-OFF the work station.

Disconnect the Internal Printer Sharing Cable from Position C1 of the Electronic Module Distribution Board.

Using the lowest ohms range,
measure from Pin C1-7 in the Internal Printer Sharing Cable to frame ground.

Does the meter indicate a short?
(two ohms or less)
Y N

002

The following is a list of all repair actions which might be necessary to correct the failure. The list is ordered from the most probable failure first to the least probable last.

Each repair action should be performed one at a time until the failure is corrected.

1. Install a new Printer Sharing Card.

2. Repair the Internal Printer Sharing Cable or install a new Internal Printer Sharing Cable.

3. Install a new Electronic Module Distribution Board.

Reconnect the Internal Printer Sharing Cable to Position C1 of the Electronic Module Distribution Board.

Reconnect the Printer Sharing Cable to Rear Panel Connector 6A (Six A).
(Step 002 continues)

A MAP 4213-1

(Step 002 continued)

POWER-ON the work station.

Load the DISPLAYWRITER SYSTEM DIAGNOSTICS then,
select MDIs on the Function Selection Menu,
and then press ENTER when the Device Selection Menu appears.

A series of tests will automatically begin to run to verify the fix and further instructions will be given.

003

Repair the Internal Printer Sharing Cable or install a new Internal Printer Sharing Cable.

Reconnect the Internal Printer Sharing Cable to Position C1 of the Electronic Module Distribution Board.

Reconnect the Printer Sharing Cable to Rear Panel Connector 6A (Six A).

POWER-ON the work station.

Load the DISPLAYWRITER SYSTEM DIAGNOSTICS then,
select MDIs on the Function Selection Menu,
and then press ENTER when the Device Selection Menu appears.

A series of tests will automatically begin to run to verify the fix and further instructions will be given.

RECEIVE REPAIR-CONN. 6A

MAP 4214

PAGE 1 OF 1

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
4270	A	1	001

001
(ENTRY POINT A)

POWER-OFF the work station.

Disconnect the Internal Printer Sharing Cable from Position C1 of the Electronic Module Distribution Board.

Using the lowest ohms range,
measure between Pin 3 on Rear Panel Connector 6A and Pin C1-8 in the Internal Printer Sharing Cable and then,
measure between Pin 4 on Rear Panel Connector 6A and Pin C1-9 in the Internal Printer Sharing Cable.

Does the meter indicate continuity for both of these measurements?
(two ohms or less)
Y N

002

Repair the Internal Printer Sharing Cable or install a new Internal Printer Sharing Cable.

Reconnect the Internal Printer Sharing Cable to Position C1 of the Electronic Module Distribution Board.

Reconnect the Printer Sharing Cable to Rear Panel Connector 6A (Six A).

POWER-ON the work station.

Load the DISPLAYWRITER SYSTEM DIAGNOSTICS then,
select MDIs on the Function Selection Menu,
and then press ENTER when the Device Selection Menu appears.

A series of tests will automatically begin to run to verify the fix and further instructions will be given.

A MAP 4214-1

003

The following is a list of all repair actions which might be necessary to correct the failure. The list is ordered from the most probable failure first to the least probable last.

Each repair action should be performed one at a time until the failure is corrected.

1. Install a new Printer Sharing Card.

2. Repair the Internal Printer Sharing Cable or install a new Internal Printer Sharing Cable.

3. Install a new Electronic Module Distribution Board.

Reconnect the Internal Printer Sharing Cable to Position C1 of the Electronic Module Distribution Board.

Reconnect the Printer Sharing Cable to Rear Panel Connector 6A (Six A).

POWER-ON the work station.

Load the DISPLAYWRITER SYSTEM DIAGNOSTICS then,
select MDIs on the Function Selection Menu,
and then press ENTER when the Device Selection Menu appears.

A series of tests will automatically begin to run to verify the fix and further instructions will be given.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
4270	A	1	001

001
(ENTRY POINT A)

POWER-OFF the work station.

Disconnect the Internal Printer Sharing Cable from Position C1 of the Electronic Module Distribution Board.

Using the lowest ohms range,
measure between Pin 1 on Rear Panel Connector 6A and Pin C1-10 in the Internal Printer Sharing Cable and then,
measure between Pin 2 on Rear Panel Connector 6A and Pin C1-12 in the Internal Printer Sharing Cable.

Does the meter indicate continuity for both of these measurements?
(two ohms or less)
Y N

002

Repair the Internal Printer Sharing Cable or install a new Internal Printer Sharing Cable.

Reconnect the Internal Printer Sharing Cable to Position C1 of the Electronic Module Distribution Board.

Reconnect the Printer Sharing Cable to Rear Panel Connector 6A (Six A).

POWER-ON the work station.

Load the DISPLAYWRITER SYSTEM DIAGNOSTICS then,
select MDIs on the Function Selection Menu,
and then press ENTER when the Device Selection Menu appears.

A series of tests will automatically begin to run to verify the fix and further instructions will be given.

003

The following is a list of all repair actions which might be necessary to correct the failure. The list is ordered from the most probable failure first to the least probable last.

Each repair action should be performed one at a time until the failure is corrected.

1. Install a new Printer Sharing Card.

2. Repair the Internal Printer Sharing Cable or install a new Internal Printer Sharing Cable.

3. Install a new Electronic Module Distribution Board.

Reconnect the Internal Printer Sharing Cable to Position C1 of the Electronic Module Distribution Board.

Reconnect the Printer Sharing Cable to Rear Panel Connector 6A (Six A).

POWER-ON the work station.

Load the DISPLAYWRITER SYSTEM DIAGNOSTICS then,
select MDIs on the Function Selection Menu,
and then press ENTER when the Device Selection Menu appears.

A series of tests will automatically begin to run to verify the fix and further instructions will be given.

MAP 4216

PAGE 1 OF 1

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
4270	A	1	001

001
(ENTRY POINT A)

POWER-OFF the work station.

Disconnect the Internal Printer Sharing Cable from Position C1 of the Electronic Module Distribution Board.

Using the lowest ohms range,
measure from Pin C1-19 in the Internal Printer Sharing Cable to frame ground.

Does the meter indicate a short?
(two ohms or less)
Y N

002

The following is a list of all repair actions which might be necessary to correct the failure. The list is ordered from the most probable failure first to the least probable last.

Each repair action should be performed one at a time until the failure is corrected.

1. Install a new Printer Sharing Card.

2. Repair the Internal Printer Sharing Cable or install a new Internal Printer Sharing Cable.

3. Install a new Electronic Module Distribution Board.

Reconnect the Internal Printer Sharing Cable to Position C1 of the Electronic Module Distribution Board.

Reconnect the Printer Sharing Cable to Rear Panel Connector 6B (Six B).
(Step 002 continues)

(Step 002 continued)

POWER-ON the work station.

Load the DISPLAYWRITER SYSTEM DIAGNOSTICS then,
select MDIs on the Function Selection Menu,
and then press ENTER when the Device Selection Menu appears.

A series of tests will automatically begin to run to verify the fix and further instructions will be given.

003

Repair the Internal Printer Sharing Cable or install a new Internal Printer Sharing Cable.

Reconnect the Internal Printer Sharing Cable to Position C1 of the Electronic Module Distribution Board.

Reconnect the Printer Sharing Cable to Rear Panel Connector 6B (Six B).

POWER-ON the work station.

Load the DISPLAYWRITER SYSTEM DIAGNOSTICS then,
select MDIs on the Function Selection Menu,
and then press ENTER when the Device Selection Menu appears.

A series of tests will automatically begin to run to verify the fix and further instructions will be given.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
4270	A	1	001

001
(ENTRY POINT A)

POWER-OFF the work station.

Disconnect the Internal Printer Sharing Cable from Position C1 of the Electronic Module Distribution Board.

Using the lowest ohms range,
measure between Pin 3 on Rear Panel Connector 6B and Pin C1-21 in the Internal Printer Sharing Cable and then,
measure between Pin 4 on Rear Panel Connector 6B and Pin C1-22 in the Internal Printer Sharing Cable.

Does the meter indicate continuity for both of these measurements?
(two ohms or less)
Y N

002

Repair the Internal Printer Sharing Cable or install a new Internal Printer Sharing Cable.

Reconnect the Internal Printer Sharing Cable to Position C1 of the Electronic Module Distribution Board.

Reconnect the Printer Sharing Cable to Rear Panel Connector 6B (Six B).

POWER-ON the work station.

Load the DISPLAYWRITER SYSTEM DIAGNOSTICS then,
select MDIs on the Function Selection Menu,
and then press ENTER when the Device Selection Menu appears.

A series of tests will automatically begin to run to verify the fix and further instructions will be given.

003

The following is a list of all repair actions which might be necessary to correct the failure. The list is ordered from the most probable failure first to the least probable last.

Each repair action should be performed one at a time until the failure is corrected.

1. Install a new Printer Sharing Card.

2. Repair the Internal Printer Sharing Cable or install a new Internal Printer Sharing Cable.

3. Install a new Electronic Module Distribution Board.

Reconnect the Internal Printer Sharing Cable to Position C1 of the Electronic Module Distribution Board.

Reconnect the Printer Sharing Cable to Rear Panel Connector 6B (Six B).

POWER-ON the work station.

Load the DISPLAYWRITER SYSTEM DIAGNOSTICS then,
select MDIs on the Function Selection Menu,
and then press ENTER when the Device Selection Menu appears.

A series of tests will automatically begin to run to verify the fix and further instructions will be given.

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP ENTRY POINT	PAGE NUMBER	STEP NUMBER
4270	A	1	001

001
(ENTRY POINT A)

POWER-OFF the work station.

Disconnect the Internal Printer Sharing Cable from Position C1 of the Electronic Module Distribution Board.

Using the lowest ohms range,
measure between Pin 1 on Rear Panel Connector 6B and Pin C1-23 in the Internal Printer Sharing Cableand then,
measure between Pin 2 on Rear Panel Connector 6B and Pin C1-24 in the Internal Printer Sharing Cable.

Does the meter indicate continuity for both of these measurements?
(two ohms or less)
Y N

002

Repair the Internal Printer Sharing Cable or install a new Internal Printer Sharing Cable.

Reconnect the Internal Printer Sharing Cable to Position C1 of the Electronic Module Distribution Board.

Reconnect the Printer Sharing Cable to Rear Panel Connector 6B (Six B).

POWER-ON the work station.

Load the DISPLAYWRITER SYSTEM DIAGNOSTICS then,
select MDIs on the Function Selection Menu,
and then press ENTER when the Device Selection Menu appears.

A series of tests will automatically begin to run to verify the fix and further instructions will be given.

003

The following is a list of all repair actions which might be necessary to correct the failure. The list is ordered from the most probable failure first to the least probable last.

Each repair action should be performed one at a time until the failure is corrected.

1. Install a new Printer Sharing Card.

2. Repair the Internal Printer Sharing Cable or install a new Internal Printer Sharing Cable.

3. Install a new Electronic Module Distribution Board.

Reconnect the Internal Printer Sharing Cable to Position C1 of the Electronic Module Distribution Board.

Reconnect the Printer Sharing Cable to Rear Panel Connector 6B (Six B).

POWER-ON the work station.

Load the DISPLAYWRITER SYSTEM DIAGNOSTICS then,
select MDIs on the Function Selection Menu,
and then press ENTER when the Device Selection Menu appears.

A series of tests will automatically begin to run to verify the fix and further instructions will be given.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
5070	A	1	001

001
(ENTRY POINT A)

POWER-OFF the work station.

Disconnect the Internal Distribution Cable from Position B1 of the Electronic Module Distribution Board.

Using the lowest ohms range,
measure between Pin 3 on Rear Panel Connector 0 (Zero) and Pin B1-8B in the Internal Distribution Cable and then,
measure between Pin 4 on Rear Panel Connector 0 (Zero) and Pin B1-9B in the Internal Distribution Cable.

Does the meter indicate continuity for both of these measurements?
(two ohms or less)
Y N

Y

002
Repair the Internal Distribution Cable or install a new Internal Distribution Cable.

Reconnect the Internal Distribution Cable to Position B1 of the Electronic Module Distribution Board.

Reconnect the Printer Cable to Rear Panel Connector 0 (Zero).

POWER-ON the work station.

Load the DISPLAYWRITER SYSTEM DIAGNOSTICS then,
select MDIs on the Function Selection Menu,
and then press ENTER when the Device Selection Menu appears.

A series of tests will automatically begin to run to verify the fix and further instructions will be given.

N

003

The following is a list of all repair actions which might be necessary to correct the failure. The list is ordered from the most probable failure first to the least probable last.

Each repair action should be performed one at a time until the failure is corrected.

1. Install a new System Card.

2. Repair the Internal Distribution Cable or install a new Internal Distribution Cable.

3. Install a new Electronic Module Distribution Board.

Reconnect the Internal Distribution Cable to Position B1 of the Electronic Module Distribution Board.

Reconnect the Printer Cable to Rear Panel Connector 0 (Zero).

POWER-ON the work station.

Load the DISPLAYWRITER SYSTEM DIAGNOSTICS then,
select MDIs on the Function Selection Menu,
and then press ENTER when the Device Selection Menu appears.

A series of tests will automatically begin to run to verify the fix and further instructions will be given.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
5070	A	1	001

001
(ENTRY POINT A)

POWER-OFF the work station.

Disconnect the Internal Distribution Cable from Position B1 of the Electronic Module Distribution Board.

Using the lowest ohms range,
measure between Pin 1 on Rear Panel Connector 0 (Zero) and Pin B1-10B in the Internal Distribution Cable and then,
measure between Pin 2 on Rear Panel Connector 0 (Zero) and Pin B1-12B in the Internal Distribution Cable.

Does the meter indicate continuity for both of these measurements?
(two ohms or less)
Y N

002
Repair the Internal Distribution Cable or install a new Internal Distribution Cable.

Reconnect the Internal Distribution Cable to Position B1 of the Electronic Module Distribution Board.

Reconnect the Printer Cable to Rear Panel Connector 0 (Zero).

POWER-ON the work station.

Load the DISPLAYWRITER SYSTEM DIAGNOSTICS then,
select MDIs on the Function Selection Menu,
and then press ENTER when the Device Selection Menu appears.

A series of tests will automatically begin to run to verify the fix and further instructions will be given.

003

The following is a list of all repair actions which might be necessary to correct the failure. The list is ordered from the most probable failure first to the least probable last.

Each repair action should be performed one at a time until the failure is corrected.

1. Install a new System Card.

2. Repair the Internal Distribution Cable or install a new Internal Distribution Cable.

3. Install a new Electronic Module Distribution Board.

Reconnect the Internal Distribution Cable to Position B1 of the Electronic Module Distribution Board.

Reconnect the Printer Cable to Rear Panel Connector 0 (Zero).

POWER-ON the work station.

Load the DISPLAYWRITER SYSTEM DIAGNOSTICS then,
select MDIs on the Function Selection Menu,
and then press ENTER when the Device Selection Menu appears.

A series of tests will automatically begin to run to verify the fix and further instructions will be given.

MAP 5030

PAGE 1 OF 1

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP: ENTRY POINT	PAGE NUMBER	STEP NUMBER
0070	A	1	001

EXIT POINTS

EXIT THIS MAP: PAGE NUMBER	STEP NUMBER	TO: MAP NUMBER	ENTRY POINT
1	001	0010	A

001
(ENTRY POINT A)

POWER-OFF the work station.

Install a new System Card.
GO TO MAP 0010, ENTRY POINT A.

MAP 6010

PAGE 1 OF 6

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP ENTRY POINT	PAGE NUMBER	STEP NUMBER
0009	A	1	001
0010	A	1	001

EXIT POINTS

EXIT THIS MAP PAGE NUMBER	STEP NUMBER	TO MAP NUMBER	ENTRY POINT
4	028	2230	A
2	007	8065	A

001
(ENTRY POINT A)

This MAP isolates the part causing an LED Indicator to light.

LED Indicators:

A = Over/under voltage

B = Overcurrent

C = Overheat

Is the "C" LED Indicator ON?
Y N

002

****
* NOTE *
* If this is your second time *
* through this map and you are *
* instructed to replace a FRU *
* that you just replaced, *
* replace the POWER *
* SUPPLY instead. *
****

POWER-OFF (Wait 8 seconds).

Disconnect all cables from the rear panels of the Electronic Module except the (ac) Power Cord or (Cords).

POWER-ON.

Are the "A" and/or "B" LED Indicators ON?
Y N

6 3 2
A B C

003

POWER-OFF (Wait 8 seconds).

Reconnect the Keyboard Module Cable Connector (7).

POWER-ON.

Are the "A" and/or "B" LED Indicators ON?
Y N

004

POWER-OFF (Wait 8 seconds).
Reconnect the Display Module Cable Connector (2).

POWER-ON.

Are the "A" and/or "B" LED Indicators ON?
Y N

005

POWER-OFF (Wait 8 seconds).

Reconnect the Diskette DC Connector (10), Diskette Signal Connector (5) and Communications Power Connector (11) if present.

POWER-ON.

Are the "A" and/or "B" LED Indicators ON?
Y N

006
GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

007

You are now directed to go to the DC Short Failure MAP.

GO TO MAP 8065, ENTRY POINT A.

008

Has a new Display Module been installed?
Y N

009

POWER-OFF (Wait 8 seconds).

Install a new Display Module.

Reconnect all the cable connectors.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

010

POWER-OFF (Wait 8 seconds).

Install a new base Power Supply.

Reconnect all the cable connectors.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

011

POWER-OFF (Wait 8 seconds).

Disconnect the Keyboard Module Cable (Logic Card Connector) at the Keyboard Logic Card.

POWER-ON.

Are the "A" and/or "B" LED Indicators ON?
Y N

012

POWER-OFF (Wait 8 seconds).

Reconnect the Keyboard Module Cable (Logic Card Connector) at the Keyboard Logic Card.

Disconnect the Speaker Connector at the Keyboard Logic Card.

POWER-ON.

Are the "A" and/or "B" LED Indicators ON?
Y N

013

POWER-OFF (Wait 8 seconds).

Check to ensure that a Speaker Tab is not touching the metal mounting bracket. If a Speaker Tab is touching the mounting bracket, then rotate the Speaker away from the mounting bracket. Ensure that the Speaker mounting srew is tight. If a Speaker Tab is not touching the metal mounting bracket, then install a new Speaker.

Reconnect all the cable connectors.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

014

POWER-OFF (Wait 8 seconds).

Install a new Keyboard Logic Card.

Reconnect all the cable connectors.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

015

POWER-OFF (Wait 8 seconds).

Repair or install a new Keyboard Module Cable.

Reconnect all the cable connectors.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

016

POWER-OFF (Wait 8 seconds).

Disconnect the System Power Cable Connector (P1) at the Power Supply.

POWER-ON.

Are the "A" and/or "B" LED Indicators ON?
Y N

017

POWER-OFF (Wait 8 seconds).

Reconnect the System Power Cable (P1) at the Power Supply.

Remove all the Cards from the Electronic Module Distribution Board Assembly.

POWER-ON.

Are the "A" and/or "B" LED Indicators ON?
Y N

018

POWER-OFF (Wait 8 seconds).

Reinstall the original System Card.

POWER-ON.

Are the "A" and/or "B" LED Indicators ON?
Y N

019

POWER-OFF (Wait 8 seconds).

Reinstall the original Display Adapter Card.

POWER-ON.

Are the "A" and/or "B" LED Indicators ON?
Y N

020

Is the Memory Size Suffix a letter "F" or "G"? (Refer to the Product Support Manual (PSM) or Information Card for Memory Card Type Identification Information.)
Y N

021

Do you have more than one Card left?
Y N

022

POWER-OFF (Wait 8 seconds).

Install a new Memory Card.

Reconnect all the cable connectors.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

023

POWER-OFF (Wait 8 seconds).

Reinstall the original Memory Card in slot "E".

POWER-ON.

Are the "A" and/or "B" LED Indicators ON?
Y N

024

Do you have more than one Card left?
Y N

025

POWER-OFF (Wait 8 seconds).

REPLACE REMAINING CARD

Reconnect all the cable connectors.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

026

One of the remaining Cards is shorted.

POWER-OFF.

Reinstall the original Cards one at a time.

POWER-ON.

When the "A" and/or "B" LED Indicators come on.

The last Card installed is the one with a short.

Exchange the failing Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

027

POWER-OFF (Wait 8 seconds).

Install a new Memory Card.

Reinstall all the original cards.

Reconnect all the cable connectors.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

028

You are now directed to go to the Power Supply Memory Map.

GO TO MAP 2230, ENTRY POINT A.

029

POWER-OFF (Wait 8 seconds).

Install a new Display Adapter Card.

Reinstall all the original cards.

Reconnect all the cable connectors.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

030

POWER-OFF (Wait 8 seconds).

Install a new System Card.

Reinstall all the original cards.

Reconnect all the cable connectors.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

031

POWER-OFF (Wait 8 seconds).

Disconnect the Internal Distribution Cable Connector (D1) from the Electronic Module Distribution Board.

POWER-ON.

Are the "A" and/or "B" LED Indicators ON?
Y N

032

POWER-OFF (Wait 8 seconds).

Install a new Internal Distribution Cable.

Reinstall all the original cards.

Reconnect all the cable connectors.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

033

POWER-OFF (Wait 8 seconds).

Disconnect the Internal Distribution Cable Connector (B1) from the Electronic Module Distribution Board.

POWER-ON.

Are the "A" and/or "B" LED Indicators ON?
Y N

034

POWER-OFF (Wait 8 seconds).

Install a new Internal Distribution Cable.

Reinstall all the original cards.

Reconnect all the cable connectors.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

035

POWER-OFF (Wait 8 seconds).

Disconnect the System Power Cable Connector (A1) at the Electronic Module Distribution Board.

POWER-ON.

Are the "A" and/or "B" LED Indicators ON?
Y N

036

POWER-OFF (Wait 8 seconds).

Install a new Electronic Module Distribution Board.

Reinstall all the original cards.

Reconnect all the cable connectors.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

037

POWER-OFF (Wait 8 seconds).

Install a new System Power Cable.

Reinstall all the original cards.

Reconnect all the cable connectors.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

038

POWER-OFF (Wait 8 seconds).

Disconnect the Internal Distribution Cable Connector (P2) at the Power Supply.

POWER-ON.

Are the "A" and/or "B" LED Indicators ON?
Y N

039

POWER-OFF (Wait 8 seconds).

Install a new Internal Distribution Cable.

Reconnect all the cable connectors.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

040

POWER-OFF (Wait 8 seconds).

Install a new base Power Supply.

Reconnect all the cable connectors.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

041

Is the Fan in the Electronic Module running?
Y N

042

POWER-OFF.

Install a new base Power Supply.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

043

Is the Fan making any unusual noise or running slowly?
Y N

044

Is the Machine located in direct sunlight or in a very hot area?
Y N

045

POWER-OFF.

Install a new base Power Supply.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

046

Advise the Customer of the environmental impact on the machine.

047

POWER-OFF.

Install a new base Power Supply.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP: ENTRY POINT	PAGE NUMBER	STEP NUMBER
7070	A	1	001

001
(ENTRY POINT A)

POWER-OFF.

Reinstall the original Communications Adapter Card.

Is the Communications Adapter Card in the Diskette Unit?
Y N

002

Install a new Electronic Module Distribution Board.

Reconnect all the cable connectors.

POWER-ON.

Load the Displaywriter System Diagnostic diskette.

Select MDIs on the Function Selection menu.

Does the Device Selection menu indicate that Communications is present (green dot next to ID letter)?
Y N

003

POWER-OFF.

Reinstall the original Electronics Module Distribution Board.

Install a new System Card.

POWER-ON.

Load the Displaywriter System Diagnostic diskette.

Select MDIs on the Function Selection menu.

Run the Communications MDIs.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

004

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

005

Disconnect the Diskette Unit Signal Cable Connectors (5) and (A1).

Using the lowest ohms range, check the continuity of each wire in the Diskette Unit Signal Cable.

Refer to the Product Support Manual for pin assignments.

Was the cable continuity correct? (less than 2 ohms).
Y N

006

Install a new Diskette Unit Signal Cable.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

007

Disconnect the Internal Diskette Signal Cable Connector (S1) in the Electronic Module.

Using the lowest ohms range, check the continuity of each wire between connectors (5) and (S1) in the Internal Diskette Signal Cable.

Refer to the Product Support Manual for pin assignments.

Was the cable continuity correct? (less than 2 ohms).
Y N

008

Install a new Internal Diskette Signal Cable in the Electronic Module.

Reconnect all the cable connectors.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

009

Install a new System Card.

Reconnect all the cable connectors.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP ENTRY POINT	PAGE NUMBER	STEP NUMBER
7060	A	1	001
7061	A	1	001

001
(ENTRY POINT A)

POWER-OFF.

Is the Communications Adapter Card located in the Electronic Module?
Y N

002

Disconnect the Internal Communications Cable Connector (C2).

Using the lowest ohms range, check the contunity of each wire between connectors (4A) and (C2) of the Internal Communications Cable.

Refer to the Product Support Manual for pin assignments.

Was the cable continuity correct? (less than 2 ohms).
Y N

003

Install a new Internal Communications Cable in the Diskette Unit.

Reconnect all the cable connectors.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

004

Install a new Communications Adapter Card.

Reconnect all the cable connectors.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

005

Disconnect the Internal Communications Cable Connector (A2).

Using the lowest ohms range, check the contunity of each wire between connectors (4) and (A2) of the Internal Communications Cable.

Refer to the Product Support Manual for pin assignments.

Was the cable continuity correct? (less than 2 ohms).
Y N

006

Install a new Internal Communications Cable in the Electronic Module.

Reconnect all the cable connectors.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

007

Install a new Communications Adapter Card.

Reconnect all the cable connectors.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

MAP 7030

PAGE 1 OF 1

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
7075	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
1	003	7062	A

001
(ENTRY POINT A)

POWER-OFF.

Disconnect the Internal Communications Cable Connector (D2 or D3) from the Diskette Unit Distribution Board.

Using the lowest ohms range, check the contunity of each wire between connectors (4B) and (D2 or D3) of the Internal Communications Cable.

Refer to the Product Support Manual for pin assignments.

Was the cable continuity correct? (less than 2 ohms).
Y N

002

Reinstall the original Feature Card in Slot "D".

Install a new Internal Communications Cable in the Diskette Unit.

Reconnect all the cable connectors.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

003
GO TO MAP 7062, ENTRY POINT A.

MAP 7060

PAGE 1 OF 2

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
7074	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	005	7020	A

001
(ENTRY POINT A)

POWER-OFF.

Test Conditions:

a. Position the Electronics Module Distribution Board to permit access for making voltage measurements on Connector (A1).

b. All cables are to be connected.

c. All cards are to be in place.

POWER-ON.

Using the 20(dc) voltage range, measure from each pin in the following Chart to frame ground at the Power Supply Case.

System Power Cable Connector (A1)

Pin	Voltage Range (dc) Volts
8	-11.04 to -13.20
20	+11.04 to +13.20

Were all the voltage measurements correct?
Y N

002

POWER-OFF.

Disconnect System Power Cable Connectors P1 and A1.

Using the lowest ohms range, check the continuity of the System Power Cable.

Connector (A1) pin 8 to
Connector (P1) pin 1.

Connector (A1) pin 20 to
Connector (P1) pin 15.
(Step 002 continues)

(Step 002 continued)

Was the cable continuity correct? (less than 2 ohms)
Y N

003

Install a new System Power Cable.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

004

Install a new base Power Supply.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

005
GO TO MAP 7020, ENTRY POINT A.

MAP 7061

PAGE 1 OF 2

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
7074	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	005	7020	A

001
(ENTRY POINT A)

POWER-OFF.

Test Conditions:

a. Position the Diskette Unit Distribution Board to permit access for making voltage measurements on Connector (C1).

b. All cables are to be connected.

c. All cards are to be in place.

POWER-ON.

Using the 20(dc) voltage range, measure from each pin in the following Chart to frame ground at the Power Supply Case.

Communication Power Cable Connector (C1)	
Pin	Voltage Range (dc) Volts
5	+11.04 to +13.20
10	+8.25 to +8.93
12	-4.6 to -5.5
17	-11.04 to -13.20

Were all the voltage measurements correct?
Y N

2 2
A B

002

POWER-OFF.

Disconnect Communication Power Cable Connectors 11 and C1.

Using the lowest ohms range, check the continuity of the Communications Power Cable.

Refer to the Product Support Manual for pin assignments.

Was the cable continuity correct? (less than 2 ohms)

Y N

003

Install a new Communications Power Cable.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

004

Install a new base Power Supply.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

005

GO TO MAP 7020, ENTRY POINT A.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
7030	A	1	001
7076	A	1	001
7077	A	1	001
7078	A	1	001

001
(ENTRY POINT A)

POWER-OFF.

Reinstall the original Communications Feature Card in slot "D".
(If you have not already done so.)

POWER-ON.

Using the 20(dc) voltage range, measure from each pin in the following Chart from frame ground to the Pins in the Chart.

CONN		Voltage Range
D1	Pin	(dc) Volts
D1	10	+8.245 to +8.925
D1	14	+4.6 to +5.5
D1	5	-4.6 to -5.5
D1	18	-11.04 to -13.20
D2	10	+8.245 to +8.925
D2	14	+4.6 to +5.5
D2	5	-4.6 to -5.5
D3	17	+8.245 to +8.925
D3	14	+4.6 to +5.5
D4	14	+4.6 to +5.5

Were all the voltage measurements correct?
Y N

2
A B

B

002

Using the 20(dc) voltage range, measure from each pin in the following Chart from frame ground to the Pins in the Chart.

CONN		Voltage Range
C1	Pin	(dc) Volts
C1	5	+11.04 to +13.20
C1	10	+8.245 to +8.925
C1	1	+4.6 to +5.5
C1	2	+4.6 to +5.5
C1	13	+4.6 to +5.5
C1	14	+4.6 to +5.5
C1	15	+4.6 to +5.5
C1	16	+4.6 to +5.5
C1	12	-4.6 to -5.5
C1	17	-11.04 to -13.20

Were all the voltage measurements correct?
Y N

003

Disconnect the Communications Power Cable Connector (11) at the Power Supply.

Using the 20 (dc) voltage range, measure the output voltage at the Power Supply Connector (11).

Refer to the Product Support Manual for Pin assignments.

Were all the voltage measurements correct?
Y N

004

POWER-OFF.

Install a new base Power Supply.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

005

POWER-OFF.

Install a new Communications Power Cable.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

2
C

006

POWER-OFF.

Install a new Diskette Unit Distribution Board.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

007

Install a new Communications Adapter Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

MAP 8020

PAGE 1 OF 5

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP: ENTRY POINT	PAGE NUMBER	STEP NUMBER
0009	A	1	001
0010	A	1	001
8021	A	1	001
8028	A	1	001

EXIT POINTS

EXIT THIS MAP: PAGE NUMBER	STEP NUMBER	TO: MAP NUMBER	ENTRY POINT
2	009	8022	A
4	021	8022	A
4	027	8026	A
4	029	8060	A
5	033	8061	A
4	031	8062	A

001
(ENTRY POINT A)

This MAP is used to isolate the failure to a specific Diskette function.

Select the RNA Diagnostics by pressing the Memory Record Button while turning the POWER Switch ON.

The functions or tests are selected by pressing the MOVE key.

The function or test is executed by pressing the ENTER key.

Load the DISPLAYWRITER SYSTEM DIAGNOSTICS.

Select the Drive Set Ready Test L.

Execute test procedure L by pressing ENTER.

If an Error Code is not displayed on the screen, then execute test M.

+-TEST L or M ERROR CODE CHART-+

ERROR CODE	ACTION
01	GO TO MAP 8021,A
02	GO TO MAP 8022,A
04	GO TO MAP 8025,A
08 or 17	GO TO MAP 8028,A
19 or 20	GO TO MAP 8026,A

+-----------------------------+
|If this is a two-drive |
|station, execute the test on |
|both drives. It is necessary|
|to use the D function to |
|select the desired drive. |
+-----------------------------+

Was an Error Code displayed on the screen?
Y N

002

No Error Found.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

RNA START MAP

MAP 8020

PAGE 2 OF 5

003

Was the Error Code 03, 07, 09, 15 or 16?
Y N

004

Is this a two Drive station?
Y N

005

POWER-OFF.

Disconnect the Diskette Drive Cable B3 at the Diskette Adapter Card and reconnect the Diskette Drive Cable in the empty B4 Connector position on the Diskette Adapter Card.

Press the Memory Record Button while turning the Power Switch On.

Select the Right Drive. (You are selecting the B4 Drive Station)

Execute test procedure L, if an Error Code is not displayed on the screen then execute test procedure M.

Was an Error Code displayed on the screen? (Record the Error Code)
Y N

006

POWER-OFF.

Return the Diskette Drive Cable to the original position on the Diskette Adapter Card.

Install a new Diskette Adapter Card.

Verify by running the Drive Set Ready test L.

Verify by running the Stepper Motor Phase test M.

If an Error Code occurs, go back to MAP 8020, Entry A.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

007

POWER-OFF.

Return the Diskette Drive Cable to the original position on the Diskette Adapter Card.

Is the Error Code which was a result of test L or test M in the Error Code Chart? (Start of MAP 8020)
Y N

008

Was the Error Code 10?
Y N

009

Error Code 14: Check for a correctly seated Diskette and check that the Diskette Load Lever is down. Execute test L and test M a few times. If Error Code 14 occurs more than once, load another Diskette and go to the Diskette Drive Not Ready MAP.

GO TO MAP 8022, ENTRY POINT A.

010

Using the lowest ohm range, measure from Pin A18 (File Control Card Connector) to Pin 6 (Connector B3). For a reading of less than 2 ohms.

Do you measure less than 2 ohms?
Y N

011

Install a new Diskette Drive Cable.

Press the Memory Record Button, while turning the Power Switch On.

Verify by running the Drive Set Ready test L.

Verify by running the Stepper Motor Phase test M.

If an Error Code occurs, go back to MAP 8020, Entry A.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

012

Install a new Diskette Adapter Card.

Press the Memory Record Button while turning the Power Switch On.

Execute test L and if an Error Code is not displayed, then execute test M.

Was an Error Code displayed on the screen?
Y N

013

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

014

POWER-OFF.

Install a new File Control Card.

Press the Memory Record Button, while turning the Power Switch On.

Verify by running the Drive Set Ready test L.

Verify by running the Stepper Motor Phase test M.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

015

Follow the instructions in the Error Code Chart.

016

Are both Drives failing?
Y N

4
G H

017

POWER-OFF.

Record failing drive left or right.

Swap Drive Cable Connectors B3 and B4 at the Diskette Adapter.

The purpose of swapping Connector B3 and B4 is to determine if the failure is on the Diskette Adapter Card or on a drive.

Press the Memory Record Button while turning the Power Switch On.

Select the left drive.

Load the DISPLAYWRITER SYSTEM DIAGNOSTS in the right drive.

Execute test L and if an Error Code is not displayed, then execute test M.

If this drive failed, then record that the right drive failed.

Select the right drive.

Load the DISPLAYWRITER SYSTEM DIAGNOSTIS in the left drive.

Execute test L and if an Error Code is not displayed, then then execute test M.

If this drive failed, then record that the Left Drive failed.

Record the Error Code.

POWER-OFF.

Return Connector B3 and B4 to their original positions.

Is the same Drive failing?
Y N

018

Install a new Diskette Adapter Card.

Press the Memory Record Button, while turning the Power Switch On.

Verify by running the Drive Set Ready test L.

Verify by running the Stepper Motor Phase test M.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

4
J

019

Is the Error Code in the Error Code Chart? (Start of MAP 8020)
Y N

020

Was the Error Code 10?
Y N

021

Error Code 14: Check for a correctly seated Diskette and check that the Diskette Load Lever is down. Execute test L and test M a few times. If Error Code 14 occurs more than once, load another Diskette and go to the Diskette Drive Not Ready MAP.

GO TO MAP 8022, ENTRY POINT A.

022

Using the lowest ohm range, measure from Pin A18 (File Control Card Connector) to Pin 6 (Connector B3). For a reading of less than 2 ohms.

Do you measure less than 2 ohms?
Y N

023

Install a new Diskette Drive Cable.

Verify by running the Drive Set Ready test L.

Verify by running the Stepper Motor Phase test M.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

024

Install a new File Control Card.

Press the Memory Record Button, while turning the Power Switch On.

Verify by running the Drive Set Ready test L.

Verify by running the Stepper Motor Phase test M.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

025

Follow the instructions in the Error Code Chart.

026

Are both AC Drive Motors turning?
Y N

027

You are now directed to go to the No Index Pulses MAP.

GO TO MAP 8026, ENTRY POINT A.

028

Using the 20(dc) voltage range, measure from Pin 7(-) to Pin 14(+) at Connector B3 and Connector B4. Check for a reading of +4.6 volts to +5.5 volts.

Is the voltage between +4.6 volts to +5.5 volts?
Y N

029

You are now directed to go to the Diskette Unit +5 Vdc Power MAP.

GO TO MAP 8060, ENTRY POINT A.

030

Using the 20(dc) voltage range, measure from Pin 7(-) to Pin 5(+) at Connector B3 and Connector B4. Check for a reading of -4.6 volts to -5.5 volts.

Is the voltage between -4.6 volts to -5.5 volts?
Y N

031

You are now directed to go to the Diskette Unit -5 Vdc Power MAP.

GO TO MAP 8062, ENTRY POINT A.

B L 2 4 RNA START MAP

MAP 8020

PAGE 5 OF 5

032

Using the 200(dc) voltage range, measure from Pin 7(-) to Pin 12(+) at Connector B3 and Connector B4. Check for a reading of +22.08 volts to +26.4 volts.

Is the voltage between +22.08 volts to +26.4 volts?
Y N

033

You are now directed to go to the Diskette Unit +24 Vdc Power MAP.

GO TO MAP 8061, ENTRY POINT A.

034

POWER-OFF.

Install a new Diskette Adapter Card.

Press the Memory Record Button, while turning the Power Switch On.

Verify by running the Drive Set Ready test L.

Verify by running the Stepper Motor Phase test M.

If an Error Code occurs, go back to MAP 8020, Entry A.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

035

POWER-OFF.

Install a new Diskette Adapter Card.

Press the Memory Record Button, while turning the Power Switch On.

Verify by running the Drive Set Ready test L.

Verify by running the Stepper Motor Phase test M.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

MAP 8021

PAGE 1 OF 7

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP: ENTRY POINT	PAGE NUMBER	STEP NUMBER
8020	A	1	001
8028	A	1	001
8071	A	1	001

EXIT POINTS

EXIT THIS MAP: PAGE NUMBER	STEP NUMBER	TO: MAP NUMBER	ENTRY POINT
2	004	8020	A
2	003	8028	A
3	016	8060	A
4	023	8060	A
3	014	8061	A
4	025	8061	A
5	037	8061	A
7	049	8061	A

001
(ENTRY POINT A)

This MAP isolates Read failure problems.

Remove the Diskette from failing drive.

Press the Memory Record Button while turning the Power Switch On.

Select the failing drive.

Select test procedure N by pressing the MOVE key.

Execute test procedure N by pressing the ENTER key.

This moves the Head Carriage to Track 40.

Remove the Cable Guide (Warning: Do not let the Head Cable touch the Drive Belt).

The Stepping Motor Pulley is at Track 40 if the timing holes in pulley and casting are aligned.

Use the alignment pin to verify.

Press the END key to terminate test N.

Is the Stepping Motor Pulley located at Track 40?
Y N
|
| 002
|
| Is the head located at Track 40? (.020 gap, see the Product Support Manual)
| Y N
| | |

2 2 2
A B C

003

You are now directed to go to the Seek Error MAP.

GO TO MAP 8028, ENTRY POINT A.

004

Go to the Product Support Manual and perform the Head Carriage adjustment.

You are now directed to go to the RNA Start MAP.

GO TO MAP 8020, ENTRY POINT A.

005

Is the Drive Pulley turning in a counterclockwise direction?
Y N

006

POWER-OFF.

Disconnect the AC Cable Connector 8.

Discharge the AC Capacitor by taking a meter lead and connecting the clip to the Capacitor Terminal with two wires and the other end of the meter lead to the Capacitor Terminal with the single wire.

Install a new AC Capacitor.

Reconnect the AC Power Cord to the drive.

POWER-ON.

Is the Drive Pulley turning in a counterclockwise direction?
Y N

007

POWER-OFF.

Disconnect the AC Cable Connector 8.

Discharge the AC Capacitor by taking a meter lead and connecting the clip to the Capacitor Terminal with two wires and the other end of the meter lead to the Capacitor Terminal with the single wire.

Reinstall the original AC Capacitor.

Install a new AC Motor.

Reconnect the AC Power Cord to the drive.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

008

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

009

Load the DISPLAYWRITER SYSTEM DIAGNOSTICS in the failing drive.

Select test procedure L by pressing the MOVE key.

Execute test procedure L by pressing the ENTER key.

If an Error Code is not displayed on the screen, then execute test procedure M.

Was an Error Code displayed on the screen?
Y N

010

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

011

Execute test procedure L by pressing the ENTER key.

Does the solenoid pick and drop?
Y N

012

For a Diskette 1 Drive connect a meter lead between Pins TPC04 and TPHLD for a Diskette 2D Drive between Pins TPA07 and TPA08, located on the File Control Card.

This should activate the Head Load Solenoid.

Does the solenoid pick?
Y N

013

Using the 200(dc) voltage range, measure from Pin B03(+) to Pin A18(-) on the File Control Card Connector. Check for a reading +22.08 volts to +26.4 volts.

Is the voltage between +22.08 and +26.4 volts?
Y N

014

You are now directed to go to the Diskette Unit +24 Vdc Power MAP.

GO TO MAP 8061, ENTRY POINT A.

015

Using the 20(dc) voltage range, measure from Pin B01(+) to Pin A18(-) at the File Control Card Connector. Check for a reading of +4.6 volts to +5.5 volts.

Is the voltage between +4.6 volts to +5.5 volts?
Y N

016

You are now directed to go to the Diskette Unit +5 Vdc Power MAP.

GO TO MAP 8060, ENTRY POINT A.

017

POWER-OFF.

Disconnect the Head Load Solenoid Connector from the File Control Card.

Using the 2K ohm range, check the Head Load Solenoid resistance. For a Diskette 1 Drive the resistance should be 140 to 400 ohms. For a Diskette 2D Drive the resistance should be 113 to 248 ohms.

Is the Solenoid resistance inside these limits?
Y N

018

If the solenoid resistance is below the limit, the File Control Card should also be replaced.

Install a new Head Load Solenoid.

Press the Memory Record Button, while turning the Power Switch On.

Select Test Procedure L by pressing the MOVE key.

Execute Test Procedure L by pressing the ENTER key.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

019

Install a new File Control Card.

Press the Memory Record Button, while turning the Power Switch On.

Verify by running the Drive Set Ready test L.

Verify by running the Stepper Motor Phase test M.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

020

POWER-OFF.

Using the lowest ohm range, measure from Pin B15 (File Control Card Connector) to Pin 17 (Connector B3/B4). Check for a reading of less than 2 ohms.

Do you measure less than 2 ohms?
Y N

021

Install a new Diskette Drive Cable.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

022

Using the 20(dc) voltage range, measure from Pin B01(+) to Pin A18(-) at the File Control Card Connector. Check for a reading of +4.6 volts to +5.5 volts.

Is the voltage between +4.6 volts to +5.5 volts?
Y N

023

You are now directed to go to the Diskette Unit +5 Vdc Power MAP.

GO TO MAP 8060, ENTRY POINT A.

024

Using the 200(dc) voltage range, measure from Pin B03(+) to Pin A18(-) on the File Control Card Connector. Check for a reading +22.08 volts to +26.4 volts.

Is the voltage between +22.08 and +26.4 volts?
Y N

025

You are now directed to go to the Diskette Unit +24 Vdc Power MAP.

GO TO MAP 8061, ENTRY POINT A.

026

POWER-OFF.

Install a new File Control Card.

Press the Memory Record Button while turning the Power Switch On.

Select test procedure L by pressing the MOVE key.

Execute test procedure L by pressing the ENTER key.

Does the solenoid pick and drop?
Y N

027

POWER-OFF.

Reinstall the original File Control Card.

Install a new Diskette Adapter Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

028

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

029

POWER-OFF.

Perform the Solenoid and Bail service adjustment as described in the Product Support Manual.
Press the Memory Record Button, while turning the Power Switch On.

Load the DISPLAYWRITER SYSTEM DIAGNOSTICS.

Select test procedure M by pressing the MOVE key.

Execute test procedure M by pressing the ENTER key.

Was test procedure M completed without a failure?
Y N

030

Is the failing Drive a type 1 Drive?
Y N

031

Remove the Diskette.

Select test procedure N by pressing the MOVE key.

Execute test procedure N by pressing the ENTER key.

Check the Head Carriage for .020 gap, see the Product Support Manual.

Is the adjustment correct?
Y N

032

Go to the Product Support Manual and make the correct adjustments.
GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

033

POWER-OFF.

Install a new Head Carriage Assembly.

Press the Memory Record Button, while turning the Power Switch On.

Load the DISPLAYWRITER SYSTEM DIAGNOSTICS.

Select test procedure M by pressing the MOVE key.

Execute test procedure M by pressing the ENTER key.

Was test procedure M completed without a failure?
Y N

034

POWER-OFF.

Install a new File Control Card.

Press the Memory Record Button, while turning the Power Switch On.

Load the DISPLAYWRITER SYSTEM DIAGNOSTICS.

Select test procedure M by pressing the MOVE key.

Execute test procedure M by pressing the ENTER key.
(Step 034 continues)

6 Q

(Step 034 continued)

Was test procedure M completed without a failure?
Y N

035

POWER-OFF.

Install a new Diskette Adapter Card.

Press the Memory Record Button, while turning the Power Switch On.

Load the DISPLAYWRITER SYSTEM DIAGNOSTICS.

Select test procedure M by pressing the MOVE key.

Execute test procedure M by pressing the ENTER key.

Was test procedure M completed without a failure?
Y N

036

Using the 200(dc) voltage range, measure from Pin B03(+) to Pin A18(-) on the File Control Card Connector. Check for a reading +22.08 volts to +26.4 volts.

Is the voltage between +22.08 and +26.4 volts?
Y N

037

You are now directed to go to the Diskette Unit +24 Vdc Power MAP.

GO TO MAP 8061, ENTRY POINT A.

038

POWER-OFF.

Install a new Head Load Solenoid.

Press the Memory Record Button, while turning the Power Switch On.

Select Test Procedure L by pressing the MOVE key.

Execute Test Procedure L by pressing the ENTER key.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

6 6
R S

039

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

040

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

041

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

042

Check the Pressure Pad on the Head Load Arm for wear.

Is the Pressure Pad worn?
Y N

043

Remove the Diskette.

Select test procedure N by pressing the MOVE key.

Execute test procedure N by pressing the ENTER key.

Check the Head Carriage for .020 gap, see the Product Support Manual.

Is the adjustment correct?
Y N

044

Go to the Product Support Manual and make the correct adjustments.

045

POWER-OFF.

Install a new Head Carriage Assembly.

Press the Memory Record Button, while turning the Power Switch On.

Load the DISPLAYWRITER SYSTEM DIAGNOSTICS.

Select test procedure M by pressing the MOVE key.

Execute test procedure M by pressing the ENTER key.
(Step 045 continues)

(Step 045 continued)

Was test procedure M completed without a failure?
Y N

046

POWER-OFF.

Install a new File Control Card.

Press the Memory Record Button, while turning the Power Switch On.

Load the DISPLAYWRITER SYSTEM DIAGNOSTICS.

Select test procedure M by pressing the MOVE key.

Execute test procedure M by pressing the ENTER key.

Was test procedure M completed without a failure?
Y N

047

POWER-OFF.

Install a new Diskette Adapter Card.

Press the Memory Record Button, while turning the Power Switch On.

Load the DISPLAYWRITER SYSTEM DIAGNOSTICS.

Select test procedure M by pressing the MOVE key.

Execute test procedure M by pressing the ENTER key.

Was test procedure M completed without a failure?
Y N

048

Using the 200(dc) voltage range, measure from Pin B03(+) to Pin A18(-) on the File Control Card Connector. Check for a reading +22.08 volts to +26.4 volts.

Is the voltage between +22.08 and +26.4 volts?
Y N

049

You are now directed to go to the Diskette Unit +24 Vdc Power MAP.

GO TO MAP 8061, ENTRY POINT A.

050

POWER-OFF.

Install a new Head Load Solenoid.

POWER-ON.

Select Test Procedure L by pressing the MOVE key.

Execute Test Procedure L by pressing the ENTER key.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

051

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

052

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

053

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

054

Go to the Product Support Manual for the correct Pressure Pad replacement procedure.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

055

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

MAP 8022

PAGE 1 OF 3

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP: ENTRY POINT	PAGE NUMBER	STEP NUMBER
8020	A	1	001
8026	A	1	001
8071	A	1	001

EXIT POINTS

EXIT THIS MAP: PAGE NUMBER	STEP NUMBER	TO: MAP NUMBER	ENTRY POINT
3	016	8026	A

001
(ENTRY POINT A)

This MAP isolates problems causing slow Diskette speed.

NOTE: A failing Diskette can cause slow Diskette speed.

POWER-OFF.

Remove the Drive Belt.

Go to the Product Support Manual and check the operator handle and the Collet Flat Spring adjustments.

Are the adjustments correct?
Y N

Y:

002

Install/Repair the necessary parts.

Press the Memory Record Button while turning the Power Switch On.

Verify by running the Drive Set Ready test L.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

N:

003

Go to the Product Support Manual and perform the Solenoid and Bail ajustment.

Verify by running the Drive Set Ready test L.

Verify by executing the Diskette MDI.

Was test procedure L and the Diskette MDI completed without a failure?
Y N

Y:

N:

3 2
A B

004

Check the Drive Belt.

Is the Belt in good condition?
Y N

005

Install a new Drive Belt.

Press the Memory Record Button while turning the Power Switch On.

Verify by running the Drive Set Ready test L.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

006

Remove the Diskette from the drive if one is present.

Disengage the Collet Spindle, by turning the Diskette Handle to the Unload position.

By hand turn the Drive Hub Assembly and check for binds.

Is the Hub free of binds and noise?
Y N

007

Install a new Drive Assembly.

Press the Memory Record Button while turning the Power Switch On.

Verify by running the Drive Set Ready test L.

Verify by running the Stepper Motor Phase test M.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

008

Engage the Collet Spindle, by turning the Diskette Handle to the Load position.

By hand turn the Drive Hub assembly and check for binds.

Is the Collet Spindle free of binds?
Y N

009

Install a new Diskette Guide Assembly.

Press the Memory Record Button while turning the Power Switch On.

Verify by running the Drive Set Ready test L.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

010

Is the AC Motor Drive Pulley Set Screw tight?
Y N

011

Check the AC Drive Motor Shaft for damage.

Check to ensure the Set Screw is over the flat surface on the Motor Shaft when tightening the Set Screw.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

012

Install a new AC Drive Motor.

Press the Memory Record Button while turning the Power Switch On.
Verify by running the Drive Set Ready test L.

Was test procedure L completed without a failure?
Y N

013

POWER-OFF.

Install the original AC Drive Motor.

Using the lowest ohm range, measure from Pin B07 (File Control Card Connector) to Pin 4 (Connector B3/B4). For a reading of less than 2 ohms.

Do you measure less than 2 ohms?
Y N

A E F G
1 2 2 2

DRIVE NOT READY

MAP 8022

PAGE 3 OF 3

014

Install a new Diskette Drive Cable.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

015

POWER-OFF.

Install a new File Control Card.

Press the Memory Record Button while turning the Power Switch On. Verify by running the Drive Set Ready test L.

Was test procedure L completed without a failure?
Y N

016

You are now directed to go to the No Index Pulses MAP.

GO TO MAP 8026, ENTRY POINT A.

017

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

018

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

019

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP: ENTRY POINT	PAGE NUMBER	STEP NUMBER
8020	A	1	001
8071	A	1	001

001
(ENTRY POINT A)

This MAP will isolate Read/Write problems. This problem occurs if a read and a write function occurs at the same time.

CAUTION

A section of the Diskette may lose data if a Read/Write failure is present.

This can cause a Diskette Load Failure.

POWER-OFF.

Using the lowest ohm range, measure from the File Control Card Connector to Connector B3/B4, using the information in the chart.

File Control Card Connector PIN	Connector B3/B4 PIN
A01	5
B03	12
B06	3
B14	11
B09	9
B17	21

Do all the wires measure less than 2 ohms?
Y N

002

Install a new Diskette Drive Cable.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

003

Install a new File Control Card.
POWER-ON.

Load the DISPLAYWRITER SYSTEM DIAGNOSTICS.

Execute the Diskette MDI Procedure.

Was the Diskette MDI test procedure completed without a failure?
Y N

004

POWER-OFF.

Reinstall the original File Control Card.

Install a new Diskette Adapter Card.

POWER-ON.

Load the DISPLAYWRITER SYSTEM DIAGNOSTICS.

Execute the Diskette MDI Procedure.

Was the Diskette MDI test procedure completed without a failure?
Y N

005

Follow your normal escalation procedure.

006

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

007

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

MAP 8026

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
8020	A	1	001
8022	A	1	001
8070	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
3	014	8022	A
3	024	8060	A
3	022	8062	A

001
(ENTRY POINT A)

This MAP isolates Missing Index Pulse problems.

POWER-ON.

Is the AC Drive Motor turning in the failing drive?
Y N

002

POWER-OFF.

Disconnect the AC Motor Power Cable Connector from the Motor.

POWER-ON.

DANGER

CAUTION: AC voltage is present on the AC Motor Connector.

Using the 200(ac) voltage range, measure from Pin 6 to Pin 5 on the Diskette Drive AC Distribution Cable. (see chart #1)

Is the voltage correct?
Y N

003

Do you have a large Display?
Y N

CHART #1

Connector Pins	(ac) Voltage Range
6 to 5	104 to 127 volts
2 to 3	104 to 127 volts

Refer to the Product Support Manual for other (ac) voltages (use the correct voltage range)

3 2 2 2
A B C D

004

Disconnect the Diskette AC Cable from the Electronic unit.

Using the 200(ac) voltage range, measure from Pin 2 to Pin 3 at the AC out connector on panel 2. (see chart #1)

Is the voltage correct?
Y N

005

POWER-OFF.

Install a new base Power Supply.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

006

POWER-OFF.

Install a new Diskette AC Distribution Cable.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

007

Disconnect the Media Module AC Cable.

Using the 200(ac) voltage range, measure from Pin 2 to Pin 3 at the AC Output Connector on the Large Display Module. (see chart #1)

Is the voltage correct?
Y N

008

POWER-OFF.

Install a new Diskette AC Distribution Cable.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

009

POWER-OFF.

Install a new Display AC Input Cable.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

010

POWER-OFF.

Leave the Motor Power Cable Connector disconnected.

Remove the Drive Belt.

Let the Motor cool for five minutes.

Reinstall the Motor Power Cable Connector.

POWER-ON.

Is the AC Drive Motor turning in the failing drive?
Y N

011

Give the AC Drive Motor Pulley a few quick turns with the Power ON.

Does the AC Drive Motor turn now?
Y N

012

POWER-OFF.

Install a new AC Drive Motor.

Press the Memory Record Button, while turning the Power Switch On.

Verify by running the Drive Set Ready test L.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

013

POWER-OFF.

Disconnect the Media Module AC Cable.

Discharge the AC Capacitor by taking a meter lead and connecting the clip to the Capacitor Terminal with two wires and the other end of the meter lead to the Capacitor Terminal with the single wire.

Install a new AC Drive Motor Capacitor.

Press the Memory Record Button, while turning the Power Switch On.

Verify by running the Drive Set Ready test L.

(Step 013 continues)

(Step 013 continued)
GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

014

You are now directed to go to the Diskette Drive Not Ready MAP.

GO TO MAP 8022, ENTRY POINT A.

015

Is the Drive Belt on both pulleys?
Y N

016

POWER-OFF.

Check the condition of the Belt and install a new Belt if it is damaged.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

017

Is the Diskette turning?
Y N

018

Check if the Diskette Handle is completely in the load position.

Is the Diskette Handle completely in the Load position?
Y N

019

Push the Diskette Handle down completely and check for binds.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

020

Go to the Product Support Manual and install a new Guide Assembly.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

021

Using the 20(dc) voltage range, measure from Pin A18(-) to Pin A01(+) at the File Control Card Connector. Check for a reading of -4.6 volts to -5.5 volts.

Is the voltage between -4.6 volts to -5.5 volts?
Y N

022

You are now directed to go to the Diskette Unit -5 Vdc Power MAP.

GO TO MAP 8062, ENTRY POINT A.

023

Using the 20(dc) voltage range, measure from Pin B01(+) to Pin A18(-) at the File Control Card Connector. Check for a reading of +4.6 volts to +5.5 volts.

Is the voltage between +4.6 volts to +5.5 volts?
Y N

024

You are now directed to go to the Diskette Unit +5 Vdc Power MAP.

GO TO MAP 8060, ENTRY POINT A.

025

Is the failing Drive a Diskette 2D Drive?
Y N

026

LED Service Check.

This measurement is checking the LED Diode, to determine if the Diode is shorted or open.

POWER-OFF.

Set the CE meter on the 200K ohm range.

Remove the LED Cable Connector from the File Control Card.

Place a lead on each of the LED Connector Sockets.

Observe the CE meter.

Reverse the leads on the Connector
(Step 026 continues)

(Step 026 continued)
Pins and observe the CE meter

Only one of the measurements should have generated a reading between 100K and 200K ohms.

Did you observe only one reading between 100K and 200K ohms?
Y N

027

Install a new LED Assembly.

Press the Memory Record Button, while turning the Power Switch On.

Verify by running the Drive Set Ready test L.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

028

Reconnect the LED Cable Connector to the File Control Card.

POWER-ON.

Using the 2(dc) voltage range, measure from Pin TPLED(+) to Pin TPF01(-) on the File Control Card.

Is the voltage reading between 1.0 and 4.5 volts?
Y N

029

POWER-OFF.

Install a new File Control Card.

Verify by running the Drive Set Ready test L.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

030

Remove the Diskette.

Using the 20(dc) voltage range, measure from Pin TPF01(-) to Pin TPC02(+) on the File Control Card.

The voltage reading should be larger than 2.5 volts.

Is the voltage reading 2.5 volts or larger?
Y N

031

Using the 20(dc) voltage range, measure from Pin TPF01(-) to Pin TPA01(+) on the File Control Card. Check for a reading of +4.6 volts to +5.5 volts.

Is the voltage between +4.6 volts to +5.5 volts?
Y N

032

POWER-OFF.

Install a new File Control Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

033

POWER-OFF.

Install a new PTX Assembly.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

034

Observe the meter and insert a Diskette 1 Diskette.

Repeat this a few times.

The reading should be less than +.5 volts if the Diskette is loaded.

Is the voltage reading lower than .5 volts?
Y N

035

POWER-OFF.

Install a new PTX Assembly.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

036

PTX Service Check.

POWER-OFF.

Disconnect the AC Drive Motor Power Cable.

Disconnect the PTX Cable Connector at the File Control Card.

POWER-ON.

Using the 20(dc) voltage range, measure from Pin TPE03(+) to Pin TPF01(-) on the File Control Card.

Is the voltage reading less than 1.0 volts?
Y N

037

POWER-OFF.

Install a new File Control Card.

POWER-ON.

Verify by running the Drive Set Ready test L.

Verify by running the Stepper Motor Phase test M.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

038

Leave the PTX Cable and the Motor Power Cable disconnected.

Leave the meter leads on TPE03(+) and TPF01(-).

Install one end of a jumper to Pin 3 of the PTXCP socket on the File Control Card.

Observe the CE meter while touching the other end of the jumper to Pin 1 of the PTXCP socket on the File Control Card several times.

NOTE: A wrong measurement can occur the first time the test Pin is touched.

Is the voltage reading 2.5 volts or larger?
Y N

039

POWER-OFF.

Remove the jumper.

Reinstall the AC Drive Motor Power Cable.

Install a new File Control Card.

POWER-ON.

Verify by running the Drive Set Ready test L.

Verify by running the Stepper Motor Phase test M.

If Error Code 02 occurs, install a new PTX Assembly.

Verify by running the Drive Set Ready test L.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

040

POWER-OFF.

Using the lowest ohm range, measure from Pin B04 (File Control Card Connector) to Pin 1 (Connector B3/B4). Check for a reading of less than 2 ohms.

Do you measure less than 2 ohms?
Y N

041

Install a new Diskette Drive Cable.

Press the Memory Record Button, while turning the Power Switch On.

Verify by running the Drive Set Ready test L.

Verify by running the Stepper Motor Phase test M.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

MAP 8026

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042

Install a new Diskette Adapter Card.

Press the Memory Record Button, while turning the Power Switch On.

Execute test procedure L.

Is an Error Code displayed on the screen?
Y N

043

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

044

POWER-OFF.

Install a new LED Assembly.

Press the Memory Record Button while turning the Power Switch On.

Verify by running the Drive Set Ready test L.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

045

Is the failing Diskette a 2D Diskette?
Y N

046

LED Service Check.

This measurement is checking the LED Diode, to determine if the Diode is shorted or open.

POWER-OFF.

Set the CE meter on the 200K ohm range.

Remove the LED Cable Connector from the File Control Card.

Place a lead on each of the LED Connector Sockets, LEDCP 5 and 6.

Observe the CE meter.

Reverse the leads on the Connector Sockets and observe the CE meter .

Only one of the measurements should have generated a reading between 100K and 200K ohms.
(Step 046 continues)

8 P

(Step 046 continued)

Did you observe only one reading between 100K and 200K ohms?
Y N

047

Install a new LED Assembly.

Press the Memory Record Button, while turning the Power Switch On.

Verify by running the Drive Set Ready test L.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

048

Reconnect the LED Cable Connector to the File Control Card.

POWER-ON.

Using the 2(dc) voltage range, measure from Pin TPA07(-) to Pin TPLD1(+) on the File Control Card.

Is the voltage reading between 1.0 and 4.5 volts?
Y N

049

POWER-OFF.

Install a new File Control Card.

Press the Memory Record Button, while turning the Power Switch On.

Verify by running the Drive Set Ready test L.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

050

Remove the Diskette.

Using the 20(dc) voltage range, measure from Pin TPA07(-) to Pin TPB07(+) on the File Control Card.

The voltage reading should be larger than 2.5 volts.

Is the voltage reading 2.5 volts or larger?
Y N

7 7 Q R

051

Using the 20(dc) voltage range, measure from Pin TPA07(-) to Pin TPA09(+) on the File Control Card. Check for a reading of +4.6 volts to +5.5 volts.

Is the voltage between +4.6 volts to +5.5 volts?
Y N

052

POWER-OFF.

Install a new File Control Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

053

POWER-OFF.

Install a new PTX Assembly.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

054

Observe the meter and insert a Diskette 1 Diskette.

Repeat this a few times.

The reading should be less than +.5 volts if the Diskette is loaded.

Is the voltage reading lower than .5 volts?
Y N

055

POWER-OFF.

Install a new PTX Assembly.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

056

PTX Service Check.

POWER-OFF.

Disconnect the AC Drive Motor Power Cable.

Disconnect the PTX Cable Connector at the File Control Card.

POWER-ON.

Using the 20(dc) voltage range, measure from Pin TPA07(-) to Pin TPE01(+) on the File Control Card.

Is the voltage reading less than 1.0 volts?
Y N

057

POWER-OFF.

Install a new File Control Card.

POWER-ON.

Verify by running the Drive Set Ready test L.

Verify by running the Stepper Motor Phase test M.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

058

Leave the PTX Cable and the Motor Power Cable disconnected.

Leave the meter leads on TPA07(-) and TPE01(+).

Install one end of a jumper to Pin 3 of the PTXCP socket on the File Control Card.

Observe the CE meter while touching the other end of the jumper to Pin 1 of the PTXCP socket on the File Control Card several times.

NOTE: A wrong measurement can occur the first time the test Pin is touched.

Is the voltage reading 2.5 volts or larger?
Y N

059

POWER-OFF.

Remove the jumper.

Reinstall the AC Drive Motor Power Cable.

Install a new File Control Card.

POWER-ON.

Verify by running the Drive Set Ready test L.

Verify by running the Stepper Motor Phase test M.

If Error Code 02 occurs, install a new PTX Assembly.

Verify by running the Drive Set Ready test L.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

060

POWER-OFF.

Using the lowest ohm range, measure from Pin B04 (File Control Card Connector) to Pin 1 (Connector B3/B4). Check for a reading of less than 2 ohms.

Do you measure less than 2 ohms?
Y N

061

Install a new Diskette Drive Cable.

Press the Memory Record Button, while turning the Power Switch On.

Verify by running the Drive Set Ready test L.

Verify by running the Stepper Motor Phase test M.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

062

Install a new Diskette Adapter Card.

Press the Memory Record Button, while turning the Power Switch On.

Execute test procedure L.

Is an Error Code displayed on the screen?
Y N

063

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

064

POWER-OFF.

Install a new LED Assembly.

Press the Memory Record Button while turning the Power Switch On.

Verify by running the Drive Set Ready test L.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

065

LED Service Check.

This measurement is checking the LED Diode, to determine if the Diode is shorted or open.

POWER-OFF.

Set the CE meter on the 200K ohm range.

Remove the LED Cable Connector from the File Control Card.

Place a lead on each of the LED Connector Sockets, LEDCP 1 and 3.

Observe the CE meter.

Reverse the leads on the Connector Pins and observe the CE meter .

Only one of the measurements should have generated a reading between 100K and 200K ohms.

Did you observe only one reading between 100K and 200K ohms?
Y N

066

POWER-OFF.

Install a new LED Assembly.

Press the Memory Record Button, while turning the Power Switch On.

Verify by running the Drive Set Ready test L.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

067

Reconnect the LED Cable Connector to the File Control Card.

POWER-ON.

Using the 2(dc) voltage range, measure from Pin TPA07(-) to Pin TPLD2(+) on the File Control Card.

Is the voltage reading between 1.0 and 4.5 volts?
Y N

068

POWER-OFF.

Install a new File Control Card.

Press the Memory Record Button, while turning the Power Switch On.

Verify by running the Drive Set Ready test L.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

069

Remove the Diskette.

Using the 20(dc) voltage range, measure from Pin TPA07(-) to Pin TPA10(+) on the File Control Card.

The voltage reading should be larger than 2.5 volts.

Is the voltage reading 2.5 volts or larger?
Y N

070

Using the 20(dc) voltage range, measure from Pin TPA07(-) to Pin TPA09(+) on the File Control Card. Check for a reading of +4.6 volts to +5.5 volts.

Is the voltage between +4.6 volts to +5.5 volts?
Y N

071

POWER-OFF.

Install a new File Control Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

072

POWER-OFF.

Install a new PTX Assembly.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

073

Observe the meter and insert a Diskette 2D Diskette.

Repeat this a few times.

The reading should be less than +.5 volts if the Diskette is loaded.

Is the voltage reading lower than .5 volts?
Y N

074

POWER-OFF.

Install a new PTX Assembly.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

075

PTX Service Check.

POWER-OFF.

Disconnect the AC Drive Motor Power Cable.

Disconnect the PTX Cable Connector at the File Control Card.

POWER-ON.

Using the 20(dc) voltage range, measure from Pin TPA07(-) to Pin TPE01(+) on the File Control Card.

Is the voltage reading less than 1.0 volts?
Y N

076

POWER-OFF.

Install a new File Control Card.

Press the Memory Record Button, while turning the Power Switch On.

Verify by running the Drive Set Ready test L.

Verify by running the Stepper Motor Phase test M.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

077

Leave the PTX Cable and the Motor Power Cable disconnected.

Leave the meter leads on TPA07(-) and TPE01(+).

Install one end of a jumper to Pin 4 of the PTXCP socket on the File Control Card.

Observe the CE meter while touching the other end of the jumper to Pin 5 of the PTXCP socket on the File Control Card several times.

NOTE: A wrong measurement can occur the first time.

Is the voltage reading 2.5 volts or larger?
Y N

078

POWER-OFF.

Remove the jumper.

Reinstall the AC Drive Motor Power Cable.

Install a new File Control Card.

Press the Memory Record Button, while turning the Power Switch On.

Verify by running the Drive Set Ready test L.

Verify by running the Stepper Motor Phase test M.

If Error Code 02 occurs, install a new PTX Assembly.

Verify by running the Drive Set Ready test L.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

079

POWER-OFF.

Using the lowest ohm range, measure from Pin B04 (File Control Card Connector) to Pin 1 (Connector B3/B4). Check for a reading of less than 2 ohms.

Do you measure less than 2 ohms?
Y N

080

Install a new Diskette Drive Cable. Verify by running the Drive Set Ready test L.

Verify by running the Stepper Motor Phase test M.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

081

Install a new Diskette Adapter Card.

Press the Memory Record Button, while turning the Power Switch On.

Execute test procedure L.

Is an Error Code displayed on the screen?
Y N

082

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

083

POWER-OFF.

Install a new LED Assembly.

Press the Memory Record Button while turning the Power Switch On.

Verify by running the Drive Set Ready test L.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

MAP 8028

PAGE 1 OF 6

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP ENTRY POINT	PAGE NUMBER	STEP NUMBER
8020	A	1	001
8021	A	1	001
8071	A	1	001

EXIT POINTS

EXIT THIS MAP PAGE NUMBER	STEP NUMBER	TO MAP NUMBER	ENTRY POINT
5	029	8020	A
6	045	8021	A
2	007	8060	A
2	009	8061	A

001
(ENTRY POINT A)

This MAP isolates Seek Error problems.

Remove Diskette.

Press the Memory Record Button while turning the Power Switch On.

Select functions by pressing the MOVE key and select test procedure N.

Execute test procedure N by pressing the ENTER key.

This moves the Head Carriage to Track 40.

Remove the Cable Guide (Warning: Do not let the Head Cable touch the Drive Belt).

The Stepping Motor Pulley is at Track 40 if the timing holes in pulley and casting are aligned.

Use the alignment pin to verify.

Press the END key to terminate test N.

Is the Stepping Motor Pulley located at Track 40?
Y N

002

Are the four Stepping Motor mounting screws tight?
Y N

6 2 2
A B C

003

Tighten the mounting screws.

The position of the Stepping Motor may affect Head Alignment.

Load the DISPLAYWRITER SYSTEM DIAGNOSTICS.

Execute the 6360 Head Alignment Compatibility Check, by selecting the Diskette Utility function.

Follow the instructions on the screen.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

004

Check that the Stepping Motor Tape is parallel to the pulley.

Is the tape parallel to the pulley?
Y N

005

Go to the Product Support Manual for Pulley and Tape adjustments.

Verify by running the Stepper Motor Phase test M.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

006

Using the 20(dc) voltage range, measure from Pin B01(+) to Pin A18(-) at the File Control Card Connector. Check for a reading of +4.6 volts to +5.5 volts.

Is the voltage between +4.6 volts to +5.5 volts?
Y N

007

You are now directed to go to the Diskette Unit +5 Vdc Power MAP.

GO TO MAP 8060, ENTRY POINT A.

008

Using the 200(dc) voltage range, measure from Pin B03(+) to Pin A18(-) on the File Control Card Connector. Check for a reading +22.08 volts to +26.4 volts.

Is the voltage between +22.08 and +26.4 volts?
Y N

009

You are now directed to go to the Diskette Unit +24 Vdc Power MAP.

GO TO MAP 8061, ENTRY POINT A.

010

POWER-OFF.

Remove the Diskette.

By hand, move the Head Carriage to Track 00. (toward the rear of the drive)

Press the Memory Record Button while turning the Power Switch On.

Select functions by pressing the MOVE key.

Select the failing drive.

Select test procedure T by pressing the MOVE key.

Execute test procedure T by pressing the ENTER key.

Using the 200(dc) voltage range, measure the (dc) voltage between each File Control Card test point in the Chart (See Chart #1 or Chart #4).

NOTE: Negative lead on TPF01 for a Diskette 1 Drive or TPA07 for a Diskette 2D Drive. These points are on the File Control Card.

The Head may or may not move during this test and audible trackstep sounds may or may not be heard.

(Step 010 continues)

(Step 010 continued)

Single cycle step to Track 01 by pressing the space bar and repeat the measurements.

Repeat for Tracks 02 and 03 by pressing the space bar.

DISKETTE 1 DRIVE CHART #1				
STEPPING MOTOR TEST PINS				
	TPH01	TPH02	TPH03	TPH04
Trk 0	UP	UP	UP	DOWN
Trk 1	UP	UP	DOWN	UP
Trk 2	UP	DOWN	UP	UP
Trk 3	DOWN	UP	UP	UP
Down lev is 0 to 2.0dc volts				
Up lev is 21.6 to 26.4dc volts				

DISKETTE 2D DRIVE CHART #4				
STEPPING MOTOR TEST PINS				
	TPA01	TPA02	TPA03	TPA04
Trk 0	UP	UP	UP	DOWN
Trk 1	UP	DOWN	UP	UP
Trk 2	UP	UP	DOWN	UP
Trk 3	DOWN	UP	UP	UP
Down lev is 0 to 2.0dc volts				
Up lev is 21.6 to 26.4dc volts				

Are the results the same as in the chart?
Y N

5
E F

F

011

POWER-OFF.

Remove Stepping Motor Cable from the Diskette File Control Card.

Using the 2k ohm range, measure from Pin 1 to Pins 3,4,5,6 at the Stepping Motor Cable Connector.

Is the resistance of each of the four coils between 115 and 141 ohms?
Y N

012

Install a new 24 Volt DC Synchronous Stepper Motor.

Verify by running the Stepper Motor Phase test M.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

013

Reconnect the Stepping Motor Cable on the Diskette Control Card.

By hand move the Head Carriage to Track 00. (toward the rear of the drive.

Press the Memory Record Button while turning the Power Switch On.

Select test procedure T, by pressing the MOVE key.

Execute test procedure T, by pressing the ENTER key.

Using the 20(dc) voltage range, measure from Pin TPE01 to TPF01 for a Diskette 1 Drive or from Pin TPC01 to TPA07 for a Diskette 2D Drive. These points are on the File Control Card.

Slowly press the Space Bar four times while observing the CE Meter.

Was one or more results less than 0.4 volts and one or more results larger than 2.5 volts?
Y N

4 4
G H

014

POWER-OFF.

Using the lowest ohm range, measure from Pin B10 (File Control Card Connector) to Pin 13 (Connector B3/B4). For a reading of less than 2 ohms.

Did the wire (Access 0) have continuity?
Y N

015

Install a new Diskette Drive Cable.

Verify by running the Drive Set Ready test L.

Verify by running the Stepper Motor Phase test M.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

016

Install a new File Control Card.

Verify by running the Drive Set Ready test L.

Verify by running the Stepper Motor Phase test M.

Was test procedures L and M completed without a failure?
Y N

017

POWER-OFF.

Install the original File Control Card.

Install a new Diskette Adapter Card.

Verify by running the Drive Set Ready test L.

Verify by running the Stepper Motor Phase test M.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

018

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

019

Using the 20(dc) voltage range, measure from Pin TPC01 to TPF01 for a Diskette 1 Drive or from Pin TPD01 to TPA07 for a Diskette 2D Drive. These points are on the File Control Card.

Slowly press the Space Bar four times while observing the CE Meter.

Was one or more results less than 0.4 volts and one or more results larger than 2.5 volts?
Y N

020

POWER-OFF.

Using the lowest ohm range, measure from Pin B13 (File Control Connector) to Pin 10 (Connector B3/B4). Check for a reading of less than 2 ohms.

Did the wire have continuity?
Y N

021

Install a new Diskette Drive Cable.

Verify by running the Drive Set Ready test L.

Verify by running the Stepper Motor Phase test M.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

022

Install a new File Control Card.

Verify by running the Drive Set Ready test L.

Verify by running the Stepper Motor Phase test M.

Was test procedures L and M completed without a failure?
Y N

023

POWER-OFF.

Install the original File Control Card.

Install a new Diskette Adapter Card.

Verify by running the Drive Set Ready test L.

Verify by running the Stepper Motor Phase test M.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

024

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

025

POWER-OFF.

Install a new File Control Card.

Select test procedure M by pressing the MOVE key.

Execute Test Procedure M by pressing the ENTER key.

Was test procedure M completed without a failure?
Y N

026

POWER-OFF.

Install a new Diskette Adapter Card.

Verify by running the Stepper Motor Phase test M.

Was an Error Code displayed on the screen?
Y N

027

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

028

Is the Error Code 08 or 17?
Y N

029

You are now directed to go to the RNA Start MAP.

GO TO MAP 8020, ENTRY POINT A.

030

Install the original Diskette Adapter Card.

Install a new 24 Volt DC Synchronous Stepper Motor.

Verify by running the Stepper Motor Phase test M.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

031

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

032

POWER-OFF.

Remove the Diskette.

Remove the Upper Guide Rod screws and slide the rod from left to right a few times.

Is there free movement?
Y N

033

Clean the Guide Rods.

Check the Guide Rods for free movement.

Is there free movement?
Y N

034

Are both Guide Rods in good condition?
Y N

035

Install a new Guide Rod(s).

Verify by running the Stepper Motor Phase test M.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

036

Install a new Head Carriage Assembly.

Verify by running the Drive Set Ready test L.

Verify by running the Stepper Motor Phase test M.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

037

Reinstall the Guide Rod.

Verify by running the Stepper Motor Phase test M.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

038

Reinstall the Guide Rod.

Go to the Product Support Manual and perform the Head Carriage Adjustment.

Press the Memory Record Button while turning the Power Switch On.

Load the DISPLAYWRITER SYSTEM DIAGNOSTICS.

Select Test Procedure M by pressing the MOVE key.

Execute Test Procedure M by pressing the ENTER key.

Was test procedure M completed without a failure?
Y N

039

POWER-OFF.

Install a new Diskette Adapter Card.

Verify by running the Drive Set Ready test L.

Verify by running the Stepper Motor Phase test M.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

040

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

041

Is the head located at Track 40? (.020 gap, see the Product Support Manual)
Y N

042

Go to the Product Support Manual and perform the Head Carriage Adjustment.

Verify by running the Stepper Motor Phase Test M.

Was test procedure M completed without a failure?
Y N

043

Go to the Product Support Manual and perform the Stepper Drive Band adjustment.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

044

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

045

At this point it has been determined that there is a read failure .

You are now directed to go to the Read ID Error MAP.

GO TO MAP 8021, ENTRY POINT A.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
8071	A	1	001

001
(ENTRY POINT A)

This MAP will isolate Write problems in the Diskette Unit.

POWER-OFF.

Install a new File Control Card.

POWER-ON.

Execute the Diskette MDI. Return to this MAP and continue with this step.

Was the Diskette MDI test procedure completed without a failure?
Y N

002

POWER-OFF.

Install the original File Control Card.

Using the lowest ohm range, and using the information in chart #13 or chart #14, Check for a reading of less than 2 ohms.

File Control Card Connector	Connector B3/B4
PIN B08	PIN 18
PIN B09	PIN 9
PIN B14	PIN 11
PIN B17	PIN 21
ON TYPE 2D DRIVES ALSO CHECK THE FOLLOWING PIN.	
PIN B16	PIN 8

Is there continuity in the wire?
Y N

003

Install a new Diskette Drive Cable.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

004

Install a new Diskette Adapter Card.

POWER-ON.

Execute the Diskette MDI.

Was the Diskette MDI test procedure completed without a failure?
Y N

005

POWER-OFF.

Install the original Diskette Adapter Card.

Install a new Head Carriage Assembly.

Press the Memory Record Button, while turning the Power Switch On.

Verify by running the Drive Set Ready test L.

Verify by running the Stepper Motor Phase test M.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

006

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

007

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

MAP 8032

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0009	A	1	001
0010	A	1	001
0015	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
3	019	8060	A
5	034	8060	A
2	008	8061	A
3	014	8061	A
3	017	8061	A
2	006	8062	A
3	012	8062	A
3	021	8062	A

001
(ENTRY POINT A)

This MAP will isolate data flow problems in the Diskette Unit.

ERROR CODE 04

The failing part is most likely the System Card. You may install it now if there is a replacement System Card at your present location.

If the Card is replaced and BATs completed successfully, then go to MAP 0010, entry point A to verify system operation.

If BATs failed, continue with step 001.

If a card is not present, then the MAP should be followed to a repair statement before obtaining any parts from the Distribution Center.

ERROR CODE 05

The failing part is most likely the Diskette Adapter Card. You may install it now if there is a replacement Diskette Adapter Card at your present location.

If the Card is replaced and BATs completed successfully, then go to MAP 0010, entry point A to verify system operation.

If BATs failed, continue with step 001.

If a card is not present, then the MAP should be followed to a repair statement before obtaining any parts from the Distribution Center.

POWER-OFF.

(Step 001 continues)

(Step 001 continued)
Remove the Communications Adapter Card from the Media Module, if one is present.

POWER-ON.

Is the Error Code 04 or 05?
Y N

002

Install a new Communications Adapter Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

003

POWER-OFF.

Reinstall the Communications Adapter Card.

POWER-ON.

Is the Error Code 04?
Y N

004

POWER-OFF.

Disconnect Cable B3 at the Diskette Adapter Card.

POWER-ON.

Is the Error Code 05?
Y N

005

POWER-OFF.

Reconnect Cable B3 at the Diskette Adapter Card.

POWER-ON.

Using the 20(dc) voltage range, measure from Pin A18(-) to Pin A01(+) at the File Control Card Connector. Check for a reading of -4.6 volts to -5.5 volts.

Make this measurement on the Left Drive.

Is the voltage between -4.6 volts to -5.5 volts?
Y N

006

You are now directed to go to the Diskette Unit -5 Vdc Power MAP.

GO TO MAP 8062, ENTRY POINT A.

007

Using the 200(dc) voltage range, measure from Pin A18(-) to Pin B03(+) of the File Control Card Connector. Check for a reading of 22.08 volts to 26.4 volts.

Make this measurement on the Left Drive.

Is the voltage between +22.08 volts to +26.4 volts?
Y N

008

You are now directed to go to the Diskette Unit +24 Vdc Power MAP.

GO TO MAP 8061, ENTRY POINT A.

009

POWER-OFF.

Install a new File Control Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

010

POWER-OFF.

Reconnect Cable B3 and disconnect Cable B4 at the Diskette Adapter Card.

If Cable B4 is not present (on a single drive station), then answer the next question yes.

POWER-ON.

Is the Error Code 05?
Y N

011

POWER-OFF.

Reconnect Cable B4 at the Diskette Adapter Card.

POWER-ON.

Using the 20(dc) voltage range, measure from Pin A18(-) to Pin A01(+) at the File Control Card Connector. Check for a reading of -4.6 volts to -5.5 volts.

Make this measurement on the Right Drive.

Is the voltage between -4.6 volts to -5.5 volts?
Y N

012

You are now directed to go to the Diskette Unit -5 Vdc Power MAP.

GO TO MAP 8062, ENTRY POINT A.

013

Using the 200(dc) voltage range, measure from Pin A18(-) to Pin B03(+) of the File Control Card Connector. Check for a reading of 22.08 volts to 26.4 volts.

Make this measurement on the Right Drive.

Is the voltage between +22.08 volts to +26.4 volts?
Y N

014

You are now directed to go to the Diskette Unit +24 Vdc Power MAP.

GO TO MAP 8061, ENTRY POINT A.

015

POWER-OFF.

Install a new File Control Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

016

POWER-OFF.

Leave Cable B4 disconnected at the Diskette Adapter Card.

Disconnect Cable B3 at the Diskette Adapter Card.

POWER-ON.

Is the Error Code 05?
Y N

017

You are now directed to go to the Diskette Unit +24 Vdc Power MAP.

GO TO MAP 8061, ENTRY POINT A.

018

Using the 20(dc) voltage range, measure from Pin 15(-) to Pins 1,2,3,13,14 (+ all) of Connector B2 at the Diskette Adapter Card. Check for a reading of +4.6 volts to +5.5 volts.

Is the voltage between +4.6 volts to 5.5 volts on each Connector Pin indicated?
Y N

019

You are now directed to go to the Diskette Unit +5 Vdc Power MAP.

GO TO MAP 8060, ENTRY POINT A.

020

Using the 20(dc) voltage range, measure from Pin 15(-) to Pin 5(+) of Connector B2 at the Diskette Adapter Card. Check for a reading of -4.6 volts to -5.5 volts.

Is the voltage between -4.6 volts to -5.5 volts?
Y N

021

You are now directed to go to the Diskette Unit -5 Vdc Power MAP.

GO TO MAP 8062, ENTRY POINT A.

022

POWER-OFF.

Reconnect Cable B3 and B4 at the Diskette Adapter Card.

If you have installed a new Diskette Adapter Card at the start of this MAP, do not install another Diskette Adapter Card. Reinstall the original Diskette Adapter Card. Continue with the next step.

Install a new Diskette Adapter Card.

POWER-ON.

Is an Error Code displayed on the screen?
Y N

023

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

024

POWER-OFF.

Reinstall the original Diskette Adapter Card.

Install a new External Diskette Signal Cable.

POWER-ON.

Is an Error Code displayed on the screen?
Y N

025

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

026

POWER-OFF.

Install the original External Diskette Signal Cable.

Using the lowest ohm range, measure from the File Control Card Connector to Connector B3/B4, using the information in the chart.

(Step 026 continues)

(Step 026 continued)

File Control Card Connector	Connector B3/B4
PIN	PIN
B06	3
B14	11
B09	9
B17	21

Do all the wires measure less than 2 ohms?
Y N

027

Install a new Diskette Drive Cable.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

028

Install a new System Card.

POWER-ON.

Is an Error Code displayed on the screen?
Y N

029

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

030

POWER-OFF.

Reinstall the original System Card.

Install a new Internal Diskette Signal Cable in the Electronic Module.

POWER-ON.

Is an Error Code displayed on the screen?
Y N

031

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

032

Follow your normal escalation procedure.

033

Using the 20(dc) voltage range, measure from Pin 15(-) to Pins 1,2,3,13,14 (+ all) of Connector B2 at the Diskette Adapter Card. Check for a reading of +4.6 volts to +5.5 volts.

Is the voltage between +4.6 volts to 5.5 volts on each Connector Pin indicated?
Y N

034

You are now directed to go to the Diskette Unit +5 Vdc Power MAP.

GO TO MAP 8060, ENTRY POINT A.

035

If you have installed a new System Card at the start of this MAP, do not install another System Card. Reinstall the original System Card. Continue with the next step.

POWER-OFF.

Install a new System Card.

POWER-ON.

Is an Error Code displayed on the screen?
Y N

036

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

037

POWER-OFF.

Reinstall the original System Card.

Install a new Diskette Adapter Card.

POWER-ON.

Is an Error Code displayed on the screen?
Y N

038

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

039

POWER-OFF.

Install the original Diskette Adapter Card.

Install a new External Diskette Signal Cable.

POWER-ON.

Is an Error Code displayed on the screen?
Y N

040

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

041

POWER-OFF.

Install the original External Diskette Signal Cable.

Install a new Internal Diskette Signal Cable in the Electronic Module.

POWER-ON.

Is an Error Code displayed on the screen?
Y N

042

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

043

Follow your normal escalation procedure.

DISKETTE UNIT +5 VDC POWER MAP

MAP 8060

PAGE 1 OF 2

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP ENTRY POINT	PAGE NUMBER	STEP NUMBER
8020	A	1	001
8021	A	1	001
8026	A	1	001
8028	A	1	001
8032	A	1	001

001
(ENTRY POINT A)

This MAP will isolate +5 (dc) voltage problems in the Diskette Unit and external DC Power Cable.

Remove the Diskette(s) if one is present.

POWER-OFF.

Disconnect the Diskette DC Power Cable from Connector 10, Panel 2.

POWER-ON.

Using the 20(dc) voltage range, measure from Pin 7(-) to Pins 1,2,3,4,14 (all +) of Connector 10 at Panel 2. Check for a reading of +4.6 volts to +5.5 volts. (measure at the Panel).

Is the voltage between +4.6 volts to 5.5 volts on each Connector Pin indicated?
Y N

002

POWER-OFF.

Install a new base Power Supply.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

003

POWER-OFF.

Reinstall the Diskette DC Power Cable to Connector 10, at Panel 2.

POWER-ON.

Using the 20(dc) voltage range, measure from Pin 15(-) to Pins 1,2,3,13,14 (all +) of Connector B2, at the Diskette Adapter Card. Check for a reading of +4.6 volts to +5.5 volts.

Is the voltage between +4.6 volts to 5.5 volts on each Connector Pin indicated?
Y N

004

POWER-OFF.

Install a new Diskette Unit DC Power Cable.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

005

Using the 20(dc) voltage range, measure from Pin 7(-) to Pin 14(+) at Connector B3 and Connector B4. Check for a reading of +4.6 volts to +5.5 volts.

Is the voltage between +4.6 volts to +5.5 volts?
Y N

006

POWER-OFF.

Install a new Diskette Adapter Card.

Press the Memory Record Button, while turning the Power Switch On.

Verify by running the Drive Set Ready test L.

Verify by running the Stepper Motor Phase test M.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

007

Using the 20(dc) voltage range, measure from Pin B01(+) to Pin A18(-) at the File Control Card Connector. Check for a reading of +4.6 volts to +5.5 volts.

Is the voltage between +4.6 volts to +5.5 volts?
Y N

008

POWER-OFF.

Install a new Diskette Drive Cable.

Press the Memory Record Button, while turning the Power Switch On.

Verify by running the Drive Set Ready test L.

Verify by running the Stepper Motor Phase test M.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

009

POWER-OFF.

Install a new File Control Card.

Verify by running the Drive Set Ready test L.

Verify by running the Stepper Motor Phase test M.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
8020	A	1	001
8021	A	1	001
8026	A	1	001
8028	A	1	001
8032	A	1	001

001
(ENTRY POINT A)

This MAP will isolate +24 (dc) voltage problems in the Diskette Unit and external DC Power Cable.

Remove the Diskette if one is present.

POWER-OFF.

Disconnect the Diskette Unit DC Power Cable from Connector 10, Panel 2.

POWER-ON.

Using the 200(dc) voltage range, measure from Pin 7(-) to Pin 13(+) at Connector 10 at Panel 2. (Measure at the Panel) Check for a reading of +22.08 volts to +26.4 volts.

Is the voltage between +22.08 volts to +26.4 volts?
Y N

002

POWER-OFF.

Install a new base Power Supply.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

003

POWER-OFF.

Reinstall the Diskette Unit DC Power Cable to Connector 10, at Panel 2.

POWER-ON.

Using the 200(dc) voltage range, measure from Pin 15(-) to Pin 12 (+) of Connector B2, at the Diskette Adapter Card. Check for a reading of +22.08 volts to +26.4 volts.

Is the voltage between +22.08 volts to +26.4 volts?
Y N

004

POWER-OFF.

Install a new Diskette Unit DC Power Cable.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

005

Using the 200(dc) voltage range, measure from Pin 7(-) to Pin 12(+) at Connector B3 and Connector B4. Check for a reading of +22.08 volts to +26.4 volts.

Is the voltage between +22.08 volts to +26.4 volts?
Y N

006

POWER-OFF.

Install a new Diskette Adapter Card.

Press the Memory Record Button, while turning the Power Switch On.

Verify by running the Drive Set Ready test L.

Verify by running the Stepper Motor Phase test M.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

B
1

DISKETTE UNIT +24 VDC

MAP 8061

PAGE 2 OF 2

007

Using the 200(dc) voltage range, measure from Pin B03(+) to Pin A18(-) on the File Control Card Connector. Check for a reading +22.08 volts to +26.4 volts.

Is the voltage between +22.08 and +26.4 volts?
Y N

008

POWER-OFF.

Install a new Diskette Drive Cable.

Press the Memory Record Button, while turning the Power Switch On.

Verify by running the Drive Set Ready test L.

Verify by running the Stepper Motor Phase test M.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

009

POWER-OFF.

Install a new File Control Card.

Verify by running the Drive Set Ready test L.

Verify by running the Stepper Motor Phase test M.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

DISKETTE UNIT -5 VDC POWER MAP

MAP 8062

PAGE 1 OF 2

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP ENTRY POINT	PAGE NUMBER	STEP NUMBER
8020	A	1	001
8026	A	1	001
8032	A	1	001

001
(ENTRY POINT A)

This MAP will isolate -5 (dc) voltage problems in the Diskette Unit and external DC Power Cable.

Remove the Diskette if one is present.

POWER-OFF.

Disconnect the Diskette Unit DC Power Cable from Connector 10, at Panel 2.

POWER-ON.

Using the 20(dc) voltage range, measure from Pin 7(-) to Pin 12(+) on Connector 10 at Panel 2. (Measure at the Panel) Check for a reading of -4.6 volts to -5.5 volts.

Is the voltage between -4.6 volts to -5.5 volts?
Y N

002

POWER-OFF.

Install a new base Power Supply.

Reconnect all the cable connectors.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

003

POWER-OFF.

Reinstall the Diskette Unit DC Power Cable to Connector 10, at Panel 2.

POWER-ON.

Using the 20(dc) voltage range, measure from Pin 15(-) to Pin 5(+) of Connector B2, at the Diskette Adapter Card. Check for a reading of -4.6 volts to -5.5 volts.

Is the voltage between -4.6 volts to -5.5 volts?
Y N

004

POWER-OFF.

Install a new Diskette Unit DC Power Cable.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

005

Using the 20(dc) voltage range, measure from Pin 7(-) to Pin 5(+) at Connector B3 and Connector B4. Check for a reading of -4.6 volts to -5.5 volts.

Is the voltage between -4.6 volts to -5.5 volts?
Y N

006

POWER-OFF.

Install a new Diskette Adapter Card.

Press the Memory Record Button, while turning the Power Switch On.

Verify by running the Drive Set Ready test L.

Verify by running the Stepper Motor Phase test M.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

007

Using the 20(dc) voltage range, measure from Pin A18(-) to Pin A01(+) at the File Control Card Connector. Check for a reading of -4.6 volts to -5.5 volts.

Is the voltage between -4.6 volts to -5.5 volts?
Y N

008

POWER-OFF.

Install a new Diskette Drive Cable.

Press the Memory Record Button, while turning the Power Switch On.

Verify by running the Drive Set Ready test L.

Verify by running the Stepper Motor Phase test M.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

009

POWER-OFF.

Install a new File Control Card.

Verify by running the Drive Set Ready test L.

Verify by running the Stepper Motor Phase test M.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

DISKETTE UNIT A/C POWER MAP

MAP 8064

PAGE 1 OF 2

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP ENTRY POINT	PAGE NUMBER	STEP NUMBER
0010	A	1	001
9165	A	1	001

001
(ENTRY POINT A)

This MAP isolates AC short problems in the Diskette Unit.

The Media Module may get its AC Power from the Electronic Module, or from the large Display Module.

POWER-OFF.

Reconnect the Media Module AC Cable.

Disconnect the Diskette Unit AC Cable from the Diskette Unit. This is done by disconnecting the AC Motor Connector or Connectors (two drives) and the AC Fan Connector in the Diskette Unit.

POWER-ON.

Is the Fan in the Electronic Module running?
Y N

002

POWER-OFF.

Install a new Diskette Unit AC Cable.
Install a new Fuse.

Reconnect the AC Power Cable.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

003

Is this a two Drive station?
Y N

004

POWER-OFF.

Disconnect the Media Module AC Cable.

Discharge the AC Capacitor by taking a meter lead and connecting the clip to the Capacitor Terminal with two wires and the other end of the meter lead to the Capacitor Terminal with the single wire.
Using the lowest ohm range, place a meter lead on each of the black AC wires on the AC Motor Connector.

Record the reading.

Leave the meter leads connected.

Disconnect the blue wire (single wire) from the AC Capacitor.

Did the meter reading increase?
Y N

005

Install a new AC Drive Motor.

Reconnect the Media Module AC Cable.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

006

Install a new AC Drive Motor Capacitor.

Reconnect the Media Module AC Cable.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

007

POWER-OFF.

Reconnect the Fan in the Diskette Unit.

POWER-ON.

Is the Fan in the Diskette Unit running?
Y N

008

POWER-OFF.

Install a new Fan in the Diskette Module. Install a new Fuse.

Reconnect the AC Motor Connector on both drives.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

009

POWER-OFF.

Connect the Right Drive AC Cable.

POWER-ON.

Is the AC Motor turning on the Right Drive?
Y N

010

The Right Drive is the failing Drive.

POWER-OFF.

Disconnect the Media Module AC Cable.

Discharge the AC Capacitor by taking a meter lead and connecting the clip to the Capacitor Terminal with two wires and the other end of the meter lead to the Capacitor Terminal with the single wire.

Using the lowest ohm range, place a meter lead on each of the black AC wires on the AC Motor Connector.

Record the reading.

Leave the meter leads connected.

Disconnect the blue wire (single wire) from the AC Capacitor.

Did the meter reading increase?
Y N

011

Install a new AC Drive Motor Capacitor.

Reconnect the Media Module AC Cable.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

012

Install a new AC Drive Motor.

Reconnect the Media Module AC Cable.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

013

The Left Drive is the failing Drive.

POWER-OFF.

Disconnect the AC Cable Connector 8.

Discharge the AC Capacitor by taking a meter lead and connecting the clip to the Capacitor Terminal with two wires and the other end of the meter lead to the Capacitor Terminal with the single wire.

Using the lowest ohm range, place a meter lead on each of the black AC wires on the AC Motor Connector.

Record the reading.

Leave the meter leads connected.

Disconnect the blue wire (single wire) from the AC Capacitor.

Did the meter reading increase?
Y N

014

Install a new AC Drive Motor.

Reconnect the Media Module AC Cable.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

015

Install a new AC Drive Motor Capacitor.

Reconnect the Media Module AC Cable.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP: ENTRY POINT	PAGE NUMBER	STEP NUMBER
6010	A	1	001

001
(ENTRY POINT A)

This MAP isolates DC short problems in the Diskette Unit.

POWER-OFF (Wait 8 seconds).

Disconnect the Communications DC Voltage Cable Connector 11 (if present) from Panel 2.

Disconnect all cables from the Connector Strip or from the Diskette Unit Distribution Board.

Remove the Diskette Adapter Card.

Remove if present remaining cards from the Diskette Unit Distribution Board.

POWER-ON.

Are the "A" and/or "B" LED indicators ON?
Y N

002

Reconnect the Communications DC Voltage Cable Connector 11 to Panel 2.

If this cable is not present, then answer NO to this question.

Are the "A" and/or "B" LED indicators ON?
Y N

003

POWER-OFF.

Reconnect Cable B2.

Reconnect if present Cable C1 to the Diskette Unit Distribution Board.

POWER-ON.

Are the "A" and/or "B" LED indicators ON?
Y N

5 5 4
A B C D

004

POWER-OFF (Wait 8 seconds).

Reinstall the original Diskette Adapter Card.

POWER-ON.

Are the "A" and/or "B" LED indicators ON?
Y N

005

If the Communications feature is not present in the Media Module, then answer NO to this question.

Reinstall the remaining original cards one at a time.

Power-On after installing each card.

Record the part number or card type of the failing card.

Did the A and/or B LED Indicators remain on after installing each card?
Y N

006

Is this a two Drive station?
Y N

007

POWER-OFF.

Reconnect the Drive Cable.

Disconnect the Head Load Solenoid Connector from the File Control Card.

Disconnect the Stepping Motor Connector from the File Control Card.

POWER-ON.

Are the "A" and/or "B" LED indicators ON?
Y N

4 4 2 2 2
E F G H J

008

POWER-OFF.

Reconnect the Head Load Solenoid in the failing Drive.

POWER-ON.

Are the "A" and/or "B" LED indicators ON?
Y N

009

POWER-OFF.

Reconnect the Stepping Motor Connector in the failing Drive.

POWER-ON.

Are the "A" and/or "B" LED indicators ON?
Y N

010

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

011

POWER-OFF (Wait 8 seconds).

Install a new Stepping Motor.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

012

POWER-OFF (Wait 8 seconds).

Install a new Head Load Solenoid in the failing Drive.

POWER-ON.

Are the "A" and/or "B" LED indicators ON?
Y N

013

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

014

POWER-OFF (Wait 8 seconds).

Install a new base Power Supply.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

015

POWER-OFF (Wait 8 seconds).

Install a new File Control Card in the failing Drive.

POWER-ON.

Are the "A" and/or "B" LED indicators ON?
Y N

016

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

017

POWER-OFF (Wait 8 seconds).

Install a new base Power Supply.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

018

POWER-OFF.

Reconnect the Left Drive Cable to Connector B3 on the Diskette Adapter Card.

Are the "A" and/or "B" LED indicators ON?
Y N

019

This isolates to a failing Right Drive.

POWER-OFF.

Reconnect the Right Drive Cable to Connector B4 on the Diskette Adapter Card.

Disconnect the Head Load Solenoid Connector from the File Control Card on the failing drive.

Disconnect the Stepping Motor Connector from the File Control Card on the failing drive.

POWER-ON.

Are the "A" and/or "B" LED indicators ON?
Y N

020

POWER-OFF.

Reconnect the Head Load Solenoid in the failing Drive.

POWER-ON.

Are the "A" and/or "B" LED indicators ON?
Y N

021

POWER-OFF.

Reconnect the Stepping Motor Connector in the failing Drive.

POWER-ON.

Are the "A" and/or "B" LED indicators ON?
Y N

022

POWER-OFF.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

023

POWER-OFF (Wait 8 seconds).

Install a new Stepping Motor.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

024

POWER-OFF (Wait 8 seconds).

Install a new Head Load Solenoid in the failing Drive.

POWER-ON.

Are the "A" and/or "B" LED indicators ON?
Y N

025

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

N

026

POWER-OFF (Wait 8 seconds).

Install a new base Power Supply.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

027

POWER-OFF (Wait 8 seconds).

Install a new File Control Card in the failing Drive.

POWER-ON.

Are the "A" and/or "B" LED indicators ON?
Y N

028

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

029

POWER-OFF (Wait 8 seconds).

Install a new base Power Supply.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

030

This isolates to a failing Left Drive.

POWER-OFF (Wait 8 seconds).

Disconnect the Head Load Solenoid Connector from the File Control Card on the failing drive.

Disconnect the Stepping Motor Connector from the File Control Card on the failing drive.

POWER-ON.

Are the "A" and/or "B" LED indicators ON?
Y N

4 4
P Q

031

POWER-OFF.

Reconnect the Head Load Solenoid in the failing Drive.

POWER-ON.

Are the "A" and/or "B" LED indicators ON?
Y N

032

POWER-OFF.

Reconnect the Stepping Motor Connector in the failing Drive.

POWER-ON.

Are the "A" and/or "B" LED indicators ON?
Y N

033

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

034

POWER-OFF (Wait 8 seconds).

Install a new Stepping Motor.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

035

POWER-OFF (Wait 8 seconds).

Install a new Head Load Solenoid in the failing Drive.

POWER-ON.

Are the "A" and/or "B" LED indicators ON?
Y N

036

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

037

POWER-OFF (Wait 8 seconds).

Install a new base Power Supply.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

038

POWER-OFF (Wait 8 seconds).

Install a new File Control Card in the failing Drive.

POWER-ON.

Are the "A" and/or "B" LED indicators ON?
Y N

039

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

040

POWER-OFF (Wait 8 seconds).

Install a new base Power Supply.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

041

POWER-OFF (Wait 8 seconds).

Install a new Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

042

POWER-OFF (Wait 8 seconds).

Install a new Diskette Adapter Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

043

Is a Diskette Unit Distribution Board present?
Y N

044

POWER-OFF (Wait 8 seconds).

Install a new Connector Strip.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

A B R
1 1 4

DC SHORT FAILURE MAP

MAP 8065

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045

POWER-OFF (Wait 8 seconds).

Install a new Diskette Unit Distribution Board.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

046

POWER-OFF (Wait 8 seconds).

Install a new Communications DC Voltage Cable.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

047

POWER-OFF (Wait 8 seconds).

Install a new Diskette Adapter DC Power Cable.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0017	A	1	001

001
(ENTRY POINT A)

The most probable failing FRU is the Display Module. You may replace it now if there is a replacement Display Module at your present location. Follow the MAPs to a fix statement before obtaining any parts from the distribution center.

DANGER

WARNING: DO NOT REMOVE THE DISPLAY MODULE COVERS. Operating voltages up to 14,000 volts are present inside the Display (Note: no bleeder resistor provided). Use CAUTION when handling the Display Module. The Display Screen is glass and will implode if cracked or broken.

Disconnect the Display Module Connector (2) from Panel 1.

Using the 20(dc) voltage range, measure from Pin 2 (ground) to Pin 3 (+12V) of Panel 1 Connector (2), (Pin side).

Is the voltage between +11.0 volts and +13.2 volts?
Y N

002

Using the 20(dc) voltage range, measure from frame ground to Pin 10 of Internal Distribution Cable Connector (P2).

Is the voltage between +11.0 volts and +13.2 volts?
Y N

003

POWER-OFF.

Install a new base Power Supply.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

004

POWER-OFF.

Repair or install a new Internal Distribution Cable.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

005

POWER-OFF.

Remove the Electronics Module top cover.

Reconnect the Display Module Connector (2).

POWER-ON with the Memory Record Button pressed.

Using the 20(dc) voltage range, measure from frame ground to Pin 13 of the Internal Distribution Cable Connector (2) (wiring side).

Is the voltage between +4.0 volts and +5.5 volts?
Y N

006

POWER-OFF.

Install a new Display Module.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

007

Using the 20(dc) voltage range, measure from frame ground to Pin 4 of the Internal Distribution Cable Connector (D1).

Is the voltage between +4.0 volts and +5.5 volts?
Y N

008

POWER-OFF.

Repair or install a new Internal Distribution Cable.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

009

POWER-OFF.

Install a new Display Adapter Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP ENTRY POINT	PAGE NUMBER	STEP NUMBER
0009	A	1	001
0010	A	1	001
9030	A	1	001
9040	A	1	001

001
(ENTRY POINT A)

DANGER

WARNING: DO NOT REMOVE THE DISPLAY MODULE COVERS. Operating voltages up to 14,000 volts are present inside the Display (Note: no bleeder resistor provided). Use CAUTION when handling the Display Module. The Display Screen is glass and will implode if cracked or broken.

Load the DISPLAYWRITER SYSTEM DIAGNOSTICS.

Select and run the Display MDI.
Note: The Keying sequence is:

"A"
"ENTER"
(Wait two to five seconds for a diskette access.)
"A"
"ENTER"
(Wait two to five seconds for a diskette access.)
"ENTER"

(If a wrong key is pressed during the keying sequence, press "END" and restart the sequence.)

Was there a Service Request Number 190001 and/or did the Display MDI test fail? (Test failure is indicated by a Display message and/or LED indicators "F" and "H" on.)
Y N

002

Has a new Display Module been installed?
Y N

003

POWER-OFF.

Install a new Display Module.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

004

POWER-OFF.

Install a new Display Adapter Card.

Reinstall the original Display Module.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

005

POWER-OFF.

Install a new Display Adapter Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

A B C

MAP 9020-1

MAP 9030

PAGE 1 OF 2

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0010	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	010	9020	A

001
(ENTRY POINT A)

The most probable failing FRU is the Display Module. You may replace it now if there is a replacement Display Module at your present location. Follow the MAPs to a fix statement before obtaining any parts from the distribution center.

DANGER

WARNING: DO NOT REMOVE THE DISPLAY MODULE COVERS. Operating voltages up to 14,000 volts are present inside the Display (Note: no bleeder resistor provided). Use CAUTION when handling the Display Module. The Display Screen is glass and will implode if cracked or broken.

Is there a single horizontal or vertical line on the Display? (Refer to Figure 2, Appendix A)
Y N

002

Turn the Contrast and Brightness Control Knobs fully clockwise.

Turn the Brightness Control Knob slowly counterclockwise until the Display raster is not visible.

Is there an Image on the Display Screen?
Y N

003

Using the 2(dc) voltage range, measure from frame ground to Pin 10 of the Internal Distribution Cable Connector (2) (wiring side).

Do NOT disconnect Display Module Connector (2).

Is the voltage between +1.2 volts and +1.8 volts?
Y N

2 2 2 2
A B C D

NO VIDEO DATA MAP

MAP 9030

004

POWER-OFF.

Disconnect Internal Distribution Cable Connector (D1).

POWER-ON with the Memory Record Button pressed.

Using the 2(dc) voltage range, measure from frame ground to Pin 10 of the Internal Distribution Cable Connector (2) (wiring side).

Do NOT disconnect Display Module Connector (2).

Is the voltage between +1.2 volts and +1.8 volts?

Y N

005

POWER-OFF.

Reconnect Internal Distribution Cable Connector (D1).

Install a new Display Module.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

006

POWER-OFF.

Install a new Display Adapter Card.

Reconnect Internal Distribution Cable Connector (D1).

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

007

Using the 2(dc) voltage range, measure from frame ground to Pin 1 of the Internal Distribution Cable Connector (D1).

Is the voltage between +1.2 volts and +1.8 volts?

Y N

008

POWER-OFF.

Repair or install a new Internal Distribution Cable.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

009

POWER-OFF.

Install a new Display Adapter Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

010

You are now directed to go to the Display Display Adapter MAP.

GO TO MAP 9020, ENTRY POINT A.

011

POWER-OFF.

Install a new Display Module.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

MAP 9040

PAGE 1 OF 2

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0009	A	1	001
0010	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
1	003	9020	A

001
(ENTRY POINT A)

The most probable failing FRU is the Display Module. You may replace it now if there is a replacement Display Module at your present location. Follow the MAPs to a fix statement before obtaining any parts from the distribution center.

DANGER

WARNING: DO NOT REMOVE THE DISPLAY MODULE COVERS. Operating voltages up to 14,000 volts are present inside the Display (Note: no bleeder resistor provided). Use CAUTION when handling the Display Module. The Display Screen is glass and will implode if cracked or broken.

Turn the Display Brightness and Contrast Control Knobs fully clockwise.

Compare the Display Image to the Pictures in Figure 5, Appendix A.

Does the Image on the Display match any of the pictures?
Y N

002

Is the Display Image rolling? (Refer to Figure 4, Appendix A.)
Y N

003

You are now directed to go to the Display Display Adapter MAP.

GO TO MAP 9020, ENTRY POINT A.

004

Using the 20(dc) voltage range, measure from frame ground to Pin 12 of the Internal Distribution Cable Connector (2) (wiring side).

Do NOT disconnect Display Module Connector (2).

Record the voltage.

Is the voltage between +4.0 volts and +5.5 volts?
Y N

005

POWER-OFF.

Install a new Display Module.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

006

POWER-OFF.

Disconnect the System Power Cable Connector (P1).

POWER-ON.

Using the 20(dc) voltage range, measure from frame ground to Pin 12 of the Internal Distribution Cable Connector (2) (wiring side).

Do NOT disconnect Display Module Connector (2).

Did the voltage measurement increase +0.3 volts to +0.7 volts above the recorded voltage?
Y N

007

Using the 20(dc) voltage range, measure from frame ground to Pin 3 of the Internal Distribution Cable Connector (D1) (wiring side).

Is the voltage between +4.5 volts and +5.5 volts?
Y N

008

POWER-OFF.

Install a new Internal Distribution Cable.

Reconnect the System Power Cable Connector (P1).

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

009

POWER-OFF.

Install a new Display Adapter Card.

Reconnect the System Power Cable Connector (P1).

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

010

POWER-OFF.

Install a new Display Module.

Reconnect the System Power Cable Connector (P1).

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

011

POWER-OFF.

Install a new Display Module.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

NO CONTRAST ADJUSTMENT MAP

MAP 9050

PAGE 1 OF 1

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP: ENTRY POINT	PAGE NUMBER	STEP NUMBER
9070	A	1	001

001
(ENTRY POINT A)

The most probable failing FRU is the Display Module. You may replace it now if there is a replacement Display Module at your present location. Follow the MAPs to a fix statement before obtaining any parts from the distribution center.

DANGER

WARNING: DO NOT REMOVE THE DISPLAY MODULE COVERS. Operating voltages up to 14,000 volts are present inside the Display (Note: no bleeder resistor provided). Use CAUTION when handling the Display Module. The Display Screen is glass and will implode if cracked or broken.

POWER-OFF.

Disconnect the Display Module Connector (2) from Panel 1.

Using the 20(Ohm) Resistance range, measure the resistance between Pin 11 and Pin 15 of Panel 1 Connector (2).

Is the resistance less than 2 Ohms?
Y N

002

Using the 20(Ohm) Resistance range, measure the resistance between Panel 1 Connector (2) Pin 11 and Internal Distribution Cable Connector (D1) Pin 2.

Is the resistance less than 2 Ohms?
Y N

003

Install a new Internal Distribution Cable.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

004

Install a new Display Adapter Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

005

Install a new Display Module.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

MAP 9109

PAGE 1 OF 6

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0010	A	1	001
0017	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
6	045	9110	A

001
(ENTRY POINT A)

DANGER

THERE IS UP TO 17,000 VOLTS PRESENT INSIDE THE DISPLAY MODULE. (Note: After the Power is turned off, allow 10 seconds for the High Voltage to reach a safe level.)

Use CAUTION when handling the Display module. Wear SAFETY GLASSES. The Display Screen is glass and will implode if cracked or broken.

****

The Display Indicators (0,1,2) are located at the rear of the Display Module just above the cables.

The Indicators are normally "ON".

Are all the Display Indicators (0,1,2) ON?
Y N
|
| 002
|
| Are all the Display Indicators (0,1,2) OFF?
| Y N
| |
| | 003
| |
| | Are Display Indicators (0 ON and 1,2 OFF)?
| | Y N
| | |
| | | 004
| | |
| | | Are Display Indicators (0,2 ON and 1 OFF)?
| | | Y N
| | | |
| | | | 005
| | | |
| | | | Are Display Indicators (0 OFF and 1,2 ON)?
| | | | Y N

6 4 3 3 2 2
A B C D E F

INDICATOR MAP

MAP 9109

PAGE 2 OF 6

006

Are Display Indicators (0,1 ON and 2 OFF)?
Y N

007

POWER-OFF.

Disconnect the Display Indicator (0) Cable Connector (LV1) at the Low Voltage Power Supply in the Display Module.

POWER-ON.

Using the 20(dc) voltage range, measure from Pin 1(-) to Pin 3(+) of the Display Indicator (0) Cable Conn. (LV1) at the Low Voltage Power Supply. Check for +4.6 to +5.5 volts.

Is the voltage between +4.6 and +5.5 volts?
Y N

008

POWER-OFF.

Install a new Low Voltage Power Supply in the Display Module.

You are now directed to go to the Large Display Indicator MAP.

GO TO MAP 9109, ENTRY POINT A.

009

POWER-OFF.

Install a new Low Voltage LED Indicator (0) Cable Assembly in the Display Module.

You are now directed to go to the Large Display Indicator MAP.

GO TO MAP 9109, ENTRY POINT A.

010

POWER-OFF.

Install a new Deflection Neon Indicator (2) Cable Assembly in the Display Module.

POWER-ON.

Are all the Display Indicators (0,1,2) ON?
Y N

011

POWER-OFF.

Install a new Analog Card in the Display Module.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

012

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

013

POWER-OFF.

Disconnect the Display Indicator (0) Cable Connector (LV1) at the Low Voltage Power Supply in the Display Module.

POWER-ON.

Using the 20(dc) voltage range, measure from Pin 1(-) to Pin 3(+) of the Display Indicator (0) Cable Conn. (LV1) at the Low Voltage Power Supply. Check for +4.6 to +5.5 volts.

Is the voltage between +4.6 and +5.5 volts?
Y N

014

POWER-OFF.

Install a new Low Voltage Power Supply in the Display Module.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

015

POWER-OFF.

Install a new Low Voltage LED Indicator (0) Cable Assembly in the Display Module.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

016

Has new High Voltage Power Supply been installed in the Display Module?
Y N

017

POWER-OFF.

* * * DANGER * * *
See the Product Support Manual for the CRT Anode Discharge procedure.

Install a new High Voltage Power Supply in the Display Module.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

018

Has new Display Analog Card been installed in the Display Module?
Y N

019

POWER-OFF.

* * * DANGER * * *
See the Product Support Manual for the CRT Anode Discharge procedure.

Reinstall the original High Voltage Power Supply in the Display Module.

Install a new Analog Card in the Display Module.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

020

Has new Display Indicator (1) Cable Assembly been installed in the Display Module?
Y N

021

POWER-OFF.

Reinstall the original Analog Card in the Display Module.

Install a new High Voltage Neon Indicator (1) Cable Assembly in the Display Module.

POWER-ON.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

022

POWER-OFF.

Install a new Mainframe Assembly in the Display Module.

* * * DANGER * * *
See the Product Support Manual for the CRT Anode Discharge procedure.

Reinstall all the original components in the Display Module.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

023

Has new Display Analog Card been installed in the Display Module?
Y N

024

POWER-OFF.

Install a new Analog Card in the Display Module.

POWER-ON.

Are all the Display Indicators (0,1,2) ON?
Y N

025

You are now directed to go to the Large Display Indicator MAP.

GO TO MAP 9109, ENTRY POINT A.

026

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

027

POWER-OFF.

* * * DANGER * * *
See the Product Support Manual for the CRT Anode Discharge procedure.

Install a new High Voltage Power Supply in the Display Module.

POWER-ON.

Are all the Display Indicators (0,1,2) ON?
Y N

028

POWER-OFF.

Install a new Mainframe Assembly in the Display Module.

* * * DANGER * * *
See the Product Support Manual for the CRT Anode Discharge procedure.

Reinstall all the original components in the Display Module.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

029

POWER-OFF.

Reinstall the original Analog Card in the Display Module.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

030

Is the Display Module (ac) Cable Connector (12) connected?
Y N

031

POWER-OFF.

Connect the Display Module (ac) Cable Connector (12) to Panel 2 of the Electronic Module.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

032

POWER-OFF.

Disconnect the DC Output Cable Connector (LV2) at the Low Voltage Power Supply.

POWER-ON.

Is Display Indicator (0) ON?
Y N

033

DANGER

HIGH VOLTAGE IS PRESENT AT THE POWER CORD CONNECTOR.

POWER-OFF.

Disconnect the AC (input) Cable Connector (LV3) at the Low Voltage Power Supply.

POWER-ON.

Using the 200(ac) voltage range, measure from Pin (1) to Pin (3) of AC Cable Connector (LV3). The voltage should be between 104 and 127 volts (ac). (WT-GBG/I use the Product Support Manual.)

Is the voltage in the correct range?
Y N

034

DANGER

HIGH VOLTAGE IS PRESENT AT THE POWER CORD CONNECTOR.

POWER-OFF.

Disconnect the Display Module AC Cable Connector (12) at Panel 2 of the Electronic Module.

POWER-ON.

Using the 200(ac) voltage range, measure the (ac) voltage at the AC connector (12) on Panel 2. The voltage should be between 104 and 127 volts (ac). (WT-GBG/I Use voltage chart in the Product Support Manual.)

Is the voltage in the correct range?
Y N

035

POWER-OFF.

Install a new Power Supply in the Electronic Module.

Reconnect all the cable connectors.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

036

POWER-OFF.

Install a new AC Input Cable in the Display Module.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

037

POWER-OFF.

Install a new Low Voltage Power Supply in the Display Module.

Reconnect all the cable connectors.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

038

POWER-OFF.

Reconnect the DC Output Cable Connector (LV2) at the Low Voltage Power Supply.

Disconnect the High Voltage Power Supply Cable Connector (J3) at the Connector Strip.

POWER-ON.

Is Display Indicator (0) ON?
Y N

039

POWER-OFF.

Reconnect the High Voltage Power Supply Cable Connector (J3) at the Connector Strip.

Remove the Analog Card in the Display Module.

POWER-ON.

Is Display Indicator (0) ON?
Y N

040

POWER-OFF.

Install a new Mainframe Assembly in the Display Module.

* * * DANGER * * *
See the Product Support Manual for the CRT Anode Discharge procedure.

Reinstall all the original components in the Display Module.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

041

POWER-OFF.

Install a new Analog Card in the Display Module.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

042

POWER-OFF.

Install a new High Voltage Power Supply in the Display Module.

* * * DANGER * * *
See the Product Support Manual for the CRT Anode Discharge procedure.

Reconnect all the cable connectors.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

043

Did you come from MAP 0015 with the Error Indicators (D,E,F,G,H) equal to (0,0,1,0,1)?
Y N

044

Load the Displaywriter System Diagnostic Diskette.

Select and run the Display MDI.
Note: The Keying sequence is:

"A"
"ENTER"
(Wait two to five seconds for a diskette access.)
"A"
"ENTER"
(Wait two to five seconds for a diskette access.)
"ENTER"

(If a wrong key is pressed during the keying sequence, press "END" and restart the sequence.)

(Failure is indicated by a Display message and/or LED Indicators "F" and "H" ON.)

Did you get a failure message on the Display and/or are the LED Indicators "F" and "H" ON?
Y N

045
You are now directed to go to the Large Display Entry MAP.

GO TO MAP 9110, ENTRY POINT A.

046

POWER-OFF.

Install a new Display Adapter Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

047

POWER-OFF.

Remove the Analog Card in the Display Module.

POWER-ON.

Do the Error Indicators (D,E,F,G,H) equal (0,0,1,0,1)?
Y N

048

POWER-OFF.

Install a new Analog Card in the Display Module.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

049

POWER-OFF.

Install a new Mainframe Assembly in the Display Module.

* * * DANGER * * *
See the Product Support Manual for the CRT Anode Discharge procedure.

Reinstall all the original components in the Display Module.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

MAP 9110

PAGE 1 OF 5

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP: ENTRY POINT	PAGE NUMBER	STEP NUMBER
9109	A	1	001
9170	A	1	001

EXIT POINTS

EXIT THIS MAP: PAGE NUMBER	STEP NUMBER	TO: MAP NUMBER	ENTRY POINT
3	015	9112	A
2	010	9115	A
3	018	9115	A
5	033	9115	A

001
(ENTRY POINT A)

DANGER

THERE IS UP TO 17,000 VOLTS PRESENT INSIDE THE DISPLAY MODULE. (Note: After the Power is turned off, allow 10 seconds for the High Voltage to reach a safe level.)

Use CAUTION when handling the Display module. Wear SAFETY GLASSES. The Display Screen is glass and will implode if cracked or broken.

****

POWER-OFF.

Remove any Diskette that may be in the Drive.

POWER-ON.

Wait 20 seconds for BAT to complete.

Turn the Brightness Control fully clockwise or until an image or raster can be seen.

Is the Display blank?, (no illumination).
Y N
|
| 002
|
| At this time find Appendix B in the back of this Manual in order to answer the questions which follow.
|
| Carefully compare your Display Image with Appendix B, Figure 2.
|
| Does your Display Image match the illustration(s)?
| Y N

5 4 2
A B C

003

Carefully compare your Display Image with those in Appendix B, Figure 3.

Does your Display Image match the illustration(s)?
Y N

004

Does your Display Image contain a recognizible IBM logo?
Y N

005

Carefully compare your Display Image with those in Appendix B, Figure 4.

Does your Display Image match the illustration(s)?
Y N

006

POWER-OFF.

Install a new Analog Card in the Display Module.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

007

POWER-OFF.

Disconnect the Large Display Signal Cable Connector (2) at the Electronic Module, Panel 2.

Using the lowest ohms range make the following resistance measurement.

Display Module Signal
Cable Connector (2):
Pin 10 to Pin 9.

Check for a reading of 200 ohms or less.

Is the resistance 200 ohms or less?
Y N

008

POWER-OFF.

Install a new Mainframe Assembly in the Display Module.

* * * DANGER * * *
See the Product Support Manual for the CRT Anode Discharge procedure.

Reinstall all the original components in the Display Module.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

009

Is the resistance 2 ohms or less?
Y N

010

Reconnect the Display Module Cable Connector (2) at Panel 2 on the Electronic Module.
You are now directed to go to the Large Display Image Quality MAP.
GO TO MAP 9115, ENTRY POINT A.

011

Remove the Analog Card in the Display Module.

Using the lowest ohms range make the following resistance measurement.

Display Module Signal
Cable Connector (2):
Pin 10 to Pin 9.

Check for a reading of 2 ohms or less.

Is the resistance 2 ohms or less?
Y N

012

Install a new Analog Card in the Display Module.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

013

POWER-OFF.

Install a new Mainframe Assembly in the Display Module.

* * * DANGER * * *
See the Product Support Manual for the CRT Anode Discharge procedure.

Reinstall all the original components in the Display Module.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

014

Carefully compare your Display Image with those in Appendix B, Figure 5.

Does your Display Image match the illustration(s)?
Y N

015

You are now directed to go to the Large Display Distorted Shape MAP.

GO TO MAP 9112, ENTRY POINT A.

016

POWER-OFF.

Disconnect the Video Output Cable Connector (J502).

Disconnect the CRT Socket Cable Connector.

Using the lowest ohms range, make all of the following resistance measurements.

PROBE WIRING SIDE ONLY TO
***PREVENT DAMAGE TO PINS. ***

1. The Video Output Cable Connector (J502): Pin 1 to

   The CRT Socket: Pin 7.

2. The Video Output Cable Connector (J502): Pin 4 to

   The CRT Connector: Pin 6.

Check for a reading of 200 ohms or
(Step 016 continues)

(Step 016 continued)
less.

Were all of the readings 200 ohms or less?
Y N

017

POWER-OFF.

Install a new Mainframe Assembly in the Display Module.

* * * DANGER * * *
See the Product Support Manual for the CRT Anode Discharge procedure.

Reinstall all the original components in the Display Module.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

018

You are now directed to go to the Large Display Image Quality MAP.
GO TO MAP 9115, ENTRY POINT A.

019

POWER-OFF.

Install a new Analog Card in the Display Module.

POWER-ON.

Carefully compare your Display Image with Appendix B, Figure 1.

Does your Display Image match the illustration(s)?
Y N

020

POWER-OFF.

Disconnect the Large Display Signal Cable Connector (2) at the Electronic Module, Panel 2.

Remove the Analog Card in the Display Module.

Using the lowest ohms range, make all of the following resistance measurements.

1. Connector Strip:

   Position J4 Pin 24 to

   The Display Module
(Step 020 continues)

(Step 020 continued)
Cable Connector (2):
Pin 12 .

2. Connector Strip:

Position J4 Pin 23 to

The Display Module
Cable Connector (2):
Pin 13.

Check for a reading of 2 ohms or less.

Were all of the readings 2 ohms or less?
Y N

021

POWER-OFF.

Install a new Mainframe Assembly in the Display Module.

* * * DANGER * * *
See the Product Support Manual for the CRT Anode Discharge procedure.

Reinstall all the original components in the Display Module.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

022

Disconnect Internal Distribution Cable Connector (D1) in the Electronic Module.

Using the lowest ohms range, measure the resistance between the Pins shown in the chart for the Internal Distribution Cable Connectors (D1) and (2).

(D1)		(2)
Pin	Signal	Pin
1	Video	10
2	Bright	11
3	Vertical	12
4	Horizontal	13

Is the resistance 2 ohms or less?
Y N

K L

B J K L
1 3

023

Reinstall the original Analog Card in the Display Module.

Install a new Internal Distribution Cable.

Reconnect the Display Module Cable Connector (2).

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

024

Reinstall the original Analog Card in the Display Module.

Install a new Display Adapter Card.

Reconnect the Display Module Cable Connector (2).

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

025

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

026

POWER-OFF.

Disconnect the Deflection Output Cable Connector (J301).

Using the lowest ohms range make the following resistance measurement.

PROBE WIRING SIDE ONLY TO
***PREVENT DAMAGE TO PINS. ***
Deflection Output Cable
Connector (J301):

Pin 1 to Pin 2.

Check for a reading of 8 ohms or less.

Is the resistance 8 ohms or less?
Y N

5 5
M N

DISPLAY ENTRY

MAP 9110

PAGE 5 OF 5

027

POWER-OFF.

Install a new Mainframe Assembly in the Display Module.

* * * DANGER * * *
See the Product Support Manual for the CRT Anode Discharge procedure.

Reinstall all the original components in the Display Module.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

028

Install a new Analog Card in the Display Module.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

029

POWER-OFF

Remove the Large Display Cover.

POWER-ON Wait 20 seconds

Look through the neck of the CRT.(Two cm. foreward of the CRT Socket.)
Observe the Filament of the CRT.

Is the Filament of the CRT 'ON'?
Y N

030

POWER-OFF.

Remove the Analog Card in the Display Module.

Using the lowest ohms range make the following resistance measurement.

Connector Strip:

Position J2 Pin 1 to

Position J2 Pin 13 .

Check for a reading between 3.5 ohms and 25 ohms.

Is the resistance between 3.5 ohms and 25 ohms?
Y N

031

POWER-OFF.

Install a new Mainframe Assembly in the Display Module.

* * * DANGER * * *
See the Product Support Manual for the CRT Anode Discharge procedure.

Reinstall all the original components in the Display Module.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

032

POWER-OFF.

Install a new Analog Card in the Display Module.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

033

You are now directed to go to the Large Display Image Quality MAP.
GO TO MAP 9115, ENTRY POINT A.

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP: ENTRY POINT	PAGE NUMBER	STEP NUMBER
9110	A	1	001

001
(ENTRY POINT A)

DANGER

THERE IS UP TO 17,000 VOLTS PRESENT INSIDE THE DISPLAY MODULE. (Note: After the Power is turned off, allow 10 seconds for the High Voltage to reach a safe level.)

Use CAUTION when handling the Display module. Wear SAFETY GLASSES. The Display Screen is glass and will implode if cracked or broken.

****

Load the Displaywriter System Diagnostics

Do you have a readable Function Selection Menu on the CRT?
Y N

002

POWER-OFF.

Install a new Display Adapter Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

003

Select the UTILITIES

Select the Display ID

Select the Test pattern

Adjust the Brightness Control to obtain the correct visual level.

Are all the characters displayed of the same intensity?
Y N

3
A B

004

Carefully compare your Display Image with those in Appendix B, Figure 7.

Does your Display Image match the illustration(s)?
Y N

005

Carefully compare your Display Image with those in Appendix B, Figure 8.

Does your Display Image match the illustration(s)?
Y N

006

Carefully compare your Display Image with those in Appendix B, Figure 9.

Does your Display Image match the illustration(s)?
Y N

007

Carefully compare your Display Image with those in Appendix B, Figure 10.

Does your Display Image match the illustration(s)?
Y N

008

Select the Font Test

Every character or symbol is repeated four times. Verify that all characters or symbols within a four character group are the same.

Do all characters within each group look the same?
Y N

3 2 2 2 2 2
C D E F G H

009

POWER-OFF.

Install a new Display Adapter Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

010

At this point you have an image quality problem.

Is the problem with focus?
Y N

011

The following list of all repair actions which might be necessary to correct the failure. The list is ordered from the most probable failure first to the least probable failure last.

After each Repair Action carefully compare your Display Image with Appendix B, Figure 1.

Each repair action should be performed one at a time until the failure is corrected.

1. Install a new Analog Card.
2. Install a new Mainframe Assembly.
3. Install a new High Voltage Power Supply.

012

The following list of all repair actions which might be necessary to correct the failure. The list is ordered from the most probable failure first to the least probable failure last.

After each Repair Action carefully compare your Display Image with Appendix B, Figure 1.

Each repair action should be performed one at a time until the failure is corrected.

1. Install a new Analog Card.
2. Install a new High Voltage Power Supply.

(Step 012 continues)

(Step 012 continued)
3. Install a new Mainframe Assembly.

013

POWER-OFF.

Install a new Mainframe Assembly in the Display Module.

* * * DANGER * * *
See the Product Support Manual for the CRT Anode Discharge procedure.

Reinstall all the original components in the Display Module.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

014

Adjust the Width Control for the correct width.

Use the adjustment procedure in the Product Support Manual.

Were you able to adjust the Width Control for the correct width?
Y N

015

POWER-OFF.

Install a new Analog Card in the Display Module.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

016

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

017

Adjust the Height Control for the correct height.

Use the adjustment procedure in the Product Support Manual.

Were you able to adjust the Height Control for the correct heigth?
Y N

018

POWER-OFF.

Install a new Analog Card in the Display Module.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

019

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

020

POWER-OFF.

Check that the Yoke is secure against the CRT.

Is the Yoke Assembly secure against the CRT?
Y N

021

POWER-OFF.

Install a new Mainframe Assembly in the Display Module.

* * * DANGER * * *
See the Product Support Manual for the CRT Anode Discharge procedure.

Reinstall all the original components in the Display Module.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

022

POWER-OFF.

Install a new High Voltage Power Supply in the Display Module.

* * * DANGER * * *
See the Product Support Manual for the CRT Anode Discharge procedure.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

023

POWER-OFF.

Install a new Analog Card in the Display Module.

POWER-ON.

Load the Displaywriter System Diagnostics

Select the UTILITIES

Select the Display ID

Select the Test pattern

Adjust the Brightness Control to obtain the correct visual level.

Are all the characters displayed of the same intensity?
Y N

024

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

025

POWER-OFF.

Remove the Analog Card in the Display Module.

Remove the Display Adapter Card in the Electronic Module.

Using the lowest ohms range make the following resistance measurement.

Connector Strip:
Position (J1) Pin 1 to

Frame ground.

Is the resistance 2 ohms or less?
Y N

026

Using the lowest ohms range make the following resistance measurement.

Connector Strip:
Position (J1) Pin 1 to

Internal Distribution
Cable Connector D1 Pin (2)

Check for a reading of 2 ohms or less.

Is the resistance 2 ohms or less?
Y N

027

Disconnect the Large Display Signal Cable Connector (2) at the Electronic Module, Panel 2.

Using the lowest ohms range make the following resistance measurement.

Connector Strip:
Position (J1) Pin 1 to

Display Module Signal
Cable Connector (2):
Pin 11.

Is the resistance 2 ohms or less?
Y N

028

POWER-OFF.

Install a new Mainframe Assembly in the Display Module.

* * * DANGER * * *
See the Product Support Manual for the CRT Anode Discharge procedure.

Reinstall all the original components in the Display Module.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

029

Reinstall the original Analog Card in the Display Module.

Install a new Internal Distribution Cable.

Reinstall all the original cards.

Reconnect all the cable connectors.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

030

Reinstall the original Analog Card in the Display Module.

Install a new Display Adapter Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

031

Disconnect the Large Display Signal Cable Connector (2) at the Electronic Module, Panel 2.

Using the lowest ohms range make the following resistance measurement.

Connector Strip:
Position (J1) Pin 1 to

Frame ground.

Is the resistance 2 ohms or less?
Y N

032

Reinstall the original Analog Card in the Display Module.

Install a new Internal Distribution Cable.

Reinstall all the original cards.

Reconnect all the cable connectors.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

033

POWER-OFF.

Install a new Mainframe Assembly in the Display Module.

* * * DANGER * * *
See the Product Support Manual for the CRT Anode Discharge procedure.

Reinstall all the original components in the Display Module.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
9110	A	1	001

001
(ENTRY POINT A)

DANGER

THERE IS UP TO 17,000 VOLTS PRESENT INSIDE THE DISPLAY MODULE. (Note: After the Power is turned off, allow 10 seconds for the High Voltage to reach a safe level.)

Use CAUTION when handling the Display module. Wear SAFETY GLASSES. The Display Screen is glass and will implode if cracked or broken.

****

Has new Display Analog Card been installed in the Display Module?
Y N

002

POWER-OFF.

Remove the Analog Card in the Display Module.

POWER-ON.

Using the 200(dc) voltage range, make all of the following voltage measurements from frame ground to the points indicated.

Conn Pin	Volts dc
J1 Pin 7	+28.8 to +35.2
J4 Pin 13	+28.8 to +35.2
J1 Pin 2	+ 4.6 to + 5.5
J4 Pin 17	+ 4.6 to + 5.5
J1 Pin 11	- 4.6 to - 5.5

Is the voltage in the correct range?
Y N

2
A B C

B C MAP 9115-1

003

Using the 200(dc) voltage range, make all of the following voltage measurements from frame ground to the points indicated.

Conn LV2	Volts dc
Pin 1	+28.8 to +35.2
Pin 2	+28.8 to +35.2
Pin 6	+ 4.6 to + 5.5
Pin 7	+ 4.6 to + 5.5
Pin 8	- 4.6 to - 5.5

Is the voltage in the correct range?
Y N

004

POWER-OFF.

Install a new Low Voltage Power Supply in the Display Module.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

005

POWER-OFF.

Install a new Mainframe Assembly in the Display Module.

* * * DANGER * * *
See the Product Support Manual for the CRT Anode Discharge procedure.

Reinstall all the original components in the Display Module.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

006

POWER-OFF.

Using the lowest ohms range make the following resistance measurement.

Connector Strip:

Position J1 Pin 9 to

Position J4 Pin 15 .

Check for a reading of 2 ohms or less.

Is the resistance 2 ohms or less?
Y N

2 2
D E

007

POWER-OFF.

Install a new Mainframe Assembly in the Display Module.

* * * DANGER * * *
See the Product Support Manual for the CRT Anode Discharge procedure.

Reinstall all the original components in the Display Module.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

008

Install a new Analog Card in the Display Module.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

009

Has the Internal Distribution Cable in the Electronic Module been replaced or verified good?
Y N

010

POWER-OFF.

Reinstall the original Analog Card in the Display Module.

Disconnect the Large Display Signal Cable Connector (2) at the Electronic Module, Panel 2.

Using the lowest ohms range, measure the resistance between the Pins shown in the chart for the Internal Distribution Cable Connectors (D1) and (2).

(D1)		(2)
Pin	Signal	Pin
1	Video	10
2	Bright	11
3	Vertical	12
4	Horizontal	13

(Step 010 continues)

(Step 010 continued)

Were all of the readings 2 ohms or less?
Y N

011

Install a new Internal Distribution Cable.

Reinstall all the original cards.

Reconnect all the cable connectors.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

012

POWER-OFF.

Install a new High Voltage Power Supply in the Display Module.

* * * DANGER * * *
See the Product Support Manual for the CRT Anode Discharge procedure.

Reinstall all the original cards.

Reconnect all the cable connectors.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

013

Has a new Display Adapter Card been installed in the Electronic Module?
Y N

014

POWER-OFF.

Reinstall the original High Voltage Power Supply in the Display Module.

Install a new Display Adapter Card.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

015

POWER-OFF.

Install a new Mainframe Assembly in the Display Module.

* * * DANGER * * *
See the Product Support Manual for the CRT Anode Discharge procedure.

Reinstall all the original components in the Display Module.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

MAP 9165

PAGE 1 OF 2

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0010	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	005	8064	A

001
(ENTRY POINT A)

POWER-OFF.

Reconnect the Display Module AC Cable Connector (12) at panel 2 of the Electronic Module.

Disconnect the Diskette Unit AC (output) Cable Connector (8) at the rear of the Display Module.

POWER-ON.

Is the Fan in the Electronic Module running?
Y N

002

POWER-OFF.

Disconnect the AC (input) Cable Connector (LV3) at the Low Voltage Power Supply.

Install a new Fuse.

POWER-ON.

Is the Fan in the Electronic Module running?
Y N

003

POWER-OFF.

Install a new AC Input Cable in the Display Module.

Reconnect all the cable connectors.

Install a new Fuse.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

2 2
A B

004

POWER-OFF.

Install a new Low Voltage Power Supply in the Display Module.

Reconnect all the cable connectors.

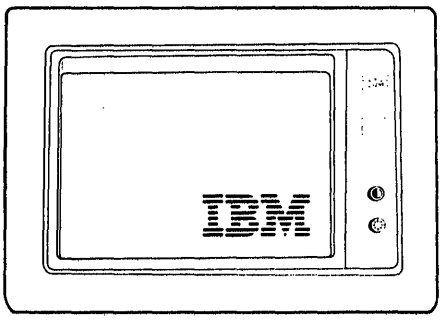
Install a new Fuse.

GO TO MAP 0010, ENTRY POINT A, to Verify System Operation.

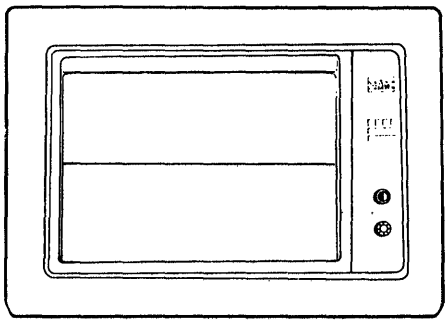
005

You are now directed to go to the Diskette Unit A/C Power Failure MAP.

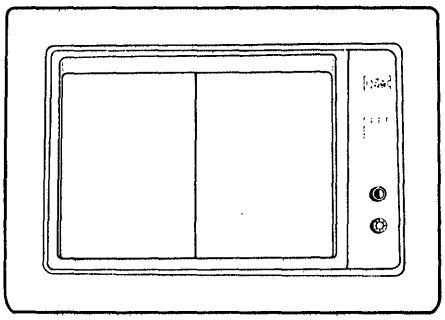
GO TO MAP 8064, ENTRY POINT A.



Normal display image after BAT completion
Figure 1

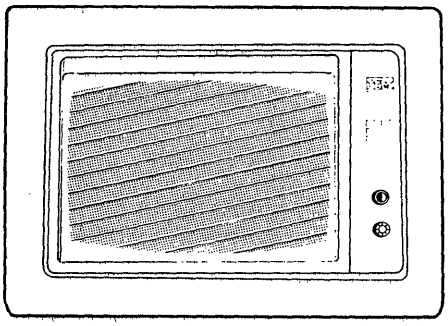


Single horizontal line
(solid or broken)



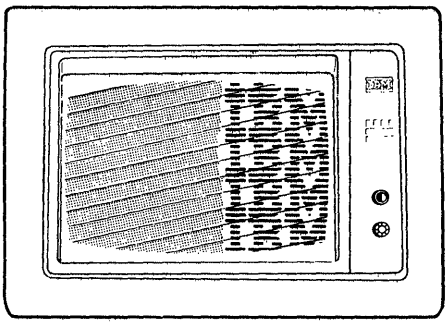
Single vertical line
(may be flashing)

Figure 2



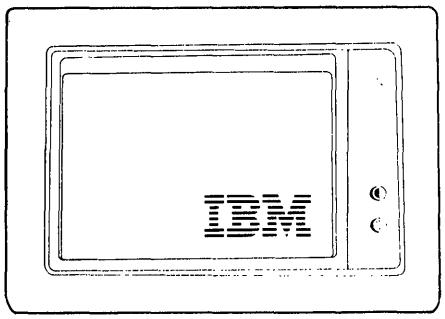
Display raster

Figure 3

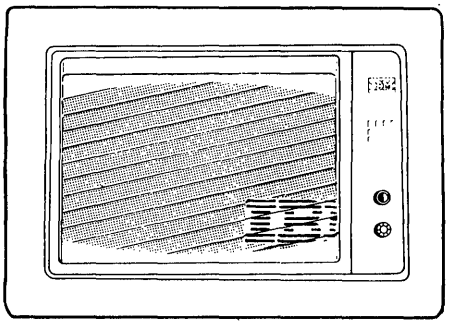


Display image rolling

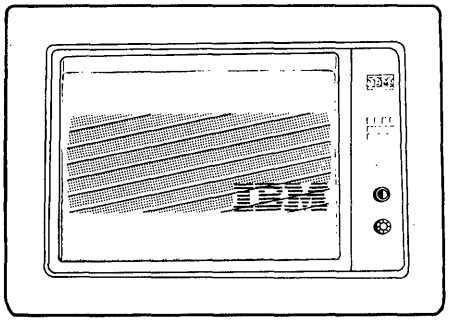
Figure 4



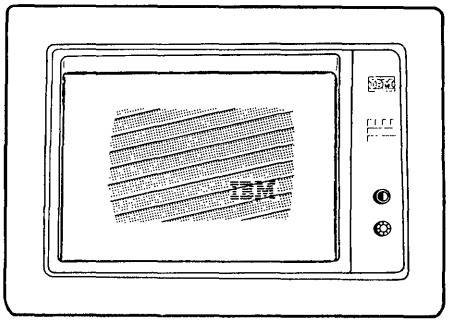
Too dim



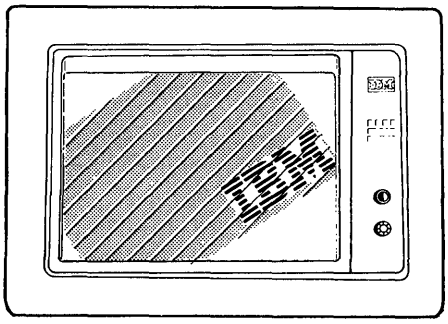
Too wide



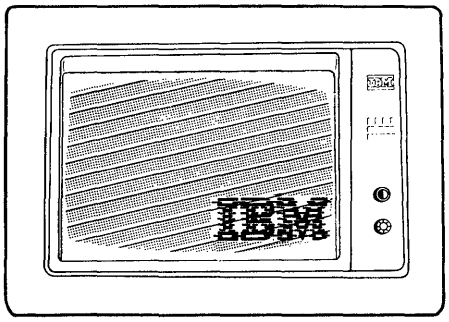
Too short



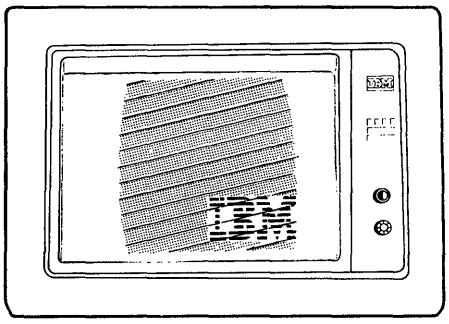
Shrunk



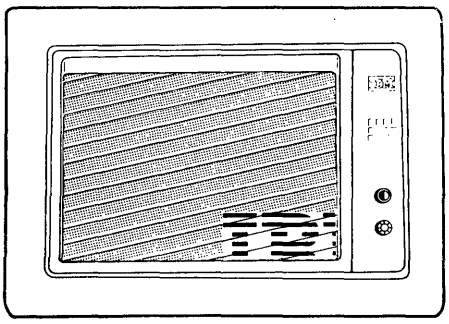
Tilted



Out of focus

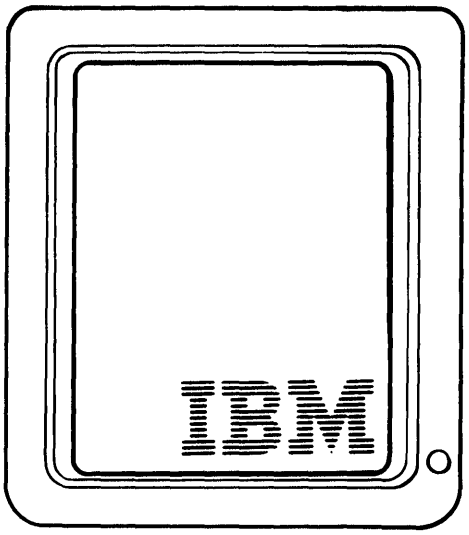


Too narrow



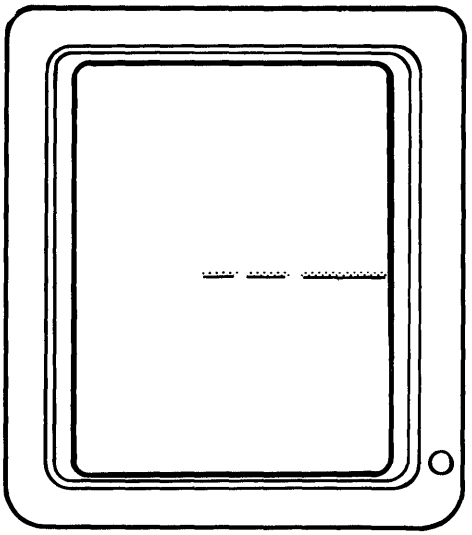
Changes size when Brightness control turned

Figure 5 - Distorted Display Images



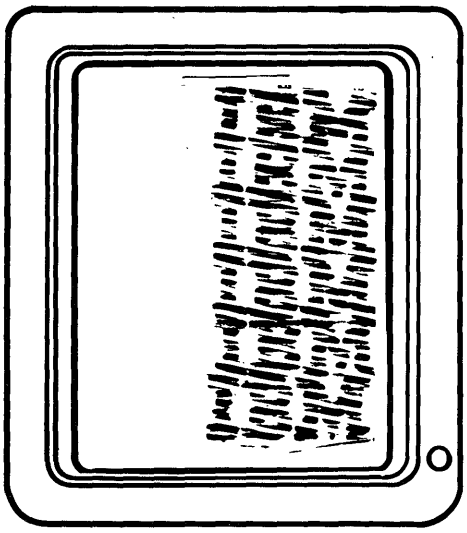
Normal

Figure 1

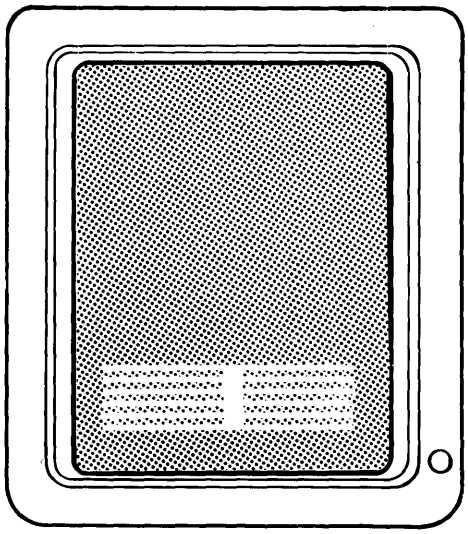


Single horizontal line
(solid or broken)

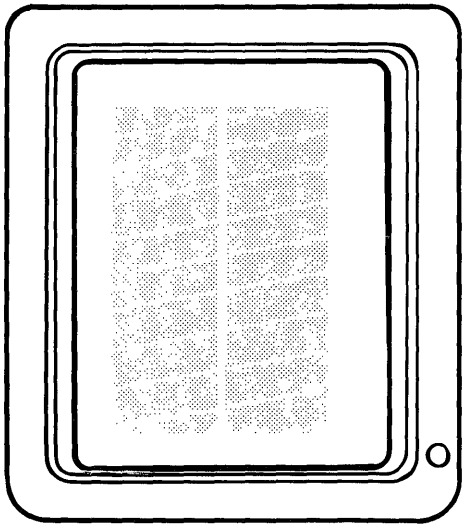
Figure 2



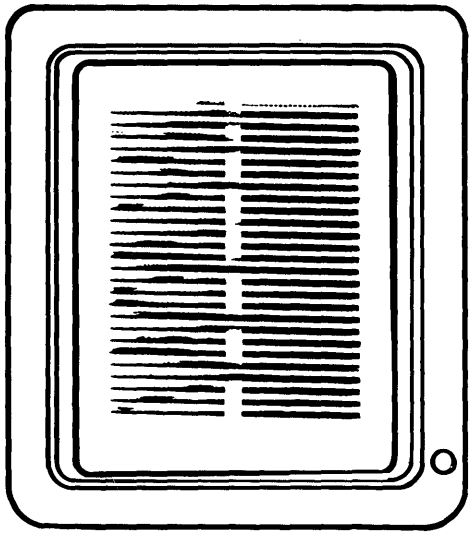
Vertical roll



Horizontal roll

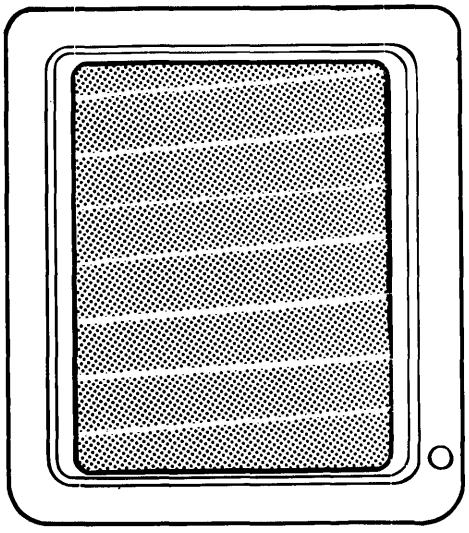


Shrunken raster

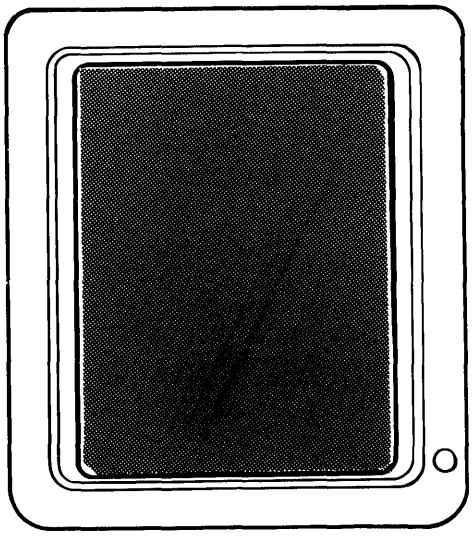


Vertical and horizontal roll

Figure 3

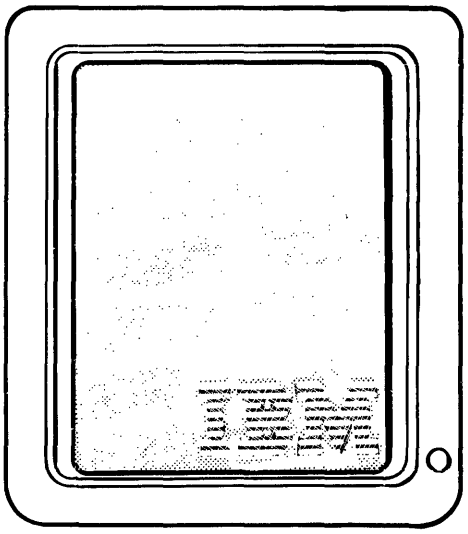


Bright raster

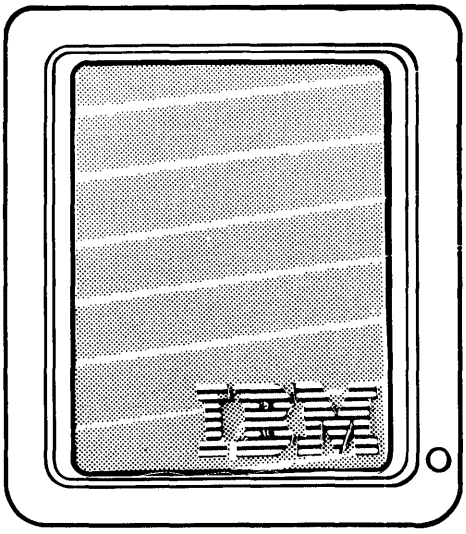


Dim raster

Figure 4

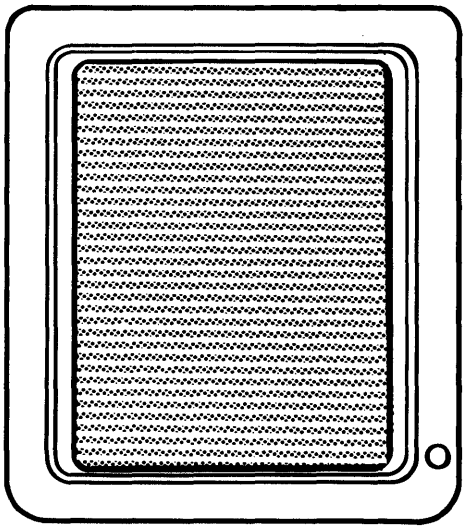


Bright raster w/logo
(Raster brighter than logo)

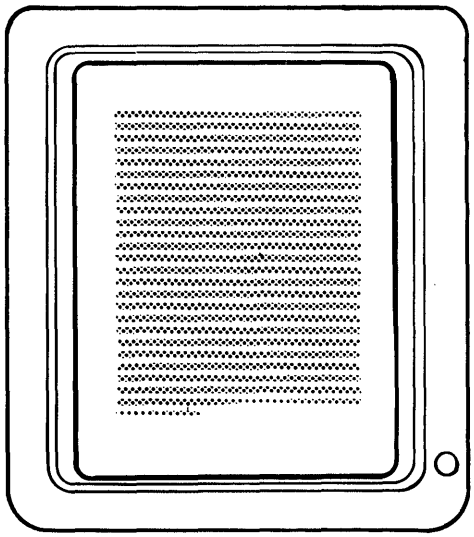


Dim raster w/logo
(Logo brighter than raster)

Figure 5

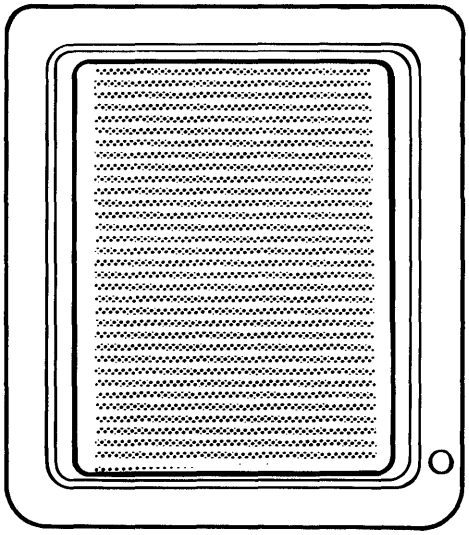


Too Big
(Height and width larger than normal)

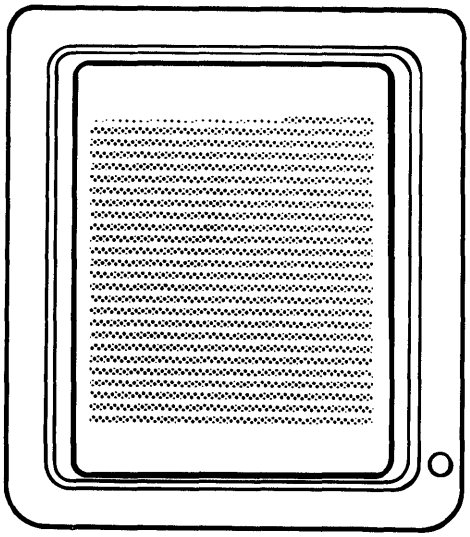


Too small
(Height and width smaller than normal)

Figure 7

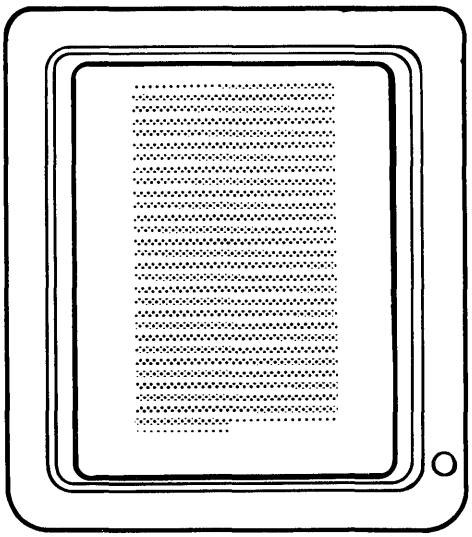


Too tall
(Width normal)

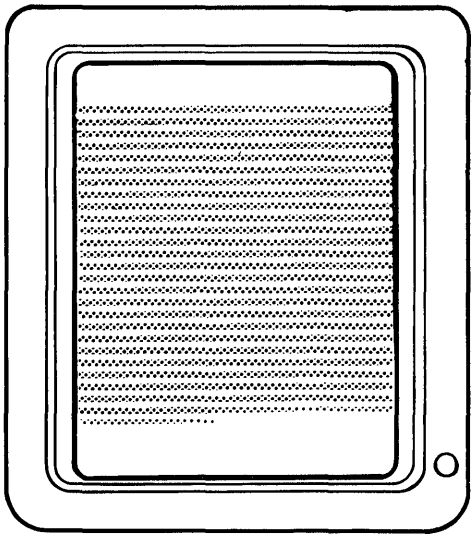


Too short
(Width normal)

Figure 8

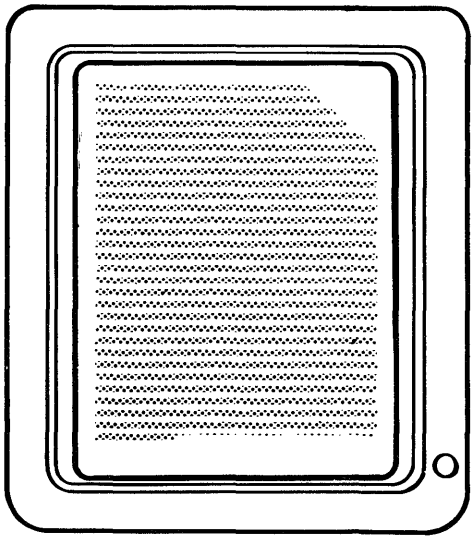


Too narrow
(Height normal)

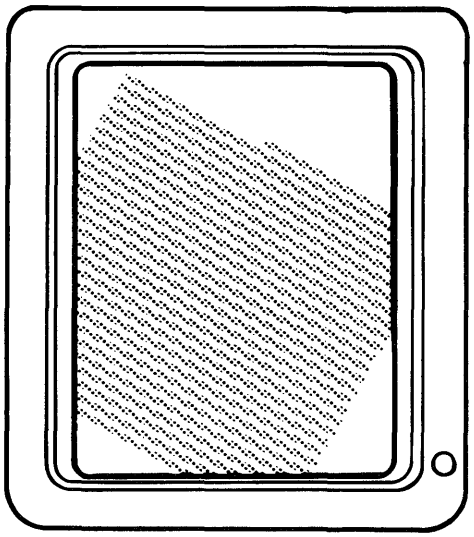


Too wide
(Height normal)

Figure 9

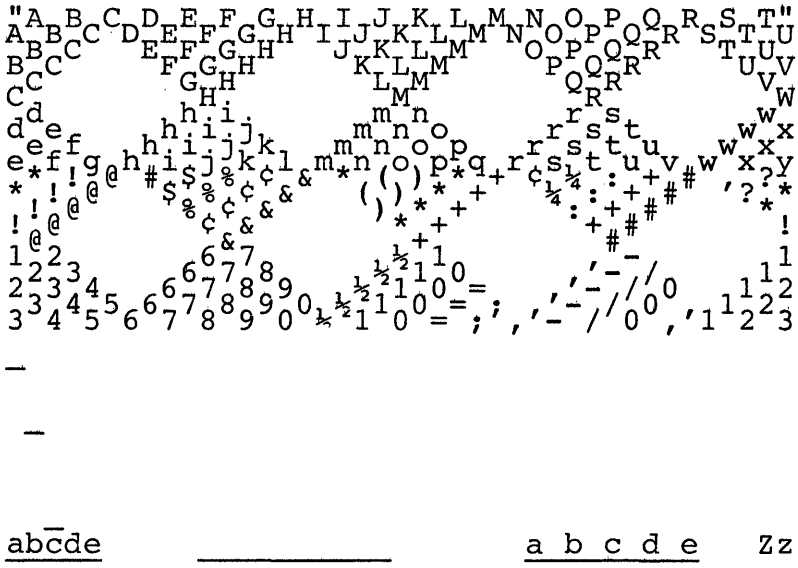


Wrong position
(Note upper right corner)



Tilted

Figure 10



Appendix C-2

APPENDIX D-1

GLOSSARY

This glossary includes definitions developed by the American National Standards Institute (ANSI) and the International Organization for Standardization (ISO). This material is reproduced from the American National Dictionary for Information Processing, copyright 1977 by the Computer and Business Equipment Manufacturers Association, copies of which may be purchased from the American National Standards Institute, 1430 Broadway, New York, NY, 10018.

ANSI definitions are preceded by an asterisk. The symbol "(SCI)" at the beginning of a definition indicates that it is reprinted from an early working document of ISO Technical Committee 97, Subcommittee 1 and that agreement has not yet been reached among its members.

The glossary does not include terms that are defined in non-technical dictionaries and that have no special meaning in data processing. Some terms may have different meanings in other contexts, or to people not familiar with data processing industry usage.

In the interest of clarity and consistency of style, the glossary uses the same method of arranging, organizing, and cross-referencing entries as the American National Dictionary for Information Processing.

A

assigning printer. The action taken by the primary workstation to allow a secondary work station to control the printer.

B

Basic Assurance Test (BAT). A series of tests executed in sequence that are automatically started at POR

BAT. Basic Assurance Test.

bleeder resistor. A resistor located in an electrical circuit which will quickly lower that voltage when power is removed.

break condition. Condition of a data link in which no current flow is detected.

C

D

data link. The physical connection and the connection protocols between the host and communication controller nodes via the host data channel.

display station. A display station consists of a display module, an electronics module and a a keyboard module.

E

escape. Horizontal movement of the printer carrier.

escapement. See escape.

F

Field Replaceable Unit (FRU). A part which can be installed in a customer's office.

FRU. Field Replaceable Unit

G

H

half index. A 1/2 unit vertical paper movement.

I

I/O. input/output.

ID. Identifier.

*** identifier (ID).** A character or group of characters used to identify

or name an item of data and possible to indicate certain properties of that data.

implode. To inwardly explode with force.

index. A unit vertical paper movement.

* **initialize.** (1) To set counters, switches, addresses, or contents of storage to zero or other starting values. (2) To prepare a diskette for use by naming the diskette.

* **input/output (I/O).** Pertaining to a device or to a channel that may be involved in an input process, and at a different time, in an output process.

* **link.** See data link.

locator. Interface board component locator, used to find test points.

logo. The name, symbol or trademark of a company.

MAP Diagnostic Integration (MDI). A diagnostic program on the diagnostic diskette that is a combination of MAPs and loadable diagnostics.

MCU. Mag Card Unit.

MCU Link. An electrical circuit which communicates with the Mag Card Unit.

MDI. MAP Diagnostic Integration.

menu. In computer graphics, options listed in a display image that can be selected by the user of the display device.

multitrack. The function which allows writing on both sides of a diskette with one command.

printer link. An electrical circuit which communicates with the printer.

Problem Determination Diskette. The diskette on which the automated and semi-automated problem determination tests are stored.

Problem Determination Guide. The manual used by the customer when executing Problem Determination Procedures.

Product Support Manual (PSM). The manual used to service the Displaywriter.

PSM. Product Support Manual.

PTXCP. Photo transistor checkpoint on the file control card.

raster. A predetermined pattern of scanning lines that provides uniform coverage of a display space.

reinitialize. A procedure used to format tracks on a diskette. See initialize.

Repair Verify MDI. An MDI which is performed to verify a specific repair action.

RNA. Resident Non-Automatic Diagnostics.

Resident Non-Automatic Diagnostics. Diagnostics contained in the system electronics that do not run during BAT.

S

sector. That portion of a track that can be accessed by a magnetic head during a read/write operation.

sharing link. An electrical circuit which communicates with another workstation.

sheet feed. An attachment for the 5218 printer for automatically feeding individual sheets of paper.

soft error. An error that can be recovered from by an automatic repeat of the failing operation.

system. The IBM Displaywriter System.

T

tab. A multiple unit horizontal movement.

TPHLD. Head Load test point.

TPLED. Light Emitting Diode test point.

trace. In diagnostics, the tracking of MDI steps on the display.

tractor feed. An attachment for the printer for feeding continuous form paper

U

Universal Synchronous Asynchronous Receiver Transmitter (USART). A device used to send and receive data.

USART. Universal Synchronous Asynchronous Receiver Transmitter.

V

W

workstation. A display station and a single or dual diskette unit.

X

Y

Z

APPENDIX D-2

APPENDIX D-3

APPENDIX D-4

APPENDIX D-5

APPENDIX D-6

International Business Machines Corporation
Customer Service Division

S241-6250-6

Printed in USA (Revised) February, 1983