

P/N 4412142
EC 987940

P.M. CHECK LIST

THESE PROCEDURES SHOULD BE REVIEWED
ON EACH CALL AND PERFORMED AS REQUIRED.

VACUUM MACHINE.
REMOVE ANY RIBBON LINT FROM ACTUATOR TIPS.
CLEAN RIBBON GUIDE POSTS.
LUBRICATE MACHINE PER MIM CHAPTER 5.
DO NOT OIL REAR OILERS

INITIALS	DATE	INITIALS	DATE	INITIALS	DATE
COMMENTS		COMMENTS		COMMENTS	
INITIALS	DATE	INITIALS	DATE	INITIALS	DATE
COMMENTS		COMMENTS		COMMENTS	
INITIALS	DATE	INITIALS	DATE	INITIALS	DATE
COMMENTS		COMMENTS		COMMENTS	
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COMMENTS		COMMENTS		COMMENTS	



INTRODUCTION

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HOW TO USE THE MAPs.

CONTENTS OF INTRODUCTION
USE OF MAPS
MAP ORGANIZATION
GLOSSARY

When using the MAPs, you must:

READ CAREFULLY. The MAPs will aid you in finding the failure only if you follow every instruction and answer questions accurately.

FOLLOW THE SEQUENCE. Always do one question at a time. When a procedure precedes the question, do all steps in the procedure before answering the question. Some steps have additional information that pertains to that step. This information is in the MAP flow and is an aid in describing why questions or an action is needed in finding the correct failing FRU. At times the MAP instructions might not seem to point to the problem. However, they can be important in determining the correct failing FRU.

FOLLOW INSTRUCTIONS. Instructions must be carried out exactly and in the order given. Questions rely on instructions immediately before the questions. Do not change the conditions prepared by the instructions before answering the questions. Do not turn power off or disconnect any cable unless informed to do so. Whenever possible the MAPs are written so that 'no' is the unexpected answer and is a machine error.

***** IMPORTANT *****

The word REPLACE in the MAPs represents the most probable failing FRU (field replaceable unit) has been found.

Replace the FRU with a new one. Return machine to operating condition. (Reconnect cables, cards, reinstall all covers).

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***** NOTE *****

When a card or cable is called out as the failing FRU, reseal FRU and VERIFY repair. IF still failing REPLACE FRU.

Go to VERIFY MAPS to verify machine before returning to customer.

SEE MIMs represents check MIMs for location references unless MAPs instruct you to REPLACE a FRU then SEE MIMs and use procedure.

INTERMITTENT STRATEGY.

SYMPTOM MAP 4000 has additional diagnostic information, error codes, description of errors, suspect FRU lists, service checks, and symptom lists to aid in isolating the failing FRU's. This additional information is valuable in diagnosing failures.

USE THE FOLLOWING AIDS:

For operation of General Logic Probe, see MIM chapter 2.

When using the PROBE, connect the power leads to:

- red A1J4D03
- black A1J4D08

Ensure the ground side of the probe lead is grounded.

Probe switch setting = Mult, None and Grd.

Pulsing is:

Up light 'ON' and down light 'ON'

or

Up light alternating with down light

or

One light 'ON' solid and other light flashing.

Always use a CE voltmeter to check voltage lines. Using a general logic probe can give a result that is not correct.

When using the general logic probe in multimode, both lights might flash once when power is switched on. Ignore this flash, it is caused by switching noise.

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USING THE IBM 5225 PRINTER MAINTENANCE ANALYSIS PROCEDURES
MAPs

NOTE

Some 5225's have usage meters installed on the end of the electronic gate. If your machine has one of these meters please return the Usage Meter Reading card using the instructions supplied on the CE Incident Report in the MLM.

The MAPs guide you through the service call using step-by-step procedures that have you follow the trace lines when responding to questions or when leaving or entering a page. The MAPs use a sequential plan for isolating the possible causes of machine failures and point you to the part needing adjustment, repair, or replacement.

NOTE: You will be instructed to 'GO TO' ENTRY POINTS and STEP numbers when progressing through the MAPs. Ensure you go to the instructed 'ENTRY POINT' or STEP.

The MAPs are engineering change controlled and will be updated as needed to give you the latest information possible for diagnosing problems.

Normal end of ribbon life indications:

1. Ink in ribbon used up.
2. Severe ribbon folding.
3. Ribbon material wear.

All of the above conditions represent normal end of 5225 ribbon life and the ribbon needs to be replaced.

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MAP 1000-3

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MAP ORGANIZATION

2000 ENTRY / VERIFY MAP

The 2000 map is the starting point for each service call. From here you will be guided to the ERROR/INDEX MAP (if an error is displayed) or any one of the other MAPs described below.

This MAP is also returned to after completing a repair action to VERIFY correct operation of the 5225.

Start every repair action with the ENTRY/VERIFY MAP ENTRY POINT A.

2100 PRINT QUALITY MAP

This MAP is entered ONLY when PRINT QUALITY is the problem.

3000 ERROR/INDEX MAP

This MAP is entered ONLY from the ENTRY/VERIFY MAP.

This MAP is an index of all errors leading you to the correct MAP to isolate the failing area.

3100 PRINTER CONTROL UNIT MAP (PCU)

This MAP isolates failing FRUs in the PCU.

3200 INTERFACE MAP

This MAP diagnoses interface problems.

3300 ACTUATOR CARRIER MOVEMENT AND CONTROL MAP

This MAP isolates problems in the actuator carrier portion of the machine.

3400 FORMS MOVEMENT AND CONTROL MAP

This MAP isolates problems in the forms movement and control area of the machine.

3500 ACTUATOR MAP

This MAP isolates failing actuators and the associated drive assemblies.

3600 POWER SUPPLY MAP

This MAP isolates problems in the power supply.

3800 RIBBON MOVEMENT AND CONTROL MAP

This MAP isolates problems in the ribbon and ribbon drive assemblies of the machine.

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MAP 1000-4

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3900 OPERATOR PANEL/MODE SWITCH MAP

This MAP isolates problems in the operator keys, the display and the mode switch.

4000 SYMPTOM MAP

This MAP includes procedures to loop tests and analyze the host and printer error log. FRU lists and Descriptions associated with the error log number will be included.

The FRUs will be listed in order of their highest probable failure rate.

Service checks, Symptoms charts, Intermittent service checks and Voltage checks are supplied.

GLOSSARY

ACTIVITY: Action or process of communication with Host system.

AMPLIFIER: An electronic device used to increase a signal.

BUFFER: A portion of storage for temporarily holding input or output data.

CABLE-THRU: A physical connection at the printer which connects more than one printer or work station units on the same cable to the system or controller.

CHAMOIS: A soft leather material used in the Actuator Oil Reservoir.

CMA: Communications Adapter.

CMS: Communications Storage.

COAXIAL CABLE: A cable that has a single conductor with insulation and shield.

COUNTERBALANCE: A mechanical device to balance the weight of forms feed assembly.

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CPI: Characters per inch.

CROSSOVER CONNECTOR: Top card connector.

CS: Control and Sense card.

CTA: Control Adapter.

DETENT: Very slow forms speed.

DRAWING(S): A functional description of printer operation referenced by Maintenance Analysis Procedures for failure isolation.

DRIVER: (EXAMPLE is SERVO POWER DRIVER CARD) - AMPLIFIER.

ENCODER: A device for changing an analog quantity(shaft position, voltage amplitude, etc.) into a digital representation.

ENDPLATE(S): This hardware gives vertical mounting support to the Forms Feed Assembly.

EOF: End of Forms.

EPRM: Erasable Programmable Read Only Memory.

FET: Field Effect Transistor.

FRU: Field Replaceable Unit.

GAUGE: Tool used to measure gap.

GRAPHICS: Symbols generated by a process such as printing, drawing, or hand writing.

GROUP: Eight or nine actuators in one local area of the actuator assembly is a group. (Models 1, 2, 3 and 4 have 8 actuators in a GROUP AND Models 11 and 12 have 9). There may be as many as eight GROUPS to an actuator carrier assembly depending on the model.

HIG: Head Image Generator.

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MAP 1000-6

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HOME: The left most physical position the printer Actuator Carrier Assembly moves to when the machine stops printing. The position RAMP is also used to describe this same position.

I/F: Interface.

INDICATION: Symptom

LEADSCREW: A mechanical device used by the Printer mechanism to drive the Actuator Carrier block assembly.

LED: Light Emitting Diode.

LEM: Linear Emitter.

LINE ACTIVITY: Communications between HOST system and printer through the twinax cable.

LINEAR ENCODER: A electronic device used by the printer to determine the movement and position of the Actuator Carrier during machine operation. It contains an encoder glass assembly and linear emitter block assembly.

LOGICAL PAGE LENGTH: The page length specified by the HOST system.

LPI: Lines per inch.

LPM: Lines per minute.

MAPS: Maintenance Analysis Procedures.

MARGINAL: Close to the lower or upper limit of specification.

MATRIX PRINTER: A printer in which each character is represented by a pattern of dots.

MICROPROCESSOR: An electronic device which processes digital data.

MIM: Maintenance Information Manual.

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MAP 1000-7

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MLM: Maintenance Logic Manual.

MM: Millimetre

MODE: A method of operation.

MST: Monolithic System Technology.

OIL RESERVOIR: Container for oil used to lubricate Actuators.

PADDLE CARD: Connector card.

PCU: Printer Control Unit.

QUADRATURE: The alignment of two square wave signals such that their sum generates four equally spaced pulses.

RAMP: See HOME.

RASTER SCAN: An already determined printing pattern of vertical lines to determine forms vertical registration.

REFERENCE DRAWINGS: Functional descriptions used by MAPS for failure isolation.

REPAIR: Correct problem by replacement or putting back together broken part.

REPLACE: Change out or swap failed FRU with new FRU.

RIPPLE PRINT: An already determined printing pattern with a given pattern shift from line to line of print.

ROS: Read Only Storage.

SCS: SNA Character String.

SLACK: Loose.

SPLIT -BLOCK: Mechanical device for coupling the printer leadscrew to the Actuator Carrier Assembly drive motor.

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SYMMETRY: UP and DOWN period for a given signal are equal.

TACHOMETER: A device for measuring velocity.

THRUST BEARINGS: Support bearings for Actuator Assembly.

TTL: Transistor Transistor Logic.

TURN AROUND TIME: The time needed to stop the actuator Carrier Assembly, reverse its direction, and return it to normal speed.

TWINAX: A cable with two insulated wires that have a common shield.

WL: Wire Latch.

ENTRY/VERIFY

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ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
2100	A	2	001
2100	G	13	050
3000	A	2	001
3100	A	2	001
3200	A	2	001
3300	A	2	001
3400	A	2	001
3500	A	2	001
3600	A	2	001
3800	A	2	001
3900	A	2	001
4000	A	2	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
15	064	2100	A
14	058	2100	A
12	046	3000	A
19	079	3000	A
19	081	3000	A
21	087	3000	A
24	095	3000	A
24	097	3000	A
14	055	3000	A
14	054	3300	34
17	074	3400	B
17	076	3400	B
10	040	3400	77
11	042	3400	77
11	044	3400	77
12	048	3500	A
15	061	3500	A
5	012	3600	A
5	015	3600	A
25	103	3600	A
26	108	3600	PO
7	020	3600	81
16	068	3800	NN
17	072	3800	NN
16	066	3800	88
16	070	3800	88
9	028	3900	A
9	030	3900	A
9	034	3900	A
10	036	3900	A
21	088	3900	A
23	091	3900	A
23	093	3900	A
25	105	3900	A
26	109	3900	A
25	106	3900	A
22	089	3900	A

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MAP 2000-2

ENTRY/VERIFY

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EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
9	029	3900	A-
7	024	3900	A0
10	038	3900	NA
9	032	3900	R-
3	003	4000	A
19	082	4000	A
20	083	4000	A
24	098	4000	A
7	022	4000	E
15	062	4000	G

001

(Entry Point A)

C.E. ENTRY (STARTING) POINT.

The Forms needed for printer test should be at least 375 mm (14.8 inches) wide.

No printing should be performed before these Forms are loaded into the printer.

SYSTEM ERROR LOGS will aid in identifying INTERMITTENT failures.

If machine is operational and has not been powered OFF, you should, attempt to print ERROR LOG.

(Step 001 continues)

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MAP 2000-2

5225 ALL MODELS

MAP 2000-3

ENTRY/VERIFY

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(Step 001 continued)

Go to ERROR LOG procedure =====>

NOTE: If ERROR LOG procedure can not be performed, continue with steps below.

----- ERROR LOG PROCEDURE -----

Ensure correct width Forms are loaded, open Forms Feed assembly and move forms to a non-printed area.

Close the Forms Feed Assembly, and Top Cover.

Press STOP key.

TO PRINT THE LOG:

Turn MODE SWITCH to D.

Press START key.

Keep printout for reference.

(See MIM Chapter 2.)

<===== Continue with step 001.

IS this the FIRST time in this map for this problem?

Y N

002

Are you here to VERIFY a repair?

Y N

003

Go To Map 4000, Entry Point A.

004

Go to Page 4, Step 006, Entry Point C.

005

Go to Page 4, Step 006, Entry Point C.

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MAP 2000-3

006
(Entry Point C)

POWER OFF

Check machine for:

- Machine POWER OFF.
 - Paper correctly loaded.
 - FORMS FEED ASSEMBLY closed and both release latches are engaged.
 - FORMS THICKNESS setting between 0 and 8 (three part forms or less).
- NOTE: A 47 error code will be forced if forms thickness setting is for 4 part forms when running in TEST MODE or MODE SW = 8.

See MIM Chapter 4 for assembly location.

FORMS THICKNESS CONTROL SETTINGS

PART FORMS	SETTING
SINGLE PART	0-3
TWO PART	4-6
THREE PART	6-8
FOUR PART	9-12
FIVE PART	13-16
SIX PART	17-19

-Ensure ACTUATOR CARRIER is on ramp (HOME position).

To ramp ACTUATOR CARRIER turn motor knob CCW until stop is reached. (FORMS FEED ASSEMBLY moves to the rear).

-Top cover closed.

Turn MODE switch to 2.

After POWER ON, the correct indications for the first 5 seconds are:

F in DISPLAY.

READY OFF

ATTENTION ON

POWER ON and check for correct indicators during first five seconds.

Indications correct during first 5 seconds?

Y	N
5	5
A	B

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MAP 2000-4

A B
4 4

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MAP 2000-5

ENTRY/VERIFY

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007

Go to Page 25, Step 099, Entry Point F.

008

After 30 seconds did F change to 0?

Y N

009

Is display D?

Y N

010

After 30 seconds did display change from F ?

Y N

011

Open top cover, bypass interlock switch.
Did you hear the power sequence relay pick?

See MIM Chapter 1.

Y N

012

Go To Map 3600, Entry Point A.

013

Go to Page 21, Step 084,
Entry Point E.

014

Power should not drop.
Is power still on?

Y N

015

Go To Map 3600, Entry Point A.

016

Go to Page 21, Step 084, Entry Point E.

6 6
C D

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MAP 2000-5

C D
5 5

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MAP 2000-6

ENTRY/VERIFY

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017

Go to Page 21, Step 084, Entry Point E.

018

Go to Page 7, Step 019, Entry Point D.

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MAP 2000-6

ENTRY/VERIFY

019

(Entry Point D)

ACTUATOR FAN is located between RIBBON DRIVE motors.

See MIM Figure 4-3.

Open lower front cover and verify ACTUATOR FAN is running.

Is ACTUATOR FAN running ?

Y N

020

Go To Map 3600, Entry Point 81.

021

Verify all the following fans are running:

- 1. Drive Motor fan.
- 2. Logic Gate Cooling fan.
- 3. Servo Power Amp fan.

See MIM figure 4-5.

See MIM figure 4-5.

See MIM figure 4-9.

Are all fans running?

Y N

022

Go To Map 4000, Entry Point E.

023

Is ALARM off? (if installed).

CUSTOMER ACCESS PANEL has ALARM volume control, if ALARM is installed.

Y N

024

ALARM failure.

Go To Map 3900, Entry Point AO.

E
7

5225 ALL MODELS

MAP 2000-8

ENTRY/VERIFY

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025

MODE SWITCH TEST

While holding 2nd MODE key, press and hold STOP key.

DISPLAY will indicate position of MODE SWITCH.

Verify each display using the table below.

Turn MODE SWITCH to each position.

SWITCH POSITION	DISPLAY
TEST	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
A	A
B	B
C	C
D	D
E (STORAGE PRINT)	E
ONLINE	F
BUFFER PRINT	BLANK and ATTENTION OFF

TEST	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
A	A
B	B
C	C
D	D
E (STORAGE PRINT)	E
ONLINE	F
BUFFER PRINT	BLANK and ATTENTION OFF

NOTE:

Model 11,12 use STORAGE PRINT as E position.

Model number can be found by checking machine label behind right rear cover. See MIM 1002.

Release STOP and 2ND MODE keys.

ALL indications correct?

Y N

Y N

9 9
F G

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MAP 2000-8

F G
8 8

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MAP 2000-9

ENTRY/VERIFY

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026

Did ATTENTION LIGHT go off in BUFFER
PRINT position?

Y N

027

Did display go blank?

Y N

028

OPERATOR PANEL failure.

Go To Map 3900, Entry Point A.

029

ATTENTION LIGHT failure.

Go To Map 3900, Entry Point A-.

030

OPERATOR PANEL failure.

Go To Map 3900, Entry Point A.

031

OPERATOR PANEL TEST.

Turn MODE switch to 9.

Press and release START key.

Is READY LIGHT on?

Y N

032

READY LIGHT error.

Go To Map 3900, Entry Point R-.

033

Is ATTENTION LIGHT on and 0 displayed?

Y N

034

OPERATOR PANEL problem.

Go To Map 3900, Entry Point A.

1
0
H

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MAP 2000-9

ENTRY/VERIFY

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035

While pressing each key verify the digit indicated in the table below displayed.

The DISPLAY will be on solid during correct operation.

A flickering DISPLAY indicates a switch failure.

- DISPLAY key = 5.
Alarm will sound if installed.
- SPACE key = 4.
- STOP key = 7.
- START key = 6.
- NEW PAGE key = 3.
- 2ND MODE key = 8.

Is DISPLAY OK?

Y N

036

OPERATOR PANEL error.
Go To Map 3900, Entry Point A.

037

If ALARM is not installed, answer yes to the following question.

Did ALARM sound when DISPLAY key was pressed?

Y N

038

ALARM error.
Go To Map 3900, Entry Point NA.

039

COVER SWITCH TEST.

Turn MODE switch to TEST.

OPEN top cover.

Is 7 displayed?

Y N

040

COVER switch circuit failure.
Go To Map 3400, Entry Point 77.

J
1
0

**5225 ALL MODELS
ENTRY/VERIFY**

MAP 2000-11

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041

Close the top cover.

Is 0 displayed?

Y N

042

Cover switch circuit failure.

Go To Map 3400, Entry Point 77.

043

PLATEN SWITCH TEST.

Open top cover.

Open FORMS FEED ASSEMBLY.

Close the top cover.

Is 7 displayed?

Y N

044

PLATEN switch circuit failure.

Go To Map 3400, Entry Point 77.

045

Open top cover.

Close the FORMS FEED ASSEMBLY. (Ensure both RELEASE latches are engaged.)

Close the top cover.

Set MODE switch to the TEST position.

Observe panel indicators while TEST is running.

Press START.

OFFLINE test will now run and a test pattern will print.

-READY will come ON.

-ATTENTION will remain ON.

-DISPLAY will be 1, while test is running.

(Step 045 continues)

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MAP 2000-11

ENTRY/VERIFY

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(Step 045 continued)
End of test is indicated by:
-READY LIGHT OFF
-ATTENTION LIGHT ON
-DISPLAY = 0

See MIM 2003.

Correct indications will only occur when MODE SWITCH is in TEST position.

Indicators OK?

Y N

046

Go to ERROR INDEX MAP.
Go To Map 3000, Entry Point A.

047

Open top cover.

Check print.

Did any printing occur?

Y N

048

Go to ACTUATOR MAP.
Go To Map 3500, Entry Point A.

049

Go to Page 13, Step 050, Entry Point G.

K L M N
1 1 1 1
3 3 3 3

5225 ALL MODELS

MAP 2000-14

ENTRY/VERIFY

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053

Turn MODE SWITCH to TEST.
Start printing.
After printing,
turn MODE SWITCH to 6, Press start.
Print at least 3 pages of TEST pattern.

Did an ERROR code occur?

Y N

054

(Missing dots should not be
diagnosed bad in this step.)

Go To Map 3300, Entry Point 34.

055

Go To Map 3000, Entry Point A.

056

Go to Page 15, Step 059, Entry Point B.

057

Go to Page 15, Step 059, Entry Point B.

058

Go To Map 2100, Entry Point A.

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MAP 2000-14

059
(Entry Point B)

See MIM 2006 Actuator failure.

Compare ACTUATOR TEST printout.

Check for horizontal dash lines to the right of printed numbers.

NOTE: Line missing or dots missing to right of number indicates actuator failure. Do not ignore missing dots any more.

Is printing OK?

Y N

060

Are dots intermittent?

Y N

061

Go to ACTUATOR MAP.
Go To Map 3500, Entry Point A.

062

Go To Map 4000, Entry Point G.

063

Check vertical alignment
See Note: =====>

VERTICAL ALIGNMENT:

-Groups of vertical lines at end of printout are to check vertical alignment.
Ensure FORMS TRACTOR is adjusted to hold forms tightly and Forms Horizontal knob works correctly (forms tractors move when forms horizontal knob is turned).

Is vertical alignment OK?

Y N

064

Go to PRINT MAP.
Go To Map 2100, Entry Point A.

Print quality covers adjustments, forms feed, actuator carrier assembly and service checks.

065

Turn MODE switch to 4.

Override cover interlock switch.

See MIM 1009.

Press START.

Is **DISPLAY = 4**?

Y N

066

Press STOP

Close the top cover.

Go to RIBBON MAP.

Go To Map 3800, Entry Point 88.

067

Is ribbon running with normal motor sound?

Y N

068

Press STOP

Close the top cover.

Go to RIBBON MAP.

Go To Map 3800, Entry Point NN.

069

By hand, reverse ribbon direction.

See Note: ==>

NOTE:

To reverse ribbon, stop the rotation of the ribbon spool **NOT BEING DRIVEN**. If ribbon check (Display =88 or 89) occurs press STOP key then press start key to ensure ribbon did reverse.

Did ribbon reverse ?

Y N

070

Ribbon will not reverse.

Press STOP key.

Go To Map 3800, Entry Point 88.

Q
1
6

**5225 ALL MODELS
ENTRY/VERIFY**

MAP 2000-17

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071

**After ribbon has reversed is ribbon running
with normal motor sound?**

If ribbon reverses twice before running nine yards (about 1 minute) of ribbon, a ribbon jam will be indicated (Display will indicate an 88).

Y N

072

Press STOP key.
Go to RIBBON MAP.
Go To Map 3800, Entry Point NN.

073

Press Stop.
Check the 5 Forms Feed electronic adjustments.

See MIM 3104.

**Are all 5 adjustments indicating '0' in the
display?**

Y N

074

Go To Map 3400, Entry Point B.

075

Check the 3 actuator carrier electronic
adjustments.

See MIM 3105.

**Are all 3 adjustments indicating '0' in the
display?**

Y N

076

Go To Map 3400, Entry Point B.

1
R
001

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MAP 2000-17

R
1
7

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MAP 2000-18

ENTRY/VERIFY

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077

Turn MODE switch to ONLINE.

Press Stop Key.

Press and hold 2ND MODE KEY. Then press
CANCEL KEY.

See Note ==>

NOTE:

CANCEL KEY causes the POWER-ON test to run after moving MODE switch to ONLINE. This verifies printer operates correctly before going ONLINE.

ONLINE permits HOST system to communicate with printer.

End of operation is indicated by:

- READY LIGHT OFF
- ATTENTION LIGHT ON
- DISPLAY = BLANK

5280 System see Note: ==>

NOTE: FOR 5280 SYSTEMS ONLY.

Do NOT make the printer ready at this time. Run program PRTRPOLL. See 5280 MIM.

Normal indications:

- ready light off
- attention light on
- display blank

DD is used as an error indicator when host attempts to communicate with this device and has no reponse.

Is DISPLAY BLANK and ATTENTION LIGHT ON?

Y N

|

078

Is Display A?

Y

N

|

|

|

2 1 1
0 9 9
S T U

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MAP 2000-18

T U
1 1
8 8

**5225 ALL MODELS
ENTRY/VERIFY**

MAP 2000-19

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079

Go to ERROR/INDEX MAP
Go To Map 3000, Entry Point A.

080

5280 System see Note ==>

Hit Reset Key, then Start Key.

Is Display Blank?

Y N

081

Go to ERROR/INDEX MAP
Go To Map 3000, Entry Point A.

082

5280 System see Note ==>

Machine has tested correctly with the off line tests.

To verify repair, run printer ON-LINE.
If no problem, return machine to customer.
If problem is still suspected see the SYMPTOM CHART in Table of Contents of Map 4000.
Go To Map 4000, Entry Point A.

NOTE: FOR 5280 SYSTEMS ONLY.

If the HOST to this PRINTER is not a 5280 SYSTEM, you should have a BLANK in the Display, when the HOST SYSTEM has power ON and is OPERATIONAL.

A D will remain in the PRINTER Display until, the 5280 SYSTEM attempts to send information to this device. (Ex. Running TPRNT from Host).

A DD on display informs you that there is no line activity, a condition not an error.

DD is used as an error indicator when host attempts to communicate with this device and has no reponse - to see a blank on display, run program TPRNT from host.

NOTE: FOR 5280 SYSTEMS ONLY.

Cancel PRTRPOLL program.
Make printer ready.
Run TPRNT to verify repair.

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MAP 2000-19

S
1
8

5225 ALL MODELS

MAP 2000-20

ENTRY/VERIFY

PAGE 20 OF 26

083

5280 System see Note ==>

Machine has tested correctly with the off line tests.

To verify repair, run printer ON-LINE.

If no problem, return machine to customer.

If problem is still suspected see the SYMPTOM CHART in Table of Contents of Map 4000.

Go To Map 4000, Entry Point A.

NOTE: FOR 5280 SYSTEMS ONLY.

Cancel PRTRPOLL program.

Make printer ready.

Run TPRNT to verify repair.

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PEC 323243

MAP 2000-20

5225 ALL MODELS
ENTRY/VERIFY
PAGE 21 OF 26

MAP 2000-21

084
(Entry Point E)

Press Stop to clear error.

Wait 15 seconds.

Turn MODE SWITCH to BUFFER PRINT

While holding 2nd MODE key, press and hold STOP key.

Is DISPLAY =BLANK?

Y N

085

Release 2nd MODE key, and STOP key.

PRESS and RELEASE START

Did ATTENTION light go off and then on?

Y N

086

Is ATTENTION light off?

Y N

087

POWER OFF.

Place Actuator Carrier in ramp (home) position.

Turn MODE SWITCH to 2.

POWER ON (wait 30 seconds)

Go to ERROR INDEX MAP 3000.

Go To Map 3000, Entry Point A.

When machine is powered on, CE should wait approximately 30 seconds for voltage (+50v) to turn ON and power ON diagnostic to be completed.

088

MODE SWITCH PLUG OFF?

Go To Map 3900, Entry Point A.

2 2
2 2
V W

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MAP 2000-21

V W
2 2
1 1

5225 ALL MODELS

MAP 2000-22

ENTRY/VERIFY

PAGE 22 OF 26

089

MODE SWITCH PLUG OFF?

Go To Map 3900, Entry Point A.

090

MODE SWITCH TEST

Press and hold 2ND MODE key.

Then, press and hold STOP key.

DISPLAY will indicate position of MODE SWITCH.

Ensure each display is OK using table below.

Turn MODE SWITCH to each position.

SWITCH POSITION	DISPLAY
ONLINE	F
BUFFER PRINT	BLANK
	ATTENTION OFF
TEST	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
A	A
B	B
C	C
D	D
E (STORAGE PRINT)	E

NOTE:

Model 11,12 use STORAGE PRINT as E position.

Model number can be found by checking machine label behind right rear cover. See MIM 1002.

Each display OK?

Y N

Y N

2 2
3 3
X Y

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MAP 2000-22

X Y
2 2
2 2

**5225 ALL MODELS
ENTRY/VERIFY**

MAP 2000-23

PAGE 23 OF 26

091

Go to OPERATOR PANEL MAP.
Go To Map 3900, Entry Point A.

092

Turn MODE switch to 9.

Press START.

While pressing each key verify the digit indicated in the table below is displayed.

While pressing each key the DISPLAY will be on solid (no flickering).

Flickering DISPLAY indicates an intermittent switch.

DISPLAY	= 5.
Alarm will sound if installed.	
SPACE	= 4.
STOP	= 7.
START	= 6.
NEW PAGE	= 3.
2ND MODE	= 8.

Is DISPLAY OK for each key?

Y N

093

Go to PANEL MAP.
Go To Map 3900, Entry Point A.

094

Place actuator carrier on ramp (home position).

Press and release STOP key.

Turn MODE switch to 2.

Press START.

POWER ON TESTS will run.

If error displays, go to ERROR INDEX MAP 3000
Entry Point A.

Did 0 display?

Y N

2
2 4
4 A
Z A

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MAP 2000-23

Z A
2 A
3 2
3

5225 ALL MODELS

MAP 2000-24

ENTRY/VERIFY

PAGE 24 OF 26

095

Go To Map 3000, Entry Point A.

096

Turn MODE switch to TEST.

Press START.

Test will run.

Did test run and is 0 in display?

Y N

097

Go To Map 3000, Entry Point A.

098

An intermittent error.

Get more information about failure.

Go To Map 4000, Entry Point A.

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EC 997163

PEC 323243

MAP 2000-24

ENTRY/VERIFY

099

(Entry Point F)

Is ATTENTION LIGHT ON ?

Y N

100

Was F in display for first 5 seconds?

Y N

101

Check for +5 volts on logic board.

Meter between pins A1L1E11(+) and A1M1E11(-) for +5 VDC +/-10% .

See drawing AA045.

Was +5 VDC OK ?

Y N

102

Check for +5 VDC between A1M2D03(+) and A1M2D08(-).

Is +5 VDC present ?

Y N

103

+5 VDC missing

Go To Map 3600, Entry Point A.

104

Open land pattern on LOGIC board.

105

Go To Map 3900, Entry Point A.

106

Operator Panel problem

Go To Map 3900, Entry Point A.

26AB

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MAP 2000-25

A
B
2
5

5225 ALL MODELS

MAP 2000-26

ENTRY/VERIFY

PAGE 26 OF 26

107

POWER OFF.

Probe A1T2D12 for Power On Reset.

POWER ON.

Did probe indicate down for approximately 10 seconds, then go up?

Y N

108

Go To Map 3600, Entry Point PO.

109

Go To Map 3900, Entry Point A.

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EC 997163 PEC 323243

MAP 2000-26

PRINT QUALITY

PAGE 1 OF 9

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
2000	A	1	001
4000	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
9	008	2000	A
2	003	2000	G
9	007	3500	A
9	005	4000	A

001

(Entry Point A)

Check machine for:

Paper correctly loaded.

FORMS FEED ASSEMBLY closed.

FORMS THICKNESS CONTROL SETTING
CORRECT

Top cover closed.

Ensure ACTUATOR CARRIER is on ramp.

FORMS THICKNESS CONTROL SETTING.

PART	FORMS	SETTING
SINGLE	PART	0-3
TWO	PART	4-6
THREE	PART	6-8
FOUR	PART	9-12
FIVE	PART	13-16
SIX	PART	17-19

POWER ON machine.

Ensure MODE switch is in TEST position.

Press START.

Printout contains:

RIPPLE PRINT TEST - MODELS 1,2,3,4

First six lines are 10 characters/inch at 6 lines/inch.

Next eight lines are 10 characters/inch at 8 lines/inch.

Next six lines are 15 characters/inch at 6 lines/inch.

Next eight lines are 15 characters/inch at 8 lines/inch.

OFFLINE test will now run.

READY will turn ON.

ATTENTION will remain ON.

DISPLAY will be 1

Correctly completed test in MODE switch position TEST is indicated by:

READY OFF

ATTENTION ON

DISPLAY 0

RIPPLE PRINT TEST - MODELS 11,12

First four lines are 10 characters/inch at 6 lines/inch.

Next six lines are 10 characters/inch at 8 lines/inch.

COMPARE THE PRINT OUT WITH MIM 2003

(Step 001 continues)

PRINT QUALITY

PAGE 2 OF 9

(Step 001 continued)

ACTUATOR TEST:

Horizontal lines to the right of printed numbers.

VERTICAL ALIGNMENT TEST:

Groups of vertical lines at end of printout.

DEFINITION OF PRINT QUALITY

Check printout for variable densities (light, dark or cut off printing, smudged), character spacing not even, over printing, or character format.

NOTE: We are only looking at character spacing and line spacing at this point. Ignore missing wire and groups.

Sample printouts are included in MIM 2000.

Quality of print is normal?

Y N

002

See Print Quality Symptoms List.

Go to Page 3, Step 004, Entry Point B.

003

**NOT A PRINT QUALITY PROBLEM OR
PATTERN PROBLEM.**

Go To Map 2000, Entry Point G.

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MAP 2100-2

PRINT QUALITY

PAGE 3 OF 9

004

(Entry Point B)

PRINT QUALITY SYMPTOM LIST

Note: Print Quality Symptom List should be used to isolate a print quality failure. Perform service checks and/or repair action as needed, for one or more failures.

CONTENTS OF QUALITY SYMPTOM LIST

- A- VERTICAL DOT ALIGNMENT
- B- HORIZONTAL DOT ALIGNMENT
- C- EXTRA DOTS
- D- SMUDGING
- E- DROPPING DOTS
- F- CHARACTER REGISTRATION
- G- LIGHT AND DARK PRINTING
- H- PARTIAL OR FULL LINE MISSING
- I- POOR COPIES
- J- DOUBLE PASS BAR CODE/RPQ

A- VERTICAL DOT ALIGNMENT

- | | |
|---|---------------------------------------|
| 1. FORMS TENSION | SEE OPERATOR GUIDE (FORMS
LOADING) |
| 2. TRACTOR LOOSE. | SEE MIM 3407 |
| 3. HORIZONTAL ADJUSTMENT
ROD LOOSE | SEE MIM 3406 |
| 4. FORMS BOX NOT ALIGNED | SEE OPERATOR GUIDE (FORMS
LOADING) |
| 5. NOT ENOUGH FORMS
DRAG | SEE MIM 3402 |
| 6. FORMS ASSEMBLY PIVOT
BOLTS | SEE MIM 3402 |
| 7. FORMS ASSEMBLY - SIDE
THRUST SCREWS | SEE MIM 3402 |

(Step 004 continues)

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MAP 2100-3

PRINT QUALITY

PAGE 4 OF 9

(Step 004 continued)

8. FORMS FEED ASSEMBLY LOOSE (Side plate screws loose.)	SEE MIM 3402
9. THRUST BEARINGS	SEE MIM 3306
10. VERTICAL BEARINGS (ANTI-ROTATION)	SEE MIM 3306
11. LEADSCREW BEARINGS	SEE MIM 3309
12. LEADSCREW NUTS AND BUSHINGS	SEE MIM 3309
13. NOSE GUIDE	SEE MIM 3308
14. ACTUATOR (ALIGNMENT)	SEE MIM 3308
15. LINEAR ENCODER (LEM)	SEE MIM 3303

B- HORIZONTAL DOT
ALIGNMENT

Small and Large CHARACTERS

1. BINDS	
A. FORMS DRAG TENSION	SEE MIM 3402
B. E.O.F. (End Of Forms) JAMMED	SEE MIM 3409
2. CHECK ELECTRONIC ADJUSTMENT OF ACTUATOR CARRIER AND FORMS	SEE MIM 3104 and 3105
3. PULLEY COVER RUBBING	SEE MIM 3403
4. TRACTOR	SEE MIM 3405
5. BELT TENSION	SEE MIM 3403
6. PULLEY LOOSE	SEE MIM 3403
7. PULLEY ALIGNMENT	SEE MIM 3403
8. ENCODER WHEEL LOOSE	SEE MIM 3404
9. GUIDE (NOSE PIECE)	SEE MIM 3308
10. ACTUATOR (single)	SEE MIM 3308
11. A1L2 or A1K2 CARD BAD	SEE MIM 3103
12. FORMS MOTOR BAD	SEE MIM 3403

(Step 004 continues)

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MAP 2100-4

PRINT QUALITY

PAGE 5 OF 9

(Step 004 continued)

C- EXTRA DOTS

Other than Selected

- | | |
|--|--------------|
| 1. ACTUATOR (BAD) | SEE MIM 3308 |
| 2. ACTUATOR/PLATEN
ADJUSTMENT (TIGHT) | SEE MIM 3402 |

D- SMUDGING

A SMEAR:

- | | |
|---|--------------|
| 1. FORMS THICKNESS CAM
SETTING NOT CORRECT | SEE MIM 3410 |
| 2. RIBBON SHIELD MISSING,
DAMAGED, TO MUCH INK. | |
| 3. ACTUATOR HAS FOREIGN
MATERIAL ON TIP | |
| 4. FORMS HOLE PUNCHES
(CHAD) COLLECTED IN
MACHINE | |
| 5. RIBBON WORN | |
| 6. ACTUATOR (Wire out) | |
| 7. RIBBON SNAG | SEE MIM 3402 |
| 8. MULTIPLE PRINTING
(Verify Forms Thickness
Cam setting) | SEE MIM 3410 |
| 9. NOT ENOUGH FORMS DRAG | SEE MIM 3402 |
| 10. PLATEN GAP ADJUSTMENT | SEE MIM 3402 |
| 11. RIBBON DRIVE POSITION | SEE MIM 3804 |

B. LARGE DOTS

- | | |
|---|--------------|
| 1. ENDPLATE TO PRINT
ASSEMBLY ADJUSTMENT | SEE MIM 3402 |
| 2. CLOSING FORMS FEED
ASSEMBLY WHEN ACTUATOR
CARRIER NOT ON RAMP. | |

(Step 004 continues)

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MAP 2100-5

PRINT QUALITY

PAGE 6 OF 9

(Step 004 continued)

E- DROPPING DOTS

- | | |
|--|--------------|
| 1. FORM THICKNESS CAM SETTING. | SEE MIM 3410 |
| 2. PLATEN GAP ADJUSTMENT | SEE MIM 3402 |
| 3. FRONT OILER (DRY)
REAR OILER (TO MUCH OIL) | SEE MIM 3307 |
| 4. REAR OILER (INTERFERENCE) | SEE MIM 3307 |
| 5. ACTUATOR SCREW BROKEN OR LOOSE. | SEE MIM 3308 |
| 6. CONNECTOR (ELECTRICAL) LOOSE. | |
| 7. ACTUATOR FAILURE (BROKEN MECHANICAL WIRE). | SEE MIM 3308 |
| 8. ACTUATOR CARRIER THRUST BEARING | SEE MIM 3306 |

F- CHARACTER REGISTRATION

LINE TO LINE

A. VERTICAL:

- | | |
|---|--------------------|
| 1. PRINT TOO CLOSE TO OUT FOLD. | SEE OPERATOR GUIDE |
| 2. OPENING COVER WHILE PRINTING. | |
| 3. CUSTOMER TEARING OFF FORMS WHILE PRINTING. | |
| 4. FORMS NOT TRACKING STRAIGHT. | SEE OPERATOR GUIDE |
| 5. FORMS DRAG. | SEE MIM 3402 |
| 6. FORMS PULLEY LOOSE OR RUBBING COVER. | SEE MIM 3403 |
| 7. FORMS ENCODER LOOSE | SEE MIM 3404 |
| 8. FORMS TRACTOR BINDING | SEE MIM 3407 |
| 9. PROGRAM PROBLEM (FORMS SPACING). | |

(Step 004 continues)

PRINT QUALITY

PAGE 7 OF 9

(Step 004 continued)

B. HORIZONTAL :

- 1. ACTUATOR CARRIER LINEAR ENCODER (LEM) SEE MIM 3303
- 2. HORIZONTAL ADJUSTMENT ROD (VERNIER) LOOSE. SEE MIM 3406
- 3. HORIZONTAL FORMS TENSION (TRACTOR TO TRACTOR SETTING) SEE MIM 3407
- 4. FORMS THICKNESS CAM SETTING. SEE MIM 3410

 G- LIGHT AND DARK
 PRINTING

- 1. RIBBON WEARING OUT.
- 2. FORMS THICKNESS SETTING NOT CORRECT OR THE CAM FOLLOWER IS BINDING. SEE MIM 3302 AND 3406
- 3. PLATEN OUT OF ADJUSTMENT. SEE MIM 3402
- 4. RIBBON FOLDED.

 H- PARTIAL OR FULL LINE
 MISSING

- 1. FORMS THICKNESS CAM FOLLOWER IS BINDING AND NOT CLOSING QUICK ENOUGH. SEE MIM 3402
- 2. FORMS FEED ASSEMBLY PIVOT BOLTS TOO TIGHT SEE MIM 3402
- 3. FORMS FEED ASSEMBLY SIDE THRUST SCREWS TOO TIGHT SEE MIM 3402
- 4. RIBBON DRIVE BINDS SEE MIM 3804

(Step 004 continues)

PRINT QUALITY

(Step 004 continued)

- | | |
|---|--------------|
| AGINST MAIN SHAFT | |
| 5. END PLATE TO PRINT ASSEMBLY ADJUSTMENT | SEE MIM 3402 |
| 6. CAM FOLLOWER SPRING BAD | SEE MIM 3306 |
| 7. ACTUATOR MAIN SHAFT END ADJUSTMENT | SEE MIM 3402 |
| 8. LATCH BINDING | SEE MIM 3306 |
| 9. ACTUATOR CARRIER BEARINGS BAD | SEE MIM 3310 |
| 10. RIBBON LIFTED | |
| 11. RIBBON FOLDED OR WORN | |
| 12. RIBBON SHIELD NOT INSTALLED CORRECTLY | SEE MIM 3807 |
| 13. PLATEN GAP ADJUSTMENT | SEE MIM 3402 |

I- POOR COPIES

- | | |
|---|--------------|
| 1. FORMS THICKNESS SETTING NOT CORRECT. | SEE MIM 3410 |
| 2. FORMS THICKNESS NOT OPERATING CORRECTLY. | SEE MIM 3410 |
| 3. FORMS SLIPPING. | SEE MIM 3403 |
| 4. FORMS SPECIFICATIONS. | |

J- DOUBLE PASS
BAR CODE/RPQ

SMUDGING

- | | |
|------------------------|--------------|
| 1. FORMS THICKNESS CAM | SEE MIM 3410 |
|------------------------|--------------|

(Step 004 continues)

PRINT QUALITY

PAGE 9 OF 9

(Step 004 continued)

SETTING NOT CORRECT

2. VERTICAL MISPLACED DOT

.

.

.

.

.

.

3. FORMS DRAG TENSION

4. HORIZONTAL REGISTRATION

.

.....

.

SEE VERTICAL DOT ALIGNMENT ABOVE

SEE MIM 3402

SEE HORIZONTAL DOT ALIGNMENT ABOVE

Print Quality OK?

Y N

005

Go To Map 4000, Entry Point A.

006

All DOTS present ?

See Actuator printouts in MIM 2000.

Y N

007

Missing DOT problem

Go To Map 3500, Entry Point A.

008

GO TO VERIFY MAP

Go To Map 2000, Entry Point A.



ERROR INDEX

PAGE 1 OF 9

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
2000	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	004	2000	A
3	007	2000	A
3	010	2000	A
4	012	2000	A
3	011	2000	A
9	015	4000	A

001

(Entry Point A)

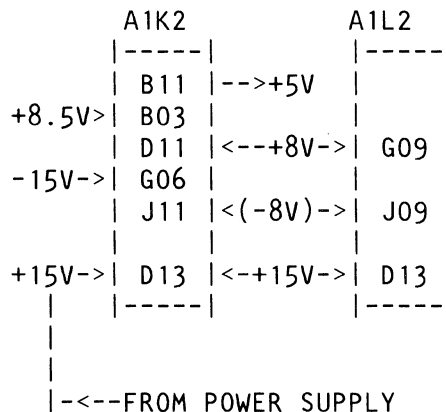
BOARD VOLTAGE CHECKS.

Check for -15 vdc (+10% or -8%) between A1K2G06(-) and A1K2D08(GROUND)

Check for +8.5 vdc (+10% or -8%) between A1K2B03(+) and A1K2D08(GROUND)

Check for +15 vdc (+10% or -8%) between A1L2D13(+) and A1K2D08(GROUND)

Check for -5 vdc (+10% or -8%) between A1U3B06(-) and A1Q2D08(GROUND)



**A1 BOARD
CONNECTIONS**

ALL voltages check OK?

Y	N
2 2	
A B	

A B
1 1

5225 ALL MODELS

MAP 3000-2

ERROR INDEX

PAGE 2 OF 9

002

SUPPLY VOLTAGES MISSING! POWER PROBLEM.

If one of the voltages is missing go to the MAP

specified below.

+15 vdc missing GO TO MAP 3600, ENTRY 17

-15 vdc missing GO TO MAP 3600, ENTRY 15

+8.5 vdc missing GO TO MAP 3600, ENTRY 85

-5 vdc missing GO TO MAP 3600, ENTRY 5-

003

Check for +8 vdc (+10% or -8%) between A1L2G09(+) and A1K2D08 (GROUND)

Check for -8 vdc (+10% or -8%) between A1L2J09(-) and A1K2D08 (GROUND)

Are BOTH voltages present?

Y N

004

REPLACE A1K2 card.

Check all voltages from step 001.

Verify repair.

Go To Map 2000, Entry Point A.

005

Check for +5 vdc (+10% or -8%) between A1K2B11(+) and A1K2D08(GROUND)

Is voltage present?

Y N

4 3
C D

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MAP 3000-2

ERROR INDEX

PAGE 3 OF 9

006

POWER OFF.

Disconnect A1Y3.

POWER ON.

Check for +5 VDC between A1K2B11(+) and A1K2D08 (ground).

Is +5 volts present?

Y N

007

REPLACE A1K2 card.

Check all voltages from step 001.

Go To Map 2000, Entry Point A.

008

POWER OFF.

Reconnect A1Y3.

Disconnect EOF assembly cable.

POWER ON.

Is +5 volts present at A1K2B11?

Y N

009

POWER OFF.

Remove Linear Encoder cover.

Disconnect Linear Emitter cable.

POWER ON.

Is +5 volts present at A1K2B11?

Y N

010

POWER OFF.

REPAIR/REPLACE cable A1Y3 to EOF sensor or Linear Emitter Amplifier.

Go To Map 2000, Entry Point A.

011

POWER OFF.

REPLACE Linear Emitter Amplifier.

Go To Map 2000, Entry Point A.

C E
2 3

5225 ALL MODELS

MAP 3000-4

ERROR INDEX

PAGE 4 OF 9

012

POWER OFF.
REPLACE EOF Sensor.

Go To Map 2000, Entry Point A.

013

Go to Page 5, Step 014, Entry Point B.

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MAP 3000-4

ERROR INDEX

PAGE 5 OF 9

014

(Entry Point B)

The following table describes MAP ENTRIES for errors displayed:

The digit now displayed is the first digit of the error code.

Press 2ND MODE to display the second digit.

***** NOTE *****
 IF THE ERROR DISPLAYED CHANGES AFTER YOU HAVE ENTERED A MAP, ON POWER DOWN/POWER UP SEQUENCES, YOU ARE SEEING CHANGING SYMPTOMS.
 IF THIS OCCURS, LEAVE THE MAP YOU ARE IN AND GO TO MAP 4000, ENTRY POINT B TO REPLACE THE FRU(S) THAT ARE COMMON TO THE TWO OR MORE ERROR CODES THAT HAVE BEEN DISPLAYED.

VALID ERROR DISPLAYED	MAP ENTRY (Errors with MODE SWITCH TEST running)
11	Printer Control Unit problem. (CTA card). Go to MAP 3100 ENTRY POINT 11.
22	Printer Control Unit problem. (I/F card). Go to MAP 3100 ENTRY POINT 22.
31	Head servo problem. Go to MAP 3300 ENTRY POINT 31.
32	Head servo problem. Go to MAP 3300 ENTRY POINT 32.
34	Head servo problem. Go to MAP 3300 ENTRY POINT 34.
35	Head servo problem. Go to MAP 3300 ENTRY POINT 35.

(Step 014 continues)

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EC 323243 PEC 869365

MAP 3000-5

ERROR INDEX

(Step 014 continued)

- 36 | Head servo problem.
Go to MAP 3300 ENTRY POINT 36.
- 37 | Head servo problem.
Go to MAP 3300 ENTRY POINT 36.
- 38 | Head servo problem.
Go to MAP 3300 ENTRY POINT 38.
- 39 | Head servo problem.
Go to MAP 3300 ENTRY POINT 36.

NOTE 1

Visually check for mechanical problems, in Forms DRIVE AND EMITTER area.

Remove the FORMS EMITTER cover, inspect for loose and/or damaged emitter, coupling, transducer or damaged/dirty encoder wheel.

- 41 | Forms servo problem.
Go to MAP 3400 ENTRY POINT 41.
- 42 | Forms servo problem.
SEE NOTE 1 ABOVE
Go to MAP 3400 ENTRY POINT 42.
- 43 | Forms servo problem.
SEE NOTE 1 ABOVE
Go to MAP 3400 ENTRY POINT 43.
- 45 | Forms servo problem.
SEE NOTE 1 ABOVE
Go to MAP 3400 ENTRY POINT 45.
- 46 | Forms servo problem.
SEE NOTE 1 ABOVE
Go to MAP 3400 ENTRY POINT 46.

(Step 014 continues)

ERROR INDEX

PAGE 7 OF 9

(Step 014 continued)

- | | |
|----|--|
| 47 | Forms servo problem.
SEE NOTE 1 ABOVE
Go to MAP 3400 ENTRY POINT 47. |
| 48 | Forms servo problem.
SEE NOTE 1 ABOVE
Go to MAP 3400 ENTRY POINT 48. |
| 77 | Check COVER or PLATEN for being correctly closed.
Go to MAP 3400 ENTRY POINT 77. |
| 81 | Power supply problem. (No +50/+10 VDC)
Go to MAP 3600 ENTRY POINT 81. |
| 83 | Printer Control Unit problem. (HIG card)
If MOD-11, or MOD-12 suspect (STH card).
Go to MAP 3100 ENTRY POINT 83. |
| 84 | Printer Control Unit problem. (W/L card).
Go to MAP 3500 ENTRY POINT 84. |
| 85 | Printer Control Unit problem. (W/L card).
Suspect A1M2 W/L card and A1P2 CTA card.
Go to MAP 3500 ENTRY POINT 85. |
| 86 | Head jumpers not valid. (Control/Sense Card)
See MIM 3103 or drawing AB050 for correct location.
If jumpers are o.k., REPLACE A1N2 and A1P2.
Install correct jumpers on new card. |
| 87 | CTA timers failed. (Control/Sense Card)
REPLACE A1N2 and A1P2 cards. (CHECK JUMPERS). |
| 88 | Ribbon problem.
Go to MAP 3800 ENTRY POINT 88. |
| 89 | Ribbon card.
Go to MAP 3800 ENTRY POINT 88. |

(Step 014 continues)

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EC 323243 PEC 869365

MAP 3000-7

ERROR INDEX

PAGE 8 OF 9

(Step 014 continued)

CC	<p>If OFF LINE - during Power On diagnostics, suspect A1R2 (KJS) card for MOD-11 or MOD-12. Go to MAP 3100 ENTRY POINT CC.</p> <p>If ON LINE - AFTER Power On diagnostics have run. (ALL MODELS) Our address was not received. (MODE SWITCH to Buffer Print or On Line) Ensure the host is attempting to address the printer. Go to MAP 3200 ENTRY POINT CC.</p>
DD	<p>If ONLINE, (MODE SWITCH set to On Line or Buffer Print) No line activity or the cable from the Host is not connected. This may not be an error condition. Ensure the Host is powered on and attempting to communicate with the printer. Go to MAP 3200 ENTRY POINT DD.</p> <p>If OFF LINE, PRINTER CONTROL UNIT PROBLEM (CMS CARD) Go to MAP 3100 ENTRY POINT DD.</p>
EE	<p>End of Forms, Forms Jam, or printer control problem. (CMS card) If MODE SWITCH is set to 2, Go to MAP 3100 ENTRY POINT EE.</p> <p>If MODE SWITCH not set to 2, Go to MAP 3400 ENTRY POINT EE.</p>
FF	<p>Communications Adapter Problem. Go to MAP 3100 ENTRY POINT FF.</p>
BLANK	<p>Mode switch set on line.</p>

Is a valid error displayed?

Y N

9 9
F G

20JUL81 PN 6844894

EC 323243 PEC 869365

MAP 3000-8

F G
8 8

5225 ALL MODELS

MAP 3000-9

ERROR INDEX

PAGE 9 OF 9

015

Conditions have changed.

Go To Map 4000, Entry Point A.

016

Go to MAP shown in table above.

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MAP 3000-9

**5225 ALL MODELS
PRINTER CONTROL UNIT**

MAP 3100-1

PAGE 1 OF 55

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
3000	CC	53	184
3000	DD	15	051
3000	EE	11	038
3000	FF	1	001
3000	11	21	073
3000	22	18	060
3000	83	25	084
3600	FF	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
5	012	2000	A
6	016	2000	A
10	034	2000	A
10	035	2000	A
32	109	2000	A
33	113	2000	A
37	133	2000	A
37	134	2000	A
46	163	2000	A
2	003	3600	P0
4	009	3600	P0
29	100	3600	P0
31	106	3600	P0
7	023	3600	5-
34	120	3600	5-
3	006	3600	81
30	103	3600	81
7	025	3600	85
11	040	3600	85
34	122	3600	85
39	137	3600	85

001
(Entry Point FF)

NOTE: Model number can be found by checking machine labels behind right rear covers. See MIM 1002.

IS THIS A MODEL 11 OR 12 ?

Y N

1
0
A

2
B

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MAP 3100-1

B
1

5225 ALL MODELS

MAP 3100-2

PCU MAPS

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002

If cards are found in location A1Q2, A1Q4 and/or A1V2, this printer has Eraseable Programable Read Only Memory (EPROMS) installed. This is temporary and will be replaced by Read Only Storage(ROS) as it becomes available.

NOTE --

Entry points to this MAP that are valid two digit characters 0 through F, compare to the console display error in the following way. - The first digit is what is in the error display when no console keys are pressed. The second digit is what is in the error display while the 2ND MODE key is pressed.

NOTE -- ENSURE THAT THE MODE SWITCH IS IN POSITION '2'. IF IT IS NOT IN '2', YOU SHOULD NOT BE IN THIS MAP. IF IT IS IN '2', CONTINUE WITH THE MAP.

POWER OFF printer.

Probe 'power on reset' at board pin A1P2D06.

POWER ON printer and see if line being probed is down for approximately 10 seconds after switch is turned on.

DID PROBE INDICATE DOWN?

Y N

003

POWER OFF printer.

Go To Map 3600, Entry Point PO.

004

Probe 'power on reset' at board pin A1P2D06.

AFTER 30 SECONDS DID PROBE INDICATE UP?

Y N

7 3
C D

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EC 323243 PEC 869365

MAP 3100-2

D
2

5225 ALL MODELS

MAP 3100-3

PCU MAPS

PAGE 3 OF 55

005

POWER OFF

Remove F206 from Sequence Card.

See Reference Drawing AA030.

POWER ON

Wait 30 seconds.

IS FF IN DISPLAY?

Y N

006

POWER OFF

Reinstall F206 on Sequence Card.

Go To Map 3600, Entry Point 81.

007

POWER OFF

Reinstall F206 on Sequence Card.

IS CE JUMPER INSTALLED BETWEEN BOARD PINS A1T2D12 and A1T2D08?

Y N

008

Disconnect power on reset cable P213 from J213.

See MIM Figure 4-12.

POWER ON

Probe 'power on reset' at board pin A1P2D06.

DID PROBE INDICATE DOWN?

Y N

7 4 4
E F G

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MAP 3100-3

PCU MAPS

PAGE 4 OF 55

009

The 'power on reset' line from the power supply is down constantly.

POWER OFF PRINTER

Reconnect power on reset cable P213 to J213.

Go To Map 3600, Entry Point PO.

010

Something is holding the 'power on reset' line down.

Reconnect Power on reset cable P213 to J213.

POWER OFF printer and remove the following card(s).

- A1M2 (WL)
- A1N2 (CS)
- A1P2 (CTA)
- A1R2 or A1R4 (HIG)
- A1S2 (CMS)
- A1T2 (CMA)
- A1U2 (IF)

Disconnect cable connector A1Y6 from A1 board.

Verify A1K4 card is correctly seated in machine.

Also remove any of the following cards if they are installed.

- A1Q2 (CMA eprom)
- A1Q4 (CTA eprom)

POWER ON printer and wait 30 seconds.

Probe 'power on reset' at board pin A1P2D06.

DID PROBE INDICATE DOWN?

Y N

| |

7 5
H J

See MIM 3103.

This printer uses one of two pin to pin compatible HIG cards.

A1R2 (4 wide 3 high HIG card)

A1R4 (2 wide 3 high HIG card)

When reinstalling this card, ensure that crossover connector is between A1R4 and A1S4 for either card.

See Reference Drawing AB050.

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EC 323243 PEC 869365

MAP 3100-4

J
4

5225 ALL MODELS

MAP 3100-5

PCU MAPS

PAGE 5 OF 55

011

(Entry Point GB)

One of the cards that were removed or A1Y6 is failing.

See NOTE ==>

Probe Power On Reset at board pin A1P2D06.

NOTE: Ensure that jumpers are installed correctly before replacing or reinstalling this card(s):
A1N2 (CS), A1T2 (CMA), A1R2 or A1R4 (HIG).

POWER OFF

Reinstall 'one' card from the following list.
(Install cards in the sequence indicated).

A1T2 (CMA)

A1Q2 (CMA EPROM) - if it was installed.

A1S2 (CMS)

A1U2 (IF)

A1P2 (CTA)

A1Q4 (CTA EPROM) - if it was installed

A1R2 or A1R4 (HIG)

A1N2 (CS)

A1M2 (WL)

See MIM 3103.

This printer uses one of two pin to pin compatible HIG cards.

A1R2 (4 wide 3 high HIG card)

A1R4 (2 wide 3 high HIG card)

When reinstalling this card, ensure that crossover connector is between A1R4 and A1S4 for either card.

See Reference Drawing AB050.

POWER UP

Wait 30 seconds.

Observe probe.

PROBE INDICATES UP?

Y N

012

Replace the card that was just installed.
Reinstall any remaining cards and A1Y6 connector.

Verify Repair.

Go To Map 2000, Entry Point A.

013

ALL CARDS HAVE BEEN REINSTALLED?

Y N

014

Go to Step 011, Entry Point GB.

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EC 323243 PEC 869365

MAP 3100-5

6
K

K
5

5225 ALL MODELS

MAP 3100-6

PCU MAPS

PAGE 6 OF 55

015

POWER OFF

Reinstall A1Y6 cable connector.

POWER ON.

PROBE INDICATES DOWN?

Y N

016

See NOTE ==>

Go To Map 2000, Entry Point A.

NOTE: if problem continues, go to Map 4000, entry point B. There is more information for this error code.

017

POWER OFF

Disconnect Customer Access Panel cable from Customer Access Panel P.C. card.

See MIM Chapter 1 and Reference Drawing AA035.

POWER ON PRINTER and wait 30 seconds.

DID PROBE INDICATE DOWN?

Y N

018

REPLACE Customer Access Panel P.C. card.

Go to Page 46, Step 161, Entry Point XZ.

019

REPLACE or REPAIR Customer Access Panel cable.

Go to Page 46, Step 161, Entry Point XZ.

20JUL81

PN 6844895

EC 323243

PEC 869365

MAP 3100-6

C E H
2 3 4

5225 ALL MODELS

MAP 3100-7

PCU MAPS

PAGE 7 OF 55

020

The 'power on reset' circuit on the board is tied down.

POWER OFF printer.

REPLACE A1K4 card.

**Go to Page 46, Step 161,
Entry Point XZ.**

021

Remove CE jumper.

Go to Page 46, Step 163, Entry Point XX.

022

**IS THERE -5 VDC BETWEEN BOARD PINS
A1P2S06 AND DC GROUND (A1U2D08)?**

Y N

023

POWER OFF printer.

Go To Map 3600, Entry Point 5-.

024

**IS THERE +8.5 VDC BETWEEN BOARD PINS
A1P2S11 AND DC GROUND (A1U2D08)?**

Y N

025

POWER OFF printer.

Go To Map 3600, Entry Point 85.

026

POWER OFF printer and remove the following card(s).

A1P2 (CTA) - A1S2 (CMS) - A1U2 (IF)

POWER ON printer and wait 30 seconds.

Press the 2ND MODE key to display the second digit.

IS CONSOLE DISPLAY 'FF'?

Y N

1
0 8
L M

20JUL81

PN 6844895

EC 323243

PEC 869365

MAP 3100-7

027

POWER OFF printer and reinstall the following card.

A1S2 (CMS)

Reconnect the CROSSOVER CONNECTOR between S4 and R4 cards.

See Reference Drawing AB050.

POWER ON printer and wait 30 seconds.

Press the 2ND MODE key to display the second digit.

IS CONSOLE DISPLAY 'FF'?

Y N

028

POWER OFF printer and reinstall the following card.

A1U2 (IF).

POWER ON printer and wait 30 seconds.

Press the 2ND MODE key to display the second digit.

IS CONSOLE DISPLAY 'FF'?

Y N

029

POWER OFF printer and reinstall the following card.

A1P2 (CTA)

POWER ON printer and wait 30 seconds.

Press the 2ND MODE key to display the second digit.

IS CONSOLE DISPLAY 'FF'?

Y N

N P Q R
8 8 8 8

5225 ALL MODELS

MAP 3100-9

PCU MAPS

PAGE 9 OF 55

030

Something has changed. You got here originally because display was 'FF'. Printer has had the A1U2 (IF), A1S2 (CMS), & A1P2 (CTA) cards removed and reinstalled. Now display is something other than 'FF'.

POWER OFF printer.

Go to Page 46, Step 163,

Entry Point XX.

031

POWER OFF printer.

REPLACE A1P2 card (CTA).

Go to Page 46, Step 163,

Entry Point XX.

032

POWER OFF printer.

REPLACE A1U2 card (IF)

Go to Page 46, Step 161, Entry Point XZ.

033

POWER OFF printer.

The A1S2 (CMS) and A1T2 (CMA) cards may be needed to isolate this problem.

Replace A1S2 (CMS) card reinstall all other cards.

POWER ON printer.

IS CONSOLE DISPLAY '0'?

Y N

| |
| |
| |
| |
| |
| |
| |
| |

1 1
0 0
S T

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EC 323243 PEC 869365

MAP 3100-9

A L S T
1 7 9 9

5225 ALL MODELS

MAP 3100-10

PCU MAPS

PAGE 10 OF 55

034

REINSTALL ORIGINAL A1S2 (CMS)
CARD.
REPLACE A1T2 (CMA) CARD.

ENSURE THAT JUMPERS ARE
INSTALLED CORRECTLY BEFORE
REPLACING OR REINSTALLING THIS
CARD(S).

SEE MIM 3103

Go To Map 2000, Entry Point A.

035

Go To Map 2000, Entry Point A.

036

POWER OFF printer.

SEE MIM 3103

REPLACE A1T2 card (CMA)
ENSURE THAT JUMPERS ARE INSTALLED
CORRECTLY BEFORE REPLACING OR
REINSTALLING THIS CARD(S).

Go to Page 46, Step 161, Entry Point XZ.

037

Go to Page 29, Step 099, Entry Point SF.

20JUL81 PN 6844895

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MAP 3100-10

PCU MAPS

038
(Entry Point EE)

IS THIS A MODEL 11 OR 12 ?

Y N

039

POWER ON printer and wait 30 seconds.

NOTE --

NOTE -- ENSURE THAT THE MODE SWITCH IS IN POSITION '2'. IF IT IS NOT IN '2', YOU SHOULD NOT BE IN THIS MAP. IF IT IS IN '2', CONTINUE WITH THE MAP.

Entry points to this MAP that are valid two digit characters 0 through F, compare to the console display error in the following way. - The first digit is what is in the error display when no console keys are pressed. The second digit is what is in the error display while the 2ND MODE key is pressed.

IS THERE +8.5 VDC BETWEEN BOARD PINS A1P2S11 AND DC GROUND (A1U2D08)?

Y N

040

POWER OFF printer.

Go To Map 3600, Entry Point 85.

041

POWER OFF printer and remove the following card(s).

A1P2 (CTA) - A1U2 (IF)

POWER ON printer and wait 30 seconds.

Press the 2ND MODE key to display the second digit.

IS CONSOLE DISPLAY 'EE'?

Y N

1 1 1
4 3 2
U V W

20JUL81 PN 6844895

EC 323243 PEC 869365

MAP 3100-11

W
1
1

**5225 ALL MODELS
PCU MAPS**

MAP 3100-12

PAGE 12 OF 55

042

POWER OFF printer and reinstall the following card.
A1U2 (IF)

POWER ON printer and wait 30 seconds.

Press the 2ND MODE key to display the second digit.

IS CONSOLE DISPLAY 'EE'?

Y N

043

POWER OFF printer and reinstall the following card.
A1P2 (CTA).

POWER ON printer and wait 30 seconds.

Press the 2ND MODE key to display the second digit.

IS CONSOLE DISPLAY 'EE'?

Y N

044

Something has changed. You got here originally because display was 'EE'. Printer has had A1P2 (CTA) & A1U2 (IF) cards removed and reinstalled. Now display is something other than 'EE'.

POWER OFF printer.

**Go to Page 46, Step 163,
Entry Point XX.**

045

POWER OFF printer.

REPLACE A1P2 card (CTA).

Go to Page 46, Step 163, Entry Point XX.

1
3
X

20JUL81

PN 6844895

EC 323243

PEC 869365

MAP 3100-12

V X
1 1
1 2

5225 ALL MODELS

MAP 3100-13

PCU MAPS

PAGE 13 OF 55

046

POWER OFF printer.

REPLACE A1U2 card (IF)

Go to Page 46, Step 161, Entry Point XZ.

047

POWER OFF printer.

The A1S2 (CMS) and A1T2 (CMA) cards may be needed to isolate this problem.

REPLACE A1S2 card (CMS)

POWER ON printer and wait 30 seconds.

Press the 2ND MODE key to display the second digit.

IS CONSOLE DISPLAY 'EE'?

Y N

048

POWER OFF printer.

Go to Page 46, Step 161, Entry Point XZ.

049

A1T2 card (CMA) is failing.

POWER OFF printer.

Reinstall original A1S2 card (CMS) in printer.

REPLACE A1T2 card (CMA).

ENSURE THAT JUMPERS ARE INSTALLED CORRECTLY BEFORE REPLACING OR REINSTALLING THIS CARD(S).

SEE MIM 3103

Go to Page 46, Step 161, Entry Point XZ.

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EC 323243 PEC 869365

MAP 3100-13

U
1
1

5225 ALL MODELS

MAP 3100-14

PCU MAPS

PAGE 14 OF 55

050

Go to Page 39, Step 136, Entry Point SE.

20JUL81

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PEC 869365

MAP 3100-14

PCU MAPS

051
(Entry Point DD)

IS THIS A MODEL 11 or 12 ?

Y N

052

NOTE -- ENSURE THAT THE MODE SWITCH IS IN POSITION '2'. IF IT IS NOT IN '2', YOU SHOULD NOT BE IN THIS MAP. IF IT IS IN '2', CONTINUE WITH THE MAP.

NOTE --

Entry points to this MAP that are valid two digit characters 0 through F, compare to the console display error in the following way. - The first digit is what is in the error display when no console keys are pressed. The second digit is what is in the error display while the 2ND MODE key is pressed.

POWER OFF printer and remove the following card(s).

A1P2 (CTA)

POWER ON printer and wait 30 seconds.

Press the 2ND MODE key to display the second digit.

IS CONSOLE DISPLAY 'DD'?

Y N

053

POWER OFF printer and reinstall the following card.

A1P2 (CTA)

POWER ON printer and wait 30 seconds.

Press the 2ND MODE key to display the second digit.

IS CONSOLE DISPLAY 'DD'?

Y N

1 1 1 1
7 6 A A
Y Z A B

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Z A A
1 A B
5 1 1
5 5 5

5225 ALL MODELS

MAP 3100-16

PCU MAPS

PAGE 16 OF 55

054

Something has changed. You got here originally because display was 'DD'. Printer has had A1P2 card (CTA) removed and reinstalled. Now display is something other than 'DD'.

POWER OFF printer.

**Go to Page 46, Step 163,
Entry Point XX.**

055

POWER OFF printer.

REPLACE A1P2 card (CTA).

Go to Page 46, Step 163, Entry Point XX.

056

POWER OFF printer.

The A1S2 (CMS) and A1U2 (IF) cards may be needed to isolate this problem.

REPLACE A1S2 card (CMS)

POWER ON printer and wait 30 seconds.

Press the 2ND MODE key to display the second digit.

IS CONSOLE DISPLAY 'DD'?

Y N

057

POWER OFF printer.

Go to Page 46, Step 161, Entry Point XZ.

1
7
A
C

20JUL81

PN 6844895

EC 323243

PEC 869365

MAP 3100-16

Y A
1 C
5 1
6

5225 ALL MODELS

MAP 3100-17

PCU MAPS

PAGE 17 OF 55

058

A1U2 card (IF) is failing.

POWER OFF printer.

Reinstall original A1S2 (CMS) card in printer.

REPLACE A1U2 card (IF).

Go to Page 46, Step 161, Entry Point XZ.

059

Go to Page 42, Step 147, Entry Point SD.

20JUL81

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EC 323243

PEC 869365

MAP 3100-17

PCU MAPS

060
(Entry Point 22)

IS THIS A MODEL 11 or 12 ?

Y N

061

NOTE -- ENSURE THAT THE MODE SWITCH IS IN POSITION '2'. IF IT IS NOT IN '2', YOU SHOULD NOT BE IN THIS MAP. IF IT IS IN '2', CONTINUE WITH THE MAP.

There may be nothing wrong with the printer. It should power-up with '22' in the display when the station address switches are set to '7'.

CABLE THRU FEATURE, has four switches on CUSTOMER ACCESS PANEL.

POWER OFF printer.

IS the CABLE THRU FEATURE installed?

Y N

062

NO SWITCHES, DEFAULT IS ADDRESS 0
Go to Page 19, Step 064,
Entry Point GG.

063

ARE STATION ADDRESS SWITCHES SET TO '7'?

Y N

2 2 1
0 0 9
A A A
D E F

NOTE --

Entry points to this MAP that are valid two digit characters 0 through F, compare to the console display error in the following way. - The first digit is what is in the error display when no console keys are pressed. The second digit is what is in the error display while the 2ND MODE key is pressed.

CABLE THRU FEATURE

0 to 6 are valid station addresses. 7 is an illegal address because 7 is used as the end of message character in the address field of the last frame of a data transmission.

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MAP 3100-18

A
F
1
8

5225 ALL MODELS
PCU MAPS
PAGE 19 OF 55

MAP 3100-19

064
(Entry Point GG)

Remove the following card.
A1P2 (CTA)

POWER ON printer and wait 30 seconds.

Press the 2ND MODE key to display the
second digit.

IS CONSOLE DISPLAY '22'?

Y N

065
POWER OFF printer.

REPLACE A1P2 card (CTA).
Go to Page 46, Step 163, Entry Point XX.

066
POWER OFF printer.

Reinstall A1P2 (CTA) card.

The A1U2 (I/F) card and Customer Access Panel
P.C. card may be needed to isolate this failure.

REPLACE A1U2 (I/F) card.

POWER ON printer and wait 30 seconds.

Press the 2ND MODE key to display the second
digit.

IS CONSOLE DISPLAY 22?

Y N

067
Go to Page 46, Step 163, Entry Point XX.

2
0
A
G

20JUL81 PN 6844895

EC 323243 PEC 869365

MAP 3100-19

A A A
D E G
1 1 1
8 8 9

5225 ALL MODELS

MAP 3100-20

PCU MAPS

PAGE 20 OF 55

068

Reinstall original A1U2 (I/F) card.
Remove Customer Access Panel in back of machine.

REPLACE Customer Access Panel P.C. card.

Reinstall Customer Access Panel.

If problem continues, suspect A1T2 (CMS) card.

**Go to Page 46, Step 163,
Entry Point XX.**

See MIM Figure 4-15 and Reference Drawing AA035.

069

Set switches to something other than '7'.

POWER ON printer and wait 30 seconds.

Press the 2ND MODE key to display the second digit.

IS CONSOLE DISPLAY '22'?

Y N

070

The error that got you to this point in the MAP is corrected (switches set to '7').

POWER OFF printer.

**Go to Page 46, Step 163,
Entry Point XX.**

**Go to Page 46, Step 161,
Entry Point XZ.**

071

POWER OFF printer.

Go to Page 19, Step 064, Entry Point GG.

072

Go to Page 43, Step 150, Entry Point S2.

20JUL81

PN 6844895

EC 323243

PEC 869365

MAP 3100-20

073
(Entry Point 11)

IS THIS A MODEL 11 or 12 ?

Y N

074

NOTE -- ENSURE THAT THE MODE SWITCH IS IN POSITION '2'. IF IT IS NOT IN '2', YOU SHOULD NOT BE IN THIS MAP. IF IT IS IN '2', CONTINUE WITH THE MAP.

POWER OFF printer and remove the following card(s).

A1N2 (CS) - A1M2 (WL) - A1R2 or A1R4 (HIG)

POWER ON printer and wait 30 seconds.

Press the 2ND MODE key to display the second digit.

IS DISPLAY '11'?

Y N

2 2 2
4 4 2
A A A
H J K

NOTE --

Entry points to this MAP that are valid two digit characters 0 through F, compare to the console display error in the following way. - The first digit is what is in the error display when no console keys are pressed. The second digit is what is in the error display while the 2ND MODE key is pressed.

See MIM 3103.

This printer uses one of two pin to pin compatible HIG cards.

A1R2 (4 wide 3 high HIG card)

A1R4 (2 wide 3 high HIG card)

When reinstalling this card, ensure that crossover connector is between A1R4 and A1S4 for either card.

See Reference Drawing AB050.

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EC 323243 PEC 869365

MAP 3100-21

A
K
2
1

5225 ALL MODELS

MAP 3100-22

PCU MAPS

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075

POWER OFF

Reinstall the following card and crossover connector.
A1R2 (HIG).

POWER ON printer and wait 30 seconds.

Press the 2ND MODE key to display the second digit.

IS DISPLAY '11'?

Y N

076

POWER OFF printer and reinstall the following card.

SEE MIM 3103

A1N2 (CS).

ENSURE THAT JUMPERS ARE INSTALLED CORRECTLY BEFORE REPLACING OR REINSTALLING THIS CARD(S).

POWER ON printer and wait 30 seconds.

Press the 2ND MODE key to display the second digit.

IS DISPLAY '11'?

Y N

077

POWER OFF printer and reinstall the following card.

A1M2 (WL)

POWER ON printer and wait 30 seconds.

Press the 2ND MODE key to display the second digit.

IS DISPLAY '11'?

Y N

2 2 2 2
4 3 3 3
A A A A
L M N P

20JUL81

PN 6844895

EC 323243

PEC 869365

MAP 3100-22

A A A
M N P
2 2 2
2 2 2

5225 ALL MODELS

MAP 3100-23

PCU MAPS

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078

Something has changed. You got here originally because display was '11'. Printer has had A1N2 (CS), A1M2 (WL), and A1R2 or A1R4 (HIG) cards removed and reinstalled. Now display is something other than '11'.

POWER OFF printer.

**Go to Page 46, Step 163,
Entry Point XX.**

079

POWER OFF printer.

REPLACE A1M2 card (WL).

Go to Page 46, Step 163, Entry Point XX.

080

POWER OFF printer.

REPLACE A1N2 card (CS).

ENSURE THAT JUMPERS ARE INSTALLED
CORRECTLY BEFORE REPLACING OR
REINSTALLING THIS CARD(S).

SEE MIM 3103

Go to Page 46, Step 161, Entry Point XZ.

20JUL81 PN 6844895

EC 323243 PEC 869365

MAP 3100-23

A A A
H J L
2 2 2
1 1 2

5225 ALL MODELS

MAP 3100-24

PCU MAPS

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081

POWER OFF printer.

REPLACE A1R2 card (HIG).

ENSURE THAT JUMPERS ARE
INSTALLED CORRECTLY BEFORE
REPLACING OR REINSTALLING THIS
CARD(S).

See MIM 3103.

This printer uses one of two pin to pin
compatible HIG cards.

A1R2 (4 wide 3 high HIG card)

A1R4 (2 wide 3 high HIG card)

When reinstalling this card, ensure that crossover
connector is between A1R4 and A1S4 for either
card.

See Reference Drawing AB050.

**Go to Page 46, Step 161,
Entry Point XZ.**

082

POWER OFF printer.

REPLACE A1P2 card (CTA).

Go to Page 46, Step 161, Entry Point XZ.

083

Go to Page 47, Step 164, Entry Point S1.

20JUL81 PN 6844895

EC 323243 PEC 869365

MAP 3100-24

PCU MAPS

084
(Entry Point 83)

IS THIS A MODEL 11 or 12 ?

Y N

085
POWER OFF printer.

The A1R2 or A1R4 (HIG), A1P2 (CTA) and A1S2 (CMS) cards may be needed to isolate this failure.

REPLACE the A1R2 or A1R4 (HIG) card. Ensure jumpers are installed correctly. POWER ON printer and wait 30 seconds.

Press the 2ND MODE key to display the second digit.

See MIM 3103.
This printer uses one of two pin to pin compatible HIG cards.
A1R2 (4 wide 3 high HIG card)
A1R4 (2 wide 3 high HIG card)
When reinstalling this card, ensure that crossover connector is between A1R4 and A1S4 for either card.
See Reference Drawing AB050.

IS CONSOLE DISPLAY '83'?

Y N

086
Position Mode Switch on TEST.
Press Start.
After printing, move switch to position 6 and press Start.
Print at least 3 pages of test pattern.

AFTER THE END OF BOTH TESTS, IS CONSOLE DISPLAY 83?

Y N

087
POWER OFF printer.
Go to Page 46, Step 163, Entry Point XX.

2 2 2
8 7 6
A A A
Q R S

PCU MAPS

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088

POWER OFF printer.

Ensure that A1R2 or A1R4 (HIG card) jumpers are installed correctly.

Reinstall original A1R2 or A1R4 (HIG) card.

REPLACE A1P2 (CTA) card.

Move switch to position 2.

POWER ON printer.

See MIM 3103.

This printer uses one of two pin to pin compatible HIG cards.

A1R2 (4 wide 3 high HIG card)

A1R4 (2 wide 3 high HIG card)

When reinstalling this card, ensure that crossover connector is between A1R4 and A1S4 for either card.

See Reference Drawing AB050.

IS CONSOLE DISPLAY 83?

Y N

089

Position Mode Switch on TEST.

Press Start.

After printing, move switch to position 6 and press Start.

Print at least 3 pages of test pattern.

AFTER THE END OF BOTH TESTS, IS CONSOLE DISPLAY 83?

Y N

090

POWER OFF printer.

Go to Page 46, Step 163,**Entry Point XX.****091**

POWER OFF Printer.

Reinstall original A1P2 (CTA) card in printer.

REPLACE A1S2 (CMS) card.

Go to Page 46, Step 163, Entry Point XX.**092**

POWER OFF Printer.

Reinstall original A1P2 (CTA) card in printer.

REPLACE A1S2 (CMS) card.

Go to Page 46, Step 163, Entry Point XX.

PCU MAPS

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093

POWER OFF printer.

Ensure that A1R2 card jumpers are installed correctly.

Reinstall original A1R2 or A1R4 (HIG) card.

REPLACE A1P2 (CTA) card.

Move switch to position 2.

POWER ON printer.

See MIM 3103.

This printer uses one of two pin to pin compatible HIG cards.

A1R2 (4 wide 3 high HIG card)

A1R4 (2 wide 3 high HIG card)

When reinstalling this card, ensure that crossover connector is between A1R4 and A1S4 for either card.

See Reference Drawing AB050.

IS CONSOLE DISPLAY 83?

Y N

094

Position Mode Switch on TEST.

Press Start.

After printing, move switch to position 6 and press Start.

Print at least 3 pages of test pattern.

AFTER THE END OF BOTH TESTS, IS CONSOLE DISPLAY 83?

Y N

095

POWER OFF printer.

Go to Page 46, Step 163,**Entry Point XX.****096**

POWER OFF Printer.

Reinstall original A1P2 (CTA) card in printer.

REPLACE A1S2 (CMS) card.

Go to Page 46, Step 163, Entry Point XX.**097**

POWER OFF Printer.

Reinstall original A1P2 (CTA) card in printer.

REPLACE A1S2 (CMS) card.

Go to Page 46, Step 163, Entry Point XX.

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EC 323243 PEC 869365

MAP 3100-27

A
0
2
5

5225 ALL MODELS

MAP 3100-28

PCU MAPS

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098

Go to Page 50, Step 173, Entry Point S8.

20JUL81

PN 6844895

EC 323243

PEC 869365

MAP 3100-28

PCU MAPS

099

(Entry Point SF)

If cards are found in location A1Q2, A1Q4 and/or A1V2, this printer has Eraseable Programable Read Only Memory (EPROMS) installed. This is temporary and will be replaced by Read Only Storage(ROS) as it becomes available.

NOTE --

Entry points to this MAP that are valid two digit characters 0 through F, compare to the console display error in the following way. - The first digit is what is in the error display when no console keys are pressed. The second digit is what is in the error display while the 2ND MODE key is pressed.

NOTE -- ENSURE THAT THE MODE SWITCH IS IN POSITION '2'. IF IT IS NOT IN '2', YOU SHOULD NOT BE IN THIS MAP. IF IT IS IN '2', CONTINUE WITH THE MAP.

POWER OFF printer.

Probe 'power on reset' at board pin A1P2D06.

POWER ON printer and see if line being probed is down for approximately 10 seconds after on/off switch is turned on.

DID PROBE INDICATE DOWN?

Y N

100

The power on reset line did not go down for approximately 10 seconds after printer was powered up.

POWER OFF printer.

Go To Map 3600, Entry Point PO.

101

Probe 'power on reset' at board pin A1P2D06.

AFTER 30 seconds DID PROBE INDICATE UP?

Y N

3 3
4 O
A A
T U

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EC 323243

PEC 869365

MAP 3100-29

A
U
2
9

5225 ALL MODELS

MAP 3100-30

PCU MAPS

PAGE 30 OF 55

102

POWER OFF

Remove F206 from Sequence Card.

See Reference Drawing AA030.

POWER ON

Wait 30 seconds.

IS FF IN DISPLAY?

Y N

103

POWER OFF

Reinstall F206 on Sequence Card.

Go To Map 3600, Entry Point 81.

104

POWER OFF

Reinstall F206 on Sequence Card.

IS CE JUMPER INSTALLED BETWEEN BOARD PINS A1T2D12 and A1T2D08?

Y N

105

Disconnect power on reset cable P213 from J213.

See MIM Figure 4-12.

POWER ON

Probe power on reset at board pin A1P2D06.

DID PROBE INDICATE DOWN?

Y N

3 3 3
4 1 1
A A A
V W X

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EC 323243

PEC 869365

MAP 3100-30

A A
W X
3 3
0 0

5225 ALL MODELS

MAP 3100-31

PCU MAPS

PAGE 31 OF 55

106

The 'power on reset' line from the power supply is down constantly.

POWER OFF

Reconnect power on reset cable P213 to J213.

Go To Map 3600, Entry Point PO.

107

Something is holding the 'power on reset' line down.

Reconnect Power on reset cable P213 to J213.
POWER OFF printer and remove the following card(s).

A1M2 (WL)

A1N2 (CS)

A1P2 (CTA)

A1R2 (KJS)

A1S2 (STH)

A1T2 (CMA)

A1U2 (IF)

Disconnect cable connector A1Y6

Verify A1K4 card is correctly seated.

Also remove any of the following cards if they are installed.

A1Q2 (CMA eprom)

A1Q4 (CTA eprom)

A1V2 (CMA eprom)

POWER ON printer and wait 30 seconds.

Probe 'power on reset' at board pin A1P2D06.

DID PROBE INDICATE DOWN?

Y N

| |

3 3

4 2

A A

Y Z

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EC 323243

PEC 869365

MAP 3100-31

A
Z
3
1

5225 ALL MODELS

MAP 3100-32

PCU MAPS

PAGE 32 OF 55

108

(Entry Point GC)

One of the cards that were removed or A1Y6 is failing.

See NOTE ==>

Probe Power On Reset at board pin A1P2D06.

POWER OFF

Reinstall 'one' card from the following list.
(Install cards in the sequence indicated).

A1Q2 (CMA)

A1Q4 (CMA EPROM) - if it was installed.

A1S2 (CMS)

A1U2 (IF)

A1P2 (CTA)

A1Q4 (CTA EPROM) - if it was installed.

A1R2 or A1R4 (HIG)

A1N2 (CS)

A1M2 (WL)

POWER UP

Wait 30 seconds.

Observe probe.

PROBE INDICATES UP?

Y N

|

109

Replace the card that was just installed.

Reinstall any remaining cards and A1Y6 connector.

Verify Repair.

Go To Map 2000, Entry Point A.

110

ALL CARDS HAVE BEEN REINSTALLED?

Y N

| |

3 3
3 3
B B
A B

NOTE: Ensure that jumpers are installed correctly before replacing or reinstalling this card(s):
A1N2 (CS), A1T2 (CMA), A1R2 or A1R4 (HIG).

See MIM 3103.

This printer uses one of two pin to pin compatible HIG cards.

A1R2 (4 wide 3 high HIG card)

A1R4 (2 wide 3 high HIG card)

When reinstalling this card, ensure that crossover connector is between A1R4 and A1S4 for either card.

See Reference Drawing AB050.

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EC 323243

PEC 869365

MAP 3100-32

B B
A B
3 3
2 2

5225 ALL MODELS

MAP 3100-33

PCU MAPS

PAGE 33 OF 55

111

Go to Page 32, Step 108, Entry Point GC.

112

POWER OFF

Reinstall A1Y6 cable connector.

POWER ON.

PROBE INDICATES DOWN?

Y N

113

See NOTE ==>

Go To Map 2000, Entry Point A.

NOTE: if problem continues, go to Map 4000, entry point B. There is more information for this error code.

114

POWER OFF

Disconnect Customer Access Panel cable from Customer Access Panel P.C. card.

See MIM Chapter 1 and Reference Drawing AA035.

POWER ON

Wait 30 seconds

DID PROBE INDICATE DOWN?

Y N

115

REPLACE Customer Access Panel P.C. card.

Go to Page 46, Step 161, Entry Point XZ.

116

REPLACE or REPAIR Customer Access Panel cable.

Go to Page 46, Step 161, Entry Point XZ.

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EC 323243 PEC 869365

MAP 3100-33

A A A
T V Y
2 3 3
9 0 1

5225 ALL MODELS

MAP 3100-34

PCU MAPS

PAGE 34 OF 55

117

The 'power on reset' circuit on the A1 board is tied down.

POWER OFF printer.

REPLACE A1K4 card.

**Go to Page 46, Step 161,
Entry Point XZ.**

118

Remove CE jumper.

Go to Page 46, Step 163, Entry Point XX.

119

**IS THERE -5 VDC BETWEEN BOARD PINS
A1P2S06 AND DC GROUND (A1U2D08)?**

Y N

120

POWER OFF printer.

Go To Map 3600, Entry Point 5-.

121

**IS THERE +8.5 VDC BETWEEN BOARD PINS
A1P2S11 AND DC GROUND (A1U2D08)?**

Y N

122

POWER OFF printer.

Go To Map 3600, Entry Point 85.

3583C

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MAP 3100-34

B
C
3
4

5225 ALL MODELS

MAP 3100-35

PCU MAPS

PAGE 35 OF 55

123

POWER OFF printer and remove the following card(s).

A1P2 (CTA) - A1S2 (STH) - A1U2 (IF) - A1R2 (KJS)

POWER ON printer and wait 30 seconds.

Press the 2ND MODE key to display the second digit.

IS CONSOLE DISPLAY 'FF'?

Y N

124

POWER OFF printer and reinstall the following card.

See Reference Drawing AB050.

A1S2 (STH)

POWER ON printer and wait 30 seconds.

Press the 2ND MODE key to display the second digit.

IS CONSOLE DISPLAY 'FF'?

Y N

125

POWER OFF printer and reinstall the following card.

A1U2 (IF).

POWER ON printer and wait 30 seconds.

Press the 2ND MODE key to display the second digit.

IS CONSOLE DISPLAY 'FF'?

Y N

3 3 3 3
8 7 7 6
B B B B
D E F G

20JUL81 PN 6844895

EC 323243 PEC 869365

MAP 3100-35

PCU MAPS

PAGE 36 OF 55

126

POWER OFF printer and reinstall the following card.

A1P2 (CTA)

POWER ON printer and wait 30 seconds.

Press the 2ND MODE key to display the second digit.

IS CONSOLE DISPLAY 'FF'?

Y N

127

POWER OFF PRINTER and reinstall the following card A1R2(KJS) card.

POWER ON PRINTER and wait 30 seconds.

IS CONSOLE DISPLAY FF ?

Y N

128

Something has changed. You got here originally because display was 'FF'. Printer has had the A1R2 (KJS), A1U2 (IF), A1S2 (STH) and A1P2 (CTA) cards removed and reinstalled. Now display is something other than 'FF'.

POWER OFF printer.

Go to Page 46, Step 163,

Entry Point XX.

129

POWER OFF printer.

REPLACE A1R2 (KJS) card.

Go to Page 46, Step 163, Entry Point XX.

130

POWER OFF printer.

REPLACE A1P2 card (CTA).

Go to Page 46, Step 163, Entry Point XX.

B B
5 5

5225 ALL MODELS

MAP 3100-37

PCU MAPS

PAGE 37 OF 55

131

POWER OFF printer.

REPLACE A1U2 card (IF)

Go to Page 46, Step 161, Entry Point XZ.

132

POWER OFF printer.

The A1S2 (STH) and A1T2 (CMA) cards may be needed to isolate this problem.

Replace A1S2 (STH) card reinstall all other cards.
POWER ON printer.

IS CONSOLE DISPLAY '0'?

Y N

133

REINSTALL ORIGINAL A1S2 (STH) CARD.

REPLACE A1T2 (CMA) CARD.

ENSURE THAT JUMPERS ARE INSTALLED
CORRECTLY BEFORE REPLACING OR
REINSTALLING THIS CARD(S).

SEE MIM 3103

Go To Map 2000, Entry Point A.

134

Go To Map 2000, Entry Point A.

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EC 323243

PEC 869365

MAP 3100-37

B
D
3
5

5225 ALL MODELS

MAP 3100-38

PCU MAPS

PAGE 38 OF 55

135

POWER OFF printer.

SEE MIM 3103

REPLACE A1T2 card (CMA)
ENSURE THAT JUMPERS ARE INSTALLED
CORRECTLY BEFORE REPLACING OR
REINSTALLING THIS CARD(S).

Go to Page 46, Step 161, Entry Point XZ.

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MAP 3100-38

PCU MAPS

136
(Entry Point SE)

POWER ON printer and wait 30 seconds.

NOTE -- ENSURE THAT THE MODE SWITCH IS IN POSITION '2'. IF IT IS NOT IN '2', YOU SHOULD NOT BE IN THIS MAP. IF IT IS IN '2', CONTINUE WITH THE MAP.

IS THERE +8.5 VDC BETWEEN BOARD PINS A1P2S11 AND DC GROUND (A1U2D08)?

Y N

|

137

POWER OFF printer.

Go To Map 3600, Entry Point 85.

138

POWER OFF printer and remove the following card(s).

A1P2 (CTA) - A1U2 (IF)

POWER ON printer and wait 30 seconds.

Press the 2ND MODE key to display the second digit.

IS CONSOLE DISPLAY 'EE'?

Y N

|

139

POWER OFF printer and reinstall the following card.

A1U2 (IF)

POWER ON printer and wait 30 seconds.

Press the 2ND MODE key to display the second digit.

IS CONSOLE DISPLAY 'EE'?

Y N

|

4 4 4
1 0 0
B B B
H J K

NOTE --

Entry points to this MAP that are valid two digit characters 0 through F, compare to the console display error in the following way. - The first digit is what is in the error display when no console keys are pressed. The second digit is what is in the error display while the 2ND MODE key is pressed.

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EC 323243 PEC 869365

B B
J K
3 3
9 9

5225 ALL MODELS

MAP 3100-40

PCU MAPS

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140

POWER OFF printer and reinstall the following card.

A1P2 (CTA).

POWER ON printer and wait 30 seconds.

Press the 2ND MODE key to display the second digit.

IS CONSOLE DISPLAY 'EE'?

Y N

141

Something has changed. You got here originally because display was 'EE'. Printer has had A1P2 (CTA) & A1U2 (IF) cards removed and reinstalled. Now display is something other than 'EE'.

POWER OFF printer.

Go to Page 46, Step 163,

Entry Point XX.

142

POWER OFF printer.

REPLACE A1P2 card (CTA).

Go to Page 46, Step 163, Entry Point XX.

143

POWER OFF printer.

REPLACE A1U2 card (IF)

Go to Page 46, Step 161, Entry Point XZ.

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EC 323243 PEC 869365

MAP 3100-40

B
H
3
9

5225 ALL MODELS

MAP 3100-41

PCU MAPS

PAGE 41 OF 55

144

POWER OFF printer.

The A1S2 (STH) and A1T2 (CMA) cards may be needed to isolate this problem.

REPLACE A1S2 card (STH)

POWER ON printer and wait 30 seconds.

Press the 2ND MODE key to display the second digit.

IS CONSOLE DISPLAY 'EE'?

Y N

145

POWER OFF printer.

Go to Page 46, Step 161, Entry Point XZ.

146

A1T2 card (CMA) is failing.

POWER OFF printer.

Reinstall original A1S2 (STH) card in printer.
REPLACE A1T2 card (CMA).

ENSURE THAT JUMPERS ARE INSTALLED
CORRECTLY BEFORE REPLACING OR
REINSTALLING THIS CARD(S).

SEE MIM 3103

Go to Page 46, Step 161, Entry Point XZ.

20JUL81

PN 6844895

EC 323243

PEC 869365

MAP 3100-41

PCU MAPS

147

(Entry Point SD)

NOTE --

NOTE -- ENSURE THAT THE MODE SWITCH IS IN POSITION '2'. IF IT IS NOT IN '2', YOU SHOULD NOT BE IN THIS MAP. IF IT IS IN '2', CONTINUE WITH THE MAP.

Entry points to this MAP that are valid two digit characters 0 through F, compare to the console display error in the following way. - The first digit is what is in the error display when no console keys are pressed. The second digit is what is in the error display while the 2ND MODE key is pressed.

POWER OFF printer and remove the following card(s).
A1P2 (CTA)

POWER ON printer and wait 30 seconds.

Press the 2ND MODE key to display the second digit.

IS CONSOLE DISPLAY 'DD'?

Y N

148

POWER OFF printer.

REPLACE A1P2 card (CTA).

Go to Page 46, Step 163, Entry Point XX.

149

A1U2 card (IF) is failing.

POWER OFF printer.

REPLACE A1U2 card (IF).

Go to Page 46, Step 161, Entry Point XZ.

PCU MAPS

150
(Entry Point S2)

NOTE -- ENSURE THAT THE MODE SWITCH IS IN POSITION '2'. IF IT IS NOT IN '2', YOU SHOULD NOT BE IN THIS MAP. IF IT IS IN '2', CONTINUE WITH THE MAP.

There may be nothing wrong with the printer. It should power-up with '22' in the display when the station address switches are set to '7'. CABLE THRU FEATURE, has four switches on CUSTOMER ACCESS PANEL.

POWER OFF printer.

IS the CABLE THRU FEATURE installed?

Y N

151
NO SWITCHES, DEFAULT IS ADDRESS 0
Go to Step 153, Entry Point SG.

152
ARE STATION ADDRESS SWITCHES SET TO '7'?

Y N

153
(Entry Point SG)

Remove the following card.
A1P2 (CTA)

POWER ON printer and wait 30 seconds.

Press the 2ND MODE key to display the second digit.

IS CONSOLE DISPLAY '22'?

Y N

4 4 4
5 4 4
B B B
L M N

NOTE --

Entry points to this MAP that are valid two digit characters 0 through F, compare to the console display error in the following way. - The first digit is what is in the error display when no console keys are pressed. The second digit is what is in the error display while the 2ND MODE key is pressed.

CABLE THRU FEATURE

0 to 6 are valid station addresses. 7 is an illegal address because 7 is used as the end of message character in the address field of the last frame of a data transmission.

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B B
M N
4 4
3 3

5225 ALL MODELS

MAP 3100-44

PCU MAPS

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154

POWER OFF printer.

REPLACE A1P2 card (CTA).

Go to Page 46, Step 163, Entry Point XX.

155

POWER OFF printer.

Reinstall A1P2 (CTA) card.

The A1U2 (I/F) card and Customer Access Panel P.C. card may be needed to isolate this failure.

REPLACE A1U2 (I/F) card.

POWER ON printer and wait 30 seconds.

Press the 2ND MODE key to display the second digit.

IS CONSOLE DISPLAY 22?

Y N

156

Go to Page 46, Step 163, Entry Point XX.

157

Reinstall original A1U2 (I/F) card.

Remove Customer Access Panel in back of machine..

REPLACE Customer Access Panel P.C. card.

Reinstall Customer Access Panel.

See MIM Figure 4-15 and Reference Drawing AA035.

If problem continues, suspect A1T2 (CMA) card.

Go to Page 46, Step 163, Entry Point XX.

20JUL81

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EC 323243

PEC 869365

MAP 3100-44

B
L
4
3

5225 ALL MODELS

MAP 3100-45

PCU MAPS

PAGE 45 OF 55

158

Set switches to something other than '7'.

POWER ON printer and wait 30 seconds.

Press the 2ND MODE key to display the second digit.

IS CONSOLE DISPLAY '22'?

Y N

159

The error that got you to this point in the MAP is corrected (switches set to '7').

POWER OFF printer.

Go to Page 46, Step 163, Entry Point XX.

160

POWER OFF printer.

Go to Page 19, Step 064, Entry Point GG.

20JUL81

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EC 323243

PEC 869365

MAP 3100-45

161
(Entry Point XZ)

SEE MIM 3101

Reinstall all cards that are not now installed.
ARE ALL CARDS REINSTALLED?

Y N

162

Go to Step 161, Entry Point XZ.

163
SEE NOTE ==>
(Entry Point XX)

NOTE: If problem continues, go to Map 4000,
entry point B. There is more information for this
error code.

Go To Map 2000, Entry Point A.

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MAP 3100-46

PCU MAPS

164
(Entry Point S1)

NOTE -- ENSURE THAT THE MODE SWITCH IS IN POSITION '2'. IF IT IS NOT IN '2', YOU SHOULD NOT BE IN THIS MAP. IF IT IS IN '2', CONTINUE WITH THE MAP.

POWER OFF printer and remove the following card(s).

A1N2 (CS) - A1M2 (WL)

POWER ON printer and wait 30 seconds.

Press the 2ND MODE key to display the second digit.

IS DISPLAY '11'?

Y N

165

POWER OFF printer and reinstall the following card.

SEE MIM 3103

A1N2 (CS).

ENSURE THAT JUMPERS ARE INSTALLED CORRECTLY BEFORE REPLACING OR REINSTALLING THIS CARD(S).

POWER ON printer and wait 30 seconds.

Press the 2ND MODE key to display the second digit.

IS DISPLAY '11'?

Y N

4 4 4
9 8 8
B B B
P Q R

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EC 323243 PEC 869365

MAP 3100-47

B B
O R
4 4
7 7

5225 ALL MODELS

MAP 3100-48

PCU MAPS

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166

POWER OFF printer and reinstall the following card.

A1M2 (WL)

POWER ON printer and wait 30 seconds.

Press the 2ND MODE key to display the second digit.

IS DISPLAY '11'?

Y N

167

Something has changed. You got here originally because display was '11'. Printer has had A1N2 (CS), and A1M2 (WL) cards removed and reinstalled. Now display is something other than '11'.

POWER OFF printer.

Go to Page 46, Step 163,

Entry Point XX.

168

POWER OFF printer.

REPLACE A1M2 card (WL).

Go to Page 46, Step 163, Entry Point XX.

169

POWER OFF printer.

REPLACE A1N2 card (CS).

ENSURE THAT JUMPERS ARE INSTALLED CORRECTLY BEFORE REPLACING OR REINSTALLING THIS CARD(S).

SEE MIM 3103

Go to Page 46, Step 161, Entry Point XZ.

20JUL81 PN 6844895

EC 323243 PEC 869365

MAP 3100-48

B
P
4
7

5225 ALL MODELS
PCU MAPS
PAGE 49 OF 55

MAP 3100-49

170

POWER OFF printer.

The A1S2 (STH) and A1P2 (CTA) cards may be needed to isolate this failure.

REPLACE A1P2 (CTA) card.

POWER ON printer and wait 30 seconds.

IS DISPLAY 11 ?

Y N

171

Go to Page 46, Step 161, Entry Point XZ.

172

POWER OFF printer.

REINSTALL original A1P2 (CTA), A1M2 (WL) and A1N2 (CS) cards.

REPLACE A1S2 (STH) card.

Go to Page 46, Step 161, Entry Point XZ.

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EC 323243 PEC 869365
MAP 3100-49

173
(Entry Point S8)

POWER OFF printer.

The A1P2 (CTA) and A1S2 (STH) cards may be needed to isolate this failure.

REPLACE A1S2 (STH) card.

POWER ON printer and wait 30 seconds.

Press the 2ND MODE key to display the second digit.

IS CONSOLE DISPLAY '83'?

Y N

174

Position Mode Switch on TEST.
Press Start.
After printing, move switch to position 6 and press Start.
Print at least 3 pages of test pattern.

AFTER THE END OF BOTH TESTS, IS CONSOLE DISPLAY 83?

Y N

175

POWER OFF printer.
Go to Page 46, Step 163,
Entry Point XX.

5 5
2 1
B B
S T

20JUL81 PN 6844895

EC 323243 PEC 869365

MAP 3100-50

B
T
5
0

5225 ALL MODELS

MAP 3100-51

PCU MAPS

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176

POWER OFF printer.
Reinstall original A1S2 (STH) card.
REPLACE A1P2 (CTA) card.
Move switch to position 2.

POWER ON printer.

IS CONSOLE DISPLAY 83?

Y N

177

Position Mode Switch on TEST.
Press Start.
After printing, move switch to position 6 and
press Start.
Print at least 3 pages of test pattern.

**AFTER THE END OF BOTH TESTS, IS
CONSOLE DISPLAY 83?**

Y N

178

POWER OFF printer.
**Go to Page 46, Step 163,
Entry Point XX.**

179

POWER OFF Printer.

IF problem is intermitent, go to MAP 4000.

Go to Page 46, Step 163, Entry Point XX.

180

POWER OFF Printer.
Reinstall original A1P2 (CTA) card in printer.
REPLACE A1S2 (CMS) card.

Go to Page 46, Step 163, Entry Point XX.

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EC 323243 PEC 869365
MAP 3100-51

PCU MAPS

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181

POWER OFF printer.

Reinstall original A1S2 (STH) card.

REPLACE A1P2 (CTA) card.

POWER ON printer.

Position mode switch on test.

Press Start.

After printing, move switch to position 6 and press Start.

Print at least 3 pages of test pattern.

**AFTER THE END OF BOTH TESTS, IS
CONSOLE DISPLAY 83?**

Y N

182

POWER OFF printer.

Go to Page 46, Step 163, Entry Point XX.**183**

POWER OFF Printer.

If problem is intermitent, go to MAP 4000.

Go to Page 46, Step 163, Entry Point XX.

184
(Entry Point CC)

NOTE --

NOTE -- ENSURE THAT THE MODE SWITCH IS IN POSITION '2'. IF IT IS NOT IN '2', YOU SHOULD NOT BE IN THIS MAP. IF IT IS IN '2', CONTINUE WITH THE MAP.

Entry points to this MAP that are valid two digit characters 0 through F, compare to the console display error in the following way. - The first digit is what is in the error display when no console keys are pressed. The second digit is what is in the error display while the 2ND MODE key is pressed.

POWER OFF printer and remove the following card(s).

A1P2 (CTA)- A1U2 (I/F)

POWER ON printer and wait 30 seconds.

Press the 2ND MODE key to display the second digit.

IS CONSOLE DISPLAY 'CC'?

Y N

185

POWER OFF printer and reinstall the following card.

A1U2 (I/F)

POWER ON printer and wait 30 seconds.

Press the 2ND MODE key to display the second digit.

IS CONSOLE DISPLAY 'CC'?

Y N

5 5 5
5 4 4
B B B
U V W

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EC 323243 PEC 869365

MAP 3100-53

B B
V W
5 5
3 3

5225 ALL MODELS

MAP 3100-54

PCU MAPS

PAGE 54 OF 55

186

POWER OFF printer and reinstall the following card.

A1P2 (CTA)

POWER ON printer and wait 30 seconds.

Press the 2ND MODE key to display the second digit.

IS CONSOLE DISPLAY 'CC'?

Y N

187

Something has changed. You got here originally because display was 'CC'. Machine has had A1P2 (CTA) and A1U2(IF) cards removed and reinstalled. Now display is something other than 'CC'.

POWER OFF printer.

**Go to Page 46, Step 163,
Entry Point XX.**

188

POWER OFF printer.

REPLACE A1P2 (CTA) CARD.

Go to Page 46, Step 163, Entry Point XX.

189

POWER OFF printer.

REPLACE A1U2 (IF) CARD.

Go to Page 46, Step 161, Entry Point XZ.

20JUL81

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EC 323243

PEC 869365

MAP 3100-54

B
U
5
3

5225 ALL MODELS

MAP 3100-55

PCU MAPS

PAGE 55 OF 55

190

POWER OFF printer.

The A1R2 (KJS) and A1T2 (CMA) cards may be needed to isolate this problem.

REPLACE THE A1R2 (KJS) CARD.

POWER ON printer and wait 30 seconds.

Press the 2ND MODE key to display the second digit.

IS CONSOLE DISPLAY 'CC'?

Y N

191

POWER OFF printer.

Go to Page 46, Step 161, Entry Point XZ.

192

POWER OFF printer.

A1T2 (CMA) IS FAILING.

Reinstall original A1R2 (KJS) card in printer.

REPLACE A1T2 (CMA) CARD.

ENSURE THAT JUMPERS ARE INSTALLED CORRECTLY BEFORE REPLACING OR REINSTALLING THIS CARD(S).

SEE MIM 3103

Go to Page 46, Step 161, Entry Point XZ.

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MAP 3100-55

INTERFACE MAP

PAGE 1 OF 30

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
3000	CC	1	001
3000	DD	18	048

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	002	2000	A
2	006	2000	A
3	008	2000	A
13	036	2000	A
17	046	2000	A
17	047	2000	A
19	051	2000	A
19	053	2000	A
28	080	2000	A
30	084	2000	A

001

IN THE EVENT THAT THIS MAP DOES NOT FIND THE PROBLEM, GO TO THE SYSTEM ENTRY MAP AND VERIFY THE HOST AND THE CABLE TO THIS DEVICE.

(Entry Point CC)

ADDRESS NOT RECEIVED ENTRY.

 5280 SYSTEMS SEE NOTE
 =====>

(Step 001 continues)

NOTE --

Entry points to this MAP that are valid two digit characters 0 to F, compare to the operator panel display error in the following way. - The first digit is what is in the error display when no operator panel keys are pressed. The second digit is what is in the error display while the 2ND MODE key is pressed.

 NOTE: FOR 5280 SYSTEMS ONLY.

If the Host System for this printer is a 5280 SYSTEM, you must run program PRTRPOLL continuously to use entry point DD of this map. See HOST MIM for instructions. Ensure printer is ready.

ENSURE THAT YOU RUN PROGRAM PRTRPOLL CONTINUOUSLY BEFORE YOU ANSWER ANY QUESTIONS IN THIS MAP.

INTERFACE MAP

PAGE 2 OF 30

(Step 001 continued)

IS THE MODE SWITCH SET TO 'ONLINE'?

Y N

002

Set the mode switch to 'ONLINE'.

Go To Map 2000, Entry Point A.

003

CABLE THRU FEATURE has address switches on CUSTOMER ACCESS PANEL. See MIM Chapter 1.

DOES THIS PRINTER HAVE THE 'CABLE THRU' FEATURE INSTALLED?

Y N

004

Go to Page 13, Step 035, Entry Point X5.

005

The printer is getting data from the twinax or coax cable, but it may not be decoding the address that is set into the 'station address switches'.

See MIM Chapter 1 and Reference Drawing AA035.

Look at the 'station address switches' and determine what this printer's address is. (0, 1, 2, 3, 4, 5, or 6)

DOES THE HOST SYSTEM EXPECT THIS PRINTER TO HAVE THAT ADDRESS?

Y N

006

Set the 'station address switches' to the correct address.

Go To Map 2000, Entry Point A.

3
A

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MAP 3200-2

A
2

**5225 ALL MODELS
INTERFACE MAP**

MAP 3200-3

PAGE 3 OF 30

007

The 'station address switches' are set to the correct position, but the printer control unit is not decoding the correct address.

POWER OFF printer.

Set mode switch to '2'.

POWER ON printer and wait 30 seconds.

IS OPERATOR PANEL DISPLAY '0'?

Y N

008

Printer control unit error.

POWER OFF printer.

Go To Map 2000, Entry Point A.

009

Record what 'station address switches' are now set to.

Turn the Mode Switch to position 2.

Set all 'station address switches' off.

Probe A1U2G08, A1U2J09, and A1U2G09.

**CUSTOMER ACCESS PANEL
ADDRESS SWITCHES**

	4	2	1
ON	---	---	---
	---	---	---
	---	---	---
OFF			

**ON THE THREE PINS, DOES PROBE
INDICATE UP?**

Y N

| |

4 4
B C

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PEC 869365

MAP 3200-3

INTERFACE MAP

PAGE 4 OF 30

010

POWER OFF printer.

Remove A1U2 (IF) card.

POWER ON printer and wait 30 seconds.

Probe A1U2G08, A1U2J09, and A1U2G09.
ON ALL THREE PINS, ARE BOTH PROBE LIGHTS OFF?

Y N

011

POWER OFF printer.

Reinstall A1U2 (IF) card.

**Go to Page 15, Step 042,
Entry Point X2.**

012

POWER OFF printer.

REPLACE A1U2 (IF) card.

Go to Page 17, Step 045, Entry Point X3.

013

POWER OFF printer.
REMOVE A1U2 (IF) card.
Set 'Station Address Switch 1' to the 'on' position.

POWER ON printer and wait 30 seconds.

PROBE A1U2J09 and A1U2G09.

CUSTOMER ACCESS PANEL
ADDRESS SWITCHES

ON	4	2	1
	---	---	---
	---	---	---
	---	---	---
OFF			

(Step 013 continues)

INTERFACE MAP

PAGE 5 OF 30

(Step 013 continued)

ON BOTH PINS, ARE BOTH LIGHTS OFF?

Y N

014

Both pins should be electrically disconnected from all circuits now.

POWER OFF printer.

Locate Customer Access Panel P.C. card behind Customer Access Panel.

Remove Customer Access Panel. DO NOT disconnect any cables until you are instructed in this map

Ensure that you maintain ground between Customer Access Panel and machine frame.

Disconnect Customer Access Panel cable from the Customer Access Panel P.C. card connector 1U1.

Check for continuity on connector 1U1 between pin 10 and pins 11 and 12.

IS THERE CONTINUITY ON ANY OF THE TWO PINS?

Y N

015

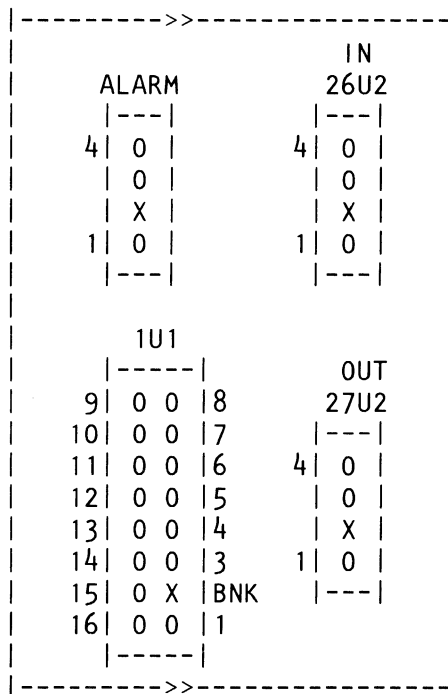
REPLACE or REPAIR Customer Access Panel cable.

Go to Page 17, Step 045, Entry Point X3.

See MIM 1010.

See MIM Figure 4-15 and Reference Drawing AA035.

CUSTOMER ACCESS
PANEL P.C. CARD



D E
5 5

5225 ALL MODELS

MAP 3200-6

INTERFACE MAP

PAGE 6 OF 30

016

REPLACE Customer Access Panel P.C. card.

Go to Page 17, Step 045, Entry Point X3.

017

Probe A1U2G08.

DID PROBE INDICATE DOWN?

Y N

018

The pin should be connected to DC ground through the switch now.

Go to Page 11, Step 032, Entry Point X1.

019

Set 'station address switch 1' back to the 'off' position.

Set 'station address switch 2' to the 'on' position.

Probe A1U2G08 and A1U2G09.

BOTH LIGHTS OFF?

Y N

8 7
F G

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PEC 869365

MAP 3200-6

**5225 ALL MODELS
INTERFACE MAP**

020

Both pins should be electrically disconnected from all circuits now.

See MIM 1010.

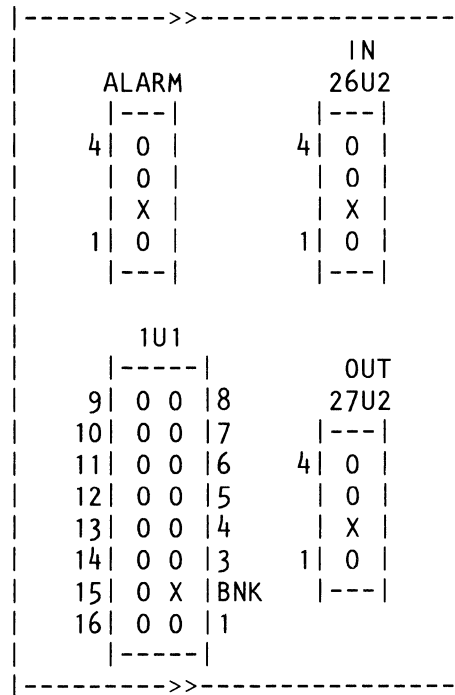
Locate Customer Access Panel P.C. card behind Customer Access Panel.

See MIM Figure 4-15 and 15 and Reference Drawing AA035.

POWER OFF Printer.

**CUSTOMER ACCESS
PANEL P.C. CARD**

Remove Customer access panel. DO NOT disconnect any cables until you are instructed in this map



Ensure that you maintain ground between Customer Access panel and machine frame.

Disconnect Customer Access Panel cable from the Customer Access Panel P.C. card connector 1U1.

Check for continuity on connector 1U1 between pin 11 and pins 10 and 12.

IS THERE CONTINUITY ON ANY OF THE TWO PINS?

Y N

021

REPLACE or REPAIR Customer Access Panel cable.

Go to Page 17, Step 045, Entry Point X3.

F H
6 7

5225 ALL MODELS

MAP 3200-8

INTERFACE MAP

PAGE 8 OF 30

022

REPLACE Customer Access Panel P.C. card.

Go to Page 17, Step 045, Entry Point X3.

023

Probe A1U2J09.

DID PROBE INDICATE DOWN?

Y N

024

The pin should be connected to DC ground through the switch now.

Go to Page 11, Step 032, Entry Point X1.

025

Set 'station address switch 2' back to the 'off' position.

Set 'station address switch 4' to the 'on' position.

Probe A1U2G08 and A1U2J09.

BOTH LIGHTS OFF?

Y N

1
0 9
J K

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EC 323243

PEC 869365

MAP 3200-8

K
8

**5225 ALL MODELS
INTERFACE MAP**

MAP 3200-9

PAGE 9 OF 30

026

Both pins should be electrically disconnected from all circuits now.

See MIM 1010.

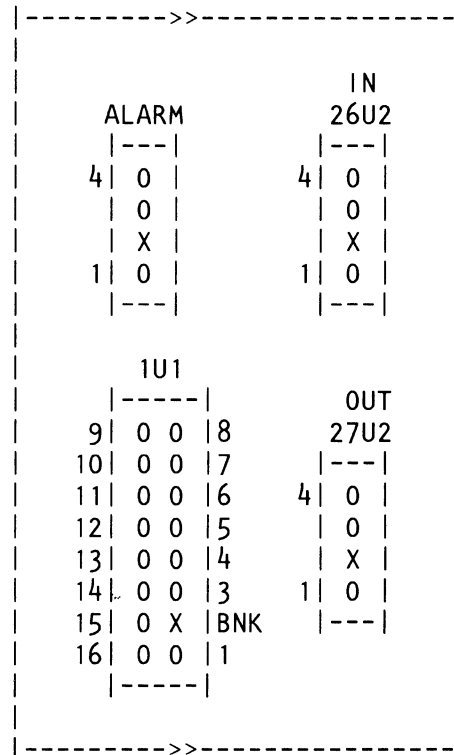
POWER OFF Printer.

See MIM Figure 4-15 and Reference Drawing AA035.

Locate Customer Access Panel P.C. card behind Customer Access Panel.

**CUSTOMER ACCESS
PANEL P.C. CARD**

Remove Customer access panel. DO NOT disconnect any cables until you are instructed in this map.



Ensure that you maintain ground between Customer Access panel and machine frame.

Disconnect Customer Access Panel cable from the Customer Access Panel P.C. card connector 1U1.

Check for continuity on connector 1U1 between pin 12 and pins 10 and 11.

IS THERE CONTINUITY ON ANY OF THE TWO PINS?

Y N

027

REPLACE or REPAIR Customer Access Panel cable.

Go to Page 17, Step 045, Entry Point X3.

1
0
L

20JUL81 PN 6844896

EC 323243 PEC 869365

MAP 3200-9

J L
8 9

5225 ALL MODELS

MAP 3200-10

INTERFACE MAP

PAGE 10 OF 30

028

REPLACE Customer Access Panel P.C. card.
Go to Page 17, Step 045, Entry Point X3.

029

Probe A1U2G09.

DID PROBE INDICATE DOWN?

Y N

030

The pin should be connected to DC ground
through the switch now.

Go to Page 11, Step 032, Entry Point X1.

03

POWER OFF printer.

REPLACE A1U2 (I/F) card.

Go to Page 17, Step 045, Entry Point X3.

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EC 323243 PEC 869365

MAP 3200-10

INTERFACE MAP

032

(Entry Point X1)

See Reference Drawing AA035.

POWER OFF Printer.

CUSTOMER ACCESS PANEL
CABLE

Disconnect Customer Access Panel cable from A1Y6 and Customer Access Panel P.C. card connector 1U1.

CONNECTOR A1Y6		OTHER END
	- STA ADDR 1	
B04	<----->	10
	- STA ADDR 2	
B05	<----->	11
	- STA ADDR 4	
B06	<----->	12

Check for continuity on cable between:

Pin B04 and Pin 10.

Pin B05 and Pin 11.

Pin B06 and Pin 12.

	8	0	0	9
	7	0	0	10
	6	0	0	11
	5	0	0	12
	4	0	0	13
	3	0	0	14
BLANK	X	0	0	15
	1	0	0	16

PIN PATTERN

DO ALL WIRES CHECK FOR CONTINUITY?

Y N

033

REPAIR or REPLACE Customer Access Panel cable.

Go to Page 17, Step 045, Entry Point X3.

1
2
M

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PEC 869365

MAP 3200-11

M
1
1

**5225 ALL MODELS
INTERFACE MAP**

MAP 3200-12

PAGE 12 OF 30

034

REPLACE Customer Access Panel P.C. card.

Go to Page 17, Step 045, Entry Point X3.

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MAP 3200-12

5225 ALL MODELS
INTERFACE MAP
PAGE 13 OF 30

MAP 3200-13

035

(Entry Point X5)

DOES HOST SYSTEM EXPECT THIS
PRINTER TO BE ADDRESS 0?

Y N

036

Because this printer has no 'cable thru'
feature, its address is '0'. The host system
must assign '0' as this printer's address.

Go To Map 2000, Entry Point A.

037

Probe A1U2G08, A1U2J09, and A1U2G09.

ON ALL THREE PINS, DOES PROBE
INDICATE UP?

Y N

038

POWER OFF printer.

Remove A1U2 (IF) card.
POWER ON printer and wait 30 seconds.

Probe A1U2G08, A1U2J09, and A1U2G09.

ON ALL THREE PINS, ARE BOTH PROBE
LIGHTS OFF?

Y N

039

The three pins should be electrically
disconnected from all circuits.

Reinstall A1U2 (IF) card.

Go to Page 15, Step 042,
Entry Point X2.

1 1
4 4
N P

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EC 323243 PEC 869365

MAP 3200-13

N P
1 1
3 3

5225 ALL MODELS

MAP 3200-14

INTERFACE MAP

PAGE 14 OF 30

040

(Entry Point X6)

POWER OFF printer.

REPLACE A1U2 (IF) card.

Go to Page 17, Step 045, Entry Point X3.

041

Go to Step 040, Entry Point X6.

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EC 323243

PEC 869365

MAP 3200-14

INTERFACE MAP

042
(Entry Point X2)

See MIM 1010.

Locate Customer Access Panel P.C. card behind Customer Access Panel.

Ensure that A1U2 (IF) card has been reinstalled.

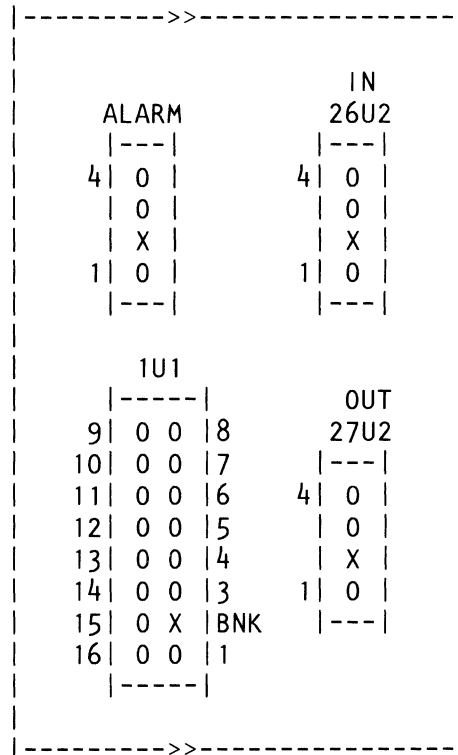
Remove Customer Access Panel.

See MIM Figure 4-15 and Reference Drawing AA035.

Ensure that you maintain ground between Customer Access panel and machine frame.

DO NOT disconnect any cables until you are instructed in this map.

CUSTOMER ACCESS
PANEL P.C. CARD



(Step 042 continues)

**5225 ALL MODELS
INTERFACE MAP**

MAP 3200-16

PAGE 16 OF 30

(Step 042 continued)

Disconnect Customer Access Panel cable from connector 1U1.

See Reference Drawing AA035.

Probe pins 10, 11 and 12 on Customer Access Panel cable.

**CUSTOMER ACCESS PANEL
CABLE**

CONNECTOR A1Y6		OTHER END
	- STA ADDR 1	
B04	<----->	10
	- STA ADDR 2	
B05	<----->	11
	- STA ADDR 4	
B06	<----->	12

	8	0	0	9
	7	0	0	10
	6	0	0	11
	5	0	0	12
	4	0	0	13
	3	0	0	14
BLANK	X	0		15
	1	0	0	16

PIN PATTERN

**ON ALL THREE PINS, DOES PROBE
INDICATE UP?**

Y N

043

There is a short on the Customer Access Panel cable. REPAIR or REPLACE this cable.

Go to Page 17, Step 045, Entry Point X3.

044

REPLACE Customer Access Panel P.C. card.

Go to Page 17, Step 045, Entry Point X3.

20JUL81 PN 6844896

EC 323243 PEC 869365

MAP 3200-16

**5225 ALL MODELS
INTERFACE MAP
PAGE 17 OF 30**

MAP 3200-17

045

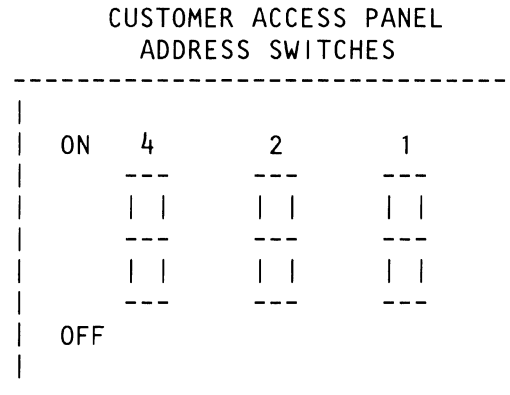
(Entry Point X3)

REINSTALL A1U2 (IF) card, if removed.

REINSTALL Customer Access Panel.

If this machine has the Cable Through Feature installed and you have changed the switches, set them to the position recorded earlier.

See MIM 1010.



Problem continues?

Y N

046

Verify repair.

Go To Map 2000, Entry Point A.

047

Verify that HOST is sending the correct address to this device and the switches are set to the correct address.

Go To Map 2000, Entry Point A.

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MAP 3200-17

INTERFACE MAP

048

(Entry Point DD)

NO LINE ACTIVITY ENTRY.

A DD on the display informs you that there is no line activity. A condition, not an error.

DD is used as an error indication when the Host attempts to communicate with this device and has no response.

This map should only be used after you have verified with host operator that the system is operational.

NOTE --

Entry points to this MAP that are valid two digit characters 0 to F, compare to the operator panel display error in the following way. - The first digit is what is in the error display when no operator panel keys are pressed. The second digit is what is in the error display while the 2ND MODE key is pressed.

5280 SYSTEMS SEE NOTE

=====>

NOTE: FOR 5280 SYSTEMS ONLY.

IN THE EVENT THAT THIS MAP DOES NOT FIND THE PROBLEM, GO TO THE SYSTEM ENTRY MAP AND VERIFY THE HOST AND CABLE TO THIS DEVICE.

If the Host System for this printer is a 5280 SYSTEM, you must run program PRTRPOLL continuously to use entry point DD of this map. See HOST MIM for instructions. Ensure printer is ready.

ENSURE THAT YOU RUN PROGRAM PRTRPOLL CONTINUOUSLY BEFORE YOU ANSWER ANY QUESTIONS IN THIS MAP.

IS THE HOST SYSTEM ON AND OPERATING CORRECTLY ?

Y N

|

049

GO TO SYSTEM ENTRY MAP.

1
9
Q

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MAP 3200-18

0
1
8

**5225 ALL MODELS
INTERFACE MAP**

MAP 3200-19

PAGE 19 OF 30

050

IS THE MODE SWITCH SET TO 'ONLINE'?

Y N

051

Set the mode switch to 'online'.

Go To Map 2000, Entry Point A.

052

**IS THE TWINAX CABLE(S) INSTALLED
CORRECTLY ON THE TWINAX
CONNECTOR(S)?**

See MIM Chapter 1 and Reference Drawing
AA035.

Y N

053

Install cable(s) correctly.

Go To Map 2000, Entry Point A.

054

PROBE PIN A1U2J12.

**ON THIS PIN, DOES PROBE INDICATE
PULSING?**

Y N

Vertical lines for Y and N columns.

2 2
2 2
R S

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EC 323243 PEC 869365

MAP 3200-19

055

Locate Customer Access Panel P.C. card on back of machine.

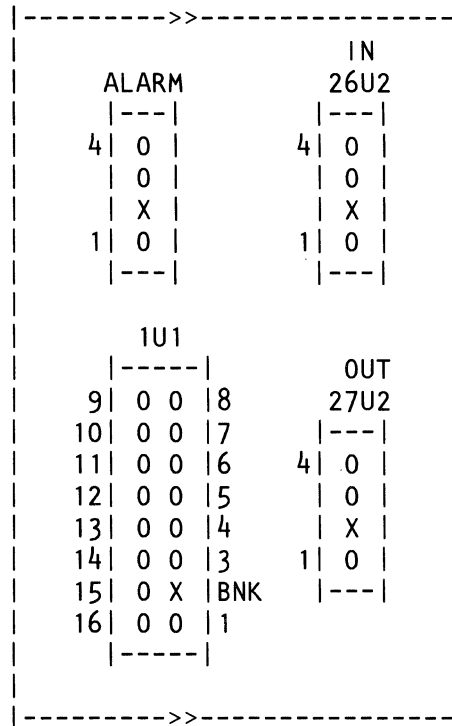
See MIM 1010.

Remove Customer access panel. DO NOT disconnect any cables until you are instructed in this map.

See MIM Figure 4-15 and Reference Drawing AA035.

CUSTOMER ACCESS
PANEL P.C. CARD

Ensure that you maintain ground between Customer Access panel and machine frame.



Ground the probe on machine frame.

Probe pin 9 on connector 1U1 without disconnecting the cable.

DOES LINE PULSE?

Y N

Two vertical lines for recording 'Y' or 'N' responses.

2 2
2 1
T U

056

Inform HOST OPERATOR that it will be necessary to disconnect the INPUT twinax or coax cable from this printer.

Disconnect twinax or coax cable from printer.

IS THERE COAX CABLE INSTALLED AT ANY POINT BETWEEN THE HOST AND THIS PRINTER?

Y N

057

If Host Operator can Power Off the system, do so.

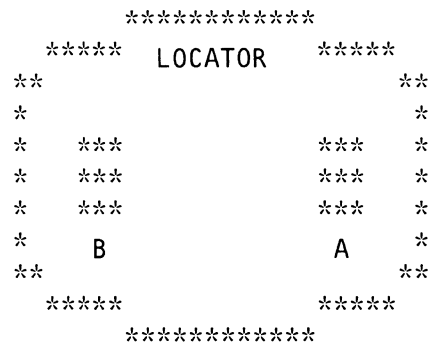
The following resistance measurements can be made while Host System is on.

Check TWINAX cable for resistance between:

PINS	RANGE
-----	-----
A and B	90 to 220 ohms
A and Ground Shield	45 to 140 ohms
B and Ground Shield	45 to 140 ohms

(Step 057 continues)

***** NOTE *****
 If Host System is on, DO NOT cause any shorts when measuring resistance on twinax cable.



Twinax cable (End View)

R T V
1 2 2
9 0 1

5225 ALL MODELS

MAP 3200-22

INTERFACE MAP

PAGE 22 OF 30

(Step 057 continued)

**ARE RESISTANCE MEASUREMENTS
IN GIVEN RANGE?**

Y N

058

REINSTALL twinax cable.

Reinstall Customer Access Panel.

See MIM 1010.

Suspect twinax cable or Host
problem.

GO TO SYSTEM ENTRY MAP

059

**Go to Page 26, Step 073,
Entry Point YY.**

060

**Go to Page 26, Step 073,
Entry Point YY.**

061

POWER OFF Printer.

REPAIR or REPLACE Customer Access Panel
cable.

Go to Page 30, Step 082, Entry Point Y1.

062

Remove Customer access Panel.

See MIM 1010.

DO NOT disconnect any cables until you are
instructed in this map.

Ensure that you maintain ground between
Customer Access panel and machine frame.

Locate Customer Access Panel P.C. card on
back of machine.

See MIM Figure 4-15 and
Reference Drawing AA035.

(Step 062 continues)

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MAP 3200-22

5225 ALL MODELS

MAP 3200-23

INTERFACE MAP

PAGE 23 OF 30

(Step 062 continued)
Locate connector 1U1.

Probe pins 13 and 15.

CUSTOMER ACCESS
PANEL P.C. CARD

ALARM		IN	
4	0	4	0
	0		0
	X		X
1	0	1	0
----		----	
1U1		OUT	
9	0 0	8	27U2
10	0 0	7	----
11	0 0	6	4 0
12	0 0	5	0
13	0 0	4	X
14	0 0	3	1 0
15	0 X	BNK	----
16	0 0	1	

ON BOTH PINS, DOES PROBE INDICATE PULSING?

Y N

063

Probe A1U2J07 and A1U2S13

ON BOTH PINS, DOES PROBE INDICATE PULSING?

Y N

2	2	2
5	5	4
W	X	Y

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EC 323243 PEC 869365

MAP 3200-23

Y
2
3

**5225 ALL MODELS
INTERFACE MAP**

MAP 3200-24

PAGE 24 OF 30

064

POWER OFF Printer.

Remove A1U2 Interface card.

POWER ON Printer.

Ensure that you maintain ground between Customer Access panel and machine frame.

Probe pins A1U2J07 and A1U2S13.

ON BOTH PINS, DOES PROBE INDICATE UP?

Y N

065

POWER OFF Printer.

See Reference Drawing AA035.

Disconnect A1Y6 paddle card on A1 board and connector from 1U1 on Customer Access Panel P.C. card.

Check cable continuity (not for pin 2).

8	0 0	9
7	0 0	10
6	0 0	11
5	0 0	12
4	0 0	13
3	0 0	14
BLANK	X 0	15
1	0 0	16

PIN PATTERN		

DOES CABLE CHECK OUT GOOD FOR CONTINUITY?

Y N

066

REPLACE or REPAIR Customer Access Panel cable.

Go to Page 30, Step 082,

Entry Point Y1.

067

REPLACE Customer Access Panel P.C. card.

Go to Page 30, Step 082, Entry Point Y1.

2
5
7

20JUL81

PN 6844896

EC 323243

PEC 869365

MAP 3200-24

W X Z
2 2 2
3 3 4

5225 ALL MODELS

MAP 3200-25

INTERFACE MAP

PAGE 25 OF 30

068

REPLACE A1U2 (I/F) card.
Go to Page 30, Step 082,
Entry Point Y1.

069

POWER OFF Printer.

Disconnect A1Y6 paddle card on A1 board
and connector from 1U1 on Customer Access
Panel P.C. card.

Check cable continuity.(not for pin 2)

**DOES CABLE CHECK OUT GOOD FOR
CONTINUITY?**

Y N

070

REPLACE or REPAIR Customer Access
Panel cable.
Go to Page 30, Step 082,
Entry Point Y1.

071

REPLACE Customer Access Panel P.C. card.
Go to Page 30, Step 082, Entry Point Y1.

072

REPLACE Customer Access Panel P.C. card.
Go to Page 30, Step 082, Entry Point Y1.

20JUL81 PN 6844896

EC 323243 PEC 869365

MAP 3200-25

INTERFACE MAP

073

(Entry Point YY)

POWER OFF PRINTER

For cable thru machine, set terminator switch to the 1 position.

Check for resistance on connector 26U2 between:

PINS	RANGE
3 and 4	90 to 140 ohms
3 and 1	45 to 80 ohms
4 and 1	45 to 80 ohms

CUSTOMER ACCESS
PANEL P.C. CARD

ALARM		IN 26U2	
4	0	4	0
	0		0
	X		X
1	0	1	0

1U1			OUT 27U2	
9	0 0	8		
10	0 0	7		
11	0 0	6	4	0
12	0 0	5		0
13	0 0	4		X
14	0 0	3	1	0
15	0 X	BNK		
16	0 0	1		

ARE RESISTANCE MEASUREMENTS IN GIVEN RANGE?

Y N

074

REPLACE Customer Access Panel P.C. card.

Go to Page 30, Step 082, Entry Point Y1.

2
7
A
A

A
A
2
6

5225 ALL MODELS
INTERFACE MAP
PAGE 27 OF 30

MAP 3200-27

075

Check for continuity between input socket and Customer Access Panel P.C. card connector 26U2.

SEE Reference Drawing AA035

Pin to pin continuity chart

	SOCKET		IN 26U2	
	===	===	===	===
A	0	=====	0	4
B	0	=====	0	3
	X	==open==	X	2
gnd	0	==open==	0	1
	===	===	===	===

```

*****
***** LOCATOR *****
***                                     ***
*                                     *
*                                     *
*   ***                               *** *
*   ***                               *** *
*   ***                               *** *
*   A                                 B   *
*                                     *
*                                     *
***                                     ***
*****                               *****
*****

```

Twinax socket (End View)

IS THERE CONTINUITY?

Y N

076

REPAIR or REPLACE Socket or Cable.
Verify Repair.
Go to Page 30, Step 082, Entry Point Y1.

2
8
A
B

20JUL81 PN 6844896

EC 323243 PEC 869365

MAP 3200-27

**5225 ALL MODELS
INTERFACE MAP**

PAGE 28 OF 30

077

Disconnect A1Y6 paddle card on A1 board and connector from 1U1 on Customer Access Panel P.C. card.

See Reference Drawing AA035.

Check cable continuity (not for pin 2).

8	0 0	9
7	0 0	10
6	0 0	11
5	0 0	12
4	0 0	13
3	0 0	14
BLANK	X 0	15
1	0 0	16

PIN PATTERN

DOES CABLE CHECK OUT GOOD FOR CONTINUITY?

Y N

078

REPLACE or REPAIR Customer Access Panel cable.

Go to Page 30, Step 082, Entry Point Y1.

079

At cable connector removed from A1Y6, resistance check each connector pin to frame ground. Meter should read an open circuit at each pin.

NOTE: Connector 1U1 should still be disconnected.

Did meter read an open circuit at each pin?

Y N

080

REPAIR or REPLACE cable between cable connector A1Y6 and cable connector 1U1.

Verify repair.

Go To Map 2000, Entry Point A.

A
C
2
8

5225 ALL MODELS

MAP 3200-29

INTERFACE MAP

PAGE 29 OF 30

081

The Host fails to communicate with this device.
A suspect list follows. SEE NOTE ==>

1. A1U2 (I/F) CARD.
2. CUSTOMER ACCESS PANEL P.C. CARD.
3. TWIN-AX OR COAX CABLE.
4. HOST INTERFACE CARDS.

NOTE:

ADDITIONAL INFORMATION IS AVAILABLE IN
MAP 4000 (symptom map) FOR ERROR CODE
DD, ALSO SEE SYMPTOM MAP CHART.

20JUL81

PN 6844896

EC 323243

PEC 869365

MAP 3200-29

INTERFACE MAP

PAGE 30 OF 30

082

(Entry Point Y1)

IF REMOVED:

REINSTALL all cards and cables.

REINSTALL Customer Access Panel.

See MIM 1010.

IS THIS THE FIRST TIME HERE FOR THIS
PROBLEM?

Y N

083

PROBLEM CONTINUES

SEE NOTE =====>

GO TO SYSYEM ENTRY MAP.

NOTE:

ADDITIONAL INFORMATION IS AVAILABLE IN
MAP 4000 (symptom map) FOR ERROR CODE
DD, ALSO SEE SYMPTOM CHART.

084

TO VERIFY REPAIR,

Go To Map 2000, Entry Point A.

ACTUATOR MOVEMENT / CONTROL

PAGE 1 OF 96

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
2000	34	8	015
3000	31	3	001
3000	32	6	008
3000	34	8	015
3000	35	22	066
3000	36	42	130
3000	38	49	147

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
3	002	2000	A
4	006	2000	A
5	007	2000	A
6	009	2000	A
7	013	2000	A
8	016	2000	A
9	019	2000	A
11	028	2000	A
12	029	2000	A
12	031	2000	A
12	032	2000	A
14	036	2000	A
14	037	2000	A
15	040	2000	A
15	041	2000	A
15	043	2000	A
16	045	2000	A
16	047	2000	A
17	051	2000	A
18	052	2000	A
18	054	2000	A
19	056	2000	A
20	059	2000	A
20	060	2000	A
20	063	2000	A
23	072	2000	A
24	073	2000	A
24	075	2000	A
26	083	2000	A
28	090	2000	A
29	092	2000	A
29	093	2000	A
31	096	2000	A
31	097	2000	A
31	098	2000	A
32	100	2000	A
32	102	2000	A
40	126	2000	A
41	128	2000	A

5225 ALL MODELS
 ACT MVMNT / CNTRL
 PAGE 2 OF 96

MAP 3300-2

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
33	107	2000	A
34	110	2000	A
34	112	2000	A
34	113	2000	A
35	115	2000	A
36	118	2000	A
36	119	2000	A
37	121	2000	A
38	123	2000	A
39	124	2000	A
42	131	2000	A
43	135	2000	A
44	138	2000	A
45	140	2000	A
45	141	2000	A
47	145	2000	A
48	146	2000	A
49	148	2000	A
50	153	2000	A
50	154	2000	A
50	156	2000	A
51	159	2000	A
52	160	2000	A
52	162	2000	A
54	169	2000	A
55	171	2000	A
55	173	2000	A
55	174	2000	A
56	176	2000	A
56	179	2000	A
56	181	2000	A
57	183	2000	A
58	187	2000	A
60	190	2000	A
60	191	2000	A
60	193	2000	A
63	202	2000	A
63	204	2000	A
64	206	2000	A

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
66	213	2000	A
69	217	2000	A
73	226	2000	A
73	227	2000	A
74	230	2000	A
75	231	2000	A
75	233	2000	A
76	235	2000	A
77	237	2000	A
78	239	2000	A
79	242	2000	A
79	243	2000	A
80	246	2000	A
81	248	2000	A
96	287	2000	A
96	288	2000	A
92	276	2000	A
27	087	3600	85
22	068	4000	A
25	077	4000	B

16MAR82 PN 6844897
 EC 997163 PEC 323243
 MAP 3300-2

001
(Entry Point 31)

Reference Drawing for this entry point:

Symptoms at this entry point:

ACTUATOR CARRIER MOVEMENT AND
CONTROL AA050

Panel Lights	Status
=====	=====
ATTENTION	ON
READY	OFF
DISPLAY	3

Press and hold 2ND MODE. Note number in
DISPLAY.

Is 1 displayed?

Y N

002

Symptoms have changed.

Go To Map 2000, Entry Point A.

003

Set MODE switch to TEST .

While probing lines below, press and release
STOP.

Signal Name	Logic Pin	Probe Light Status
=====	=====	=====
Head Run	A1L2G02	Pulse
Head Ramp	A1L2G03	Pulse
10 CPI	A1L2G07	Pulse
Head Left	A1L2J02	Pulse

Did all lines pulse?

Y N

Y N

5 4
A B

004
POWER OFF.

Remove A1N2 card.

POWER ON.

Wait approximately 30 seconds.

Probe lines below.

Signal Name	Logic Pin	Probe Light Status
Head Run	A1L2G02	Up
Head Ramp	A1L2G03	Up
10 CPI	A1L2G07	Up
Head Left	A1L2J02	Up

Are all lines UP?

Y N

005
A1L2 CARD FAILURE

POWER OFF.

Reinstall A1N2 card.

REPLACE A1L2 card.

Perform service checks.

Go to Page 81, Step 247, Entry Point B.

006
A1N2 CARD FAILURE

Before installing new A1N2 card, verify card is jumpered for correct number of print actuator groups. See MIM 3103.

POWER OFF.

REPLACE A1N2 card.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

A
3

5225 ALL MODELS
ACT MVMNT / CNTRL
PAGE 5 OF 96

MAP 3300-5

007

A1N2 CARD FAILURE

Before installing new A1N2 card, verify card is jumpered for correct number of print actuator groups. See MIM 3103.

POWER OFF.

REPLACE A1N2 card.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

16MAR82 PN 6844897
EC 997163 PEC 323243
MAP 3300-5

008
(Entry Point 32)

Reference Drawing for this entry point:

Symptoms at this entry point:

ACTUATOR CARRIER MOVEMENT AND
CONTROL AA050

Panel Indicators =====	Status =====
ATTENTION	ON
READY	OFF
DISPLAY	3

Press and hold 2ND MODE. Note number in
DISPLAY.

Is 2 displayed?

Y N

009

Symptoms have changed.

Go To Map 2000, Entry Point A.

010

Set MODE switch to TEST.

Press and release STOP.

While probing A1N2B12 (Head Run), press and
release START.

Did line pulse?

Y N

011

Install CE jumper A1T2D12 to A1T2D08.

Is line UP?

Y N

Vertical lines for Y/N responses.

7 7 7
C D E

16MAR82 PN 6844897

EC 997163 PEC 323243

MAP 3300-6

C D E
6 6 6

5225 ALL MODELS

MAP 3300-7

ACT MVMNT / CNTRL

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012

A1L2 CARD FAILURE

POWER OFF.

REMOVE CE jumper A1T2D12 to
A1T2D08.

REPLACE A1L2 card.

Perform service checks.

Go to Page 81, Step 247, Entry Point B.

013

A1N2 CARD FAILURE

Before installing new A1N2 card, verify card is
jumpered for correct number of print actuator
groups. See MIM 3103.

POWER OFF.

REMOVE CE jumper A1T2D12 to A1T2D08.

REPLACE A1N2 card.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

014

A1L2 CARD FAILURE

POWER OFF.

REPLACE A1L2 card.

Perform service checks.

Go to Page 81, Step 247, Entry Point B.

16MAR82 PN 6844897

EC 997163 PEC 323243

MAP 3300-7

015
(Entry Point 34)

Reference Drawing for this entry point:

Symptoms at this entry point:

ACTUATOR CARRIER MOVEMENT AND
CONTROL AA050

Panel Indicators =====	Status =====
ATTENTION	ON
READY	OFF
DISPLAY	3

SEE MIM 3611 for access to the following parts
F1,F2,F3,P204,P205, and P206.

Press and hold 2ND MODE. Note number in
DISPLAY.

Is 4 displayed?

Y N

016
Symptoms have changed.
Go To Map 2000, Entry Point A.

017

Set MODE switch to TEST.

Press and release STOP.

Wait 30 seconds.

Press and hold 2ND MODE.

Is 5 displayed?

Y N

018
POWER OFF.

Locate Actuator Drive Motor.

See MIM Figure 4-6.

(Step 018 continues)

(Step 018 continued)
Slowly turn Motor knob clockwise (CW) to STOP position in the right margin and counterclockwise (CCW) to RAMP position. (See Note to the right)

Note:
With machine power OFF, the motor knob rotation will normally be continuously free.

When the motor knob is turned fully CW the Actuator Carrier Assembly will hit the STOP position in the right margin. Turning the motor knob fully CCW will cause the Actuator Carrier Assembly to move up the RAMP to HOME position. Additional torque is needed to move Actuator Carrier Assembly up RAMP to HOME position.

STOP is when the Actuator Carrier Assembly mechanically hits the RIGHT or LEFT margin limits.

Is motor knob rotation continuously free in both directions?

Y N

019
ACTUATOR DRIVE MECHANICAL FAILURE

Either Actuator Drive Motor or drive mechanism failed.

Check for mechanical binds at motor shaft, couplings, and any other attached hardware.

Either REPAIR or REPLACE failed parts.

VERIFY REPAIR.
Go To Map 2000, Entry Point A.

See MIM 3302.

020
Turn motor knob fully CW to STOP position.

Attempt to turn motor knob CW past STOP position.

Can motor knob be turned past STOP position?

Y N

2 1
0 0
G H

16MAR82 PN 6844897
EC 997163 PEC 323243
MAP 3300-9

021

Install CE jumper (A1T2D12 to A1T2D08).

Turn motor knob fully CCW (Actuator Carrier Assembly in HOME position).

POWER ON.

Wait approximately 30 seconds.

Jumper A1T2P09 (Over Current Reset) to logic ground, and then, remove same ground.

Slowly turn Motor knob clockwise (CW) to STOP position in the right margin, and counterclockwise (CCW) to RAMP position. (See Note to the right)

Note:

When the motor knob is turned fully CW the Actuator Carrier Assembly will hit the stop position in the right margin. Turning the motor knob fully CCW will cause the Actuator Carrier Assembly to move up RAMP to HOME position. Additional torque is needed to move Actuator Carrier Assembly up RAMP to HOME position.

With machine powered on, the motor knob rotation will feel different than when the machine was powered off. It should be harder to turn (stiff).

Is motor knob rotation continuously stiff?

Y N

022

Is motor knob rotation continuously free (Same as with machine power OFF)?

Y N

023

Go to Page 67, Step 214, Entry Point A.

024

POWER OFF.

Locate fuses F209 (+50 vdc,10a) and F3 (10 vdc,2a).

See MIM Figure 4-9, 4-10 and MIM 3611 for access to F3.

Check both fuses for continuity.

Are both fuses good?

Y N

1 1 1
8 5 1
J K L

16MAR82 PN 6844897

EC 997163 PEC 323243

MAP 3300-10

L
1
0

5225 ALL MODELS
ACT MVMNT / CNTRL
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MAP 3300-11

025

Is fuse F3 blown?

Y N

026

FUSE F209 BLOWN

REPLACE fuse F209.

Remove CE jumper (A1T2D12 to A1T2D08).

Set MODE switch to TEST.

POWER ON.

Wait approximately 30 seconds.

Press START.

Did machine operate correctly in TEST?

Y N

027

POWER OFF.

Remove P206 and check for open to ground from P206 pin 6.

See MIM Figure 4-10.

Is circuit open?

Y N

028

REPAIR/REPLACE cable P206-6 to F209 fuse.

REPLACE Fuse 209.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

1 1 1
3 2 2
M N P

16MAR82 PN 6844897

EC 997163 PEC 323243

MAP 3300-11

N P
1 1
1 1

5225 ALL MODELS
ACT MVMNT / CNTRL

MAP 3300-12

PAGE 12 OF 96

029

SERVO POWER AMPLIFIER CARD FAILURE

POWER OFF.

REPLACE Servo Power Amplifier card.

See MIM 3611.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

030

Run TEST several times to verify machine operates correctly.

Did machine operate correctly in TEST?

Y N

031

SERVO POWER AMPLIFIER CARD FAILURE

POWER OFF.

REPLACE Servo Power Amplifier card.

See MIM 3611.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

032

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

16MAR82 PN 6844897

EC 997163 PEC 323243

MAP 3300-12

M
1
1

5225 ALL MODELS
ACT MVMNT / CNTRL
PAGE 13 OF 96

MAP 3300-13

033

REPLACE fuse F3.

See MIM Figure 4-10.

Remove CE jumper (A1T2D12 to A1T2D08).

POWER ON.

Set Mode switch to TEST.

Press START.

Did machine operate correctly in TEST?

Y N

034

POWER OFF

See MIM Figure 4-16.

Disconnect connector A1L5 at A1 board.

Check resistance at A1L5 cable connector,
pins D12 and D13 (Current Sense lines).

Is resistance approximately zero ohms?

Y N

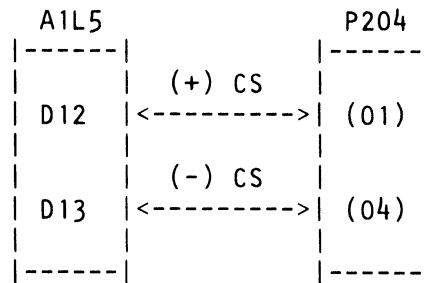
035

Locate Servo Power Amplifier card.

See MIM Figure 4-10.

Disconnect connector P204 at Servo Power
Amplifier card.

Check continuity of cable shown in figure
to the right.====>



**A1L5/P204 CABLE
CONNECTION
(CURRENT SENSE LINES ONLY)**

Continuity check good?

Y N

1 1 1 1
4 4 4 4
Q R S T

16MAR82 PN 6844897

EC 997163 PEC 323243

MAP 3300-13

Q R S T
1 1 1 1
3 3 3 3

5225 ALL MODELS
ACT MVMNT / CNTRL

MAP 3300-14

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036

CABLE A1L5/P204 FAILURE

Either REPAIR or REPLACE cable
A1L5/P204.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

037

SERVO POWER AMPLIFIER CARD
FAILURE

REPLACE Servo Power Amplifier card.

See MIM 3611.

VERIFY REPAIR

Go To Map 2000, Entry Point A.

038

A1L2 CARD FAILURE

REPLACE A1L2 card.

Reconnect connector A1L5 at A1 board.

Perform service checks.

Go to Page 81, Step 247, Entry Point B.

039

Run TEST several times to verify machine
operates correctly.

Did machine operate correctly in TEST?

Y N

1 1
5 5
U V

16MAR82 PN 6844897

EC 997163 PEC 323243

MAP 3300-14

K U V
1 1 1
0 4 4

5225 ALL MODELS
ACT MVMNT / CNTRL

MAP 3300-15

PAGE 15 OF 96

040
SERVO POWER AMPLIFIER CARD
FAILURE

POWER OFF.

REPLACE Servo Power Amplifier card. See MIM 3611.

VERIFY REPAIR.
Go To Map 2000, Entry Point A.

041
VERIFY REPAIR.
Go To Map 2000, Entry Point A.

042
Reinstall fuses F209 and F3. See MIM Figures 4-9 and 4-10.

DISCONNECT P 206

POWER ON.

Wait approximately 30 seconds.

Check for +50 VDC at P206 pin 6 to ground.

Is +50 VDC present?

Y N

043
REPAIR/REPLACE wire assembly from 50
volt bus to fuse F209, from F209 to P206-6.
VERIFY REPAIR.
Go To Map 2000, Entry Point A.

044
Check for +10 VDC at P206 pin 3 to ground.

Is 10 VDC present?

Y N

1 1
6 6
W X

16MAR82 PN 6844897

EC 997163 PEC 323243

MAP 3300-15

W X
1 1
5 5

5225 ALL MODELS
ACT MVMNT / CNTRL

MAP 3300-16

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045

Check for broken wire from 10V bus to P206
pin 3

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

046

POWER OFF.

See MIM Figure 4-10.

RECONNECT P206.

POWER ON.

Locate F3 fuse socket.

Check for +10 vdc at F3 fuse socket.

Is 10 vdc at F3 socket?

Y N

047

CABLE ASSEMBLY FAILURE

POWER OFF.

REPLACE P206 Cable Assembly.

See MIM 3614.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

048

Check for +5 VDC between (+)A1L2P11 and
(-)A1L2P12.

Is +5 VDC present?

Y N

1 1
7 7
Y Z

16MAR82 PN 6844897

EC 997163 PEC 323243

MAP 3300-16

Y Z
1 1
6 6

5225 ALL MODELS
ACT MVMNT / CNTRL

MAP 3300-17

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049

A1L2 CARD FAILURE

POWER OFF.

REPLACE A1L2 card.

Perform service checks.

Go to Page 81, Step 247, Entry Point B.

050

POWER OFF.

Locate Actuator Drive Motor.

See MIM Figure 4-6.

Disconnect Actuator Drive Motor connector J209
from cable connector P209.

See MIM Figure 4-12.

POWER ON.

Wait approximately 30 seconds.

Check for +5 VDC between cable connector P209
(+)pin 1 and (-)pin 2.

Is +5 vdc present?

Y N

051

CABLE A1L4/P209 FAILURE

POWER OFF.

Either REPAIR or REPLACE cable A1L4/P209.

Remove CE jumper (A1T2D12 to A1T2D08).

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

1
8
A
A

16MAR82 PN 6844897

EC 997163 PEC 323243

MAP 3300-17

J A
1 A
0 1
7

5225 ALL MODELS
ACT MVMNT / CNTRL
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MAP 3300-18

052

SERVO AMP A1L2 OR ACTUATOR DRIVE
MOTOR FAILURE

POWER OFF.

REPLACE A1L2 card. Perform service checks,
Entry Point B.

REPLACE Actuator Drive Motor.

See MIM 3302.

Remove CE jumper (A1T2D12 to A1T2D08).

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

053

Remove CE jumper (A1T2D12 to A1T2D08).

Wait approximately 5 seconds Models 1,2,3,4.
(Approximately 15 seconds Models 11, 12).

Probe A1N2D13 (Head Ramp).

Is line UP?

Y N

054

A1L2 CARD FAILURE or A1N2 CARD
FAILURE.

POWER OFF.

REPLACE A1L2 or A1N2 card.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

When replacing A1L2 card, perform service
checks in this map Entry Point B.

Before installing new A1N2 card, verify card is
jumpered for correct number of print actuator
groups. See MIM 3103.

1
9
A
B

16MAR82 PN 6844897

EC 997163 PEC 323243

MAP 3300-18

055

Press and release STOP while observing probe lights.

Does line pulse?

Y N

056

A1N2 CARD FAILURE

Before installing new A1N2 card, verify card is jumpered for correct number of print actuator groups. See MIM 3103.

POWER OFF.

REPLACE A1N2 card.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

057

Locate Actuator Drive Motor.

See MIM Figure 4-6.

Turn Actuator motor knob fully CCW.

When the motor knob is turned fully CW the Actuator Carrier Assembly will hit the stop position in the right margin. Turning the motor knob fully CCW will cause the Actuator Carrier Assembly to move up RAMP to HOME position.

Probe A1N2J09 (Head Busy).

Press and release START while observing probe lights. (NOTE - This test takes approximately 3 to 5 seconds before probe will pulse.)

Does line pulse?

Y N

058

A1L2 CARD FAILURE

POWER OFF.

REPLACE A1L2 card.

Perform service checks.

Go to Page 81, Step 247, Entry Point B.

F 8
G 9
A C

5225 ALL MODELS
ACT MVMNT / CNTRL

MAP 3300-20

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059

A1N2 CARD FAILURE

Before installing new A1N2 card, verify card is jumpered for correct number of print actuator groups. See MIM 3103.

POWER OFF.

REPLACE A1N2 card.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

060

ACTUATOR DRIVE MECHANICAL FAILURE

Actuator motor/lead screw coupling is loose.

REPAIR motor/lead screw coupling.

See MIM 3302

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

061

Probe A1N2B13 (Head Left).

Press and release STOP while observing probe lights.

Does line pulse?

Y N

062

Is line DOWN?

Y N

063

A1N2 CARD FAILURE

Before installing new A1N2 card, verify card is jumpered for correct number of print actuator groups. See MIM 3103.

POWER OFF.

REPLACE A1N2 card.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

2 2
1 1
A A
D E

16MAR82 PN 6844897

EC 997163 PEC 323243

MAP 3300-20

A A
D E
2 2
0 0

5225 ALL MODELS
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MAP 3300-21

064

A1L2 CARD FAILURE

POWER OFF.

REPLACE A1L2 card.

Perform service checks.

Go to Page 81, Step 247, Entry Point B.

065

A1L2 CARD FAILURE

POWER OFF.

REPLACE A1L2 card.

Perform service checks.

Go to Page 81, Step 247, Entry Point B.

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EC 997163 PEC 323243

MAP 3300-21

066
(Entry Point 35)

Symptoms at this entry point:

Panel Indicators	Status
=====	=====
ATTENTION	ON
READY	OFF
DISPLAY	3

Reference Drawings for this entry point:

ACTUATOR CARRIER MOVEMENT AND CONTROL AA050

LOGIC BOARD POWER DISTRIBUTION AA010

EMITTERS AND PLATEN SWITCH AA065

Open top cover. Bypass cover interlock switch.

Place Actuator Carrier Assembly on RAMP (HOME POSITION).

Press and Release STOP key.
Press START. Wait 30 seconds.

Press and hold 2ND MODE. Note number in DISPLAY.

Is 5 displayed?

Y N

067

Is 8 displayed?

Y N

068

Symptoms have changed.
Go To Map 4000, Entry Point A.

069

ERROR 38 .
Go to Page 49, Step 147, Entry Point 38.

2
3
A
F

A
F
2
2

070
POWER OFF

Disconnect connector A1L5 at A1 board.

See MIM Figure 4-16.

Check resistance at A1L5 cable connector, pins D12 and D13 (Current Sense lines).

Is resistance approximately zero ohms?

Y N

071

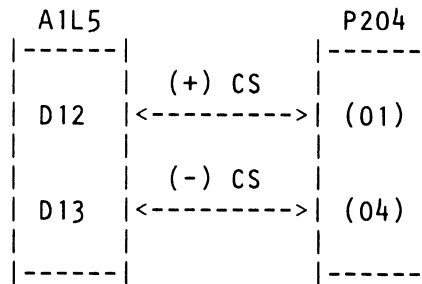
Locate Servo Power Amplifier card.

See MIM Figure 4-10.

Disconnect connector P204 at Servo Power Amplifier card.

See MIM 3617 for access to P204.

Check continuity of cable shown in figure to the right.====>



A1L5/P204 CABLE
CONNECTION
(CURRENT SENSE LINES ONLY)

Continuity check good?

Y N

072

CABLE A1L5/P204 FAILURE

Either REPAIR or REPLACE cable A1L5/P204.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

2 2
4 4
A A
G H

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EC 997163 PEC 323243

MAP 3300-23

A
G
2
3

5225 ALL MODELS
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MAP 3300-24

073

SERVO POWER AMPLIFIER CARD FAILURE

REPLACE Servo Power Amplifier card.

See MIM 3611.

VERIFY REPAIR

Go To Map 2000, Entry Point A.

074

Reconnect A1L5 connector.

Locate Actuator Drive Motor.

See MIM Figure 4-6.

Slowly turn Motor knob clockwise (CW) to STOP position in the right margin, and counterclockwise (CCW) to RAMP position. (See Note to the right)

Note:

When the motor knob is turned fully CW the Actuator Carrier Assembly will hit the stop position in the right margin. Turning the motor knob fully CCW will cause the Actuator Carrier Assembly to move up RAMP to HOME position. Additional torque is needed to move Actuator Carrier Assembly up RAMP to HOME position.

Is motor knob rotation continuously free in both directions?

Y N

075

ACTUATOR DRIVE MECHANICAL FAILURE

Actuator motor/ drive mechanism failed.

Check for mechanical binds at motor shaft, couplings, and any other attached hardware.

Either REPAIR or REPLACE failed parts.

Reconnect cable A1L5.

See MIM 3302.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

2
5
A
J

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EC 997163 PEC 323243

MAP 3300-24

A
J
2
4

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MAP 3300-25

076

Set MODE switch to TEST.

POWER ON.

Wait approximately 30 seconds.

After POWER ON tests are completed, an error will be displayed.

Is 3 in DISPLAY?

Y N

077

Symptoms have changed. NOTE ERROR CODE

Go To Map 4000, Entry Point B.

078

Press and release STOP.
wait 3 seconds

When STOP is pressed, DISPLAY will change to 0. The 0 will remain in DISPLAY if error is reset.

Does DISPLAY change to 0 and remain 0?

Y N

079

Remove Actuator Fan cover.

Press STOP and observe the FIRST movement of the Actuator Carrier Assembly.

Does the Actuator Carrier Assembly remain stopped (no movement)?

Y N

080

Is first movement of the Actuator Carrier assembly to the left?

Y N

081

Probe A1L2J02 (- head left)
Press STOP key

Is up light on and remain on?

Y N

3 3 2 2 2
2 1 6 6 6
A A A A A
K L M N P

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EC 997163 PEC 323243

MAP 3300-25

A
M
2
5
A
N
2
5
A
P
2
5

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MAP 3300-26

082
A1L2 CARD FAILURE

POWER OFF.

REPLACE A1L2 card.

Perform service checks.

Go to Page 81, Step 247, Entry Point B.

083
A1N2 CARD FAILURE

POWER OFF.

REPLACE A1N2 card.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

Before installing new A1N2 card, verify card is jumpered for correct number of print actuator groups. See MIM 3103.

084
Locate Actuator Drive Motor.

See MIM Figure 4-6.

Turn motor knob fully CCW to move Actuator Carrier Assembly to HOME position.

When the motor knob is turned fully CW the Actuator Carrier Assembly will hit the stop position in the right margin. Turning the motor knob fully CCW will cause the Actuator Carrier Assembly to move up RAMP to HOME position.

Probe the following signal lines:

Signal Name	Logic Pin	Probe Indicate
PRT Emitter	A1N2B09	DOWN
TA Emitter	A1N2B05	DOWN
MARG Emitter	A1N2B03	DOWN

Are any lines DOWN?

Y N

085
Probe A1K2B11(+5 vdc).

Is line UP?

Y N

2
9
A
Q
2
8
A
R
2
7
A
S

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EC 997163 PEC 323243

MAP 3300-26

A
3
6

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MAP 3300-27

086

Check for +8.5 vdc between A1K2B03 and logic ground.

Is +8.5 vdc present?

Y N

087

POWER SUPPLY PROBLEM.

Go To Map 3600, Entry Point 85.

088

A1K2 CARD FAILURE

POWER OFF.

REPLACE A1K2 card.

Perform service checks.

Go to Page 81, Step 247, Entry Point B.

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EC 997163 PEC 323243

MAP 3300-27

089

POWER OFF.

Disconnect connector at Linear Emitter (LEM) Amplifier card. See MIM 3303.

See MIM 3303.

POWER ON.

See the figure to the right.====>

Check for +5 vdc between (+)pin 8 and (-)pin 6 at LEM connector.

LEM		A1Y3
	MARG EM	
01	<----->	B03
	TA EM	
02	<----->	B04
	PRT EM	
03	<----->	B02
04		
05		
	Ground	
06	<----->	B08
XX		
	+5 VDC	
08	<----->	D02

**LEM/A1Y3 CABLE
CONNECTION**

Note: LEM connector does not permit connection at pin 7. This is a reference pin only, and is used to seat connector at LEM amplifier board correctly.

Is +5vdc present?

Y N

090

LEM/A1Y3 CABLE FAILURE

POWER OFF.

Either REPAIR or REPLACE LEM/A1Y3 cable.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

A A
0 T
2 2
6 8

5225 ALL MODELS
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PAGE 29 OF 96

MAP 3300-29

091
POWER OFF.

Check alignment by performing SERVICE CHECKS of the Linear Encoder Glass Assembly, and check glass for scratches or dirt.

See MIM 3303.

LEM should not have scratches, cracks, or dirt.

Is Linear Encoder Glass ok?

Y N

092
LINEAR ENCODER GLASS ASSEMBLY
FAILURE

Either REPAIR or REPLACE Linear Encoder Glass.

See MIM 3303.

VERIFY REPAIR.
Go To Map 2000, Entry Point A.

093
LINEAR EMITTER AMPLIFIER CARD
FAILURE

REPLACE Linear Emitter Amplifier card.

See MIM 3303.

VERIFY REPAIR.
Go To Map 2000, Entry Point A.

094
POWER OFF.

Install CE jumper (A1T2D12 to A1T2D08).

POWER ON.

Wait approximately 30 seconds.

Install jumper A1T2P09 (Over Current Reset) to logic ground, and then, remove same ground.

While probing each line below, turn Actuator motor knob fully CW and CCW. Each line will pulse while knob is turned.

(Step 094 continues)

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MAP 3300-29

5225 ALL MODELS
 ACT MVMNT / CNTRL

MAP 3300-30

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(Step 094 continued)

Margin Emitters, pulse at end of CW and CCW movement.

(Right or Left stops.)

Signal Name	Logic Pin
Print Emitter	A1N2B09
Turn Around Emitter	A1N2B05
Margin Emitter	A1N2B03

Does each line pulse?

Y N

095

POWER OFF.

See MIM 3303.

Disconnect connector A1Y3 at A1 board and connector at Linear Emitter Amplifier card.

See the figure to the right.==>

Check continuity of cable.

Check for OPEN between frame ground and all pins of cable.

LEM		A1Y3
01	<----->	B03
02	<----->	B04
03	<----->	B02
04		
05		
06	<----->	B08
XX		
08	<----->	D02

LEM/A1Y3 CABLE
 CONNECTION

Note: LEM connector does not permit connection at pin 7. This is a reference pin only, and is used to seat connector at LEM amplifier board correctly.

Cable good?

Y N

3 3 3
 1 1 1
 A A A
 U V W

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EC 997163 PEC 323243

MAP 3300-30

A A A A
L U V W
2 3 3 3
5 0 0 0

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ACT MVMNT / CNTRL

MAP 3300-31

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096
LEM/A1Y3 CABLE FAILURE

POWER OFF.

Remove CE jumper (A1T2D12 to
A1T2D08).
Either REPAIR or REPLACE LEM/A1Y3
cable.

VERIFY REPAIR.
Go To Map 2000, Entry Point A.

097
LINEAR EMITTER AMPLIFIER CARD
FAILURE

REPLACE Linear Emitter Amplifier card. See MIM 3303.

Remove CE jumper (A1T2D12 to
A1T2D08).

VERIFY REPAIR.
Go To Map 2000, Entry Point A.

098
A1N2 CARD FAILURE

Before installing new A1N2 card, verify card is
jumpered for correct number of print actuator
groups. See MIM 3103.

POWER OFF.

REPLACE A1N2 card.

Remove CE jumper (A1T2D12 to A1T2D08).

VERIFY REPAIR.
Go To Map 2000, Entry Point A.

099
Probe A1L2G05 (Head Over Current).

Is line DOWN?

Y N

3 3
2 2
A A
X Y

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EC 997163 PEC 323243

MAP 3300-31

A A A
K X Y
2 3 3
5 1 1

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MAP 3300-32

100
A1N2 CARD FAILURE

Before installing new A1N2 card, verify card is jumpered for correct number of print actuator groups. See MIM 3103.

POWER OFF.

REPLACE A1N2 card.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

101

Probe A1L2B03 (Over Current Reset).

Press and release STOP while observing probe lights.

Does line pulse?

Y N

102
A1T2 CARD FAILURE

Ensure that jumpers are installed correctly before replacing this card. See MIM 3103.

POWER OFF.

REPLACE A1T2 card.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

103

Go to Page 40, Step 125, Entry Point ML.

104

Probe A1N2B13.

Is line pulsing?

Y N

3 3
3 3
A B
Z A

16MAR82 PN 6844897

EC 997163 PEC 323243

MAP 3300-32

A
Z
3
2

B
A
3
2

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MAP 3300-33

105
POWER OFF.

Remove A1N2 card.

POWER ON.

Probe A1N2B13.

Is line up?

Y N

106
POWER OFF.

Reinstall A1N2 card.
Reconnect crossover connector.
Replace A1L2 card.

Perform service checks.
Go to Page 81, Step 247, Entry Point B.

107
POWER OFF.

Replace A1N2 card.
Reconnect crossover connector.
Verify repair.
Go To Map 2000, Entry Point A.

When installing new A1N2 card, verify card is jumpered for correct number of print actuator groups. See MIM 3103.

108
POWER OFF.

Locate fuse F209 (+50v, 10a).

See MIM Figure 4-9

Remove fuse F209.

Check fuse F209 for continuity.

Is F209 good?

Y N

3
5
B
B
B

3
4
B
C

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MAP 3300-33

109

REPLACE fuse F209.

See MIM 3616.

POWER ON.

Wait approximately 30 seconds.

Set Mode switch to TEST.

Press and release START.

Did machine operate correctly in TEST?

Y N

110

SERVO POWER AMPLIFIER CARD FAILURE

POWER OFF.

REPLACE Servo Power Amplifier card.

See MIM 3611.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

111

Run TEST several more times to verify machine operates correctly.

Did machine operate correctly in TEST?

Y N

112

SERVO POWER AMPLIFIER CARD FAILURE

POWER OFF.

REPLACE Servo Power Amplifier card.

See MIM 3611.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

113

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

B
B
3
3

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MAP 3300-35

114

Disconnect connector P206 and install fuse F209.

See MIM Figures 4-9 and 4-10.

POWER ON.

Wait for approximately 30 seconds.

Check for +50 vdc between P206-6 and GROUND, and between 50 VDC bus on power supply and ground.

Is +50 vdc present at both locations?

Y N

115

POWER OFF.

REPAIR or REPLACE cable assembly P206 or F209 fuse socket.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

116

POWER OFF.

See MIM Figure 4-16.

Disconnect connector A1L5 at A1 board.

Check resistance at A1L5 cable connector, pins D12 and D13 (Current Sense Lines).

Resistance will be approximately zero ohms.

Is resistance zero ohms?

Y N

3 3
7 6
B B
D E

16MAR82 PN 6844897

EC 997163 PEC 323243

MAP 3300-35

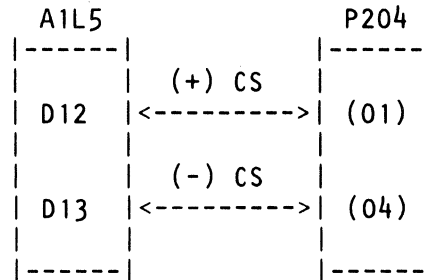
117

Locate Servo Power Amplifier card.

See MIM Figure 4-10.

Disconnect connector P204 at Servo Power Amplifier card.

Check continuity of current sense lines shown in table to the right.====>



A1L5/P204 CABLE
CONNECTION
(Current Sense Lines Only)

Continuity check good?

Y N

118

CABLE A1L5/P204 FAILURE

Either REPAIR or REPLACE cable A1L5/P204.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

119

SERVO POWER AMPLIFIER CARD FAILURE

REPLACE Servo Power Amplifier card.

See MIM 3611.

Reconnect connector A1L5 at A1 board.

VERIFY REPAIR

Go To Map 2000, Entry Point A.

B
D
3
5

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MAP 3300-37

120

MOTOR INPUT RESISTANCE TEST

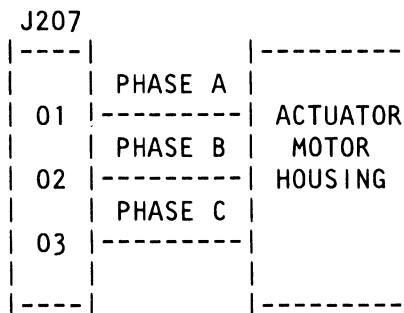
Locate Actuator Drive Motor.

See MIM Figure 4-6.

Disconnect motor connector J207.

See the figure to the right.====>

Check for 1 ohm resistance between all connector pins , and OPEN from all pins to frame ground.
less than 1 ohm may indicate a short between windings.



Are resistance measurements correct?

Y N

121

ACTUATOR DRIVE MOTOR FAILURE

REPLACE Actuator Drive Motor.

See MIM 3302.

Reconnect connector A1L5 at A1 board.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

3
0
0
3

122

CABLE P205/P207 CONTINUITY TEST

Locate Servo Amplifier card.

See MIM 3611 and Figure 4-12.

Disconnect connector P205 at Servo Power Amplifier card.

Check continuity of cable P205/P207 shown in table to the right.====>

P205		P207
07	PHASE A <----->	01
10	PHASE B <----->	02
11	PHASE C <----->	03

P205/P207 CABLE CONNECTION

Continuity check good?

Y N

123

CABLE P205/P207 FAILURE

Either REPAIR or REPLACE cable P205/P207.

Reconnect connector A1L5 at A1 board.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

124

SERVO POWER AMPLIFIER CARD or SERVO AMP CARD (A1L2) FAILURE

REPLACE Servo Power Amplifier card or Servo Amp Card A1L2.

See MIM 3611.

Reconnect connector A1L5 at A1 board.

Reconnect connector J207 to cable A1L5/P207.

VERIFY REPAIR

(Step 124 continues)

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MAP 3300-38

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MAP 3300-39

(Step 124 continued)
Go To Map 2000, Entry Point A.

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MAP 3300-39

125
(Entry Point ML)
POWER OFF.

Disconnect connectors A1L4 and A1L5 at A1 board.

POWER ON.

Wait approximately 30 seconds.

Press and release STOP.

Probe A1L2G05 (Over Current).

Is line DOWN?

Y N

126
SERVO POWER AMPLIFIER CARD FAILURE

POWER OFF.

REPLACE Servo Power Amplifier card. See MIM 3611.

Reconnect connectors A1L4 and A1L5 at A1 board.

VERIFY REPAIR.
Go To Map 2000, Entry Point A.

127
POWER OFF.

Remove A1L2 card.

POWER ON.

Wait approximately 30 seconds.

Probe A1L2G05 (Head Over Current).

Is line UP?

Y N

4 4
1 1
B B
G H

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MAP 3300-40

B B
G H
4 4
0 0

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MAP 3300-41

128
A1N2 CARD FAILURE

POWER OFF.

Reinstall A1L2 card.

REPLACE A1N2 card.
See NOTE ===>

Reconnect connectors A1L4 and A1L5 at A1 board.

VERIFY REPAIR.
Go To Map 2000, Entry Point A.

Before installing new A1N2 card, verify card is jumpered for correct number of print actuator groups.
See MIM 3103.

129
A1L2 CARD FAILURE

REPLACE A1L2 card.

Reconnect connectors A1L4 and A1L5 at A1 board.

Perform service checks.
Go to Page 81, Step 247, Entry Point B.

130
(Entry Point 36)

Symptoms at this entry point:

Panel Indicators	Status
ATTENTION	ON
READY	OFF
DISPLAY	3

Press and hold 2ND MODE. Note number in DISPLAY.

Is 6, 7 or 9 displayed?

Y N

131
Symptoms have changed.
Go To Map 2000, Entry Point A.

132
POWER OFF.

Install CE jumper (A1T2D12 to A1T2D08).

POWER ON.

Wait approximately 30 seconds.

Jumper A1T2P09 (Over Current Reset) to logic ground, and then, remove same ground.

Slowly turn Motor knob clockwise (CW) to STOP position in the right margin, and counterclockwise (CCW) to RAMP position. (See Note to the right)

With machine powered on, the motor knob rotation will feel different than when the machine was powered off. It should be harder to turn (stiff).

(Step 132 continues)

Reference Drawings for this entry point:

ACTUATOR CARRIER MOVEMENT AND CONTROL AA050

EMITTERS AND PLATEN SWITCH AA065

Note:

When the motor knob is turned fully CW the Actuator Carrier Assembly will hit the stop position in the right margin. Turning the motor knob fully CCW will cause the Actuator Carrier Assembly to move up RAMP to HOME position. Additional torque is needed to move Actuator Carrier Assembly up RAMP to HOME position.

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MAP 3300-42

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MAP 3300-43

(Step 132 continued)

Is motor knob rotation continuously stiff in both directions?

Y N

133

Go to Page 67, Step 214, Entry Point A.

134

POWER OFF.

Check alignment by performing SERVICE CHECKS of the Linear Encoder Glass Assembly, and check glass for scratches or dirt.

See MIM 3303.

LEM should not have scratches, cracks, or dirt.

Is Linear Encoder Glass ok?

Y N

135

LINEAR ENCODER GLASS ASSEMBLY FAILURE

Either REPAIR or REPLACE Linear Encoder Glass.

See MIM 3303.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

136

POWER ON

While probing each of the following lines, turn motor knob fully CW and CCW. Probe lights will pulse at each pin.

Signal Name	Logic Pin
Print Emitter	A1N2B09
Turn Around Emitter	A1N2B05
Margin Emitter	A1N2B03

Do all lines pulse?

Y N

Y N

4 4
 6 4
 B B
 J K

16MAR82 PN 6844897

EC 997163 PEC 323243

MAP 3300-43

137

POWER OFF.

Disconnect connector A1Y3 at A1 board, and connector at Linear Emitter (LEM) Amplifier card.

See MIM 3303.

See the figure to the right.====>

Check continuity of cable (pin to pin).

Check for OPEN between frame ground and all pins of cable.

LEM		A1Y3
01	Marg Em <----->	B03
02	TA Em <----->	B04
03	PRT EM <----->	B02
04		
05		
06	Ground <----->	B08
XX		
08	+5 VDC <----->	D02

LEM/A1Y3 CABLE CONNECTION

Note: LEM connector does not permit connection at pin 7. This is a reference pin only, and is used to seat connector at LEM amplifier board correctly.

Does cable check O.K.?

Y N

138

CABLE LEM/A1Y3 FAILURE

Either REPAIR or REPLACE cable between Linear Emitter Amplifier card and A1Y3 at A1 board.

Remove CE jumper (A1T2D12 to A1T2D08).

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

B
L
4
4

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MAP 3300-45

139
POWER ON.

Probe the following pins:
A1N2B03
A1N2B05
A1N2B09.

All lines up?

Y N

140
POWER OFF

Reconnect A1Y3 and LEM connector.
Remove CE jumper (A1T2D12 to A1T2D08).
Replace A1N2 card.
Verify repair.
Go To Map 2000, Entry Point A.

When installing new A1N2 card, verify card is jumpered for correct number of print actuator groups. See MIM 3103.

141
LINEAR EMITTER AMPLIFIER CARD FAILURE

REPLACE Linear Emitter Amplifier card.

See MIM 3303.

Reconnect A1Y3.
Remove CE jumper (A1T2D12 to A1T2D08).

VERIFY REPAIR.
Go To Map 2000, Entry Point A.

B
J
4
3

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MAP 3300-46

142

POWER OFF.

Remove CE jumper (A1T2D12 to A1T2D08).

POWER ON.

Wait approximately 30 seconds.

Check Turn Around (TA) time as follows:

Press and release STOP.

Set Mode switch to A.

Press START. The DISPLAY will be a flashing A.

Turn Mode switch to 5.

Press START.

If TA time is correct, the DISPLAY will be 0.
See Note =====>

Mode switch position A permits operator to perform secondary test routines. When switch is in position A and START is pressed, a flashing A will be displayed. The operator then sets the MODE switch for a specific test routine. Pressing START again will cause the test routine to run. The test is stopped by pressing STOP. See MIM Chapter 2 for additional definition of MODE switch position A.

NOTE: An F or 1 in the Display would not cause an error. (If Display is an F or 1, adjust pot to indicate 0 and continue.)

Is DISPLAY 0?

Y N

Two vertical lines for 'Y' and 'N' responses.

4 4
8 7
B B
M N

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EC 997163 PEC 323243

MAP 3300-46

B
N
4
6

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MAP 3300-47

143

TA TIME ADJUSTMENT

Locate TA time adjustment POT on A1L2 card.
See figure to the right.====>

During head speed adjustments, actuator carrier at turn around, may over travel and cause noise. This noise is not a problem and does not occur during normal operation.
Adjust TA time as follows:

If DISPLAY is a numeric character, turn POT CW until 0 is displayed.

If DISPLAY is an alphabetic character, turn POT CCW until 0 is displayed.

Can TA time be adjusted for 0 display?

Y N

144

A1L2 CARD FAILURE

POWER OFF.

REPLACE A1L2 card.

Perform service checks.

Go to Page 81, Step 247, Entry Point B.

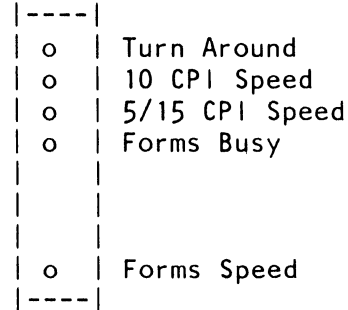
145

TA TIME ADJUSTED

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

**A1L2
CARD
(TOP)**



A1L2 POT LOCATIONS

16MAR82 PN 6844897

EC 997163 PEC 323243

MAP 3300-47

B
M
4
6

5225 ALL MODELS
ACT MVMNT / CNTRL
PAGE 48 OF 96

MAP 3300-48

146

A1N2 CARD FAILURE

REPLACE A1N2 card.

Remove CE jumper (A1T2D12 to A1T2D08).

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

Before installing new A1N2 card, verify card is jumpered for correct number of print actuator groups. See MIM 3103.

16MAR82 PN 6844897
EC 997163 PEC 323243
MAP 3300-48

147
(Entry Point 38)

Reference Drawing for this entry point:

Symptoms at this entry point:

ACTUATOR CARRIER MOVEMENT AND
 CONTROL AA050

Panel Indicators	Status
ATTENTION	ON
READY	OFF
DISPLAY	3

Press and hold 2ND MODE. Note number in
 DISPLAY.

Is 8 displayed?

Y N

148
 Symptoms have changed.
 Go To Map 2000, Entry Point A.

149

Probe A1N2M08.
 Press and release STOP key.

Does line pulse?

Y N

150
 Probe A1N2M08.

Is line up?

Y N

151
 POWER OFF.
 Remove A1N2 card.
 POWER ON.
 Probe A1N2M08.

Is line up?

Y N

5 5 5 5
 O O O O
 B B B B
 P Q R S

B B B B
P O R S
4 4 4 4
9 9 9 9

5225 ALL MODELS
ACT MVMNT / CNTRL

MAP 3300-50

PAGE 50 OF 96

152
POWER OFF.

Replace A1L2 card.
Reinstall A1N2 card.

Perform service checks.
Go to Page 81, Step 247,
Entry Point B.

153
A1N2 FAILURE

POWER OFF.
Replace A1N2 card.
Verify repair.
Go To Map 2000, Entry Point A.

When installing new A1N2 card, verify card is jumpered for correct number of print actuator groups. See MIM 3103.

154
POWER OFF.

Replace A1N2 card.
Verify repair.

Go To Map 2000, Entry Point A.

When installing new A1N2 card, verify card is jumpered for correct number of print actuator groups. See MIM 3103.

155
POWER OFF

Check alignment by performing SERVICE CHECKS of the Linear Encoder Glass Assembly, and check glass for scratches or dirt.

See MIM 3303.

LEM should not have scratches, cracks, or dirt.

Is Linear Encoder Glass ok?

Y N

156
LINEAR ENCODER GLASS ASSEMBLY FAILURE.

Either REPAIR or REPLACE Linear Encoder Glass.

See MIM 3303.

Go To Map 2000, Entry Point A.

5
1
B
T

16MAR82 PN 6844897

EC 997163 PEC 323243

MAP 3300-50

B
T
5
0

5225 ALL MODELS
ACT MVMNT / CNTRL
PAGE 51 OF 96

MAP 3300-51

157

Disconnect connector A1L5 at A1 board.

Check resistance at A1L5 cable connector, pins D12 and D13 (Current Sense lines).

Is resistance approximately zero ohms?

Y N

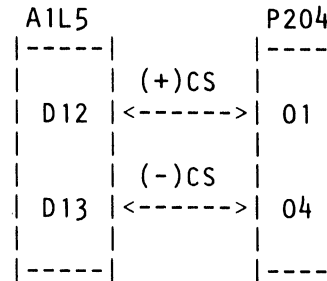
158

Locate Servo Power Amplifier card.

See MIM 3611 and Figure 4-10.

Disconnect connector P204 at Servo Power Amplifier card.

Check continuity of cable shown in figure to the right.====>



A1L5/P204 CABLE
CONNECTION
CURRENT SENSE (CS)

Continuity check good?

Y N

159

CABLE A1L5/P204 FAILURE

Either REPAIR or REPLACE cable A1L5/P204.

Reconnect A1L5 cable.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

5 5
2 2
B B
U V

16MAR82 PN 6844897

EC 997163 PEC 323243

MAP 3300-51

160
SERVO POWER AMPLIFIER CARD FAILURE

REPLACE Servo Power Amplifier card.

See MIM 3611.

VERIFY REPAIR
Go To Map 2000, Entry Point A.

161
Reinstall A1L5 connector.

Locate Actuator Drive Motor.

See MIM Figure 4-6.

Slowly turn Motor knob clockwise (CW) to STOP position in the right margin, and counterclockwise (CCW) to RAMP position. (See Note to the right)

Note:
With machine power OFF, the motor knob rotation will normally be continuously free.

When the motor knob is turned fully CW the Actuator Carrier Assembly will hit the stop position in the right margin. Turning the motor knob fully CCW will cause the Actuator Carrier Assembly to move up RAMP to HOME position. Additional torque is needed to move Actuator Carrier Assembly up the RAMP to HOME position.

Is motor knob rotation continuously free in both directions?

Y N

162
ACTUATOR DRIVE MECHANICAL FAILURE

Either Actuator Drive Motor or drive mechanism failed.

Check mechanical binds at motor shaft, couplings, and any other attached hardware.

Either REPAIR or REPLACE failed parts.

VERIFY REPAIR.
Go To Map 2000, Entry Point A.

See MIM 3302.

B
W
5
2

5225 ALL MODELS
ACT MVMNT / CNTRL
PAGE 53 OF 96

MAP 3300-53

163

Turn motor knob fully CW to STOP position.

Attempt to turn motor knob CW past STOP position. Ensure knob setscrews are tight.

Can motor knob be turned past STOP position?

Y N

164

Set MODE switch to TEST.

Install CE jumper (A1T2D12 to A1T2D08).

Turn Motor knob fully CCW.

POWER ON.

Wait approximately 30 seconds.

Jumper A1T2P09 (Over Current Reset) to logic ground, and then, remove same ground.

Slowly turn Motor knob clockwise (CW) to STOP position in the right margin, and counterclockwise (CCW) to RAMP position. (See Note to the right)

Note:

When the motor knob is turned fully CW the Actuator Carrier Assembly will hit the stop position in the right margin. Turning the motor knob fully CCW will cause the Actuator Carrier Assembly to move up RAMP to HOME position. Additional torque is needed to move Actuator Carrier Assembly up RAMP to HOME position.

With machine powered on, the motor knob rotation will feel different than when the machine was powered off. It should be harder to turn (stiff).

Is motor knob rotation continuously stiff in both directions?

Y N

165

Go to Page 67, Step 214, Entry Point A.

6
6
B
X
5
4
B
Y

16MAR82 PN 6844897
EC 997163 PEC 323243
MAP 3300-53

B
Y
5
3

5225 ALL MODELS
ACT MVMNT / CNTRL
PAGE 54 OF 96

MAP 3300-54

166

Remove CE jumper (A1T2D12 to A1T2D08).

NOTE: Normal power on sequence is attempted.

Wait approximately 30 seconds.

Models 1,2,3,4:

Set MODE switch to 6 (Ripple Print).

Models 11, 12:

Set MODE switch to C.

Turn motor knob fully CCW or until Actuator Carrier Assembly is at HOME position.

Press and release STOP.

Set Actuator Carrier speed at 15 CPI (Models 1,2,3,4).

See MIM Chapter 1 for density setting by Operator Panel.

Models 11, 12 are 5 CPI when MODE switch = C.

Press and release START. Machine will continue to print unless STOP is pressed or an error occurs.

Press STOP after 120 lines are printed.
(Approximately two pages.)

Did machine print until stop key was pressed?

Y N

|

167

Is a 3 displayed?

Y N

|

168

Is 8 displayed?

Y N

|

169

Symptoms have changed.

Go To Map 2000, Entry Point A.

6 5 5
3 6 5
B C C
Z A B

16MAR82 PN 6844897

EC 997163 PEC 323243

MAP 3300-54

170

Press and hold 2ND MODE. Note number in DISPLAY.

Is 3 displayed?

Y N

171

Symptoms have changed.
Go To Map 2000, Entry Point A.

172

POWER OFF.

Remove A1N2 card.

Verify A1N2 card is jumpered for correct number of print actuator groups.

See MIM 3103.

Is A1N2 card jumpered correctly?

Y N

173

A1N2 CARD FAILURE

Either jumper A1N2 card correctly or REPLACE A1N2 card.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

Before installing new A1N2 card, verify card is jumpered for correct number of print actuator groups. See MIM 3103.

174

A1N2 CARD FAILURE

REPLACE A1N2 card.

Before installing new A1N2 card, verify card is jumpered for correct number of print actuator groups. See MIM 3103.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

C
A
5
4

5225 ALL MODELS
ACT MVMNT / CNTRL
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MAP 3300-56

175

Press and hold 2ND MODE.

Is 8 displayed?

Y N

176

Symptoms have changed.

Go To Map 2000, Entry Point A.

177

Press and release STOP

Set Actuator Carrier speed at 10 CPI (Models 1,2,3,4).

See MIM Chapter 1 for density setting (speed) by Operator Panel.

SEE NOTE: =====>

Set Mode Switch to 6.

Models 11, 12 are 10 CPI when MODE switch = 6.

Press and release START. Machine will continue to print unless STOP is pressed.

Press STOP after 120 lines are printed. (Approximately two pages.)

Did machine print until stop key was pressed?

Y N

178

Is a 3 displayed?

Y N

179

Symptoms have changed.

Go To Map 2000, Entry Point A.

180

Press and release 2ND MODE.

Is 8 displayed?

Y N

181

Symptoms have changed.

Go To Map 2000, Entry Point A.

6 5
1 7
C C
C D

16MAR82 PN 6844897

EC 997163 PEC 323243

MAP 3300-56

182

Press and release STOP.

Set Mode switch to B.

Press START.

Mode switch position B checks for correct Linear Encoder Glass alignment, and glass failures (scratches, dirty glass). The machine will continue to run with a B in DISPLAY, if no Linear Encoder glass problem is sensed.

Is B displayed and test running?

Y N

183

LINEAR ENCODER GLASS FAILURE

Either REPAIR or REPLACE Linear Encoder glass.

See MIM 3303.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

184

(Entry Point TA)

Press Stop Key.

Check Turn Around (TA) time as follows:

Set Mode switch to A.

Press START. The DISPLAY will be a flashing A.

Turn Mode switch to 5.

Press START.

Mode switch position A permits operator to perform secondary test routines. When switch is in position A and START is pressed, a flashing A will be displayed. The operator then sets the MODE switch for a specific test routine. Pressing START again will cause the test routine to run. The test is stopped by pressing STOP. See MIM Chapter 2 for additional definition of MODE switch position A.

If TA time is correct, the DISPLAY will be 0.
See Note =====>

NOTE: An F or 1 in the Display would not cause an error. (If Display is an F or 1, adjust pot to indicate 0 and continue.)

Is DISPLAY 0?

Y N

Vertical lines for Y and N responses.

C
5
7

185

TA TIME ADJUSTMENT

Locate TA time adjustment POT on A1L2 card.
See figure to the right.====>

During head speed adjustments, actuator carrier
at turn around, may over travel and cause noise.
This noise is not a problem and does not occur
during normal operation.
Adjust TA time as follows:

If DISPLAY is a numeric character, turn POT CW
until 0 is displayed. (Several turns may be
needed.)

If DISPLAY is an alphabetic character, turn POT
CCW until 0 is displayed.

Can TA time be adjusted for 0 display?

Y N

186

A1L2 CARD FAILURE

POWER OFF.

REPLACE A1L2 card.

Perform service checks.

Go to Page 81, Step 247, Entry Point B.

187

TA TIME ADJUSTED

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

A1L2
CARD
(TOP)

o	Turn Around
o	10 CPI Speed
o	5/15 CPI Speed
o	Forms Busy
o	Forms Speed

A1L2 POT LOCATIONS

188

Press and release Stop key

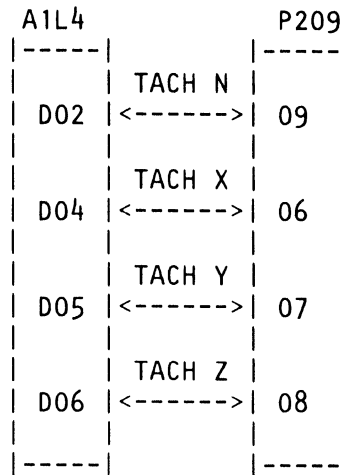
POWER OFF.

Disconnect connector A1L4 at A1 board.

See the figure to the right.====>

At A1L4 cable connector, check for approximately 25 ohms to approximately 175 ohms between the following pins:

- D02 and D04
- D02 and D05
- D02 and D06



A1L4/P209 CABLE CONNECTION
(TACH LINES ONLY)

TACH resistance measurements good?

Y N

189

A1L4/P209 CABLE CONTINUITY TEST

Locate Actuator Drive Motor.

See MIM Figure 4-6.

Disconnect motor output connector J209 from cable connector P209.

See the figure in preceding step.

Check continuity of TACH lines shown in figure.

Is continuity check good?

Y N

6 6 6
0 0 0
C C C
G H J

935C
935C
935C

**5225 ALL MODELS
ACT MVMNT / CNTRL**

MAP 3300-60

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190

CABLE A1L4/P209 FAILURE

Either REPAIR or REPLACE cable
A1L4/P209.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

191

ACTUATOR DRIVE MOTOR FAILURE

REPLACE Actuator Drive Motor.

See MIM 3302.

Reconnect connector A1L4 at A1 board.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

192

Check alignment by performing SERVICE
CHECKS of the Linear Encoder Glass Assembly,
and check glass for scratches or dirt.

See MIM 3303.

LEM should not have scratches, cracks, or dirt.

Is Linear Encoder Glass ok?

Y N

193

LINEAR ENCODER GLASS ASSEMBLY
FAILURE

Either REPAIR or REPLACE Linear Encoder
Glass.

See MIM 3303.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

935C

16MAR82 PN 6844897

EC 997163 PEC 323243

MAP 3300-60

C
C
5
6
6

5225 ALL MODELS
ACT MVMNT / CNTRL
PAGE 61 OF 96

MAP 3300-61

194

A1L2 CARD FAILURE

Reconnect connector A1L4 at A1 board.

REPLACE A1L2 card.

Perform service checks.

Go to Page 81, Step 247, Entry Point B.

195

Check 5/15 CPI Actuator Carrier speed as follows:

Set Mode switch to A.

Press START. The DISPLAY will indicate a flashing A.

Turn Mode switch to 4.

Press and release START.

If speed is correct, the DISPLAY will be 0.
See Note =====>

Is 0 displayed?

Y N

Vertical lines for Y and N responses.

Mode switch position A permits operator to perform secondary test routines. When switch is in position A, and START is pressed, a flashing A will be displayed. The operator then sets the MODE switch for a specific test routine.

Pressing START again, will cause the test the test routine to run. The test is stopped by pressing STOP. See MIM, Chapter 2, for Mode switch position A.

NOTE: An F or 1 in the Display would not cause an error. (If Display is an F or 1, adjust pot to indicate 0 and continue.)

6
2
C
L

16MAR82 PN 6844897

EC 997163 PEC 323243

MAP 3300-61

C C
L M
6 6
1 1

5225 ALL MODELS
ACT MVMNT / CNTRL
PAGE 62 OF 96

MAP 3300-62

196
5/15 CPI SPEED ADJUSTMENT

Locate 5/15 CPI Speed adjustment POT on A1L2 card. See figure to the right.====>

During head speed adjustments, actuator carrier at turn around, may over travel and cause noise. This noise is not a problem and does not occur during normal operation.

Adjust 5/15 CPI Speed as follows:

If DISPLAY is a numeric character turn POT CCW until 0 is displayed.

If DISPLAY is an alphabetic character, turn POT CW until 0 is displayed.

Can 5/15 CPI speed be adjusted for 0 display?

Y N

197
A1L2 CARD FAILURE

POWER OFF.

REPLACE A1L2 card.

Perform service checks.

Go to Page 81, Step 247, Entry Point B.

198
5/15 CPI SPEED ADJUSTED

Go to Page 81, Step 247, Entry Point B.

199
DO TA adjustment.
Go to Page 57, Step 184, Entry Point TA.

A1L2 CARD (TOP)	
o	Turn Around
o	10 CPI Speed
o	5/15 CPI Speed
o	Forms Busy
o	Forms Speed

A1L2 POT LOCATIONS

B
Z
5
4

5225 ALL MODELS
ACT MVMNT / CNTRL
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MAP 3300-63

200

Press and release STOP

Set Actuator Carrier speed at 10 CPI.

See MIM Chapter 1.

Set Mode Switch to 6 (Models 11, 12).

Press and release START. Machine will continue to print unless STOP is pressed or an error occurs.

Press STOP after 120 lines are printed.
(Approximately two pages).

Did machine print until stop key was pressed?

Y N

201

Is a 3 displayed?

Y N

202

Symptoms have changed.
Go To Map 2000, Entry Point A.

203

Press and hold 2ND MODE.

Is 8 displayed?

Y N

204

Symptoms have changed.
Go To Map 2000, Entry Point A.

205

Press and release STOP.

Probe A1N2M08 (10 CPI).

Is DOWN light ON?

Y N

6 6 6
6 4 4
C C C
N P Q

16MAR82 PN 6844897

EC 997163 PEC 323243

MAP 3300-63

C
P
6
3

5225 ALL MODELS
ACT MVMNT / CNTRL
PAGE 64 OF 96

MAP 3300-64

206

206
A1N2 CARD FAILURE

POWER OFF.

REPLACE A1N2 card.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

Before installing new A1N2 card, verify card is jumpered for correct number of print actuator groups. See MIM 3103.

207

Check 10 CPI speed as follows:

Press and release STOP.

Set Mode switch to A.

Press START. The DISPLAY will indicate a flashing A.

Turn Mode switch to 3.

Press and release START.

Mode switch position A permits operator to perform secondary test routines. When switch is in position A, and START is pressed, a flashing A will be displayed. The operator then sets the MODE switch for a specific test routine. Pressing START again, will cause the test the test routine to run. The test is stopped by pressing STOP. See MIM, Chapter 2, for Mode switch position A.

If speed is correct, the DISPLAY will be 0.
See Note =====>

NOTE: An F or 1 in the Display would not cause an error. (If Display is an F or 1, adjust pot to indicate 0 and continue.)

Is 0 displayed?

Y N

Y N

6
R
C
3

16MAR82 PN 6844897

EC 997163 PEC 323243

MAP 3300-64

C
C
4674
64

5225 ALL MODELS
ACT MVMNT / CNTRL
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MAP 3300-65

208
10 CPI SPEED ADJUSTMENT

Locate 10 CPI Speed adjustment POT on A1L2 card. See figure to the right.====>

During head speed adjustments, actuator carrier at turn around, may over travel and cause noise. This noise is not a problem and does not occur during normal operation. Adjust 10 CPI Speed as follows:

If DISPLAY is a numeric character, turn POT CCW until 0 is displayed.

If DISPLAY is an alphabetic, turn POT CW until 0 is displayed.

Can 10 CPI speed be adjusted for 0 display?

Y N

209
A1L2 CARD FAILURE

POWER OFF.

REPLACE A1L2 card.

Perform service checks.

Go to Page 81, Step 247, Entry Point B.

210
10 CPI SPEED ADJUSTED

Go to Page 83, Step 254, Entry Point B1.

211

DO TA adjustment.

Go to Page 57, Step 184, Entry Point TA.

A1L2 CARD (TOP)	

0	Turn Around
0	10 CPI Speed
0	5/15 CPI Speed
0	Forms Busy

0	Forms Speed

A1L2 POT LOCATIONS

16MAR82 PN 6844897

EC 997163 PEC 323243

MAP 3300-65

B
X
5
3

C
N
6
3

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ACT MVMNT / CNTRL
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MAP 3300-66

212

Go to Page 81, Step 247, Entry Point B.

213

ACTUATOR DRIVE MECHANICAL FAILURE

Actuator motor drive/lead screw coupling is loose.

REPAIR motor drive/lead screw coupling.

See MIM 3302 and Figure 4-4.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

16MAR82 PN 6844897

EC 997163 PEC 323243

MAP 3300-66

C
U
6
7

5225 ALL MODELS
ACT MVMNT / CNTRL
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MAP 3300-68

215
POWER OFF.

REMOVE A1N2 card.

POWER ON.

Wait approximately 30 seconds.

Locate Actuator Drive Motor.

See MIM Figure 4-6.

Turn motor knob fully CCW.

Jumper A1T2P09 (Over Current Reset) to logic ground, and then, remove same ground.

Probe the following pins:

Logic Pin	Probe Light Status
A1L2U05	both OFF
A1L2U06	both OFF
A1L2U07	both OFF
A1L2U09	both OFF
A1L2U10	both OFF
A1L2U11	both OFF

Are probe lights as shown above?

Y N

216
A1L2 CARD FAILURE

POWER OFF.

Remove CE jumper (A1T2D12 to A1T2D08).

Reconnect connectors A1L4 and A1L5 at A1 board.

REPLACE A1L2 card.

Perform service checks.

Go to Page 81, Step 247, Entry Point B.

6
9
C
V

16MAR82 PN 6844897

EC 997163 PEC 323243

MAP 3300-68

C C
T V
6 6
7 8

5225 ALL MODELS
ACT MVMNT / CNTRL
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MAP 3300-69

217
POWER OFF.

REPLACE A1N2 card.

RECONNECT A1L4 and A1L5 connectors.

REMOVE CE jumper (A1T2D12 to A1T2D08).

Verify repair.

Go To Map 2000, Entry Point A.

When installing new A1N2 card, verify card is jumpered for correct number of print actuator groups. See MIM 3103.

218
SERVO/ENCODER TEST 2

Jumper A1L2P07 (Encoder A) to logic ground.

Jumper A1T2P09 (Over Current Reset) to logic ground, and then, remove same ground.

Probe the following pins:

Logic Pin	Probe Light Status
A1L2U07	DOWN
A1L2U10	UP

Are probe lights as shown above?

Y N

219
A1L2 CARD FAILURE

POWER OFF.

Remove CE jumper (A1T2D12 to A1T2D08).

Remove jumper at A1L2P07.

Reconnect connectors A1L4 and A1L5 at A1 board.

REPLACE A1L2 card.

(Step 219 continues)

7
O
C
W

16MAR82 PN 6844897

EC 997163 PEC 323243

MAP 3300-69

**5225 ALL MODELS
ACT MVMNT / CNTRL**

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(Step 219 continued)
Perform service checks.
Go to Page 81, Step 247, Entry Point B.

220
SERVO/ENCODER TEST 3

Remove jumper at A1L2P07

Jumper A1L2P09 (Encoder B) to logic ground.

Jumper A1T2P09 (Over Current Reset) to logic ground, and then, remove same ground.

Probe the following pins:

Logic Pin	Probe Light Status
A1L2U06	DOWN
A1L2U09	UP

Are probe lights as shown above?

Y N

221
A1L2 CARD FAILURE

POWER OFF.

Remove CE jumper (A1T2D12 to A1T2D08).

Remove jumper at A1L2P09.

Reconnect connectors A1L4 and A1L5 at A1 board.

REPLACE A1L2 card.

Perform service checks.
Go to Page 81, Step 247, Entry Point B.

C
X
7
0

5225 ALL MODELS
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MAP 3300-71

222
SERVO/ENCODER TEST 4

Remove jumper at A1L2P09.

Jumper A1L2P10 (Encoder C) to logic ground.

Jumper A1T2P09 (Over Current Reset) to logic ground, and then, remove same ground.

Probe the following pins:

Logic Pin	Probe Light Status
A1L2U05	DOWN
A1L2U11	UP

Are probe lights as shown above?

Y N

223
A1L2 CARD FAILURE

POWER OFF.

Remove CE jumper (A1T2D12 to A1T2D08).

Remove jumper at A1L2P10.

Reconnect connectors A1L4 and A1L5 at A1 board.

REPLACE A1L2 card.

Perform service checks.

Go to Page 81, Step 247, Entry Point B.

7
2
C
Y

16MAR82 PN 6844897
EC 997163 PEC 323243
MAP 3300-71

C
Y
7
1

224

MOTOR TACH RESISTANCE TEST

POWER OFF.

Remove jumper at A1L2P10.

See the figure to the right.====>

At A1L4 cable connector, check for approximately 25 ohms to 175 ohms between the following pins:

- D02 and D04
- D02 and D05
- D02 and D06

A1L4		P209
D02	TACH N <----->	09
D04	TACH X <----->	06
D05	TACH Y <----->	07
D06	TACH Z <----->	08

A1L4/P209 CABLE CONNECTION
(TACH LINES ONLY)

TACH resistance measurements good?

Y N

225

A1L4/P209 CABLE CONTINUITY TEST

Locate Actuator Drive Motor.

See MIM Figure 4-6.

Disconnect motor output connector J209 from cable connector P209.

See the figure in preceding step.

Check continuity of TACH lines shown in figure.

Is continuity check good?

Y N

7 7 7
3 3 3
C D D
Z A B

16MAR82 PN 6844897

EC 997163 PEC 323243

C D D
Z A B
7 7 7
2 2 2

5225 ALL MODELS
ACT MVMNT / CNTRL
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MAP 3300-73

226

CABLE A1L4/P209 FAILURE

Either REPAIR or REPLACE cable
A1L4/P209.

Remove CE jumper (A1T2D12 to
A1T2D08).

Reconnect connector A1L5 at A1 board.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

227

ACTUATOR DRIVE MOTOR FAILURE

REPLACE Actuator Drive Motor.

See MIM 3302.

Remove CE jumper (A1T2D12 to A1T2D08).

Reconnect connectors A1L4 and A1L5 at A1
board.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

228

MOTOR ENCODER TEST

Reconnect connector A1L4 at A1 board.

OPEN COVER BUT DO NOT OVERRIDE COVER
INTERLOCK SWITCH. (prevent contactor from
picking)

POWER ON.

While turning motor knob CW and CCW , probe
the following pins:

Logic Pin	Signal Name	Probe Light Status
=====	=====	=====
A1N2G09	Encoder A	Pulse

(Step 228 continues)

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MAP 3300-73

**5225 ALL MODELS
ACT MVMNT / CNTRL**

MAP 3300-74

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(Step 228 continued)
A1N2G07 Encoder B Pulse
A1N2G05 Encoder C Pulse

Are probe lights as shown above?

Y N

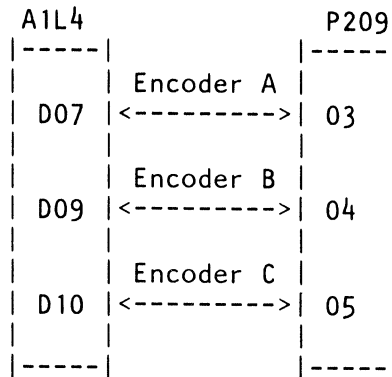
229
CABLE A1L4/P209 CONTINUITY TEST

POWER OFF.

Disconnect connector A1L4 at A1 board, and
Actuator Motor output connector J209 from
cable connector P209.

See the figure to the right.===>

Check continuity of cable as shown in figure.



A1L4/P209 CABLE
CONNECTION
(ENC LINES ONLY)

Is continuity check good?

Y N

230
CABLE A1L4/P209 FAILURE

Either REPAIR or REPLACE cable
A1L4/P209.

Remove CE jumper (A1T2D12 to
A1T2D08).

Reconnect connector A1L5 at A1 board.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

7 7
5 5
D D
C D

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MAP 3300-74

D D
C D
7 7
4 4

5225 ALL MODELS
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MAP 3300-75

231
ACTUATOR DRIVE MOTOR FAILURE

REPLACE Actuator Drive Motor. See MIM 3302.

Remove CE jumper (A1T2D12 to A1T2D08).

Reconnect connectors A1L4 and A1L5 at A1 board.

VERIFY REPAIR.
Go To Map 2000, Entry Point A.

232
MOTOR INPUT RESISTANCE TEST

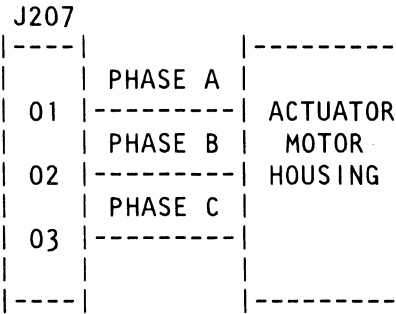
POWER OFF.

Locate Actuator Drive Motor. See MIM Figure 4-6.

Disconnect Actuator Drive motor connector J207.

See the figure to the right.====>

Check for approximately one ohm resistance between all connector pins , and OPEN resistance from all pins to frame ground.



Are resistance measurements correct?

Y N

233
ACTUATOR DRIVE MOTOR FAILURE

REPLACE Actuator Drive Motor. See MIM 3302.

Remove CE jumper (A1T2D12 to A1T2D08).

Reconnect connector A1L5 at A1 board.

VERIFY REPAIR.
Go To Map 2000, Entry Point A.

7
6
D
E

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EC 997163 PEC 323243
MAP 3300-75

234

CABLE P205/P207 CONTINUITY TEST

Locate Servo Power Amplifier card.

See MIM 3611 and Figure 4-10.

Disconnect connector P205 at Servo Power Amplifier card.

Check continuity of cable P205/P207 shown in table to the right.====>

P205		P207
(07)	PHASE A <----->	(01)
(10)	PHASE B <----->	(02)
(11)	PHASE C <----->	(03)

P205/P207 CABLE CONNECTION
(MOTOR INPUT ONLY)

Continuity check good?

Y N

235

CABLE P205/P207 FAILURE

Either REPAIR or REPLACE cable P205/P207.

Remove CE jumper (A1T2D12 to A1T2D08).

Reconnect connector A1L5 at A1 board.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

236

CABLE A1L5/P204 CONTINUITY TEST

Locate Servo Power Amplifier card.

See MIM 3611 and Figure 4-10.

Disconnect connector P204 at Servo Power Amplifier card.

See the figure to the right.====>

Check continuity of cable as shown in figure.

A1L5		P204
D05	<---->	08
D06	<---->	12
D07	<---->	05
D09	<---->	10
D10	<---->	07
D11	<---->	11
D12	<---->	01
D13	<---->	04

A1L5/P204 CABLE CONNECTION

Cable A1L5/P204 good?

Y N

237

CABLE A1L5/P204 FAILURE

Either REPAIR or REPLACE cable A1L5/P204.

Remove CE jumper (A1T2D12 to A1T2D08).

Reconnect cables P205/P207 and A1L4/P209.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

D
G
7
7

**5225 ALL MODELS
ACT MVMNT / CNTRL**

MAP 3300-78

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238

POWER ON.

Override cover interlock switch.
Check for +10 VDC at right hand side of FUSE F3.

IS +10 VDC present?

Y N

239

POWER OFF.
Disconnect P206 REPAIR or REPLACE cable P206.

VERIFY REPAIR.
Go To Map 2000, Entry Point A.

240

FUSE CHECK.

Check for +10 VDC at left hand side of FUSE F3.

IS +10 VDC present?

Y N

241

POWER OFF.
REPLACE FUSE F3.

POWER ON.

Place MODE switch to 6.

Press start.

RUN TEST.

Did machine print for 2 minutes?

Y N

7 7 7
9 9 9
D D D
H J K

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MAP 3300-78

D D D
H J K
7 7 7
8 8 8

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MAP 3300-79

242

POWER OFF.
REPLACE FUSE F3, if bad.

REPLACE SERVO POWER AMPLIFIER.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

243

VERIFY REPAIR.
Go To Map 2000, Entry Point A.

244

POWER OFF.

REPLACE Servo Power Amplifier card.

See MIM 3611.

Remove CE jumper (A1T2D12 to A1T2D08).

Reconnect cables A1L4/P209, P205/P207, and
A1L5/P204.

Set MODE switch at TEST.

POWER ON.

Wait approximately 30 seconds.

Press START.

Did machine run correctly in TEST?

Y N

245

A1L2 CARD FAILURE

POWER OFF.
REPLACE A1L2 card.

Perform service checks.

Go to Page 81, Step 247, Entry Point B.

8
O
D
L

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MAP 3300-79

D
L
7
9

5225 ALL MODELS
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MAP 3300-80

246

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

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MAP 3300-80

247
(Entry Point B)

SERVICE CHECKS

ENSURE that C.E. JUMPER A1T2D12 to A1T2D08 is removed.
POWER ON.

Wait approximately 30 seconds.

Set MODE switch to position A.

Press and release START. The DISPLAY will be a flashing A.

Mode switch position A permits operator to perform secondary test routines. When switch is in position A and START is pressed, a flashing A will be displayed. The operator then sets the MODE switch for a specific test routine.

Pressing START again will cause the test routine to run. The test is stopped by pressing STOP. See MIM Chapter 2 for additional definition of MODE switch position A.

Is there a flashing A in DISPLAY?

Y N

248

Symptoms have changed
Go To Map 2000, Entry Point A.

249

10 CPI SPEED CHECK

Turn Mode switch to position 3.

Press and release START.

If speed is correct, the DISPLAY will be 0.
See Note =====>

NOTE: An F or 1 in the Display would not cause an error. (If Display is an F or 1, adjust pot to indicate 0 and continue.)

Is DISPLAY 0?

Y N

8 8
2 2
D D
M N

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MAP 3300-81

D D
M N
8 8
1 1

5225 ALL MODELS
ACT MVMNT / CNTRL

MAP 3300-82

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250

Locate 10 CPI Speed adjustment POT on A1L2 card. See figure to the right.=====>

During head speed adjustments, actuator carrier at turn around, may over travel and cause noise. This noise is not a problem and does not occur during normal operation. Adjust POT as follows:

If a numeric character is in DISPLAY, turn POT CCW until 0 is in DISPLAY.

If an alphabetic character is in DISPLAY, turn POT CW until 0 is in DISPLAY.

Can 10 CPI be adjusted for 0 DISPLAY?

Y N

251

A1L2 CARD FAILURE

POWER OFF.

REPLACE A1L2 card.

Perform service checks.

Go to Page 81, Step 247, Entry Point B.

252

10 CPI ADJUSTED

Go to Page 83, Step 254, Entry Point B1.

253

10 CPI OK

Go to Page 83, Step 254, Entry Point B1.

A1L2
CARD
(TOP)

o	Turn Around Time
o	10 CPI Speed
o	5/15 CPI Speed
o	Forms Busy
o	Forms Speed

A1L2 POT LOCATIONS

16MAR82 PN 6844897

EC 997163 PEC 323243

MAP 3300-82

254
(Entry Point B1)

5/15 CPI SPEED CHECK

Press and release STOP.

Turn Mode switch to position 4.

Press and release START.

If speed is correct, the DISPLAY will be 0.
See Note =====>

NOTE: An F or 1 in the Display would not cause an error. (If Display is an F or 1, adjust pot to indicate 0 and continue.)

Is 0 in DISPLAY?

Y N

255

Locate 5/15 CPI Speed adjustment POT on A1L2 card. See figure to the right.=====>

During head speed adjustments, actuator carrier at turn around, may over travel and cause noise. This noise is not a problem and does not occur during normal operation. Adjust POT as follows:

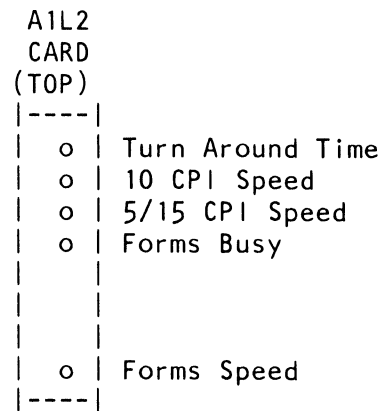
If a numeric character is in DISPLAY, turn POT CCW until 0 is in DISPLAY.

If an alphabetic character is in DISPLAY, turn POT CW until 0 is in DISPLAY.

Can 5/15 CPI be adjusted for 0 DISPLAY?

Y N

Vertical lines for response input.



A1L2 POT LOCATIONS

8 8 8
4 4 4
D D D
P Q R

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D D D
P O R
8 8 8
3 3 3

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MAP 3300-84

256
A1L2 CARD FAILURE

POWER OFF.

REPLACE A1L2 card.

Perform service checks.

Go to Page 81, Step 247, Entry Point B.

257
5/15 CPI ADJUSTED

Go to Page 85, Step 259, Entry Point B2.

258
5/15 CPI OK

Go to Page 85, Step 259, Entry Point B2.

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EC 997163 PEC 323243
MAP 3300-84

259
(Entry Point B2)

TURN AROUND(TA) TIME CHECK

Press and release STOP.

Turn Mode switch to position 5.

Press and release START.

If TA time is correct, the DISPLAY will be 0.
See Note =====>

NOTE: An F or 1 in the Display would not cause an error. (If Display is an F or 1, adjust pot to indicate 0 and continue.)

Is 0 in DISPLAY?

Y N

260

Locate TA time adjustment POT on A1L2 card. See figure to the right.=====>

During head speed adjustments, actuator carrier at turn around, may over travel and cause noise. This noise is not a problem and does not occur during normal operation.
Adjust POT as follows:

If a numeric character is in DISPLAY, turn POT CW until 0 is in DISPLAY.

If an alphabetic character is in DISPLAY, turn POT CCW until 0 is in DISPLAY.

Can TA time be adjusted for 0 DISPLAY?

Y N

8 8 8
6 6 6
D D D
S T U

A1L2
CARD
(TOP)

```
|----|  
|  o  | Turn Around Time  
|  o  | 10 CPI Speed  
|  o  | 5/15 CPI Speed  
|  o  | Forms Busy  
|----|  
|  o  | Forms Speed  
|----|
```

A1L2 POT LOCATIONS

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MAP 3300-85

D D D
S T U
8 8 8
5 5 5

**5225 ALL MODELS
ACT MVMNT / CNTRL**

MAP 3300-86

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261

A1L2 CARD FAILURE

POWER OFF.

REPLACE A1L2 card.

Perform service checks.

Go to Page 81, Step 247, Entry Point B.

262

TA TIME ADJUSTED

Go to Page 87, Step 264, Entry Point B3.

263

TA TIME OK

Go to Page 87, Step 264, Entry Point B3.

16MAR82 PN 6844897

EC 997163 PEC 323243

MAP 3300-86

264
 (Entry Point B3)

FORMS SYMMETRY A CHECK

Press and release STOP.

Remove Forms from Tractors.
 Ensure Forms Feed Assembly is closed.
 Close Top Cover (or bypass Cover Interlock Switch).

Turn Mode switch to position A.

Press and release and START.

If Forms Symmetry is correct, the DISPLAY will be 0.

See Note =====>

Is 0 in DISPLAY?

Y N

265

Locate Forms Symmetry A adjustment POT on A1K2 card. See figure to the right. =====>

Adjust POT as follows:

If a numeric character is in DISPLAY, turn POT CCW until 0 is in DISPLAY.

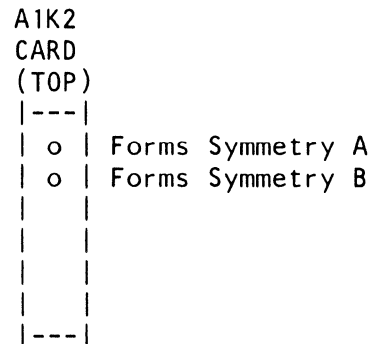
If an alphabetic character is in DISPLAY, turn POT CW until 0 is in DISPLAY.

Can Forms Symmetry A be adjusted for 0 DISPLAY?

Y N

8 8 8
 8 8 8
 D D D
 V W X

NOTE: An F or 1 in the Display would not cause an error. (If Display is an F or 1, adjust pot to indicate 0 and continue.)



A1K2 POT LOCATIONS

D D D
V W X
8 8 8
7 7 7

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MAP 3300-88

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266

A1K2 CARD FAILURE

(Possible Forms Transducer Assembly failure.)

POWER OFF.

REPLACE A1K2 card.

Perform service checks.

Go to Page 81, Step 247, Entry Point B.

267

FORMS SYMMETRY A ADJUSTED

Go to Page 89, Step 269, Entry Point B4.

268

FORMS SYMMETRY A OK

Go to Page 89, Step 269, Entry Point B4.

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EC 997163 PEC 323243

MAP 3300-88

269
(Entry Point B4)

FORMS SYMMETRY B CHECK

Press and release STOP.

Turn Mode switch to position B.

Press and release START.

If Forms Symmetry is correct, the DISPLAY will be 0.

See Note =====>

Is 0 in DISPLAY?

Y N

270

Locate Forms Symmetry B adjustment POT on A1K2 card. See figure to the right.=====>

Adjust POT as follows:

If a numeric character is in DISPLAY, turn POT CCW until 0 is in DISPLAY.

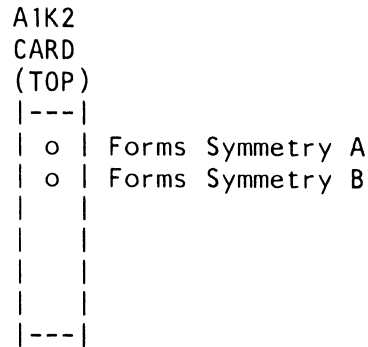
If an alphabetic character is in DISPLAY, turn POT CW until 0 is in DISPLAY.

Can Forms Symmetry B be adjusted for 0 DISPLAY?

Y N

9 9 9
0 0 0
D D E
Y Z A

NOTE: An F or 1 in the Display would not cause an error. (If Display is an F or 1, adjust pot to indicate 0 and continue.)



A1K2 POT LOCATIONS

D D E
Y Z A
8 8 8
9 9 9

**5225 ALL MODELS
ACT MVMNT / CNTRL**

MAP 3300-90

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271

A1K2 CARD FAILURE
(Possible Forms Transducer Assembly failure)

POWER OFF.

REPLACE A1K2 card.

Perform service checks.
Go to Page 81, Step 247, Entry Point B.

272

FORMS SYMMETRY B ADJUSTED

Go to Page 91, Step 274, Entry Point B5.

273

FORMS SYMMETRY B OK

Go to Page 91, Step 274, Entry Point B5.

16MAR82 PN 6844897

EC 997163 PEC 323243

MAP 3300-90

274
(Entry Point B5)

FORMS QUADRATURE CHECK

Press and release STOP.

Turn Mode switch to position C.

Press and release START.

If Forms Quadrature is correct, the DISPLAY will be 0.

See Note =====>

Is 0 in DISPLAY?

Y N

275

Locate Forms Quadrature adjustment screw on Forms Drive Motor.

Adjust screw as follows:

If a numeric character is in DISPLAY, turn screw CCW until 0 is in DISPLAY.

If an alphabetic character is in DISPLAY, turn screw CW until 0 is in DISPLAY.

Can Forms Quadrature be adjusted?

Y N

9
2
B
C
D

NOTE: An F or 1 in the Display would not cause an error. (If Display is an F or 1, adjust pot to indicate 0 and continue.)

See MIM 3403.

Note: This is a fine adjustment. Perform carefully.

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MAP 3300-91

E E E
B C D
9 9 9
1 1 1

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ACT MVMNT / CNTRL
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MAP 3300-92

276
FORMS DRIVE ENCODER ASSEMBLY
FAILURE

POWER OFF.

Locate Forms Drive Encoder Assembly.

See MIM Figure 4-7.

Remove Forms Emitter/Encoder cover.

Check for loose Encoder wheel and Motor
shaft coupling.

Either REPAIR or REPLACE any failed
parts.

See MIM 3404.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

277

Go to Page 93, Step 279, Entry Point B6.

278

Go to Page 93, Step 279, Entry Point B6.

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EC 997163 PEC 323243

MAP 3300-92

279
(Entry Point B6)

FORMS SPEED CHECK

Press and release STOP.

Turn Mode switch to position D.

Press and release START.

If speed is correct, the DISPLAY will be 0.
See Note =====>

NOTE: An F or 1 in the Display would not cause an error. (If Display is an F or 1, adjust pot to indicate 0 and continue.)

Is 0 in DISPLAY?

Y N

280

Locate Forms Speed adjustment POT on A1L2 card. See figure to the right.=====>

Adjust POT as follows:

If a numeric character is in DISPLAY, turn POT CCW until 0 is in DISPLAY.

If an alphabetic character is in DISPLAY, turn POT CW until 0 is in DISPLAY.

A1L2
CARD
(TOP)

- | | |
|-------|------------------|
| ----- | |
| o | Turn Around Time |
| o | 10 CPI Speed |
| o | 5/15 CPI Speed |
| o | Forms Busy |
| | |
| o | Forms Speed |
| ----- | |

A1L2 POT LOCATIONS

Can Forms Speed be adjusted for 0
DISPLAY?

Y N

9 9 9
4 4 4
E E E
F F G

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EC 997163 PEC 323243

MAP 3300-93

F
3
F
3
E
3

5225 ALL MODELS
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MAP 3300-94

281
A1L2 CARD FAILURE

POWER OFF.

REPLACE A1L2 card.

Perform service checks.

Go to Page 81, Step 247, Entry Point B.

282
FORMS SPEED ADJUSTED

Go to Page 95, Step 284, Entry Point B7.

283
FORMS SPEED OK

Go to Page 95, Step 284, Entry Point B7.

16MAR82 PN 6844897

EC 997163 PEC 323243

MAP 3300-94

284
(Entry Point B7)

FORMS BUSY CHECK

Press and release STOP.

Turn Mode switch to position E.

Press and release and START.

If busy is correct, the DISPLAY will be 0.
See Note =====>

NOTE: An F or 1 in the Display would not cause an error. (If Display is an F or 1, adjust pot to indicate 0 and continue.)

Is 0 in DISPLAY?

Y N

285

Locate Forms Busy adjustment POT on A1L2 card. See figure to the right. =====>

Adjust POT as follows:

If a numeric character is in DISPLAY, turn POT CCW until 0 is in DISPLAY.

If an alphabetic character is in DISPLAY, turn POT CW until 0 is in DISPLAY.

A1L2
CARD
(TOP)

-
- | o | Turn Around Time
- | o | 10 CPI Speed
- | o | 5/15 CPI Speed
- | o | Forms Busy
- | |
- | o | Forms Speed
-

A1L2 POT LOCATIONS

Can Forms BUSY be adjusted for 0 DISPLAY?

Y N

9 9 9
6 6 6
E E E
H J K

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EC 997163 PEC 323243

MAP 3300-95

E E E
H J K
9 9 9
5 5 5

5225 ALL MODELS
ACT MVMNT / CNTRL
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MAP 3300-96

286

A1L2 CARD FAILURE

POWER OFF.

REPLACE A1L2 card.

Perform service checks.

Go to Page 81, Step 247, Entry Point B.

287

SERVICE CHECKS COMPLETED.

VERIFY ADJUSTMENTS.

Go To Map 2000, Entry Point A.

288

SERVICE CHECKS COMPLETED.

VERIFY ADJUSTMENTS

Go To Map 2000, Entry Point A.

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MAP 3300-96

FORMS MOVEMENT AND CONTROL

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ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
2000	B	109	325
2000	77	101	296
3000	EE	92	269
3000	41	3	001
3000	42	6	008
3000	43	10	021
3000	45	37	106
3000	46	44	127
3000	47	56	155
3000	48	60	170
3000	77	101	296

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
3	002	2000	A
5	006	2000	A
5	007	2000	A
6	009	2000	A
7	013	2000	A
7	015	2000	A
8	019	2000	A
10	022	2000	A
11	024	2000	A
12	034	2000	A
13	036	2000	A
17	044	2000	A
21	053	2000	A
22	054	2000	A
23	056	2000	A
23	058	2000	A
25	060	2000	A
25	061	2000	A
27	067	2000	A
27	068	2000	A
28	071	2000	A
28	072	2000	A
29	076	2000	A
30	077	2000	A
30	080	2000	A
30	081	2000	A
31	085	2000	A
33	091	2000	A
33	092	2000	A
33	094	2000	A
33	095	2000	A
34	097	2000	A
35	099	2000	A
35	100	2000	A
36	103	2000	A
37	107	2000	A
38	109	2000	A
38	111	2000	A
39	115	2000	A

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FMS MVMNT / CNTRL

MAP 3400-2

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EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
40	118	2000	A
41	121	2000	A
42	124	2000	A
42	125	2000	A
43	126	2000	A
44	128	2000	A
45	130	2000	A
46	133	2000	A
49	140	2000	A
51	143	2000	A
51	145	2000	A
51	146	2000	A
53	148	2000	A
53	150	2000	A
54	153	2000	A
55	154	2000	A
56	156	2000	A
57	159	2000	A
57	161	2000	A
58	163	2000	A
58	165	2000	A
59	166	2000	A
59	168	2000	A
59	169	2000	A
61	174	2000	A
61	175	2000	A
61	177	2000	A
62	180	2000	A
63	184	2000	A
66	189	2000	A
70	199	2000	A
70	200	2000	A
71	202	2000	A
72	203	2000	A
73	206	2000	A
73	207	2000	A
75	211	2000	A
76	213	2000	A
77	214	2000	A

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
77	217	2000	A
78	219	2000	A
78	222	2000	A
83	236	2000	A
85	242	2000	A
85	243	2000	A
88	250	2000	A
88	253	2000	A
89	256	2000	A
89	258	2000	A
89	259	2000	A
89	260	2000	A
90	264	2000	A
92	270	2000	A
93	273	2000	A
94	276	2000	A
95	277	2000	A
95	279	2000	A
98	289	2000	A
99	292	2000	A
99	293	2000	A
100	294	2000	A
100	295	2000	A
101	298	2000	A
101	300	2000	A
103	303	2000	A
103	304	2000	A
103	305	2000	A
105	311	2000	A
106	313	2000	A
106	314	2000	A
106	315	2000	A
106	316	2000	A
107	317	2000	A
107	321	2000	A
108	322	2000	A
108	323	2000	A
108	324	2000	A
109	326	2000	A

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MAP 3400-2

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
120	354	2000	A
124	365	2000	A
124	366	2000	A
11	028	3600	15
11	026	3600	17
63	182	3600	17
96	283	3600	85
60	171	4000	B

001
 (Entry Point 41)

Reference DRAWING for this entry point:

Symptoms at this entry point:

FORMS MOVEMENT AND CONTROL AA055.

Panel Lights Status
 =====

ATTENTION ON
 READY OFF
 DISPLAY 4

====> SEE NOTE :

NOTE: Visually check for mechanical problems in Forms Drive and Emitter area.
 Remove the FORMS EMITTER cover, inspect for loose or damaged emitter, coupling or transducer.
 Inspect for damaged or dirty encoder wheel.

Press and hold 2ND MODE. Note number in DISPLAY.

Is 1 displayed?

Y N

002
 Symptoms have changed.
 Go To Map 2000, Entry Point A.

A
3

5225 ALL MODELS.
FMS MVMNT / CNTRL
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MAP 3400-4

003

Set MODE switch to TEST.

While probing the lines below, press and release
STOP.

Signal Name	Logic Pin	Probe Light Status
High Speed	A1L2B02	Pulse
Forward	A1L2D02	Pulse
Forms Run	A1L2D04	Pulse
Detent	A1L2D09	Pulse

Did all lines pulse?

Y N

004

POWER OFF.

Remove A1N2 card.

POWER ON.

Wait approximately 30 seconds.

Probe lines below.

Signal Name	Logic Pin	Probe Light Status
High Speed	A1L2B02	UP light ON
Forward	A1L2D02	UP light ON
Forms Run	A1L2D04	UP light ON
Detent	A1L2D09	Up light ON

Are all lines UP?

Y N

5 5 5
B C D

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MAP 3400-4

B C D
4 4 4

5225 ALL MODELS.

MAP 3400-5

FMS MVMNT / CNTRL

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005

A1L2 CARD FAILURE

POWER OFF.

Reinstall A1N2 card.

REPLACE A1L2 card.

Perform service checks.

Go to Page 109, Step 325, Entry Point B.

006

A1N2 CARD FAILURE

POWER OFF.

REPLACE A1N2 card.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

When installing new A1N2 card, verify card is jumpered for correct number of print actuator groups. See MIM 3103

007

A1N2 CARD FAILURE

POWER OFF.

REPLACE A1N2 card.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

When installing new A1N2 card, verify card is jumpered for correct number of print actuator groups. See MIM 3103

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MAP 3400-5

008
(Entry Point 42)

Symptoms at this entry point:

<u>Panel Lights</u>	<u>Status</u>
ATTENTION	ON
READY	OFF
DISPLAY	4

====> SEE NOTE:

Press and hold 2ND MODE. Note number in DISPLAY.

Is 2 displayed?

Y N

009
Symptoms have changed.
Go To Map 2000, Entry Point A.

010

Set MODE switch to TEST.

Press and release STOP.

Is DISPLAY 0?

Y N

011
POWER OFF.
Connect Probe A1N2D10 (Forms Busy)

POWER ON.
Wait 5 seconds, the line should pulse before 30 seconds.

Does line pulse?

Y N

8 7 7
E F G

Reference DRAWING for this entry point:

FORMS MOVEMENT AND CONTROL AA055.

NOTE: Visually check for mechanical problems in Forms Drive and Emitter area.
Remove the FORMS EMITTER cover, inspect for loose or damaged emitter, coupling or transducer.
Inspect for damaged or dirty encoder wheel.

F G
6 6

5225 ALL MODELS.

MAP 3400-7

FMS MVMNT / CNTRL

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012

Is UP light on?

Y N

013

A1N2 CARD FAILURE

When installing new A1N2 card, verify card is jumpered for correct number of print actuator groups. See MIM 3103

POWER OFF.

REPLACE A1N2 card.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

014

A1L2 CARD FAILURE

POWER OFF.

REPLACE A1L2 card.

Perform service checks.

Go to Page 109, Step 325, Entry Point B.

015

A1N2 CARD FAILURE

When installing new A1N2 card, verify card is jumpered for correct number of print actuator groups. See MIM 3103

POWER OFF.

REPLACE A1N2 card.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

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MAP 3400-7

016

Press and release STOP while
probing each of the lines below:

Signal Name	Logic Pin	Probe Light Status
High Speed	A1L2B02	Pulse
Detent	A1L2D09	Pulse

Do both lines pulse?

Y N

017

Both lines UP?

Y N

018

A1L2 CARD FAILURE

POWER OFF.

REPLACE A1L2 card.

Perform service checks.

Go to Page 109, Step 325, Entry Point B.

019

A1N2 CARD FAILURE

When installing new A1N2 card, verify card is
jumpered for correct number of print actuator
groups. See MIM 3103

POWER OFF.

REPLACE A1N2 card.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

H
8

5225 ALL MODELS.

MAP 3400-9

FMS MVMNT / CNTRL

PAGE 9 OF 124

020

A1L2 CARD FAILURE

POWER OFF.

REPLACE A1L2 card.

Perform service checks.

Go to Page 109, Step 325, Entry Point B.

17MAR82 PN 6844898

EC 997163 PEC 323243

MAP 3400-9

021
 (Entry Point 43)

Reference DRAWING for this entry point:

Symptoms at this entry point:

FORMS MOVEMENT AND CONTROL AA055.

Panel Lights	Status
=====	=====

LOGIC BOARD POWER DISTRIBUTION AA010

ATTENTION	ON
READY	OFF
DISPLAY	4

NOTE: Visually check for mechanical problems in Forms Drive and Emitter area.

Remove the FORMS EMITTER cover, inspect for loose or damaged emitter, coupling or transducer.

Inspect for damaged or dirty encoder wheel.

====> SEE NOTE:

Press and hold 2ND MODE. Note number in DISPLAY.

Is 3 displayed?

Y N

|

022
 Symptoms have changed.
 Go To Map 2000, Entry Point A.

023

Check for correct seating of the following connectors:

CONNECTOR	LOCATION
=====	=====
A1K2G06	A1 Board
A1K2D13	A1 Board
A1L2D13	A1 Board
A1L4	A1 Board
A1L5	A1 Board
J208/P208	Forms Motor
J210/P210	Forms Motor

See MIM Figure 4-7 for location of Forms Drive Motor.

Are all connectors seated correctly?

Y N

|

1 1
 1 1
 J K

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MAP 3400-10

J K
1 1
0 0

**5225 ALL MODELS.
FMS MVMNT / CNTRL**

MAP 3400-11

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024
POWER OFF.

Reseat connectors.

VERIFY REPAIR.
Go To Map 2000, Entry Point A.

025
Check for +15 vdc between connector
(+)A1L2D13 and (-)logic ground.

Is +15 vdc present?

Y N

026
POWER SUPPLY PROBLEM

Go To Map 3600, Entry Point 17.

027
Check for -15 vdc between connector
(-)A1K2G06 and (+)logic ground.

Is -15 vdc present?

Y N

028
POWER SUPPLY PROBLEM

Go To Map 3600, Entry Point 15.

029
Check for -8 vdc between
(-)A1K2J11 and logic ground.

Is -8 vdc present?

Y N

1 1
2 2
L M

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EC 997163 PEC 323243

MAP 3400-11

L M
1 1
1 1

5225 ALL MODELS.
FMS MVMNT / CNTRL

MAP 3400-12

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030

A1K2 CARD FAILURE

POWER OFF.

REPLACE A1K2 card.

Perform service checks.

Go to Page 109, Step 325, Entry Point B.

031

POWER OFF.

Check fuses F1 and F2.

See MIM Figure 4-10.

FUSE F1 and F2 good?

Y N

032

REPLACE bad fuse or fuses.

Remove Forms from Forms Feed Assembly.

ENSURE Forms Feed Assembly is CLOSED.

Close top cover.

Run forms busy test for two minutes.

NOTE: To run forms busy test -

Set MODE switch to position A and press START key to get flashing A, then set MODE switch to position E and press START key. Test should be running.

Did test run for 2 minutes?

Y N

033

Go to Page 13, Step 035, Entry Point C.

034

Verify repair.

Go To Map 2000, Entry Point A.

1
3
N

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EC 997163 PEC 323243

MAP 3400-12

N
1
2

5225 ALL MODELS.

MAP 3400-13

FMS MVMNT / CNTRL

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035

(Entry Point C)

Open TOP COVER.

Remove Forms from Forms Feed Assembly.

ENSURE Forms Feed Assembly IS CLOSED.

Locate Forms Vertical Adjustment (FVA) knob.

See MIM Figure 4-2.

SLOWLY turn FVA knob several revolutions clockwise (CW) and counterclockwise (CCW). (slight drag is determined to be FREE, resistance to rotation is NOT FREE.)

With the TOP COVER open, the Cover Interlock switch is activated and HIGH VOLTAGE is removed from servo system. This will cause the FVA to turn freely.

Is FVA rotation CONTINUOUSLY FREE in both directions?

Y N

036

FORMS DRIVE MECHANICAL FAILURE

Either Forms Drive Motor or drive mechanism has failed.

Check for mechanical binds at motor shaft, couplings, and any other attached hardware.

Either REPAIR or REPLACE failed parts.

See MIM 3403.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

1
4
P

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EC 997163 PEC 323243

MAP 3400-13

037

Set MODE switch to TEST.

Install CE jumper(A1T2D12 to A1T2D08).

Locate Cover Interlock switch.

Override Cover Interlock switch, (TAB UP).

POWER ON, if it is not already on.

Wait approximately 30 seconds.

Jumper A1T2P09 (Over Current Reset) to logic ground, and then, remove same jumper.

VERY SLOWLY turn Forms Vertical Adjustment (FVA) SEVERAL revolutions CW and CCW. (See Note to the right).

During this test, the FVA knob rotation will normally be continuously stiff. (Continuously stiff is a resistance to rotation that is not free.)

See MIM Figure 4-1.

When Cover Interlock switch is in OVERRIDE mode, the servo system receives drive power.

NOTE:

Turning the FVA knob too quickly can cause a machine Over Current condition. This will disable drive power to the Forms Drive Motor and cause the FVA knob to turn freely (Same as with machine power OFF).

To check over current condition:

Probe A1L2D05. It should indicate up (no over current). If probe indicates down (over current), jumper A1T2P09 (Over Current Reset) to logic ground, and then remove same jumper. This will remove the Over Current condition.

Does FVA have a continuous resistance to rotation?

Y N

|

038

Is FVA rotation continuously free?
(Same as with machine power OFF)?

Y N

|

|

3 2 1
Q R S

S
1
4

**5225 ALL MODELS.
FMS MVMNT / CNTRL**

MAP 3400-15

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039

SERVO/ENCODER TEST 1

=====

POWER OFF.

Disconnect connectors A1L4 and A1L5 at logic board.

Check for approximate resistance of 4000 to 8000 ohms between A1L2S12 and A1L2S13.

Is resistance check OK?

Y N

040

REPLACE A1L2 card.

Perform service checks.

Go to Page 109, Step 325, Entry Point B.

041

POWER ON.

Wait approximately 30 seconds.

Jumper A1T2P09 (Over Current Reset) to logic ground, and then, remove same jumper.

Probe the following pins;

Logic Pin	Probe Light Status
A1L2S06	Both lights OFF
A1L2S07	Both lights OFF
A1L2S08	Both lights OFF
A1L2S09	Both lights OFF
A1L2S10	Both lights OFF
A1L2S11	Both lights OFF

Are probe lights as shown above?

Y N

1 1
7 6
T U

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EC 997163 PEC 323243

MAP 3400-15

042
POWER OFF.

REMOVE A1N2 card.

POWER ON.

Wait approximately 30 seconds.

Jumper A1T2P09 (Over Current Reset) to logic ground, and then, remove same jumper.

Probe the following pins:

Logic Pin	Probe Light Status
A1L2S06	Both lights OFF
A1L2S07	Both lights OFF
A1L2S08	Both lights OFF
A1L2S09	Both lights OFF
A1L2S10	Both lights OFF
A1L2S11	Both lights OFF

Are probe lights as shown above?

Y N

043
A1L2 CARD FAILURE

POWER OFF.

REINSTALL A1N2 card.

Remove CE jumper (A1T2D12 to A1T2D08).

Reconnect connectors A1L4 and A1L5 at A1 board.

REPLACE A1L2 card.

Perform service checks.

Go to Page 109, Step 325, Entry Point B.

T V
1 1
5 6

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FMS MVMNT / CNTRL**

MAP 3400-17

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044
POWER OFF.

REPLACE A1N2 card (Verify jumpers are installed).

Reconnect connectors A1L4 and A1L5 at A1 board.

Remove CE jumper (A1T2D12 to A1T2D08).

Verify repair.

Go To Map 2000, Entry Point A.

045
SERVO/ENCODER TEST 2

Jumper A1L2M06 (ENC A) to logic ground.

Jumper A1T2P09 (Over Current Reset) to logic ground, and then, remove same jumper.

Probe the following pins:

Logic Pin	Probe Light Status
A1L2S08	DOWN light ON
A1L2S10	UP light ON

Are probe lights as shown above?

Y N

046
A1L2 CARD FAILURE

POWER OFF.

Remove CE jumper (A1T2D12 to A1T2D08).

Remove jumper A1L2M06 to logic ground.

Reconnect connectors A1L4 and A1L5 at logic board.

REPLACE A1L2 card.
(Step 046 continues)

1
8
W

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MAP 3400-17

(Step 046 continued)

Perform service checks.

Go to Page 109, Step 325, Entry Point B.

047

SERVO/ENCODER TEST 3

Remove jumper at A1L2M06.

Jumper A1L2M07 (ENC B) to logic ground.

Jumper A1T2P09 (Over Current Reset) to logic ground, and then, remove same jumper.

Probe the following pins:

Logic Pin	Probe Light Status
A1L2S07	DOWN light ON
A1L2S09	UP light ON

Are probe lights as shown above?

Y N

048

A1L2 CARD FAILURE

POWER OFF.

Remove CE jumper (A1T2D12 to A1T2D08).

Remove jumper at A1L2M07.

Reconnect connectors A1L4 and A1L5 at A1 board.

REPLACE A1L2 card.

Perform service checks.

Go to Page 109, Step 325, Entry Point B.

X
1
8

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MAP 3400-19

049
SERVO/ENCODER TEST 4

Remove jumper at A1L2M07.

Jumper A1L2M08 (ENC C) to logic ground.

Jumper A1T2P09 (Over Current Reset) to logic ground, and then, remove same jumper.

Probe the following pins:

Logic Pin	Probe Light Status
A1L2S06	DOWN light ON
A1L2S11	UP light ON

Are probe lights as shown above?

Y N

050
A1L2 CARD FAILURE

POWER OFF.

Remove CE jumper (A1T2D12 to A1T2D08).

Remove jumper at A1L2M08.

Reconnect connectors A1L4 and A1L5 at logic board.

REPLACE A1L2 card.

Perform service checks.

Go to Page 109, Step 325, Entry Point B.

2
0
Y

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MAP 3400-19

A
A
2
0

5225 ALL MODELS.
FMS MVMNT / CNTRL
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MAP 3400-21

052
POWER OFF.

Disconnect connector A1L4 at A1 board.

Locate Forms Drive Motor.

See MIM Figure 4-7.

Disconnect connector P210 at Forms Drive Motor connector J210.

Check continuity of cable shown in figure to the right.====>

A1L4		P210
-----	TACH N	----
B02	<----->	09
	TACH X	
B03	<----->	06
	TACH Y	
B04	<----->	07
	TACH Z	
B05	<----->	08
	ENC A	
B06	<----->	03
	ENC B	
B07	<----->	04
	ENC C	
B08	<----->	05
	+5 VDC	
B09	<----->	01
	GROUND	
B10	<----->	02
-----		----

A1L4/P210 CABLE CONNECTION

Is continuity check good?

Y N

053
A1L4/P210 CABLE FAILURE

Either REPAIR or REPLACE cable A1L4/P210.

Remove CE jumper (A1T2D12 to A1T2D08).

Reconnect connector A1L5 at A1 board.

VERIFY REPAIR.
Go To Map 2000, Entry Point A.

2
2
A
B

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MAP 3400-21

Z
2
0

A
B
2
1

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MAP 3400-22

054
FORMS DRIVE MOTOR FAILURE

REPLACE Forms Drive Motor.

See MIM 3403.

Remove CE jumper (A1T2D12 to A1T2D08).

Reconnect connectors A1L4 and A1L5 at logic board.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

055

MOTOR INPUT RESISTANCE TEST

POWER OFF.

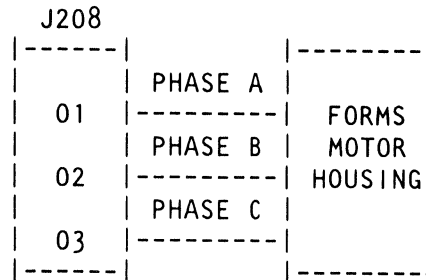
Locate Forms Drive Motor.

See MIM Figure 4-7.

Disconnect connector J208.

See figure to the right.====>

Check for less than 10 ohms between all connector pins, and OPEN resistance from all pins to frame ground.



FORMS DRIVE MOTOR INPUT CABLE

Are resistance measurements correct?

Y N

Vertical line for Y/N response

2 2
3 3
A A
C D

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MAP 3400-22

A A
C D
2 2
2 2

056
FORMS DRIVE MOTOR FAILURE

REPLACE Forms Drive Motor. See MIM 3403.

Remove CE jumper (A1T2D12 to A1T2D08).

Reconnect connectors A1L4 and A1L5 at logic board.

VERIFY REPAIR.
Go To Map 2000, Entry Point A.

057
Locate Servo Power Amplifier card.

See MIM Figure 4-6.

Disconnect connector P204 at Servo Power Amplifier card.

Check continuity of cable shown to the right.====>

P204		P208
09	PHASE A	01
06	PHASE B	02
03	PHASE C	03

P204/P208 CABLE CONNECTION

Continuity check good?
Y N

058
CABLE P204/P208 FAILURE

Either REPAIR or REPLACE cable P204/P208.

Remove CE jumper (A1T2D12 to A1T2D08).

Reconnect connectors A1L4 and A1L5.

VERIFY REPAIR.
Go To Map 2000, Entry Point A.

2
4
A
E

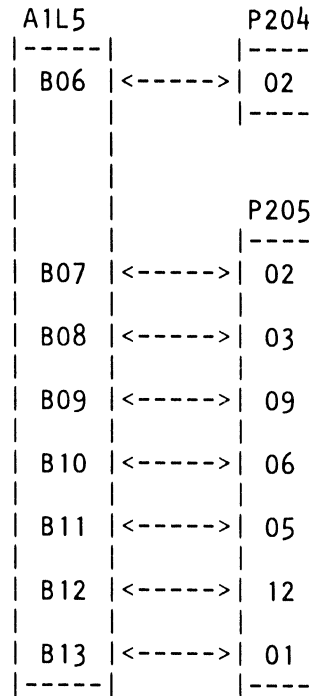
059

Locate Servo Power Amplifier card.

See MIM 3611 and Figure 4-10.

Disconnect connector P204 and P205 at Servo Power Amplifier card.

Check continuity of cable shown to the right.====>



A1L5/P204/P205
CABLE CONNECTION

Continuity check good?

Y N

060

A1L5/ P204/P205 CABLE FAILURE

Either REPAIR or REPLACE A1L5/P204/P205 cable.

Remove CE jumper (A1T2D12 to A1T2D08).

Reconnect connectors A1L4 and A1L5 at logic board.

Reconnect cable P204/P208 to Servo Power Amplifier card and Forms Drive Motor.

(Step 060 continues)

R
1
4

A
F
2
4

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FMS MVMNT / CNTRL

MAP 3400-25

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(Step 060 continued)
VERIFY REPAIR.
Go To Map 2000, Entry Point A.

061
SERVO POWER AMPLIFIER CARD FAILURE

REPLACE Servo Power Amplifier card. See MIM 3611.

Reconnect cable P204/P208 to Forms Drive Motor.

Remove CE jumper (A1T2D12 to A1T2D08).

Reconnect connectors A1L4 and A1L5 at logic board.

VERIFY REPAIR.
Go To Map 2000, Entry Point A.

062
POWER OFF.

Locate fuses F1 (10 vdc, 1.5a) and F2 (50v, 5a).

Located on Servo Power Amplifier.
See MIM Figure 4-10 and MIM 3611.

Remove both fuses and check continuity of fuses.

Are both Forms fuses (F1 and F2) good?

Y N

063
FORMS FUSE(S) FAILURE

Has fuse F1 failed?

Y N

3 2 2
1 8 6
A A A
G H J

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EC 997163 PEC 323243
MAP 3400-25

A
J
2
5

5225 ALL MODELS.
FMS MVMNT / CNTRL
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MAP 3400-26

064

50V FUSE(F2) FAILED

REPLACE fuse F2.

See MIM 3611 and Figure 4-10.

Remove CE jumper (A1T2D12 to A1T2D08).

Set Mode Switch to TEST.

Load Forms into Forms Feed Assembly.

POWER ON.

Wait approximately 30 seconds.

Press and release START.

Did machine operate correctly in TEST?

Y N

065

POWER OFF

Disconnect connector A1L5 at A1 board.

Set CE meter at R x 1 scale.

Check resistance at A1L5 connector, pins B12
and B13 (Current Sense lines).

Resistance will be approximately zero ohms.

Resistance zero ohms?

Y N

2 2 2
8 8 7
A A A
K L M

17MAR82 PN 6844898

EC 997163 PEC 323243

MAP 3400-26

A
M
2
6

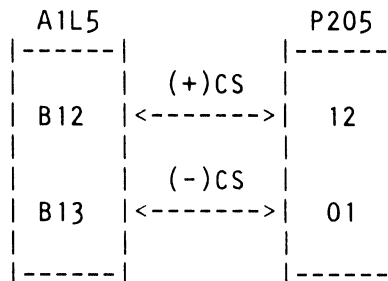
066

Locate Servo Power Amplifier card.

See MIM Figure 4-10.

Disconnect connector P205 at Servo Power Amplifier card.

Check continuity of cable shown in figure to the right.====>



A1L5/P205 CONNECTION
CURRENT SENSE(CS)
LINES ONLY

Continuity check good?

Y N

067

CABLE A1L5/P205 FAILURE

Either REPAIR or REPLACE cable A1L5/P205.

Remove CE jumper (A1T2D12 to A1T2D08).

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

068

SERVO POWER AMPLIFIER CARD FAILURE

POWER OFF.

REPLACE Servo Power Amplifier card.

See MIM 3611.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

A
H
2
5
A
K
2
6
A
L
2
6

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FMS MVMNT / CNTRL**

MAP 3400-28

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069

A1L2 CARD FAILURE

REPLACE A1L2 card.

Reconnect connector A1L5 at A1 board.

Perform service checks.

Go to Page 109, Step 325, Entry Point B.

070

Press and release START several more times to verify machine operates correctly in TEST.

Did machine operate correctly in TEST?

Y N

071

SERVO POWER AMPLIFIER CARD FAILURE

POWER OFF.

REPLACE Servo Power Amplifier card.

See MIM 3611.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

072

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

073

REPLACE fuse F1 (also fuse F2, if it failed).

See MIM Figure 4-10.

Remove CE jumper.

Load Forms into Forms Feed Assembly.

POWER ON.

Did machine operate correctly in TEST?

Y N

3
O
A
N
2
9
A
P

17MAR82

PN 6844898

EC 997163

PEC 323243

MAP 3400-28

A
P
2
8

074
POWER OFF

Disconnect connector A1L5 at A1 board.

Check resistance at A1L5 cable connector, pins B12 and B13 (Current Sense lines).

Resistance will be approximately zero ohms.

Resistance zero ohms?

Y N

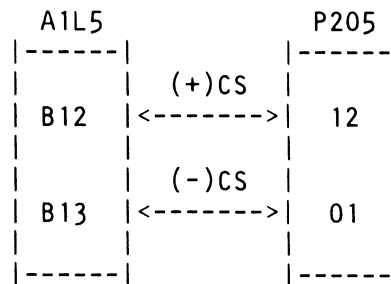
075

Locate Servo Power Amplifier card.

See MIM Figure 4-10.

Disconnect connector P205 at Servo Power Amplifier card.

Check continuity of cable shown in figure to the right.====>



A1L5/P205 CONNECTION
CURRENT SENSE(CS)
LINES ONLY

Continuity check good?

Y N

076

CABLE A1L5/P205 FAILURE

Either REPAIR or REPLACE cable A1L5/P205.

Check fuses F1 and F2 again.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

3 3
0 0
A A
Q R

A A A
N O R
2 2 2
8 9 9

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MAP 3400-30

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077
SERVO POWER AMPLIFIER CARD
FAILURE

POWER OFF.

REPLACE Servo Power Amplifier card. See MIM 3611.

VERIFY REPAIR.
Go To Map 2000, Entry Point A.

078
A1L2 CARD FAILURE

REPLACE A1L2 card.

Reconnect connector A1L5 at A1 board.

Perform service checks.
Go to Page 109, Step 325, Entry Point B.

079
Press and release START several more times to
verify machine operates correctly in TEST.

Did machine operate correctly in TEST?

Y N

080
SERVO POWER AMPLIFIER CARD FAILURE

POWER OFF.

REPLACE Servo Power Amplifier card. See MIM 3611.

VERIFY REPAIR.
Go To Map 2000, Entry Point A.

081
VERIFY REPAIR.
Go To Map 2000, Entry Point A.

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MAP 3400-30

A
G
2
5

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MAP 3400-31

082

Reinstall fuses F1 and F2.

See MIM Figure 4-10.

POWER ON.

Wait approximately 30 seconds.

Check for +10 vdc at F1 fuse socket, and +50 vdc at F2 fuse socket.

Are both voltages correct at fuse socket?

Y N

083

POWER OFF

See Reference Drawing AA055.

Disconnect connector P205 and P206.
Check for less than 5 ohms between the following:

See MIM Figure 4-9 and 4-10.

- From P206-3 to +10 VDC bus.
- From P205-8 to +50 VDC bus.

Is check GOOD?

Y N

084

REPAIR OR REPLACE P205 or P206 cable.

085

RESISTOR CABLE ASSEMBLY FAILURE FROM P206-1 TO RESISTOR R241 OR P206-4 TO RESISTOR R241

See Reference Drawing AA055.

POWER OFF.

Remove CE jumper (A1T2D12 to A1T2D08).

REPLACE Resistor (R241) cable Assembly.

See MIM 3614.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

3
2
A
S

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MAP 3400-31

A
S
3
1

086
FORMS ENCODER TEST.

Check for +5 vdc between (+)A1L2M09 and (-)A1L2M10.

Is +5 vdc present?
Y N

087
POWER OFF.

Disconnect cable connector from A1L4.

POWER ON.

Check for +5VDC at A1L2M09(+) and ground(-).

Is +5VDC present?
Y N

088
A1L2 CARD FAILURE

Reconnect pin side cable connector to A1L4.

POWER OFF.

Remove CE jumper (A1T2D12 to A1T2D08).
REPLACE A1L2 card.
Perform service checks.

Go to Page 109, Step 325, Entry Point B.

089
POWER OFF.

Continuity check pin side cable connector (L4) between pin B09 and frame ground.

See Reference Drawing AA055 and AA010.

Is circuit open?
Y N

3 3 3
4 3 3
A A A
T U V

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A A
U V
3 3
2 2

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MAP 3400-33

090

Disconnect P210 from J210.
Continuity check pin side cable connector
between pin B09 and frame ground.

See MIM Figure 4-12.

Is circuit open?

Y N

091

Repair or replace cable between A1L4 and
P210.

Verify repair.

Go To Map 2000, Entry Point A.

092

Reconnect pin side cable connector to A1L4.

REPLACE Forms Motor.

Verify repair.

Go To Map 2000, Entry Point A.

093

Disconnect P209 from J209.
Continuity check pin side cable connector (L4)
between pin D11 and frame ground.

See Reference Drawing AA050.

Is circuit open?

Y N

094

Repair or replace cable between A1L4 and
P209.

Verify repair.

Go To Map 2000, Entry Point A.

095

Replace Actuator Carrier Motor.

Verify repair.

Go To Map 2000, Entry Point A.

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MAP 3400-33

A
T
3
2

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MAP 3400-34

096
POWER OFF.

Locate Forms Drive Motor.

See MIM Figure 4-7.

Disconnect cable P210 at Forms Motor output connector J210.

POWER ON.

Check for +5 vdc at connector P210 between (+)pin 1 and (-)pin 2.

Is +5 vdc present?

Y N

097
CABLE A1L4/P210 FAILURE

POWER OFF.

Either REPAIR or REPLACE cable A1L4/P210.

Remove CE jumper (A1T2D12 to A1T2D08).

VERIFY REPAIR.
Go To Map 2000, Entry Point A.

098
POWER OFF.

Disconnect P205 from Power Servo Amplifier card.

Check for less than 5 ohms between P205-4 and ground bus bar.

Is it less than 5 ohms?

Y N

3 3
5 5
A A
W X

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MAP 3400-34

Q A A
1 W X
4 3 3
4 4 4

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MAP 3400-35

099

REPLACE/REPAIR cable between P205-4 and ground bus bar.

Reconnect P210/J210 and remove CE jumper (A1T2D12 to A1T2D08).

VERIFY REPAIR.
Go To Map 2000, Entry Point A.

100

POWER OFF.

Replace A1L2 , perform service checks found in this map, Entry Point B.

See MIM 3403.

IF NOT REPAIRED,
REPLACE Forms Drive Motor.

Remove CE jumper (A1T2D12 to A1T2D08).

Reconnect P205 to power servo amplifier

Reconnect P210/J210.

VERIFY REPAIR.
Go To Map 2000, Entry Point A.

101

Remove CE jumper (A1T2D12 to A1T2D08).

Probe A1N2D12 (Forms Run).

While observing probe lights
Press and release STOP.

Did line pulse?

Y N

102

Is line DOWN?

Y N

3 3 3
6 6 6
A A B
Y Z A

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MAP 3400-35

A A B
Y Z A
3 3 3
5 5 5

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MAP 3400-36

103

A1N2 CARD FAILURE

When installing new A1N2 card, verify card is jumpered for correct number of print actuator groups. See MIM 3103

POWER OFF.

REPLACE A1N2 card.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

104

A1L2 CARD FAILURE

POWER OFF.

REPLACE A1L2 card.

Perform service checks.

Go to Page 109, Step 325, Entry Point B.

105

A1L2 CARD FAILURE

POWER OFF.

REPLACE A1L2 card.

Perform service checks.

Go to Page 109, Step 325, Entry Point B.

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MAP 3400-36

B B
3 3
7 7

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FMS MVMNT / CNTRL
PAGE 38 OF 124

MAP 3400-38

109
FORMS DRIVE MECHANICAL FAILURE

Either Forms Drive Motor or drive mechanism has failed.

Check for mechanical binds at motor shaft, couplings, and any other attached hardware.

Either REPAIR or REPLACE failed parts.

See MIM 3403.

VERIFY REPAIR.
Go To Map 2000, Entry Point A.

110

Locate Cover Interlock switch.

With Cover Interlock switch in OVERRIDE mode, the servo system receives drive power.

Override Cover Interlock switch (TAB UP).

POWER ON.

Wait approximately 30 seconds.

Probe pin A1L2D05 (Forms Over Current).

Is line DOWN?

Y N

111
A1N2 CARD FAILURE

When installing new A1N2 card, verify card is jumpered for correct number of print actuator groups. See MIM 3103

POWER OFF.

REPLACE A1N2 card.

VERIFY REPAIR.
Go To Map 2000, Entry Point A.

3
G
B
D

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MAP 3400-38

B
D
3
8

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MAP 3400-39

112

Press and release STOP.

Probe A1L2G13 (Forms Lockout).

Is line UP?

Y N

113
POWER OFF.

Remove A1N2 card.

POWER ON.

Probe A1L2G13 (Forms Lockout)

Is line UP?

Y N

114
A1L2 CARD FAILURE

POWER OFF.

Reinstall A1N2 card.

REPLACE A1L2 card.

Perform service checks.

Go to Page 109, Step 325, Entry Point B.

115

A1N2 CARD FAILURE

POWER OFF.

REPLACE A1N2 card.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

When installing new A1N2 card, verify card is jumpered for correct number of print actuator groups. See MIM 3103

4
O
B
E

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MAP 3400-39

B
3
9

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MAP 3400-40

116

Probe A1L2D05 (Forms Over Current).

Is line UP?

Y N

117

Probe A1L2B03 (Over Current Reset).

While pressing and releasing STOP, observe probe lights.

Does line pulse?

Y N

118

A1T2 CARD FAILURE

POWER OFF.

REPLACE A1T2 card.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

Ensure that jumpers are installed correctly when replacing A1T2 card.

119

POWER OFF.

Disconnect connector A1L5 at A1 board.

POWER ON. Wait 30 seconds.

Press and release STOP.

Probe A1L2D05 (Forms Over Current).

Is line UP?

Y N

4
3
B
F

4
2
B
G

4
1
B
H

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MAP 3400-40

B
H
4
O

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MAP 3400-41

120
POWER OFF.

REMOVE A1L2 card.

POWER ON.

Is A1L2D05 up?

Y N

121
POWER OFF.

REPLACE A1N2 card.

Reconnect connector A1L5 at A1 board.

Verify repair.

Go To Map 2000, Entry Point A.

When installing new A1N2 card, verify card is jumpered for correct number of print actuator groups. See MIM 3103.

122
POWER OFF.

REPLACE A1L2 card.

Reconnect connector A1L5 at A1 board.

Perform service checks.

Go to Page 109, Step 325, Entry Point B.

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EC 997163 PEC 323243

MAP 3400-41

123

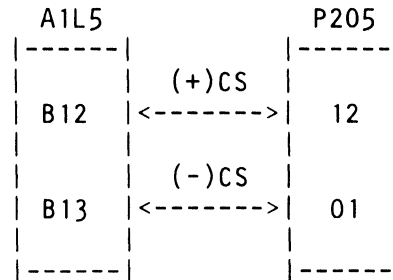
POWER OFF.

Locate Servo Power Amplifier card.

See MIM Figure 4-10.

Disconnect connector P205 at Servo Power Amplifier card.

Check continuity of cable shown in figure to the right.====>



A1L5/P205 CONNECTION
CURRENT SENSE(CS)
LINES ONLY

Continuity check good?

Y N

124

CABLE A1L5/P205 FAILURE

Either REPAIR or REPLACE cable A1L5/P205.

Remove CE jumper (A1T2D12 to A1T2D08).

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

125

SERVO POWER AMPLIFIER CARD FAILURE

POWER OFF.

REPLACE Servo Power Amplifier card.

See MIM 3611.

Reconnect cable A1L5/P205 at A1 board and Servo Power Amplifier card.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

B
F
4
O

5225 ALL MODELS.
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MAP 3400-43

126

A1N2 CARD FAILURE

When installing new A1N2 card, verify card is jumpered for correct number of print actuator groups. See MIM 3103

POWER OFF.

REPLACE A1N2 card.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

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MAP 3400-43

127
(Entry Point 46)

FORMS EMITTER PROBLEM

Symptoms at this entry point:

Panel Lights =====	Status =====
-----------------------	-----------------

ATTENTION	ON
READY	OFF
DISPLAY	4

SEE NOTE =====>

Press and hold 2ND MODE. Note number in DISPLAY.

Is 6 displayed?

Y N

|
|
|
|
|

128

Symptoms have changed.

Go To Map 2000, Entry Point A.

129

POWER OFF.

Open TOP COVER.

Remove Forms from Forms Feed Assembly.

Locate Forms Vertical Adjustment (FVA) knob.

See MIM Figure 4-3.

SLOWLY turn FVA knob several revolutions clockwise (CW) and counterclockwise (CCW).

Is FVA rotation continuously free (not binding) in both directions?

Y N

|
|
|
|
|

4 4
5 5
B B
J K

Reference DRAWINGS for this entry point:

FORMS MOVEMENT AND CONTROL AA055

LOGIC BOARD POWER DISTRIBUTION AA010

EMITTERS AND PLATEN SWITCH AA065

NOTE: Visually check for mechanical problems in forms drive and emitter area.

Remove the Forms Emitter cover, inspect for loose or damaged emitter, coupling or transducer.

Inspect for damaged or dirty encoder wheel.

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MAP 3400-44

B B
J K
4 4
4 4

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MAP 3400-45

130
FORMS DRIVE MECHANICAL FAILURE

Either Forms Drive Motor or drive mechanism has failed.

Check for mechanical binds at motor shaft, couplings, and any other attached hardware.

Either REPAIR or REPLACE failed parts.

See MIM 3403.

VERIFY REPAIR.
Go To Map 2000, Entry Point A.

131
Set MODE switch to TEST.

Install CE jumper (A1T2D12 to A1T2D08).

Locate Cover Interlock switch.

See MIM Figure 4-6.

Override Cover Interlock switch (TAB UP).

When Cover Interlock switch is in OVERRIDE mode, the servo system receives drive power.

POWER ON.

Wait approximately 30 seconds.

Jumper A1T2P09 (Over Current Reset) to logic ground, and then, remove same jumper.

SLOWLY turn Forms Vertical Adjustment (FVA) several revolutions CW and CCW. (See Note to the right).

NOTE:
During this test, the FVA knob rotation will normally be CONTINUOUSLY stiff (offers slight CONTINUOUS resistance to turning).

Turning the FVA knob too quickly can cause a machine Over Current condition. This will disable drive power to the Forms Drive Motor and cause the FVA knob to turn freely (Same as with machine power OFF).

To remove Over Current condition, jumper A1T2P09 (Over Current Reset) to logic ground, and then, remove same jumper.

(Step 131 continues)

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MAP 3400-45

(Step 131 continued)

Is FVA rotation continuously stiff?

Y N

132

Check for correct seating of connector A1L2D13 at A1 board.

Is connector A1L2D13 seated correctly?

Y N

133

A1L2D13 CONNECTION FAILURE

POWER OFF.

Reseat connector A1L2D13 at A1 board.

Remove CE jumper (A1T2D12 to A1T2D08).

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

134

A1L2 CARD FAILURE

POWER OFF.

Remove CE jumper (A1T2D12 to A1T2D08).

REPLACE A1L2 card.

Perform service checks.

Go to Page 109, Step 325, Entry Point B.

135

Go to Page 47, Step 136, Entry Point EM.

136
(Entry Point EM)

Turn FVA knob several revolutions CW and CCW while probing each of the following pins:

- A1K2B05 (Forms Emitter A).
- A1K2B07 (Forms Emitter B).

Does each line pulse?

Y N

137

Check for -8 vdc between (-)A1K2J11 and logic ground.

-8 vdc present?

Y N

138

A1K2 CARD FAILURE

POWER OFF.

Remove CE jumper (A1T2D12 to A1T2D08).

REPLACE A1K2 card.

Perform service checks.

Go to Page 109, Step 325, Entry Point B.

5 4
4 8
B B
L M

139

Locate Forms Transducer Assembly.

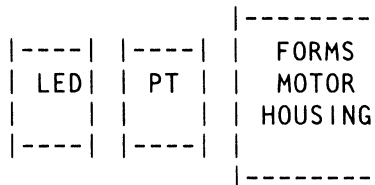
See figure to the right.====>

POWER OFF

Disconnect cable connector A1Y3 and PT at Forms Transducer Assembly and A1Y3.

See MIM Figure 4-7.

The Forms Transducer Assembly contains a Photo Transistor(PT) and Light Emitting Diode (LED) as shown in the figure below. Note position of PT and LED, and Forms Drive Motor.



FORMS TRANSDUCER
ASSEMBLY LOCATION
(REAR TOP VIEW)

See figure to the right.====>

Check continuity of cable PT to A1Y3 and check to see if cable has a short circuit to ground.

PT		A1Y3
(1) 0	PHASE A <----->	B07
(2) 0	PHASE B <----->	D07
(3) X		
(4) 0	-8 VDC <----->	D09

PT/A1Y3 CABLE CONNECTION

Note:

Pin (X) is reference pin for seating PT connector correctly at Forms Transducer Assembly. Only PT connector pins 1, 2, and 4 are electrically connected to connector A1Y3.

SEE REFERENCE DRAWING AB100

(Step 139 continues)

5225 ALL MODELS.

MAP 3400-49

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(Step 139 continued)

Continuity is OK and there are no short
circuit to ground?

Y N

140

CABLE PT/A1Y3 FAILURE

POWER OFF.

Remove CE jumper (A1T2D12 to A1T2D08).

Either REPAIR or REPLACE cable PT/A1Y3.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

5
O
B
N

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MAP 3400-49

141

Locate Forms Transducer Assembly.

See MIM Figure 4-7.

Reconnect A1Y3 connector and PT connector.
Disconnect connector LED at Forms Transducer Assembly .

See figure to the right.====>

A1Y3		LED
	+5 VDC	(1)
D12	<----->	0
		(2)
		X
	PHASE B	(3)
B09	<----->	0
	PHASE A	(4)
B10	<----->	0

LED/A1Y3 CABLE CONNECTION

Note:

Pin (X) is reference pin for seating LED connector correctly at Forms Transducer Assembly. Only LED connector pins 1, 3, and 4 are electrically connected to connector A1Y3.

POWER ON

Check for +5 vdc between following pins of LED cable connector.

(+) PIN 1 and (-) PIN 3

(+) PIN 1 and (-) PIN 4

Is +5 vdc present for BOTH measurements?

Y N

142

POWER OFF.

Check continuity of cable A1Y3 to LED.

See Figure LED/A1Y3 Cable Connections above.

Is continuity OK?

Y N

5	5	5
2	1	1
B	B	B
P	Q	R

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EC 997163 PEC 323243

MAP 3400-50

B B
O R
5 5
0 0

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MAP 3400-51

143

CABLE LED/A1Y3 FAILURE

POWER OFF.

Remove CE jumper (A1T2D12 to A1T2D08).

Either REPAIR or REPLACE cable LED/A1Y3.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

144

Check continuity between
A1J1D13 and A1K2D09
A1J1C13 and A1K2D10

Is continuity OK?

Y N

145

A1 BOARD FAILURE

REPAIR or REPLACE A1 Board.

Reconnect A1Y3/LED cable connectors.

REMOVE jumper A1T2D12 to ground.

Verify repair.

Go To Map 2000, Entry Point A.

146

REPLACE A1K2 card.

Reconnect A1Y3/LED cable connectors.

REMOVE jumper A1T2D12 to ground.

Verify repair.

Go To Map 2000, Entry Point A.

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MAP 3400-51

B
S
5
2

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MAP 3400-53

148

FORMS TRANSDUCER ASSEMBLY FAILURE

POWER OFF.

Remove CE jumper (A1T2D12 to A1T2D08).

REPLACE Forms Transducer Assembly.

VERIFY REPAIR.

See MIM 3404.

Go To Map 2000, Entry Point A.

149

POWER OFF.

Remove A1K2 card.

POWER ON.

Probe A1N2B02

Probe A1N2D06

Are both lines up?

Y N

150

POWER OFF.

Reinstall A1K2 card.

Replace A1N2 card. (Verify jumpers on card).

Remove CE jumper (A1T2D12 to A1T2D08).

Verify repair.

Go To Map 2000, Entry Point A.

5
4
B
U

17MAR82

PN 6844898

EC 997163

PEC 323243

MAP 3400-53

B B
L U
4 5
7 3

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MAP 3400-54

151
A1K2 CARD FAILURE

POWER OFF.

Remove CE jumper (A1T2D12 to A1T2D08).

Reconnect cable PT/A1Y3 at Forms
Transducer Assembly.

REPLACE A1K2 card.

Perform service checks.

Go to Page 109, Step 325, Entry Point B.

152
POWER OFF.

Locate Forms Drive Encoder Assembly.

Remove Forms Drive Encoder Assembly cover.

Check Encoder glass and mechanical coupling of
Encoder glass to Motor shaft.

See MIM Figure 4-7.

Visually check for mechanical problems in Forms
Drive and Emitter area.

Remove the FORMS EMITTER cover, inspect for
loose or damaged emitter, coupling, or
transducer.

Is Forms Encoder glass and coupling good?

Y N

153
FORMS ENCODER GLASS FAILURE

Either REPAIR or REPLACE Forms Encoder
glass.

See MIM 3404.

Remove CE jumper (A1T2D12 to A1T2D08).

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

5
B
V

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EC 997163 PEC 323243

MAP 3400-54

B
V
5
4

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MAP 3400-55

154

A1N2 CARD FAILURE

POWER OFF.

Remove CE jumper (A1T2D12 to A1T2D08).

REPLACE A1N2 card.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

When installing new A1N2 card, verify card is jumpered for correct number of print actuator groups. See MIM 3103

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MAP 3400-55

155
(Entry Point 47)

Symptoms at this entry point:

Panel Lights =====	Status =====
ATTENTION	ON
READY	OFF
DISPLAY	4

====> SEE NOTE :

FORMS THICKNESS KNOB SETTING = 0

Press and hold 2ND MODE. Note number in DISPLAY.

NOTE: Visually check for mechanical problems in Forms Drive and Emitter area.
Remove the FORMS EMITTER cover, inspect for loose or damaged emitter, coupling or transducer.
Inspect for damaged or dirty encoder wheel.

Is 7 displayed?

Y N

|

156

Symptoms have changed.

Go To Map 2000, Entry Point A.

157

Forms thickness switch check.

See MIM 3410 and Figure 4-12.

PROBE A1N2J12.

Turn Forms Thickness knob 0 through 30.

Did probe change from up to down?

Y N

| |

5 5
9 7
B B
W X

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MAP 3400-56

B
X
5
6

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MAP 3400-57

158

Disconnect leads 1 and 2 from forms thickness switch.

Check for +5VDC between connector 1(-) and connector 2(+) of forms thickness switch cable.

Is +5VDC present?

Y N

159

Forms thickness cable is failing between:

Switch pin 1 to A1Y4B12

or

Switch pin 2 to A1Y4B11

REPLACE/REPAIR failing cable from forms thickness switch to A1Y4.

Verify repair.

Go To Map 2000, Entry Point A.

160

POWER OFF.

Disconnect lead from forms thickness switch pin 3.

Check for 0 ohms between disconnected lead and A1N1B13.

Is it 0 ohms?

Y N

161

REPLACE/REPAIR cable between Forms Thickness switch and A1Y4.

Verify repair.

Go To Map 2000, Entry Point A.

5
0
B
Y

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MAP 3400-57

B
Y
5
7

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MAP 3400-58

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162

REMOVE A1N2 card.

POWER ON.

Probe A1N2J12.

Are both lights out?

Y N

163

POWER OFF.

REPLACE Cable A1Y4.

Verify repair.

Go To Map 2000, Entry Point A.

164

POWER OFF.

RECONNECT switch.

POWER ON

Press Forms Thickness switch.

Did light indicate down?

Y N

165

Forms Thickness switch is failing.

REPLACE Forms Thickness switch.

Verify repair.

Go To Map 2000, Entry Point A.

5
9
B
Z

17MAR82

PN 6844898

EC 997163

PEC 323243

MAP 3400-58

B B
W Z
5 5
6 8

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MAP 3400-59

166
POWER OFF.

REPLACE A1N2.

Verify repair.

Go To Map 2000, Entry Point A.

167

Check switch for correct adjustment.

When installing new A1N2 card, verify card is jumpered for correct number of print actuator groups. See MIM 3103.

FORMS THICKNESS SWITCH

Electrical check of Forms thickness switch:
Connect meter to
A1N2J12(+) and any D08(-).
Cam Setting 0-14=+5 volts
Cam Setting 15-30= 0 volts
NOTE: Forms thickness switch cannot be checked using resistance check.

Was switch adjusted correctly?

Y N

168
Ensure adjustment is correct.

Verify repair.

Go To Map 2000, Entry Point A.

169

POWER DOWN.

A1N2 card is FAILING.

REPLACE A1N2 card.

Verify repair.

Go To Map 2000, Entry Point A.

When installing new A1N2 card, verify card is jumpered for correct number of print actuator groups. See MIM 3103.

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MAP 3400-59

170
(Entry Point 48)

Reference DRAWING for this entry point:

Symptoms at this entry point:

FORMS MOVEMENT AND CONTROL AA055

Panel Lights =====	Status =====
ATTENTION	ON
READY	OFF
DISPLAY	4

====> SEE NOTE:

NOTE: Visually check for mechanical problems in Forms Drive and Emitter area. Remove the FORMS EMITTER cover, inspect for loose or damaged emitter, coupling or transducer. Inspect for damaged or dirty encoder wheel.

Press and hold 2ND MODE. Note number in DISPLAY.

Is 8 displayed?

Y N

171

Symptoms have changed. NOTE ERROR
Go To Map 4000, Entry Point B.

172

Open top cover (do not override Cover Interlock switch).

Measure for less than +3 VDC between A1P1E13 (+) (HPG) and ground (-).

Is it less than +3 VDC?

Y N

173

Measure for less than +3 VDC between J201-8 (+) on sequence card and ground (-).

See Reference Drawing AA030.

Is it less than +3 VDC?

Y N

6 6 6
1 1 1
C C C
A B C

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MAP 3400-60

C C C
A B C
6 6 6
0 0 0

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FMS MVMNT / CNTRL
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MAP 3400-61

174
POWER OFF

REPLACE Sequence card.

See MIM 3605.

Verify repair.
Go To Map 2000, Entry Point A.

175
POWER OFF.

REPAIR/REPLACE wire from P201-8 to P213-2 or wire from J213 to A1Y5 connector.

See Reference Drawing AA045.

Verify repair.
Go To Map 2000, Entry Point A.

176
POWER OFF

Close Top cover.
Jumper A1N2G06 (HPG) to logic ground (any D08 pin).
POWER ON.

Wait 30 seconds.

PRESS and RELEASE 2ND MODE.
Is error code '81'?

Y N

177
POWER OFF.

Remove jumper between A1N2G06 and ground.

REPLACE A1N2 card.

When installing new A1N2 card, verify card is jumpered for correct number of print actuator groups. See MIM 3103.

Verify repair.
Go To Map 2000, Entry Point A.

6
2
C
D

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MAP 3400-61

C
D
6
1

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FMS MVMNT / CNTRL
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MAP 3400-62

178
POWER OFF.

Remove jumper between A1N2G06 and ground.

POWER ON.

Wait 30 seconds.

Set MODE switch to TEST.

Press and release STOP.

Press and release START and note if forms move backward quickly.

Do forms move backward quickly?

Y N

179
Check for correct seating of
Connectors A1K2D13 and A1L2D13
at A1 board.

Are all connectors seated correctly?

Y N

180
POWER OFF.

Reseat connectors.

VERIFY REPAIR.
Go To Map 2000, Entry Point A.

181
Check for +15 vdc between connector
(+)A1L2D13 and (-)logic ground.

Is +15 vdc present?

Y N

9
F
C
C
C
G

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EC 997163 PEC 323243

MAP 3400-62

C
C
6
6
2
2

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MAP 3400-63

182
POWER SUPPLY PROBLEM

Go To Map 3600, Entry Point 17.

183
POWER OFF.

Open Top Cover.

Remove forms from Forms Feed Assembly.

Locate Forms Vertical Adjustment (FVA) knob.

SLOWLY turn FVA knob several revolutions clockwise (CW) and counterclockwise (CCW).

Is FVA rotation continuously free in both directions?

Y N

184
FORMS DRIVE MECHANICAL FAILURE

Either Forms Drive Motor or drive mechanism has failed.

Check for mechanical binds at motor shaft, couplings, and any other attached hardware.

Either REPAIR or REPLACE failed parts.

VERIFY REPAIR.
Go To Map 2000, Entry Point A.

With the Top Cover open, the Cover Interlock switch is activated and HIGH VOLTAGE is removed from servo system.

See MIM Figure 4-3.

See MIM 3403.

6
4
C
H

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EC 997163 PEC 323243
MAP 3400-63

C
H
6
3

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PAGE 64 OF 124

MAP 3400-64

185

Set MODE switch to TEST.

Install CE jumper (A1T2D12 to A1T2D08).

Locate Cover Interlock switch.

See MIM Figure 4-1.

Override Cover Interlock switch (TAB UP).

When Cover Interlock switch is in OVERRIDE mode, the servo system receives drive power.

POWER ON.

Wait approximately 30 seconds.

Install jumper A1T2P09 (Over Current Reset) to logic ground, and then, remove same jumper.

VERY SLOWLY turn Forms Vertical Adjustment (FVA) SEVERAL REVOLUTIONS CW and CCW. (See Note to the right).

NOTE:

Turning the FVA knob too quickly can cause a machine Over Current condition. This will disable drive power to the Forms Drive Motor and cause the FVA knob to turn freely (Same as with machine power OFF).

During this test, the FVA knob rotation will normally be continuously stiff. (With Power on Forms should be harder to turn.)

To remove Over Current condition, jumper A1T2P09 (Over Current Reset) to logic ground, and then, remove same jumper.

Is FVA rotation continuously stiff?

Y N

186

SERVO/ENCODER TEST 1

=====

POWER OFF.

Disconnect connectors A1L4 and A1L5 at logic board.

POWER ON.

Wait approximately 30 seconds.

Jumper A1T2P09 (Over Current Reset) to logic ground, and then, remove same jumper.

Probe the following pins;
(Step 186 continues)

7
7
C
J

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MAP 3400-64

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MAP 3400-65

(Step 186 continued)

Logic Pin	Probe Light Status
A1L2S06	Both lights OFF
A1L2S07	Both lights OFF
A1L2S08	Both lights OFF
A1L2S09	Both lights OFF
A1L2S10	Both lights OFF
A1L2S11	Both lights OFF

Are probe lights as shown above?

Y N

187
POWER OFF.

REMOVE A1N2 card.

POWER ON.

Wait approximately 30 seconds.

Jumper A1T2P09 (Over Current Reset) to logic ground, and then, remove same jumper.

Probe the following pins.:

Logic Pin	Probe Light Status
A1L2S06	Both lights OFF
A1L2S07	Both lights OFF
A1L2S08	Both lights OFF
A1L2S09	Both lights OFF
A1L2S10	Both lights OFF
A1L2S11	Both lights OFF

Are probe lights as shown above?

Y N

6 6 6
6 6 6
C C C
K L M

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MAP 3400-65

C C C
K L M
6 6 6
5 5 5

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MAP 3400-66

188

A1L2 CARD FAILURE

POWER OFF.

Remove CE jumper (A1T2D12 to A1T2D08).

Reconnect connectors A1L4 and A1L5 at logic board.

REPLACE A1L2 card.

Perform service checks.

Go to Page 109, Step 325, Entry Point B.

189

POWER OFF.

REPLACE A1N2 card.

Verify repair.

Go To Map 2000, Entry Point A.

When installing new A1N2 card, verify card is jumpered for correct number of print actuator groups. See MIM 3103.

190

SERVO/ENCODER TEST 2

Jumper A1L2M06 (ENC A) to logic ground.

Jumper A1T2P09 (Over Current Reset) to logic ground, and then, remove same jumper.

Probe the following pins:

Logic Pin	Probe Light Status
A1L2S08	DOWN light ON
A1L2S10	UP light ON

Are probe lights as shown above?

Y N
| |

6 6
7 7
C C
N P

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MAP 3400-66

C
O
6
7

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MAP 3400-68

|

193
A1L2 CARD FAILURE

POWER OFF.

Remove CE jumper (A1T2D12 to A1T2D08).

Remove jumper at A1L2M07.

Reconnect connectors A1L4 and A1L5 at
Logic board.

REPLACE A1L2 card.

Perform service checks.

Go to Page 109, Step 325, Entry Point B.

194
SERVO/ENCODER TEST 4

Remove jumper at A1L2M07.

Jumper A1L2M08 (ENC C) to logic ground.

Jumper A1T2P09 (Over Current Reset) to logic
ground, and then, remove same jumper.

Probe the following pins:

Logic Pin	Probe Lights Status
=====	=====
A1L2S06	DOWN light ON
A1L2S11	UP light ON

Are probe lights as shown above?

Y N
| |

6
9
C
S

17MAR82 PN 6844898

EC 997163 PEC 323243

MAP 3400-68

C
S
6
8

195

A1L2 CARD FAILURE

POWER OFF.

Remove CE jumper (A1T2D12 to A1T2D08).

Remove jumper at A1L2M08.

Reconnect connectors A1L4 and A1L5 at logic board.

REPLACE A1L2 card.

Perform service checks.

Go to Page 109, Step 325, Entry Point B.

196

MOTOR TACH TEST

POWER OFF.

Disconnect connector A1L4 at A1 board.

See to figure to the right.====>

At connector A1L4, check for approximately 25 ohms to approximately 175 ohms between the following pins.

B02 and B03

B02 and B04

B02 and B05

A1L4		P210
-----		----
	TACH N	
B02	<----->	09
	TACH X	
B03	<----->	06
	TACH Y	
B04	<----->	07
	TACH Z	
B05	<----->	08
-----		----

A1L4/P210 CABLE
CONNECTION
(TACH LINES ONLY)

TACH resistance measurements good?

Y N

197

TACH resistance measurements are more than 25 ohms?

Y N

7 7 7
2 1 0
C C C
U V W

C
W
6
9

5225 ALL MODELS.

MAP 3400-70

FMS MVMNT / CNTRL

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198

Disconnect P210/J210 FORMS MOTOR plug at connector J210 (connector to motor).

Check for approximately 25 ohms to approximately 175 ohms between following pins:

09 to 06

09 to 07

09 to 08

Resistance measurements O.K.?

Y N

199

FORMS DRIVE MOTOR FAILURE

REPLACE Forms Drive Motor.

See MIM 3403.

Reconnect cable A1L4/P210.

Reconnect connector A1L5 at A1 board.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

200

CABLE A1L4/P210 FAILURE

Either REPAIR or REPLACE cable A1L4/P210.

Reconnect connector A1L5 at A1 board.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

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MAP 3400-70

C
V
6
9

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MAP 3400-71

201

CABLE A1L4/P210 CONTINUITY TEST

Locate Forms Drive Motor.

See MIM Figure 4-7.

Disconnect connector P210 at motor output connector J210.

See figure to the right.====>

Check continuity of cable A1L4/P210.

A1L4		P210
-----		-----
	TACH N	
B02	<----->	09
	TACH X	
B03	<----->	06
	TACH Y	
B04	<----->	07
	TACH Z	
B05	<----->	08
-----		-----

A1L4/P210 CABLE
CONNECTION
(TACH LINES ONLY)

Is continuity check good?

Y N

202

CABLE A1L4/P210 FAILURE

Either REPAIR or REPLACE cable A1L4/P210.

Reconnect connector A1L5 at A1 board.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

7
2
C
X

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EC 997163 PEC 323243

MAP 3400-71

C C
U X
6 7
9 1

203
FORMS DRIVE MOTOR FAILURE

REPLACE Forms Drive Motor. See MIM 3403.

Reconnect cable A1L4/P210.

Reconnect connector A1L5 at A1 board.

VERIFY REPAIR.
Go To Map 2000, Entry Point A.

204
MOTOR ENCODER TEST

Remove jumper from A1L2M08 to ground.

Reconnect connector at A1L4 at A1 board.
Reconnect P210 to J210.
Reconnect A1L5 cable.

Return Cover Interlock switch to normal operating mode (TAB DOWN).

POWER ON.

Wait approximately 30 seconds.

While turning FVA knob CW and CCW, probe the following pins:

Logic Pin	Signal Name	Probe Light Status
A1L2M06	Encoder A	Pulse
A1L2M07	Encoder B	Pulse
A1L2M08	Encoder C	Pulse

Did all lines pulse?

Y N
| |
| |
| |
| |
| |
| |
| |
| |

7 7
4 3
C C
Y Z

C
Z
7
2

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MAP 3400-73

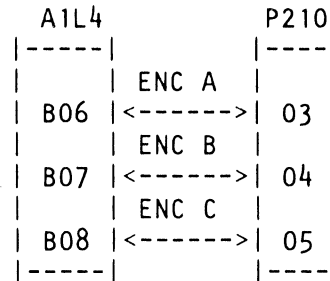
205

POWER OFF.

Disconnect connector A1L4 at A1 board, and P210 at Forms Motor Output connector J210.

See figure to the right.====>

Check continuity of cable A1L4/P210.



A1L4/P210 CABLE
CONNECTION
(ENCODER LINES ONLY)

Is continuity check good?

Y N

206

A1L4/P210 CABLE FAILURE

Either REPAIR or REPLACE cable A1L4/P210.

Remove CE jumper (A1T2D12 to A1T2D08).

Reconnect connector A1L5 at A1 board.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

207

FORMS DRIVE MOTOR FAILURE

REPLACE Forms Drive Motor.

See MIM 3403.

Remove CE jumper (A1T2D12 to A1T2D08).

Reconnect connectors A1L4 and A1L5.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

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EC 997163 PEC 323243

MAP 3400-73

C
Y
7
2

208

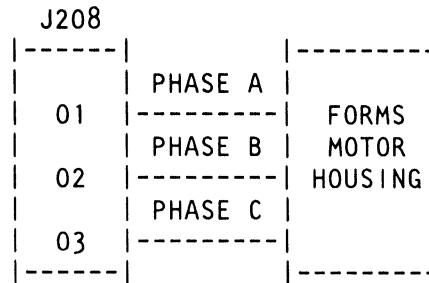
MOTOR INPUT RESISTANCE TEST

POWER OFF.

Disconnect connector P208 at Motor input connector J208.

See to figure to the right.====>

Check for less than 10 ohms between all connector pins, and OPEN resistance from all pins to frame ground.



FORMS DRIVE MOTOR INPUT CABLE

Are resistance measurements correct?

Y N

209

FORMS DRIVE MOTOR FAILURE

REPLACE Forms Drive Motor.

See MIM 3403.

Remove CE jumper (A1T2D12 to A1T2D08).

Reconnect connectors A1L4 and A1L5 at logic board.

Do Forms Electronic adjustment procedure.

Go to Page 109, Step 325, Entry Point B.

7
5
D
A

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MAP 3400-74

D
A
7
4

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MAP 3400-75

210

Locate Servo Power Amplifier card.

See MIM Figure 4-10.

Disconnect connector P204 at Servo Power Amplifier card.

Check continuity of cable shown in figure to the right.====>

P204		P208
09	PHASE A <----->	01
06	PHASE B <----->	02
03	PHASE C <----->	03

**P204/P208 CABLE
CONNECTION**

Continuity check good?

Y N

211

CABLE P204/P208 FAILURE

Either REPAIR or REPLACE cable P204/P208.

Remove CE jumper (A1T2D12 to A1T2D08).

Reconnect connectors A1L4 and A1L5 at logic board.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

7
6
D
B

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EC 997163 PEC 323243

MAP 3400-75

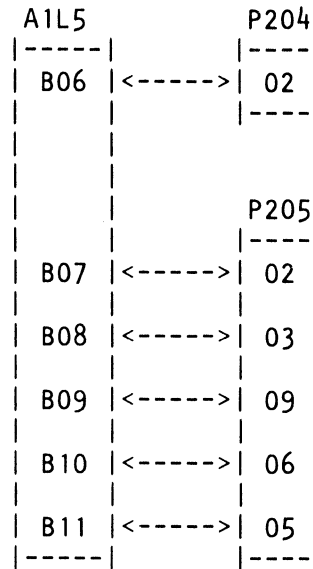
212

Locate Servo Power Amplifier card.

See MIM Figure 4-10.

Disconnect connector P205 at Servo Power Amplifier card.

Check for continuity and grounds in cable shown in figure to the right.====>



A1L5/P204/P205
CONNECTION

Continuity check good?

Y N

213

A1L5/P204/P205 CABLE FAILURE

Either REPAIR or REPLACE A1L5/P204/P205 cable.

Remove CE jumper (A1T2D12 to A1T2D08).

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

C D
J C
6 7
4 6

5225 ALL MODELS.
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MAP 3400-77

214
SERVO FAILURE

REPLACE Fuse F1 and/or REPLACE A1L2 card or, REPLACE Servo Power Amplifier card.

When installing new A1L2 card, perform service checks in this map Entry Point B.
When replacing Servo Power Amplifier card, see MIM 3611.

Remove CE jumper (A1T2D12 to A1T2D08).

Reconnect P208/J208, A1L5, P204,P205 connectors

VERIFY REPAIR.
Go To Map 2000, Entry Point A.

215
POWER OFF.

Remove CE jumper (A1T2D12 to A1T2D08).

Load forms into Forms Feed Assembly.

Power On.

Wait approximately 30 seconds.

Is 4 displayed?
Y N

216
Is 0 displayed?
Y N

217
Symptoms have changed.
Go To Map 2000, Entry Point A.

218
Ensure MODE SWITCH is in TEST position.
Press and release START.
Does print test STOP with a 4 in display?

Y N
| |
| |
| |

7 7 7
8 8 8
D D D
D E F

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EC 997163 PEC 323243

MAP 3400-77

D D D
7 7 7
7 7 7

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MAP 3400-78

219

Symptoms have changed.
Go To Map 2000, Entry Point A.

220

Go to Step 221, Entry Point FM.

221

(Entry Point FM)

Press and release 2ND MODE.

Is 8 displayed?

Y N

222

Symptoms have changed.
Go To Map 2000, Entry Point A.

223

Press and release STOP. This will cause error to be reset(DISPLAY=0).

Press and release START. Note any backward movement of forms.

Did forms move backward?

Y N

224

Press and release STOP key.

Open Forms Feed Assembly and leave open.

Remove Forms from Forms Feed Assembly.

Turn FVA knob several revolutions CW or CCW while probing each of the following pins:

See MIM Figure 4-3 for FVA.

A1N2B02
A1N2D06

(Step 224 continues)

9
0
0
0
6

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MAP 3400-78

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MAP 3400-79

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(Step 224 continued)
Did each line pulse?

Y N

225
EMITTER PROBLEM.

Go to Page 47, Step 136, Entry Point EM.

226
FORMS SYMMETRY A CHECK

POWER OFF.

ENSURE Forms Feed Assembly is closed.

POWER ON.

Wait approximately 30 seconds.

Press and release STOP.

Set MODE switch to A.

Press and release START. DISPLAY will be a flashing A

See note ===>

Press and release START again. If Forms Symmetry A is correct, the DISPLAY will be 0.

See Note ===>

Is DISPLAY 0?

Y N

Vertical lines for Y and N responses.

8 8
0 0
D D
H J

Mode switch position A permits operator to perform secondary test routines. When switch is in position A and START is pressed, a flashing A will be displayed. The operator then sets the MODE switch for a specific test routine. Pressing START again will cause the test routine to run. The test is stopped by pressing STOP. See MIM Chapter 2 for additional definition of MODE switch position A.

IMPORTANT NOTE:

If 46 Error Code occurs when adjusting Forms Symmetry A or Forms Symmetry B, either pot may be too far out of adjustment (both are 40 turn pots). Attempt to center the pots until the forms tractors run continuously so the adjustment can be made.

NOTE: An F or 1 in the Display would not cause an error. (If Display is equal to F or 1, adjust pot to indicate 0 and continue.)

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MAP 3400-79

D D
H J
7 7
9 9

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MAP 3400-80

227

Locate FORMS SYMMETRY A adjustment POT on A1K2 card. See figure to the right.====.

Adjust FORMS SYMMETRY A as follows:

If DISPLAY is a numeric character, turn POT CCW until 0 is displayed.

If DISPLAY is an alphabetic character, turn POT CW until 0 is displayed.

Can Forms Symmetry A be adjusted for 0 display?

Y N

228

A1K2 CARD FAILURE

POWER OFF.

REPLACE A1K2 card.

Perform service checks.

Go to Page 109, Step 325, Entry Point B.

229

Go to Step 230, Entry Point SB.

230

(Entry Point SB)

FORMS SYMMETRY B CHECK

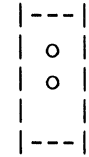
Press and release STOP. DISPLAY will change to a flashing A.

Set MODE switch to B.

Press and release START.

(Step 230 continues)

A1K2
CARD
(TOP)



Forms Symmetry A
Forms Symmetry B

A1K2 POT LOCATIONS

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MAP 3400-80

FMS MVMNT / CNTRL

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(Step 230 continued)

If Forms Symmetry B is correct, the DISPLAY will be 0.

See Note =====>

NOTE: An F or 1 in the Display would not cause an error. (If Display is equal to F or 1, adjust pot to indicate 0 and continue.)

Is DISPLAY 0?

Y N

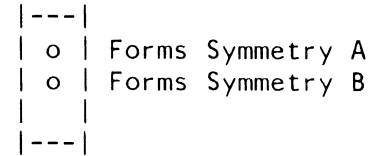
231

Locate FORMS SYMMETRY B adjustment POT on A1K2 card. See figure to the right.=====>

If DISPLAY is a numeric character, turn POT CCW until 0 is displayed.

If DISPLAY is an alphabetic character, turn POT CW until 0 is displayed.

A1K2
CARD
(TOP)



A1K2 POT LOCATIONS

Can Forms Symmetry B be adjusted for 0 display?

Y N

232

A1K2 CARD FAILURE

POWER OFF.

REPLACE A1K2 card.

Perform service checks.

Go to Page 109, Step 325, Entry Point B.

233

Go to Page 82, Step 234, Entry Point FQ.

234
(Entry Point FQ)

FORMS QUADRATURE

Press and release STOP. DISPLAY will be a flashing A.

Turn Mode switch to position C.

Press and release START.

If Forms Quadrature is correct, the DISPLAY will be 0.
See Note =====>

NOTE: An F or 1 in the Display would not cause an error. (If Display is equal to F or 1, adjust pot to indicate 0 and continue.)

Is DISPLAY 0?
Y N

235
Locate Forms Quadrature adjustment screw on Forms Drive Motor.

See MIM Figure 7.

Adjust for 0 DISPLAY.

NOTE: This is a fine adjustment. Perform carefully.

Can Forms Quadrature be adjusted for 0?
Y N

236
FORMS DRIVE ENCODER ASSEMBLY FAILURE

POWER OFF.

Locate Forms Encoder Assembly.

See MIM Figure 4-7.

Remove Forms Encoder cover.

Check for loose Encoder wheel and Motor shaft coupling.

Either REPAIR or REPLACE any failed parts.

See MIM 3404.

(Step 236 continues)

D D
L M
8 8
2 2

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MAP 3400-83

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(Step 236 continued)
VERIFY REPAIR.
Go To Map 2000, Entry Point A.

237

Go to Step 238, Entry Point FS.

238

(Entry Point FS)

FORMS SPEED CHECK

Press and release STOP. DISPLAY will change to a flashing A.

Set MODE switch to position D.

Press and release START.

If Forms Speed is correct, the DISPLAY will be 0.
See Note =====>

NOTE: An F or 1 in the Display would not cause an error. (If Display is equal to F or 1, adjust pot to indicate 0 and continue.)

Is DISPLAY 0?

Y N

239

Locate FORMS SPEED adjustment POT on A1L2 card. See figure to the right.=====>

Adjust FORMS SPEED as follows:

If DISPLAY is a numeric character, turn POT CCW until 0 is displayed.

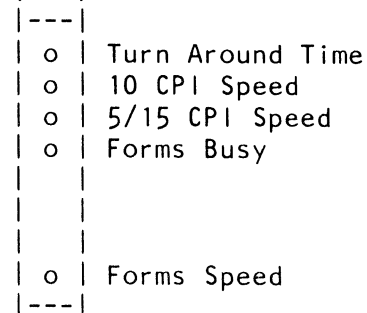
If DISPLAY is an alphabetic character, turn POT CW until 0 is displayed.

Can FORMS SPEED be adjusted for 0 display?

Y N

8 8 8
6 6 4
D D D
N P Q

A1L2
CARD
(TOP)



A1L2 POT LOCATIONS

17MAR82 PN 6844898

EC 997163 PEC 323243

MAP 3400-83

D
0
0
3

5225 ALL MODELS.
FMS MVMNT / CNTRL
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MAP 3400-84

240

MOTOR TACH TEST

POWER OFF.

Disconnect connector A1L4 at A1 board.

See figure to the right.====>

At connector A1L4, check for approximately 25 ohms to approximately 175 ohms between the following pins.

B02 and B03

B02 and B04

B02 and B05

A1L4		P210
	TACH N	
B02	<----->	09
	TACH X	
B03	<----->	06
	TACH Y	
B04	<----->	07
	TACH Z	
B05	<----->	08

A1L4/P210 CABLE
CONNECTION
(TACH LINES ONLY)

TACH resistance measurements good?

Y N

--	--

8
6
D
R

8
5
D
S

17MAR82 PN 6844898

EC 997163 PEC 323243

MAP 3400-84

D
S
8
4

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MAP 3400-85

241

CABLE A1L4/P210 CONTINUITY TEST

Locate Forms Drive Motor.

See MIM Figure 4-7.

Disconnect connector P210 at motor output connector J210.

See figure to the right.====>

Check continuity of cable A1L4/P210.

A1L4		P210
-----		-----
	TACH N	
B02	<----->	09
	TACH X	
B03	<----->	06
	TACH Y	
B04	<----->	07
	TACH Z	
B05	<----->	08
-----		-----

A1L4/P210 CABLE
CONNECTION
(TACH LINES ONLY)

Is continuity check good?

Y N

242

CABLE A1L4/P210 FAILURE

Either REPAIR or REPLACE cable A1L4/P210.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

243

FORMS DRIVE MOTOR FAILURE

REPLACE Forms Drive Motor.

See MIM 3403.

Reconnect cable A1L4/P210.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

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EC 997163 PEC 323243

MAP 3400-85

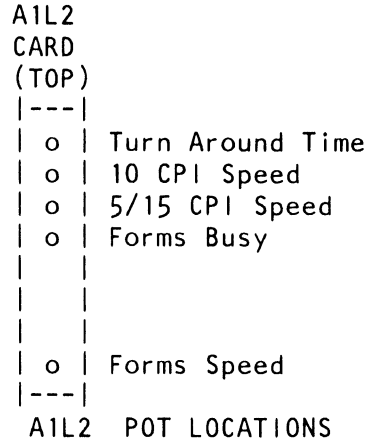
247

Locate FORMS BUSY adjustment POT on A1L2 card. See figure to the right.=====>

Adjust FORMS BUSY as follows:

If DISPLAY is a numeric character, turn POT CCW until 0 is displayed.

If DISPLAY is an alphabetic character, turn POT CW until 0 is displayed.



Can FORMS BUSY be adjusted for 0 display?

Y N

248

Probe A1L2D06 (Forms Busy).

Is line pulsing?

Y N

249

POWER OFF.

Remove A1L2 card.

POWER ON.

Wait approximately 30 seconds.

Probe A1L2D06 (Forms Busy).

Is line UP?

Y N

8 8 8 8
D D D D
V W X Y

D D D D
V W X Y
8 8 8 8
7 7 7 7

5225 ALL MODELS.
FMS MVMNT / CNTRL
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MAP 3400-88

250
A1N2 CARD FAILURE

When installing new A1N2 card, verify card is jumpered for correct number of print actuator groups. See MIM 3103

POWER OFF.

Reinstall A1L2 card.

REPLACE A1N2 card.

VERIFY REPAIR.
Go To Map 2000, Entry Point A.

251
A1L2 CARD FAILURE

POWER OFF.

REPLACE A1L2 card.

If A1L2 card is replaced, pots on new card must be adjusted.

Perform service checks.
Go to Page 109, Step 325, Entry Point B.

252
A1L2 CARD FAILURE

POWER OFF.

REPLACE A1L2 card.

If A1L2 card is replaced, pots on new card must be adjusted.

Perform service checks.
Go to Page 109, Step 325, Entry Point B.

253
VERIFY REPAIR.
Go To Map 2000, Entry Point A.

17MAR82 PN 6844898

EC 997163 PEC 323243

MAP 3400-88

D
T
8
6

5225 ALL MODELS.
FMS MVMNT / CNTRL
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MAP 3400-89

254

PRESS and RELEASE STOP key.
REINSTALL forms in forms feed assembly.
SET MODE SWITCH to TEST.
PRESS and release STOP key.
PRESS and release START key.
WAIT 30 seconds.

Is display 0?

Y N

255

Is display 4?

Y N

256

SYMPTOM has CHANGED.
Go To Map 2000, Entry Point A.

257

Press and release 2nd mode.

Is display 8?

Y N

258

SYMPTOM has CHANGED.
Go To Map 2000, Entry Point A.

259

A1N2 or A1L2 CARD FAILURE

POWER OFF.

REPLACE A1N2 and/or A1L2 cards.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

When installing new A1N2 card, verify card is jumpered for correct number of print actuator groups. See MIM 3103

When installing new A1L2, perform service checks found in this map Entry Point B.

260

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

17MAR82 PN 6844898

EC 997163 PEC 323243

MAP 3400-89

D
G
7
8

5225 ALL MODELS.
FMS MVMNT / CNTRL
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MAP 3400-90

261

Press and release STOP. This will cause error to be reset (DISPLAY=0).

Probe A1N2G02 (Forms Forward).

Press and release START. Note if line pulses.

Did line pulse?

Y N

262

Is line UP?

Y N

263

A1L2 CARD FAILURE

POWER OFF.

REPLACE A1L2 card.

Perform service checks.

Go to Page 109, Step 325, Entry Point B.

264

A1N2 CARD FAILURE

POWER OFF.

REPLACE A1N2 card.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

When installing new A1N2 card, verify card is jumpered for correct number of print actuator groups. See MIM 3103

9
1
D
Z

17MAR82 PN 6844898

EC 997163 PEC 323243

MAP 3400-90

C D
E Z
6 9
2 0

5225 ALL MODELS.
FMS MVMNT / CNTRL
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MAP 3400-91

265
A1L2 CARD FAILURE

POWER OFF.

REPLACE A1L2 card.

Perform service checks.

Go to Page 109, Step 325, Entry Point B.

266

Check for +8 vdc between A1L2G09 and logic ground.

Is +8 vdc present?

Y N

267
A1K2 CARD FAILURE

POWER OFF.

REPLACE A1K2 card.

Perform service checks.

Go to Page 109, Step 325, Entry Point B.

268

A1L2 CARD FAILURE

POWER OFF.

REPLACE A1L2 card.

Perform service checks.

Go to Page 109, Step 325, Entry Point B.

17MAR82 PN 6844898

EC 997163 PEC 323243

MAP 3400-91

269
(Entry Point EE)

Reference Drawings for this entry point:

Symptoms at this entry point:

FORMS MOVEMENT AND CONTROL AA055

Panel Lights =====	Status =====
-----------------------	-----------------

EMITTERS AND PLATEN SWITCH AA065

ATTENTION	ON
READY	OFF
DISPLAY	E

====> SEE NOTE:

NOTE: Visually check for mechanical problems in Forms Drive and Emitter area.

Press and hold 2ND MODE. Note number in DISPLAY.

Remove the FORMS EMITTER cover, inspect for loose or damaged emitter, coupling or transducer.

Is E displayed?

Y N

270
Symptoms have changed.
Go To Map 2000, Entry Point A.

271
POWER OFF.

Open Top Cover.

Open Forms Feed Assembly.

Check for paper (forms) jam.

Is paper jammed?

Y N

1
O
O
E
A
3
3
F
B

17MAR82 PN 6844898

EC 997163 PEC 323243

MAP 3400-92

272

Locate End Of Forms (EOF) Sensor.

See MIM Figure 4-12.

If the EOF Sensor is correctly installed and aligned, the EOF wheel will turn as the FVA knob feeds the forms through the Forms Feed Assembly.

See MIM Figure 4-3.

Locate Forms Vertical Adjustment (FVA) knob.

Close Forms Feed Assembly - do not remove forms.

Turn FVA knob several revolutions while observing EOF Sensor wheel. (Observe setscrew to right of wheel.)

Does EOF wheel turn?

Y N

273

EOF SENSOR FAILURE

Check EOF Sensor for the following possible mechanical failures:

EOF Sensor is not correctly installed and aligned.

The EOF wheel is binding.

EOF Sensor spring is loose or broken.

REPAIR/REPLACE EOF Sensor mechanical failures.

See MIM 3409.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

274

Locate Cover Interlock switch.

See MIM Figure 4-1.

Override Cover Interlock switch (TAB UP).

With Cover Interlock switch in OVERRIDE mode, the servo system receives drive power.

Set MODE switch to TEST.

With power ON, continuously turning the FVA knob will cause a Forms Over Current and an error (45) to be displayed.

POWER ON.

Wait approximately 30 seconds.

Turn FVA knob several revolutions.

Is 4 displayed?

Y N

275

Is 0 displayed?

Y N

276

Symptoms have changed.
Go To Map 2000, Entry Point A.

277

FORMS DRIVE MECHANICAL FAILURE.

POWER OFF.

Open Forms Feed Assembly.

Remove forms from Forms Feed Assembly.

Check Forms Feed Assembly for the following possible mechanical failures:

Loose forms drive pulley.

Loose tractor mounting hardware.

Broken or loose drive belts.

Either REPAIR or REPLACE failed Forms Feed assembly parts.

Load forms into Forms Feed Assembly.
(Step 277 continues)

See MIM 3403.

E
D
9
4

**5225 ALL MODELS.
FMS MVMNT / CNTRL**

MAP 3400-95

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(Step 277 continued)

VERIFY REPAIR.
Go To Map 2000, Entry Point A.

278

Press and hold 2ND MODE. Note number in DISPLAY.

Is 5 displayed?

Y N

279

Symptoms have changed.
Go To Map 2000, Entry Point A.

280

EOF ELECTRICAL TEST

POWER OFF.

Install CE jumper(A1T2D12 to A1T2D08).

POWER ON.

Wait approximately 30 seconds.

Locate EOF Sensor.

See MIM Figure 4-12.

Probe A1N2B08 (EOF Emitter).

Turn EOF wheel by hand while observing probe lights.

Does line pulse?

Y N

281

Check for +5 vdc between A1K2B11 and logic ground.

Is +5 vdc present?

Y N

1
0
0
E
E
E
F
G

17MAR82 PN 6844898

EC 997163 PEC 323243

MAP 3400-95

5
9
7
F
F

5225 ALL MODELS.
FMS MVMNT / CNTRL
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MAP 3400-96

282

Check for +8.5 vdc between A1K2B03 and logic ground.

Is +8.5 vdc present?

Y N

283

POWER SUPPLY PROBLEM.

Remove CE jumper (A1T2D12 to A1T2D08).

Go To Map 3600, Entry Point 85.

284

A1K2 CARD FAILURE

POWER OFF.

Remove CE jumper (A1T2D12 to A1T2D08).

REPLACE A1K2 card.

Perform service checks.

Go to Page 109, Step 325, Entry Point B.

285

Disconnect EOF cable connector at EOF Sensor.

Probe A1K2D02 (EOF Emitter).

Is line DOWN?

Y N

9
7
F
F
H

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EC 997163 PEC 323243

MAP 3400-96

6
9
L
K

286
A1K2 CARD FAILURE

POWER OFF.

Remove CE jumper (A1T2D12 to A1T2D08).

Reconnect EOF cable at EOF Sensor.

REPLACE A1K2 card.

Perform service checks.

Go to Page 109, Step 325, Entry Point B.

287
Probe A1K2D02.

Jumper A1K2D03 (+5 vdc) to A1K2B02 (EOF Emitter). Probe lights will pulse as jumper is connected to and removed from A1K2B02.

Does line pulse?

Y N

288
POWER OFF.

Remove A1K2 card.

POWER ON.

Wait approximately 30 seconds.

Probe A1K2D02

Is line UP?

Y N

9
9
9
L
L
M

E E
L M
9 9
7 7

5225 ALL MODELS.
FMS MVMNT / CNTRL
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MAP 3400-98

289

A1N2 CARD FAILURE

When installing new A1N2 card, verify card is jumpered for correct number of print actuator groups. See MIM 3103

POWER OFF.

REPLACE A1N2 card.

Remove CE jumper (A1T2D12 to A1T2D08).

Reinstall A1K2 card.

Reconnect EOF cable at EOF Sensor.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

290

A1K2 CARD FAILURE

POWER OFF.

REPLACE A1K2 card.

Remove CE jumper (A1T2D12 to A1T2D08).

Reconnect EOF cable at EOF Sensor.

Perform service checks.

Go to Page 109, Step 325, Entry Point B.

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MAP 3400-98

E
K
9
7

5225 ALL MODELS.
FMS MVMNT / CNTRL
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MAP 3400-99

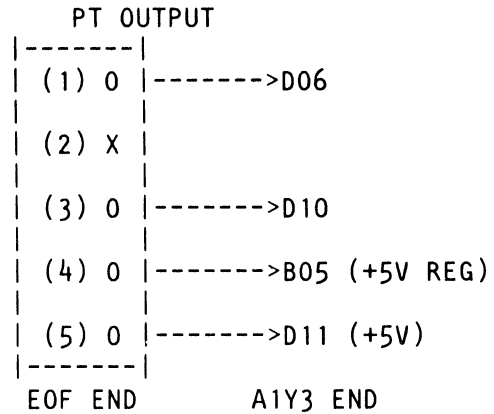
291

POWER OFF.

Remove CE jumper (A1T2D12 to A1T2D08).

Disconnect connector A1Y3 at A1 board.

Check continuity of EOF/A1Y3 cable shown in figure to the right.=====>



EOF/A1Y3 CABLE CONNECTION

Note:
Pin (X) is reference pin for seating.
Only PT connector pins 1, 3, 4 and 5 are electrically connected to connector A1Y3.

EOF/A1Y3 cable good?

Y N

292

EOF/A1Y3 CABLE FAILURE

Either REPAIR or REPLACE EOF cable.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

293

EOF ASSEMBLY OR A1K2 CARD FAILURE

REPLACE EOF assembly and/or A1K2.

When installing new A1K2 card, perform service checks in this map Entry Point B.

Reconnect EOF/A1Y3 cable.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

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EC 997163 PEC 323243

MAP 3400-99

E
A
9
2

E
F
F
5

5225 ALL MODELS.
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MAP 3400-100

294

A1N2 CARD FAILURE

When installing new A1N2 card, verify card is jumpered for correct number of print actuator groups. See MIM 3103

POWER OFF.

Remove CE jumper (A1T2D12 to A1T2D08).

REPLACE A1N2 card.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

295

Remove forms from Form Feed Assembly.

Ensure Forms Tractor mounting hardware is not loose.

See MIM 3402 for Forms Feed Assembly service checks and adjustments.

Load Forms into Forms Feed Assembly.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

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EC 997163 PEC 323243

MAP 3400-100

296
(Entry Point 77)

Symptoms at this entry point:

Panel Lights	Status
ATTENTION	ON
READY	OFF
DISPLAY	7 OR 8 OR 0

Reference Drawings for this entry point:

FORMS MOVEMENT AND CONTROL AA055

EMITTERS AND PLATEN SWITCH AA065

OPERATOR CONTROLS AA045

Close Top Cover.

Is 7 or 0 displayed?

Y N

297

Open Top Cover.

Is 8 displayed?

Y N

298

Symptoms have changed.

Go To Map 2000, Entry Point A.

299

Press and hold 2ND MODE. Note number in
DISPLAY.

Is 1 displayed?

Y N

300

Symptoms have changed.

Go To Map 2000, Entry Point A.

1 1
0 0
3 2
F F
N P

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EC 997163 PEC 323243

MAP 3400-101

301

Set MODE switch to TEST.

Probe A1N2B07 (+ Cover Open) and A1N2U04 (- Cover Open) with Top Cover open and closed.

The probe lights will be ON as follows:

Logic Pin	Cover Open	Cover Closed
A1N2B07	UP	DOWN
A1N2U04	DOWN	UP

Are probe lights as shown above?

Y N

302

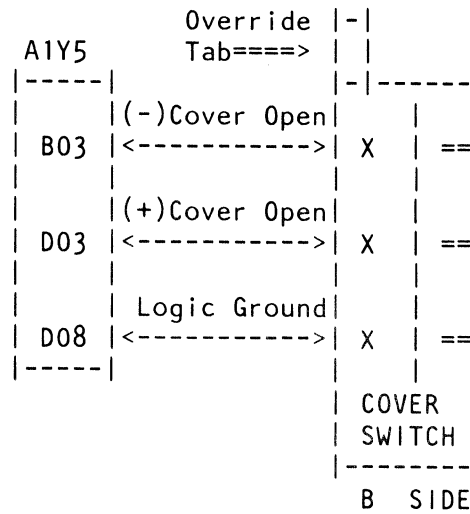
POWER OFF.

Locate Cover interlock switch.

See MIM Figure 4-6.

Disconnect connector A1Y5 at A1 board and wires (X) at Cover switch shown in figure to the right.====>

Check continuity of cable.



A1Y5/COVER INTERLOCK SWITCH CONNECTION

Continuity check good?

Y N

1
O
Q
1
O
R
1
O
S

E
U
1
0
3

307

Override Cover Interlock switch (TAB UP).

Does DISPLAY change to 0?

Y N

308

Set MODE switch to TEST

Probe A1N2D09 (Platen Open).

Open and close Forms Feed Assembly. The probe lights will be ON as shown below:

Forms Feed Assembly	Probe Light Status
=====	=====
Closed	DOWN light ON
Open	UP light ON

Are probe lights as shown above?

Y N

309

Open Forms Feed Assembly.

Locate Platen switch.

See MIM Figure 4-6.

Probe A1N2D09 (Platen Open).

While pressing and releasing Platen switch pushbutton, note if line pulses.

CAUTION: On normal operation, ribbon will move.

Does line pulse?

Y N

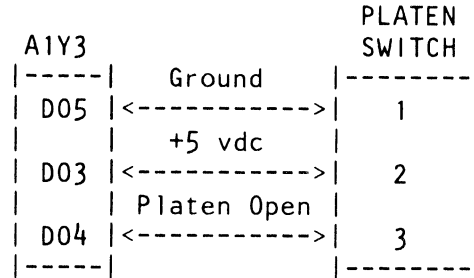
1	1	1	1
0	0	0	0
7	6	6	5
E	E	E	E
V	W	X	Y

E
Y
1
0
4

310

See figure to the right.==>

At Platen switch, measure +5 vdc between tab pins (-) 1 and (+) 2.



A1Y3/PLATEN SWITCH CONNECTION

Is +5 vdc present at switch?

Y N

311

A1Y3/PLATEN SWITCH CABLE FAILURE

POWER OFF.

Either REPAIR or REPLACE cable A1Y3/Platen switch.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

312

POWER OFF.

Disconnect connector A1Y3 at A1 board.

Check continuity between A1Y3D04 and Platen switch, Tab pin 3.

Is continuity check good?

Y N

1 1
0 0
6 6
E F
Z A

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E E E F
W X Z A
1 1 1 1
0 0 0 0
4 4 5 5

5225 ALL MODELS.

MAP 3400-106

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313

A1Y3/PLATEN SWITCH CABLE
FAILURE

Either REPAIR or REPLACE cable
A1Y3/Platen switch.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

314

PLATEN SWITCH FAILURE

REPLACE Platen switch.

See MIM Figure 4-6.

Reconnect cable A1Y3/Platen Switch.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

315

PLATEN SWITCH SPRING FAILURE

POWER OFF.

REPLACE Platen switch spring.

See MIM Figure 4-6.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

316

A1N2 CARD FAILURE

When installing new A1N2 card, verify card is
jumpered for correct number of print actuator
groups. See MIM 3103

POWER OFF.

Install new A1N2 card.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

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EC 997163 PEC 323243

MAP 3400-106

E
T
1
O
3

E
V
1
O
4

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MAP 3400-107

317
COVER INTERLOCK SWITCH MAGNET NOT
ALIGNED

Cover Interlock switch magnet is not aligned
with switch.

See MIM 1009 for alignment procedure.

VERIFY REPAIR.
Go To Map 2000, Entry Point A.

318
Ensure Forms Feed assembly is open.

Bypass top cover interlock switch.

Is 7 displayed?

Y N

319
Probe A1N2D09.

Is line up?

Y N

320
POWER OFF.

Disconnect connector A1Y3.

POWER ON.

Is line up?

Y N

321
RECONNECT A1Y3.
REPLACE A1N2.
Verify repair.

When installing new A1N2 card, verify card is
jumpered for correct number of print actuator
groups. See MIM 3103.

Go To Map 2000, Entry Point A.

1
O
8
F
B

1
O
8
F
C

1
O
8
F
D

17MAR82 PN 6844898

EC 997163 PEC 323243

MAP 3400-107

F F F
B C D
1 1 1
0 0 0
7 7 7

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MAP 3400-108

322
POWER OFF.

REPLACE A1Y3 cable and/or Platen switch.

Verify repair.
Go To Map 2000, Entry Point A.

323
POWER OFF.

REPLACE A1N2.

Verify repair.
Go To Map 2000, Entry Point A.

When installing new A1N2 card, verify card is jumpered for correct number of print actuator groups. See MIM 3103.

324
Close Form Feed assembly.

Close Top Cover.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

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EC 997163 PEC 323243

MAP 3400-108

325
(Entry Point B)

SERVICE CHECKS

POWER ON.

Wait approximately 30 seconds.

NOTE: If error code is displayed, press stop.

Set MODE switch to position A.

Press and release START. The DISPLAY will be a flashing A.

You will be adjusting both the Actuator Carrier and Forms Feed electronically in this section of the MAP.

Mode switch position A permits operator to perform secondary test routines. When switch is in position A and START is pressed, a flashing A will be displayed. The operator then sets the MODE switch for a specific test routine. Pressing START again will cause the test routine to run. The test is stopped by pressing STOP. See MIM Chapter 2 for additional definition of MODE switch position A.

NOTE: Pressing stop twice will cause adjustment routines to end.

Is there a flashing A in DISPLAY?

Y N

326
Symptoms have changed
Go To Map 2000, Entry Point A.

327
10 CPI SPEED CHECK

Turn Mode switch to position 3.

Press and release START.

If speed is correct, DISPLAY will be 0.
See Note =====>

NOTE: An F or 1 in the Display would not cause an error. (If Display is equal to F or 1, adjust pot to indicate 0 and continue.)

Is DISPLAY 0?

Y N

1 1
1 1
0 0
F F
E F

17MAR82 PN 6844898

EC 997163 PEC 323243

MAP 3400-109

328

Locate 10 CPI Speed adjustment POT on A1L2 card. See figure to the right.=====>

During head speed adjustments, actuator carrier at turnaround, may over travel and cause noise. This noise is not a problem and does not occur during normal operation.

Adjust POT as follows:

If a numeric character is in DISPLAY, turn POT CCW until 0 is in DISPLAY.

If an alphabetic character is in DISPLAY, turn POT CW until 0 is in DISPLAY.

Can 10 CPI be adjusted for 0 DISPLAY?

Y N

329

A1L2 CARD FAILURE

POWER OFF.

REPLACE A1L2 card.

Perform service checks.

Go to Page 109, Step 325, Entry Point B.

330

10 CPI ADJUSTED

Go to Page 111, Step 332, Entry Point B1.

331

10 CPI OK

Go to Page 111, Step 332, Entry Point B1.

A1L2
CARD
(TOP)

- | | |
|---|------------------|
| o | Turn Around Time |
| o | 10 CPI Speed |
| o | 5/15 CPI Speed |
| o | Forms Busy |
| o | Forms Speed |

A1L2 POT LOCATIONS

332
(Entry Point B1)

5/15 CPI SPEED CHECK

Press and release STOP once.

Turn Mode switch to position 4.

Press and release START.

If speed is correct, DISPLAY will be 0.
See Note =====>

NOTE: An F or 1 in the Display would not cause an error. (If Display is equal to F or 1, adjust pot to indicate 0 and continue.)

Is 0 in DISPLAY?

Y N

333

Locate 5/15 CPI Speed adjustment POT on A1L2 card. See figure to the right. =====>

During head speed adjustments, actuator carrier at turnaround, may over travel and cause noise. This noise is not a problem and does not occur during normal operation. Adjust POT as follows:

If a numeric character is in DISPLAY, turn POT CCW until 0 is in DISPLAY.

If an alphabetic character is in DISPLAY, turn POT CW until 0 is in DISPLAY.

Can 15 CPI speed be adjusted for 0 DISPLAY?

Y N

1 1 1
1 1 1
2 2 2
F F F
G H J

A1L2
CARD
(TOP)

```
|-----|  
| o | Turn Around Time  
| o | 10 CPI Speed  
| o | 5/15 CPI Speed  
| o | Forms Busy  
|-----|  
  
| o | Forms Speed  
|-----|
```

A1L2 POT LOCATIONS

17MAR82 PN 6844898

EC 997163 PEC 323243

MAP 3400-111

F F F
G H J
1 1 1
1 1 1
1 1 1

5225 ALL MODELS.
FMS MVMNT / CNTRL
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MAP 3400-112

334
A1L2 CARD FAILURE

POWER OFF.

REPLACE A1L2 card.

Perform service checks.

Go to Page 109, Step 325, Entry Point B.

335
15 CPI ADJUSTED

Go to Page 113, Step 337, Entry Point B2.

336
15 CPI OK

Go to Page 113, Step 337, Entry Point B2.

17MAR82 PN 6844898

EC 997163 PEC 323243

MAP 3400-112

337
(Entry Point B2)

TURN AROUND (TA) TIME CHECK

Press and release STOP once.

Turn Mode switch to position 5.

Press and release START.

If Turn Around (TA) time is correct, DISPLAY will be 0.
See Note =====>

NOTE: An F or 1 in the Display would not cause an error. (If Display is equal to F or 1, adjust pot to indicate 0 and continue.)

Is 0 in DISPLAY?

Y N

338

Locate TA time adjustment POT on A1L2 card. See figure to the right.=====>

During head speed adjustments, actuator carrier at turnaround, may over travel and cause noise. This noise is not a problem and does not occur during normal operation.

Adjust POT as follows:

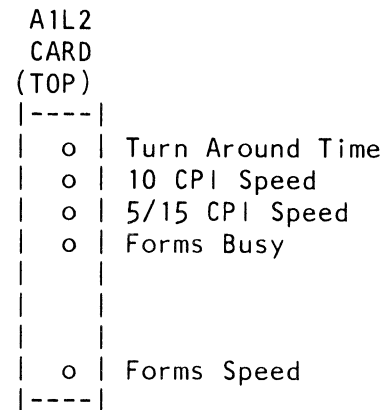
If a numeric character is in DISPLAY, turn POT CW until 0 is in DISPLAY.

If an alphabetic character is in DISPLAY, turn POT CCW until 0 is in DISPLAY.

Can TA time be adjusted for 0 DISPLAY?

Y N

1 1 1
1 1 1
4 4 4
F F F
K L M



A1L2 POT LOCATIONS

F F F
K L M
1 1 1
1 1 1
3 3 3

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MAP 3400-114

339

A1L2 CARD FAILURE

POWER OFF.

REPLACE A1L2 card.

Perform service checks.

Go to Page 109, Step 325, Entry Point B.

340

TA TIME ADJUSTED

Go to Page 115, Step 342, Entry Point B3.

341

TA TIME OK

Go to Page 115, Step 342, Entry Point B3.

17MAR82 PN 6844898

EC 997163 PEC 323243

MAP 3400-114

342
(Entry Point B3)

FORMS SYMMETRY A CHECK

Press and release STOP once.

Turn Mode switch to position A.

Remove forms from tractors.
 Ensure Forms Feed Assembly is closed.
 Close top cover (or bypass Cover Interlock switch).

Flashing A is displayed.

Press and release START.

If Forms Symmetry is correct, DISPLAY will be 0.
 See Note =====>

IMPORTANT NOTE:

If 46 Error Code appears when adjusting Forms Symmetry A or Forms Symmetry B, either Pot is far out of adjustment. Attempt to center pots until Forms Tractors run continuously so adjustment can be made.

NOTE: An F or 1 in the Display would not cause an error. (If Display is equal to F or 1, adjust pot to indicate 0 and continue.)

Is 0 in DISPLAY?
 Y N

343

Locate Forms Symmetry A adjustment POT on A1K2 card. See figure to the right.=====>

Adjust POT as follows:

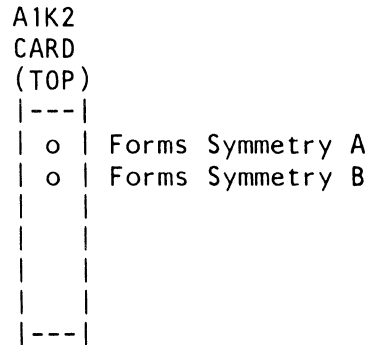
If a numeric character is in DISPLAY, turn POT CCW until 0 is in DISPLAY.

If an alphabetic character is in DISPLAY, turn POT CW until 0 is in DISPLAY.

Can Forms Symmetry A be adjusted for 0 DISPLAY?

Y N
 | |
 | |
 | |

1 1 1
 1 1 1
 6 6 6
 F F F
 N P Q



A1K2 POT LOCATIONS

17MAR82 PN 6844898

EC 997163 PEC 323243

MAP 3400-115

F F F
N P Q
1 1 1
1 1 1
5 5 5

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MAP 3400-116

344

(Possible Forms Transducer Assembly failure.)

A1K2 CARD FAILURE

POWER OFF.

REPLACE A1K2 card.

Perform service checks.

Go to Page 109, Step 325, Entry Point B.

345

FORMS SYMMETRY A ADJUSTED

Go to Page 117, Step 347, Entry Point B4.

346

FORMS SYMMETRY A OK

Go to Page 117, Step 347, Entry Point B4.

17MAR82 PN 6844898

EC 997163 PEC 323243

MAP 3400-116

F F F
R S T
1 1 1
1 1 1
7 7 7

5225 ALL MODELS.
FMS MVMNT / CNTRL
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MAP 3400-118

349

A1K2 CARD FAILURE

(Possible Forms Transducer Assembly failure)

POWER OFF.

REPLACE A1K2 card.

Perform service checks.

Go to Page 109, Step 325, Entry Point B.

350

FORMS SYMMETRY B ADJUSTED

Go to Page 119, Step 352, Entry Point B5.

351

FORMS SYMMETRY B OK

Go to Page 119, Step 352, Entry Point B5.

17MAR82 PN 6844898

EC 997163 PEC 323243

MAP 3400-118

352
(Entry Point B5)

FORMS QUADRATURE CHECK

Press and release STOP once.

Turn Mode switch to position C.

Press and release START.

If Forms Quadrature is correct, DISPLAY will be 0.
See Note =====>

NOTE: An F or 1 in the Display would not cause an error. (If Display is equal to F or 1, adjust pot to indicate 0 and continue.)

Is 0 in DISPLAY?

Y N

353

Locate Forms Quadrature adjustment screw on Forms Drive Motor.

See MIM Figure 4-7.

Adjust screw as follows:

NOTE: This is a fine adjustment. Perform carefully.

If a numeric character is in DISPLAY, turn screw CCW until 0 is in DISPLAY.

If an alphabetic character is in DISPLAY, turn screw CW until 0 is in DISPLAY.

Can Forms Quadrature be adjusted?

Y N

1 1 1
2 2 2
O O O
F F F
U V W

17MAR82 PN 6844898

EC 997163 PEC 323243

MAP 3400-119

F F F
U V W
1 1 1
1 1 1
9 9 9

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MAP 3400-120

354

FORMS DRIVE ENCODER ASSEMBLY
FAILURE

POWER OFF.

Locate Forms Drive Encoder Assembly.

See MIM Figure 4-7.

Remove Forms Drive Encoder cover.

See MIM 3404.

Check for loose Encoder wheel and Motor
shaft coupling.

See MIM 3404.

Either REPAIR or REPLACE any failed
parts.

See MIM 3404.

VERIFY REPAIR.

Go To Map 2000, Entry Point A.

355

Go to Page 121, Step 357, Entry Point B6.

356

Go to Page 121, Step 357, Entry Point B6.

17MAR82 PN 6844898

EC 997163 PEC 323243

MAP 3400-120

357
(Entry Point B6)

FORMS SPEED CHECK

Press and release STOP once.

Turn Mode switch to position D.

Press and release START.

If speed is correct, DISPLAY will be 0.
See Note =====>

NOTE: An F or 1 in the Display would not cause an error. (If Display is equal to F or 1, adjust pot to indicate 0 and continue.)

Is 0 in DISPLAY?

Y N

358

Locate Forms Speed adjustment POT on A1L2 card. See figure to the right.=====>

Adjust POT as follows:

If a numeric character is in DISPLAY, turn POT CCW until 0 is in DISPLAY.

If an alphabetic character is in DISPLAY, turn POT CW until 0 is in DISPLAY.

A1L2
CARD
(TOP)

- | | |
|---|------------------|
| o | Turn Around Time |
| o | 10 CPI Speed |
| o | 5/15 CPI Speed |
| o | Forms Busy |
| o | Forms Speed |

Can Forms Speed be adjusted for 0 DISPLAY?

Y N

1	1	1
2	2	2
2	2	2
F	F	F
F	F	F
X	Y	Z

A1L2 POT LOCATIONS

17MAR82 PN 6844898

EC 997163 PEC 323243

F F F
X Y Z
1 1 1
2 2 2
1 1 1

5225 ALL MODELS.
FMS MVMNT / CNTRL
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MAP 3400-122

359

A1L2 CARD FAILURE

POWER OFF.

REPLACE A1L2 card.

Perform service checks.

Go to Page 109, Step 325, Entry Point B.

360

FORMS SPEED ADJUSTED

Go to Page 123, Step 362, Entry Point B7.

361

FORMS SPEED OK

Go to Page 123, Step 362, Entry Point B7.

17MAR82 PN 6844898

EC 997163 PEC 323243

MAP 3400-122

362
(Entry Point B7)

FORMS BUSY CHECK

Press and release STOP once.

Turn Mode switch to position E.

Press and release and START.

If busy is correct, DISPLAY will be 0.
See Note =====>

NOTE: An F or 1 in the Display would not cause an error. (If Display is equal to F or 1, adjust pot to indicate 0 and continue.)

Is 0 in DISPLAY?

Y N

363

Locate Forms Busy adjustment POT on A1L2 card. See figure to the right.=====>

Adjust POT as follows:

If a numeric character is in DISPLAY, turn POT CCW until 0 is in DISPLAY.

If an alphabetic character is in DISPLAY, turn POT CW until 0 is in DISPLAY.

A1L2
CARD
(TOP)

- | | |
|---|------------------|
| o | Turn Around Time |
| o | 10 CPI Speed |
| o | 5/15 CPI Speed |
| o | Forms Busy |
| o | Forms Speed |

A1L2 POT LOCATIONS

Can Forms BUSY be adjusted for 0 DISPLAY?

Y N

1	1	1
2	2	2
4	4	4
G	G	G
A	B	C

17MAR82 PN 6844898

EC 997163 PEC 323243

G G G
A B C
1 1 1
2 2 2
3 3 3

5225 ALL MODELS.
FMS MVMNT / CNTRL
PAGE 124 OF 124

MAP 3400-124

364

A1L2 CARD FAILURE

POWER OFF.

REPLACE A1L2 card.

Perform service checks.

Go to Page 109, Step 325, Entry Point B.

365

ADJUSTMENTS COMPLETED

Go To Map 2000, Entry Point A.

366

Go To Map 2000, Entry Point A.

17MAR82

PN 6844898

EC 997163

PEC 323243

MAP 3400-124

ACTUATOR

PAGE 1 OF 17

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
2000	A	1	001
3000	84	11	024
3000	85	15	032

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
4	003	2000	A
5	007	2000	A
5	008	2000	A
6	011	2000	A
6	012	2000	A
6	013	2000	A
7	014	2000	A
11	025	2000	A
13	028	2000	A
14	031	2000	A
15	033	2000	A
15	036	2000	A
16	039	2000	A
17	044	2000	A
17	043	2000	A
8	016	2000	A
8	018	2000	A
9	020	2000	A
10	022	2000	A
10	023	2000	A
16	037	2000	A

001

(Entry Point A)

Symptoms:

Print ACTUATOR not firing.

No line (dots) after number printed in print actuator test.

Note: For more than one ACTUATOR failure repeat this problem diagnostic procedure.

See MIM 2006.

Set MODE switch to 5

Override COVER INTERLOCK switch.

Press START (DISPLAY will show 5).

Compare printout to chart below.

CAUTION

(Step 001 continues)

5225 ALL MODELS

MAP 3500-2

ACTUATOR

PAGE 2 OF 17

(Step 001 continued)

Do not swap ACTUATOR DRIVER cards for purpose of failure analysis unless instructed by maps.

NOTE 1: 8/9 actuators in one local area of the actuator assembly are a group (Models 1,2,3,4 have 8 actuators in a group and Models 11,12 have 9).

See Reference Drawings AA070 and AA075.

The following actuator driver cards are needed:

- MOD-1 A1H2 (2 GROUPS)
- MOD-2 A1H2 and F2 (4 GROUPS)
- MOD-3 A1H2,F2, D2 (6 GROUPS)
- MOD-4 A1H2,F2,D2,B2 (8 GROUPS)
- MOD-11 A1H2 and F2 (4 GROUPS)
- MOD-12 A1H2,F2,D2,B2 (7 GROUPS)

GROUP DRIVER CARD LOCATION AND ACTUATOR CABLE LOCATION (NUMBER PRINTED WITH DOTS MISSING TO RIGHT)								
First digit is group number and second is actuator number in that group. Ex: 72 = group 7, actuator 2. See MIM 2006.								
11	21	31	41	51	61	71	81	
12	22	32	42	52	62	(72)	82	
13	23	33	43	53	63	73	83	
14	24	34	44	54	64	74	84	
15	25	35	45	55	65	75	85	
16	26	36	46	56	66	76	86	
17	27	37	47	57	67	77	87	
18	28	38	48	58	68	78	88	
19*	29*	39*	49*	59*	69*	79*	(NOTE 2)	
A1H2	A1H2	A1F2	A1F2	A1D2	A1D2	A1B2	A1B2	CARD
A1H4	A1H5	A1F4	A1F5	A1D4	A1D5	A1B4	A1B5	CABLE

NOTE 2: 19* through 79* are Models 11 and 12 only. Record failing ACTUATOR(S).

NOTE 3: Record failing ACTUATOR POSITIONS and any PLUG swapping performed in steps below.

(Step 001 continues)

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 EC 323243 PEC 869365
 MAP 3500-2

ACTUATOR

PAGE 3 OF 17

(Step 001 continued)
POWER OFF printer.

Is one or more complete ACTUATOR GROUP(S) missing?

Y N

002

DANGER

KEEP HANDS CLEAR OF ACTUATOR ASSEMBLY WHEN FAN COVER IS OFF.

Remove actuator FAN COVER.

Disconnect a good ACTUATOR next to a failing ACTUATOR in same group. Leave good ACTUATOR disconnected.

Disconnect failing ACTUATOR and connect its plug to the good ACTUATOR.

For typical actuator group configuration, see figure to right.=====>

POWER ON printer.

Wait 30 seconds.

Press and release START.

Are both actuator positions completely blank?

Y N

Vertical lines for Y/N response

7 4 4
A B C

Eight or nine actuators in one head assembly are a group.

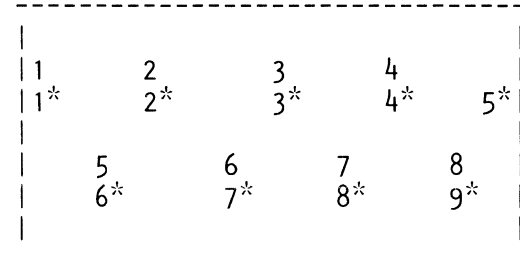
See MIM 3803.

Suspected DRIVER CARD connected to good ACTUATOR, in same group. See MIM 2007 Actuator connectors.

TYPICAL ACTUATOR GROUP CONFIGURATION

NOTE:

Models 1,2,3,4 = 1 through 8
Models 11,12 = 1* through 9*



View from plug side.

See MIM 2008.

B C
3 3

5225 ALL MODELS

MAP 3500-4

ACTUATOR

PAGE 4 OF 17

003

POWER OFF printer.

REPLACE failing ACTUATOR recorded above.

See MIM 3308.

Reconnect actuator cables to original location.

Reinstall actuator FAN COVER.

Verify repair.

See MIM 3803.

Go To Map 2000, Entry Point A.

004

POWER OFF printer.

Connect suspected failing ACTUATOR with plug disconnected from good ACTUATOR above

Testing suspected ACTUATOR with good drive card.

POWER ON printer.

Wait 30 seconds.

Press START.

Are both ACTUATOR print positions completely blank?

See MIM 2007 and 2008.

Y N

005

Probe failing ACTUATOR line recorded above at WIRE LATCH card A1M2.

For pin number, see Reference Drawing ACTUATOR Driver AA070 (Models 1,2,3,4) and AA075 (Models 11,12).

See Note ==>

NOTE: Observe probe until test printout is complete or a pulse is seen.

Press and release START switch and observe probe.

Did probe pulse?

Y N

7 6 5
D E F

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MAP 3500-4

F
4

5225 ALL MODELS

MAP 3500-5

ACTUATOR

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006

POWER OFF printer.

Remove actuator driver card (for failing actuator).

POWER ON printer. (wait 30 seconds)

Press and release Stop.

Press and release Start.

Did probe pulse?

Y N

007

POWER OFF printer.

Reconnect actuator cables to original location.

REPLACE failing WIRE LATCH card A1M2 .

Reinstall actuator FAN COVER.

Verify repair.

Go To Map 2000, Entry Point A.

008

POWER OFF printer.

Replace actuator driver card just removed.

POWER ON printer.

Verify repair.

Go To Map 2000, Entry Point A.

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EC 323243 PEC 869365

MAP 3500-5

ACTUATOR

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009

POWER OFF printer.

Reconnect cables to original location.

Disconnect suspected ACTUATOR recorded in step 1.

Continuity check cable(for open) from suspected actuator recorded above, to pin side connector at driver card. (Pin to pin,short between wires,short to frame ground.)

Reference table in step 001 for cable location. For pin location, see Reference Drawing AA070 (Models 1,2,3,4) and AA075 (Models 11,12). See MIM Figure 4-16.

Did actuator cable check good?

Y N

010

Is cable short circuit?

Y N

011

REPAIR or REPLACE actuator cables.

Reinstall actuator FAN COVER.

Verify repair.

Go To Map 2000, Entry Point A.

See MIM 3803.

012

REPAIR or replace failing ACTUATOR CABLE.
REPLACE failing ACTUATOR DRIVER CARD.

Verify repair.

Go To Map 2000, Entry Point A.

See table above.

013

REPLACE failing ACTUATOR DRIVER card.

Reference table above.

Reconnect actuator cables to original location.

Reinstall actuator cover.

Verify repair.

Go To Map 2000, Entry Point A.

A D
3 4

5225 ALL MODELS

MAP 3500-7

ACTUATOR

PAGE 7 OF 17

014

POWER OFF printer.

ACTUATOR and ACTUATOR DRIVER card failure.

REPLACE failing ACTUATOR and ACTUATOR DRIVER card.

See MIM 3308 and 3102.

Reconnect actuator cable to original location.

Reinstall actuator FAN COVER.

See MIM 3803.

Verify repair.

Go To Map 2000, Entry Point A.

015

POWER OFF printer

Open Top Cover.

Visually check Forms Thickness Cam for correct setting.

See MIM Figure 4-3.

CHECK PLATEN adjustment. SEE MIM 3402.

Note: If forms thickness is too wide the Actuators may not hit the paper.

PART FORMS	FORMS CONTROL RANGE
Single Part	0-3
Two Part	4-6
Three Part	6-8
Four Part	9-12
Five Part	13-16
Six Part	17-19

Was Platen adjustment check and Forms Thickness Cam setting correct?

Y N

Vertical lines for Y and N responses.

8 8
G H

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PEC 869365

MAP 3500-7

ACTUATOR

PAGE 8 OF 17

016

Make Platen adjustments and/or set Forms Thickness Cam for correct settings.

POWER ON Printer.

Close Top Cover.

Verify REPAIR.

Go To Map 2000, Entry Point A.

017

Open Forms Feed Assembly.

Verify Ribbon is in good condition and correctly installed.

Normal end of ribbon life indications:

1. Ink in ribbon used up.
2. Severe ribbon folding.
3. Ribbon material wear.

All of the above conditions represent normal end of 5225 ribbon life and ribbon needs to be replaced.

Ribbon check good?

Y N

018

REPAIR or replace Ribbon.

Close Top Cover.

Power ON printer.

Verify REPAIR.

Go To Map 2000, Entry Point A.

J
8

5225 ALL MODELS

MAP 3500-9

ACTUATOR

PAGE 9 OF 17

019

Locate Actuator Carrier Drive Motor.

See MIM Figure 4-6.

Close Forms Feed Assembly.

Turn Motor knob fully counterclockwise until Actuator Assembly is in ramp (home position).

While turning Motor knob clockwise observe Forms Thickness Cam Follower Pin. It should move toward the Forms Thickness Cam and stops against the Forms Thickness Cam.

See MIM Figure 4-3.

Did Cam Follower Pin stop against Cam?

Y N

020

Mechanical failure ,Actuator Shaft binding, or broken spring.

See MIM 3306.

REPAIR or replace failed parts.

Verify REPAIR.

Go To Map 2000, Entry Point A.

021

Verify (+10 VDC,+50 VDC) all FDS cable connectors at A1(X)2 are correctly connected (x=B,D,F,or H).

See MIM Figure 4-16.

At power supply check tightness of screws for Flat Distribution System Cable (FDS) at +10V,+50V,and ground bus.

See MIM Figure 4-10.

NOTE: A failing SEQUENCE card (in POWER SUPPLY), or open wire between ground terminal (GND) on SEQUENCE card and capacitor bank ground bus(GND BUS) can cause all the ACTUATOR DRIVER fuses to open when PRINTER is powered OFF.

Verify all Actuator pin side cable connectors are correctly connected.

See Reference Drawings:
Models 1,2,3,4 - AA070
Models 11,12 - AA075

Are all cable connectors correctly connected?

Y N

||
||

1 1
0 0
K L

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EC 323243 PEC 869365

MAP 3500-9

K L
9 9

5225 ALL MODELS

MAP 3500-10

ACTUATOR

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022

Connect cable connector to correct location.

Go To Map 2000, Entry Point A.

023

POWER OFF.

See table, in step 1, for ACTUATOR DRIVER card location.

REPLACE failing ACTUATOR DRIVER card.

Verify REPAIR.

Go To Map 2000, Entry Point A.

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EC 323243

PEC 869365

MAP 3500-10

ACTUATOR

PAGE 11 OF 17

024

(Entry Point 84)

Symptoms:

ATTENTION	ON
READY	OFF
DISPLAY	8

While holding 2ND MODE pressed, note number in DISPLAY.

Is 4 DISPLAYED?

Y N

025

Symptoms have changed.

Go To Map 2000, Entry Point A.

026

POWER OFF printer.

Place MODE SWITCH to 5.

Remove all ACTUATOR DRIVER cards from printer and record their home location.

To isolate WIRE LATCH card remove all ACTUATOR DRIVER cards.

POWER ON printer.

Wait 30 seconds.

Is 8 DISPLAYED?

Y N

027

ACTUATOR DRIVER card is failing.

Go to Page 14, Step 029, Entry Point B.

ACTUATOR

PAGE 12 OF 17

028

POWER OFF printer.

Replace A1M2 Wire Latch card.
Install Actuator Driver cards removed earlier.

See Reference Drawings AA070 and AA075.

The following actuator driver cards are needed:

- MOD-1 H2
- MOD-2 H2 and F2
- MOD-3 H2, F2 and D2
- MOD-4 H2, F2, D2 and B2
- MOD-11 H2 and F2
- MOD-12 H2, F2, D2 and B2

POWER ON printer.

Place MODE SWITCH to 5.

Press and release START.

See printout for missing group (dots or lines missing).

POWER OFF printer.

Compare table below with printout to determine the failing ACTUATOR DRIVER card.

GROUP DRIVER CARD LOCATION AND ACTUATOR CABLE LOCATION (NUMBER PRINTED WITH DOTS MISSING TO RIGHT)								
First digit is group number. Second digit is actuator number in that group. Ex: 72 = group 7, actuator 2. See MIM 2008.								
11	21	31	41	51	61	71	81	
12	22	32	42	52	62	(72)	82	
13	23	33	43	53	63	73	83	
14	24	34	44	54	64	74	84	
15	25	35	45	55	65	75	85	
16	26	36	46	56	66	76	86	
17	27	37	47	57	67	77	87	
18	28	38	48	58	68	78	88	
19*	29*	39*	49*	59*	69*	79*	(NOTE 1)	
A1H2	A1H2	A1F2	A1F2	A1D2	A1D2	A1B2	A1B2	CARD
A1H4	A1H5	A1F4	A1F5	A1D4	A1D5	A1B4	A1B5	CABLE

NOTE 1: 19* through 79* are Models 11 and 12 only.

(Step 028 continues)

5225 ALL MODELS

MAP 3500-13

ACTUATOR

PAGE 13 OF 17

(Step 028 continued)

REPLACE failing ACTUATOR DRIVER card.

Verify repair.

Go To Map 2000, Entry Point A.

20JUL81

PN 6844899

EC 323243

PEC 869365

MAP 3500-13

ACTUATOR

PAGE 14 OF 17

029

(Entry Point B)

If printer contains more than one ACTUATOR DRIVER card this test will be repeated until all ACTUATOR DRIVER cards are tested.

POWER OFF printer

Install ONE of the ACTUATOR DRIVER cards removed earlier.

POWER ON printer.

Wait 30 seconds.

Is 8 DISPLAYED?

Y N

030

ACTUATOR DRIVER card is good.

Go to Step 029, Entry Point B.

031

POWER OFF printer.

Remove last ACTUATOR DRIVER card installed it is failing.

REPLACE failing ACTUATOR DRIVER card.

If printer has more than one ACTUATOR DRIVER card, install remaining cards to home locations.

Verify repair.

Go To Map 2000, Entry Point A.

ACTUATOR

032
(Entry Point 85)

Symptoms:

PANEL INDICATORS	STATUS
ATTENTION	ON
READY	OFF
DISPLAY	8

While holding 2ND MODE pressed,note number in DISPLAY.

Is 5 DISPLAYED?

Y N

033
Symptoms have changed.
Go To Map 2000, Entry Point A.

034
Probe A1M2U13 (-PED DRV signal).
Is probe DOWN indicator ON ?

Y N

035
While probing A1M2U13 press STOP, then press START.
Did probe pulse?

Y N

036
POWER OFF Printer.

REPLACE failing A1M2 (wire Latch) card.

Verify repair.
Go To Map 2000, Entry Point A.

1 1
6 6
N P

N P
1 1
5 5

**5225 ALL MODELS
ACTUATOR**

MAP 3500-16

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037

Power OFF Printer.

REPLACE A1N2 card.

Verify REPAIR.

Go To Map 2000, Entry Point A.

038

POWER OFF Printer.

Remove A1M2 (WIRE LATCH) card. Leave out.

POWER ON printer.

Wait 30 seconds.

Probe A1M2U13.

Is probe DOWN indicator ON ?

Y N

039

POWER OFF printer.

REPLACE failing A1M2 (WIRE LATCH) card.

Verify repair.

Go To Map 2000, Entry Point A.

040

POWER OFF printer.

Reinstall A1M2 card, it is good.

ACTUATOR DRIVER card is failing.

Is this a model 1 printer?

Y N

1 1
7 7
Q R

20JUL81

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EC 323243

PEC 869365

MAP 3500-16

Q R
1 1
6 6

**5225 ALL MODELS
ACTUATOR**

MAP 3500-17

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041

Repeat following step until failing ACTUATOR DRIVER card is found.

NOTE: A failing card will cause probe DOWN indicator to light.

POWER OFF printer.

Remove an ACTUATOR DRIVER card.

POWER ON printer.

Wait 30 seconds.

Probe A1M2U13.

Is probe UP indicator ON ?

Y N

042

Repeat the above step.

043

POWER OFF printer.

REPLACE failing ACTUATOR DRIVER card.

Install all ACTUATOR DRIVER cards removed earlier.

Verify repair.

Go To Map 2000, Entry Point A.

044

POWER OFF printer.

REPLACE failing ACTUATOR DRIVER card.

Verify repair.

Go To Map 2000, Entry Point A.

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MAP 3500-17

POWER SUPPLY

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ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
2000	A	5	001
2000	P0	27	084
2000	81	73	312
3000	81	73	312
3100	P0	27	084
3100	5-	63	264
3100	85	52	200
3300	85	52	200
3400	15	58	235
3400	17	68	285
3400	85	52	200

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
7	007	2000	A
7	008	2000	A
9	012	2000	A
9	014	2000	A
9	015	2000	A
10	017	2000	A
10	019	2000	A
10	020	2000	A
13	027	2000	A
13	028	2000	A
14	032	2000	A
14	033	2000	A
15	034	2000	A
15	035	2000	A
15	036	2000	A
15	037	2000	A
17	042	2000	A
17	043	2000	A
17	045	2000	A
18	046	2000	A
18	047	2000	A
18	048	2000	A
20	055	2000	A
22	066	2000	A
20	056	2000	A
21	060	2000	A
21	061	2000	A
22	062	2000	A
22	063	2000	A
22	064	2000	A
22	065	2000	A
24	070	2000	A
24	072	2000	A
25	073	2000	A
25	074	2000	A
25	075	2000	A
26	083	2000	A

5225 ALL MODELS

MAP 3600-2

POWER SUPPLY

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EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
30	102	2000	A
30	103	2000	A
32	104	2000	A
32	105	2000	A
32	106	2000	A
34	111	2000	A
37	123	2000	A
37	124	2000	A
39	133	2000	A
38	127	2000	A
38	128	2000	A
39	130	2000	A
39	131	2000	A
39	132	2000	A
40	134	2000	A
40	136	2000	A
40	137	2000	A
40	138	2000	A
41	139	2000	A
41	141	2000	A
41	143	2000	A
42	145	2000	A
42	146	2000	A
42	148	2000	A
42	150	2000	A
43	152	2000	A
43	153	2000	A
43	155	2000	A
44	157	2000	A
44	159	2000	A
44	161	2000	A
45	163	2000	A
45	165	2000	A
45	167	2000	A
46	168	2000	A
46	169	2000	A
47	178	2000	A

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
48	179	2000	A
48	181	2000	A
48	182	2000	A
48	183	2000	A
49	185	2000	A
49	186	2000	A
49	188	2000	A
49	189	2000	A
50	191	2000	A
50	192	2000	A
50	193	2000	A
50	195	2000	A
51	197	2000	A
51	198	2000	A
51	199	2000	A
52	204	2000	A
53	205	2000	A
53	207	2000	A
53	208	2000	A
54	214	2000	A
54	215	2000	A
55	218	2000	A
55	219	2000	A
55	221	2000	A
56	223	2000	A
56	225	2000	A
56	227	2000	A
56	228	2000	A
57	229	2000	A
57	230	2000	A
57	231	2000	A
57	233	2000	A
57	234	2000	A
58	239	2000	A
59	240	2000	A
59	242	2000	A
59	243	2000	A

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MAP 3600-2

5225 ALL MODELS

MAP 3600-3

POWER SUPPLY

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EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
60	249	2000	A
60	250	2000	A
61	253	2000	A
61	254	2000	A
61	256	2000	A
61	257	2000	A
61	258	2000	A
61	259	2000	A
61	260	2000	A
62	262	2000	A
62	263	2000	A
65	272	2000	A
65	273	2000	A
65	275	2000	A
66	276	2000	A
66	277	2000	A
67	283	2000	A
66	279	2000	A
66	281	2000	A
66	282	2000	A
67	284	2000	A
68	286	2000	A
68	288	2000	A
69	293	2000	A
70	296	2000	A
70	297	2000	A
70	299	2000	A
71	301	2000	A
71	303	2000	A
71	305	2000	A
71	306	2000	A
71	307	2000	A
71	308	2000	A
72	310	2000	A
72	311	2000	A
75	320	2000	A
75	321	2000	A

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
75	322	2000	A
75	323	2000	A
75	324	2000	A
76	325	2000	A
77	331	2000	A
77	332	2000	A
78	336	2000	A
79	337	2000	A
79	338	2000	A
79	339	2000	A
80	343	2000	A
80	345	2000	A
81	347	2000	A
81	348	2000	A
81	349	2000	A
83	356	2000	A
83	358	2000	A
83	357	2000	A
84	360	2000	A
84	359	2000	A
86	365	2000	A
86	366	2000	A
86	367	2000	A
87	370	2000	A
87	371	2000	A
87	372	2000	A
87	373	2000	A
88	376	2000	A
91	393	2000	A
92	396	2000	A
92	397	2000	A
92	398	2000	A
93	402	2000	A
93	403	2000	A
93	404	2000	A
88	378	2000	A
89	381	2000	A

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MAP 3600-3

5225 ALL MODELS

MAP 3600-4

POWER SUPPLY

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EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
89	382	2000	A
89	383	2000	A
96	413	2000	A
97	423	2000	A
96	414	2000	A
97	425	2000	A
96	415	2000	A
96	418	2000	A
97	420	2000	A
97	421	2000	A
97	422	2000	A
97	424	2000	A
97	426	2000	A
99	433	2000	A
100	434	2000	A
100	435	2000	A
100	438	2000	A
100	436	2000	A
100	439	2000	A
101	441	2000	A
101	442	2000	A
104	453	2000	A
106	466	2000	A
105	454	2000	A
105	455	2000	A
105	457	2000	A
105	458	2000	A
106	461	2000	A
106	463	2000	A
106	464	2000	A
106	465	2000	A
106	467	2000	A
107	469	2000	A
107	474	2000	A
108	475	2000	A
108	477	2000	A
108	478	2000	A

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
108	479	2000	A
108	480	2000	A
106	468	2000	A
101	443	2000	A
30	101	3100	FF
26	078	3900	A

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MAP 3600-4

5225 ALL MODELS

MAP 3600-5

POWER SUPPLY

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001

(Entry Point A)

Reference Drawings:

POWER WIRING DRAWING YA000
HIGH POWER AA015
LOW POWER AA020
AC POWER BOX AA020
SEQUENCER AA030
LOGIC BOARD POWER DISTRIBUTION AA010

The Reference Drawings are located in the binder with the MIM (Maintenance Information Manual).
NOTE: Record all wires or assemblies disconnected during problem analysis and reconnect when repair is complete.

CAUTION:

WHILE WORKING IN THE PRIMARY POWER AREA, CAUTION MUST BE USED.
115/230 VAC TERMINALS ARE NOT COVERED.

Location of assemblies is given in MIM 3600.

All voltages and resistances are -8/+10% unless specified.

DANGER

HAZARDOUS VOLTAGES ARE PRESENT IN THE AC POWER BOX WHEN LINE POWER PLUG IS CONNECTED TO CUSTOMER SOURCE AND MACHINE IS POWERED OFF!
SEE MIM 3600 AC POWER BOX.
USE CAUTION WHEN WORKING IN THIS AREA.

See MIM Figure 4-7 for location.

Power on complete when used in the POWER MAPs represents:

Did both low power and high power supply sequence up correctly (+5 VDC, +10 VDC, +50 VDC, -15 VDC, +15 VDC, +8.5 VDC, all good).
O is displayed in LED of OPERATOR PANEL represents Power On Complete is O.K.

Verify that customer power matches machine MLC record.
Connect machine to customer power.

See Reference Drawing YA000 Note 1 for voltage connections.

Note: for machine operating voltage, see label on power supply. Label is located below CB201.

POWER OFF.

(Step 001 continues)

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MAP 3600-5

5225 ALL MODELS

MAP 3600-6

POWER SUPPLY

PAGE 6 OF 108

(Step 001 continued)

Check for correct connection of the following plugs to the SEQUENCE card:

P201 to J201

P202 to J202

P203 to J203

Verify that customer power is present at outlet.

Verify CB201 and CB202 are ON (if tripped, reset them).

Verify A1K4 card seated correctly.

Check fuses F201 and F202 (replace, if bad).

The Sequence Card locations are identified on the label attached to the Sequence Card plastic cover. See Reference Drawing AA030.

NOTE: Reset CB is to move it to the 'off' position, then back to the 'on' position.

POWER ON.

Wait for 30 seconds.

Look for ATTENTION, or READY, or any LED on.

Are any OPERATOR PANEL lights or LEDs ON?

Y N

002

Is the gate fan or head motor fan running?

Y N

003

The customer power source circuit breaker or fuse must remain good with machine plugged into outlet.

Is the circuit breaker or fuse good?

Y N

004

The customer power source circuit breaker or fuse must remain good with machine disconnected.

Is the circuit breaker or fuse good with machine disconnected?

Y N

005

Customer power problem.

2 2
6 5
A B C D

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MAP 3600-6



POWER SUPPLY

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009

POWER OFF.

Check F201.

Check CB201.

Did CB201 trip (turn off) or is F201 bad (broken)?

Y N

See MIM Figure 4-9 for location.

010

DANGER

HAZARDOUS VOLTAGES ARE PRESENT IN THE AC POWER BOX WHEN THE LINE POWER PLUG IS CONNECTED TO CUSTOMER SOURCE AND MACHINE IS POWERED OFF!

DISCONNECT LINE POWER PLUG FROM CUSTOMER SOURCE.

For access to TB204 inside AC BOX, remove covers as needed.

RECONNECT LINE POWER PLUG TO CUSTOMER SOURCE.

POWER ON.

Check for 115/230 VAC between TB204-3 and TB204-4.

See label located below CB201 for correct machine voltage.

See MIM Figure 4-7 for AC POWER BOX location.

See MIM Figure 4-9 for TB204 location.
See MIM 3602.

See Reference Drawings AAO25 and YA000.

Is correct voltage present?

Y N

011

Check for 115/230 VAC between TB204-9 and TB204-10.

Is correct voltage present?

Y N

1
1
E F G H

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PEC 869365

MAP 3600-8

F G H
8 8 8

5225 ALL MODELS

MAP 3600-9

POWER SUPPLY

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012

POWER OFF.
DISCONNECT LINE POWER PLUG FROM
CUSTOMER SOURCE.
REPAIR or REPLACE failing line power
cord.
Verify repair.
Go To Map 2000, Entry Point A.

013

Check for 115/230 VAC between TB204-7
and TB204-8.

See Reference Drawing AA025.

Is correct voltage present?

Y N

014

POWER OFF.
DISCONNECT POWER PLUG FROM
CUSTOMER SOURCE.
Repair or replace CB201 or wire(s) from
TB204-9, 10 to CB201 or wire(s) from
CB201 to TB204-7,8.
Verify repair.
Go To Map 2000, Entry Point A.

See MIM 3603 for removal of CB201.

015

POWER OFF.
DISCONNECT LINE POWER PLUG FROM
CUSTOMER SOURCE.
REPAIR or REPLACE S201 (Power ON/OFF
Switch) or wire(s) from TB204-7,8 to S201 or
wire(s) from S201 to TB204-3,4.
Verify repair.
Go To Map 2000, Entry Point A.

See Reference Drawing AA025.

016

Check for 115/220 VAC between TB204-2 and
TB204-6.

Is correct voltage present?

Y N

1 1
0 0
J K

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MAP 3600-9

J K
9 9

5225 ALL MODELS

MAP 3600-10

POWER SUPPLY

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017

POWER OFF.

DISCONNECT LINE POWER PLUG FROM CUSTOMER SOURCE.

Repair or replace F201 holder or wire from TB204-3 to TB204-2.

Verify repair.

Go To Map 2000, Entry Point A.

018

POWER OFF.

Connect meter for 115/220 VAC between TB201-1 and TB201-*4.

See Note: ==>

See Reference Drawing YA000 for TB201-*4.

POWER ON.

Check for 115/220 VAC between TB201-1 and TB201-*4.

Is correct voltage present?

Y N

019

POWER OFF.

DISCONNECT LINE POWER PLUG FROM CUSTOMER SOURCE.

Repair or replace bad wire(s) between TB204-6 and TB201-1 or TB204-2 and TB201-*4.

Verify repair.

Go To Map 2000, Entry Point A.

020

POWER OFF.

Replace T201.

Verify repair.

Go To Map 2000, Entry Point A.

See MIM 3608 for TB201 removal.

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MAP 3600-10

POWER SUPPLY

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021

Open top cover (do not override cover interlock).
Replace F201 if bad.
Reset CB201 if tripped (off).
POWER ON.
Wait 30 seconds.
POWER OFF.
Check F201.
Check CB201.

Did CB201 trip (turn off) or is fuse F201 bad?

Y N

022

POWER ON.
Close top cover (or override cover interlock).
Wait 30 seconds.

Did CB201 trip when K201 activated?

Y N

023

POWER OFF.
Reset CB201.
Check F201. (Replace if bad).
Remove following fan cables from TB201.
1. Servo Power Amp fan cable from TB201-1 and TB201-4.
2. Head Motor fan cable from TB201-6 and TB201-9.
3. Remove logic gate fan cable from TB201.

POWER ON.

Did machine power on complete?

Y N

NOTE:

To verify K201 activated, listen for audible pick or visually check relay. K201 is located inside of AC POWER BOX.

See Reference Drawing AA020 and/or MIM 3600.

See Reference Drawing YA000 and MIM Figure 4-7.

For machine wiring connections, see Reference Drawing YA000 Table A (60HZ) and Table B (50HZ).

1 1 1 1
8 5 5 2
L M N P

20JUL81 PN 6844900

EC 323243 PEC 869365

MAP 3600-11

P
1
1

**5225 ALL MODELS
POWER SUPPLY**

MAP 3600-12

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024

POWER OFF.

See MIM Figure 4-9.

Reconnect fan cables.

Remove and insulate both leads from C206.

Reset CB201.

Check F201 (Replace if bad).

POWER ON.

See Reference Drawing AA025 and/or MIM 3600.

Check for approximately 8 VAC between TB203-1 and TB203-2.

Was approximately 8 VAC present?

Y N

025

POWER OFF.

DANGER

HAZARDOUS VOLTAGES ARE PRESENT IN THE AC POWER BOX WHEN THE LINE POWER PLUG IS CONNECTED TO CUSTOMER SOURCE AND MACHINE IS POWERED OFF!

USE CAUTION WHEN WORKING IN THIS AREA.

DISCONNECT LINE POWER PLUG FROM CUSTOMER SOURCE.

Reconnect C206.

Remove input leads from TB201-1 and TB201-*4.

See Table TB201 on Reference Drawing YA000 for correct pin connection.

Check for 0 ohms at the following two locations:

TB204-3 and Frame ground.

TB204-4 and Frame ground.

0 ohms at either measurement?

Y N

1 1 1
5 3 3
Q R S

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EC 323243

PEC 869365

MAP 3600-12

R S
1 1
2 2

5225 ALL MODELS

MAP 3600-13

POWER SUPPLY

PAGE 13 OF 108

026

Reset CB201.

Check F201. (Replace if bad).

Reconnect leads TB201-1 and TB201-*4.

Disconnect and insulate leads from TB203-1 and TB203-2. (wires that go to diode heat sink only).

RECONNECT LINE POWER PLUG TO CUSTOMER SOURCE.

POWER ON.

Check for approximately 13 VAC between TB203-1 and TB203-2 (transformer side):

Is approximately 13 VAC present?

Y N

027

POWER OFF.

REPLACE T201.

Reset CB201 and check F201(replace if bad).

Verify repair.

Go To Map 2000, Entry Point A.

028

POWER OFF.

REPLACE diode heat sink assembly.

Reset CB201 and check F201(replace if bad).

Verify repair.

Go To Map 2000, Entry Point A.

029

Disconnect and insulate leads from TB204-3 and TB204-4 (to line side of K201.)

Disconnect and insulate jumper from TB204-3.

Check for 0 ohms at the following two locations:

TB204-3 and frame ground.

TB204-4 and frame ground.

0 ohms at either measurement?

Y N

1 1
5 4
T U

TB201-*4, as shown on Reference Drawing YA000 can be connected to terminals 2 through 10 so that it can be similar to customer source voltage. See YA000 Note 1, also table A and B.

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MAP 3600-13

POWER SUPPLY

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030

Reconnect jumper wire to TB204-3.

Check for 0 ohms at the following two locations:

TB204-3 and frame ground.

TB204-4 and frame ground.

0 ohms at either measurement.

Y N

031

Reconnect wires TB204-3 and TB204-4 (to line side of K201).

Remove F201.

Check for 0 ohms at the following two locations:

TB204-3 and frame ground.

TB204-4 and frame ground.

0 ohms at either measurement?

Y N

032

REPAIR or REPLACE failing fuse holder F201 or cable from TB204-6 to TB201-1.

RECONNECT LINE POWER PLUG TO CUSTOMER SOURCE.

Reinstall F201.

Verify repair.

Go To Map 2000, Entry Point A.

033

REPAIR or REPLACE K201 or cable from line side of K201 to TB204-3 and TB204-4.

RECONNECT LINE POWER PLUG TO CUSTOMER SOURCE.

Reinstall F201.

Verify repair.

Go To Map 2000, Entry Point A.

M N O T V
1 1 1 1 1
1 1 2 3 4

5225 ALL MODELS

MAP 3600-15

POWER SUPPLY

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034

REPAIR or REPLACE jumper or cable from TB204-2 to TB201-4.

RECONNECT LINE POWER PLUG TO CUSTOMER SOURCE.

Verify repair.

Go To Map 2000, Entry Point A.

035

REPAIR or REPLACE Power On switch S201 or cable from switch to TB204-3 and TB204-4.

Verify repair.

Go To Map 2000, Entry Point A.

036

POWER OFF
REPLACE C206.

Verify repair.

Go To Map 2000, Entry Point A.

See Reference Drawing AA025 and/or MIM 3600 for C206 removal/reinstall.

037

POWER OFF.

One of three fans or cable is failing.

Isolate the failing fan or cable and REPAIR or REPLACE failing part.

(Each fan motor has approximately 125 ohms resistance.)

Verify repair.

Go To Map 2000, Entry Point A.

See Reference Drawing YA000 and MIM Figures 4-2 and 4-5.

038

POWER OFF.

Disconnect actuator fan wires (only) at TB202-6 and TB202-9 and insulate wires.

Reset CB201.

Check F202 (Replace if bad).

POWER ON.

See Reference Drawing AA015 and/or MIM Figure 4-3 for fan location.

See Reference Drawing YA000 and MIM Figure 4-5.

Did machine power on complete?

Y N

1 1
8 6
W X

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EC 323243

PEC 869365

MAP 3600-15

X
1
5

**5225 ALL MODELS
POWER SUPPLY**

MAP 3600-16

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039

POWER OFF

Remove and insulate both leads from C215.

Reset CB201.

Check F202 (replace if bad)

POWER ON.

See Reference Drawing AA015 and/or MIM Figure 4-5 for C215 location.

Did CB201 remain on and F202 remain good?

Y N

040

POWER OFF.

DANGER

HAZARDOUS VOLTAGES ARE PRESENT IN THE AC POWER BOX WHEN THE LINE POWER PLUG IS CONNECTED TO CUSTOMER SOURCE AND MACHINE IS POWERED OFF!

USE CAUTION WHEN WORKING IN THIS AREA.

DISCONNECT LINE POWER PLUG FROM CUSTOMER SOURCE.

Remove leads from TB202-1 (line-C) and TB202-*4 (line-D).

Check for 0 ohms between:

TB204-1 and frame ground.

TB204-5 and frame ground

See TB202 TABLE on Reference Drawing YA000 for *4 (line-D) connection.

0 ohms at either measurement?

Y N

1 1 1
8 7 7
Y Z A

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MAP 3600-16

Z A
1 A
6 1
6 6

**5225 ALL MODELS
POWER SUPPLY**

MAP 3600-17

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041

Reconnect C215.
Reconnect wires to TB202-1 and TB202-*4
(line-D).
Disconnect wires from TB203-3, TB203-4,
TB203-5, and TB203-6 (from T201 side only)
and insulate.
Reset CB201.
Check F202 (replace if bad)
RECONNECT LINE POWER PLUG TO
CUSTOMER SOURCE.
POWER ON.

**Did CB201 remain on and F202 remain
good?**

Y N

042

POWER OFF.
REPLACE T202.
Verify repair.
Go To Map 2000, Entry Point A.

043

POWER OFF.
REPLACE diode heat sink assembly.
Verify repair.
Go To Map 2000, Entry Point A.

044

Remove leads from TB204-1(to TB202-4)and
TB204-5 (to TB202-1).
Check for 0 ohms between TB204-1 and frame
ground and between TB204-5 and frame ground.

See Reference Drawing AA025 and/or MIM
Figure 4-9.

0 ohms at either measurement?

Y N

045

REPAIR or REPLACE cable from TB204-1 to
TB202-4 or TB204-5 to TB202-1.
RECONNECT LINE POWER PLUG TO
CUSTOMER SOURCE.
Verify repair.
Go To Map 2000, Entry Point A.

See Reference Drawing AA025 and MIM Figure
4-9.

1
8
A
B

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EC 323243 PEC 869365
MAP 3600-17

L W Y A
1 1 1 B
1 5 6 1
1 7

5225 ALL MODELS

MAP 3600-18

POWER SUPPLY

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046

REPAIR or REPLACE F202 holder or failing K201 or wire from K201-2A to TB204-1.

See MIM 3604.

RECONNECT LINE POWER PLUG TO CUSTOMER SOURCE.

Verify repair.

Go To Map 2000, Entry Point A.

047

POWER OFF.

REPLACE C215.

Verify repair.

Go To Map 2000, Entry Point A.

048

POWER OFF

REPAIR or REPLACE actuator fan or cable.

(Actuator fan motor has approximately 125 ohms resistance.)

Verify repair.

Go To Map 2000, Entry Point A.

See Reference Drawing YA000 for cable and fan connections. See MIM 3806 for fan removal.

049

POWER OFF

Check F201.

WAS F201 GOOD AND CB201 GOOD (NOT TRIPPED)?

Y N

050

Reset CB201 if tripped.

Replace F201 if bad.

POWER ON.

After 30 seconds F in display changes to 0 (Power on complete).

DID POWER ON COMPLETE?

Y N

2 2 1
3 2 9
A A A
C D E

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EC 323243

PEC 869365

MAP 3600-18

051

POWER OFF.

Reset CB201.

Check F201. (Replace if bad).

Remove following fan cables from TB201.

1. Servo Power Amp fan cable from TB201-1 and TB201-4.
2. Head Motor fan cable from TB201-6 and TB201-9.
3. Remove logic gate fan cable from TB201.

See Reference Drawing AA020 and/or MIM Figures 4-3 and 4-5 for fan location.

For machine wiring connections, see Reference Drawing YA000 Table A (60HZ) and Table B (50HZ).

POWER ON.

Did machine power on complete?

Y N

052

POWER OFF.

Reconnect fan cables.

Remove and insulate both leads from C206.

Reset CB201.

Check F201 (Replace if bad).

POWER ON.

Did F201 remain good and CB201 remain on?

Y N

053

POWER OFF.

DANGER

HAZARDOUS VOLTAGES ARE PRESENT IN THE AC POWER BOX WHEN THE LINE POWER PLUG IS CONNECTED TO CUSTOMER SOURCE AND MACHINE IS POWERED OFF!

USE CAUTION WHEN WORKING IN THIS AREA.

DISCONNECT LINE POWER PLUG FROM CUSTOMER SOURCE.

Reconnect C206.

(Step 053 continues)

5225 ALL MODELS

MAP 3600-20

POWER SUPPLY

PAGE 20 OF 108

(Step 053 continued)

Remove leads from TB201-1 and TB201-*4 line B.

See TB201 TABLE on Reference Drawing YA000 for *4 line B connection.

Check for 0 ohms between TB204-3 and frame ground and between TB204-4 and frame ground.

0 ohms at either measurement?

Y N

054

Reset CB201.

Check F201. (Replace if bad).

Reconnect leads TB201-1 and TB201-*4 line B.

Disconnect and insulate leads from TB203-1 and TB203-2.

RECONNECT LINE POWER PLUG TO CUSTOMER SOURCE.

POWER ON.

Did CB201 remain on and F201 remain good?

Y N

055

POWER OFF.

REPLACE T201.

Reset CB201 and check F201(replace if bad).

Verify repair.

Go To Map 2000, Entry Point A.

056

POWER OFF.

DISCONNECT LINE POWER PLUG FROM CUSTOMER SOURCE.

REPLACE diode heat sink assembly.

See MIM 3609.

Reset CB201 and check F201(replace if bad).

RECONNECT LINE POWER PLUG TO CUSTOMER SOURCE.

Verify repair.

Go To Map 2000, Entry Point A.

2
1
A
H

20JUL81 PN 6844900

EC 323243 PEC 869365

MAP 3600-20

057

Disconnect and insulate leads from TB204-3 and TB204-4 (to the line side of K201).

See Reference Drawing AA025 and/or MIM 3600).

Disconnect and insulate jumper from TB204-3. Check for 0 ohms between TB204-3 and frame ground and TB204-4 and frame ground.

0 ohms at either measurement?

Y N

058

Reconnect jumper wire to TB204-3. Check for 0 ohms between TB204-3 and frame ground and TB204-4 and frame ground.

0 ohms at either measurement.

Y N

059

Reconnect wires TB204-3 and TB204-4 (to line side of K201.)

Remove F201.

Check for 0 ohms between TB204-3 and frame ground and TB204-4 and frame ground.

0 ohms at either measurement?

Y N

060

REPAIR or REPLACE failing fuse holder F201 or cable from TB204-6 to TB201-1.

RECONNECT LINE POWER PLUG TO CUSTOMER SOURCE.

Verify repair.

Go To Map 2000, Entry Point A.

061

REPAIR or REPLACE K201 or cable from line side of K201 to TB204-3 and TB204-4.

RECONNECT LINE POWER PLUG TO CUSTOMER SOURCE.

Verify repair.

Go To Map 2000, Entry Point A.

A A A A A
D F G J K
1 1 1 2 2
8 9 9 1 1

**5225 ALL MODELS
POWER SUPPLY**

MAP 3600-22

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062

REPAIR or REPLACE jumper or cable from TB204-2 to TB201-4.
RECONNECT LINE POWER PLUG TO CUSTOMER SOURCE.
Verify repair.
Go To Map 2000, Entry Point A.

063

REPAIR or REPLACE power on switch S201 or cable from switch to TB204-3 and TB204-4.
RECONNECT LINE POWER PLUG TO CUSTOMER SOURCE.
Verify repair.
Go To Map 2000, Entry Point A.

064

POWER OFF
REPLACE C206.
Verify repair.
Go To Map 2000, Entry Point A.

See MIM 3607.

065

POWER OFF.
One of three fans or cable is failing.
Isolate the failing fan or cable and REPAIR or REPLACE failing part.
(Each fan motor has approximately 125 ohms resistance.)
Verify repair.
Go To Map 2000, Entry Point A.

See Reference Drawing YA000 and MIM Figures 4-3 and 4-5 for fan locations.

066

Verify repair.
Go To Map 2000, Entry Point A.

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MAP 3600-22

A
C
1
8

5225 ALL MODELS

MAP 3600-23

POWER SUPPLY

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067

DANGER

See Reference Drawing AA025 and/or MIM 3600.)

HAZARDOUS VOLTAGES ARE PRESENT IN THE AC POWER BOX WHEN THE LINE POWER PLUG IS CONNECTED TO CUSTOMER SOURCE AND MACHINE IS POWERED OFF!
USE CAUTION WHEN WORKING IN THIS AREA.

POWER ON.

Check for 115/230 between TB204-2 and TB204-6

Is correct voltage present?

Y N

068

Check for 115/230 VAC between TB204-3 and TB204-4.

Is 115/230 VAC present?

Y N

069

POWER OFF.

DISCONNECT LINE POWER PLUG FROM CUSTOMER SOURCE.

Remove cover from POWER OFF/ON switch S201.

RECONNECT LINE POWER PLUG TO CUSTOMER SOURCE.

POWER ON.

Check for 115/230 VAC between load side of switch S201-A and switch S201-B.

Is 115/230 VAC present?

Y N

See Reference Drawing AA025 and MIM 3600.

2 2 2 2
5 5 4 4
A A A A
L M N P

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EC 323243 PEC 869365

MAP 3600-23

A A
N P
2 2
3 3

5225 ALL MODELS

MAP 3600-24

POWER SUPPLY

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070

POWER OFF

DISCONNECT LINE POWER PLUG FROM CUSTOMER SOURCE.

REPAIR or REPLACE cable between TB204-7 and switch S201-A (line side) and between TB204-8 and switch S201-B (line side).

RECONNECT LINE POWER PLUG TO CUSTOMER SOURCE.

Verify repair.

Go To Map 2000, Entry Point A.

071

Check for 115/230 VAC on load side of switch S201.

See Reference Drawing AA025 and/or MIM 3600.

Is 115/230 VAC present.

Y N

072

POWER OFF.

DISCONNECT LINE POWER PLUG FROM CUSTOMER SOURCE.

REPAIR or REPLACE switch S201.

RECONNECT LINE POWER PLUG TO CUSTOMER SOURCE.

Verify repair.

Go To Map 2000, Entry Point A.

073

POWER OFF.

DANGER

HAZARDOUS VOLTAGES ARE PRESENT IN THE AC POWER BOX WHEN THE LINE POWER PLUG IS CONNECTED TO CUSTOMER SOURCE AND MACHINE IS POWERED OFF!

USE CAUTION WHEN WORKING IN THIS AREA.

DISCONNECT LINE POWER PLUG FROM CUSTOMER SOURCE.

REPAIR or REPLACE cable between load side of (Step 073 continues)

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PEC 869365

MAP 3600-24

B A A
6 L M
2 2
3 3

5225 ALL MODELS

MAP 3600-25

POWER SUPPLY

PAGE 25 OF 108

(Step 073 continued)
switch S201 and TB204-3 and TB204-4.
Reinstall switch S201 cover.
RECONNECT LINE POWER PLUG TO
CUSTOMER SOURCE.
Verify repair.
Go To Map 2000, Entry Point A.

074

POWER OFF.

DISCONNECT LINE POWER PLUG FROM
CUSTOMER SOURCE.
REPAIR or REPLACE cable from TB204-4
to TB204-6 including fuse holder F201.
Check jumper between TB204-3 and
TB204-2.
RECONNECT LINE POWER PLUG TO
CUSTOMER SOURCE.
Verify repair.
Go To Map 2000, Entry Point A.

075

POWER OFF.

DISCONNECT LINE POWER PLUG FROM
CUSTOMER SOURCE.
Repair or replace cable between TB204-3 and
TB201-4 or TB204-6 and TB201-1.
RECONNECT LINE POWER PLUG TO
CUSTOMER SOURCE.
Verify repair.
Go To Map 2000, Entry Point A.

See Reference Drawings AA025 and YA000.

076

POWER OFF

Wait 5 seconds.

POWER ON

K201 will activate in approximately 30 seconds.

(see note)

Did K201 activate?

Y N

NOTE:

To verify K201 activated,
Listen for audible pick or visually check relay

2 2
6 6
A A
Q R

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PEC 869365

MAP 3600-25

A A A
6 Q R
5 T E

5225 ALL MODELS

MAP 3600-26

POWER SUPPLY

PAGE 26 OF 108

077

+5 VDC problem.

Go to Page 33, Step 107,

Entry Point 5+.

078

Go To Map 3900, Entry Point A.

079

Did machine power on complete?

After 30 seconds F changes to 0 in display
(Power on complete).

Y N

080

POWER OFF.

See MIM Figure 4-9.

Remove fuse F206 from Sequence card.

Connect probe to A1T2D12.

NOTE: After POWER ON, probe indications
are as follows:

Down for approximately 10 seconds, then
up. (Ignore any pulse before 2 seconds
when switch is first turned on).

POWER ON.

**Is probe indication correct? (Down, then
up.)**

Y N

081

Go to Page 27, Step 084,

Entry Point PO.

082

POWER OFF.

Reinstall fuse F206 on Sequence card.

Go to Page 73, Step 312, Entry Point 81.

083

Go To Map 2000, Entry Point A.

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PEC 869365

MAP 3600-26

5225 ALL MODELS
POWER SUPPLY
PAGE 27 OF 108

MAP 3600-27

084
(Entry Point PO)

Reference Drawings:

HIGH POWER AA015
LOW POWER AA020
AC POWER BOX AA025
SEQUENCER AA030
LOGIC BOARD POWER DISTRIBUTION AA010
The Reference Drawings are located in the binder with the MIM (Maintenance Information Manual).

Location of assemblies is given in MIM 3600.

All voltages and resistances are +10%-8% unless specified.

DANGER

USE CAUTION WHEN WORKING IN THIS AREA. +10 VDC AND +50 VDC TERMINALS ON THE SEQUENCE CARD HAVE HIGH CURRENT CAPABILITY.

POWER OFF.

Verify the following:

P201, P202 and P203 are connected to sequence card.

See Reference Drawing AA030.

All fuses (total 4) are good on sequence card.

See Reference Drawing AA030.

A1Y5 cable connector is connected to A1 board.

P213 is connected to J213.

See MIM Figure 4-12.

All mini-bus connectors (total 10) are connected to A1 board.

See Reference Drawing AA010.

Connect probe to A1T2D12.

NOTE: After power on, probe should indicate down for approximately 10 seconds, then up (ignore any pulse as switch is turned on).

POWER ON

Are probe indications correct? (down approximately 10 seconds, then up).

Y N
| |

3 2
2 8
A A
S T

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PEC 869365

MAP 3600-27

A
T
2
7

5225 ALL MODELS
POWER SUPPLY
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MAP 3600-28

085

On Sequence Card, check for +5 VDC between J201-12 (+) and ground (-).

Is +5 VDC present?

Y N

086

Check for +5 VDC (4.6 VDC to 5.5 VDC) between J203-5(+) and ground (-) on Sequence Card.

See Reference Drawings AA020 and AA030.

Is +5 VDC in specifications (+4.6 VDC to 5.5 VDC)?

Y N

087

+5 VDC problem.
Go to Page 33, Step 107,
Entry Point 5+.

088

Check for +5 VDC (4.6 VDC to 5.5 VDC) between J203-1(+) and ground (-).

Is +5 VDC in specifications (+4.6 VDC to +5.5 VDC)?

Y N

089

+5 VDC problem.
Go to Page 33, Step 107,
Entry Point 5+.

090

Check for +8.5 VDC between J201-4(+) and ground (-).

Is +8.5 VDC present?

Y N

091

+8.5 VDC problem.
Go to Page 52, Step 200,
Entry Point 85.

3 2
2 9
A A
U V

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EC 323243 PEC 869365
MAP 3600-28

A
V
2
8

5225 ALL MODELS

MAP 3600-29

POWER SUPPLY

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092

Check for -15 VDC between J201-3(-) and ground (+).

Is -15 VDC present?

Y N

093

-15 VDC problem.

Go to Page 58, Step 235, Entry Point 15.

094

Check for -5 VDC between J201-5(-) and ground (+).

Is -5 VDC present?

Y N

095

-5 VDC problem.

Go to Page 63, Step 264, Entry Point 5-.

096

Check for +15 VDC between J201-1(+) and ground (-).

Is +15 VDC present?

Y N

097

+15 VDC problem.

Go to Page 68, Step 285, Entry Point 17.

098

POWER OFF

Disconnect P201 from Sequence card.

See Reference Drawing AA030.

POWER ON

Check for +5 VDC at cable connector P201-12.

See Reference Drawing AA045

Is +5 VDC present?

Y N

Y N
| |
| |
| |
| |
| |

3 3
1 0
A A
W X

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EC 323243

PEC 869365

MAP 3600-29

A
X
2
9

**5225 ALL MODELS
POWER SUPPLY**

MAP 3600-30

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099

Check for +5 VDC at A1T2D12.

Is +5 VDC present?

Y N

100

POWER OFF

Disconnect A1Y5 cable connector from A1 board.

POWER ON

Check for +5 VDC ar A1T2D12.

Is +5 VDC present?

Y N

101

Go To Map 3100, Entry Point FF.

102

POWER OFF

Repair or Replace grounded cable between A1Y5-D02 to P213-1 or between J213-1 to P201-12.

Verify Repair.

Go To Map 2000, Entry Point A.

See Reference Drawing AA045.

103

POWER OFF

Repair or Replace open cable between A1Y5-D02 to P213-1 or between J213-1 to P201-12.

Verify Repair.

Go To Map 2000, Entry Point A.

See Reference Drawing AA045.

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MAP 3600-30

A
W
2
9

5225 ALL MODELS

MAP 3600-31

POWER SUPPLY

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104

POWER OFF.
REPLACE SEQUENCE card.

See MIM 3605 for
removal/installation
of Sequence card.

NOTE:

If the sequence card did not repair the problem, the instructions in the VOLTAGE NOTE should be performed.

VOLTAGE NOTE:

ONLY TO BE USED WHEN LEAVING ABOVE STEP.

For POWER or INTERMITTENT problems that have not been repaired by the preceding POWER MAPs, the CE should suspect that some voltage is changing under load.

Correcting action should include the following:

1. Check all buses, terminals, and plugs for being loose.
2. Use suspected voltage MAP entry point to analyze that supply for possible open diodes, bad capacitors, or failing transformer windings.
3. Customer line voltage not constant.

(The +10 VDC, +50 VDC and +5 VDC supplies should be first priority.

The +10 VDC, +50 VDC, and +5 VDC have their own supplies, the remaining voltages are generated on the sequence card and A1K2 card.)

(Step 104 continues)

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MAP 3600-31

POWER SUPPLY

(Step 104 continued)

Voltage with +10%-8% tolerance	test point	entry location
+10 VDC	+10 VDC terminal screw on Sequence Card.	go to Entry Point 81
+50 VDC	+50 VDC terminal screw on Sequence Card.	go to Entry Point 81
+5 VDC	A1J1E11	go to Entry Point P0
+8.5 VDC	A1T1E11	go to Entry Point 85
+15 VDC	A1L2D13	go to Entry Point 17
-5 VDC	A1J1E13	go to Entry Point 5-
-15 VDC	A1K2G06	go to Entry Point 15

NOTE: Ensure Customer voltage source is stable and correct
for machine wiring.

Verify repair.
Go To Map 2000, Entry Point A.

105

POWER OFF.

See MIM 3605 for Sequence card
removal/reinstall.

Replace bad sequence card.
Verify repair.
Go To Map 2000, Entry Point A.

106

Indications have changed.
Go To Map 2000, Entry Point A.

POWER SUPPLY

107

(Entry Point 5+)

Reference Drawings:

- OPERATOR CONTROLS AA045
- EMITTERS AND PLATEN SWITCH AA065
- CUSTOMER PANEL INTERFACE AA035
- LOW POWER AA020
- AC POWER BOX AA025
- SEQUENCER AA030
- LOGIC BOARD POWER DISTRIBUTION AA010

The Reference Drawings are located in the binder with the MIM (Maintenance Information Manual).

WARNING:

Powering on or powering off with +5 VDC missing from A1 board will cause card damage. See Reference Drawing AA020.

Location of assemblies is given in MIM 3600.

All voltages and resistances are +10%/-8% unless specified.

DANGER

HAZARDOUS VOLTAGES are present in the AC POWER BOX. Use CAUTION when working in this area.

This ENTRY POINT isolates +5 VDC problems.

POWER OFF.

Ensure that connector P213 is connected to J213.

Check that P203 is correctly connected to the SEQUENCE card.

Reset CB202.

POWER ON.

Did machine power on complete.

Y N



108

Did CB202 remain on?

Y N



5	4	3
1	6	4
A	A	B
Y	Z	A

See MIM Figures 4-12 and 4-14.

See Reference Drawing AA030.

NOTE: To reset CB, turn to 'off' position, then to 'on' position.

NOTE:

If there is a time delay for Circuit Breaker to trip, note the time for failure to occur.

Ensure this time delay is checked after each POWER ON.

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EC 323243 PEC 869365

POWER SUPPLY

109

POWER OFF.

Disconnect P203 from Sequence card.

Reset CB202.

POWER ON.

Did CB202 remain on?

Y N

See Reference Drawing AA020 and/or MIM 3600.

110

POWER OFF.

Disconnect +5 VDC mini-bus cables (4 connectors) from A1 board.

Remove following logic cards from A1 board:

- A1L2
- A1K2
- A1K4
- A1H2
- A1F2
- A1D2
- A1B2

See Reference Drawings AA010 and AA020.

See Reference Drawings AA005, WA020, WA030, WA040, WA050.

Reset CB202.

POWER ON.

Did CB202 remain on?

Y N

111

POWER OFF.

REPAIR or REPLACE cables from CB202 to A1 board.

Verify repair.

Go To Map 2000, Entry Point A.

See Reference Drawing AA020.

112

POWER OFF.

Reinstall +5 VDC mini-bus cables (4 connectors) to A1 board.

Reset CB202.

POWER ON

Did CB202 remain on?

Y N

4 4 3
6 3 5
B B B
B C D

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MAP 3600-34

B
D
3
4

5225 ALL MODELS

MAP 3600-35

POWER SUPPLY

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113

POWER OFF.

Reset CB202.

Remove the following cards from A1 board:

A1U2

A1T2

A1S2

POWER ON.

Did CB202 remain on?

Y N

114

POWER OFF.

Reset CB202.

Remove the following cards from A1 board:

A1R2

A1P2

A1Q4 (only present when EPROMS used).

POWER ON.

Did CB202 remain on?

Y N

115

POWER OFF.

Reset CB202.

Remove the following card from A1 board:

A1Q2 (only present when EPROMS used).

POWER ON.

Did CB202 remain on?

Y N

116

POWER OFF.

Reset CB202.

Remove the following card from A1 board:

A1N2

POWER ON.

Did CB202 remain on?

Y N

4 4 4 4 3
2 1 1 0 6
B B B B B
E F G H J

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MAP 3600-35

B
J
3
5

5225 ALL MODELS

MAP 3600-36

POWER SUPPLY

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117

POWER OFF

Reset CB202.

Disconnect cable plug from OPERATOR PANEL.

Disconnect cable from FORMS THICKNESS SWITCH.

POWER ON.

See MIM Figure 4-7 and Reference Drawing AA045.

Did CB202 remain on?

Y N

118

POWER OFF.

Reset CB202.

Remove cable A1Y4 from A1 board.

POWER ON.

Did CB202 remain on?

Y N

119

POWER OFF

Disconnect cable plug from CUSTOMER ACCESS PANEL).

Reset CB202.

POWER ON.

See Reference Drawing AA035.

See MIM Figure 4-7 for location of customer access panel.

Did CB202 remain on?

Y N

120

POWER OFF.

Reset CB202.

Remove cable A1Y6 from A1 board.

POWER ON.

Did CB202 remain on?

Y N

4 4 3 3 3
0 0 9 9 7
B B B B B
K L M N P

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PEC 869365

MAP 3600-36

B
P
3
6

5225 ALL MODELS

MAP 3600-37

POWER SUPPLY

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121

POWER OFF.

See Reference Drawing AA065.

Reset CB202.

Disconnect following plugs or wires from:
LINEAR EMITTER, E.O.F, FORMS LED, and
PLATEN SWITCH.

POWER ON.

Did CB202 remain on?

Y N

122

POWER OFF.

Reset CB202.

Remove cable A1Y3 from A1 board.

POWER ON.

Did CB202 remain on?

Y N

123

POWER OFF.

Reset CB202.

Reconnect all disconnected assemblies.

REPAIR or REPLACE A1 board.

Verify repair.

Go To Map 2000, Entry Point A.

124

POWER OFF.

REPAIR or REPLACE cable group to:

Platen switch.

END of FORMS sensor.

FORMS emitter assembly.

Reconnect all disconnected assemblies.

Verify repair.

Go To Map 2000, Entry Point A.

3
8
8
Q

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PEC 869365

MAP 3600-37

B
303
7

5225 ALL MODELS

MAP 3600-38

POWER SUPPLY

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125

POWER OFF.

Reset CB202.

Reconnect connectors: LINEAR EMITTER and
E.O.F.

POWER ON.

Did CB202 remain ON?

Y N

126

POWER OFF.

Reset CB202.

Disconnect connectors from LINEAR
EMITTER.

POWER ON.

Did CB202 remain ON?

Y N

127

POWER OFF.

REPAIR or REPLACE LINEAR EMITTER
assembly.

Reconnect all disconnected assemblies.

Verify repair.

Go To Map 2000, Entry Point A.

128

POWER OFF.

REPAIR or REPLACE E.O.F assembly.

Reconnect all disconnected assemblies.

Verify repair.

Go To Map 2000, Entry Point A.

B
303
7

20JUL81

PN 6844900

EC 323243

PEC 869365

MAP 3600-38

B B B
M N R
3 3 3
6 6 8

5225 ALL MODELS

MAP 3600-39

POWER SUPPLY

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129

POWER OFF.

Reset CB202.

Reconnect plug to forms LED.

POWER ON.

Did CB 202 remain ON?

Y N

130

POWER OFF.

REPAIR or REPLACE FORMS LED
assembly.

Reconnect all disconnected assemblies.

Verify repair.

Go To Map 2000, Entry Point A.

131

POWER OFF.

REPLACE PLATEN SWITCH.

Reconnect all disconnected assemblies.

Verify repair.

Go To Map 2000, Entry Point A.

132

REPAIR or REPLACE cable from A1Y6 to
ALARM or REPLACE ALARM OR CUSTOMER
ACCESS PANEL.

Reconnect all disconnected assemblies.

Verify repair.

Go To Map 2000, Entry Point A.

See Reference Drawing AA035 and MIM
CHAPTER 1.

133

POWER OFF.

REPAIR or REPLACE CUSTOMER ACCESS
PANEL.

Verify repair.

Go To Map 2000, Entry Point A.

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PN 6844900

EC 323243

PEC 869365

MAP 3600-39

B B B
H K L
3 3 3
5 6 6

5225 ALL MODELS

MAP 3600-40

POWER SUPPLY

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134

REPAIR or REPLACE cable from A1Y4 to OPERATOR PANEL OR TO FORMS THICKNESS SWITCH.

See Reference Drawing AA045 and MIM 3400.

Reconnect all disconnected assemblies.
Verify repair.

Go To Map 2000, Entry Point A.

135

POWER OFF.

Reconnect cable to FORMS THICKNESS SWITCH.

POWER ON.

Did CB202 remain ON?

Y N

136

POWER OFF.

REPLACE FORMS THICKNESS SWITCH.

Reconnect all disconnected assemblies.
Verify repair.

Go To Map 2000, Entry Point A.

137

POWER OFF.

REPLACE OPERATOR PANEL.

Go To Map 2000, Entry Point A.

138

POWER OFF.

REPLACE A1N2 card.

Swap jumpers to new A1N2 card.

Verify repair.

Go To Map 2000, Entry Point A.

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PEC 869365

MAP 3600-40

B B
F G
3 3
5 5

5225 ALL MODELS

MAP 3600-41

POWER SUPPLY

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139

POWER OFF.

REPLACE A1Q2.

Verify repair.

Go To Map 2000, Entry Point A.

140

POWER OFF.

Reinstall A1R2 card.

POWER ON.

Did CB202 remain on?

Y N

141

POWER OFF.

Reset CB202.

REPLACE A1R2.

Swap jumpers to new A1R2 card.

Verify repair.

Go To Map 2000, Entry Point A.

142

POWER OFF.

Reset CB202.

Reinstall A1P2 card.

POWER ON.

Did CB202 remain on?

Y N

143

POWER OFF.

Reset CB202.

REPLACE A1P2.

Verify repair.

Go To Map 2000, Entry Point A.

144

POWER OFF.

Reset CB202.

Reinstall A1Q4 card.

POWER ON.

Did CB202 remain on?

Y N

4 4
2 2
B B
S T

20JUL81

PN 6844900

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PEC 869365

MAP 3600-41

B B B
S S T
4 4
1 1

5225 ALL MODELS

MAP 3600-42

POWER SUPPLY

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145

POWER OFF.

Reset CB202.

REPLACE A1Q4.

Verify repair.

Go To Map 2000, Entry Point A.

146

POWER OFF.

Reconnect P203.

Problem cleared by reseating cards.

Verify repair.

Go To Map 2000, Entry Point A.

147

POWER OFF.

Reinstall A1U2 card.

POWER ON.

Did CB202 remain on?

Y N

148

POWER OFF.

Reset CB202.

REPLACE A1U2.

Verify repair.

Go To Map 2000, Entry Point A.

149

POWER OFF.

Reset CB202.

Reinstall A1T2 card.

POWER ON.

Did CB202 remain on?

Y N

150

POWER OFF.

Reset CB202.

REPLACE A1T2.

Swap jumpers to new T2 card.

Verify repair.

Go To Map 2000, Entry Point A.

4
3
B
U

20JUL81

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MAP 3600-42

B B
C U
3 4
4 2

5225 ALL MODELS

MAP 3600-43

POWER SUPPLY

PAGE 43 OF 108

151

POWER OFF.

Reset CB202.

Reinstall A1S2 card.

POWER ON.

Did CB202 remain on?

Y N

152

POWER OFF.

Reset CB202.

REPLACE A1S2.

Verify repair.

Go To Map 2000, Entry Point A.

153

POWER OFF.

Reconnect P203.

Problem cleared by reseating cards.

Verify repair.

Go To Map 2000, Entry Point A.

154

POWER OFF.

Reinstall A1L2 card.

POWER ON.

Did CB202 remain on?

Y N

155

POWER OFF.

Reset CB202.

REPLACE A1L2.

Verify repair.

Go To Map 2000, Entry Point A.

See MIM 3104,3105 to adjust pots on new A1L2 card.

156

POWER OFF.

Reset CB202.

Reinstall A1K2 card.

POWER ON.

Did CB202 remain on?

Y N

4 4
4 4
B B
V W

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EC 323243

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MAP 3600-43

B B
V W
4 4
3 3

5225 ALL MODELS

MAP 3600-44

POWER SUPPLY

PAGE 44 OF 108

157

POWER OFF.

Reset CB202.

REPLACE A1K2.

Verify repair.

Go To Map 2000, Entry Point A.

158

POWER OFF.

Reset CB202.

Reinstall A1K4 card.

POWER ON.

Did CB202 remain on?

Y N

159

POWER OFF.

Reset CB202.

REPLACE A1K4.

Verify repair.

Go To Map 2000, Entry Point A.

160

POWER OFF.

Reset CB202.

Reinstall A1H2 card.

POWER ON.

Did CB202 remain on?

Y N

161

POWER OFF.

Reset CB202.

REPLACE A1H2.

Verify repair.

Go To Map 2000, Entry Point A.

4
5
B
X

20JUL81

PN 6844900

EC 323243

PEC 869365

MAP 3600-44

B
X
4
4

5225 ALL MODELS

MAP 3600-45

POWER SUPPLY

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162

POWER OFF.

Reset CB202.

Reinstall A1F2 card.

POWER ON.

Did CB202 remain on?

Y N

163

POWER OFF.

Reset CB202.

REPLACE A1F2.

Verify repair.

Go To Map 2000, Entry Point A.

164

POWER OFF.

Reset CB202.

Reinstall A1D2 card.

POWER ON.

Did CB202 remain on?

Y N

165

POWER OFF.

Reset CB202.

REPLACE A1D2.

Verify repair.

Go To Map 2000, Entry Point A.

166

POWER OFF.

Reset CB202.

Reinstall A1B2 card.

POWER ON.

Did CB202 remain on?

Y N

167

POWER OFF.

Reset CB202.

REPLACE A1B2.

Verify repair.

Go To Map 2000, Entry Point A.

4
6
B
Y

20JUL81

PN 6844900

EC 323243

PEC 869365

MAP 3600-45

A B B
Z B Y
3 3 4
3 4 5

5225 ALL MODELS

MAP 3600-46

POWER SUPPLY

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168

POWER OFF.
Reconnect P203.
Problem cleared by reseating cards.
Verify repair.

Go To Map 2000, Entry Point A.

169

POWER OFF.
REPLACE Sequence card.
Verify repair.

Go To Map 2000, Entry Point A.

See MIM 3605.

170

POWER OFF.
Disconnect P203.
POWER ON.
Check for +5 VDC between P203-5(+) and ground (-).

See Reference Drawings AA020, AA030 and/or MIM 3600.

Is +5 VDC in specifications (+4.6 VDC to +5.5 VDC)?

Y N

171

Check for +5 VDC between P203-1(+) and ground (-).

Is +5 VDC in specifications (+4.6 VDC to +5.5 VDC)?

Y N

172

Is the voltage between +3.0 VDC to +4.5 VDC?

Y N

173

Check for approximately 13 VAC between TB203-1 and TB203-2.

See MIM Figure 4-5.

Is approximately 13 VAC present.

Y N

5 5 5 4 4
0 0 0 9 7
B C C C C
Z A B C D

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PEC 869365

MAP 3600-46

C
D
4
6

**5225 ALL MODELS
POWER SUPPLY**

MAP 3600-47

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174

Is approximately 8 VAC present.

Y N

175

POWER OFF.

Remove and insulate both leads from C206.

See MIM Figure 4-9.

POWER ON.

Check for 8 VAC between TB203-1 and TB203-2.

Is 8 VAC present?

Y N

176

POWER OFF.

See Reference Drawing YA000.

Disconnect wire from TB203-1 (diode wire) and disconnect wire from TB203-2 (diode wire).

See Mim Figure 4-10.

POWER ON.

Check for approximately 8 VAC between TB203-1 and TB203-2.

Is approximately 8 VAC present?

Y N

177

POWER OFF.

See Reference Drawing YA000.

Disconnect P202 from sequence card.

See Mim Figure 4-10.

POWER ON.

Check for approximately 8 VAC between TB203-1 and TB203-2.

Is approximately 8 VAC present?

Y N

178

POWER OFF.

REPLACE T201.

See MIM 3608.

Verify repair.

RECONNECT diode CR201 and CR202 to TB203-1,2.

Go To Map 2000, Entry Point A.

4 4 4 4
9 8 8 8
C C C C
E F G H

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EC 323243 PEC 869365
MAP 3600-47

C C C
F G H
4 4 4
7 7 7

5225 ALL MODELS

MAP 3600-48

POWER SUPPLY

PAGE 48 OF 108

179

POWER OFF.

REPLACE Power Sequence card.

Reconnect C206.

Reconnect Diode CR201 to TB203-1

Reconnect Diode CR202 to TB203-2

Verify repair.

Go To Map 2000, Entry Point A.

180

POWER OFF.

Reconnect leads to C206.

Reconnect leads to TB203-1 and TB203-2.

Remove the +5 VDC diode wires from the +5 VDC capacitors.

POWER ON.

Check for approximately 13 VAC between TB203-1 and TB203-2.

Is approximately 13 VAC present?

Y N

See Reference Drawing AA020.

181

REPLACE diode heat sink assembly.

Verify repair.

Go To Map 2000, Entry Point A.

182

Short between +5 VDC bus and ground bus.

Check C201 and C202.

Check for foreign materials that could cause a short circuit.

REPLACE failing capacitor.

Verify repair.

Go To Map 2000, Entry Point A.

183

POWER OFF.

REPLACE C206.

Reconnect P203.

Verify repair.

Go To Map 2000, Entry Point A.

See MIM 3607.

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PEC 869365

MAP 3600-48

C C
4 E
6 7

5225 ALL MODELS

MAP 3600-49

POWER SUPPLY

PAGE 49 OF 108

184
POWER OFF.

Disconnect leads from C206.
Check for 1 ohm or less between the 2 leads
removed from C206.

Is resistance 1 ohm or less?

Y N

185
REPLACE T201
RECONNECT P203.
Verify repair.
Go To Map 2000, Entry Point A.

186
POWER OFF.
REPLACE C206.
Verify repair.
Go To Map 2000, Entry Point A.

187
POWER OFF.
Check for 1 ohm or less between TB203-1 and
ground bus and TB203-2 and ground bus.
**Is resistance 1 ohm or less for both
measurements?**

Y N

188
POWER OFF.
REPLACE T201.
RECONNECT P203.
Verify repair.
Go To Map 2000, Entry Point A.

See Reference Drawing AA020 and/or MIM
Figure 4-10 for Bus locations.

189
POWER OFF.
REPLACE diode heat sink assembly.
Verify repair.
Go To Map 2000, Entry Point A.

See MIM 3609.

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EC 323243 PEC 869365
MAP 3600-49

B C C
Z A B
4 4 4
6 6 6

5225 ALL MODELS

MAP 3600-50

POWER SUPPLY

PAGE 50 OF 108

190

Check for approximately 6 VAC between the following:

Between TB203-1 and Ground.

Between TB203-2 and Ground

Is approximately 6 VAC present at both points?

Y N

191

POWER OFF.

Replace T201.

Reconnect cable P203.

Verify repair.

Go To Map 2000, Entry Point A.

192

POWER OFF.

REPLACE diode heat sink assembly.

See MIM 3609.

Verify repair.

Go To Map 2000, Entry Point A.

193

POWER OFF.

REPAIR or REPLACE cable from CB202 to P203-1.

Verify repair.

Go To Map 2000, Entry Point A.

194

Check for +5 VDC(+) at any D03 board pin (except A and V rows) to any D08 ground (-) pin.

Is +5 VDC present?

Y N

195

POWER OFF.

REPAIR or REPLACE CB202 or cable from CB202 to A1 board.

See Reference Drawing AA020.

Verify repair.

Go To Map 2000, Entry Point A.

5
I
C
J

20JUL81

PN 6844900

EC 323243

PEC 869365

MAP 3600-50

A C
Y J
3 5
3 0

5225 ALL MODELS

MAP 3600-51

POWER SUPPLY

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196

POWER OFF

Reconnect P203 to Sequence card.
POWER ON.

Wait 30 seconds.

Check for +5 VDC between J203-1(+) on
Sequence Card and ground.

Is 5 VDC present?

Y N

197

POWER OFF.

Repair/Replace wire between P203-1 and
CB202.

Verify repair.

Go To Map 2000, Entry Point A.

198

POWER OFF.

REPLACE SEQUENCE card

See MIM 3605

Verify repair.

Go To Map 2000, Entry Point A.

199

Go To Map 2000, Entry Point A.

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PN 6844900

EC 323243

PEC 869365

MAP 3600-51

POWER SUPPLY

200

(Entry Point 85)

This ENTRY POINT isolates +8.5 VDC problems.

POWER OFF.

Check that P202 is correctly connected to the SEQUENCE card.

See Reference Drawings AA020, AA030, and/or MIM 3600.

See MIM Figures 4-5 and 4-11.

POWER ON (wait approximately 30 seconds).

Check for +5 VDC (+3 to 5 VDC) between A1T2D12 and ground bus.

Is 5 VDC OK?

Y N

201

Check for +8.5 VDC between left side of F203(+) and ground (-).

Is +8.5 VDC present?

Y N

202

Check for 20 VAC between J202-4 and J202-2.

Is 20 VAC present?

Y N

203

POWER OFF.

Disconnect P202.

POWER ON.

Check for 20 VAC between P202-4 and P202-2.

Is 20 VAC present?

Y N

204

REPLACE T201.

Verify repair.

Go To Map 2000, Entry Point A.

5 5 5 5
7 3 3 3
C C C C
K L M N

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EC 323243

PEC 869365

MAP 3600-52

C C C
M M M
5 5 5
2 2 2

5225 ALL MODELS

MAP 3600-53

POWER SUPPLY

PAGE 53 OF 108

205

POWER OFF.
REPLACE SEQUENCE card.
Verify repair.
Go To Map 2000, Entry Point A.

206

POWER OFF.
Disconnect P202 from sequence card.
Check for 1 ohm or less between P202-4 and
P202-1 and between P202-1 and P202-2.
**Is resistance 1 ohm or less at both
measurements?**

Y N

207

REPLACE T201.
Verify repair.
Go To Map 2000, Entry Point A.

208

REPLACE sequence card.
Verify repair.
Go To Map 2000, Entry Point A.

209

Check for +8.5 VDC between right side of
F203(+) and ground (-).
Is +8.5 VDC present?

Y N

210

POWER OFF
Check F203.
Is F203 good?

See MIM 3600.

Y N

211

REPLACE F203.
POWER ON.
Wait 30 seconds.
Did machine power on complete?

Y N

5 5 5 5
7 7 7 4
C C C C
P Q R S

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EC 323243 PEC 869365
MAP 3600-53

C
355

5225 ALL MODELS
POWER SUPPLY
PAGE 54 OF 108

MAP 3600-54

212

POWER OFF.
Replace F203.
Disconnect the wire to A1U2G11.
POWER ON.

See Reference Drawing AA010.

Did F203 remain good?

Y N

213

POWER OFF.
Replace F203.
Disconnect P201 from sequence card.
Check for approximately 15 ohms resistance
between J201-4 and ground.

Is resistance approximately 15 ohms?

Y N

214

REPLACE SEQUENCE card.
Verify repair.
Go To Map 2000, Entry Point A.

215

REPAIR or REPLACE cable between P201-4
and A1U2G11.
Verify repair.
Go To Map 2000, Entry Point A.

216

POWER OFF.
Remove the following cards:
A1U2
A1T2
A1S2
A1P2
A1K2

Check for 50 ohms or more between A1U2G11
and ground.

Is resistance 50 ohms or more?

Y N

5 5
5 5
C C
T U

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MAP 3600-54

C C
T U
5 5
4 4

5225 ALL MODELS
POWER SUPPLY

MAP 3600-55

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217

Disconnect cable from A1Y6.
Check for 50 ohms or more between
A1U2G11 and ground.

Is resistance 50 ohms or more?

Y N

218

REPAIR or REPLACE A1 board.
Reinstall remaining cards and reconnect
wire to A1U2G11.
Verify repair.

Go To Map 2000, Entry Point A.

219

Cable bad between A1Y6D06 and alarm or
alarm is bad.

REPAIR or REPLACE cable or alarm.

Reinstall remaining cards and reconnect wire
to A1U2G11.

Verify repair.

Go To Map 2000, Entry Point A.

220

Reinstall A1U2.

Check for 50 ohms or more between A1U2G11
and ground.

Is resistance 50 ohms or more?

Y N

221

REPLACE A1U2 card.

Reinstall remaining cards and reconnect wire
to A1U2G11.

Verify repair.

Go To Map 2000, Entry Point A.

222

Reinstall A1T2.

Check for 50 ohms or more between A1U2G11
and ground.

Is resistance 50 ohms or more?

Y N

5 5
6 6
C C
V W

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MAP 3600-55

C C
V W
5 5
5 5

5225 ALL MODELS

MAP 3600-56

POWER SUPPLY

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223

REPLACE A1T2 card.

Swap jumpers to new A1T2 card.

Reinstall remaining cards and reconnect wire to A1U2G11.

Verify repair.

Go To Map 2000, Entry Point A.

224

Reinstall A1S2.

Check for 50 ohms or more between A1U2G11 and ground.

Is resistance 50 ohms or more?

Y N

225

REPLACE A1S2 card.

Reinstall remaining cards and reconnect wire to A1U2G11.

Verify repair.

Go To Map 2000, Entry Point A.

226

Reinstall A1K2.

Check for 50 ohms or more between A1U2G11 and ground.

Is resistance 50 ohms or more?

Y N

227

REPLACE A1K2.

Reinstall remaining cards and reconnect wire to A1U2G11.

Verify repair.

Go To Map 2000, Entry Point A.

228

REPLACE A1P2.

Reconnect wire to A1U2G11.

Verify repair.

Go To Map 2000, Entry Point A.

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MAP 3600-56

C
2
C
3
C
3
C
3
C
3

5225 ALL MODELS

MAP 3600-57

POWER SUPPLY

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229

Verify repair.

Go To Map 2000, Entry Point A.

230

REPLACE SEQUENCE card.

Verify repair.

Go To Map 2000, Entry Point A.

231

POWER OFF.

REPLACE SEQUENCE card.

Verify repair.

Go To Map 2000, Entry Point A.

232

Check for +8.5 VDC between J201-4(+) and ground (-).

Is +8.5 VDC present?

Y N

233

POWER OFF.

REPLACE SEQUENCE card.

Verify repair.

Go To Map 2000, Entry Point A.

234

POWER OFF.

REPAIR or REPLACE cable between J201-4 and A1U2G11.

See Reference Drawing AA020.

Verify repair.

Go To Map 2000, Entry Point A.

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PEC 869365

MAP 3600-57

5225 ALL MODELS
POWER SUPPLY
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MAP 3600-58

235

(Entry Point 15)

This ENTRY POINT isolates -15 VDC problems.

POWER OFF

Check that P202 is correctly connected to the SEQUENCE card.

See MIM Figures 4-5 and 4-11.

POWER ON (wait approximately 30 seconds).

Check for +5 VDC (+3 to 5 VDC) between A1T2D12(+) and ground.

Is +5 VDC OK?

Y N

236

Check for -15 VDC between left side of F205(-) and ground (+).

See Reference Drawing AA020 and/or MIM 3600.

Is -15 VDC present?

Y N

237

Check for 33 VAC between J202-5 and J202-6.

Is 33 VAC present?

Y N

238

POWER OFF.

Disconnect P202.

POWER ON.

Check for 33 VAC between P202-5 and P202-6.

Is 33 VAC present?

Y N

239

POWER OFF

REPLACE T201.

Verify repair.

Go To Map 2000, Entry Point A.

6 5 5 5
2 9 9 9
C C C D
X Y Z A

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MAP 3600-58

C C D
Y Z A
5 5 5
8 8 8

5225 ALL MODELS

MAP 3600-59

POWER SUPPLY

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240

POWER OFF.
REPLACE SEQUENCE card.
Verify repair.
Go To Map 2000, Entry Point A.

241

POWER OFF.
Disconnect P202.
Check for 1 ohm or less between P202-3 and
P202-5 and between P202-3 and P202-6.
**Is resistance 1 ohm or less for both
measurements?**

Y N

242

REPLACE T201.
Verify repair.
Go To Map 2000, Entry Point A.

243

REPLACE SEQUENCE card.
Go To Map 2000, Entry Point A.

244

Check for -15 VDC between right side of F205(-)
and ground (+).

Is -15 VDC present?

Y N

245

POWER OFF.
Check F205.
Was F205 good?

Y N

246

REPLACE F205.

POWER ON.
Did machine power on complete?

Y N

6 6 6 6
1 1 1 0
D D D D
B C D E

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EC 323243 PEC 869365

MAP 3600-59

**5225 ALL MODELS
POWER SUPPLY**

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247

POWER OFF.

Replace F205.

Disconnect wire to A1K2G06.

POWER ON. Wait 10 seconds.

POWER OFF.

Check F205 (replace if bad)

Was F205 good?

Y N

248

Replace F205.

Disconnect P201 from Sequence card.

Check for approximately 25 ohms between

P201-3(+) and ground (-).

Is resistance approximately 25 ohms?

Y N

249

REPLACE SEQUENCE card.

Verify repair.

Go To Map 2000, Entry Point A.

250

REPAIR or REPLACE cable between P201-3
and A1K2G06.

Verify repair.

Go To Map 2000, Entry Point A.

251

Remove A1K2 card.

Check for open circuit between A1K2G06(+) and
ground (-).

Is circuit open?

Y N

252

Remove A1L2 card.

Check for open circuit between A1K2G06 (+)
and ground (-).

Is circuit open?

Y N

6 6 6
1 1 1
D D D
F G H

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MAP 3600-60

D D D D D D
B C D F G H
5 5 5 6 6 6
9 9 9 0 0 0

**5225 ALL MODELS
POWER SUPPLY**

MAP 3600-61

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253
REPAIR or REPLACE A1 board.
Verify repair.
Go To Map 2000, Entry Point A.

254
REPLACE A1L2 card.
Verify repair.
Go To Map 2000, Entry Point A.

255
Check resistance between A1K2J11 and
ground.

Is resistance more than 500 ohms?
Y N

256
REPLACE A1L2 card.
RECONNECT A1K2G06 connector.
Verify repair.
Go To Map 2000, Entry Point A.

257
REPLACE A1K2.
RECONNECT A1K2G06 connector.
Verify repair.
Go To Map 2000, Entry Point A.

258
Verify repair.
Go To Map 2000, Entry Point A.

259
REPLACE SEQUENCE card.
Verify repair.
Go To Map 2000, Entry Point A.

260
REPLACE SEQUENCE card.
Verify repair.
Go To Map 2000, Entry Point A.

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MAP 3600-61

C
X
5
8

5225 ALL MODELS

MAP 3600-62

POWER SUPPLY

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261

Check for -15 VDC between J201-3(-) and ground bus(+).

See REference Drawing AA020 and/or MIM 3600.

Is -15 VDC present?

Y N

262

POWER OFF.

REPLACE SEQUENCE card.

Verify repair.

Go To Map 2000, Entry Point A.

263

REPAIR or REPLACE cable from J201-3 and A1K2G06.

Verify repair.

Go To Map 2000, Entry Point A.

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MAP 3600-62

POWER SUPPLY

264
(Entry Point 5-)

REFERENCE DRAWINGS:

- SEQUENCER AA030
- HIGH POWER AA015
- LOW POWER AA020
- AC POWER BOX AA025

The CE should use these drawings when using the POWER MAPs.

REFERENCE DRAWINGS are located in back of the MLM.

See MIM Chapter 4 for locations.

This ENTRY POINT isolates -5 VDC problems.

POWER OFF

Check that P201 is correctly connected to the SEQUENCE card.

See MIM Figures 4-5 and 4-11.

POWER ON. (wait approximately 30 seconds)

Check for more than +3 VDC between J201-12(+) and ground(-). On sequence card.

Is it more than +3 VDC?

Y N

265

Symptoms changed.

Go to Page 27, Step 084, Entry Point PO.

266

Check for -5 VDC between J201-5(-) and ground (+) on Sequence card.

Is -5 VDC present?

Y N

6 6
7 4
D D
J K

20JUL81

PN 6844900

EC 323243

PEC 869365

MAP 3600-63

D
K
6
3

5225 ALL MODELS

MAP 3600-64

POWER SUPPLY

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267

POWER OFF.

Disconnect P201 from sequence card.

NOTE: Meter must be in +DC position and using Rx1 scale.

Check for more than 25 ohms between cable connector P201-5 (-) and ground (+ any D08 pin on A1 board).

See Reference Drawing AA020 and/or MIM 3600.

Is it more than 25 ohms?

Y N

268

POWER OFF.

Remove the following cards from the A1 board:

A1U2

A1T2

A1P2

Check for 25 ohms or more between P201-5(-) and ground (+).

Is resistance 25 ohms or more?

Y N

269

Disconnect cable connector A1Y3.

Check for 25 ohms or more between P201-5(-) and ground (+).

Is resistance 25 ohms or more?

Y N

270

Disconnect cable connector A1Y6.

Check for 25 ohms or more between P201-5 (-) and ground (+).

Is resistance 25 ohms or more?

Y N

6	6	6	6	6
7	6	6	5	5
D	D	D	D	D
L	M	N	P	Q

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EC 323243

PEC 869365

MAP 3600-64

D D
P Q
6 6
4 4

5225 ALL MODELS

MAP 3600-65

POWER SUPPLY

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271

Disconnect cable from A1U2G06
Check for open circuit between P201-5(-) and
ground bus(+).

Is circuit open?

Y N

272

REPAIR or REPLACE cable from P201-5 to
A1U2G06.

Verify repair.

Go To Map 2000, Entry Point A.

273

REPAIR or REPLACE A1 board.

Verify repair.

Go To Map 2000, Entry Point A.

274

Remove two screws that fasten Customer
Access Panel to printer.

See MIM 1010.

Pull Customer Access Panel out far enough to
disconnect connector 1U1.

See Note ==>

See Reference Drawing AA035.

Reconnect connector A1Y6.

Check for 25 ohms or more between P201-5 (-)
and ground (+).

Is resistance 25 ohms or more?

Y N

275

Repair/Replace cable between A1Y6 and
Interface card connector 1U1.

Reconnect A1Y3 connector.

Reinstall cards that were removed.

Verify repair.

Go To Map 2000, Entry Point A.

6
6
D
R

20JUL81

PN 6844900

EC 323243

PEC 869365

MAP 3600-65

D D D
M N R
6 6 6
4 4 5

5225 ALL MODELS

MAP 3600-66

POWER SUPPLY

PAGE 66 OF 108

276

Replace Interface Panel PC card.
Reconnect A1Y3.
Reinstall cards that were removed.
Verify repair.
Go To Map 2000, Entry Point A.

277

REPAIR or REPLACE cable between
connector (A1Y3) and Linear Emitter plug pin
5.
Verify repair.
Go To Map 2000, Entry Point A.

278

Reinstall A1P2.
Check for 25 ohms or more between P201-5(-)
and ground (+).
Is resistance 25 ohms or more?

Y N

279

REPLACE A1P2 card.
Verify repair.
Go To Map 2000, Entry Point A.

280

Reinstall A1T2.
Check for 25 ohms or more between P201-5(-)
and ground (+).
Is resistance 25 ohms or more?

Y N

281

REPLACE A1T2 card.
Swap jumpers to new A1T2 card.
Verify repair.
Go To Map 2000, Entry Point A.

282

REPLACE A1U2 card.
Verify repair.
Go To Map 2000, Entry Point A.

20JUL81 PN 6844900

EC 323243 PEC 869365

MAP 3600-66

D D
J L
6 6
3 4

5225 ALL MODELS

MAP 3600-67

POWER SUPPLY

PAGE 67 OF 108

283

POWER OFF.

REPLACE SEQUENCE card.

Verify repair.

Go To Map 2000, Entry Point A.

284

POWER OFF.

REPAIR or REPLACE cable from P201-5 to
A1U2G06.

Verify repair.

Go To Map 2000, Entry Point A.

20JUL81

PN 6844900

EC 323243

PEC 869365

MAP 3600-67

POWER SUPPLY

285
(Entry Point 17)

REFERENCE DRAWINGS:
SEQUENCER AA030
HIGH POWER AA015
LOW POWER AA020
AC POWER BOX AA025

The CE should use these drawings when using the POWER MAPs.

REFERENCE DRAWINGS are located in back of the MLM.

See MIM Chapter 4 for locations.

This ENTRY POINT isolates +15 VDC problems.

POWER OFF.

Check that P201 is correctly connected to the SEQUENCE card.

See MIM Figures 4-5 and 4-11.

POWER ON (wait approximately 30 seconds).

Check for more than +3 VDC between A1T2D12(+) and ground (-).

Is it more than +3 VDC ?

Y N

286

Symptoms have changed.

Go to VERIFY MAPS.

Verify repair.

Go To Map 2000, Entry Point A.

287

Check for +15 VDC between supply side of F204(+) and ground on sequence card.

See Reference Drawing AA020 and/or MIM 3600.

Is +15 VDC present?

Y N

288

REPLACE sequence card.

Verify repair.

Go To Map 2000, Entry Point A.

6
9
D
S

20JUL81 PN 6844900

EC 323243 PEC 869365

MAP 3600-68

D
S
6
8

5225 ALL MODELS

MAP 3600-69

POWER SUPPLY

PAGE 69 OF 108

289

Check for +15 VDC between load side of F204(+) and ground (-).

Is +15 VDC present?

Y N

290

POWER OFF.

Check F204.

Was F204 good?

Y N

291

Replace F204.

POWER ON.

Did machine power on complete?

Y N

292

POWER OFF.

REPLACE F204.

Disconnect P201.

Check for approximately 100 ohms between J201-1(+) and ground (-) on sequence card.

Is resistance approximately 100 ohms?

Y N

293

REPLACE SEQUENCE card.

Verify repair.

Go To Map 2000, Entry Point A.

294

Remove A1K2 and A1L2.

Check for open circuit between P201-1 and ground.

Is circuit open?

Y N

7 7 7 7 7
2 1 1 0 0
D D D D D
T U V W X

20JUL81

PN 6844900

EC 323243

PEC 869365

MAP 3600-69

D D
W X
6 6
9 9

5225 ALL MODELS

MAP 3600-70

POWER SUPPLY

PAGE 70 OF 108

295

Remove mini-bus cable from A1L2D13 and A1K2D13.

See Reference Drawing AA010.

Check for open circuit between P201-1 and ground.

Is circuit open?

Y N

296

REPAIR or REPLACE cable from P201-1 to A1L2D13 or P201-1 to A1K2D13.

Verify repair.

Go To Map 2000, Entry Point A.

297

REPAIR or REPLACE A1 board.

Verify repair.

Go To Map 2000, Entry Point A.

298

Reinstall A1L2.

Check for 100 ohms or more between P201-1 and ground.

Is resistance 100 ohms or more?

Y N

299

REPLACE A1L2 card.

See MIM 3100 to adjust pots on new A1L2 card.

Reconnect P201 to J201.

Verify repair.

Go To Map 2000, Entry Point A.

300

Reinstall A1K2 card.

Reconnect P201 to J201.

Check for 0 ohms between A1L2G09 and ground.

Is resistance 0 ohms?

Y N

7 7
1 1
D D
Y Z

20JUL81

PN 6844900

EC 323243

PEC 869365

MAP 3600-70

D D D D
U V Y Z
6 6 7 7
9 9 0 0

5225 ALL MODELS
POWER SUPPLY

MAP 3600-71

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301

REPLACE A1K2 card.

Verify repair.

Go To Map 2000, Entry Point A.

302

Remove A1K2 card.

Check for 0 ohms between A1L2G09 and ground.

Is resistance 0 ohms?

Y N

303

REPLACE A1K2 card.

Verify repair.

Go To Map 2000, Entry Point A.

304

Remove A1L2 card.

Check for 0 ohms between A1L2G09 and ground.

Is resistance 0 ohms?

Y N

305

REPLACE A1L2 card.

Verify repair.

Go To Map 2000, Entry Point A.

306

REPLACE A1 Board.

Verify repair.

Go To Map 2000, Entry Point A.

307

Verify repair.

Go To Map 2000, Entry Point A.

308

REPLACE SEQUENCE card.

Verify repair.

Go To Map 2000, Entry Point A.

20JUL81

PN 6844900

EC 323243

PEC 869365

MAP 3600-71

D
T
6
9

5225 ALL MODELS

MAP 3600-72

POWER SUPPLY

PAGE 72 OF 108

309

Check for +15 VDC between J201-1(+) and ground (-).

See Reference Drawing AA020 and/or MIM 3600.

Is +15 VDC present?

Y N

310

POWER OFF.
REPLACE SEQUENCE card.
Verify repair.

Go To Map 2000, Entry Point A.

311

POWER OFF.
REPAIR or REPLACE cable from J201-1 to A1K2D13 or from J201-1 to A1L2D13.
Verify repair.
Go To Map 2000, Entry Point A.

20JUL81 PN 6844900

EC 323243 PEC 869365

MAP 3600-72

POWER SUPPLY

PAGE 73 OF 108

312
(Entry Point 81)

REFERENCE DRAWINGS:
POWER WIRING YA000
SEQUENCER AA030
HIGH POWER AA015
LOW POWER AA020
AC POWER BOX AA025

The CE should use these drawings when using the POWER MAPs. REFERENCE DRAWINGS are located in back of the MLM.

See MIM Chapter 4 for locations or MIM 3600.

This ENTRY POINT isolates +10 VDC and +50 VDC power supply problems.

CAUTION

WHEN CHECKING VOLTAGE WAIT 30 SECONDS AFTER MACHINE IS POWERED ON. THE SUPPLY VOLTAGE FOR +10 VDC AND +50 VDC IS SUPPLIED WHEN K201 IS PICKED.

DANGER

+10 VDC AND +50 VDC CAN SUPPLY HIGH CURRENT.

See MIM Figure 4-10.

POWER OFF. Wait 5 seconds.

POWER ON.

Listen for K201 (contactor) to activate.

To verify that K201 activated, listen for audible pick or visually check contactor. K201 is located inside AC POWER BOX.

Did K201 activate after approximately 30 seconds?

Y N

313
Open TOP COVER.
Override COVER INTERLOCK switch.
Did K201 pick and remain picked?

See MIM Figure 4-1 and 3604.

Y N

8 8 7
1 1 4
E E E
A B C

314

Check for -15 VDC between J201-6(-) (voltage must be MINUS) and Ground (+) on Sequence Card.

See MIM Figures 4-5 and 4-9.

See Reference Drawing AA020 and AA030.

Is -15 VDC OK? (voltage must be minus)

Y N

315

POWER OFF.

Check fuse F206 on Sequence Card.

Is F206 good?

Y N

316

Replace F206.

POWER ON.

Wait 30 seconds.

Did K201 pick and remain picked?

Y N

317

POWER OFF.

Check fuse F206.

Is F206 good?

Y N

318

Turn CB201 OFF.

DISCONNECT LINE POWER PLUG FROM CUSTOMER SOURCE.

Disconnect plugs P201 and P203 from Sequence Card.

Check for open circuit between P201-6 and FRAME Ground.

Is circuit open?

Y N

7 7 7 7 7 7
6 6 5 5 5 5
E E E E E E
D E F G H J

20JUL81

PN 6844900

EC 323243

PEC 869365

MAP 3600-74

E E E E
F G H J
7 7 7 7
4 4 4 4

5225 ALL MODELS

MAP 3600-75

POWER SUPPLY

PAGE 75 OF 108

319

DANGER

120/220 VAC PRESENT IN AC POWER BOX WHEN MACHINE POWER IS OFF AND MACHINE IS PLUGGED INTO CUSTOMER SOURCE.

See MIM Figure 4-9 for location of AC POWER BOX.

Remove cover to gain access to AC POWER BOX.

See MIM 3604 for cover removal and access to AC POWER BOX.

Disconnect wire from K201-B to TB204-13 in AC POWER BOX.

See Reference Drawing AA025.

Check for open circuit between P201-6 and FRAME Ground.

Is circuit open?

Y N

320

Repair/replace cable between P201-6 and K201-B.

Verify repair.

Go To Map 2000, Entry Point A.

321

Replace contactor K201.

Verify repair.

Go To Map 2000, Entry Point A.

322

Replace contactor K201.

Verify repair.

Go To Map 2000, Entry Point A.

323

If contactor K201 is making and breaking contact, the hold coil is open.

Replace contactor K201.

Go To Map 2000, Entry Point A.

324

Go To Map 2000, Entry Point A.

20JUL81 PN 6844900

EC 323243 PEC 869365

MAP 3600-75

E E
D E
7 7
4 4

5225 ALL MODELS

MAP 3600-76

POWER SUPPLY

PAGE 76 OF 108

325

Verify F206 is good and fuse clip is making a good connection to fuse. If so, Replace Bad Sequence Card. Verify repair.

Go To Map 2000, Entry Point A.

326

Check for +15 VDC between J203-2(+) and ground on Sequence Card.

See Reference Drawing AA025.

Is +15 VDC OK? (voltage must be plus)

Y N

327

Check for +5 VDC between J201-12(+) (on Sequence Card) and Ground (-).

Is +5 VDC present?

Y N

328

POWER OFF

Remove fuse F206 from Sequence Card.

See MIM Figure 4-9.

POWER ON

Wait 30 seconds.

Check for +5 VDC between J201-12 (+) and ground.

Is +5 VDC present?

Y N

329

POWER OFF.

Reinstall fuse F206.

Go to Page 27, Step 084,

Entry Point PO.

7 7 7
9 8 7
E E E
K L M

20JUL81

PN 6844900

EC 323243

PEC 869365

MAP 3600-76

E
M
7
6

5225 ALL MODELS

MAP 3600-77

POWER SUPPLY

PAGE 77 OF 108

330

DANGER

120/220 VAC PRESENT IN AC POWER BOX
WHEN MACHINE POWER IS OFF AND
MACHINE IS PLUGGED INTO CUSTOMER
SOURCE.

POWER OFF

Disconnect line power plug from customer
source.

Reinstall fuse F206.

Remove cover to gain access to AC Power Box.

Remove diode CR221 from K201.

Connect remaining wires back to K201.

Reconnect plug to customer source.

See MIM 3604 and Reference Drawing AA025

POWER ON

Check for +5 VDC between J201-12 (+) and
ground (-).

Is +5 VDC present?

Y N

331

POWER OFF

Disconnect power plug from customer source.

Replace contactor K201.

Reinstall diode CR221.

See NOTE. ==>

Observe polarity of diode. See Reference
Drawing AA025.

Go To Map 2000, Entry Point A.

332

POWER OFF

Disconnect power plug from customer source.

Replace diode CR221.

Go To Map 2000, Entry Point A.

20JUL81

PN 6844900

EC 323243

PEC 869365

MAP 3600-77

E
L
7
6

5225 ALL MODELS

MAP 3600-78

POWER SUPPLY

PAGE 78 OF 108

333

POWER OFF.

Turn CB201 OFF.

Remove F206 from Sequence Card.

Disconnect P203 from Sequence Card.

Check for open circuit between P203-2 and Ground.

Is circuit open?

Y N

334

DANGER

120/220 VAC PRESENT IN AC POWER BOX WHEN MACHINE IS OFF AND MACHINE IS PLUGGED INTO CUSTOMER SOURCE.

DISCONNECT LINE POWER PLUG FROM CUSTOMER SOURCE.

See MIM 3604 for removal of covers and access to AC BOX.

Remove covers for access to AC POWER BOX.

See Reference Drawing AA025.

Remove wire from K201-A in AC POWER BOX.

Verify TOP cover is closed.

Check for open circuit between plug P203-2 and Ground.

Is circuit open?

Y N

335

OPEN TOP COVER.

Check for open circuit between P203-2 and Ground.

Is circuit open?

Y N

336

Repair/replace bad cable between cover interlock switch(COM side A) and P203-2.

Verify repair.

Go To Map 2000, Entry Point A.

7 7 7
9 9 9
E E E
N P Q

20JUL81

PN 6844900

EC 323243

PEC 869365

MAP 3600-78

E E E E
K N P O
7 7 7 7
6 8 8 8

5225 ALL MODELS

MAP 3600-79

POWER SUPPLY

PAGE 79 OF 108

337

Repair/replace bad cable between cover interlock switch(NO side A) and K201-A. Verify repair.

Go To Map 2000, Entry Point A.

338

Replace bad K201. Verify repair.

Go To Map 2000, Entry Point A.

339

Replace bad Sequence Card. Verify repair.

Go To Map 2000, Entry Point A.

340

POWER OFF.

See Reference Drawing AA025.

Disconnect wires from side A of cover Interlock Switch COM and N/O.

Close TOP COVER.

Check side A of Interlock switch for less than 5 ohms between COM and N/O .

Is it less than 5 ohms?

Y N

341

Replace bad cover Interlock Switch.

342

Reconnect wires removed from Interlock Switch.

DANGER

120/220 VAC PRESENT IN A/C POWER BOX WHEN MACHINE OFF AND MACHINE IS PLUGGED INTO CUSTOMER SOURCE.

(Step 342 continues)

20JUL81

PN 6844900

EC 323243

PEC 869365

MAP 3600-79

5225 ALL MODELS

MAP 3600-80

POWER SUPPLY

PAGE 80 OF 108

(Step 342 continued)

Remove covers for access to A/C POWER BOX.

See MIM 3604 for cover removal and access to A/C POWER BOX.

POWER ON.

Check for +15 VDC between TB204-12(+) (voltage must be plus) and Ground (-).

Is +15 VDC present (-15 VDC is wrong)?

Y N

343

POWER OFF.

DISCONNECT LINE POWER PLUG FROM CUSTOMER SOURCE.

Cable is open between P203-2 and Cover Interlock switch(COM side A) or is open between TB204-12 and Cover Interlock switch(NO side A).

Repair or replace bad cable.

Verify repair.

Go To Map 2000, Entry Point A.

344

Check for -15 VDC between TB204-13(-) (voltage must be minus) and Ground Bus(+).

Is -15 VDC present?

Y N

345

POWER OFF.

DISCONNECT LINE POWER PLUG FROM CUSTOMER SOURCE.

Repair/replace open wire between P201-6 and TB204-13.

Verify repair.

Go To Map 2000, Entry Point A.

8
I
E
R

20JUL81

PN 6844900

EC 323243

PEC 869365

MAP 3600-80

E E E
A B R
7 7 8
3 3 0

5225 ALL MODELS
POWER SUPPLY
PAGE 81 OF 108

MAP 3600-81

346

POWER OFF.

DISCONNECT LINE POWER PLUG FROM CUSTOMER SOURCE.

Check for less than 5 ohms between TB204-12 and K201-A, and TB204-13 and K201-B.

Both checks less than 5 ohms?

Y N

347

Repair/replace wire that measures more than 5 ohms.

Verify repair.

Go To Map 2000, Entry Point A.

348

Replace bad contactor K201.

Verify repair.

Go To Map 2000, Entry Point A.

349

POWER OFF.

Check TOP COVER MAGNET to see it is good and in alignment.

If magnet is good (not broken) and in correct alignment, replace COVER INTERLOCK SWITCH. It is probably intermittent.

Verify repair.

Go To Map 2000, Entry Point A.

350

After approximately 30 seconds, the actuator fan should be running.

Is actuator fan running?

Y N

Actuator Fan is located between Ribbon motors. See MIM Figure 4-3.

8 8
7 2
E E
S T

20JUL81

PN 6844900

EC 323243

PEC 869365

MAP 3600-81

351

POWER OFF.

Check fuse F202 .

Was F202 good?

Y N

352

Replace F202

POWER ON. Wait 30 seconds.

Did machine power on complete?

Y N

353

POWER OFF.

Verify CB201 is ON.

Check F202 (Replace if bad).

See Reference Drawing YA000.

Disconnect actuator fan cables (only) from TB202-6 and TB202-9.

POWER ON. Wait 30 seconds.

Did machine Power ON complete?

Y N

354

POWER OFF.

See Reference Drawing AA015 and/or MIM 3600.

Reconnect fan cables to TB202-6 and TB202-9.

Disconnect wires to diode heat sink at the following points:

TB203-3

TB203-4

TB203-5

TB203-6

Check F202 (replace if bad)

POWER ON.

Check for 100 VAC(100 to 120 VAC) between TB203-3 and TB203-4.

Was check ok?

Y N

8 8 8 8 8
4 4 4 3 3
E E E E E
U V W X Y

20JUL81 PN 6844900

EC 323243 PEC 869365

MAP 3600-82

E E
X Y
8 8
2 2

5225 ALL MODELS

MAP 3600-83

POWER SUPPLY

PAGE 83 OF 108

355

POWER OFF.

Check F202 (replace if bad)

Remove and insulate both leads to C215.

POWER ON.

Check for 70 VAC(70 to 85 VAC) between TB203-3 and TB203-4.

Was check OK

Y N

356

REPLACE diode heat sink assembly and check F202(replace if bad).

Verify repair.

Go To Map 2000, Entry Point A.

357

REPLACE C215.

Verify repair.

Go To Map 2000, Entry Point A.

358

POWER OFF.

REPLACE diode heat sink assembly.

NOTE:

There are power supply failures that can cause F202 to be slow in going bad. If you replace F202, check for 100 VAC (100 to 120 VAC) between TB203-3 and TB203-4. Also verify that the +10 VDC and +50 VDC are in tolerance. If not in tolerance, check the following 3 parts:

1. Failing C215 (short circuits after load supplied).
2. Failing T202 (short circuits after warm up).
3. Failing Diode heat sink (one or more diodes breaking down under load.

Check these parts by voltage checks, resistance measurements, or by exchanging parts.

Go To Map 2000, Entry Point A.

20JUL81 PN 6844900

EC 323243 PEC 869365

MAP 3600-83

E E E
U V W
8 8 8
2 2 2

5225 ALL MODELS

MAP 3600-84

POWER SUPPLY

PAGE 84 OF 108

359

POWER OFF.

Replace failing actuator fan or cables from TB202 to actuator fan.

Verify repair.

Go To Map 2000, Entry Point A.

360

Verify repair.

Go To Map 2000, Entry Point A.

361

POWER OFF.

Disconnect plug from ACTUATOR fan (located between ribbon motors).

Connect meter (for 120 VAC) between two pins on plug removed from motor.

See Reference Drawing AA015.

DANGER

HAZARDOUS VOLTAGE 120 VAC

POWER ON.

Is 120 VAC present ?

Y N

362

POWER OFF.

Verify F202 is good and correctly connected to fuse clip.

Reconnect plug to ACTUATOR FAN.

See printer operation AC line voltage LABEL (located below CB201).

Record AC line voltage from LABEL.

POWER ON.

DANGER

HAZARDOUS VOLTAGES (120 VAC/220 VAC) PRESENT ON TB202.

(Step 362 continues)

8
7
E
Z

20JUL81

PN 6844900

EC 323243

PEC 869365

MAP 3600-84

5225 ALL MODELS

MAP 3600-85

POWER SUPPLY

PAGE 85 OF 108

(Step 362 continued)

Check for AC voltage recorded above between TB202-1 and TB202-*(4) Line D.

*(4) See TB202 table on Reference Drawing YA000 for terminal board connection for recorded voltage and frequency.

Is recorded AC line voltage OK?

Y N

363

POWER OFF.

DANGER

THERE IS LINE VOLTAGE (120/220 VAC) PRESENT INSIDE AC BOX WHEN PRINTER IS POWERED OFF AND PRINTER IS CONNECTED TO CUSTOMER SOURCE.

Remove covers for access to AC BOX.

See MIM 3604 for cover removal and access to A/C Power Box.

POWER ON.

Wait 30 seconds.

Check for recorded AC line voltage between TB204-1 and TB204-5.

Is recorded AC line voltage OK?

Y N

364

POWER OFF.

DISCONNECT LINE POWER PLUG FROM CUSTOMER SOURCE.

Resistance check for less than 5 ohms.

FROM	TO
TB204-5	K201-1A
TB204-1	K201-2A
TB204-3	K201-2B
TB204-4	K201-1B

Were all checks less than 5 ohms?

Y N

8	8	8	8
6	6	6	6
F	F	F	F
A	B	C	D

20JUL81 PN 6844900

EC 323243 PEC 869365

MAP 3600-85

F F F F
A B C D
8 8 8 8
5 5 5 5

5225 ALL MODELS

MAP 3600-86

POWER SUPPLY

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365

Repair or replace bad wire or FUSE
HOLDER.

Verify repair.

Go To Map 2000, Entry Point A.

366

Replace K201 (contactor).

Verify repair.

Go To Map 2000, Entry Point A.

367

POWER OFF.

DISCONNECT LINE POWER PLUG FROM
CUSTOMER SOURCE.

One of following wires open.

Continuity check wires.

FROM TO

TB204-5 TB202-1
TB204-1 TB202-*(4) Line D

*(4) See TB202 Table, Reference Drawing
YA000.

REPAIR / REPLACE wire.

Verify repair.

Go To Map 2000, Entry Point A.

368

Check for 120 VAC between TB202-6 and
TB202-9.

Is 120 VAC OK?

Y N

369

POWER OFF.

Disconnect one end of each jumper from
TB202.

Continuity check each jumper.

is check OK?

Y N

Reference TB202 TABLE on Reference Drawing
YA000 for correct jumper connections.

8 8 8
7 7 7
F F F
E F G

20JUL81

PN 6844900

EC 323243

PEC 869365

MAP 3600-86

E
S
8
1

E
Z
8
4

F
E
8
6

F
F
8
6

F
G
8
6

5225 ALL MODELS

MAP 3600-87

POWER SUPPLY

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370

Repair/replace bad jumper.
Verify repair.

Go To Map 2000, Entry Point A.

371

Transformer winding open, REPLACE
T202.
Verify repair .

Go To Map 2000, Entry Point A.

372

POWER OFF.

Cable to ACTUATOR FAN is open.
Repair/replace cable.
Verify repair.

Go To Map 2000, Entry Point A.

373

POWER OFF.

See MIM 3804 for replacement

Replace ACTUATOR FAN.

NOTE:

Replacement fan may have repaired problem
or changed symptoms.

Go To Map 2000, Entry Point A.

374

PRESS STOP/RESET key, wait 5 seconds.

Ignore code displayed.

PRESS STOP/RESET key again.

Press 2nd MODE for second digit.

Is 1 displayed ?

Y N

8
9
F
H

8
8
F
J

20JUL81

PN 6844900

EC 323243

PEC 869365

MAP 3600-87

**5225 ALL MODELS
POWER SUPPLY**

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375

This problem is caused by a marginal +10 VDC or +50 VDC supply that changes under load.

POWER OFF.

Remove F207.

Check for 1 ohm or less between the following:

TB203-3 and ground.

TB203-4 and ground.

See Reference Drawing AA020 and/or MIM 3600.

See MIM Figure 4-10.

Is resistance 1 ohm or less?

Y N

376

Reinstall F207 (Verify fuse is good).

Check F208 and F210 (replace if bad).

REPLACE T202.

Verify repair.

Go To Map 2000, Entry Point A.**377**

Remove F208 and F210.

See MIM Figure 4-10.

Check for 1 ohm or less between the following:

Between TB203-5 and ground.

Between TB203-6 and ground.

Is resistance 1 ohm or less.

Y N

378

Reinstall F208 and F210 (verify fuses are good).

REPLACE T202.

Verify repair.

Go To Map 2000, Entry Point A.

F F
H K
8 8
7 8

**5225 ALL MODELS
POWER SUPPLY**

MAP 3600-89

PAGE 89 OF 108

379

Reinstall Fuses F207, F208 and F210 (verify fuses are good).

POWER ON.

Check for approximately 110 VAC between TB203-3 and TB203-4.

Is voltage approximately 107 VAC?

Y N

380

POWER OFF.

Remove two wires from C215.

Check for less than 1 ohm between the wires removed from C215.

Is resistance less than 1 ohm?

Y N

381

Replace transformer T202.

Verify repair.

Go To Map 2000, Entry Point A.

382

Replace capacitor C215.

Verify repair.

Go To Map 2000, Entry Point A.

383

POWER OFF.

REPLACE diode heat sink assembly.

Verify repair.

Go To Map 2000, Entry Point A.

384

Check for more than +3 VDC at J201-8 (+) and ground.

See Reference Drawing AA030.

Is voltage more than +3 VDC ?

Y N

9 9
3 0
L F
M

20JUL81

PN 6844900

EC 323243

PEC 869365

MAP 3600-89

385

Check for +50 VDC (+46 to +55 VDC) between +50 VDC terminal screw (+) (on sequence card) and ground (-).

Is +50 VDC in specifications (+46 VDC to +55 VDC)?

Y N

See Reference Drawing AA020 and/or MIM 3600.

386

POWER OFF.

Check for more than 5 ohms between +10 VDC terminal screw (+) and ground terminal screw (-) on Sequence card.

Permit time for capacitors to charge before reading resistance.

NOTE: After meter is connected to circuit, wait 5 seconds before reading meter to permit capacitors to charge.

Is it more than 5 ohms?

Y N

387

**Go to Page 102, Step 444,
Entry Point 10.**

388

Go to Page 94, Step 405, Entry Point 50.

389

Check for +10 VDC between +10 VDC terminal screw (+) and ground terminal screw (-) on Sequence card.

Is +10 VDC in specifications (9.2 VDC to 11 VDC)?

Y N

390

Go to Page 102, Step 444, Entry Point 10.

F
N
9
0

5225 ALL MODELS

MAP 3600-91

POWER SUPPLY

PAGE 91 OF 108

391

POWER OFF.

This check will test power supply under load.
See MIM Figure 4-14.

Disconnect P213 from J213.

POWER ON.

After 30 seconds jumper A1P2D08 (ground) to A1T2D12(POR), then remove.

Set MODE SWITCH to position 6.

Connect meter between +50 VDC terminal screw (+) and ground terminal screw (-) on Sequence card.

Record reading.

Press STOP/RESET key. This resets error code.

Observe voltmeter when START key is pressed.

Did voltmeter reading decrease more than 5volts from the recorded reading?

Y N

392

POWER OFF.

Reconnect P213 to J213.

Disconnect ground wire from ground terminal screw on sequence card.

Check for less than 5 ohms between wire removed from sequence card and ground bus on power supply.

See MIM Figure 4-10.

Is it less than 5 ohms?

Y N

393

Repair or replace wire between sequence card and ground bus on power supply. (NOTE: This wire has a special part number, see parts list.)

Note: If this wire is open. It is possible to blow all the fuses in the actuator driver cards, when machine is powered OFF.

Go To Map 2000, Entry Point A.

9
F
P
Q

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EC 323243

PEC 869365

MAP 3600-91

394

Disconnect P201 from Sequence card.

Check for more than 5 ohms between P201-pin 8 and ground.

Is it more than 5 ohms?

Y N

395

Remove paddle card connector from A1Y5 location.

Check for more than 5 ohms between P201-pin 8 and ground.

Is it more than 5 ohms?

Y N

396

REPAIR/REPLACE cable from P201-8 to P213-2 or J213-2 to A1Y5 paddle card connector.

Verify repair.

Go To Map 2000, Entry Point A.

397

REPLACE A1N2 card.

Verify repair.

Go To Map 2000, Entry Point A.

See Reference Drawing AA045.

398

REPLACE SEQUENCE card.

Verify repair.

Go To Map 2000, Entry Point A.

399

POWER OFF.

Reconnect P213 to J213.

Go to Page 94, Step 405, Entry Point 50.

F
L
8
9

5225 ALL MODELS

MAP 3600-93

POWER SUPPLY

PAGE 93 OF 108

400

POWER OFF.

PROBE A1N2G06.

POWER ON.

Did PROBE indicate DOWN and then after approximately 30 seconds indicate UP?

Y N

401

POWER OFF.

Remove cable from A1P1E13.

PROBE cable A1P1E13.

POWER ON.

Did PROBE indicate DOWN for approximately 30 seconds and then indicate UP?

Y N

See Reference Drawing AA010.

402

REPAIR or REPLACE cable from J201-8 to A1P1E13

Verify repair.

Go To Map 2000, Entry Point A.

403

REPAIR or REPLACE A1 board.

Verify repair.

Go To Map 2000, Entry Point A.

404

POWER OFF.

REPLACE A1N2 card.

Swap jumpers to new A1N2 card.

Verify repair.

Go To Map 2000, Entry Point A.

20JUL81 PN 6844900

EC 323243 PEC 869365

MAP 3600-93

POWER SUPPLY

405
(Entry Point 50)

REFERENCE DRAWINGS:

- HIGH POWER AA015
- LOW POWER AA020
- AC POWER BOX AA025

The CE should use these drawings when using the POWER MAPs.

REFERENCE DRAWINGS are located in back of the MLM.

See MIM Chapter 4 for locations/or MIM 3600.

This ENTRY POINT isolates +50 VDC problems

Enter this ENTRY POINT from ENTRY POINT 81 only (See Reference Drawing AA015).

POWER OFF.

Check fuse F207.

Is F207 good?

Y N

See MIM Figure 4-10.

406

Replace F207.

Check F208 and F210 (if bad, replace).

POWER ON.

Wait 30 seconds.

Did power on complete?

Y N

407

POWER OFF.

Check F207, F208 and F210 (if bad, replace).

See MIM Figures 4-5 and 4-11.

Disconnect wire from +50 VDC terminal screw on sequence card.

Check for more than 10 ohms between +50 VDC wire disconnected from sequence card(+) and ground bus(-).

(Step 407 continues)

See MIM Figure 4-10 for bus location.

9 9
8 7
F F
R S

20JUL81

PN 6844900

EC 323243

PEC 869365

MAP 3600-94

POWER SUPPLY

(Step 407 continued)
Is it more than 10 ohms?

Y N

408

Check F208 and F210 (replace if bad)
Disconnect P204, P205, and P206 from
SERVO POWER AMPLIFIER card.
Remove F209.

See MIM 3614 Figure 4-10 for bus locations.

Check for more than 10 ohms between
+50 VDC bus (+) and ground bus (-).

Is resistance more than 10 ohms? (Wait for
capacitors to charge.)

Y N

409

Disconnect following wires from +50 VDC
bus bar to P206-6 and P205-8.
Check for more than 10 ohms between +50
VDC bus (+) and ground bus (-).

See Reference Drawing AA050, AA055 and/or
MIM 3600.

Is resistance more than 10 ohms ? Wait
for capacitors to charge.)

Y N

410

Connect meter between +50 VDC BUS
(+) and ground bus (-).
Leave meter connected.

See Reference Drawing AA010.

While observing meter remove FDS
cables from A1 board one at a time.

FDS = Flat distribution system cables. (Flat
copper color bus cable.) See MIM Figure 4-10.

Is resistance more than 10 ohms ?

Y N

411

Remove F207.

(See Reference Drawing AA015 and/or MIM
3600).

Is resistance more than 10 ohms?

Y N

9 9 9 9 9 9
7 7 7 6 6 6
F F F F F F
T U V W X Y

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EC 323243 PEC 869365

MAP 3600-95

F F F
W X Y
9 9 9
5 5 5

5225 ALL MODELS

MAP 3600-96

POWER SUPPLY

PAGE 96 OF 108

412

Remove FDS cables from +50 VDC bus.

See Reference Drawing AA010.

Is resistance more than 10 ohms?

Y N

413

Short between +50 VDC bus and ground bus.

Check C207 and C210.

Check for foreign materials that could cause a short circuit.

REPLACE failing capacitor.

Remove meter.

Verify repair.

Go To Map 2000, Entry Point A.

414

REPAIR or REPLACE the failing FDS cable.

Verify repair.

Go To Map 2000, Entry Point A.

415

REPLACE diode heat sink (Verify fuses are good).

See MIM 3600.

Verify repair.

Go To Map 2000, Entry Point A.

416

Reinstall the FDS cable (removed in earlier step) that made the meter indicate more than 10 ohms.

Remove the associated actuator card.

Is resistance more than 10 ohms?

Y N

417

Was the associated actuator card A1H2?

Y N

418

REPAIR or REPLACE A1 board.

Verify repair.

Go To Map 2000, Entry Point A.

9 9
7 7
F G
Z A

20JUL81

PN 6844900

EC 323243

PEC 869365

MAP 3600-96

F F F F F G
S T U V Z A
9 9 9 9 9
4 5 5 5 6 6

5225 ALL MODELS

MAP 3600-97

POWER SUPPLY

PAGE 97 OF 108

419

Remove A1K4.

Is resistance more than 10 ohms?

Y N

420

REPAIR or REPLACE logic board.

Verify repair.

Go To Map 2000, Entry Point A.

421

REPLACE A1K4.

Verify repair.

Go To Map 2000, Entry Point A.

422

REPLACE that actuator card.

Verify repair.

Go To Map 2000, Entry Point A.

423

REPAIR OR REPLACE cable from +50 VDC bus to P206, or P205.

Verify repair.

Go To Map 2000, Entry Point A.

424

REPLACE SERVO AMPLIFIER ASSEMBLY.

Verify repair.

Go To Map 2000, Entry Point A.

425

POWER OFF

REPLACE SEQUENCE CARD.

Verify repair.

Go To Map 2000, Entry Point A.

426

Verify repair.

Go To Map 2000, Entry Point A.

20JUL81

PN 6844900

EC 323243

PEC 869365

MAP 3600-97

427

POWER OFF

Connect meter to read voltage between +50V bus and ground bus.

Disconnect P213 from J213.

See MIM Figure 4-14.

POWER ON.

Jumper A1T2D12 (POR) to A1P2D08 (GROUND), then remove.

WAIT 30 seconds.

Observe voltmeter for the following two indications:

1. +50 VDC is within specifications (+46 to +55 VDC).

Press Stop and then Start key.

2. Voltages must remain constant (voltage must not drop more than 5 volts).

Are both indications correct?

Y N

428

Check for 100 VAC(100 to 120 VAC) between TB203-3 and TB203-4.

See Reference Drawing AA015 and/or MIM Figure 4-9.

Was check OK?

Y N

429

Check for 70 VAC(70 to 85 VAC) between TB203-3 and TB203-4.

Was check OK ?

Y N

1	1	1	
0	0	0	9
1	1	0	9
G	G	G	G
B	C	D	E

20JUL81 PN 6844900

EC 323243 PEC 869365

MAP 3600-98

8
9
F
G

5225 ALL MODELS

MAP 3600-99

POWER SUPPLY

PAGE 99 OF 108

430

POWER OFF.

Remove and insulate both leads from C215.

POWER ON.

Wait 30 seconds.

Check for 70 VAC(70 to 85 VAC) between TB203-3 and TB203-4.

Was check OK ?

Y N

431

POWER OFF.

Check for less than 5 ohms between TB203-3 and ground bus and between TB203-4 and ground bus.

Is resistance less than 5 ohms for both measurements?

Y N

432

Reconnect C215.

Disconnect cables to diodes from TB203-3 , TB203-4, TB203-5, and TB203-6.

(See Reference Drawing AA015 and/or MIM 3600)

POWER ON.

Wait 30 seconds.

Check for 50 VAC between the following:

TB203-3 and ground bus.

TB203-4 and ground bus.

Were both checks OK?

Y N

433

POWER OFF.

REPLACE T202.

Verify repair.

Go To Map 2000, Entry Point A.

1 1 1
0 0 0
0 0 0
G G G
F G H

20JUL81

PN 6844900

EC 323243

PEC 869365

MAP 3600-99

8899
DDTT
9999
GGGH

5225 ALL MODELS

MAP 3600-100

POWER SUPPLY

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434
POWER OFF.
REPLACE diode heat sink.
Verify repair.
Go To Map 2000, Entry Point A.

435
REPLACE diode heat sink.
Verify repair.
Go To Map 2000, Entry Point A.

436
POWER OFF.
REPLACE C215.
Verify repair.
Go To Map 2000, Entry Point A.

437
POWER OFF.
Remove leads from C215.
Check for less than 5 ohms between 2 leads
removed from C215.
Is resistance less than 5 ohms?
Y N

438
Reconnect J213 to P213.
REPLACE T202.
Verify repair.
Go To Map 2000, Entry Point A.

439

Reconnect J213 to P213.
REPLACE C215.
Verify repair.
Go To Map 2000, Entry Point A.

20JUL81 PN 6844900

EC 323243 PEC 869365

MAP 3600-100

G
5
8
8

5225 ALL MODELS

MAP 3600-101

POWER SUPPLY

PAGE 101 OF 108

440

POWER OFF.

Check for less than 5 ohms between TB203-3 and ground bus and TB203-4 and ground bus.

Is resistance less than 5 ohms?

Y N

441

Reconnect P213 to J213.

REPLACE T202.

Verify repair.

Go To Map 2000, Entry Point A.

442

Reconnect P213 to J213

REPLACE diode heat sink assembly.

Verify repair.

Go To Map 2000, Entry Point A.

443

REPAIR or REPLACE wire from +50 VDC bus to +50 VDC terminal screw (on sequence card).

NOTE: This wire has a special part number, see parts list.

Go To Map 2000, Entry Point A.

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PN 6844900

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PEC 869365

MAP 3600-101

POWER SUPPLY

444

(Entry Point 10)

REFERENCE DRAWINGS:

HIGH POWER AA015

LOW POWER AA020

AC POWER BOX AA030

The CE should use these drawings when using the POWER MAPs.

REFERENCE DRAWINGS are located in back of MLM.

This ENTRY POINT isolates +10 VDC problems.

See MIM Chapter 4 for locations or MIM 3600.
See Reference Drawing AA015

THIS ENTRY POINT TO BE ENTERED AFTER ENTERING ENTRY POINT 81 ONLY.

POWER OFF.

Check fuse F208 and F210.

See MIM Figure 4-10.

Is F208 and F210 good?

Y N

445

Replace fuse F208 and/or F210.

POWER ON.

Wait 30 seconds.

Did machine power on complete?

Y N

1 1 1
0 0 0
7 7 3
G G G
J K L

20JUL81 PN 6844900

EC 323243 PEC 869365

MAP 3600-102

G
L
1
0
2

5225 ALL MODELS
POWER SUPPLY
PAGE 103 OF 108

MAP 3600-103

446

POWER OFF.

Disconnect wire from +10 VDC terminal screw on sequence card.
Check F208 and F210 (Replace if bad.).

See MIM Figures 4-5 and 4-11.

POWER ON.

Wait 30 seconds.
Check for +10 VDC between +10V wire removed from sequence card(+) and ground bus (-).

See MIM Figure 4-10 for Bus location.

Is +10 VDC in specifications (9.2 VDC to 11 VDC)?

Y N

|

447

POWER OFF

Replace F208 and F210.
Disconnect P204 and P205 from SERVO POWER AMPLIFIER assembly.
Permit time for capacitors to charge before reading resistance.
Check for 5 ohms or more between +10 VDC bus (+) and ground bus (-).
Leave meter connected.

NOTE: After meter is connected to circuit, wait 5 seconds before reading meter to permit capacitors to charge.

Is resistance 5 ohms or more?

Y N

|

448

Disconnect cable from +10 VDC bus to P206-3.
Permit time for capacitors to charge before reading resistance.

Is resistance 5 ohms or more?

Y N

|

|

1 1 1 1
0 0 0 0
6 6 6 4
G G G G
M N P Q

20JUL81 PN 6844900
EC 323243 PEC 869365
MAP 3600-103

449

While observing meter remove FDS cables one at a time from A1 board.

Permit time for capacitors to charge before reading resistance.

FDS = Flat distribution system cable. See MIM Figure 4-16.

NOTE: After meter is connected to circuit, wait 5 seconds before reading meter to permit capacitors to charge.

Is resistance 5 ohms or more?

Y N

450

Disconnect ribbon motor plugs.

See MIM 3800.

Permit time for capacitors to charge before reading resistance.

Is resistance 5 ohms or more?

Y N

451

Disconnect +10 VDC wires (tied in cables to the ribbon motors) from +10 VDC bus.

Permit time for capacitors to charge before reading resistance.

Is resistance 5 ohms or more?

Y N

452

While observing the meter, remove FDS cables from +10 VDC bus one at a time.

Permit time for capacitors to charge before reading resistance.

Is resistance 5 ohms or more?

Y N

453

Short between +10 VDC bus and ground bus.

Check C211 and C214.

Check for foreign materials that could cause a short circuit.

REPLACE failing capacitor.

Verify repair.

Reconnect all disconnected assemblies.

Go To Map 2000, Entry Point A.

1
0
5
R
1
0
5
S
1
0
5
T
1
0
5
G
1
0
5
U

20JUL81 PN 6844900

EC 323243 PEC 869365

MAP 3600-104

G G G G G G 5225 ALL MODELS
M N P V W X
1 1 1 1 1 1 POWER SUPPLY
0 0 0 0 0 0
3 3 3 5 5 5 PAGE 106 OF 108

MAP 3600-106

461
REPAIR or REPLACE A1 board.
Verify repair.
Go To Map 2000, Entry Point A.

462
Remove A1K4.
Permit time for capacitors to charge
before reading resistance.
Is resistance 5 ohms or more?
Y N

463
REPAIR or REPLACE A1 board.
Verify repair.
Go To Map 2000, Entry Point A.

464
REPLACE A1K4.
Verify repair.
Go To Map 2000, Entry Point A.

465
REPLACE that associated actuator card.
Verify repair.
Go To Map 2000, Entry Point A.

466
REPAIR or REPLACE cable from P206-3 to
+10 VDC bus.
Verify repair.
Go To Map 2000, Entry Point A.

467
REPLACE SERVO POWER AMPLIFIER.
Verify repair.
Go To Map 2000, Entry Point A.

468
POWER OFF

REPLACE SEQUENCE card.
Verify repair.
Go To Map 2000, Entry Point A.

20JUL81 PN 6844900

EC 323243 PEC 869365

MAP 3600-106

G
J
1
0
0
2

K
1
0
0
2

5225 ALL MODELS
POWER SUPPLY
PAGE 107 OF 108

MAP 3600-107

469

Verify repair.

Go To Map 2000, Entry Point A.

470

POWER ON.

Wait approximately 30 seconds.

Check for +10 VDC between +10 VDC BUS (+) and GROUND BUS(-).

Is +10 VDC present?

Y N

See Reference Drawing AA020 and/or MIM Figure 4-10.

471

Check for +10 VDC between screw CR212 (+) located on heat sink and ground bus(-).

Is +10 VDC present?

Y N

See MIM Figure 4-10.

472

Check for 22 VAC(20 to 30 VAC) between TB203-5 and TB203-6.

Is check OK?

Y N

473

POWER OFF

Disconnect wires from TB203-5 and TB203-6 (diode side).

POWER ON

Wait 30 seconds.

Check for 22 VAC(20 VAC to 30 VAC) between TB203-5 and TB203-6.

Is check OK?

Y N

474

POWER OFF.

REPLACE T202.

Verify repair.

Go To Map 2000, Entry Point A.

1
8
G
Y

1
8
G
Z

1
8
H
A

1
8
H
B

20JUL81

PN 6844900

EC 323243

PEC 869365

MAP 3600-107

G G H H
Y Z A B
1 1 1 1
0 0 0 0
7 7 7 7

5225 ALL MODELS

MAP 3600-108

POWER SUPPLY

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475

POWER OFF.
REPLACE diode heat sink.
Verify repair.
Go To Map 2000, Entry Point A.

476

POWER OFF.
Check for 0 ohms between TB203-5 and ground bus and TB203-6 and ground bus.
Is resistance 0 ohms for both measurements?

Y N

477

REPLACE T202.
Verify repair.
Go To Map 2000, Entry Point A.

478

REPLACE diode heat sink assembly.
Verify repair.
Go To Map 2000, Entry Point A.

479

POWER OFF.

REPAIR or REPLACE wire from heat sink to bus.
Verify repair.
Go To Map 2000, Entry Point A.

480

POWER OFF.

REPAIR or REPLACE wire from +10 VDC bus to +10 VDC terminal screw (on Sequence card).
NOTE: This wire has a special part number, see parts list.
Verify repair.
Go To Map 2000, Entry Point A.

20JUL81 PN 6844900

EC 323243 PEC 869365

MAP 3600-108

RIBBON MOVEMENT AND CONTROL

PAGE 1 OF 23

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
2000	NN	2	001
2000	88	3	004
3000	88	3	004
4000	NN	2	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	002	2000	A
3	005	2000	A
4	010	2000	A
4	011	2000	A
5	013	2000	A
8	021	2000	A
8	022	2000	A
9	023	2000	A
10	027	2000	A
10	028	2000	A
11	031	2000	A
11	032	2000	A
12	034	2000	A
13	036	2000	A
13	037	2000	A
13	039	2000	A
15	042	2000	A
15	044	2000	A
16	045	2000	A
17	048	2000	A
17	050	2000	A
18	051	2000	A
19	054	2000	A
19	055	2000	A
20	058	2000	A
20	059	2000	A
20	060	2000	A
21	062	2000	A
22	068	2000	A
22	065	2000	A
22	066	2000	A
22	067	2000	A
23	070	2000	A
23	071	2000	A
4	007	4000	D

5225 ALL MODELS
RIB MVMNT AND CNTRL
PAGE 2 OF 23

MAP 3800-2

001
(Entry Point NN)

Symptoms:

-Ribbon motor(s) are noisy.

Set MODE SWITCH to 4.

Jumper A1K4B05 to A1K4D08

See drawing AA060.

Press START.(Ribbon motors should be turning.)
Press STOP.

Wait 3 seconds after pressing STOP before
pressing START.

Press START.(Ribbon motors should run in
opposite direction.)

Press and release STOP.

Remove jumper A1K4B05 to A1K4D08

**Was either motor noisy (not NORMAL level
of noise)?**

Y N

002

Symptoms have changed.

Go To Map 2000, Entry Point A.

003

Go to Page 6, Step 015, Entry Point A.

13APR82 PN 6844901
EC 997163 PEC 323243
MAP 3800-2

004
(Entry Point 88)

Symptoms:

Operator Panel Indicators are shown in table to the right.=====>

PANEL INDICATORS =====	STATUS =====
ATTENTION	ON
READY	OFF
DISPLAY	8 or 9

While holding 2ND MODE pressed, note number in DISPLAY.

Is 8 or 9 displayed?

Y N

005

Symptoms have changed.

Go To Map 2000, Entry Point A.

006

Verify FDS (Flat Distribution System) cable connector is connected to A1H2 correctly.

Verify FORMS Thickness adjustment is set for correct number of forms.

Verify ribbon is in good condition.

If any of the above conditions are present, correct them.

See MIM Figure 4-16, and drawing AA060.

PART FORMS -----	FORMS CONTROL RANGE -----
Single Part	0-3
Two Part	4-6
Three Part	6-8
Four Part	9-12
Five Part	13-16
Six Part	17-19

Normal end of ribbon life indications:

1. Ink in ribbon used up.
2. Severe ribbon folding.
3. Ribbon material wear.

All of the above conditions represent normal end of 5225 ribbon life and ribbon needs to be replaced.

Is 88 or 89 a solid error?

Y N

||
||

4 4
A B

13APR82 PN 6844901

EC 997163 PEC 323243

MAP 3800-3

**5225 ALL MODELS
RIB MVMNT AND CNTRL**

PAGE 4 OF 23

007

Possible MECHANICAL FAILURES. Any one of these conditions can cause an intermittent problem:

1. Print Actuators.
2. Ribbon Area.
3. Platen to Print Actuator Adjustment.

Go To Map 4000, Entry Point D.

008

Open top cover (do not override Cover Interlock switch).

Measure for less than +3 VDC between A1P1E13 (+) (HPG) and ground A1R2D08 (-).

See drawing AA045.

Is it less than +3 VDC?

Y N

009

Measure for less than +3 VDC between J201-8 (+) on sequence card and ground (-).

See Reference Drawing AA030.

Is it less than +3 VDC?

Y N

010

POWER OFF

REPLACE Sequence card.

See MIM 3605.

Verify repair.

Go To Map 2000, Entry Point A.

011

POWER OFF.

REPAIR/REPLACE wire from P201-8 to P213-2 or wire from J213 to A1Y5 connector.

See Reference Drawing AA045.

Verify repair.

Go To Map 2000, Entry Point A.

C
4

5225 ALL MODELS
RIB MVMNT AND CNTRL
PAGE 5 OF 23

MAP 3800-5

012

POWER OFF

Close Top cover.

Jumper A1N2G06 (HPG) to ground.

POWER ON.

Wait 30 seconds.

Press 2nd Mode key.

Is 81 in display?

Y N

013

POWER OFF.

REPLACE A1N2 card.

Verify repair.

Go To Map 2000, Entry Point A.

014

POWER OFF.

Remove jumper between A1N2G06 and ground.

POWER ON.

Wait 30 seconds.

Go to Page 6, Step 015, Entry Point A.

13APR82 PN 6844901

EC 997163 PEC 323243

MAP 3800-5

015

(Entry Point A)

Press STOP key. Wait 3 seconds.

Are both ribbon spools/motors turning continuously?

Y N

016

POWER OFF.

Open top cover.

Remove both ribbon spools from FLANGE GEAR.

Remove FLANGE GEARS from both motors by removing clip with screwdriver. See MIM 3805.

Check both DRIVE GEAR CLAMPS FOR tightness.

Check each FLANGE GEAR for damage.

BY Hand turn each ribbon DRIVE GEAR clockwise(CW) and counter clockwise(CCW).

While DRIVE GEAR is turned, check for mechanical binding damaged gears or unstable rotation.

Is there damaged or worn parts?

Y N

017

Is there a symptom of binding or unstable rotation with POWER OFF?

Y N

2 2 2
3 2 1 7
D E F G

REFERENCE DRAWINGS:

RIBBON CONTROL AA060
HIGH POWER AA015

See MIM Figure 4-12.

When ribbon spools are removed, place spools on top of actuator cover. Do not completely remove ribbon from machine.

See MIM 3802 and 3805.

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MAP 3800-6

018

Reinstall flange gears.

With cover open and cover interlock switch in OVERRIDE mode, dc power(+10v) is supplied to ribbon motors.

Install CE jumper (A1T2D12 to A1T2D08).

OVERRIDE COVER INTERLOCK SWITCH.

See MIM Figure 4-1.

POWER ON.

Wait 30 seconds.

By Hand turn each ribbon FLANGE GEAR CW and CCW.

See MIM Figure 4-12.

Does each motor turn with slight resistance to rotation?

Y N

019

POWER OFF.

Remove ribbon card A1K4.

POWER ON.

When machine is powered ON, CE should wait approximately 30 seconds for power (+10 VDC, +48 VDC) to turn ON and power ON diagnostics to be completed.

By Hand turn each ribbon FLANGE GEAR CW and CCW.

Note which motor does not turn freely or is locked.

Does each motor turn freely?

Y N

020

POWER OFF.

Swap cables connector P211 and P212 at ribbon motors.

See MIM Figure 4-12.

POWER ON

By Hand turn each ribbon motor CW and CCW. Note which motor is locked or cannot be turned.

(Step 020 continues)

**5225 ALL MODELS
RIB MVMNT AND CNTRL**

MAP 3800-8

PAGE 8 OF 23

(Step 020 continued)
Is same motor locked as in above step?

Y N

021
RIBBON MOTOR CABLE FAILURE

POWER OFF.

REPAIR and/or REPLACE ribbon motor cable, from motor to A1K5.

Remove CE jumper A1T2D12 to A1T2D08.

Reinstall A1K4 card.

Reinstall ribbon spools.

See MIM 3802

Reconnect cables (P211,212) at motor and A1K5.

Verify REPAIR.

Go To Map 2000, Entry Point A.

022
RIBBON MOTOR FAILURE

POWER OFF.

REPLACE failing MOTOR.

See MIM 3805.

Remove CE jumper.

Reinstall A1K4 card

Reconnect cable connector P211 and P212 to original position.

Reinstall ribbon spools.

See MIM 3802.

Verify REPAIR.

Go To Map 2000, Entry Point A.

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MAP 3800-8

H J
7 7

5225 ALL MODELS
RIB MVMNT AND CNTRL
PAGE 9 OF 23

MAP 3800-9

023

RIBBON CARD (A1K4) FAILURE

POWER OFF.

REPLACE A1K4 card.

Remove CE jumper A1T2D12 to A1T2D08.

Reinstall ribbon spools.

See MIM 3802.

Verify REPAIR.

Go To Map 2000, Entry Point A.

024

Reinstall ribbon spools.

See MIM 3802.

Remove CE jumper while observing ribbon spools for possible rotation of ribbon motors (ribbon rotation should occur before 30 seconds).

Did either motor attempt to turn?

Y N

025

Install CE jumper(A1T2D12 to A1T2D08).

Connect probe to pin A1K4B02(+Ribbon Error).

While removing CE jumper (A1T2D12 to A1T2D08), note if probe indicators change.

Did probe indicators change?

Y N

1 1 1
3 1 0
K L M

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MAP 3800-9

026

Install CE jumper(A1T2D12 to A1T2D08).

Connect probe to pin A1K4B10(-Ribbon Error RST).

While removing CE jumper (A1T2D12 to A1T2D08), note if probe indicators pulse (or change).

Did probe indicators pulse?

Y N

027

**CONTROL AND SENSE CARD (A1N2)
FAILURE**

Before installing new A1N2 card, verify card is jumpered for correct number of PRINT ACTUATOR GROUPS. See MIM 3103.

POWER OFF.

REPLACE A1N2 card.

Verify REPAIR.

Go To Map 2000, Entry Point A.

028

RIBBON CARD (A1K4) FAILURE

POWER OFF.

REPLACE A1K4 card.

Verify REPAIR.

Go To Map 2000, Entry Point A.

L
9

5225 ALL MODELS
RIB MVMNT AND CNTRL
PAGE 11 OF 23

MAP 3800-11

029

Install CE jumper (A1T2D12 to A1T2D08).

Connect probe to pin A1K4D06(-Run).

While removing CE jumper (A1T2D12 to A1T2D08), note if probe indicators pulse (in 30 seconds).

Did probe indicators pulse?

Y N

030

Install jumper between A1K4D06 and A1K4D08

Did ribbon run?

Y N

031

A1K4 card failure.

POWER OFF.

Remove jumper A1K4D06 to A1K4D08.

REPLACE A1K4 card.

Verify REPAIR.

Go To Map 2000, Entry Point A.

032

CONTROL AND SENSE CARD(A1N2)
FAILURE

Before installing new A1N2 card, verify card is jumpered for correct number of PRINT ACTUATOR GROUPS. See MIM 3103.

POWER OFF.

REPLACE A1N2 card.

Verify REPAIR.

Go To Map 2000, Entry Point A.

1
2
N

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MAP 3800-11

N
1
1

**5225 ALL MODELS
RIB MVMNT AND CNTRL**

MAP 3800-12

PAGE 12 OF 23

033

Install CE jumper (A1T2D12 to A1T2D08).

Connect probe to pin A1K4B12(+Ribbon Busy).

While removing CE jumper (A1T2D12 to A1T2D08), note if probe indicators pulse (in 30 seconds).

Did probe indicators pulse?

Y N

034

RIBBON CARD (A1K4) FAILURE

POWER OFF.

REPLACE A1K4 card.

Verify REPAIR.

Go To Map 2000, Entry Point A.

035

POWER OFF.

Install CE jumper (A1T2D12 to A1T2D08).

CAUTION

+50vdc is present at A1K5. Use caution when connector is removed.

See drawing AA060.

Disconnect Ribbon Motor cable connector at A1K5.

See MIM Figure 4-16.

POWER ON. Wait 30 seconds.

Measure +10 VDC volts at pin B08 of cable connector(A1K5 end). (-) meter lead to frame ground.

Is +10 vdc present?

Y N

| |
| |
| |
| |
| |

1 1
3 3
P Q

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EC 997163

PEC 323243

MAP 3800-12

K P Q
9 1 1
2 2

5225 ALL MODELS
RIB MVMNT AND CNTRL

MAP 3800-13

PAGE 13 OF 23

036

POWER OFF.

Remove jumper A1T2D12 to A1T2D08.
REPAIR and/or REPLACE wiring from
P211 or P212 to +10 vdc Bus.

See Reference Drawing AA060.

Verify REPAIR.

Go To Map 2000, Entry Point A.

037

RIBBON CARD (A1K4) FAILURE

POWER OFF.

Remove jumper A1T2D12 to A1T2D08.
Reconnect cable A1K5.
REPLACE A1K4 card.
Verify REPAIR.

Go To Map 2000, Entry Point A.

038

Probe A1K4B10(-Ribbon Error RST).

Is probe UP indicator ON?

Y N

039

CONTROL AND SENSE CARD (A1N2)
FAILURE

Before installing new A1N2 card, verify card is
jumpered for correct number of PRINT
ACTUATOR GROUPS. See MIM 3103.

POWER OFF.

REPLACE A1N2 card.

Verify REPAIR.

Go To Map 2000, Entry Point A.

1
4
R

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MAP 3800-13

R
1
3

**5225 ALL MODELS
RIB MVMNT AND CNTRL**

MAP 3800-14

PAGE 14 OF 23

040

POWER OFF.

CAUTION

+50vdc is present at A1K5. Use caution when connector is removed.

See drawing AA060.

Disconnect ribbon motor cable connector at A1K5.

See Drawing AA060 and MIM Figure 4-16.

POWER ON. Wait 30 seconds.

Measure +10 vdc AT CABLE CONNECTOR (A1K5 cable end) pins in table to the right.=====>

PIN	SIGNAL NAME
D04	Left Motor Phase A
D05	Left Motor Phase Not B
D06	Left Motor Phase Not A
D07	Left Motor Phase B

Connect (-) meter lead to frame ground for each measurement.

Is +10 vdc present at every pin?

Y N

041

POWER OFF.

Disconnect cable connector P211 at left ribbon motor.

See MIM Figure 4-12.

POWER ON.

With CE meter, measure +10 vdc at cable connector P211 pins 2 and 3.

Connect (-) meter lead to frame ground.

Is +10 vdc present?

Y N

1 1 1
6 5 5
S T U

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MAP 3800-14

T U
1 1
4 4

**5225 ALL MODELS
RIB MVMNT AND CNTRL**

MAP 3800-15

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042
10 VDC WIRING FAILURE

POWER OFF.

REPAIR and/or REPLACE wiring to +10 vdc Bus.

See Reference Drawing AA060.

Verify REPAIR.
Go To Map 2000, Entry Point A.

043
POWER OFF.

Continuity check ribbon motor cable, as shown in table to the right.=====>

A1K5 CONN END	LEFT MOTOR CONN P211
FROM	TO
=====	=====

Continuity check ribbon motor cable for short (Pin to pin, and pin to frame ground).

Pin D04	Pin 05
Pin D05	Pin 06
Pin D06	Pin 04
Pin D07	Pin 01

Continuity check good?

Y N

044
RIBBON MOTOR CABLE failure

REPAIR or REPLACE RIBBON MOTOR CABLE, from MOTOR to A1K5.

See Reference Drawing AA060.

Verify REPAIR.
Go To Map 2000, Entry Point A.

1
6
V

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MAP 3800-15

S V
1 1
4 5

5225 ALL MODELS
RIB MVMNT AND CNTRL

MAP 3800-16

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045

LEFT RIBBON MOTOR FAILURE

REPLACE left RIBBON MOTOR.

See MIM 3805.

Reconnect cable connector A1K5.

Verify REPAIR.

Go To Map 2000, Entry Point A.

046

With CE meter, measure +10 vdc AT CABLE CONNECTOR (A1K5 connector end) pins in table to the right.=====>

PIN

SIGNAL NAME

PIN	SIGNAL NAME
B04	Right Motor Phase A
B05	Right Motor Phase B
B07	Right Motor Phase Not A
B08	Right Motor Phase Not B

Connect (-) meter lead to frame ground for each measurement.

Is +10 vdc present at every pin?

Y N

047

POWER OFF.

Disconnect cable connector P212 from right motor.

See MIM Figure 4-12.

POWER ON. Wait 30 seconds.

With CE meter, measure +10 VDC at cable connector P212 pins 2 and 3.

Connect (-) meter lead to frame ground.

Is +10 vdc present?

Y N

1 1 1
8 7 7
W X Y

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MAP 3800-16

X Y
1 1
6 6

5225 ALL MODELS
RIB MVMNT AND CNTRL

MAP 3800-17

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048

+10 VDC WIRING FAILURE

POWER OFF.

REPAIR or REPLACE wiring to +10 vdc Bus.

Verify REPAIR.

Go To Map 2000, Entry Point A.

See Reference Drawing AA060.

049

POWER OFF.

Continuity check of ribbon motor cable shown in
table to the right.=====>

A1K5 CONN END	RIGHT MOTOR CONN P212
FROM	TO
=====	=====
Pin B04	Pin 05
Pin B05	Pin 01
Pin B07	Pin 04
Pin B08	Pin 06

Continuity check of ribbon motor cable for short
(Pin to pin, and pin to frame ground).

Continuity check good?

Y N

050

RIBBON MOTOR CABLE FAILURE

REPAIR or REPLACE ribbon motor cable, from
MOTOR to A1K5.

Verify REPAIR.

Go To Map 2000, Entry Point A.

See Reference Drawing AA060.

1
8
Z

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MAP 3800-17

W Z
1 1
6 7

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RIB MVMNT AND CNTRL**

MAP 3800-18

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051
RIGHT RIBBON MOTOR FAILURE

REPLACE right ribbon MOTOR.

See MIM 3805.

Reconnect ribbon motor cable at A1K5.

Verify REPAIR.

Go To Map 2000, Entry Point A.

052
POWER OFF.

Reconnect cable connector at A1K5.

Reinstall ribbon spools.

See MIM 3802

Jumper logic board pin A1K4B05(CE Test) to logic ground(A1K4D08).

Set MODE SWITCH to 4 (Ribbon Test).

In Mode switch position 4 and CE TEST (A1K4B05) grounded,when START is pressed the ribbon will move in one direction until STOP is pressed and released. The ribbon will reverse its direction when START is pressed and released.

POWER ON.

When machine is powered ON, CE should wait approximately 30 seconds for voltage (+48V) to turn ON and power ON diagnostics to be completed.

WAIT 30 seconds. Press STOP. (RESET ERROR)

Press and release START. Note if ribbon motors run smoothly.

Press and release STOP. Wait 3 seconds after pressing STOP before pressing START.

Press and release START. Note if ribbon motors run smoothly in the opposite direction.

Did ribbon motors run smoothly in both directions?

Y N
| |
| |
| |
| |

2 1
O 9
A A
A B

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MAP 3800-18

A
B
1
8

5225 ALL MODELS
RIB MVMNT AND CNTRL
PAGE 19 OF 23

MAP 3800-19

053

Press and release STOP.

Remove ribbon spools from motor.

Press and release START and STOP to operate each motor. As each motor is run, note which motor does not run smoothly.

Swap cable connectors P211 and P212 at ribbon motors.

Repeat the above test to determine which motor does not run smoothly.

Does the same motor not run smoothly?

Y N

054

RIBBON CARD (A1K4) FAILURE

POWER OFF.

REPLACE A1K4 card.

Reconnect cable plugs to original position.
Remove jumper A1K4B05 to A1K4D08.

Verify REPAIR.

Go To Map 2000, Entry Point A.

055

RIBBON MOTOR FAILURE

POWER OFF.

Remove jumper A1K4B05 to A1K4D08.
REPLACE ribbon motor which failed to run smoothly.

Verify REPAIR.

Go To Map 2000, Entry Point A.

When START is pressed one of the ribbon motors will run continuously until STOP is pressed. Then, after START is pressed and released again, the other motor will run continuously until STOP is pressed. Only one motor will be running when START is pressed. See MIM Figure 4-12.

See MIM 3805.

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MAP 3800-19

A
A
1
8

**5225 ALL MODELS
RIB MVMNT AND CNTRL**

MAP 3800-20

PAGE 20 OF 23

056

Press Stop.
Connect probe to A1K4B12.
Monitor probe and press Start.

Did probe go from down to up?

Y N

057

POWER OFF.
Remove A1K4 card.
POWER ON.

Is probe up light on?

Y N

058

POWER OFF.
REPLACE A1N2.
Verify repair.
Go To Map 2000, Entry Point A.

059

POWER OFF.
REPLACE A1K4 card.
Verify repair.
Go To Map 2000, Entry Point A.

060

RIBBON CARD (A1K4) FAILURE

POWER OFF.

REPLACE A1K4 card.

Reconnect cables.

Remove jumper A1K4B05 to A1K4D08.

Verify REPAIR.

Go To Map 2000, Entry Point A.

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MAP 3800-20

061

Disconnect MOTOR plug at suspected MOTOR.
P211 right motor and P212 for left motor.

By Hand turn suspected DRIVE GEAR (MOTOR)
clockwise and counter clockwise.

Did DRIVE GEAR (MOTOR) turn smooth?

Y N

062

MECHANICAL FAILURE.

Ribbon MOTOR/FLANGE drive linkage
failure.

REPAIR or REPLACE failing parts.

See MIM 3805.

Verify REPAIR.

Go To Map 2000, Entry Point A.

063

Reconnect MOTOR plug at suspected MOTOR.

Disconnect cable at A1K5.

By Hand turn suspected DRIVE GEAR (MOTOR)
clockwise and counter clockwise.

Did DRIVE GEAR (MOTOR) turn smooth?

Y N

064

Swap cable connectors P211 and P212 at
ribbon Motors.

See MIM Figure 4-12.

By Hand turn suspected DRIVE GEAR
(MOTOR) clockwise and counter clockwise.

Did suspected Motor turn smooth?

Y N

2 2 2
2 2 2
A A A
C D E

E A A A
6 C D E
2 2 2
1 1 1

**5225 ALL MODELS
RIB MVMNT AND CNTRL**

MAP 3800-22

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065

MOTOR FAILURE.

REPLACE failing Motor.

See MIM 3805.

Swap P211 and P212 back to original position.

Verify REPAIR.

Go To Map 2000, Entry Point A.

066

CABLE FAILURE.

REPAIR or REPLACE cable between MOTOR and A1K5.

Reinstall FLANGE GEARS.

Swap P211 and P212 back to original position.

Verify REPAIR.

Go To Map 2000, Entry Point A.

067

A1K4 CARD FAILURE.

REPLACE A1K4 card.

Reinstall FLANGE GEARS.

Reconnect cable connector at A1K5.

Verify REPAIR.

Go To Map 2000, Entry Point A.

068

REPLACE any damaged or worn parts.

See MIM 3805.

Reinstall all other parts taken out from preceding steps.

Go To Map 2000, Entry Point A.

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MAP 3800-22

D
6

5225 ALL MODELS
RIB MVMNT AND CNTRL
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MAP 3800-23

069

Probe pin A1K4D06(Ribbon Run).

Is probe **DOWN** indicator **ON** continuously?

Y N

070

RIBBON CARD(A1K4) FAILURE

POWER OFF.

REPLACE A1K4 card.

Verify REPAIR.

Go To Map 2000, Entry Point A.

071

CONTROL AND SENSE CARD(A1N2) FAILURE

Before installing new A1N2 card, verify card is jumpered for correct number of PRINT ACTUATOR GROUPS. See MIM 3103.

POWER OFF.

REPLACE A1N2 card.

Verify REPAIR.

Go To Map 2000, Entry Point A.

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MAP 3800-23

OPERATOR PANEL / MODE SWITCH

PAGE 1 OF 53

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
2000	A	3	001
2000	A-	10	034
2000	A0	53	272
2000	NA	52	265
2000	R-	12	041
3600	A	3	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
4	002	2000	A
8	019	2000	A
8	021	2000	A
8	024	2000	A
9	027	2000	A
9	028	2000	A
9	029	2000	A
9	031	2000	A
9	032	2000	A
9	033	2000	A
26	117	2000	A
26	118	2000	A
26	119	2000	A
26	122	2000	A
26	123	2000	A
27	124	2000	A
28	127	2000	A
29	129	2000	A
29	131	2000	A
29	132	2000	A
30	138	2000	A
31	139	2000	A
31	140	2000	A
31	141	2000	A
32	148	2000	A
32	151	2000	A
32	150	2000	A
32	149	2000	A
32	152	2000	A
33	156	2000	A
33	158	2000	A
34	160	2000	A
34	161	2000	A
34	163	2000	A
35	165	2000	A
35	168	2000	A
35	169	2000	A

5225 ALL MODELS

MAP 3900-2

PANEL

PAGE 2 OF 53

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
36	170	2000	A
36	174	2000	A
37	176	2000	A
37	178	2000	A
37	179	2000	A
37	182	2000	A
38	183	2000	A
38	184	2000	A
38	188	2000	A
39	190	2000	A
39	192	2000	A
39	193	2000	A
40	196	2000	A
40	197	2000	A
40	198	2000	A
41	202	2000	A
41	204	2000	A
41	206	2000	A
41	207	2000	A
42	210	2000	A
42	211	2000	A
42	212	2000	A
45	224	2000	A
45	225	2000	A
45	226	2000	A
45	228	2000	A
45	230	2000	A
46	232	2000	A
46	234	2000	A
47	238	2000	A
47	239	2000	A
47	240	2000	A
48	246	2000	A
48	247	2000	A
48	248	2000	A
49	249	2000	A
49	250	2000	A

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
10	037	2000	A
11	038	2000	A
11	039	2000	A
11	040	2000	A
49	254	2000	A
13	045	2000	A
13	046	2000	A
14	053	2000	A
14	054	2000	A
15	056	2000	A
15	058	2000	A
15	059	2000	A
16	062	2000	A
16	061	2000	A
16	060	2000	A
17	068	2000	A
17	067	2000	A
18	072	2000	A
18	074	2000	A
18	075	2000	A
18	076	2000	A
19	079	2000	A
19	082	2000	A
19	083	2000	A
19	084	2000	A
20	085	2000	A
20	086	2000	A
21	094	2000	A
21	095	2000	A
22	097	2000	A
22	099	2000	A
22	100	2000	A
23	103	2000	A
23	102	2000	A
23	101	2000	A
23	104	2000	A
24	109	2000	A

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MAP 3900-2

5225 ALL MODELS

MAP 3900-3

PANEL

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EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
24	110	2000	A
24	111	2000	A
24	112	2000	A
50	260	2000	A
50	261	2000	A
50	262	2000	A
51	263	2000	A
51	264	2000	A
42	215	2000	A
43	217	2000	A
43	219	2000	A
43	220	2000	A
52	266	2000	A
52	268	2000	A
52	270	2000	A
52	271	2000	A
53	273	2000	A
53	274	2000	A

001
(Entry Point A)

POWER OFF.

Verify that the following cables are correctly seated or plugged:

- Cable connector at MODE SWITCH.
- Cable connector at OPERATOR PANEL.
- Cable to A1Y4.
- Cable to A1Y5.

The CE should see the OPERATOR CONTROL REFERENCE DRAWING (AA045) located in back of the MIMs when using the PANEL MAPs.

Are all cables correctly seated or plugged?

Y N

4 4

A B

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MAP 3900-3

A B
3 3

5225 ALL MODELS

MAP 3900-4

PANEL

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002

Seat or plug all cables.

Verify REPAIR.

Go To Map 2000, Entry Point A.

003

Go to Page 5, Step 004, Entry Point AL.

20JUL81

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PEC 869365

MAP 3900-4

PANEL

004

(Entry Point AL)

Set MODE SWITCH to TEST.

POWER ON

Was F in display for first 5 seconds?

Y N



005

Is display blank?

Y N



006

Go to Page 12, Step 041,
Entry Point R-.

007

Go to Step 012, Entry Point B.

008

After 30 seconds does display equal 0?

Y N



009

Is display blank?

Y N



010

Go to Page 12, Step 041,
Entry Point R-.

011

Go to Step 012, Entry Point B.

012

(Entry Point B)

Is attention light on?

Y N



6 6
C D

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EC 323243 PEC 869365

MAP 3900-5

C D
5 5

5225 ALL MODELS

MAP 3900-6

PANEL

PAGE 6 OF 53

013

Go to Page 7, Step 017, Entry Point C.

014

Is ready light on?

Y N

015

Go to Page 12, Step 041, Entry Point R-.

016

Go to Page 50, Step 256, Entry Point R+.

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EC 323243 PEC 869365

MAP 3900-6

PANEL

017
(Entry Point C)

Swap READY bulb with ATTENTION bulb.
Is ATTENTION light on?

Y N

018
POWER OFF.
Disconnect cable from operator panel.
POWER ON.

Check for +5 VDC between pin 1 (-) and pin 3 (+) of disconnected cable.

See Reference Drawing AA045.

0	1
X	2
0	3
0	4
0	5
0	6
0	7
0	8
0	9
0	10
0	11
0	12
0	13
0	14
0	15
0	16

OP PANEL
CABLE CONNECTOR

NOTE: Pin 2 (X) is reference pin for connecting OP Panel Cable.

Is +5 VDC present?

Y N

Y N

F19
F18
G

F G
7 7

5225 ALL MODELS

MAP 3900-8

PANEL

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019

REPAIR or REPLACE cable from A1Y4 to OPERATOR PANEL.

Go To Map 2000, Entry Point A.

020

POWER OFF

Reconnect disconnected cable to operator panel.

POWER ON.

Check for less than +1 VDC between A1T2B13+ and ground.

Is less than 1 VDC present?

Y N

021

REPLACE A1T2.

Go To Map 2000, Entry Point A.

022

Check for 0 VDC between outer tab (+) (that connects to attention light) on OPERATOR PANEL circuit board and ground (-).

See Reference Drawing AA045.

Is 0 VDC present?

Y N

023

POWER OFF.

Disconnect cable from OPERATOR PANEL.

Check for less than 1 ohm between Pin 16 of disconnected cable and A1M1C11.

Is resistance less than 1 ohm?

Y N

024

REPAIR or REPLACE cable A1Y4 to OPERATOR PANEL.

Go To Map 2000, Entry Point A.

025

Check for less than 1 ohm between Pin 1 of disconnected cable and ground.

Is resistance less than 1 ohm?

Y N

9 9 9
H J K

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MAP 3900-8

E H J K
7 8 8 8

5225 ALL MODELS

MAP 3900-9

PANEL

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026

Check for less than 1 ohm between
A1M1E11 and ground.

Is resistance less than 1 ohm?

Y N

027

Broken circuit on A1 Board.
REPAIR or REPLACE A1 board.

Go To Map 2000, Entry Point A.

028

REPAIR or REPLACE A1Y4 cable.

Go To Map 2000, Entry Point A.

029

REPLACE OPERATOR PANEL.

Go To Map 2000, Entry Point A.

030

Check for +5 VDC between center tab (+5V
Attention light socket) of Operator Panel and
ground.

Is +5 VDC present?

Y N

See Reference Drawing AA045.

031

POWER OFF.

REPLACE Operator Panel.

Verify repair.

Go To Map 2000, Entry Point A.

032

REPLACE failed socket.

Go To Map 2000, Entry Point A.

033

Install new bulb in READY light socket.

Go To Map 2000, Entry Point A.

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MAP 3900-9

PANEL

034

(Entry Point A-)

ATTENTION light will not go off.

Probe A1T2B13.

Press and hold 2nd MODE Key.

Press stop key.

Did Probe indicate UP?

Y N

035

POWER OFF.

Remove A1T2 card.

POWER ON.

PROBE A1T2B13.

Does PROBE indicate UP?

Y N

036

POWER OFF.

Disconnect cable from OPERATOR PANEL.

Check for 0 ohms between A1T2B13 and

A1S2D08.

Is resistance 0 ohms?

Y N

037

OPERATOR PANEL is failing or
ATTENTION light socket is short
circuited.

Check ATTENTION light socket and
wire to OPERATOR panel for short to
ground.

REPAIR or REPLACE short circuited
socket or OPERATOR PANEL.

Reinstall A1T2 card and OPERATOR
PANEL cable.

Go To Map 2000, Entry Point A.

1 1 1
1 1 1
L M N

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MAP 3900-10

L M N
1 1 1
0 0 0

5225 ALL MODELS

MAP 3900-11

PANEL

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038

REPAIR or REPLACE cable from A1Y4 to OPERATOR PANEL.

Wire from A1Y4D06 to Pin 16 is short circuited.

Go To Map 2000, Entry Point A.

039

POWER OFF.

REPLACE A1T2 card.

Go To Map 2000, Entry Point A.

040

OPERATOR PANEL is failing or ATTENTION light socket is short circuited.

Check ATTENTION light socket and wire to OPERATOR panel for short to ground.

REPAIR or REPLACE short circuited socket or OPERATOR PANEL.

Go To Map 2000, Entry Point A.

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MAP 3900-11

PANEL

041

(Entry Point R-)

Set mode switch to 9.

Press and release start key.

IS READY LIGHT ON?

Y N

042

Swap attention light bulb to ready light socket.

IS READY LIGHT ON?

Y N

043

POWER OFF.

Disconnect cable from Operator Panel.

POWER ON.

Check for +5 VDC between pin 1 (-) and pin 3 (+) of disconnected cable.

See Reference Drawing AA045.

0	1
X	2
0	3
0	4
0	5
0	6
0	7
0	8
0	9
0	10
0	11
0	12
0	13
0	14
0	15
0	16

OP PANEL
CABLE CONNECTOR

NOTE: Pin 2 (X) is reference pin for connecting OP Panel Cable.

(Step 043 continues)

2 2
0 0
P Q

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PANEL

(Step 043 continued)
IS +5 VDC PRESENT?

Y N

044

Check for +5 VDC between A1L1E11 and ground.

Is +5 VDC present?

Y N

045

REPAIR or REPLACE A1 board.
Go To Map 2000, Entry Point A.

046

REPAIR or REPLACE cable from A1Y4 to operator panel
Go To Map 2000, Entry Point A.

047

POWER OFF.
Reconnect disconnected cable to Operator Panel.
Connect CE jumper from A1T2D12 to ground.
POWER ON.
Probe A1T2D13, A1T2G02, A1T2G04 and A1T2J04.

DID PROBE INDICATE UP FOR ALL PINS?

Y N

048

Probe the failing pin.
Disconnect cable to operator panel.
DID THE FAILING PIN INDICATE UP?

Y N

049

POWER OFF.
Disconnect A1Y4.
POWER ON (Wait 30 seconds.)
Probe the failing pin.
DID THE FAILING PIN INDICATE UP?

Y N

1 1 1 1
6 6 6 4
R S T U

U
1
3

5225 ALL MODELS

MAP 3900-14

PANEL

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050

POWER OFF.

Remove A1T2.

POWER ON (Wait 30 seconds.)

Probe failing pin.

DID FAILING PIN INDICATE UP?

Y N

051

Probe failing pin.

POWER OFF.

Remove A1P2 and A1U2.

POWER ON.

DID FAILING PIN INDICATE UP?

Y N

052

POWER OFF.

Remove A1S2 and A1R2.

POWER ON.

DOES FAILING PIN INDICATE UP?

Y N

053

REPLACE A1 Board.

Reconnect Operator Panel connector.

Verify repair.

Go To Map 2000, Entry Point A.

054

REINSTALL cards one at a time to find failing card. (Power Off before plugging or removing cards).

POWER OFF.

REPLACE the failing card.

Reconnect Op Panel and A1Y4 connectors.

Remove CE Jumper A1T2D12 to ground.

Verify repair.

Go To Map 2000, Entry Point A.

NOTE: While probing the FAILING pin, the probe will indicate DOWN when the FAILING card is installed.

1 1
6 5
V W

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MAP 3900-14

W
1
4

5225 ALL MODELS

MAP 3900-15

PANEL

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055

POWER OFF.

REINSTALL A1T2.

POWER ON.

DOES FAILING PIN INDICATE UP?

Y N

056

POWER OFF.

REPLACE A1T2.

REINSTALL A1P2, A1U2 and reconnect Op
Panel and A1Y4 connectors. Remove CE
Jumper A1T2D12 to ground.

POWER ON.

Verify repair.

Go To Map 2000, Entry Point A.

057

POWER OFF.

REINSTALL A1U2 card.

POWER ON.

DOES FAILING PIN INDICATE UP?

Y N

058

POWER OFF.

REPLACE A1U2 card.

REINSTALL A1P2 card.

Reconnect Op Panel and A1Y4 connectors.
Remove CE jumper A1T2D12 to ground.

POWER ON.

Verify repair.

Go To Map 2000, Entry Point A.

059

POWER OFF.

REPLACE A1P2 card.

Reconnect Op Panel and A1Y4 connectors.

Remove CE jumper A1T2D12 to ground.

Verify repair.

Go To Map 2000, Entry Point A.

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MAP 3900-15

R S T V
1 1 1 1
3 3 3 4

5225 ALL MODELS

MAP 3900-16

PANEL

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060

POWER OFF.
REPLACE A1T2.
Reconnect Op Panel and A1Y4 connectors.
Remove CE jumper A1T2D12 to ground.
Verify repair.
Go To Map 2000, Entry Point A.

061

REPAIR or REPLACE cable from A1Y4 to operator panel.
Verify repair.
Go To Map 2000, Entry Point A.

062

POWER OFF.
REPLACE operator panel.
Remove CE jumper A1T2D12 to ground.
Verify repair.
Go To Map 2000, Entry Point A.

063

Remove CE jumper between A1T2D12 and ground.
Probe A1T2B10, A1T2B11, A1T2B12, A1T2D09 and A1T2J02.

DID PROBE INDICATE UP FOR ALL PINS?

Y N

064

POWER OFF.
Disconnect cable from Operator Panel.
POWER ON.
Probe A1T2B10, A1T2B11, A1T2B12, A1T2D09 and A1T2J02.

DID PROBE INDICATE UP FOR ALL PINS?

Y N

1 1 1
7 7 7
X Y Z

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MAP 3900-16

X Y Z
1 1 1
6 6 6

**5225 ALL MODELS
PANEL**

MAP 3900-17

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065

POWER OFF.

Disconnect connector at A1Y4.

POWER ON.

Probe A1T2B10, A1T2B11, A1T2B12,
A1T2D09 and A1T2J02.

**DID PROBE INDICATE UP FOR ALL
PINS?**

Y N

066

POWER OFF.

Reconnect disconnected cable to
Operator Panel and A1Y4.

POWER ON.

**Go to Page 30, Step 134,
Entry Point S.**

067

POWER OFF.

REPAIR or REPLACE cable from A1Y4 to
Operator panel.

Verify repair.

Go To Map 2000, Entry Point A.

068

REPLACE Operator Panel.

Verify repair.

Go To Map 2000, Entry Point A.

069

Check for less than +1 VDC between A1T2J02
and ground.

IS LESS THAN 1 VDC PRESENT?

Y N

070

Press and hold start key.

Probe A1T2B10 and A1T2B12.

**DID PROBE INDICATE DOWN FOR BOTH
PINS?**

Y N

1 1 1
8 8 8
A A A
A B C

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MAP 3900-17

A A A
A B C
1 1 1
7 7 7

5225 ALL MODELS

MAP 3900-18

PANEL

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071

POWER OFF.

Disconnect cable from operator panel.

Check for less than 1 ohm between pin 12 of disconnected cable and A1M1D11.

IS RESISTANCE LESS THAN 1 OHM?

Y N

072

REPAIR or REPLACE cable A1Y4 to operator panel.

Go To Map 2000, Entry Point A.

073

Check for less than 1 ohm between pin 11 of disconnected cable and A1N1B11.

IS RESISTANCE LESS THAN 1 OHM?

Y N

074

REPAIR or REPLACE cable A1Y4 to operator panel.

Go To Map 2000, Entry Point A.

075

REPLACE operator panel

Go To Map 2000, Entry Point A.

076

Check for open and ground on cable A1Y4 to Operator Panel. Repair if needed. If no problem, REPLACE A1T2.

Go To Map 2000, Entry Point A.

077

Check for 0 VDC between outer tab+ (that connects to the ready light) on the Operator Panel circuit board and ground.

IS 0 VDC PRESENT?

Y N

See Reference Drawing AA045.

2 1
0 9
A A
D E

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MAP 3900-18

A
E
1
8

5225 ALL MODELS

MAP 3900-19

PANEL

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078

POWER OFF

Disconnect cable from operator panel.

Check for less than 1 ohm between pin 15 of disconnected cable and A1M1C13.

IS RESISTANCE LESS THAN 1 OHM?

Y N

079

REPAIR or REPLACE cable from A1Y4 to operator panel

Verify repair.

Go To Map 2000, Entry Point A.

080

Check for less than 1 ohm between pin 1 of disconnected cable and ground.

IS RESISTANCE LESS THAN 1 OHM?

Y N

081

Check for less than 1 ohm between A1M1E11 and ground.

IS RESISTANCE LESS THAN 1 OHM?

Y N

082

Broken circuit on A1 board.

REPAIR or REPLACE A1 Board.

Verify repair.

Go To Map 2000, Entry Point A.

083

REPAIR or REPLACE cable A1Y4 to operator cable

Verify repair.

Go To Map 2000, Entry Point A.

084

REPLACE operator panel

Verify repair.

Go To Map 2000, Entry Point A.

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MAP 3900-19

P Q A
1 1 D
2 2 1
2 8

5225 ALL MODELS

MAP 3900-20

PANEL

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085

REPLACE failed socket or wire to socket
Verify repair.

Go To Map 2000, Entry Point A.

086

Install new bulb in empty attention light
socket
Verify repair.

Go To Map 2000, Entry Point A.

087

POWER OFF.
POWER ON.

**During first 5 seconds was DISPLAY F or
BLANK?**

Y N

088

Connect CE jumper from A1T2D12 to ground.
(Data line not responding.)

Probe the following points.

- A1T2G04
- A1T2J04
- A1T2D13
- A1T2G02

DID PROBE INDICATE UP FOR ALL PINS?

Y N

089

Probe the failing pin.
Disconnect cable to operator panel.

DID THE FAILING PIN INDICATE UP?

Y N

090

POWER OFF.
Disconnect A1Y4.
POWER ON (Wait 30 seconds.)
Probe the failing pin.

**DID THE FAILING PIN INDICATE
UP?**

Y N

2	2	2	2	2
3	3	3	3	1
A	A	A	A	A
F	G	H	J	K

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MAP 3900-20

A
K
2
0

5225 ALL MODELS

MAP 3900-21

PANEL

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091

POWER OFF.
Remove A1T2.
POWER ON (Wait 30 seconds.)
Probe failing pin.

DID FAILING PIN INDICATE UP?

Y N

092

Probe failing pin.
POWER OFF.
Remove A1P2 and A1U2.
POWER ON.

DID FAILING PIN INDICATE UP?

Y N

093

POWER OFF.
Remove A1S2 and A1R2.
POWER ON.

DOES FAILING PIN INDICATE UP?

Y N

094

REPLACE A1 Board.
Reconnect Operator Panel connector.
Verify repair.
Go To Map 2000, Entry Point A.

095

REINSTALL cards one at a time to find failing card. (Power Off before plugging or removing cards).
POWER OFF.
REPLACE the failing card.
Reconnect Op Panel and A1Y4 connectors.
Remove CE Jumper A1T2D12 to ground.
Verify repair.
Go To Map 2000, Entry Point A.

NOTE: While probing the FAILING pin, the probe will indicate DOWN when the FAILING card is installed.

2 2
3 2
A A
L M

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MAP 3900-21

PANEL

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096

POWER OFF.

REINSTALL A1T2.

POWER ON.

DOES FAILING PIN INDICATE UP?

Y N

097

POWER OFF.

REPLACE A1T2.

REINSTALL A1P2, A1U2 and reconnect Op
Panel and A1Y4 connectors. Remove CE
Jumper A1T2D12 to ground.

POWER ON.

Verify repair.

Go To Map 2000, Entry Point A.**098**

POWER OFF.

REINSTALL A1U2 card.

POWER ON.

DOES FAILING PIN INDICATE UP?

Y N

099

POWER OFF.

REPLACE A1U2 card.

REINSTALL A1P2 card.

Reconnect Op Panel and A1Y4 connectors.
Remove CE jumper A1T2D12 to ground.

POWER ON.

Verify repair.

Go To Map 2000, Entry Point A.**100**

POWER OFF.

REPLACE A1P2 card.

Reconnect Op Panel and A1Y4 connectors.

Remove CE jumper A1T2D12 to ground.

Verify repair.

Go To Map 2000, Entry Point A.

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MAP 3900-22

A A A A A
F G H J L
2 2 2 2 2
0 0 0 0 1

5225 ALL MODELS

MAP 3900-23

PANEL

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101

REPLACE A1T2.

Reconnect Op Panel and A1Y4 connectors.

Remove CE jumper A1T2D12 to ground.

Verify repair.

Go To Map 2000, Entry Point A.

102

REPAIR or REPLACE cable from A1Y4 to operator panel.

Verify repair.

Go To Map 2000, Entry Point A.

103

REPLACE operator panel.

Remove CE jumper A1T2D12 to ground.

Verify repair.

Go To Map 2000, Entry Point A.

104

REPLACE operator panel.

Remove CE jumper A1T2D12 to ground.

Verify repair.

Go To Map 2000, Entry Point A.

105

Set MODE SWITCH to ONLINE.

PROBE the following pins:

A1T2B04 UP

A1T2B05 UP

A1T2D04 UP

A1T2D06 UP

Did PROBE indicate UP for each pin?

Y N

106

Connect probe to pin that indicates down.

Disconnect cable at MODE SWITCH.

Does the probe indicate UP?

Y N

2 2 2
5 4 4
A A A
N P Q

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MAP 3900-23

A A
P Q
2 2
3 3

5225 ALL MODELS

MAP 3900-24

PANEL

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107

POWER OFF.

Disconnect cable A1Y5.

POWER ON.

Does the probe indicate UP?

Y N

108

POWER OFF.

Remove A1T2.

POWER ON.

Does the probe indicate DOWN?

Y N

109

Reconnect A1Y5.

Reconnect MODE SWITCH cable.

REPLACE A1T2 card.

Verify repair.

Go To Map 2000, Entry Point A.

110

REPAIR or REPLACE A1 board.

Verify repair.

Go To Map 2000, Entry Point A.

111

REPAIR or REPLACE cable from A1Y5 to
MODE SWITCH.

Verify repair.

Go To Map 2000, Entry Point A.

112

REPAIR or REPLACE the MODE SWITCH.

Verify repair.

Go To Map 2000, Entry Point A.

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MAP 3900-24

A
N
2
3

5225 ALL MODELS

MAP 3900-25

PANEL

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113

Set MODE SWITCH to BUFFER PRINT.

PROBE the following pins:

- A1T2B04 DOWN
- A1T2B05 DOWN
- A1T2D04 DOWN
- A1T2D06 DOWN

Did PROBE indicate DOWN for each pin?

Y N

114

Did PROBE indicate UP for ALL pins?

Y N

115

PROBE the following pins:

- A1R1C11 DOWN
- A1R1C13 DOWN
- A1R1B11 DOWN
- A1R1A13 DOWN

Did PROBE indicate DOWN for all pins?

Y N

116

POWER OFF.

Disconnect cable at MODE SWITCH.

See Reference Drawing AA045.

Check for 0 ohms between the points:

- A1R1C11 to pin 3 of cable.
- A1R1C13 to pin 4 of cable.
- A1R1B11 to pin 1 of cable.
- A1R1A13 to pin 6 of cable.

0	1
X	2
0	3
0	4
0	5
0	6

MODE SWITCH
CABLE CONNECTOR

NOTE: Pin 2 (X) is reference pin for connecting Mode Switch Cable.

(Step 116 continues)

2 2 2
7 6 6
A A A
R S T

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MAP 3900-25

A
S
T
E
F
5

5225 ALL MODELS

MAP 3900-26

PANEL

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(Step 116 continued)

Is resistance 0 ohms for all measurements?

Y N

117

REPAIR or REPLACE cable from A1Y5 to MODE SWITCH.

Verify repair.

Go To Map 2000, Entry Point A.

118

REPAIR or REPLACE MODE SWITCH.

Verify repair.

Go To Map 2000, Entry Point A.

119

REPAIR or REPLACE A1 board.

Verify repair.

Go To Map 2000, Entry Point A.

120

Disconnect cable from MODE SWITCH.
POWER OFF.

Check for less than 1 ohm between Pin 5 of disconnected cable and ground.

Is resistance less than 1 ohm?

Y N

121

Check for less than 1 ohm between A1R1A11 and ground.

Is resistance less than 1 ohm?

Y N

122

REPAIR or REPLACE A1 board.

Verify repair.

Go To Map 2000, Entry Point A.

123

REPAIR or REPLACE cable from A1Y5 to MODE SWITCH.

Verify repair.

Go To Map 2000, Entry Point A.

2
7
A
U

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MAP 3900-26

PANEL

124

REPAIR or REPLACE MODE SWITCH.

Verify repair.

Go To Map 2000, Entry Point A.

125

Additional MODE SWITCH checks:

PROBE pin A1T2B05 and turn the MODE SWITCH through all positions.

Repeat this step for A1T2D04, A1T2B04 and A1T2D06

MODE SWITCH POSITION	PINS TO PROBE			
	A1T2B05	A1T2D04	A1T2B04	A1T2D06
ONLINE	UP	UP	UP	UP
BUFFER	DOWN	DOWN	DOWN	DOWN
TEST	DOWN	DOWN	DOWN	UP
2	UP	DOWN	DOWN	DOWN
3	UP	DOWN	DOWN	UP
4	DOWN	UP	DOWN	DOWN
5	DOWN	UP	DOWN	UP
6	UP	UP	DOWN	DOWN
7	UP	UP	DOWN	UP
8	DOWN	DOWN	UP	DOWN
9	DOWN	DOWN	UP	UP
A	UP	DOWN	UP	DOWN
B	UP	DOWN	UP	UP
C	DOWN	UP	UP	DOWN

(Step 125 continues)

PANEL

(Step 125 continued)

D	DOWN	UP	UP	UP
E	UP	UP	UP	DOWN

Did probe indicate correctly for all positions for each pin?

Y N

126

POWER OFF.

See Reference Drawing AA045.

Disconnect cable to mode switch.

Check for zero ohms between all combinations of the following pins.

Example

Between pin 6 and 1 or 3 or 4

Between pin 4 and 1 or 3 or 6

Between pin 3 and 1 or 4 or 6

Between pin 1 and 3 or 4 or 6

0	1
X	2
0	3
0	4
0	5
0	6

MODE SWITCH
CABLE CONNECTOR

NOTE: Pin 2 (X) is reference pin for connecting Mode Switch Cable.

DOES RESISTANCE EQUAL ZERO FOR ANY COMBINATION?

Y N

127

REPAIR or REPLACE mode switch.

Verify repair.

Go To Map 2000, Entry Point A.

128

Remove A1T2.

Test pins again.

DOES RESISTANCE EQUAL ZERO FOR ANY COMBINATION?

Y N

2 2 2
9 9 9
A A A
V W X

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MAP 3900-28

A A A
V W X
2 2 2
8 8 8

5225 ALL MODELS

MAP 3900-29

PANEL

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129

REPLACE A1T2.

Verify repair.

Go To Map 2000, Entry Point A.

130

Disconnect A1Y5.

Test pins again.

**DOES RESISTANCE EQUAL ZERO FOR
ANY COMBINATION?**

Y N

131

REPAIR or REPLACE A1 board.

Verify repair.

Go To Map 2000, Entry Point A.

132

REPAIR or REPLACE-cable A1Y5.

Verify repair.

Go To Map 2000, Entry Point A.

133

Go to Page 30, Step 134, Entry Point S.

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MAP 3900-29

PANEL

134

(Entry Point S)

The following steps check the DISPLAY.

Set MODE SWITCH to TEST.

Press START Key.

Press STOP Key.

PROBE A1T2D11.

PROBE indicate PULSING?

Y N

135

POWER OFF.

Disconnect cable from OPERATOR PANEL.

POWER ON.

PROBE A1T2D11.

Does PROBE indicate PULSING?

Y N

136

POWER OFF.

Disconnect cable A1Y4.

POWER ON (wait 30 seconds).

PROBE A1T2D11.

Does PROBE indicate PULSING?

Y N

137

POWER OFF.

Remove A1T2 card.

Check for open circuit between

A1T2D11 and A1S2D08.

Is circuit open?

Y N

138

REPAIR or REPLACE A1 board.

Verify repair.

Go To Map 2000, Entry Point A.

3 3 3 3
1 1 1 1
A A B B
Y Z A B

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MAP 3900-30

A A B B
Y Z A B
3 3 3 3
0 0 0 0

5225 ALL MODELS

MAP 3900-31

PANEL

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139

REPLACE A1T2 card.
Move jumpers to new card.
Verify repair.
Go To Map 2000, Entry Point A.

140

REPAIR or REPLACE cable from A1Y4 to
OPERATOR PANEL.
Verify repair.
Go To Map 2000, Entry Point A.

141

REPLACE OPERATOR PANEL.
Verify repair.
Go To Map 2000, Entry Point A.

142

Install CE jumper from A1T2D12 to A1T2D08.
Is DISPLAY blank.

Y N

143

Is F displayed?

Y N

144

(Data lines not responding)
Probe the following points.
A1T2G04
A1T2J04
A1T2D13
A1T2G02

**DID PROBE INDICATE UP FOR ALL
PINS?**

Y N

145

Probe the failing pin.
Disconnect cable to operator panel.
DID PROBE INDICATE UP?

Y N

4 3 3 3 3
2 3 2 2 2
B B B B B
C D E F G

20JUL81 PN 6844902
EC 323243 PEC 869365
MAP 3900-31

B B B
F F G
3 3 3
1 1 1

5225 ALL MODELS

MAP 3900-32

PANEL

PAGE 32 OF 53

146

POWER OFF.

Disconnect A1Y4.

POWER ON (Wait 30 seconds.)

Probe the failing pin.

DID PROBE INDICATE UP?

Y N

147

POWER OFF.

Remove A1T2.

POWER ON (Wait 30 seconds.)

Probe failing pin.

DID PROBE INDICATE UP?

Y N

148

REPAIR or REPLACE A1 board.

Verify repair.

Go To Map 2000, Entry Point A.

149

REPLACE A1T2.

Verify repair.

Go To Map 2000, Entry Point A.

150

REPAIR or REPLACE cable from A1Y4 to operator panel.

Verify repair.

Go To Map 2000, Entry Point A.

151

REPLACE operator panel.

Verify repair.

Go To Map 2000, Entry Point A.

152

REPLACE operator panel.

Verify repair.

Go To Map 2000, Entry Point A.

20JUL81 PN 6844902

EC 323243 PEC 869365

MAP 3900-32

B
D
3
1

5225 ALL MODELS

MAP 3900-33

PANEL

PAGE 33 OF 53

153

Install jumper between A1T2G04 and A1S2D08.

Is E displayed?

Y N

154

IS F DISPLAYED?

Y N

155

POWER OFF.

Disconnect cable to operator panel.

Check for zero resistance between any two of the following pins:

EXAMPLE

Between pin 5 and 6 or 7 or 8

Between pin 6 and 5 or 7 or 8

Between pin 7 and 6 or 5 or 8

Between pin 8 and 7 or 5 or 6

DOES RESISTANCE EQUAL ZERO FOR ANY COMBINATION?

Y N

156

REPLACE operator panel.

Verify repair.

Go To Map 2000, Entry Point A.

157

Remove A1T2.

Test pins again.

DOES RESISTANCE EQUAL ZERO FOR ANY COMBINATION?

Y N

158

REPLACE A1T2.

Verify repair.

Go To Map 2000, Entry Point A.

3 3 3
6 4 4
B B B
H J K

20JUL81

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EC 323243

PEC 869365

MAP 3900-33

B B
J K
3 3
3 3

5225 ALL MODELS

MAP 3900-34

PANEL

PAGE 34 OF 53

159

Disconnect A1Y4.

Test pins again.

DOES RESISTANCE EQUAL ZERO FOR ANY COMBINATION?

Y N

160

REPAIR or REPLACE A1 board.

Verify repair.

Go To Map 2000, Entry Point A.

161

REPAIR or REPLACE cable.

Verify repair.

Go To Map 2000, Entry Point A.

162

POWER OFF.

Remove jumpers installed in preceding steps.

Check for zero ohms between the following points:

A1T2G04 and A1M1B13

A1T2D11 and A1M1A11

IS RESISTANCE ZERO OHMS AT BOTH POINTS?

Y N

163

REPAIR or REPLACE A1 Board.

Verify repair.

Go To Map 2000, Entry Point A.

3
5
B
L

20JUL81

PN 6844902

EC 323243

PEC 869365

MAP 3900-34

B
L
3
4

**5225 ALL MODELS
PANEL**

MAP 3900-35

PAGE 35 OF 53

164

Disconnect cable to Operator Panel.
Check for zero ohms between the following points:

- A1M1B13 and pin 8 of cable
- A1M1A11 and pin 9 of cable

IS RESISTANCE ZERO OHMS AT BOTH POINTS?

Y N

165

REPAIR or REPLACE cable from A1Y5 to Operator Panel.
Verify repair.
Go To Map 2000, Entry Point A.

166

POWER ON.

Wait 30 seconds.

Probe A1T2D11

ARE BOTH LIGHTS ON?

Y N

167

POWER OFF.
Remove A1T2 card.
Check for zero ohms between A1T2D11 and A1T2D08.

IS RESISTANCE ZERO OHMS?

Y N

168

REPLACE A1T2 card.
Verify repair.
Go To Map 2000, Entry Point A.

169

REPAIR or REPLACE A1Y4 to Operator Panel Cable.
Verify repair.
Go To Map 2000, Entry Point A.

3
6
B
M

20JUL81

PN 6844902

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PEC 869365

MAP 3900-35

B B
3 3
3 5

5225 ALL MODELS

MAP 3900-36

PANEL

PAGE 36 OF 53

170

Replace Operator Panel.

Verify repair.

Go To Map 2000, Entry Point A.

171

Remove jumper from A1T2G04 to A1S2D08.

Install jumper between A1T2J04 and A1S2D08.

Is D displayed?

Y N

172

DOES DISPLAY EQUAL F?

Y N

173

POWER OFF.

Disconnect cable to operator panel.

Check for zero resistance between any two of the following pins:

EXAMPLE

Between pin 5 and 6 or 7 or 8

Between pin 6 and 5 or 7 or 8

Between pin 7 and 6 or 5 or 8

Between pin 8 and 7 or 5 or 6

DOES RESISTANCE EQUAL ZERO FOR ANY COMBINATION?

Y N

174

REPLACE operator panel.

Verify repair.

Go To Map 2000, Entry Point A.

175

Remove A1T2.

Test pins again.

DOES RESISTANCE EQUAL ZERO FOR ANY COMBINATION?

Y N

3 3 3 3
8 7 7 7
B B B B
N P Q R

20JUL81

PN 6844902

EC 323243

PEC 869365

MAP 3900-36

B B B
P O R
3 3 3
6 6 6

5225 ALL MODELS

MAP 3900-37

PANEL

PAGE 37 OF 53

176

REPLACE A1T2.

Verify repair.

Go To Map 2000, Entry Point A.

177

Disconnect A1Y4.

Test pins again.

DOES RESISTANCE EQUAL ZERO FOR ANY COMBINATION?

Y N

178

REPAIR or REPLACE A1 board.

Verify repair.

Go To Map 2000, Entry Point A.

179

REPAIR or REPLACE cable.

Verify repair.

Go To Map 2000, Entry Point A.

180

Move jumper from A1T2J04 to A1M1A13.

DOES DISPLAY EQUAL D?

Y N

181

POWER OFF.

Disconnect cable to operator panel.

Check for zero ohms between A1M1A13 and pin 7 of cable.

IS RESISTANCE ZERO OHMS?

Y N

182

REPAIR or REPLACE cable from A1Y4 to operator panel.

Verify repair.

Go To Map,2000, Entry Point A.

3 3
8 8
B B
S T

20JUL81

PN 6844902

EC 323243

PEC 869365

MAP 3900-37

B B B
N S T
3 3 3
6 7 7

5225 ALL MODELS

MAP 3900-38

PANEL

PAGE 38 OF 53

183

REPLACE operator panel

Verify repair.

Go To Map 2000, Entry Point A.

184

REPAIR or REPLACE A1 board (Open circuit).

Verify repair.

Go To Map 2000, Entry Point A.

185

Remove jumper from A1T2J04 to A1S2D08.

Install jumper between A1T2D13 and A1S2D08.

Is B displayed?

Y N

186

DOES DISPLAY EQUAL AN F?

Y N

187

POWER OFF.

Disconnect cable to operator panel.

Check for zero resistance between any two of the following pins:

EXAMPLE

Between pin 5 and 6 or 7 or 8

Between pin 6 and 5 or 7 or 8

Between pin 7 and 6 or 5 or 8

Between pin 8 and 7 or 5 or 6

DOES RESISTANCE EQUAL ZERO FOR ANY COMBINATION?

Y N

188

REPLACE operator panel.

Verify repair.

Go To Map 2000, Entry Point A.

4 3 3
O 9 9
B B B
U V W

20JUL81

PN 6844902

EC 323243

PEC 869365

MAP 3900-38

B B
V W
3 3
8 8

**5225 ALL MODELS
PANEL**

MAP 3900-39

PAGE 39 OF 53

189

Remove A1T2.
Test pins again.

**DOES RESISTANCE EQUAL ZERO FOR
ANY COMBINATION?**

Y N

190

REPLACE A1T2.
Verify repair.

Go To Map 2000, Entry Point A.

191

Disconnect A1Y4.
Test pins again.

**DOES RESISTANCE EQUAL ZERO FOR
ANY COMBINATION?**

Y N

192

REPAIR or REPLACE A1 board.
Verify repair.

Go To Map 2000, Entry Point A.

193

REPAIR or REPLACE cable.
Verify repair.

Go To Map 2000, Entry Point A.

194

Remove jumper from A1T2D13 to A1S2D08.
Install jumper from A1L1E13 to A1S2D08.

DOES DISPLAY EQUAL B?

Y N

195

POWER OFF.
Disconnect cable to operator panel.
Check for zero ohms between A1L1E13 and
pin 6 of cable.

IS RESISTANCE ZERO OHMS?

Y N

4 4 4
0 0 0
B B B
X Y Z

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MAP 3900-39

B B B B
U X Y Z
3 3 3 3
8 9 9 9

5225 ALL MODELS

MAP 3900-40

PANEL

PAGE 40 OF 53

196

REPAIR or REPLACE cable from A1Y4 to operator panel.
Verify repair.

Go To Map 2000, Entry Point A.

197

REPLACE operator panel.
Verify repair.

Go To Map 2000, Entry Point A.

198

REPAIR or REPLACE A1 board (open circuit).
Verify repair.

Go To Map 2000, Entry Point A.

199

Remove jumper from A1T2D13 to A1S2D08.
Install jumper between A1T2G02 and A1S2D08.

Is 7 displayed?

Y N

200

DOES DISPLAY EQUAL F?

Y N

201

POWER OFF.
Disconnect cable to operator panel.
Check for zero resistance between any two of the following pins:

EXAMPLE

Between pin 5 and 6 or 7 or 8

Between pin 6 and 5 or 7 or 8

Between pin 7 and 6 or 5 or 8

Between pin 8 and 7 or 5 or 6

DOES RESISTANCE EQUAL ZERO FOR ANY COMBINATION?

Y N

4 4 4 4
2 1 1 1
C C C C
A B C D

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PN 6844902

EC 323243

PEC 869365

MAP 3900-40

C C C
B C D
4 4 4
0 0 0

5225 ALL MODELS

MAP 3900-41

PANEL

PAGE 41 OF 53

202

REPLACE operator panel.

Verify repair.

Go To Map 2000, Entry Point A.

203

Remove A1T2.

Test pins again.

DOES RESISTANCE EQUAL ZERO FOR ANY COMBINATION?

Y N

204

REPLACE A1T2.

Verify repair.

Go To Map 2000, Entry Point A.

205

Disconnect A1Y4.

Test pins again.

DOES RESISTANCE EQUAL ZERO FOR ANY COMBINATION?

Y N

206

REPAIR or REPLACE A1 board.

Verify repair.

Go To Map 2000, Entry Point A.

207

REPAIR or REPLACE cable.

Verify repair.

Go To Map 2000, Entry Point A.

208

Remove jumper A1S2D08 to A1T2G02. Add jumper A1L1D13 to A1L2D08.

DOES DISPLAY EQUAL 7?

Y N

4 4
2 2
C C
E F

20JUL81

PN 6844902

EC 323243

PEC 869365

MAP 3900-41

B C C C
C A E F
3 4 4 4
1 0 1 1

5225 ALL MODELS

MAP 3900-42

PANEL

PAGE 42 OF 53

209
POWER OFF.

Remove jumper A1L1D13 to A1L2D08.
Remove CE jumper A1T2D12 to
A1T2D08.
Disconnect cable from operator panel.
Check for zero ohms between A1L1D13
and pin 5 of operator panel cable.

IS RESISTANCE ZERO OHMS?

Y N

210
REPAIR or REPLACE cable A1Y4 to
operator panel.
Verify repair.
Go To Map 2000, Entry Point A.

211
REPLACE operator panel.
Verify repair.
Go To Map 2000, Entry Point A.

212
REPAIR or REPLACE A1 board (open
circuit).
Verify repair.
Go To Map 2000, Entry Point A.

213
Go to Page 44, Step 221, Entry Point OS.

214
PROBE A1T2B02(+blank display).
Does PROBE indicate DOWN?
Y N

215
REPLACE A1T2.
Verify repair.
Go To Map 2000, Entry Point A.

4
3
C
G

20JUL81 PN 6844902
EC 323243 PEC 869365
MAP 3900-42

C
G
4
2

5225 ALL MODELS

MAP 3900-43

PANEL

PAGE 43 OF 53

216

PROBE A1N1A13.

Does PROBE indicate DOWN?

Y N

217

REPAIR or REPLACE the A1 board.

Verify repair.

Go To Map 2000, Entry Point A.

218

POWER OFF.

Disconnect cable from OPERATOR PANEL.

POWER ON.

PROBE pin 4 of cable.

Does PROBE indicate DOWN?

Y N

219

Remove CE jumper A1T2D12 to A1T2D08
installed before.

REPAIR or REPLACE cable from A1Y4 to
OPERATOR PANEL.

Verify repair.

Go To Map 2000, Entry Point A.

220

REPAIR or REPLACE OPERATOR PANEL.

Verify repair.

Go To Map 2000, Entry Point A.

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EC 323243

PEC 869365

MAP 3900-43

PANEL

221

(Entry Point OS)

Data lines to DISPLAY are good.

Remove jumpers from:

A1T2D08 to A1T2D12

A1T2G02 to A1S2D08

Set MODE SWITCH to 9

Wait 30 seconds.

PRESS and release START key.

PRESS and HOLD STOP key.

PROBE the following pins:

A1T2B10

A1T2B11

A1T2B12

Did PROBE indicate DOWN for all pins?

Y N

222

Press and hold stop key.

Probe the following pins:

A1M1D11

A1M1D13

A1N1B11

DID ALL LINES INDICATE DOWN?

Y N

223

POWER OFF.

Disconnect cable from operator panel.

Check for zero resistance between the following points:

A1M1D11 and pin 12 of cable.

A1M1D13 and pin 10 of cable.

A1N1B11 and pin 11, of cable.

IS RESISTANCE ZERO FOR ALL THREE MEASUREMENTS?

Y N

4 4 4 4
5 5 5 5
C C C C
H J K L

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MAP 3900-44

C C C C
H J K L
4 4 4 4
4 4 4 4

5225 ALL MODELS

MAP 3900-45

PANEL

PAGE 45 OF 53

224

REPAIR or REPLACE the cable.

Verify repair.

Go To Map 2000, Entry Point A.

225

REPLACE operator panel.

Verify repair.

Go To Map 2000, Entry Point A.

226

REPAIR or REPLACE A1 board.

Verify repair.

Go To Map 2000, Entry Point A.

227

Release STOP key.

PRESS and HOLD START key.

PROBE A1T2B12 and A1T2B10.

Did PROBE indicate DOWN for both pins?

Y N

228

REPLACE OPERATOR PANEL.

Go To Map 2000, Entry Point A.

229

Release START key.

PRESS and HOLD SPACE key.

PROBE A1T2B12.

Did PROBE indicate DOWN?

Y N

230

REPLACE OPERATOR PANEL.

Go To Map 2000, Entry Point A.

4
6
C
M

20JUL81

PN 6844902

EC 323243

PEC 869365

MAP 3900-45

C
M
4
5

5225 ALL MODELS

MAP 3900-46

PANEL

PAGE 46 OF 53

231

Release SPACE key.
PRESS and HOLD DISPLAY key.
PROBE A1T2B12 and A1T2B11.

Did PROBE indicate DOWN for both pins?

Y N

232

REPLACE OPERATOR PANEL.
Go To Map 2000, Entry Point A.

233

Release DISPLAY key.
PRESS AND HOLD CANCEL key.
PROBE A1T2B10 and A1T2B11.

Did PROBE indicate DOWN for both pins?

Y N

234

REPLACE OPERATOR PANEL.
Go To Map 2000, Entry Point A.

235

Release CANCEL key.
PRESS and HOLD 2nd MODE KEY.
PROBE A1T2D09.
Release 2nd MODE key.

Did PROBE indicate DOWN?

Y N

236

Probe A1M1E13.
Press 2nd MODE Key.
DID PROBE INDICATE DOWN?

Y N

4 4 4
7 7 7
C C C
N P Q

20JUL81 PN 6844902

EC 323243 PEC 869365

MAP 3900-46

C C C
N P Q
4 4 4
6 6 6

**5225 ALL MODELS
PANEL**

MAP 3900-47

PAGE 47 OF 53

237

POWER OFF.

Disconnect cable to operator panel.

Check for zero resistance between
A1M1E13 and pin 13.

IS RESISTANCE ZERO OHMS?

Y N

238

REPAIR or REPLACE the A1Y4 cable.

Verify repair.

Go To Map 2000, Entry Point A.

239

REPLACE operator panel.

Verify repair.

Go To Map 2000, Entry Point A.

240

REPAIR or REPLACE A1 board.

Verify repair.

Go To Map 2000, Entry Point A.

241

Release 2ND MODE key.

Set MODE SWITCH to BUFFER PRINT.

Sequence has to be followed.

PRESS and HOLD 2nd MODE Key(first).

PRESS STOP key.

Did DISPLAY go BLANK?

Y N

242

POWER OFF.

Set MODE SWITCH to TEST.

POWER ON (wait 30 seconds)

Probe A1T2B02.

**DID PROBE INDICATE UP WITH POWER
ON?**

Y N

4 4 4
9 9 8
C C C
R S T

20JUL81

PN 6844902

EC 323243

PEC 869365

MAP 3900-47

C
T
4
7

5225 ALL MODELS

MAP 3900-48

PANEL

PAGE 48 OF 53

243

Disconnect cable to operator panel.

DID PROBE INDICATE UP?

Y N

244

POWER OFF.

Disconnect A1Y4.

POWER ON and wait 30 seconds.

DID PROBE INDICATE UP?

Y N

245

POWER OFF.

Remove A1T2.

Check for maximum resistance (open)
between A1T2B02 and A1S2D08.

IS RESISTANCE MAXIMUM?

Y N

246

REPAIR or REPLACE A1 board.

Verify repair.

Go To Map 2000, Entry Point A.

247

REPLACE A1T2.

REINSTALL A1Y4/Op Panel cable.

Verify repair.

Go To Map 2000, Entry Point A.

248

REPAIR or REPLACE cable A1Y4/Op Panel.

Verify repair.

Go To Map 2000, Entry Point A.

4
9
C
U

20JUL81

PN 6844902

EC 323243

PEC 869365

MAP 3900-48

C C C
R S U
4 4 4
7 7 8

5225 ALL MODELS

MAP 3900-49

PANEL

PAGE 49 OF 53

249

REPLACE operator panel.

Verify repair.

Go To Map 2000, Entry Point A.

250

REPLACE A1T2.

Verify repair.

Go To Map 2000, Entry Point A.

251

Did ATTENTION also go off?

Y N

252

Go to Page 10, Step 034, Entry Point A-.

253

PRESS and HOLD 2nd MODE key.

PRESS and HOLD STOP key.

Turn MODE SWITCH through all positions.

Do correct digits display for each switch position?

Y N

254

Problem can be caused by OPERATOR PANEL or A1T2 card.

REPLACE OPERATOR PANEL first.

Go To Map 2000, Entry Point A.

255

Go to Page 12, Step 041, Entry Point R-.

20JUL81

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EC 323243

PEC 869365

MAP 3900-49

PANEL

256

(Entry Point R+)

Set mode switch to 2.

Press STOP key.

IS READY LIGHT OFF?

Y N

257

Probe A1T2J02.

DID PROBE INDICATE UP?

Y N

258

POWER OFF.

Remove A1T2 card.

POWER ON.

Is READY LIGHT OFF?

Y N

259

POWER OFF.

Remove cable from OPERATOR PANEL.

Check for 0 ohms between A1T2J02 and A1S2D08.

Is resistance 0 ohms?

Y N

260

REPLACE OPERATOR PANEL.

Verify repair.

Go To Map 2000, Entry Point A.

261

REPAIR or REPLACE cable from A1Y4 to OPERATOR PANEL.

Verify repair.

Go To Map 2000, Entry Point A.

262

REPLACE A1T2 card.

Verify repair.

Go To Map 2000, Entry Point A.

5 5
1 1
C C
V W

20JUL81

PN 6844902

EC 323243

PEC 869365

MAP 3900-50

C C
V W
5 5
0 0

5225 ALL MODELS

MAP 3900-51

PANEL

PAGE 51 OF 53

263

OPERATOR PANEL or READY light socket is failing.

Check READY light socket and socket wires for short to ground.

REPAIR or REPLACE short circuited socket or OPERATOR PANEL.

Go To Map 2000, Entry Point A.

264

Intermittent switches are all that remains to be tested. If you suspect intermittent switches or if you get unstable indications of expected operations when any key is pressed, REPLACE Operator Panel.

If no intermittent switches are suspected return to Verify, symptoms have changed.

Go To Map 2000, Entry Point A.

20JUL81 PN 6844902

EC 323243 PEC 869365

MAP 3900-51

PANEL

265

(Entry Point NA)

PROBE A1T1C13 while pressing and holding
DISPLAY key.

PROBE indicate DOWN?

Y N

266

POWER OFF.

REPLACE A1T2 card.

Verify repair.

Go To Map 2000, Entry Point A.

267

Check for +8.5 VDC between + side of ALARM
(+) and ground (-).

Is +8.5 VDC present?

Y N

268

POWER OFF.

REPAIR or REPLACE cable from A1Y6B05 to
+ side of ALARM.

Verify repair.

Go To Map 2000, Entry Point A.

269

Jumper - side of ALARM to frame ground.

Is ALARM sounding?

Y N

270

REPLACE ALARM.

Verify repair.

Go To Map 2000, Entry Point A.

271

REPAIR or REPLACE cable from A1Y6B04 to -
side of ALARM.

Verify repair.

Go To Map 2000, Entry Point A.

5225 ALL MODELS

MAP 3900-53

PANEL

PAGE 53 OF 53

272

(Entry Point AO)

POWER OFF.

Remove A1T2 card.

POWER ON.

Is ALARM on?

Y N

273

POWER OFF.

REPLACE A1T2 card.

Verify repair.

Go To Map 2000, Entry Point A.

274

POWER OFF.

REPAIR or REPLACE short circuited cable
between A1Y6B04 and - side of ALARM

Verify repair.

Go To Map 2000, Entry Point A.

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MAP 3900-53

SYMPTOM MAP

PAGE 1 OF 73

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
2000	A	1	001
2000	C	44	037
2000	E	54	043
2000	F	67	046
2000	G	69	049
2100	A	1	001
3000	A	1	001
3300	A	1	001
3300	B	10	034
3400	B	10	034
3800	D	47	040

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
4	010	2000	A
8	028	2000	A
9	031	2000	A
9	032	2000	A
43	036	2000	A
46	039	2000	A
53	042	2000	A
66	045	2000	A
68	048	2000	A
73	051	2000	A
3	004	2100	A
4	011	3800	NN

001

(Entry Point A)

Use the contents of table below when instructed to a specific Entry Title. If not, continue with step 001.

MAP 4000 TABLE OF CONTENTS

Entry Title	Go to entry point in this MAP
Error Code	B
Card Suspect List	C
Service Checks	D
Symptom Charts	E
Voltage Checks	F
Actuator Failure	G

(Step 001 continues)

SYMPTOM MAP

PAGE 2 OF 73

(Step 001 continued)

The SYMPTOM map is use when symptoms change, when other maps do not find the failure, when no solid error indication is sensed, when the failing customer symptom cannot be duplicated or failure does not occur all the time.

ALL POSSIBLE INDICATIONS AND SYMPTOMS SHOULD BE RECORDED TO AID YOU IN USING THIS MAP.

SYSTEM ERROR LOGS WILL AID IN IDENTIFYING INTERMITTENT PROBLEMS.

Obtain all information concerning failure from customer system aids and customer information.

- 5225 error log (See MIM chapter 2).
- Error codes (Displayed on OP panel).
- System error log (Host system information).
- On line problem (Customer identified).
- System identified problem (System CE).
- Failing programs (Customer identified).
- Special configuration conditions.
- Time of Day failure occurs.
- First power on failure (cold start).
- Long run time failures (hot, overheated)

The on line program can be used to find intermittent failures. Have the customer run failing job for you to observe.

When error indication is observed, GO TO MAP 4000 Entry Point B for errors and see Symptom Charts of Map 4000 Entry Point E for additional information.

Are forms operating correctly?

Y N

002

Forms Problem - See FORMS FEED ASSEMBLY Functional Area of Service Check Chart Section D, this MAP.

Go to Page 47, Step 040, Entry Point D.

3
A

15MAR82 PN 6844904

EC 997163 PEC 323243

MAP 4000-2

SYMPTOM MAP

PAGE 4 OF 73

007

Check for loose or worn cable connectors and pins.

Check for loose or binding assembly shields or covers.

Check linear and forms emitter glasses for rubbing transducers.

Check shock mountings.

Check the leveling pads for correct installation and being locked in place.

Check for loose covers.

Check for Dry pivot points.

Actuator carrier loose.

Thrust bearings loose or worn.

Loose actuator, ribbon or forms drive motor mounting screws.

Shipping brackets still connected.

Noise is in Forms Motor?

Y N

008

Noise is in Actuator Carrier?

Y N

009

Noise is in Ribbon Drive?

Y N

010

Check fans for noise.

Go To Map 2000, Entry Point A.

011

Go To Map 3800, Entry Point NN.

012

Go to Page 54, Step 043, Entry Point E.

013

Go to Page 54, Step 043, Entry Point E.

SYMPTOM MAP

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014

Locate source of noise and go to NOISY MOTOR SYMPTOMS Chart.

Go to Page 54, Step 043, Entry Point E.

NOTE: Some motor noise go away when motor is running.

015

Is ribbon life O.K.?

Y N

016

Is ribbon getting torn or hung up?

Y N

017

Check ribbon spools for correct seating on ribbon assembly.

Check ribbon guides for tightness or damage.

Check forms thickness setting for forms being used.

Check platen adjustment. See MIM 3402.

Check forms thickness switch for short.

Check for damaged ribbon guides.

FORMS CONTROL SETTING.

PART	FORMS	SETTING
SINGLE	PART	0-3
TWO	PART	4-6
THREE	PART	6-8
FOUR	PART	9-12
FIVE	PART	13-16
SIX	PART	17-19

Electrical check of Forms thickness switch:
Connect meter to A1N2J12(+) and any D08(-).
Cam Setting 0-14=+5 volts
Cam Setting 15-30= 0 volts

SYMPTOM MAP

PAGE 6 OF 73

018

Tears in ribbon can be caused by a binding or broken actuator, platen to print actuator too close, or end plate to print assembly out of adjustment.

Verify no actuator wire protrudes out of actuator.

Run actuator test mode switch 5 and check for tearing of ribbon.

Replace failing actuator.

Perform service checks. PRINT ACTUATORS, FORMS FEED, PLATEN TO PRINT ACTUATOR ADJUSTMENTS.

Go to Page 47, Step 040, Entry Point D.

Normal end of ribbon life indications:

1. Ink in ribbon used up.
2. Severe ribbon folding.
3. Ribbon material wear.

All of the above conditions represent normal end of 5225 ribbon life and ribbon needs to be replaced.

019

Is customer output (printing speed) O.K.?

Y N

This is determined by customer comment of printing output not acceptable.

020

Check all electronic adjustments.

See MIM 3104 and 3105.

Check forms thickness switch for a short. REPLACE if failing.

Electrical check of Forms thickness switch:
Connect meter to A1N2J12(+) and any D08(-).
Cam Setting 0-14=+5 volts
Cam Setting 15-30= 0 volts

021

Does the machine fail without displaying a valid error code?

Y N

022

Error code descriptions

Go to Page 10, Step 034, Entry Point B.

SYMPTOM MAP

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023

Visually inspect mechanical parts of machine for damaged, loose or worn indications. Check for binds or missing screws, mounting parts, other physical problems.

Visual inspection O.K.?

Y N

024

Repair or correct mechanical problem found
Go to Page 47, Step 040, Entry Point D.

Review service checks. See Entry point D.

025

Do failing symptoms change?

Y N

026

Go to map that represents the suspected failing area. (Example: Forms Area Map 3400.)

027

Very intermittent problems with changing symptoms can be caused by various failures. Perform the following checks to ensure basic machine conditions to be correct.

1. Power line voltage compares with machine wiring.
2. Machine is grounded correctly.

Good connection to CUSTOMER ground at power source.

3. Check all screws on power buses, terminal blocks and sequence card for tightness.
4. Check all ground straps on covers, frames and print assembly for being connected and tight.
5. Check all connector pins for correct seating in connectors, attachment to wires and good physical condition (not bent, broken or loose on (Step 027 continues)

SYMPTOM MAP

(Step 027 continued)
wire).

6. Check all logic board, servo power amplifier and sequence card cable connectors for correct seating.

See MIM Chapter 4.

7. Check linear emitter and forms emitter for scratches on emitter glass, loose transducer assemblies, loose cable connectors or dirt.

See MIM Chapter 4.

8. Check all logic cards for correct seating in board.

See MIM Chapter 4.

9. Perform voltage checks with printer printing.

See VOLTAGE CHECKS (Entry Point F), this map.

10. Check that all (4) fans are running.

11. If possible, have customer change printer address or termination. (If on line operation is the problem.)

12. Check for loose or binding End of Forms Sensor.

See MIM Chapter 4.

13. Check platen switch for correct adjustment.

See MIM 3411.

14. Visually check crossover connectors for bent or missing pins.

Additional checks O.K.?

Y N

|

028

Correct problem area and VERIFY repair
Go To Map 2000, Entry Point A.

029

The top cover interlock can cause intermittent problems. Check adjustments and tightness of all connections to interlock switch and power supply, or loose magnet.

See MIM 1009.

Interlock check O.K.?

Y N

| |

9 9
H J

SYMPTOM MAP

PAGE 9 OF 73

030

Adjust interlock switch.

See MIM 1009.

Could interlock switch adjustment be made?

Y N

031

Replace interlock switch.

Repair or replace cable going to interlock switch if found failing.

Go To Map 2000, Entry Point A.

032

Go To Map 2000, Entry Point A.

033

No problem found. Review information at Entry Points C, E and F, this map.

SYMPTOM MAP

PAGE 10 OF 73

034

(Entry Point B)

***** ERROR CODES *****

The error code list has a comment section for each code. This is for C.E. use when he determines a special symptom or feels a history of the error could be of value in the future.

Each fru is in the order of priority to repair the failure. First FRU repairs the highest number of failures with associated indication. IN NO CASE ARE ALL FRU'S NEEDED TO FIX FAILURE. When the FRU is card, for jumper and/or adjustments see MIM 3103.

Entry to this map should only be as directed by some other printer map or when you have a changing error code.

ERROR CODE	DESCRIPTION	UNIT CHECKS	SUSPECT LIST
11	This error code is caused by any parity check in the printer controller, any storage failure during checking when running Power On diagnostics or a failure to communicate with the CMA during Power On diagnostics.	See drawing AE010 and MIM 3103.	Replace CTA-A1P2 CMA-A1T2 CMS-A1S2 ----- FOR MODELS 11 & 12: STH-A1S2 CTA-A1P2 CMA-A1T2

*COMMENTS:

* Record any information you find that may aid you or other C.E.s to isolate a failure that causes this error code.
(Step 034 continues)

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EC 997163 PEC 323243

MAP 4000-10

SYMPTOM MAP

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(Step 034 continued)

ERROR CODE	DESCRIPTION	UNIT CHECKS	SUSPECT LIST
22	<p>During power on sequence only.</p> <p>During on line operation, errors BB, CC or DD may be observed.</p> <p>NOTE: This code is normally used with mode switch set to position 2.</p>	<p>Possible bad address switches.</p> <p>Verify Switches set to correct address and not 7.</p> <p>See drawing AA035 and MIM 3103.</p>	<p>Replace A1U2 (I/F), A1T2 (CMA), Customer Access Panel PC Board CTA-A1P2</p>

*COMMENTS:

* Record any information you find that may aid you or other C.E.s to isolate a failure that causes this error code.

(Step 034 continues)

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 EC 997163 PEC 323243
 MAP 4000-11

SYMPTOM MAP

PAGE 12 OF 73

(Step 034 continued)

ERROR CODE	DESCRIPTION	UNIT CHECKS	SUSPECT LIST
31	Print head control and sense card failure. The hardware latches that control the print head (speed, direction, run or stop) are checked each time the print heads are moved to the ramp position. During printing, many errors sensed by the micro-code will result in the running of on line print head diagnostics. The diagnostics will attempt to diagnose the problem and present the correct error code.	See MIM 3103.	Replace A1N2

*COMMENTS:

* Record any information you find that may aid you or other C.E.s to isolate a failure that causes this error code.

(Step 034 continues)

15MAR82 PN 6844904

EC 997163 PEC 323243

MAP 4000-12

SYMPTOM MAP

PAGE 13 OF 73

(Step 034 continued)

ERROR CODE	DESCRIPTION	UNIT CHECKS	SUSPECT LIST
32	Head Servo Error	This error is sensed during print head diagnostics. Check electronic adjustment, see MIM 3103. See drawing AA050.	Replace A1L2 , Servo Power Amplifier

*COMMENTS:

* Record any information you find that may aid you or other C.E.s to isolate a failure that causes this error code.

ERROR CODE	DESCRIPTION	UNIT CHECKS	SUSPECT LIST
34	Head Servo, Motor, Driver or cable error.	Check all connectors on Servo Power AMP. Check motor coupling for tightness. Suspect Servo Power Amplifier card. See MIM 3616. Check Electronic Adjustments, MIM 3103. See drawing AA050.	Replace A1L2 , Servo Power Amplifier

*COMMENTS:

* Record any information you find that may aid you or other C.E.s to isolate a failure that causes this error code.

(Step 034 continues)

15MAR82 PN 6844904

EC 997163 PEC 323243

MAP 4000-13

SYMPTOM MAP

PAGE 14 OF 73

(Step 034 continued)

ERROR CODE	DESCRIPTION	UNIT CHECKS	SUSPECT LIST
35	Head over current. The print head servo motor needs too much current to operate (over current sense), or not reset by CMA during Power ON tests.	Check for binds anywhere on motor lead screw. Check continuity of cable P204 to A1L5, reference drawing AA050. Repair if failing. Check linear emitter glass for dirt or damage. Replace linear emitter amplifier card. Check cable from amplifier card to board location A1Y3 for breaks and/or wear. See Reference Drawing AA065 and MIM 3303.	Replace Linear Emitter Amplifier Card, or Linear Emitter Glass. A1L2 Servo Power Amp card.

*COMMENTS:

* Record any information you find that may aid you or other C.E.s to isolate a failure that causes this error code.

(Step 034 continues)

15MAR82 PN 6844904

EC 997163 PEC 323243

MAP 4000-14

SYMPTOM MAP

PAGE 15 OF 73

(Step 034 continued)

ERROR CODE	DESCRIPTION	UNIT CHECKS	SUSPECT LIST
36	Print emitter failure.	Replace linear emitter amplifier card. Check cable from amplifier card to board location A1Y3 for breaks and/or wear. See Reference Drawing AA065 and MIM 3303.	Replace Linear Emitter Amplifier Card

*COMMENTS:

* Record any information you find that may aid you or other C.E.s to isolate a failure that causes this error code.

(Step 034 continues)

15MAR82 PN 6844904

EC 997163 PEC 323243

MAP 4000-15

SYMPTOM MAP

PAGE 16 OF 73

(Step 034 continued)

ERROR CODE	DESCRIPTION	UNIT CHECKS	SUSPECT LIST
37	This error code can only occur if the high voltage good signal went to a down level while the on line head diagnostics were running. Since an error has to be sensed before running the on line diagnostics, this error probably will not occur often.		Power Sequence card.

*COMMENTS:

* Record any information you find that may aid you or other C.E.s to isolate a failure that causes this error code.

(Step 034 continues)

15MAR82 PN 6844904

EC 997163 PEC 323243

MAP 4000-16

SYMPTOM MAP

PAGE 17 OF 73

(Step 034 continued)

ERROR CODE	DESCRIPTION	UNIT CHECKS	SUSPECT LIST
38	Print head speed error. This error occurs when a print emitter, margin emitter or turn around emitter is late in occurring or going off.	Check for binds or loose parts in the head drive mechanism. Check for DIRTY and/or broken linear emitter glass. Check the mounting bar for the linear emitter pick up for tightness and that it is level. Perform Service Checks in MIM 3303. Check linear emitter amplifier cable to board location A1Y3. Replace linear emitter and pick up. Failing motor, Servo Power Amplifier and the A1L2 card can cause this error. Check jumpers on CS A1N2 card (number of heads). Check Electronic adjustments, MIM 3103. See drawings:AA050 and AA065.	Replace A1L2 , Cable from A1L5 to Servo Power Amp, Linear Emitter Amplifier card.

*COMMENTS:

* Record any information you find that may aid you or other C.E.s to isolate a failure that causes this error code.

(Step 034 continues)

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EC 997163 PEC 323243

MAP 4000-17

SYMPTOM MAP

PAGE 18 OF 73

(Step 034 continued)

ERROR CODE	DESCRIPTION	UNIT CHECKS	SUSPECT LIST
39	This error can only occur when the print head is going to the home position with Run or Ramp speed on and a time-out occurs waiting for home position to occur.	Check motor coupling for tightness.	

*COMMENTS:

* Record any information you find that may aid you or other C.E.s to isolate a failure that causes this error code.

(Step 034 continues)

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EC 997163 PEC 323243

MAP 4000-18

SYMPTOM MAP

PAGE 19 OF 73

(Step 034 continued)

ERROR CODE	DESCRIPTION	UNIT CHECKS	SUSPECT LIST
41	Forms control and sense card failure. The hardware latches to control the forms (speed, direction, run or stop) are checked each time the print heads are moved to the home position. All latches are turned on, read back and verified for an ON condition. Any latch failure will result in the 41 error code.	See drawing AA055.	Replace A1N2

*COMMENTS:

* Record any information you find that may aid you or other C.E.s to isolate a failure that causes this error code.

(Step 034 continues)

15MAR82 PN 6844904

EC 997163 PEC 323243

MAP 4000-19

SYMPTOM MAP

PAGE 20 OF 73

(Step 034 continued)

ERROR CODE	DESCRIPTION	UNIT CHECKS	SUSPECT LIST
42	Forms Servo Error	The Forms Servo card is probably failing. See MIM 3103 for electronic adjustment and jumper. See drawing AA055	Replace A1L2, Servo Power Amp.

*COMMENTS:

* Record any information you find that may aid you or other C.E.s to isolate a failure that causes this error code.

(Step 034 continues)

15MAR82 PN 6844904
 EC 997163 PEC 323243
 MAP 4000-20

SYMPTOM MAP

PAGE 21 OF 73

(Step 034 continued)

ERROR CODE	DESCRIPTION	UNIT CHECKS	SUSPECT LIST
43	Forms Servo Motor Driver error.	See MIM 3611 and Figure 4-10. Check fuses F1, F2. See drawing AA055.	A1L2, Servo Power Amp .

*COMMENTS:

ERROR CODE	DESCRIPTION	UNIT CHECKS	SUSPECT LIST
45	Forms over current. The forms servo motor needed too much current to operate.	Check complete forms mechanism for any binds (Note: bad bearings can bind intermittently -- make a careful check). See drawing AA055.	Replace A1L2, Servo Power Amp .

*COMMENTS:

* Record any information you find that may aid you or other C.E.s to isolate a failure that causes this error code.

(Step 034 continues)

SYMPTOM MAP

PAGE 22 OF 73

(Step 034 continued)

ERROR CODE	DESCRIPTION	UNIT CHECKS	SUSPECT LIST
46	Forms emitters error. This error is displayed if forms emitters fail.	Most probable failure is the emitter amplifier card at A1K2. Emitter pick up on forms motor or emitter cable is also suspect. See drawing AA065.	Replace A1K2 Emitter Assembly on Forms Motor.

*COMMENTS:

* Record any information you find that may aid you or other C.E.s to isolate a failure that causes this error code.

(Step 034 continues)

15MAR82 PN 6844904

EC 997163 PEC 323243

MAP 4000-22

SYMPTOM MAP

PAGE 23 OF 73

(Step 034 continued)

ERROR CODE	DESCRIPTION	UNIT CHECKS	SUSPECT LIST
47	<p>The forms thickness switch is used to increase the force of the print wires and to prevent forms high speed skip to improve forms stacking.</p> <p>This code will be displayed if the Forms Thickness cam is set above 15 and TEST or test 8 is run.</p> <p>Test 8 (Forms test) is the last routine that runs when the Mode Switch is in the TEST position.</p>	<p>Error 47 only indicates that the controller can read the switch. If code 47 always appears when running test 8 and the forms thickness setting is below 15, the switch or card A1N2 is failing. If error 47 does not appear with forms thickness set above 15, the switch or A1N2 card is failing.</p> <p>See drawing AA045 and MIM 3410.</p>	<p>Replace Forms Thickness switch, A1N2 card, A1Y4 cable.</p>

*COMMENTS:

* Record any information you find that may aid you or other C.E.s to isolate a failure that causes this error code.

(Step 034 continues)

15MAR82 PN 6844904

EC 997163 PEC 323243

MAP 4000-23

SYMPTOM MAP

PAGE 24 OF 73

(Step 034 continued)

ERROR CODE	DESCRIPTION	UNIT CHECKS	SUSPECT LIST
48	Forms speed error. This error will occur if the forms are not in the correct position when printing.	Check all forms adjustments. Symmetry A and B, Quadrature, Forms speed and busy adjustments. Check for slight binds in forms tractors. Check for loose emitter. See Drawings AA055, AA065 and MIM 3103.	Replace A1L2, A1K2, Servo Power Amp. Forms Feed Drive Motor

*COMMENTS:

* Record any information you find that may aid you or other C.E.s to isolate a failure that causes this error code.

(Step 034 continues)

15MAR82 PN 6844904

EC 997163 PEC 323243

MAP 4000-24

SYMPTOM MAP

PAGE 25 OF 73

(Step 034 continued)

ERROR CODE	DESCRIPTION	UNIT CHECKS	SUSPECT LIST
55	<p>This is NOT AN ERROR indication. It is the result of the 5225 receiving a BEL command from the host system.</p> <p>On receiving a BEL command, the 5225 action is:</p> <ol style="list-style-type: none"> 1. Went not ready - Attention light on Ready off. 2. Display 55 in LED. 3. Turn on audible alarm (if installed). 	To continue printing: press stop/reset key, press start key.	

*COMMENTS:

* Record any information you find that may aid you or other C.E.s to isolate a failure that causes this error code.

(Step 034 continues)

15MAR82 PN 6844904

EC 997163 PEC 323243

MAP 4000-25

SYMPTOM MAP

PAGE 26 OF 73

(Step 034 continued)

ERROR CODE	DESCRIPTION	UNIT CHECKS	SUSPECT LIST
77	Indicates cover and/or platen open.	<p>Check adjustment of cover interlock/magnet, platen switch and associated cables. See MIM 3411.</p> <p>IMPORTANT - Platen switch is not a micro switch and cannot be checked with an ohm meter. See drawing AA045 and AA065.</p>	<p>Replace A1N2</p>

*COMMENTS:

* Record any information you find that may aid you or other C.E.s to isolate a failure that causes this error code.

(Step 034 continues)

15MAR82 PN 6844904

EC 997163 PEC 323243

MAP 4000-26

SYMPTOM MAP

PAGE 27 OF 73

(Step 034 continued)

ERROR CODE	DESCRIPTION	UNIT CHECKS	SUSPECT LIST
81	(During power on or Operation). The sequence card checks the +50vdc and +10vdc and generates a HI POWER GOOD signal. When these voltages are in specification the signal is high. This signal is sensed by the CTA and will report an error when the HIGH POWER GOOD signal is low.	Check fuses 206 (Good connection) on sequence card. Check power supply +10 and +50 voltages. Check fuses F208,F210. Check diodes CR211 and CR212 in power supply. Check power supply and sequence card for loose connections. Check cover interlock switch. Check contactor (K201) points for dirt or burned out contacts. See MIM figure 4-10. See drawings: AA015, AA020,AA025, and AA045	REPLACE F208, F210. CR211, CR212. Sequence card.

*COMMENTS:

* Record any information you find that may aid you or other C.E.s to isolate a failure that causes this error code.

(Step 034 continues)

15MAR82 PN 6844904

EC 997163 PEC 323243

MAP 4000-27

SYMPTOM MAP

PAGE 28 OF 73

(Step 034 continued)

ERROR CODE	DESCRIPTION	UNIT CHECKS	SUSPECT LIST
83	Data from Head Image Generator does not compare with text being printed or storage parity error occurred on HIG access to CMS storage	Ensure jumpers are installed correctly on (A1R2) HIG 4 wide (A1R4) HIG 2 wide MODELS 1,2,3,4 ONLY. See MIM 3103, and drawings AB050 and AE010.	Replace (HIG) A1R2 - 4 wide, A1R4 - 2 wide, CMS-A1S2 CTA-A1P2 ----- FOR MODELS 11 & 12 --- STH-A1S2 CTA-A1P2

*COMMENTS:

* Record any information you find that may aid you or other C.E.s to isolate a failure that causes this error code.

(Step 034 continues)

15MAR82 PN 6844904

EC 997163 PEC 323243

MAP 4000-28

SYMPTOM MAP

PAGE 29 OF 73

(Step 034 continued)

ERROR CODE	DESCRIPTION	UNIT CHECKS	SUSPECT LIST
84	(During power on or operation). Indicates feedback from wire latch card does not compare with data loaded into wire latch card by the control adapter (CTA) card or that wire latch failed to reset.		Replace wire latch card A1M2

*COMMENTS:

* Record any information you find that may aid you or other C.E.s to isolate a failure that causes this error code.

(Step 034 continues)

15MAR82 PN 6844904
 EC 997163 PEC 323243
 MAP 4000-29

SYMPTOM MAP

PAGE 30 OF 73

(Step 034 continued)

ERROR CODE	DESCRIPTION	UNIT CHECKS	SUSPECT LIST
85	Wire driver error - wire driver failed to turn on or off at correct time.		Replace (WL) A1M2, (CS) A1N2, (CTA) A1P2 cards.

*COMMENTS:

* Record any information you find that may aid you or other C.E.s to isolate a failure that causes this error code.

(Step 034 continues)

15MAR82 PN 6844904

EC 997163 PEC 323243

MAP 4000-30

SYMPTOM MAP

PAGE 31 OF 73

(Step 034 continued)

ERROR CODE	DESCRIPTION	UNIT CHECKS	SUSPECT LIST
86	(During power on test only). Sensed by Control Adapter card - reads head jumpers on Control and Sense card (number of heads) during power on test (2, 4, 6 or 8). Error is reported if number of heads is zero, or more than 8.	Check jumpers on Control and Sense card - Loose? Dirty? See MIM 3103.	Replace Control and Sense card. (A1N2) CTA-A1P2

*COMMENTS:

* Record any information you find that may aid you or other C.E.s to isolate a failure that causes this error code.

(Step 034 continues)

15MAR82 PN 6844904

EC 997163 PEC 323243

MAP 4000-31

SYMPTOM MAP

PAGE 32 OF 73

(Step 034 continued)

ERROR CODE	DESCRIPTION	UNIT CHECKS	SUSPECT LIST
87	Timers on Control and Sense card failed.		Replace (CS) A1N2, (CTA) A1P2 cards.

*COMMENTS:

* Record any information you find that may aid you or other C.E.s to isolate a failure that causes this error code.

(Step 034 continues)

15MAR82 PN 6844904
EC 997163 PEC 323243
MAP 4000-32

SYMPTOM MAP

PAGE 33 OF 73

(Step 034 continued)

ERROR CODE	DESCRIPTION	UNIT CHECKS	SUSPECT LIST
88	Ribbon jam or ribbon is not running when it should be. NOTE: An error will occur if the ribbon motor reverses before approximately 10 yards of ribbon movement is used.	Set mode switch to 4 and observe ribbon drive for reversing. Install new ribbon if badly worn. Check ribbon motor cables for tight connectors and cable wear. Possible failing ribbon motor. Verify A1H2 connector is correctly connected. See drawing AA060.	Replace A1K4

NORMAL END OF RIBBON LIFE INDICATIONS:

1. Ink in ribbon used up.
2. Severe ribbon folding.
3. Ribbon material wear.

All of the above conditions represent normal end of 5225 ribbon life and ribbon needs to be replaced.

*COMMENTS:

* Record any information you find that may aid you or other C.E.s to isolate a failure that causes this error code.

(Step 034 continues)

SYMPTOM MAP

PAGE 34 OF 73

(Step 034 continued)

ERROR CODE	DESCRIPTION	UNIT CHECKS	SUSPECT LIST
89	Ribbon diagnostic failure on power up.	Use same action as Error Code 88.	

NORMAL END OF RIBBON LIFE INDICATIONS:

1. Ink in ribbon used up.
2. Severe ribbon folding.
3. Ribbon material wear.

All of the above conditions represent normal end of 5225 ribbon life and ribbon needs to be replaced.

*COMMENTS:

* Record any information you find that may aid you or other C.E.s to isolate a failure that causes this error code.

(Step 034 continues)

15MAR82 PN 6844904

EC 997163 PEC 323243

MAP 4000-34

SYMPTOM MAP

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(Step 034 continued)

ERROR CODE	DESCRIPTION	UNIT CHECKS	SUSPECT LIST
99	(On line only) Graphic Check condition. NOT AN ERROR - caused by the host transmitting a character that is not valid.	See: SGEA - SCS commands LAC - SCS commands SCL - SCS commands TRN - SCS commands	

*COMMENTS:

* Record any information you find that may aid you or other C.E.s to isolate a failure that causes this error code.

(Step 034 continues)

15MAR82 PN 6844904
EC 997163 PEC 323243
MAP 4000-35

SYMPTOM MAP

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(Step 034 continued)

ERROR CODE	DESCRIPTION	UNIT CHECKS	SUSPECT LIST
AA	DATA cleared ! Command received from HOST and the printer is not ready.	Press reset key and then press start key.	

*COMMENTS:

* Record any information you find that may aid you or other C.E.s to isolate a failure that causes this error code.

(Step 034 continues)

15MAR82 PN 6844904

EC 997163 PEC 323243

MAP 4000-36

SYMPTOM MAP

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(Step 034 continued)

ERROR CODE	DESCRIPTION	UNIT CHECKS	SUSPECT LIST
BB	(On line only) LED display may be flashing B intermittently. Printing may continue normally or at slower output. Line Checks - caused by parity errors sensed on Host interface (twinax) cable.	Check other devices on line for same symptoms. Check that no two devices are set to same address. Check twinax cables and connectors. If more than one device on line - turn off one at a time and observe symptoms. Check termination of devices - last device ONLY is terminated. If O.K., go to System Entry Map 2000.	Replace (I/F) A1U2 card, Customer access panel printed circuit card and check connecting cables and plugs, See Drawing AA035. A1T2-CMA

*COMMENTS:

* Record any information you find that may aid you or other C.E.s to isolate a failure that causes this error code.

(Step 034 continues)

15MAR82 PN 6844904

EC 997163 PEC 323243

MAP 4000-37

SYMPTOM MAP

(Step 034 continued)

ERROR CODE	DESCRIPTION	UNIT CHECKS	SUSPECT LIST
CC	(On line only) Address not received. MAY BE NORMAL CONDITION - Host is not polling device, but line activity has been sensed.	Check Address Switches for correct address. Possible failing address switch.	Replace I/F-A1U2 Customer access panel printed circuit CARD CMA-A1T2 ----- FOR MODELS 11 & 12 CMA-A1T2 KJS-A1R2 I/F-A1U2

*COMMENTS:

* Record any information you find that may aid you or other C.E.s to isolate a failure that causes this error code.

(Step 034 continues)

SYMPTOM MAP

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(Step 034 continued)

ERROR CODE	DESCRIPTION	UNIT CHECKS	SUSPECT LIST
DD	(On line only) No Line Activity. Indicates no line activity has been sensed on the twinax cable. THIS MAY BE NORMAL. (Host system powered off or not polling).	Check other devices on the same line for normal operation. If not HOST OR CABLE PROBLEM. GO TO SYSTEM ENTRY MAP. If other devices are on the same line, check that only the last device is terminated. Check twinax cables and connectors on all devices on the line, If O.K., go to System Entry Map 2000. Check diodes on K201 contactor. See drawing : AA035 and AA025.	Replace (I/F), A1U2 card, Customer access panel printed circuit card and check connecting cables, plugs. See Drawing AA035. Review Suspect Card List see Entry Point C, this map

*COMMENTS:

* Record any information you find that may aid you or other C.E.s to isolate a failure that causes this error code.

(Step 034 continues)

15MAR82 PN 6844904

EC 997163 PEC 323243

MAP 4000-39

SYMPTOM MAP

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(Step 034 continued)

ERROR CODE	DESCRIPTION	UNIT CHECKS	SUSPECT LIST
EE (with Mode Switch not in position 2)	The EE code, when displayed in the console LED, indicates End of Forms or Forms jams. The End of Forms sensor contains an LED, photo transistor and emitter wheel placed in an assembly. The emitter wheel must turn to emit pulses which the micro-program reads to verify that forms are moving.	Check emitter wheel for free rotation, spring tension against the forms and tight cable connections. Check Forms Drive belt and pulleys for tightness.	Replace EOF emitter assembly Replace A1K2, CS -A1N2 CMS-A1S2 CMA-A1T2 ----- FOR MODELS 11 & 12 CMA-A1T2 STH-A1S2 I/F-A1U2

*COMMENTS:

* Record any information you find that may aid you or other C.E.s to isolate a failure that causes this error code.

(Step 034 continues)

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MAP 4000-40

5225 ALL MODELS

MAP 4000-41

SYMPTOM MAP

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(Step 034 continued)

ERROR CODE	DESCRIPTION	UNIT CHECKS	SUSPECT LIST
FF	<p>The FF code indicates parity error in CMA or Power On Reset (POR) line held down. The pull up resistor for POR signal is located on A1K4 card. See drawing AA045.</p> <p>If printer had been powered ON or just powered ON (after 30 seconds) and the F is displayed, probe A1T2Z12(PARITY ERROR) line. If line is down the PCU is NOT causing the F. If A1T2Z12 line is up, It can be the PCU or noise on the POR line.</p> <p>If error occurs,when opening or closing top cover,it may be a Loose connection or a open diode on CR221 assembly, a bad snubber SN201/SN202, or a bad capacitor across the cover interlock switch. See drawing AA025.</p>	<p>Check seating of cards: A1T2,A1S2,A1R2, A1U2, and A1K4. Verify A1U3B06,A1U3D08, and A1U3B11 connectors are making good contact. Verify following connector pins are correctly seated and making good contact: P213-1 to J213-1 and A1Y5 pin D02 ,see drawing AA045 and MIM figure 4-14.</p> <p>On sequence card verify the following: Fuses F203 through F206 are making good contact. Connectors and pins are correctly seated (not pushed back) on P201, P202, and P203. See drawing AA020.</p> <p>Verify Voltages, use table in ENTRY POINT F of this map.</p> <p>Disconnect Power plug from customer source. Verify the following Connections are tight in power supply (See drawing AA020 and MIM figures 4-9,4-10,and 4-11.) C201,C202, R201,</p>	<p>REPLACE</p> <p>A1T2 A1S2 Sequence card A1R2 A1U2 CR221 Assembly SN201 SN202 capacitor across interlock switch See MIM 3103 if a card is replaced</p>

(Step 034 continues)

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MAP 4000-41

SYMPTOM MAP

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(Step 034 continued)

	<p>See Unit Checks. CAUTION: when entering the AC POWER BOX or POWER SUPPLY, disconnect power plug from customer source.</p>	<p>R202,ground bus screws, TB203-1,TB203-2,and all terminals on TB201. Also check solder connections on CR201 and CR202.</p> <p>For access to AC power box,SEE MIM 3602,3604 and drawing AA025. Verify the following: All screws are tight on TB204. Diode assembly CR221 is not open . All connections on K201 are tight. Ground connection screw for FL1 is tight.</p>	
--	--	--	--

*COMMENTS:

* Record any information you find that may aid you or other
 C.E.s to isolate a failure that causes this error code.

POWER OFF.
 Turn Mode Switch to 2.
 POWER ON.
 Wait 30 seconds.
 Display = 0.
 Turn Mode Switch to Test.
 Hit Start key.
 Printer should print test pattern.
 At end of print, Display = 0 and Attention light is
 on.

Above tests ran O.K.?

Y	N
4	4
3	3
K	L

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 MAP 4000-42

K L
4 4
2 2

5225 ALL MODELS

MAP 4000-43

SYMPTOM MAP

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035

VERIFY the symptoms! Perform CARD
SUSPECT LIST SERVICE CHECK (Entry Point
C, this map) for suspect problem. IF
PROBLEM is NOT corrected, request aid.

036

Verify Repair.

Go To Map 2000, Entry Point A.

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MAP 4000-43

SYMPTOM MAP

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037

(Entry Point C)

*****CARD SUSPECT LIST SERVICE CHECK*****

FOR CHANGING ERROR CODES A SUSPECT CARD LIST IS SUPPLIED,
SHOWING POSSIBLE ERROR CODES AND CARDS WHICH CAN CAUSE THAT
ERROR. EXAMPLE: ERROR CODE 48 FOUND IN CARD L2 & K2 BELOW.

NOTE: When card is replaced see MIM 3103 for jumper and/or
adjustment.

FORMS AMP K2	SERVO AMP L2	WL M2	CS N2	CTA P2
46 48	32 34	84 85	31 41 77	11
EE	35 38		83 85 86	
	42 43		87	
	45 48			
RIBBON K4	HIG R2 or R4	CMS S2	CMA T2	I/F U2
88 89	83	22 BB	22 BB CC	22 BB
		DD EE	DD EE FF	CC DD
		FF		EE FF

(Step 037 continues)

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MAP 4000-44

SYMPTOM MAP

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(Step 037 continued)

SEQUENCE CARD	L.E.M.	* (MODELS 11,12 ONLY) * KJS R2	* STH S2
81 FF	35 36	BB CC	11 22
Missing Voltage	38	DD EE	83 DD
		FF	EE FF

SERVO POWER AMP	I/F P.C. CARD
35 38	22 BB
45 48	CC DD
	FF

POWER OFF.

Turn Mode Switch to 2.

POWER ON.

Wait 30 seconds.

Display = 0.

Turn Mode Switch to Test.

Hit Start key.

Printer should print test pattern.

At end of print, Display = 0 and Attention light is on.

Above tests ran O.K.?

Y N

038

VERIFY the symptoms! Perform SERVICE CHECKS (Entry Point D, this map) for suspect problem. IF PROBLEM is NOT corrected, request aid.

M
4
5

5225 ALL MODELS

MAP 4000-46

SYMPTOM MAP

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039

Verify Repair.

Go To Map 2000, Entry Point A.

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MAP 4000-46

SYMPTOM MAP

040
(Entry Point D)

***** SERVICE CHECKS *****

SERVICE CHECKS:	FUNCTIONAL AREA

ACTUATOR CARRIER *****	
<p>1. You can turn the upper vertical bearing (one) and the thrust bearings with your fingers. There should be a light drag on all three bearings.</p>	<p>RELEASE LATCH ARMS See MIM 3306</p>
<p>Move the actuator carrier off the ramp and make the above check at both ends of the actuator movement.</p>	<p>Note: 5225 MODEL 1 machines DO NOT have thrust bearings.</p>
<p>Pull the cam follower against the spring tension and release it to ensure a free return with no binds in the shaft.</p>	
<p>Open the forms feed assembly. Ensure free return of the latches when they are released. The latches should return to the latch position under spring tension with no binds.</p>	

(Step 040 continues)

SYMPTOM MAP

PAGE 48 OF 73

(Step 040 continued)

 END OF FORMS SENSOR

- | | |
|--|---|
| 2. Ensure that the E.O.F. wheel has spring tension, and is protruding through the opening in the form feed assembly.
See MIM 3401 | E.O.F. sensor
See MIM 3409

(paper path) |
|--|---|

 FORMS DRIVE MOTOR

- | | |
|--|---------------|
| 3. The drive shaft and the pulley should be tight against the opposite sides of the bearing.
The drive belt should have approximately 6MM (.25 inches) deflection at the center point between the pulleys. The belt should not be torn or have broken or missing teeth.
Position The pulley on the drive motor to permit the full width of the belt to be on the upper pulley. | See MIM 3403. |
|--|---------------|

 FORMS FEED
 ASSEMBLY

- | | |
|--|---|
| 4. Ensure that both forms feed latches do not bind on the pivot and are fully seated behind the eccentrics when latched. Verify no left to right | END PLATE to printer assembly gap. See MIM 3402 |
|--|---|

(Step 040 continues)

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MAP 4000-48

SYMPTOM MAP

PAGE 49 OF 73

(Step 040 continued)

movement in the forms feed assembly caused by loose pivot bolts.

With the actuator carrier off the ramp, turn the forms thickness cam from 30 to 0 and ensure the pivot bolts are not binding. The cam follower spring should hold the follower tight against the cam through the total cam rotation from 30 to 0. Release both latches and verify that the locking setscrews in the casting are not binding the forms feed assembly as it pivots to the rear.

Verify that clip is on end of shaft of the Forms horizontal adjustment knob.

Check Forms Drive upper pulley for tightness.

See MIM 3402.

FORMS THICKNESS SWITCH

- 5. Check that FORMS THICKNESS SWITCH IS SET CORRECTLY.

The switch must close when the forms thickness cam setting is moved from #14 to #15. Ensure that the metal switch lever is all the way down at a setting of #15.

The cam should turn without using too much finger pressure. Ensure

This is NORMALLY OPEN and the OUTPUT must go to ground when the switch is closed.

This switch is supplied to prevent possible print wire damage when using multi part forms.

LOCATED UNDER THE FORM THICKNESS CONTROL AS SEEN FROM back of forms feed assembly.

(Step 040 continues)

SYMPTOM MAP

PAGE 50 OF 73

(Step 040 continued)

the detent does not bind
the cam.

See MIM 3410.

Electrical check of Forms
thickness switch:

Connect meter to
A1N2J12(+) and any D08(-).
Cam Setting 0-14=+5 volts
Cam Setting 15-30= 0 volts

NOTE: Forms Thickness
switch cannot be checked
using resistance check.

LEADSCREW

6. With the actuator carrier
off the ramp, there should
be no movement left to
right in the carrier.

BUSHING MOVEMENT
See MIM 3309

LINEAR ENCODER AND AMPLIFIER
ASSEMBLIES.

7. Set the mode switch to
B and press Start. The
routine will check for
scratches or
dirt on the linear
encoder. If a 38 error
code or an intermittent
38 error occurs, perform
service checks in MIM
3303.

See MIM 3303.

(Step 040 continues)

SYMPTOM MAP

PAGE 51 OF 73

(Step 040 continued)

MACHINE COOLING

8. Ensure that all four fans are running and not making noise. The actuator fan must be running to decrease print failures.

Servo Power Amp fan (See MIM Figure 4-9).
Logic Area (See MIM Figure 4-5).
Actuator Drive Motor fan (See MIM Figure 4-5)
Actuator fan (See MIM Figure 4-3).
See drawing YA000.

RIBBON AREA

9. Ensure that four ribbon guides are tight.

Ensure the ribbon is not torn, worn or damaged.

See MIM 3802

END OF RIBBON LIFE INDICATIONS:
1. Ink in ribbon used up
2. Severe ribbon folding.
3. Ribbon material wear.
All of the above conditions represent normal end of 5225 ribbon life and ribbon needs to be replaced.

Tears can be caused by a bent, broken or protruding print wire. See MIM 3308.

Print Actuator Assembly

PLATEN TO PRINT
ACTUATOR ADJUSTMENT

10. Perform steps in MIM 3402.

See MIM 3402.

(Step 040 continues)

SYMPTOM MAP

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(Step 040 continued)

PRINT ACTUATORS

11. Front and rear oilers. | See MIM 3307

Space between tip of | See MIM 3302
actuator and platen.

Bad Actuator. | See MIM 3308

Forms Thickness switch. | See MIM 3410

WICK ASSEMBLIES AND HOUSINGS

12. Front and rear oilers. | see MIM 3307

POWER OFF.

Turn Mode Switch to 2.

POWER ON.

Wait 30 seconds.

Display = 0.

Turn Mode Switch to Test.

Hit Start key.

Printer should print test pattern.

At end of print, Display = 0 and Attention light is on.

Above tests ran O.K.?

Y N

041

VERIFY the symptoms! Perform SYMPTOM CHART CHECK LIST (Entry Point E, this map) for suspect problem. IF PROBLEM is NOT corrected, request aid.

53N

15MAR82 PN 6844904

EC 997163 PEC 323243

MAP 4000-52

N
5
2

5225 ALL MODELS
SYMPTOM MAP
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MAP 4000-53

042

Verify Repair.

Go To Map 2000, Entry Point A.

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MAP 4000-53

SYMPTOM MAP

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043

(Entry Point E)

*****SYMPTOM CHART CHECK LIST*****

ACTUATOR CARRIER ASSEMBLY FAILURE SYMPTOMS		
SYMPTOMS	UNIT CHECKS	SUSPECT LIST (PRIORITY LIST)
Actuator carrier noisy (when printing)	Check thrust bearings adjustment (Models 2-4 only), drive screw wear, actuator carrier drive screw coupling tightness, drive motor for wear or not tight, guide shaft for wear, linear emitter glass loose and drive screw bearings worn.	
Print speed seems slow (as in reduction of speed).	Check all electronic adjustments. See MIM 3104, 3105. Check for binding actuator carrier drive motor, drive screw bearings, tight adjustment on thrust bearings model 2-4 only), Forms thickness setting too close or Platen to actuator gap too close.	1. Replace Servo Amplifier card (A1L2). 2. Replace Actuator carrier drive motor.
Actuator carrier crashes into either end of frame. (Intermittent actuator carrier errors may occur.)	Check linear emitter for correct adjustment. See MIM 3303. Check linear emitter glass for scratches (set Mode switch to B and press Start key. If carrier moves side	1. Replace Emitter Glass. 2. Replace Linear Emitter. 3. Replace Servo Amplifier card (A1L2).

(Step 043 continues)

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MAP 4000-54

SYMPTOM MAP

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(Step 043 continued)

	to side without stopping, emitter is O.K.)	
Actuator carrier noisy. FUSE F3 blows.	LOST CURRENT SENSE.	1. Replace Servo Power Amplifier Card. 2. REPLACE A1L2 3. Replace CABLE P204

COOLING FAN MOTOR NOT RUNNING

SYMPTOMS	UNIT CHECKS	SUSPECT LIST (PRIORITY LIST)
Actuator Assembly (see MIM Figure 4-3) Drive Motor (see MIM Figure 4-5). Logic Gate (see MIM Figure 4-5). Servo Power Amp (see Figure 4-9).	1. Check voltage at Fan cable (see Drawing YA000). 2. Continuity check failing Fan cable. (see Drawing YA000). 3. Check TB201 jumpers (see Drawing YA000).	1. Replace Fan Motor. 2. Replace Fan Cable. 3. Replace jumper.

FORMS FAILURE SYMPTOMS

SYMPTOMS	UNIT CHECKS	SUSPECT LIST (PRIORITY LIST)
Forms Tractor bound up or High Speed Forms Feed (forward or reverse). 48 error	Check cable going to forms LED, photo transistor and connector A1Y3 for correct seating. Check for voltage going to and/or from LED, P.T., A1K2 and A1L2 cards. See Reference Drawings	1. Replace Forms Emitter card (A1K2) 2. Replace Servo Amp card (A1L2). 3. Replace Forms Emit- ter transducer. 4. Replace Cable A1Y3/ PT and LED. 5. Replace Forms Encoder Wheel.

(Step 043 continues)

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MAP 4000-55

SYMPTOM MAP

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(Step 043 continued)

to attempt to drive, the high speed problem could have caused the tractor to bind up because of friction.	AA065. Check Forms Encoder Wheel for cracks or dirt.	
Little or no forms movement (forms moving slow). EE error	Check for mechanical bind, loose or broken forms drive motor, gears, belt, shaft, tractors, End of Forms transducer, Platen to Actuator adjustment, belt guard, forms thickness adjustment, forms drag assembly, cables, or forms emitter glass assembly. Check voltages and continuity of cables going to and from Forms LED, Photo Transistor (PT), End of Forms transducer, A1Y3, and A1K2 card. See Reference Drawing AA065. Jumper A1T2D12 to A1T2D08 (CE POR), POWER ON, wait 30 seconds and while probing the EOF PT output or EOF Emitter (Reference Drawing AA065) turn forms motor and observe if EOF lines pulse and EOF transducer turns against paper.	<ol style="list-style-type: none"> 1. Replace End of Forms transducer. 2. Replace Forms Emitter card(A1K2). 3. Replace Forms Drive belt. 4. Replace Forms Drive motor. 5. Replace Tractor. 6. Replace CS card (A1N2). 7. Replace A1Y3/EOF cable.
Forms jump forward or backward (Step 043 continues)	Check the following cables for damage or	<ol style="list-style-type: none"> 1. Replace Forms motor 2. Replace Servo

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MAP 4000-56

SYMPTOM MAP

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(Step 043 continued)

48 error	loose connector: P208 to J208, P204 to J204, P205 to J205, P210 to J210, A1L4, A1L5 and P206 to J206. Disconnect J208 from P208 and check for 30 ohms between all two pin combinations of connector J208. If any one of the resistance is much different than the others, replace Forms motor. See Reference Drawing AA055. Check Forms Encoder Wheel for cracks or dirt.	Amplifier (A1L2). 3. Replace CS card (A1N2). 4. Replace Cable P208/P204. 5. Replace Forms Encoder Wheel.
Intermittent 77 error.	Check the following cables for damage or loose connector: Platen switch to A1Y3 and A1Y5 to cover interlock switch. See Reference Drawings AA045 and AA065. If high power does not drop when 77 occurs (high power relay K201 picks on power up), check adjustment and condition of Platen switch. See MIM 3413. If High power does drop when 77 error is displayed, check adjustment and condition of cover interlock switch. See MIM 1009.	1. Replace Cover Interlock Switch. 2. Replace Platen Open Switch. 3. Replace CS card (A1N2). 4. Replace Cable A1Y3/ Platen Switch. 5. Replace Cable A1Y5/ Cover open switch.

(Step 043 continues)

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MAP 4000-57

SYMPTOM MAP

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(Step 043 continued)

Electronic setting, Forms Symmetry A and or B can not be adjusted for 0. NOTE: If Forms Emitter (A1K2) card was replaced and problem still is present, the Forms Emitter is probably the failing assembly.	Loose Forms Emitter glass, emitter assembly, or cable to emitter. Check Forms Emitter glass for damage.	1. Replace - Forms Emitter card (A1K2). 2. Replace - Forms Emitter. 3. Replace - Forms Emitter glass.
---	--	---

INTERFACE FAILURE SYMPTOMS

SYMPTOMS	UNIT CHECKS	SUSPECT LIST (PRIORITY LIST)
Blank display with mode switch on line. Printer checks out completely but fails to communicate with Host.	Check for any other device working on the same line. Attempt to isolate failing device.	1. Replace A1U2 (I/F) card. 2. Customer Access Panel P.C. card. 3. Customer Access Panel cable.
Display is a flashing B (on line only) PARITY ERROR sensed by this device.	Check for two devices with the same address on the same line. If more than one device is on line, turn off one at a time. Observe symptoms. Check for loose cables.	1. Replace A1U2 (I/F) card. 2. Customer Access panel P.C. card.
AA on display with Mode switch on line. DATA CLEARED. Printer not ready.	Press Reset Key and then Start Key.	This display is NOT an error.

(Step 043 continues)

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MAP 4000-58

SYMPTOM MAP

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(Step 043 continued)

NOISY MOTORS SYMPTOMS		
SYMPTOMS	UNIT CHECKS	SUSPECT LIST (PRIORITY LIST)
Forms motor noisy.	Continuity check cable (for ground or open) between A1L2 card and servo power amplifier. See Reference Drawing AA055.	1. Replace A1N2 card. 2. Replace A1L2 card. 3. Replace Servo Power Amplifier.
Actuator carrier motor noisy.	Continuity check cable (for ground or open) between A1L2 card and Servo Power Amplifier. See Reference Drawing AA050.	1. Replace A1L2 card. 2. Replace Servo Power Amplifier.

OP PANEL AND MODE SWITCH FAILURE SYMPTOMS		
SYMPTOMS	UNIT CHECKS	SUSPECT LIST (PRIORITY LIST)
Display ALWAYS blank or 6 dots or other not valid display. (Machine powers on complete but Op Panel does not respond to key depression and correct display sequence.)	Check for loose or damaged Op Panel connector or cable, A1Y4 connector or cable, or A1T2 card. Check continuity of A1Y4/Op Panel cable. See Reference Drawing AA045. Check for +5 VDC and ground to Op Panel. Verify P203 is connected to Sequence card.	1. Replace Op Panel 2. Replace Op Panel/ A1Y4 cable. 3. Replace CMA card (A1T2).

(Step 043 continues)

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MAP 4000-59

SYMPTOM MAP

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(Step 043 continued)

<p>Display ALWAYS blank AFTER Power On sequence. While machine is going through Power On sequence display is O.K.</p>	<p>Check for loose or damaged Mode Switch connector or cable, A1Y5 connector or cable, or connector to Mode Switch. See Reference Drawing AA045. Check for ground and signal continuity from and to Mode Switch and A1Y5 board location. Check for short in Mode Switch or cable.</p>	<ol style="list-style-type: none"> 1. Replace Mode Switch 2. Replace Mode Switch A1Y5 cable. 3. Replace CMA card (A1T2).
<p>ONE or MORE Op Panel keys do not respond. (Machine Powers On complete and some of the Op Panel keys may work. Display is O.K.)</p>	<p>Check for loose or damaged Op Panel cable or connector, A1Y4 cable or connector or A1T2 card. Check continuity of A1Y4/Op Panel cable. See Reference Drawing AA045. Probe A1T2B10, B11 and B12 (with machine Power On) Press and release the problem key or keys. Look for pulses on all three lines. If any lines pulse, CMA card (A1T2) may be bad.</p>	<ol style="list-style-type: none"> 1. Replace Op Panel 2. Replace CMA card (A1T2). 3. Replace Op Panel/ A1Y4 cable.
<p>0 in display with Mode switch ON LINE. (Machine powers on complete. When Start key is pressed, printer either went into Test mode, CE Power On Reset mode, ribbon run, forms</p>	<p>Check for loose or damaged Mode switch cable or connector, A1Y5 cable or connector, or A1T2 card. Check continuity of A1Y5/Mode switch cable. See Reference Drawing</p>	<ol style="list-style-type: none"> 1. Replace Mode switch 2. Replace Mode switch A1Y5 cable. 3. Replace CMA card (A1T2).

(Step 043 continues)

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MAP 4000-60

SYMPTOM MAP

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(Step 043 continued)

high speed advance mode or nothing occurs).

NOTE: See CE Mode switch instruction on power supply cover for correct mode switch operations.

AA045. Probe A1T2B04, B05, D04 and D06 (with machine power on and mode switch in On Line position). All four lines should be down. If all lines are down, CMA (A1T2) may be bad. If all lines are up, problem could be in mode switch.

F is always displayed (machine powers on complete and operates O.K. on and off line. Attention and Ready lights operate O.K.)

Check for loose or damaged Op panel cable or connector, A1Y4 cable or connector, or A1T2 card. See Reference Drawing AA045. Check continuity of A1Y4/Op panel cable. Probe A1T2D11 (Power on machine and observe probe lights during power up sequence). After 30 seconds this line should be up. If this line is always down or down after power on sequence, the CMA card (A1T2) is probably failing.

1. Replace CMA card (A1T2).
2. Replace CMS card (A1S2).
3. Replace Op Panel
4. Replace Op Panel/ A1Y4 cable.

Display ALWAYS blank (Printer powers on complete. Op panel lights, keys and printer operation seem O.K.)

Check for loose or damaged Op Panel cable or connector, A1Y4 cable or connector or A1T2 card. See Reference Drawing AA045. Probe A1T2B02, (power on printer off line). This line should be

1. Replace Op Panel.
2. Replace CMA card (A1T2).

(Step 043 continues)

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MAP 4000-61

SYMPTOM MAP

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(Step 043 continued)

	down after 30 seconds If this line is up all the time, the A1T2 card may be failing. Check P203 is connected to Sequence card.	
Op Panel displays wrong. (Printer powers on complete. Op Panel lights and keys operate correctly. Display wrong all or part of the time.)	Check for loose or damaged Op Panel cable or connector, A1Y4 cable or connector or A1T2 card. See Reference Drawing AA045. Check the continuity of the A1Y4/Op Panel cable. Probe A1T2G04, J04, D13 and G02 (with machine power on and mode switch set off line). All lines should be up. Jumper A1T2D12 to A1T2D08 and probe the same lines. All should be down. If either of the above tests fail, the A1T2 card is probably failing.	1.Replace Op Panel 2.Replace CMA card (A1T2). 3.Replace A1Y4/Op panel cable.

PRINT QUALITY SYMPTOMS		
SYMPTOMS	UNIT CHECKS	SUSPECT LIST (PRIORITY LIST)
Missing dots (1 to 5 dots).	Loose actuator cable. Bad actuator (swap bad actuator cable wire with the nearest wire to test cable, actuator and wire	1.Replace Print Actuator. 2.Replace Wire Driver card. 3.Replace Actuator cable.

(Step 043 continues)

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MAP 4000-62

SYMPTOM MAP

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(Step 043 continued)

	driver card). Swap wire driver cards, (if Model 2,3,4,11,or12.)	4. Replace WL card (A1M2).
Missing 1,2 or 3 sections of print.	Loose actuator cable, wire driver card, WL (A1M2) card or power bus cable to logic board. Swap wire driver cards (If Model 2-4). Loose HIG card A1R2 - 4 wide or A1R4 - 2 wide (Model 1 only.)	1. Replace Wire Driver card. 2. Replace WL card (A1M2). 3. Replace HIG card A1R2 - 4 wide or A1R4 - 2 wide (Model 1 only). 4. Replace CMS card A1S2.
No print (84 or 85 error).	Loose WL card (A1M2), Wire Driver card, Power bus cable to logic board, or Actuator cable.	1. Replace WL card (A1M2). 2. Replace Wire Driver card. 3. Replace HIG card A1R2 - 4 wide, A1R4 - 2 wide. 4. Replace Power bus cable (Model 1 only)
Poor print quality, Vertical or Horizontal registration, light print, random print (no real characters printed) or extra dots.	Loose Head Drive Assembly, Forms Drive Assembly, Forms Assembly or Actuator cable. Check all adjustments on head and forms assembly. Check forms thickness, electronic adjustments and worn print ribbon. Check actuators that intermittently fail by swapping wires with next actuator.	1. Replace Print Actuator. 2. Replace Ribbon 3. Replace Wire Driver card. 4. Replace WL card (A1M2). 5. Replace HIG card A1R2 - 4 wide, A1R4 - 2 wide. 6. Ensure Actuator carrier ramps (Forms Feed Assembly moves to the rear). See MIM 3306.

(Step 043 continues)

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MAP 4000-63

SYMPTOM MAP

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(Step 043 continued)

Actuator card fuses open when printer powered off. (This condition may occur again when a new actuator driver card or cards are installed.)	See Reference Drawing AA015. Check the continuity and condition of the wires going to and from the ground bus (to the sequence card and T202 transformer) If wires are good, Sequence card could be bad.	1. Replace Sequence card. 2. Replace Ground Bus wire. 3. Replace Actuator card.
Smudged printing. (Printed data may be readable but smudge is either through, above or below data.)	Check for broken print wire, Forms thickness adjustment too close, Platen to actuator gap too close and loose or worn thrust bearings. Actuator carrier not ramping.	1. Replace Print Actuator. 2. Replace Thrust bearings. 3. Ensure Actuator Carrier ramps (Forms Feed Assembly moves to the rear). See MIM 3306.

RIBBON FAILURE SYMPTOMS		
SYMPTOMS	UNIT CHECKS	SUSPECT LIST (PRIORITY LIST)
Too much Ribbon Noise	Loose or worn ribbon motor, spool, drive gear, cable connector or ribbon card (A1K4)	1. Replace Ribbon card (A1K4). 2. Replace Ribbon motor. 3. Replace Ribbon Drive gear or spool
Ribbon reverse problem 88 or 89 error	Loose ribbon drive gear, cable connector drive motor or ribbon card (A1K4). Binding or worn drive gear teeth, drive motor or ribbon will cause	1. Replace Print Actuator. 2. Replace Ribbon card (A1K4). 3. Replace Ribbon Drive gear or spool 4. Replace Ribbon

(Step 043 continues)

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MAP 4000-64

SYMPTOM MAP

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(Step 043 continued)

	ribbon reverse errors. Check all actuators for print wires that might be broken causing ribbon to hang up on extended print wire. Check platen to print head gap for being too close. Ensure Forms thickness is set correctly for Forms used (not too close).	motor. 5. Replace CS card (A1N2).
Ribbon damaged, folded over, torn or wears out too soon.	Check all actuators for print wires that might be broken causing ribbon to hang up on extended print wire. Check platen to print head gap adjustment, loose or damaged ribbon guides and ribbon spools for correct seating on spool drive assembly. Ensure forms thickness adjustment is set correctly for forms used (not too close).	1. Replace Print Actuator. 2. Normal end of ribbon life indications: Ink in ribbon used up. Severe ribbon folding. Ribbon material wear. All of the above conditions represent normal end of 5225 ribbon life and ribbon needs to be replaced.

POWER OFF.

Turn Mode Switch to 2.

POWER ON.

Wait 30 seconds.

Display = 0.

Turn Mode Switch to Test.

Hit Start key.

Printer should print test pattern.

At end of print, Display = 0 and Attention light is on.

(Step 043 continues)

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MAP 4000-65

SYMPTOM MAP

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(Step 043 continued)

Above tests ran O.K.?

Y N

044

VERIFY the symptoms! Perform VOLTAGE
CHECK LIST (Entry Point F, this map). IF
PROBLEM is NOT corrected, request aid.

045

Verify Repair

Go To Map 2000, Entry Point A.

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MAP 4000-66

SYMPTOM MAP

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046

(Entry Point F)

***** VOLTAGE CHECKS *****

NOTE: Ensure machine wiring matches line voltage. See Reference Drawing YA000 tables.

VOLTAGE CHECKS					
VOLTAGE	TEST POINT	TOLERANCE	GROUND	MAP	ENTRY
+5 VDC REG	A1K2B11	+/- 0.2 VDC	A1---D08	3000	A
+8 VDC REG	A1K2D11	+/- 0.3 VDC	A1---D08	3000	A
-8 VDC REG	A1K2J11	+/- 0.3 VDC	A1---D08	3000	A
+5 VDC	A1K2D03	+10%, -8%	A1---D08	3600	P0
+8.5 VDC	A1K2B03	+10%, -8%	A1---D08	3600	85
+15 VDC	A1K2D13	+10%, -8%	A1---D08	3600	17
-5 VDC	A1T2S06	+10%, -8%	A1---D08	3600	5-
-15 VDC	A1K2G06	+10%, -8%	A1---D08	3600	15

(Step 046 continues)

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MAP 4000-67

SYMPTOM MAP

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(Step 046 continued)

VOLTAGE CHECKS			
VOLTAGE +10%, -8%	TEST POINT on Sequence Card	GROUND	MAP ENTRY
+10 VDC	+10 VDC Test Point	on sequence card	3600 81
+50 VDC	+50 VDC Test Point	on sequence card	3600 81
GROUND	GRD Test Point	on sequence card	

POWER OFF.

Turn Mode Switch to 2.

POWER ON.

Wait 30 seconds.

Display = 0.

Turn Mode Switch to Test.

Hit Start key.

Printer should print test pattern.

At end of print, Display = 0 and Attention light is on.

Above tests ran O.K.?

Y N

047

VERIFY the symptoms! IF PROBLEM is NOT corrected, request aid.

048

Verify Repair.

Go To Map 2000, Entry Point A.

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MAP 4000-68

SYMPTOM MAP

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049

(Entry Point G)

**** ACTUATOR FAILURE ****

The following procedure will aid in identifying which actuator is intermittent.

1. Place MODE SWITCH to 5. Press START key. Check printout for bad actuator. Replace it - see MIM 2005.
If no problem can be found from printout go to step 2.
2. Obtain customer failing printout.
3. Fold paper so that failing line is at top of the page.
4. Align print position 1 of the failing printout to position 1 on the 15 CPI scale on the actuator cover.
5. Locate failing column(s) on 15 CPI scale (use 15 CPI scale even if the printout is 10 CPI).
6. Determine failing dot row in the character and use actuator firing chart to determine location of failing actuator.
7. Replace failing actuator. See MIM 3308.

ACTUATOR FIRING CHART TO DETERMINE LOCATION OF FAILING ACTUATOR:					
**** ACTUATOR FIRING CHART MODEL 1 - CHART 1 OF 1 ****					
	DOT ROW	FAILING	GROUP/	FAILING	GROUP/
	NUMBER	COLUMNS	ACTUATOR	COLUMNS	ACTUATOR
.	1	1-44	1/1	45-198	2/1
. .	2	1-50	1/2	51-198	2/2
. . .	3	1-56	1/3	57-198	2/3
. . . .	4	1-62	1/4	63-198	2/4
.	5	1-47	1/5	48-198	2/5
.	6	1-53	1/6	54-198	2/6
.	7	1-59	1/7	60-198	2/7
	8*	1-65	1/8	66-198	2/8
	* NOTE: ROW 8 IS USED FOR UNDERSCORING AND SOME LOWER CASE LETTERS.				

(Step 049 continues)

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MAP 4000-69

SYMPTOM MAP

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(Step 049 continued)

ACTUATOR FIRING CHART TO DETERMINE LOCATION OF FAILING ACTUATOR:

***** ACTUATOR FIRING CHART MODEL 2 - CHART 1 OF 2 *****

	DOT ROW NUMBER	FAILING COLUMNS	GROUP/ ACTUATOR	FAILING COLUMNS	GROUP/ ACTUATOR
.	1	1-20	1/1	21-62	2/1
. .	2	1-26	1/2	27-68	2/2
. . .	3	1-32	1/3	33-74	2/3
. . . .	4	1-38	1/4	39-80	2/4
.	5	1-23	1/5	24-65	2/5
.	6	1-29	1/6	30-71	2/6
.	7	1-35	1/7	36-77	2/7
.	8*	1-41	1/8	42-83	2/8

***** ACTUATOR FIRING CHART MODEL 2 - CHART 2 OF 2 *****

	DOT ROW NUMBER	FAILING COLUMNS	GROUP/ ACTUATOR	FAILING COLUMNS	GROUP/ ACTUATOR
.	1	63-104	3/1	105-198	4/1
. .	2	69-110	3/2	111-198	4/2
. . .	3	75-116	3/3	117-198	4/3
. . . .	4	81-122	3/4	123-198	4/4
.	5	66-107	3/5	108-198	4/5
.	6	72-113	3/6	114-198	4/6
.	7	78-119	3/7	120-198	4/7
.	8*	84-125	3/8	126-198	4/8

* NOTE: ROW 8 IS USED FOR UNDERSCORING
AND SOME LOWER CASE LETTERS.

(Step 049 continues)

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MAP 4000-70

SYMPTOM MAP

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(Step 049 continued)

ACTUATOR FIRING CHART TO DETERMINE LOCATION OF FAILING ACTUATOR:

**** ACTUATOR FIRING CHART MODEL 3 - CHART 1 OF 3 ****

	DOT ROW NUMBER	FAILING COLUMNS	GROUP/ ACTUATOR	FAILING COLUMNS	GROUP/ ACTUATOR
.	1	1-11	1/1	12-44	2/1
. .	2	1-17	1/2	18-50	2/2
. . .	3	1-23	1/3	24-56	2/3
. . . .	4	1-29	1/4	30-62	2/4
.	5	1-14	1/5	15-47	2/5
.	6	1-20	1/6	21-53	2/6
.	7	1-26	1/7	27-59	2/7
.	8*	1-32	1/8	33-65	2/8

**** ACTUATOR FIRING CHART MODEL 3 - CHART 2 OF 3 ****

	DOT ROW NUMBER	FAILING COLUMNS	GROUP/ ACTUATOR	FAILING COLUMNS	GROUP/ ACTUATOR
.	1	45-77	3/1	78-110	4/1
. .	2	51-83	3/2	84-116	4/2
. . .	3	57-89	3/3	90-122	4/3
. . . .	4	63-95	3/4	96-128	4/4
.	5	48-80	3/5	81-113	4/5
.	6	54-86	3/6	87-119	4/6
.	7	60-92	3/7	93-125	4/7
.	8*	66-98	3/8	99-131	4/8

**** ACTUATOR FIRING CHART MODEL 3 - CHART 3 OF 3 ****

	DOT ROW NUMBER	FAILING COLUMNS	GROUP/ ACTUATOR	FAILING COLUMNS	GROUP/ ACTUATOR
.	1	111-143	5/1	144-198	6/1
. .	2	117-149	5/2	150-198	6/2
. . .	3	123-155	5/3	156-198	6/3
. . . .	4	129-161	5/4	162-198	6/4
.	5	114-146	5/5	147-198	6/5
.	6	120-152	5/6	153-198	6/6
.	7	126-158	5/7	159-198	6/7
.	8*	132-164	5/8	165-198	6/8

* NOTE: ROW 8 IS USED FOR UNDERSCORING
AND SOME LOWER CASE LETTERS.

(Step 049 continues)

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MAP 4000-71

SYMPTOM MAP

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(Step 049 continued)

 ACTUATOR FIRING CHART TO DETERMINE LOCATION OF FAILING ACTUATOR:

 ***** ACTUATOR FIRING CHART MODEL 4 - CHART 1 OF 4 *****

DOT ROW NUMBER	FAILING COLUMNS	GROUP/ ACTUATOR	FAILING COLUMNS	GROUP/ ACTUATOR
. 1	1-5	1/1	6-32	2/1
. 2	1-11	1/2	12-38	2/2
. 3	1-17	1/3	18-44	2/3
. 4	1-23	1/4	24-50	2/4
. 5	1-8	1/5	9-35	2/5
. 6	1-14	1/6	15-41	2/6
. 7	1-20	1/7	21-47	2/7
. 8*	1-26	1/8	27-53	2/8

 ***** ACTUATOR FIRING CHART MODEL 4 - CHART 2 OF 4 *****

DOT ROW NUMBER	FAILING COLUMNS	GROUP/ ACTUATOR	FAILING COLUMNS	GROUP/ ACTUATOR
. 1	33-59	3/1	60-86	4/1
. 2	39-65	3/2	66-92	4/2
. 3	45-71	3/3	72-98	4/3
. 4	51-77	3/4	78-104	4/4
. 5	36-62	3/5	63-89	4/5
. 6	42-68	3/6	69-95	4/6
. 7	48-74	3/7	75-101	4/7
. 8*	54-80	3/8	81-107	4/8

 ***** ACTUATOR FIRING CHART MODEL 4 - CHART 3 OF 4 *****

DOT ROW NUMBER	FAILING COLUMNS	GROUP/ ACTUATOR	FAILING COLUMNS	GROUP/ ACTUATOR
. 1	87-113	5/1	114-140	6/1
. 2	93-119	5/2	120-146	6/2
. 3	99-125	5/3	126-152	6/3
. 4	105-131	5/4	132-158	6/4
. 5	90-116	5/5	117-143	6/5
. 6	96-122	5/6	123-149	6/6
. 7	102-128	5/7	129-155	6/7
. 8*	108-134	5/8	135-161	6/8

 ***** ACTUATOR FIRING CHART MODEL 4 - CHART 4 OF 4 *****

(Step 049 continues)

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MAP 4000-72

SYMPTOM MAP

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(Step 049 continued)

	DOT ROW NUMBER	FAILING COLUMNS	GROUP/ ACTUATOR	FAILING COLUMNS	GROUP/ ACTUATOR
.	1	141-167	7/1	168-198	8/1
. .	2	147-173	7/2	174-198	8/2
. . .	3	153-179	7/3	180-198	8/3
. . . .	4	159-185	7/4	186-198	8/4
.	5	144-170	7/5	171-198	8/5
.	6	150-176	7/6	177-198	8/6
.	7	156-182	7/7	183-198	8/7
.	8*	162-188	7/8	189-198	8/8

* NOTE: ROW 8 IS USED FOR UNDERSCORING
AND SOME LOWER CASE LETTERS.

POWER OFF.

Turn Mode Switch to 2.

POWER ON.

Wait 30 seconds.

Display = 0.

Turn Mode Switch to Test.

Hit Start key.

Printer should print test pattern.

At end of print, Display = 0 and Attention light is on.

Above tests ran O.K.?

Y N

050

VERIFY the symptoms! Perform CARD SUSPECT LIST SERVICE CHECK (Entry Point C, this map) for suspect problem. IF PROBLEM is NOT corrected, request aid.

051

Verify Repair.

Go To Map 2000, Entry Point A.

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MAP 4000-73

