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EC HISTORY		NAME	
	135570M	MAP INDEX	
TYPE 5213 MODELS 1, 2 & 3			
PART NUMBER		PAGE NUMBER	
2629875		1	

INTRODUCTION

THE MAINTENANCE ANALYSIS PROCEDURE CHARTS (MAP) , FOR THE 5213 MODELS 1,2 AND 3, ARE DESIGNED TO HELP DIAGNOSE PROBLEMS IN THE PRINTER ATTACHED TO THE SYSTEM 3 MODEL 6.

WHEN THE REPORTED PRINTER PROBLEM IS NOT IMMEDIATELY OBVIOUS, THE TROUBLE ANALYSIS SHOULD BEGIN BY RUNNING THE PRINTER DIAGNOSTIC PROGRAMS. THE PROGRAMS AND PRINTER ATTACHMENT MAPS WILL GUIDE THE USER THROUGH THE PRINTER OPERATIONS AND WILL PROVIDE FAILURE ISOLATION IN MANY CASES. THE USER WILL BE DIRECTED TO PARTICULAR 5213 MAPS FOR CONTINUATION OF THE PROBLEM ANALYSIS THROUGH THE INTERFACE ON PAGE 3.

THE MAPS REQUIRE THE USE OF THE IBM FE THEORY-MAINTENANCE MANUAL FOR THE 5213 PRINTER MODELS 1,2 AND 3. FORM NO. SY24-3587 REFERENCE IS ALSO MADE TO THE 5213 WIRING DIAGRAMS LOGIC PAGES ZZ101 THROUGH ZZ111.

EC HISTORY	NAME
135570M	MAP INTRODUCTION
	TYPE 5213 MODELS 1, 2 & 3
	PART NUMBER PAGE NUMBER
	2629876 2

INTERFACE TO PRINTER ATTACHMENT MAPS

ATTACHMENT MAP EXIT

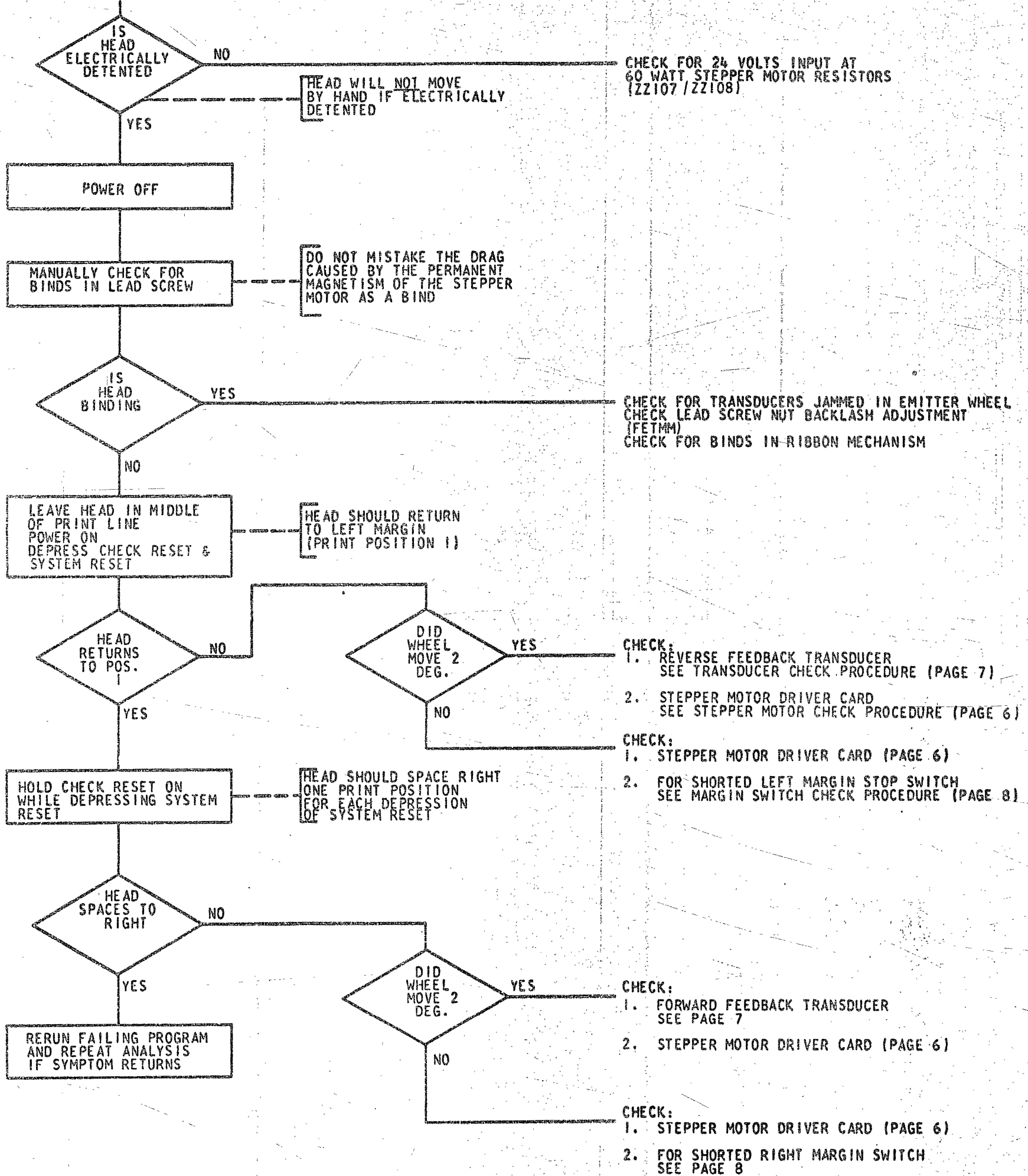
5213 MAP ENTRY

<u>ENTRY NO.</u>	<u>NAME</u>	<u>5213 MAP NAME</u>	<u>PAGE</u>
1	HEAD MOTION NOT SMOOTH	HEAD MOTION NOT SMOOTH	5
2	CARRIAGE EMITTER CHECK	SPACE OR SKIP TOO FAR	20
3	POSSIBLE SHORTED RIGHT MARGIN SW. 2 (STOP)	MARGIN SWITCH CHECK PROCEDURE	8
4	NO SIGNAL FROM RIGHT MARGIN SW. 2 (STOP)	SAME	8
5	POSSIBLE SHORTED LEFT MARG. SW. 2 (STOP)	SAME	8
6	NO SIGNAL FROM LEFT MARG. SW. 2 (STOP)	SAME	8
7	POSSIBLE SHORTED LEFT MARG. SW. 1 (SLOW)	SAME	8
8	NO SIGNAL FROM LEFT MARGIN SW. 1 (SLOW)	SAME	8
9	NO SIGNAL FROM PRI. FORMS MOTION CONTACT	CHECK FOR: 1. OPEN SWITCH (ZZ106/ZZ107) 2. MALADJUSTED SWITCH (FETMM) 3. OPEN CABLE TO ATTACHMENT (PAGE 23)	
10	POSSIBLE SHORTED PRI. FORMS MOTION CONTACT	CHECK FOR: 1. MALADJUSTED OR GROUNDED SWITCH N/O CONTACT 2. GROUNDED CABLE TO ATTACHMENT (PAGE 23)	
11	FORMS DO NOT MOVE	FORMS DO NOT MOVE MODEL 1 MODEL 2 AND 3	16 18
12	END OF FORMS SIGNAL INCORRECT	CHECK: 1. SWITCH ADJUSTMENT (FETMM) 2. CABLE TO ATTACHMENT (PAGE 23)	
13	FORMS RUNAWAY	FORMS RUNAWAY	19
14	INCORRECT SPEED	INCORRECT SPEED	5
15	FAILS TO PRINT	DROP CHARACTER	10
16	INCORRECT SIGNAL FROM COVER INTERLOCK SW. OR N/6 SWITCH	CHECK FOR: 1. OPEN SWITCH (ZZ106/ZZ107) 2. MALADJUSTED SWITCH (FETMM) 3. OPEN CABLE TO ATTACHMENT (PAGE 23)	
17	POSSIBLE SHORTED RIGHT MARG. SW. 1 (SLOW)	MARGIN SWITCH CHECK PROCEDURE	8
18	NOT APPLICABLE		
19	NO SIGNAL FROM RIGHT MARG. SW. 1 (SLOW)	MARGIN SWITCH CHECK PROCEDURE	8

EC HISTORY		NAME	
	135570M	MAP INTERFACE TO PRINTER ATTACHMENT MAPS	
		TYPE 5213 MODELS 1, 2 & 3	
		PART NUMBER	PAGE NUMBER
		2629877	3

HEAD DRIVE MECHANISM #1

I. HEAD DOES NOT MOVE



EC HISTORY		NAME	
	135570M	MAP	
		HEAD DRIVE MECHANISM #1	
		TYPE 5213 MODELS 1, 2 & 3	
		PART NUMBER	PAGE NUMBER
		2629878	4

HEAD DRIVE MECHANISM #2

- 2. HEAD MOTION NOT SMOOTH
- 3. DRIVE NOISY
- 4. INCORRECT SPEED

NOTE DIAGNOSTIC PROGRAM HALT CODE

POWER OFF
MANUALLY CHECK FOR BINDS IN LEAD SCREW

DO NOT MISTAKE THE DRAG CAUSED BY THE PERMANENT MAGNETISM OF THE STEPPER MOTOR AS A BIND.

IS HEAD BINDING

YES

- CHECK LEAD SCREW NUT BACKLASH ADJUSTMENT (FETMM)
- CHECK FOR BINDS IN RIBBON MECHANISM

NO

WAS HALT CODE AD23

YES

- 1. CHECK FOR BAD STEPPER PHASE (SEE PAGE 6)
- 2. CHECK FORWARD SPEED (FETMM)

NO

WAS HALT CODE AD123

YES

- 1. CHECK FOR BAD STEPPER PHASE (SEE PAGE 6)
- 2. CHECK REVERSE SPEED (FETMM)

NO

- 1. CHECK FOR OPEN OR SHORTED STEPPER MOTOR PHASE. SEE STEPPER MOTOR CHECK PROCEDURE (PAGE 6)
- 2. CHECK FOR SHORTED LEFT MARGIN SLOW SWITCH IF INCORRECT SLOW SPEED RETURN. SEE MARGIN SWITCH CHECK PROCEDURE (PAGE 8)

- 5. HEAD STOPS INCORRECTLY AT EITHER MARGIN
- 6. CRASH STOPS AT EITHER MARGIN

FAILS ON BOTH MARGINS

YES

- CHECK:
- 1. LOOSE STEPPER MOTOR COUPLING TO LEAD SCREW
 - 2. PRINT EMITTER PULSE NO. 3 TIMING RUN DIAGNOSTIC PROGRAM E89

NO

FAILS ON LEFT MARGIN

YES

- CHECK FOR:
- 1. OPEN OR MALADJUSTED LEFT MARGIN SLOW SW. SEE MARGIN SW. CHECK PROCEDURE (PAGE 8)
 - 2. DEFECTIVE OR MALADJUSTED LEFT MARGIN STOP SW. (PAGE 8)

NO

FAILS ON RIGHT MARGIN

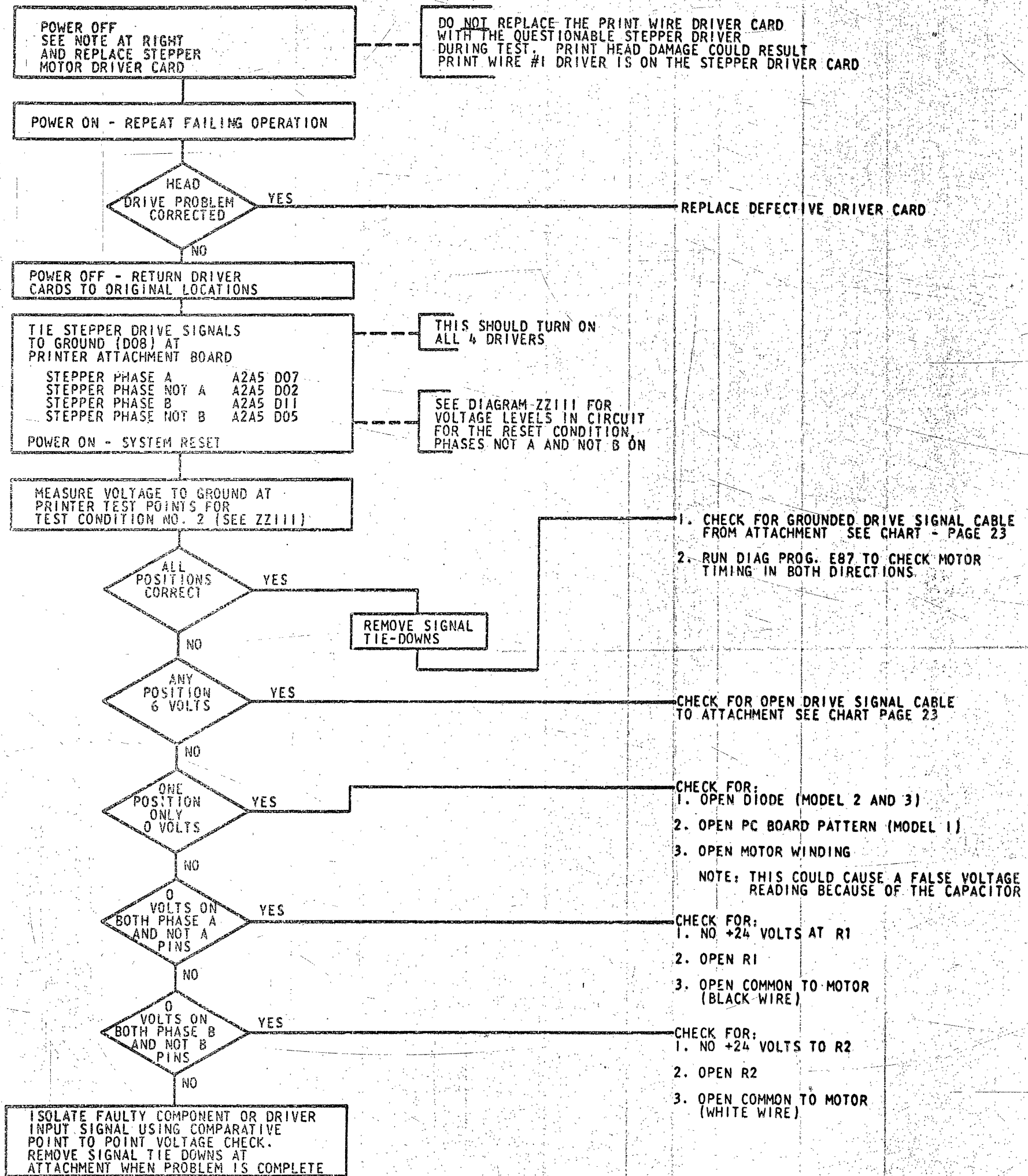
- CHECK FOR OPEN, SHORTED OR MALADJUSTED RIGHT MARGIN STOP SWITCH
SEE MARGIN SW. CHECK PROCEDURE (PAGE 8)

- 7. INCORRECT STOP AFTER ALL PRINT CYCLES

- CHECK FOR:
- 1. LOOSE STEPPER MOTOR COUPLING TO LEAD SCREW
 - 2. BINDING HEAD (REFER TO PROCEDURE AT TOP OF PAGE UNDER "2. HEAD MOTION NOT SMOOTH".)
 - 3. CORRECT STEPPER MOTOR STOP TIMING RUN DIAGNOSTIC PROGRAM E83

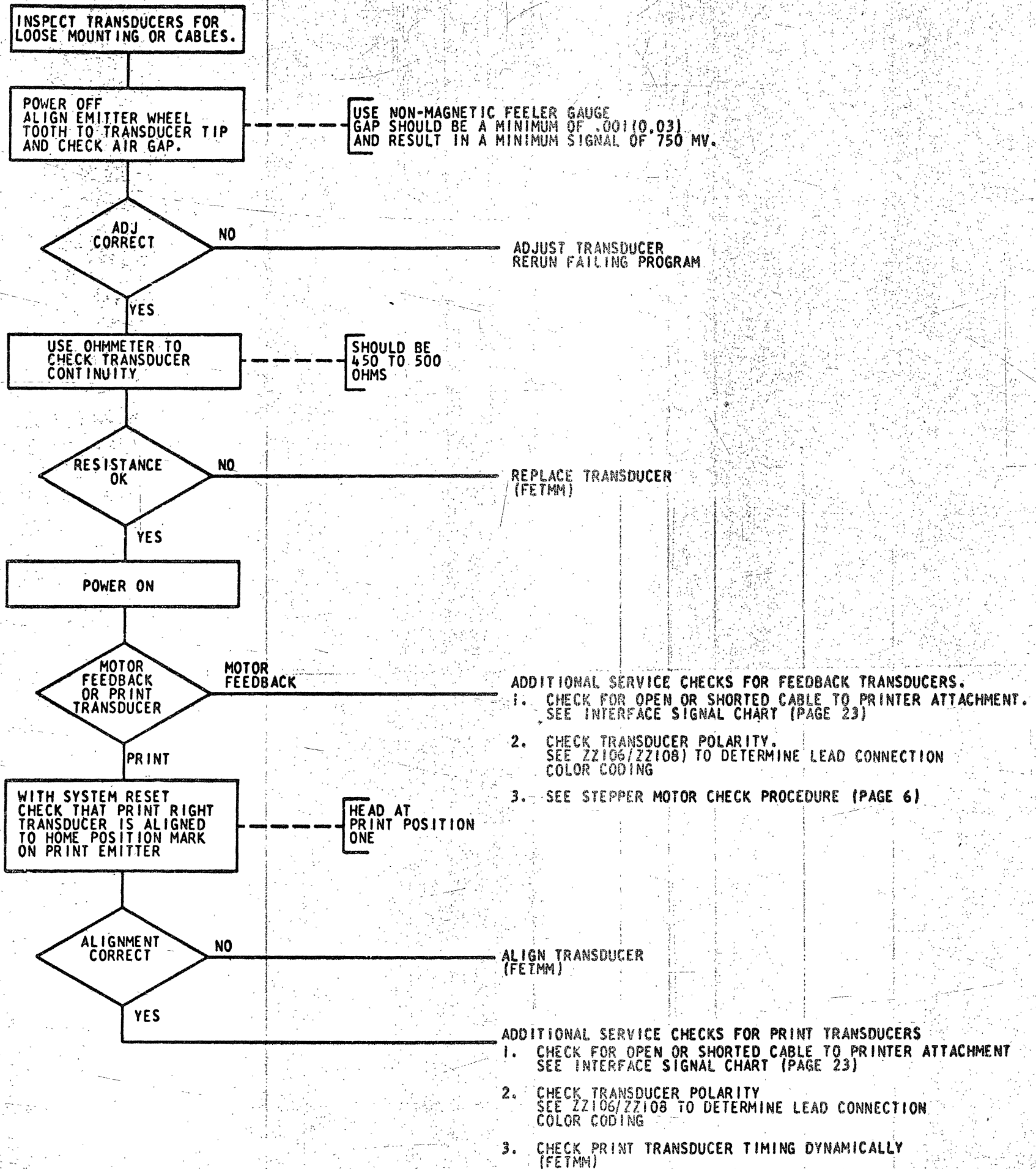
EC HISTORY		NAME	
	135570M	MAP	
		HEAD DRIVE MECHANISM #2	
		TYPE 5213 MODELS 1, 2 & 3	
		PART NUMBER	PAGE NUMBER
		2629879	5

STEPPER MOTOR CHECK PROCEDURE



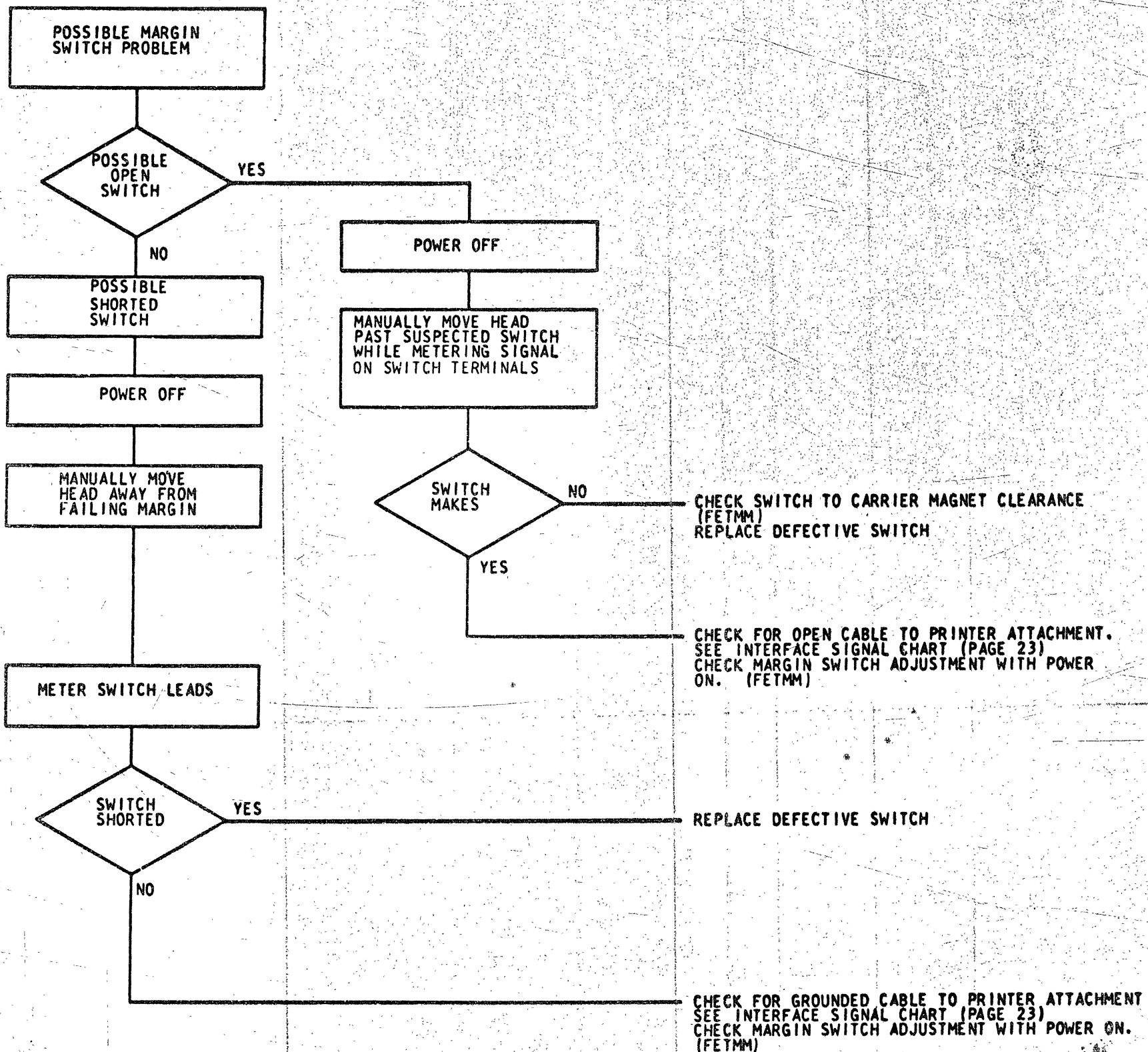
EC HISTORY		NAME	
	135570M	STEPPER MOTOR CHECK PROCEDURE	
		TYPE 5213 MODELS 1, 2 AND 3	
		PART NUMBER	PAGE NUMBER
		2629880	6

TRANSDUCER CHECK PROCEDURE



EC HISTORY		NAME	
	135570M	MAP	
		TRANSDUCER CHECK PROCEDURE	
		TYPE 5213 MODELS 1, 2 & 3	
		PART NUMBER	PAGE NUMBER
		2629881	7

MARGIN SWITCH CHECK PROCEDURE



EC HISTORY	NAME
135570M	MAP
	MARGIN SWITCH CHECK PROCEDURE
	TYPE 5213 MODELS 1, 2 & 3
	PART NUMBER
	PAGE NUMBER
	2629882
	8

PRINT FAILURES - EXAMPLES

PRINT FAILURES

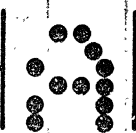
ALWAYS EXAMINE PLATEN FOR DAMAGE AND PROPER SETTING

CHARACTER PRINTED CORRECTLY

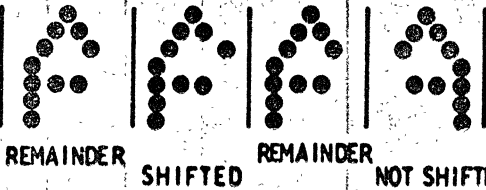


1. DROP CHARACTER PAGE 10

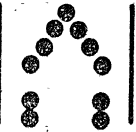
2. DROP DOTS IN CHARACTER PAGE 10



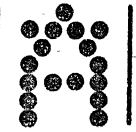
3. DROP COLUMN IN CHARACTER PAGE 11



4. DROP HORIZONTAL LINE IN CHARACTER PAGE 11



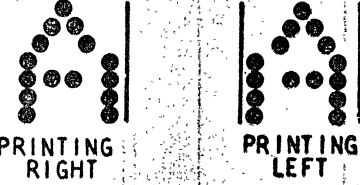
5. EXTRA DOTS IN CHARACTER PAGE 12



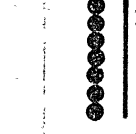
6. DOTS NOT ALIGNED PROPERLY PAGE 12



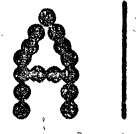
7. LAST COLUMN OF DOTS OF PRINTED CHARACTER SHIFTED PAGE 12



8. GARBLED CHARACTER PAGE 12



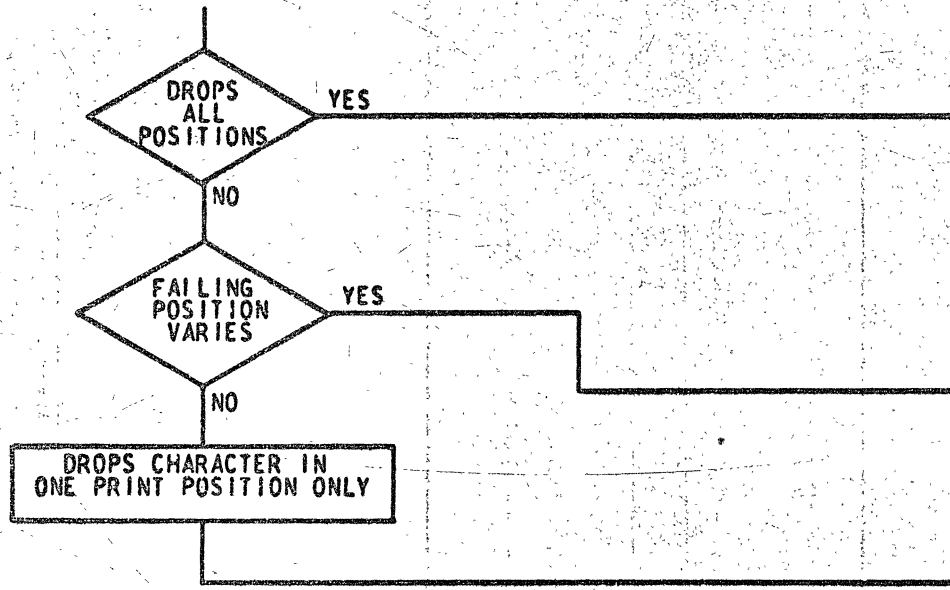
9. CROWDED PRINTING PAGE 12



10. LIGHT PRINT PAGE 13

EC HISTORY		NAME	
	135570M	MAP	
		PRINT FAILURES - EXAMPLES	
		TYPE 5213 MODELS 1, 2 & 3	
		PART NUMBER	PAGE NUMBER
		2629883	9

1. DROP CHARACTER

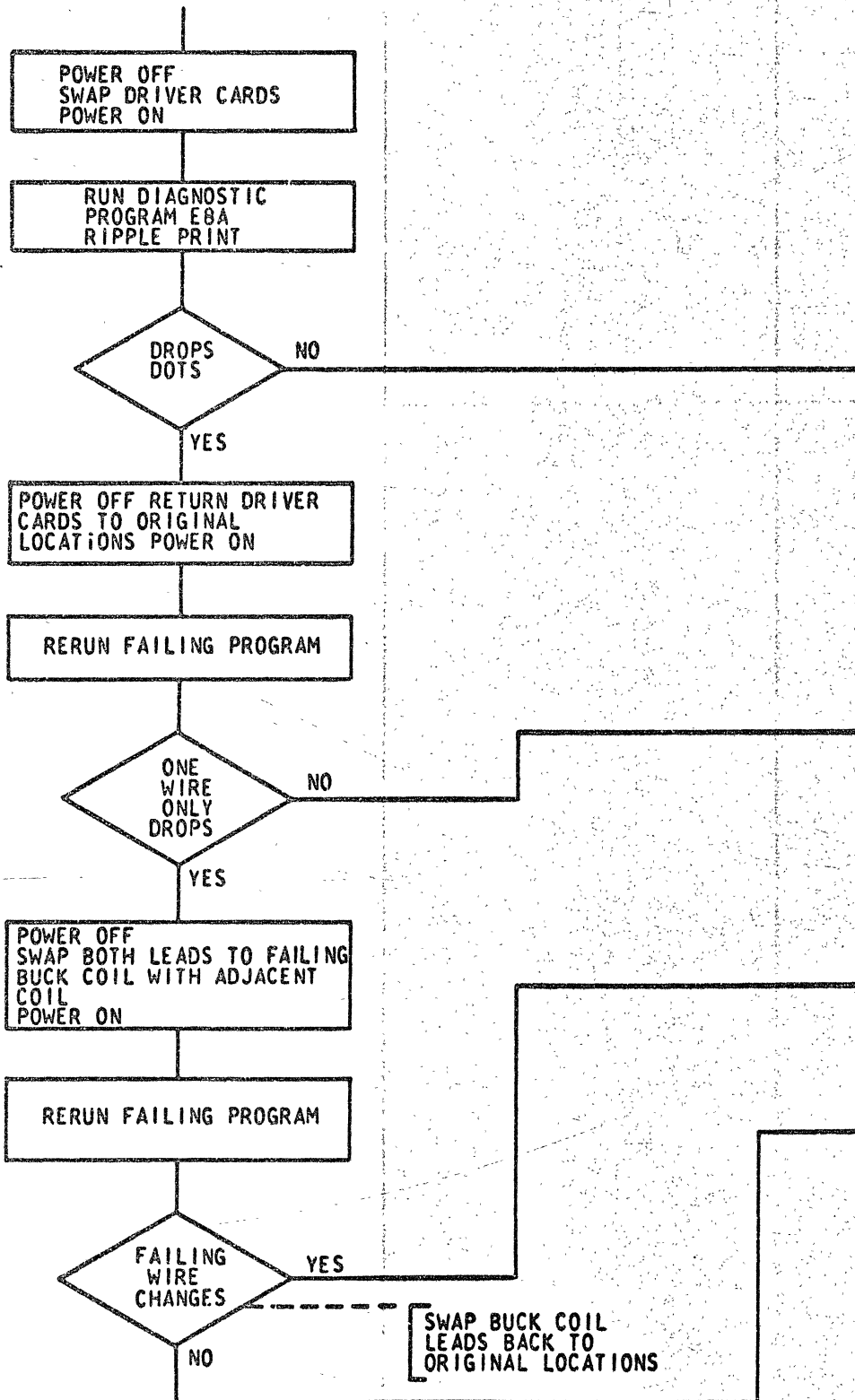


- CHECK FOR:
1. LOOSE PRINT HEAD CABLES
 2. +24 VOLTS TO WIRE DRIVERS
 3. +6 VOLTS TO DRIVER CARD
 4. MISSING PRINT EMITTER SIGNALS
 5. POSSIBLE MISSING WIRE DRIVE SIGNALS FROM ATTACHMENT (SEE INTERFACE SIGNAL CHART - PAGE 23)

CHECK FOR DAMAGED PRINT EMITTER WHEEL

1. CHECK FOR DAMAGED EMITTER WHEEL
2. POSSIBLE PRINTER ATTACHMENT PROBLEM REFER TO SYSTEM DIAGNOSTIC PROCEDURES

2. DROP DOTS IN CHARACTER



REPLACE DEFECTIVE DRIVER CARD

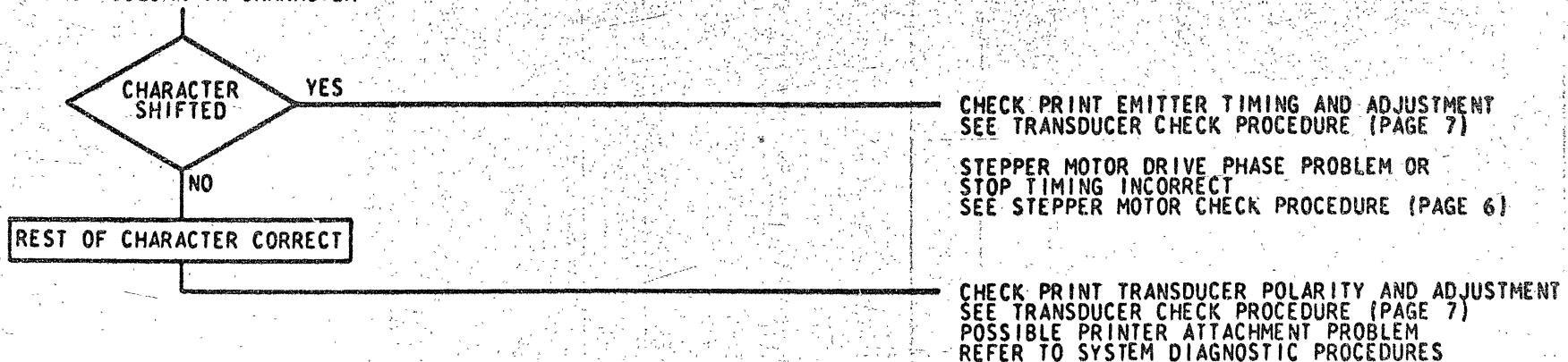
- CHECK FOR:
1. WORN PLATEN OR INCORRECT SETTING
 2. DIRTY MAGNET ARMATURE FACES
 3. BINDING PRINT WIRES
 4. DAMAGED PRINT HEAD CABLE
 5. LOOSE CABLES

- CHECK:
1. OPEN PRINT HEAD CABLE
 2. DEFECTIVE LAND PATTERN ON PC BOARD (MOD 1 ONLY)

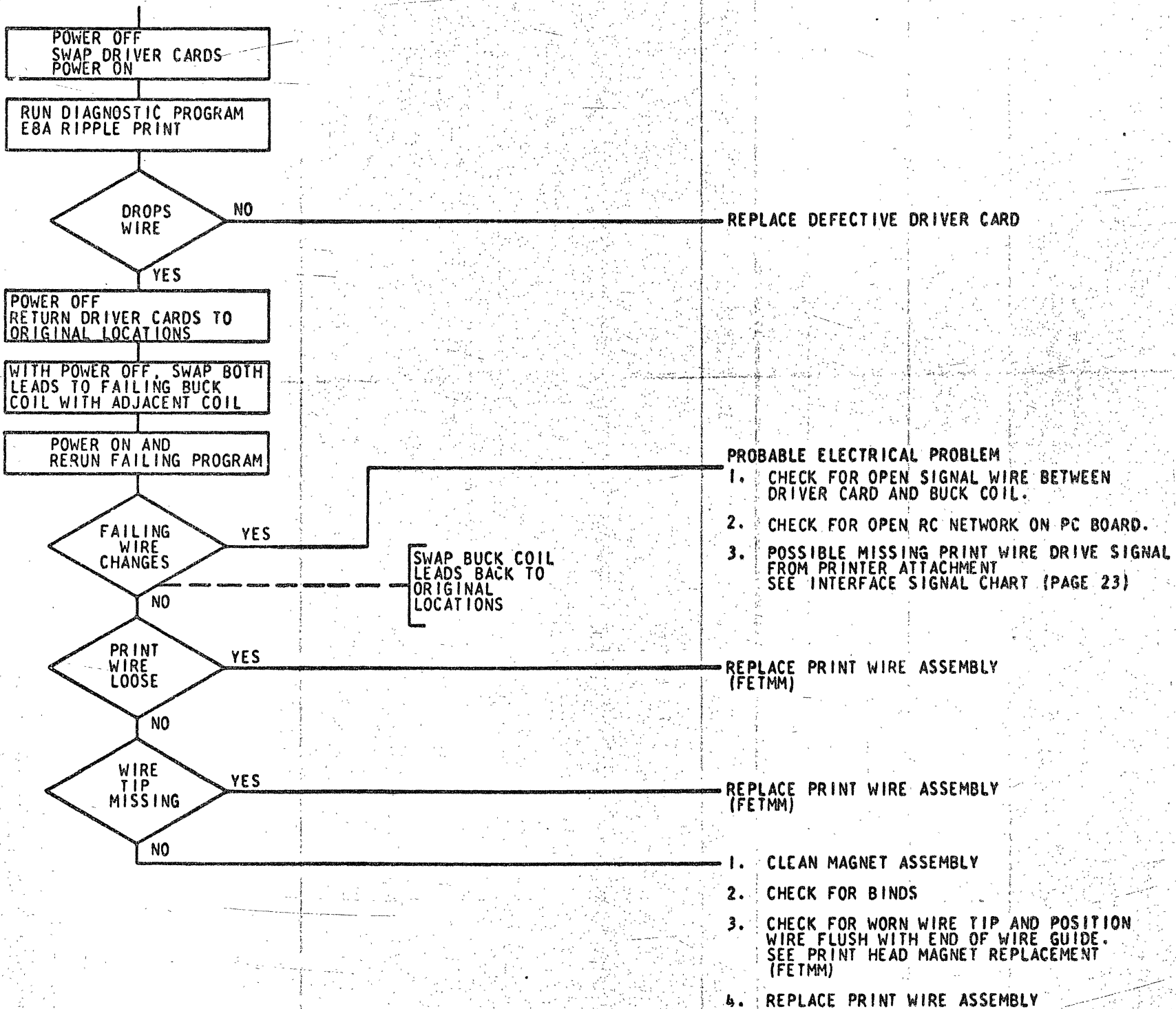
- CHECK FOR:
1. BINDING PRINT WIRE
 2. DIRTY MAGNET ARMATURE FACE
 3. WORN PRINT WIRE TIP MAY REQUIRE ADJUSTMENT FLUSH WITH END OF WIRE GUIDE (FETMM) TO REPLACE PRINT WIRE ASSEMBLY. SEE (FETMM)

EC HISTORY	NAME
135570M	MAP PRINT FAILURES - 1 AND 2
	TYPE 5213 MODELS 1, 2 & 3
	PART NUMBER PAGE NUMBER
	2629884 10

3. DROP COLUMN IN CHARACTER



4. DROP HORIZONTAL LINE IN CHARACTER



CHECK PRINT EMITTER TIMING AND ADJUSTMENT
SEE TRANSDUCER CHECK PROCEDURE (PAGE 7)

STEPPER MOTOR DRIVE PHASE PROBLEM OR
STOP TIMING INCORRECT
SEE STEPPER MOTOR CHECK PROCEDURE (PAGE 6)

CHECK PRINT TRANSDUCER POLARITY AND ADJUSTMENT
SEE TRANSDUCER CHECK PROCEDURE (PAGE 7)
POSSIBLE PRINTER ATTACHMENT PROBLEM
REFER TO SYSTEM DIAGNOSTIC PROCEDURES

REPLACE DEFECTIVE DRIVER CARD

PROBABLE ELECTRICAL PROBLEM
1. CHECK FOR OPEN SIGNAL WIRE BETWEEN
DRIVER CARD AND BUCK COIL.
2. CHECK FOR OPEN RC NETWORK ON PC BOARD.
3. POSSIBLE MISSING PRINT WIRE DRIVE SIGNAL
FROM PRINTER ATTACHMENT
SEE INTERFACE SIGNAL CHART (PAGE 23)

REPLACE PRINT WIRE ASSEMBLY
(FETMM)

REPLACE PRINT WIRE ASSEMBLY
(FETMM)

1. CLEAN MAGNET ASSEMBLY
2. CHECK FOR BINDS
3. CHECK FOR WORN WIRE TIP AND POSITION
WIRE FLUSH WITH END OF WIRE GUIDE.
SEE PRINT HEAD MAGNET REPLACEMENT
(FETMM)
4. REPLACE PRINT WIRE ASSEMBLY

EC HISTORY	NAME	
135570M	MAP	
	PRINT FAILURES - 3 AND 4	
	TYPE 5213 MODELS 1, 2 & 3	
	PART NUMBER	PAGE NUMBER
	2629885	11

5. EXTRA DOTS IN CHARACTER

POWER OFF
SWAP DRIVER CARDS
POWER ON

RUN DIAGNOSTIC PROGRAM
E8A RIPPLE PRINT

EXTRA DOTS

NO

REPLACE DEFECTIVE DRIVER CARD

YES

POWER OFF
RETURN DRIVER CARDS TO
ORIGINAL LOCATIONS
POWER ON

RERUN FAILING PROGRAM

CHECK WIRE DRIVE SIGNAL CABLE TO ATTACHMENT
FOR POSSIBLE GROUND
SEE INTERFACE SIGNAL CHART (PAGE 23)

6. DOTS NOT ALIGNED PROPERLY

1. CLEAN MAGNET POLE FACES
2. CHECK FOR BINDING WIRES
3. CHECK FOR BENT WIRES AND STRAIGHTEN WIRE OR REPLACE PRINT WIRE ASSEMBLY (FETMM)
WHEN BENT WIRES ARE DETECTED, CHECK THAT -4 VOLTS IS AVAILABLE AT THE PRINT WIRE DRIVER.
4. CHECK PAPER TENSION
5. REPLACE PRINT HEAD (FETMM)

7. LAST COLUMN OF DOTS OF PRINTED CHARACTER SHIFTED

CHECK PRINT RIGHT OR LEFT TRANSDUCERS FOR PROPER POLARITY
SEE TRANSDUCER CHECK PROCEDURE (PAGE 7)

8. GARBLED CHARACTER

1. CHECK PRINT TRANSDUCERS
SEE TRANSDUCER CHECK PROCEDURE (PAGE 7)
2. CHECK STEPPER MOTOR PHASING
SEE STEPPER MOTOR CHECK PROCEDURE (PAGE 6)

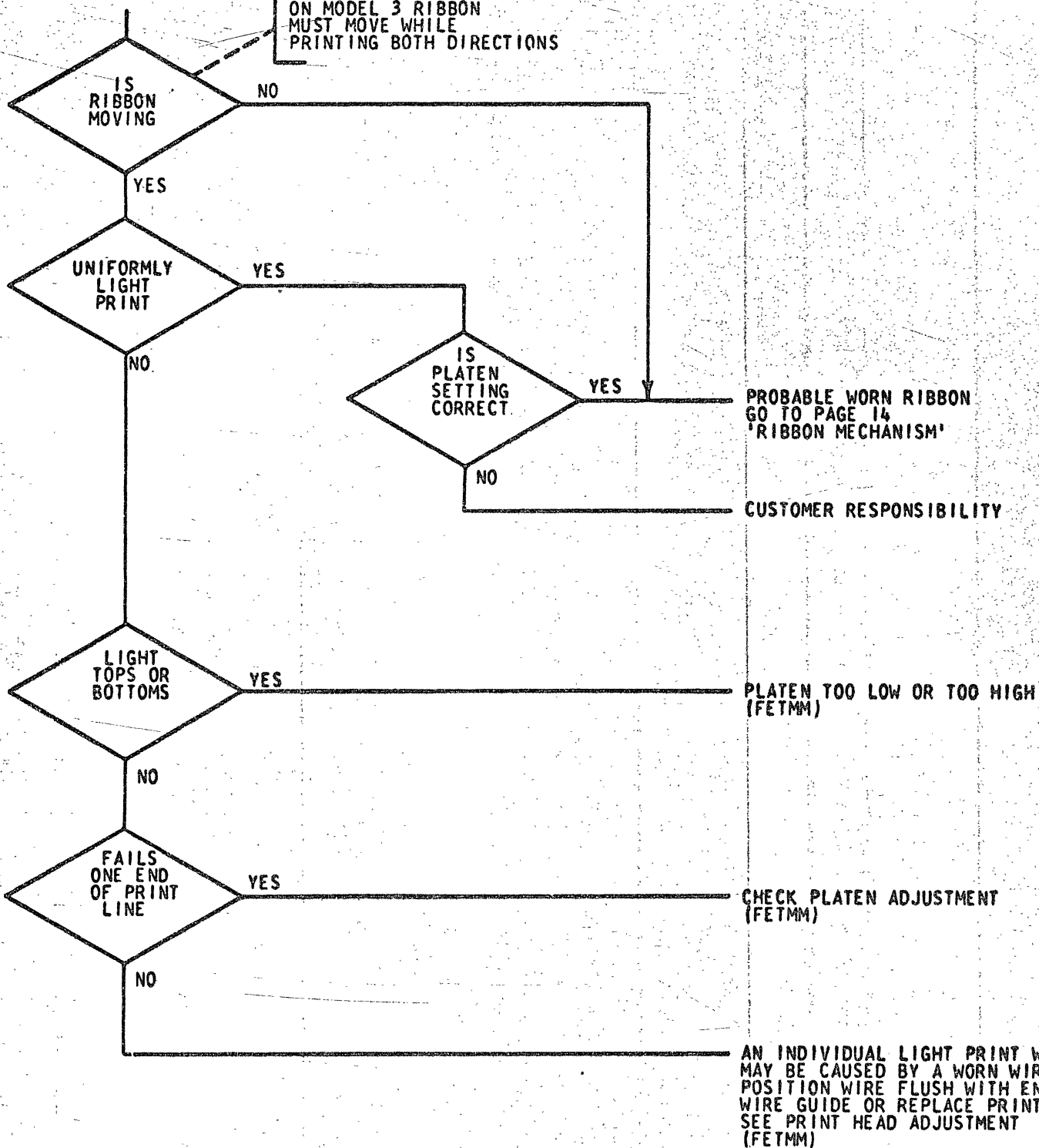
9. CROWDED PRINTING

CHECK FOR LOOSE STEPPER MOTOR COUPLING TO LEAD SCREW.

EC HISTORY		NAME	
	135570M	MAP	
		PRINT FAILURES 5,6,7,8 AND 9	
		TYPE 5213 MODELS 1,2 & 3	
		PART NUMBER	PAGE NUMBER
		2629886	12

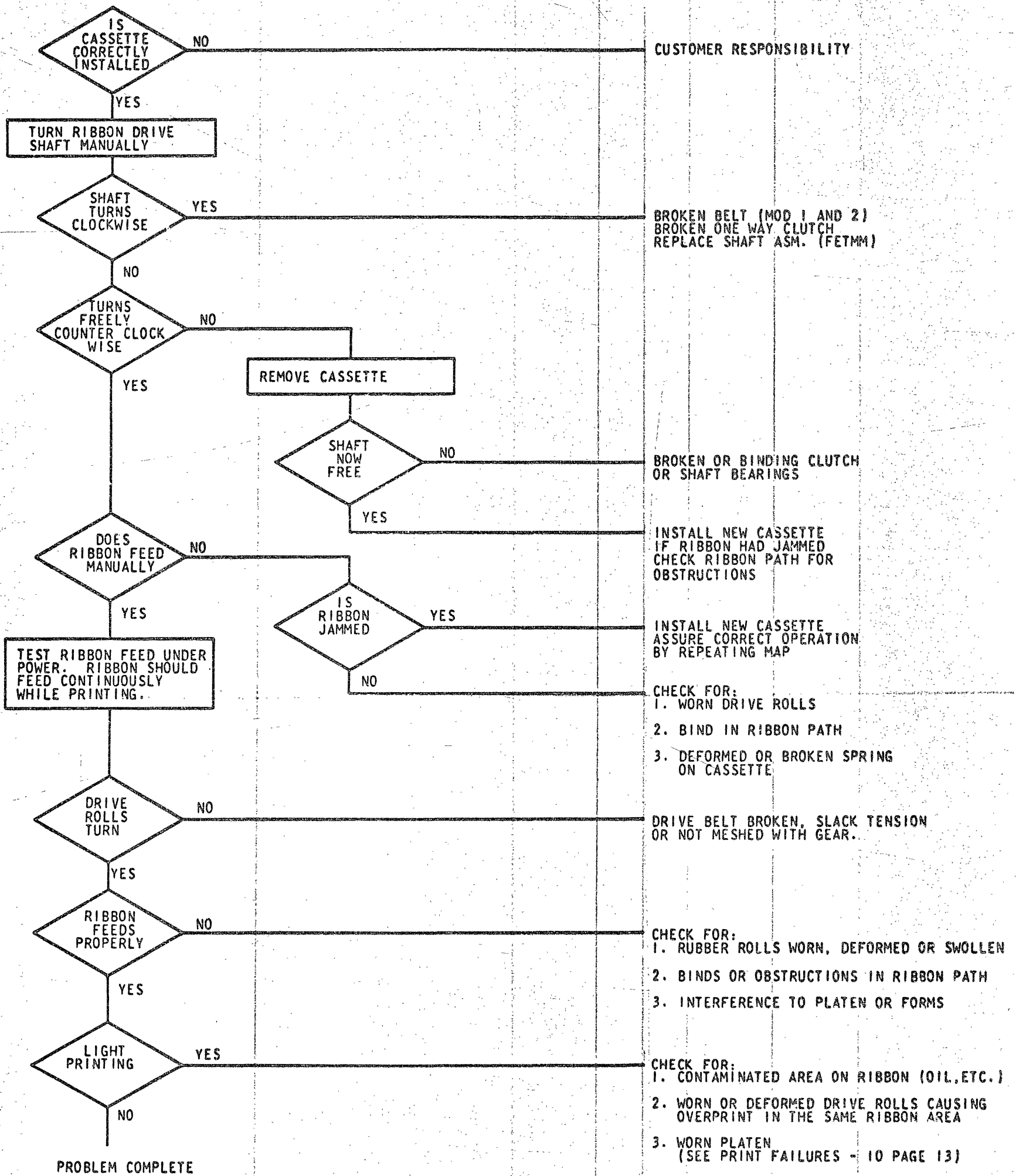
10. LIGHT PRINT

ON MODEL 3 RIBBON
MUST MOVE WHILE
PRINTING BOTH DIRECTIONS



EC HISTORY		NAME	
	135570M	MAP	
		PRINT FAILURES - 10	
		TYPE 5213 MODELS 1, 2 & 3	
		PART NUMBER	PAGE NUMBER
		2629887	13

RIBBON MECHANISM - LIGHT PRINT OR INCORRECT FEED



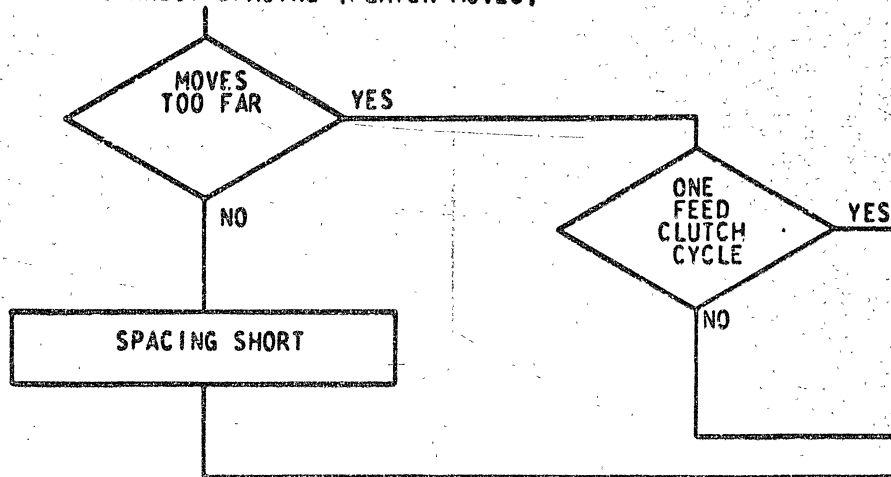
EC HISTORY		NAME	
	135570M	RIBBON MECHANISM LIGHT PRINT OR INCORRECT FEED	
		TYPE 5213 MODELS 1, 2 AND 3	
		PART NUMBER	PAGE NUMBER
		2629888	14

FORMS MECHANISM - PIN FEED PLATEN #1

1. PAPER JAM

CHECK THAT FORMS FEED STRAIGHT AND FREELY INTO PRINTER.
CHECK FOR OBSTRUCTIONS IN FORM PATH
BE SURE FEED ROLLS ARE OPEN
ASSURE THAT FORMS USED MEET SPECIFICATIONS
SEE SRL FORM NO. GC34-0003

2. INCORRECT SPACING (PLATEN MOVES)

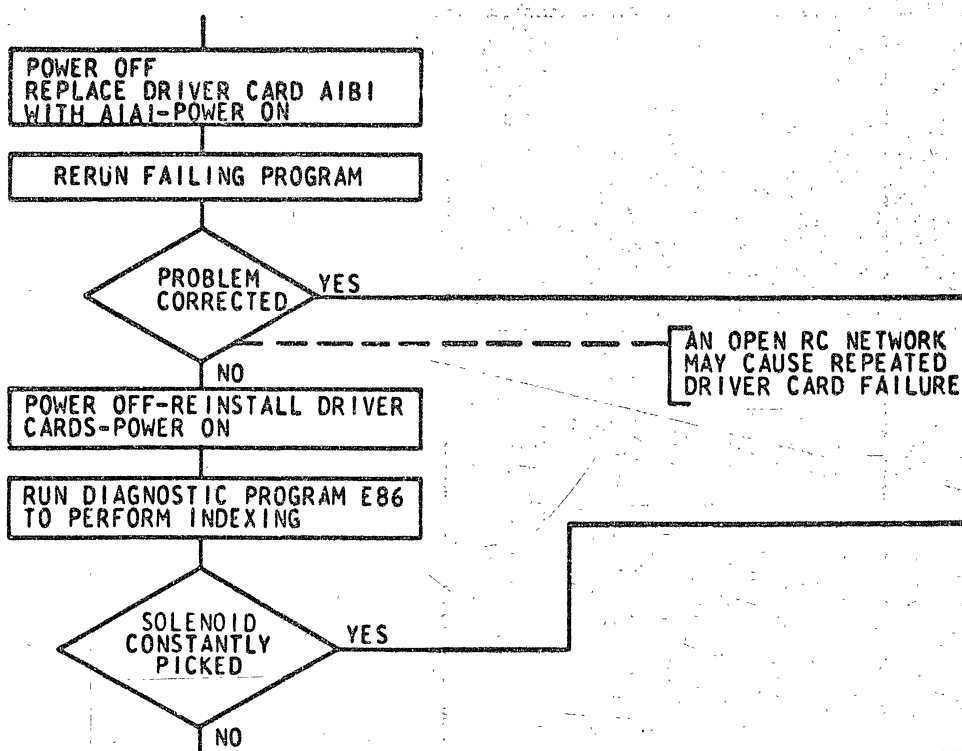


CHECK PLATEN OVERTHROW STOP ADJUSTMENT (FETMM)
CHECK INDEX SELECTOR CAM ON 1 OR 2 SPACE LEVER

GO TO '3. FORMS RUNAWAY OR OVERSPACING' BELOW

CHECK FOR BINDS IN PLATEN BUSHINGS OR CAMS
CHECK INDEX LINK ADJUSTMENT (FETMM)
CHECK INDEX SELECTOR CAM ON 1 OR 2 SPACE LEVER
CHECK PLATEN OVERTHROW STOP (FETMM)
CHECK INDEX PAWL SPRING

3. FORMS RUNAWAY OR OVERSPACING



REPLACE DEFECTIVE DRIVER CARD

AN OPEN RC NETWORK MAY CAUSE REPEATED DRIVER CARD FAILURE

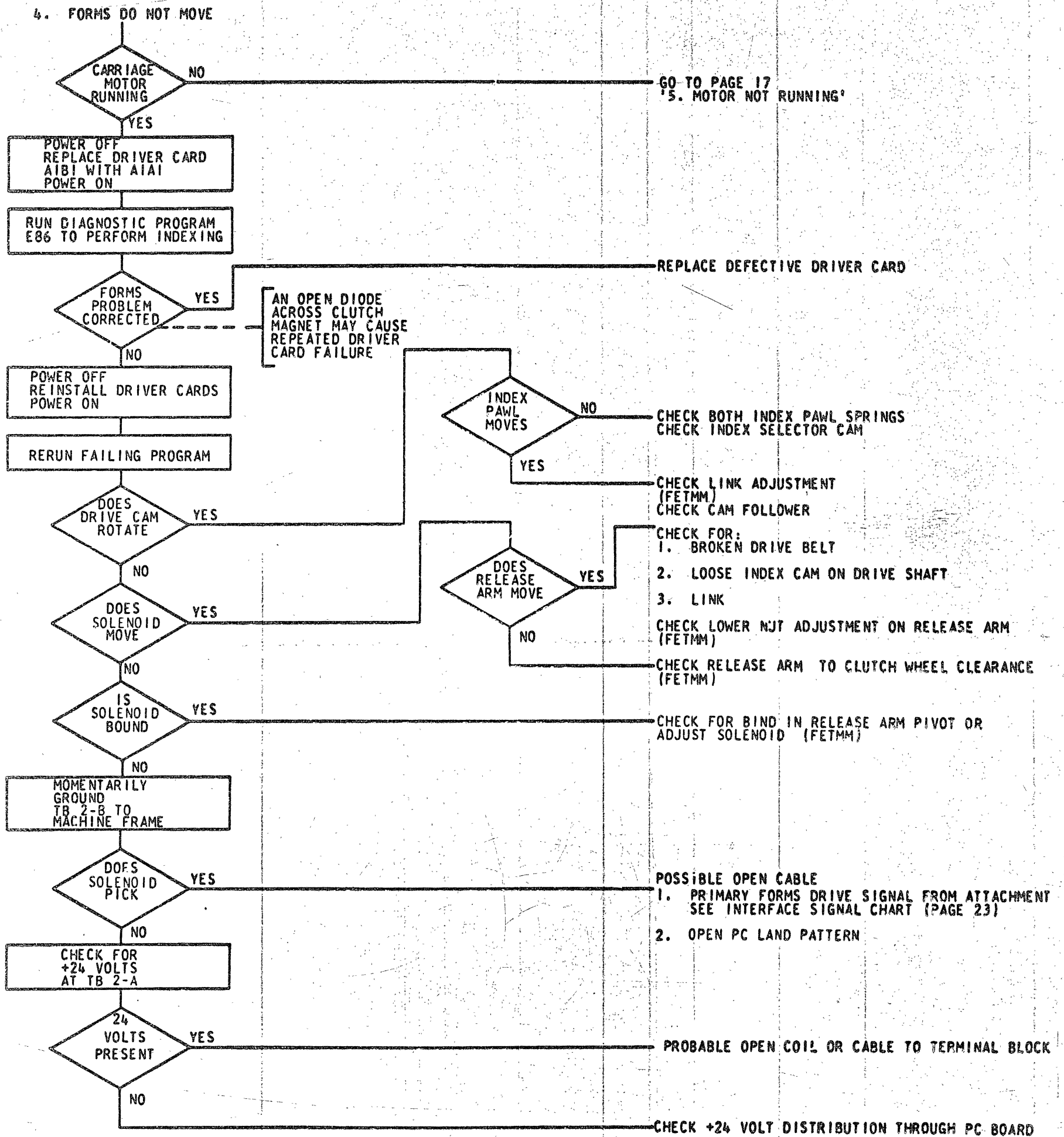
CHECK FOR GROUNDED CABLES
1. DRIVER TO COIL (22107)
2. FORMS DRIVE SIGNAL FROM ATTACHMENT
SEE INTERFACE SIGNAL CHART (PAGE 23)

CHECK FOR WEAR IN:
1. DRIVE PAWL
2. RELEASE ARM
3. CLUTCH WHEEL LATCHING SURFACE

CHECK SOLENOID RESIDUAL
CHECK FOR BIND IN RELEASE ARM PIVOT
CHECK RING ECCENTRIC ADJUSTMENT
FOR PAWL TO RATCHET CLEARANCE (FETMM)

EC HISTORY		NAME	
	1135570M	MAP	
		FORMS MECHANISM-PIN FEED PLATEN #1	
		TYPE 5213 MODELS 1, 2 & 3	
		PART NUMBER	PAGE NUMBER
		2629889	15

FORMS MECHANISM - PIN FEED PLATEN #2



EC HISTORY		NAME	
	135570M	MAP	
		FORMS MECHANISM-PIN FEED PLATEN #2	
		TYPE 5213 MODELS 1, 2 & 3	
		PART NUMBER	PAGE NUMBER
		2629890	16

5. MOTOR NOT RUNNING

TURN OFF CE MOTOR SWITCH
REPLACE MOTOR FUSE IF
BLOWN-CHECK MOTOR AND
CLUTCH FOR BINDS-TURN ON
CE MOTOR SWITCH

DOES
MOTOR
RUN

YES

END OF CALL

NO

SPIN THE MOTOR

DOES
MOTOR
RUN

YES

TURN OFF MOTOR SWITCH
DISCHARGE CAPACITOR. METER
RESISTANCE OF MOTOR
WINDINGS

NO

CHECK FUSE

OPEN
CIRCUIT

YES

OPEN START WINDING, REPLACE MOTOR

NO

REPLACE DEFECTIVE CAPACITOR C1

FUSE
BLOWN

YES

PROBABLE CAUSE

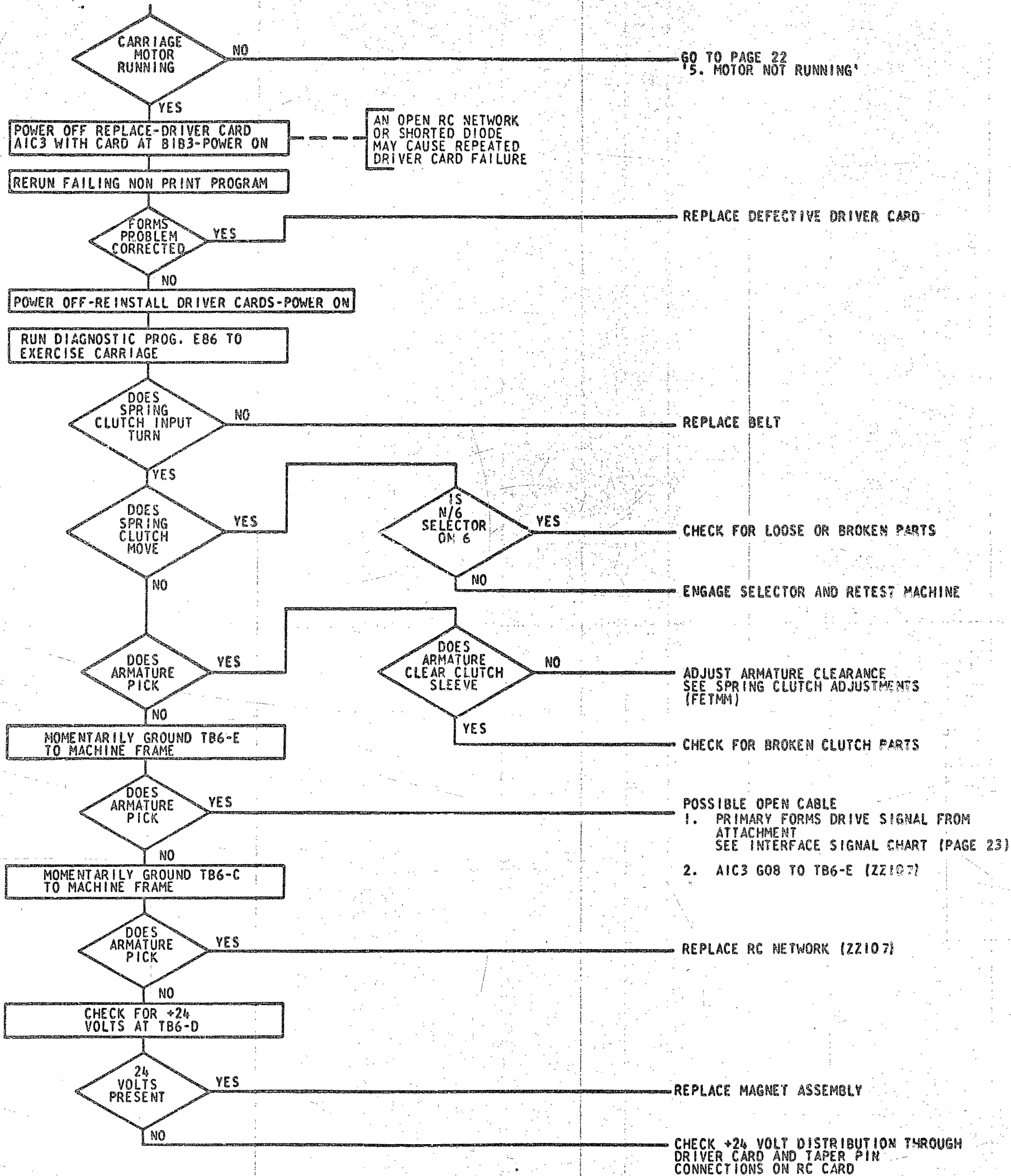
1. CABLE GROUNDED
2. DEFECTIVE CAPACITOR C1
3. DEFECTIVE MOTOR

NO

CHECK AC VOLTAGE DISTRIBUTION
TO MOTOR (SEE Z2105)
POSSIBLE OPEN CABLE, CE SWITCH,
FUSE CONNECTION, MOTOR LEADS

EC HISTORY	NAME	MAP
135570M		FORMS MECHANISM-PIN FEED PLATEN #3
		TYPE 5213 MODELS 1, 2 & 3
	PART NUMBER	PAGE NUMBER
	2629891	17

I. FORMS DO NOT MOVE



EC HISTORY		NAME	
	135570M	MAP	
		FORMS MECHANISM - VFC #1	
		TYPE 5213 MODELS 1, 2 & 3	
		PART NUMBER	PAGE NUMBER
		2629892	18

2. FORMS RUNAWAY

OBSERVE CLUTCH MAGNET ARMATURE DURING RUNAWAY

ARMATURE CONSTANTLY PICKED

NO

YES

POWER OFF
CHECK RC COMPONENTS IN CARRIAGE COIL CIRCUIT (ZZ107). A DEFECTIVE RC NETWORK MAY CAUSE REPEATED DRIVER CARD FAILURES

RC NETWORK OK

NO

YES

REPLACE DRIVER CARD AIC3 WITH CARD BIB3
POWER ON

DO NOT INSTALL QUESTIONABLE CARRIAGE DRIVER CARD IN THE PRINT WIRE DRIVER LOCATION. PRINT HEAD DAMAGE COULD RESULT

RUN DIAGNOSTIC PROGRAM E86 TO EXERCISE CARRIAGE

FORMS STILL RUNAWAY

NO

YES

POWER OFF
RETURN DRIVER CARDS TO ORIGINAL LOCATIONS

1. CHECK FOR WORN MAGNET RESIDUAL
2. CHECK SPRING CLUTCH AND MAGNET ADJ. (FETMM)
3. CHECK CARRIAGE TRANSDUCER FOR:
AIR GAP - .001-.003(0.025-0.076)
CONTINUITY - 450 TO 500 OHMS
TIMING - TRANSDUCER TIP .080-.150(2-3,8) PAST THE TRAILING EDGE OF EMITTER TOOTH (FETMM)

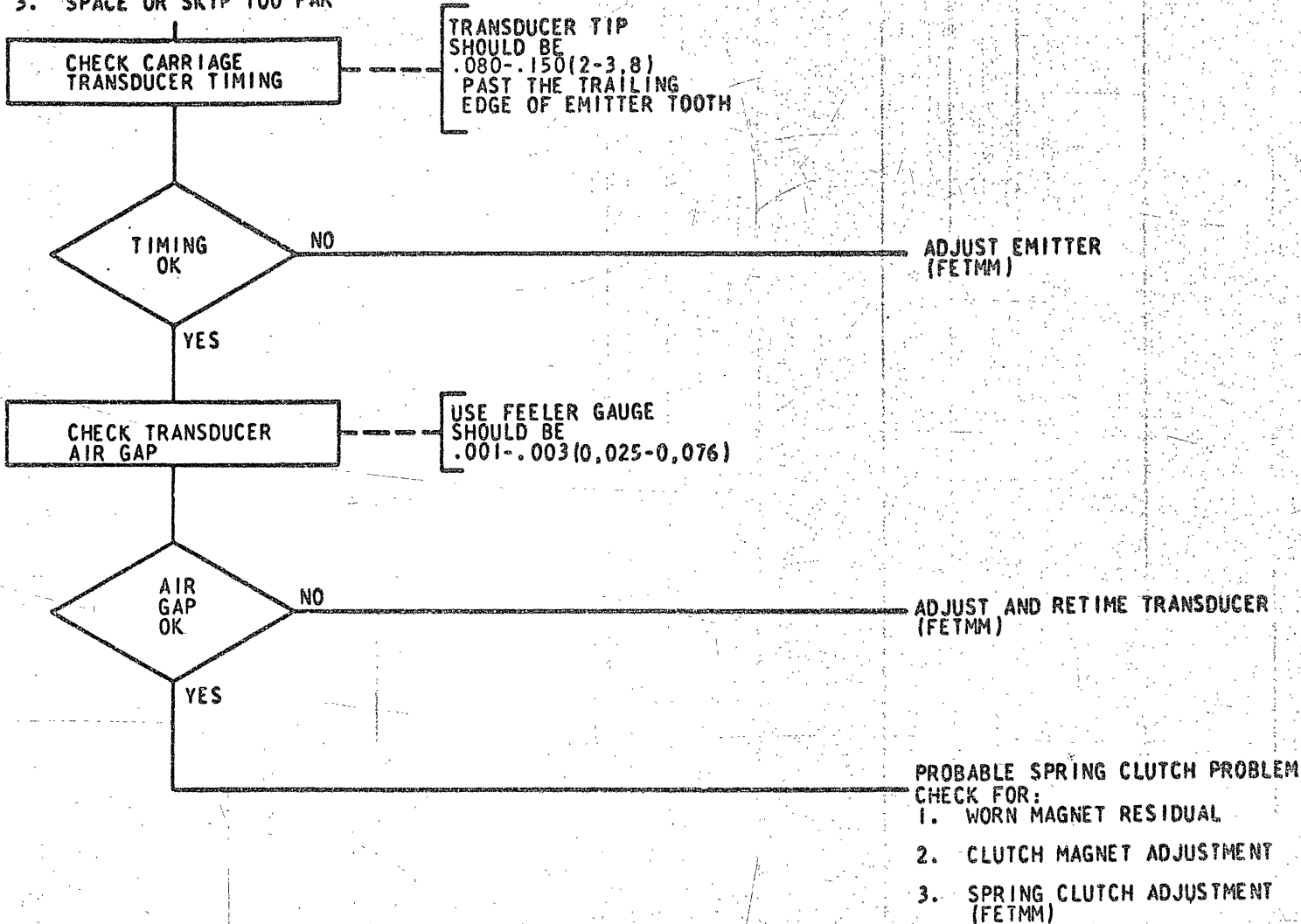
REPLACE RC NETWORK

REPLACE DEFECTIVE DRIVER CARD

- CHECK FOR GROUNDED CIRCUIT
1. CABLE FROM DRIVER CARD TO COIL (ZZ107)
 2. PRIMARY FORMS DRIVE SIGNAL FROM ATTACHMENT SEE INTERFACE SIGNAL CHART (PAGE 23)

EC HISTORY		NAME	
	135570M	MAP	
		FORMS MECHANISM - VFC #2	
		TYPE 5213 MODELS 1, 2 & 3	
		PART NUMBER	PAGE NUMBER
		2629893	19

3. SPACE OR SKIP TOO FAR



EC HISTORY	NAME	MAP
135570M	FORMS MECHANISM - VFC #3	
	TYPE 5213 MODELS 1, 2 & 3	
	PART NUMBER	PAGE NUMBER
	2629894	20

4. NOT SPACING FAR ENOUGH

CHECK FORMS THICKNESS AND
PAPER TENSION CONTROLS
FOR PROPER SETTINGS

CHECK FOR
EXCESSIVE
FORMS DRAG



ADJUST TENSION CONTROLS
(FETMM)

CHECK CARRIAGE TRANSDUCER TIMING
TRANSDUCER TIP SHOULD BE
.080-.150(2-3,8) PAST THE TRAILING
EDGE OF EMITTER TOOTH
(FETMM)
CHECK FOR LOOSE TRACTOR DRIVE GEARS
CHECK SPRING CLUTCH ADJUSTMENTS
(FETMM)

EC HISTORY		NAME	
	135570M	MAP	
		FORMS MECHANISM - VFC #4	
		TYPE 5213 MODELS 1, 2 & 3	
		PART NUMBER	PAGE NUMBER
		2629895	21

5. MOTOR NOT RUNNING

TURN OFF CE MOTOR SWITCH
REPLACE MOTOR FUSE IF
BLOWN. CHECK MOTOR AND
CLUTCH FOR BINDS. TURN ON
CE MOTOR SWITCH

DOES
MOTOR
RUN

YES

END OF CALL

NO

SPIN THE MOTOR

DOES
MOTOR
RUN

YES

TURN OFF MOTOR SWITCH
DISCHARGE CAPACITOR
METER THE RESISTANCE
OF MOTOR WINDINGS

NO

OPEN
CIRCUIT

YES

OPEN START WINDING, REPLACE MOTOR

NO

REPLACE DEFECTIVE CAPACITOR C1

CHECK FUSE

FUSE
BLOWN

YES

PROBABLE CAUSE

1. CABLE GROUNDED
2. DEFECTIVE CAPACITOR C1
3. DEFECTIVE MOTOR

NO

CHECK AC VOLTAGE DISTRIBUTION
TO MOTOR (ZZ104)
POSSIBLE OPEN CABLE, CE SWITCH,
FUSE CONNECTION, MOTOR LEADS

6. UNEVEN PRINT LINE

CHECK TRACTOR PIN ALIGNMENT
(FETMM)

EC HISTORY	NAME
135570M	MAP FORMS MECHANISM - VFC #5
	TYPE 5213 MODELS 1, 2 & 3
	PART NUMBER PAGE NUMBER
	2629896 22

INTERFACE SIGNAL CHART

FROM CPU PIN LOCATION	ALD	SIGNAL NAME	TO 5213 CONNECTION ALD ZZ103		DRIVER INPUT			
			ALL MODELS	MODEL 1	ALD	MODEL 2 AND 3	ALD	
A2 A5 B02	PR022	-PRINT WIRE DRIVE NO. 1	W2A2 D02	EC2-L	ZZ106	C3 B06	ZZ105	
A2 A5 B04	PR022	-PRINT WIRE DRIVE NO. 2	W2A2 D04	EC2-A	ZZ106	B3 B03	ZZ105	
A2 A5 B05	PR022	-PRINT WIRE DRIVE NO. 3	W2A2 D05	EC2-F	ZZ106	B3 B04	ZZ105	
A2 A5 B08	PR022	-PRINT WIRE DRIVE NO. 4	W2A2 D08	EC2-B	ZZ106	B3 B05	ZZ105	
A2 A5 B09	PR022	-PRINT WIRE DRIVE NO. 5	W2A2 D09	EC2-E	ZZ106	B3 B06	ZZ105	
A2 A5 B10	PR022	-PRINT WIRE DRIVE NO. 6	W2A2 D10	EC2-C	ZZ106	B3 B07	ZZ105	
A2 A5 B12	PR022	-PRINT WIRE DRIVE NO. 7	W2A2 D12	EC2-D	ZZ106	B3 B08	ZZ105	
A2 A5 D02	PR022	-STEPPER MOTOR DRIVE NOT A	W2A2 B02	EC2-R	ZZ108	C3 B03	ZZ107	
A2 A5 D05	PR022	-STEPPER MOTOR DRIVE NOT B	W2A2 B05	EC2-P	ZZ108	C3 B05	ZZ107	
A2 A5 D07	PR022	-STEPPER MOTOR DRIVE A	W2A2 B07	EC2-J	ZZ108	C3 B07	ZZ107	
A2 A5 D11	PR022	-STEPPER MOTOR DRIVE B	W2A2 B11	EC2-Q	ZZ108	C3 B04	ZZ107	
A2 A5 D06	PR022	-PRIMARY FORMS DRIVE	W2A2 B06	EC2-H	ZZ107	C3 B08	ZZ107	

TERMINAL CONNECTION							
			MODEL 1	ALD	MODEL 2 AND 3	ALD	
A2 B5 B02	PR021	LEFT MARGIN SLOW SWITCH N/O	W2A1 D02	SW. TERM.	ZZ107	SW. TERM.	ZZ106
A2 B5 B04	PR021	LEFT MARGIN STOP SWITCH N/O	W2A1 D04	SW. TERM.	ZZ107	SW. TERM.	ZZ106
A2 B5 B05	PR021	RIGHT MARGIN STOP SWITCH N/O	W2A1 D05	SW. TERM.	ZZ107	SW. TERM.	ZZ106
A2 B5 B09	PR021	PRI. FORMS MOVING CONTACT N/O	W2A1 D09	N/O TERM.	ZZ107	N/O TERM.	ZZ106
A2 B5 B10	PR021	PRI. END OF FORMS SWITCH N/C	W2A1 D10	N/C TERM.	ZZ107	N/C TERM.	ZZ106
A2 B5 D06	PR021	COVER INTERLOCK SWITCH N/O	W2A1 B06	N/O TERM.	ZZ107	TB6-F	ZZ106
A2 B5 D07	PR021	RIGHT MARGIN SLOW SWITCH N/O (MOD 3 ONLY)	W2A1 B07			SW. TERM.	ZZ106
A2 B2 B02	PR023	PRINT RIGHT EMITTER	P3-7	TB3-G	ZZ108	TB3-G	ZZ106
A2 B2 B04	PR023	PRINT RIGHT EMITTER RETURN	P3-8	TB3-H	ZZ108	TB3-H	ZZ106
A2 B2 B08	PR023	FORWARD FEEDBACK EMITTER	P3-1	TB3-F	ZZ108	TB3-F	ZZ106
A2 B2 B09	PR023	FORWARD FEEDBACK EMITTER RETURN	P3-2	TB3-E	ZZ108	TB3-E	ZZ106
A2 B2 B12	PR023	REVERSE FEEDBACK EMITTER	P3-4	TB3-D	ZZ108	TB3-D	ZZ106
A2 B2 B13	PR023	REVERSE FEEDBACK EMITTER RETURN	P3-5	TB3-C	ZZ108	TB3-C	ZZ106
A2 B2 B05	PR023	PRINT LEFT EMITTER (MODEL 3 ONLY)	P3-10			TB3-B	ZZ106
A2 B2 D05	PR023	PRINT LEFT EMITTER RETURN	P3-11			TB3-A	ZZ106
A2 B2 D10	PR023	FORMS EMITTER (MODEL 2 AND 3)	P3-13			TB7-G	ZZ106
A2 B2 D11	PR023	FORMS EMITTER RETURN	P3-14			TB7-H	ZZ106

EC HISTORY	NAME
135570M	MAP
	INTERFACE SIGNAL CHART
	TYPE 5213 MODELS 1, 2 & 3
	PART NUMBER
	PAGE NUMBER
	2629897
	23

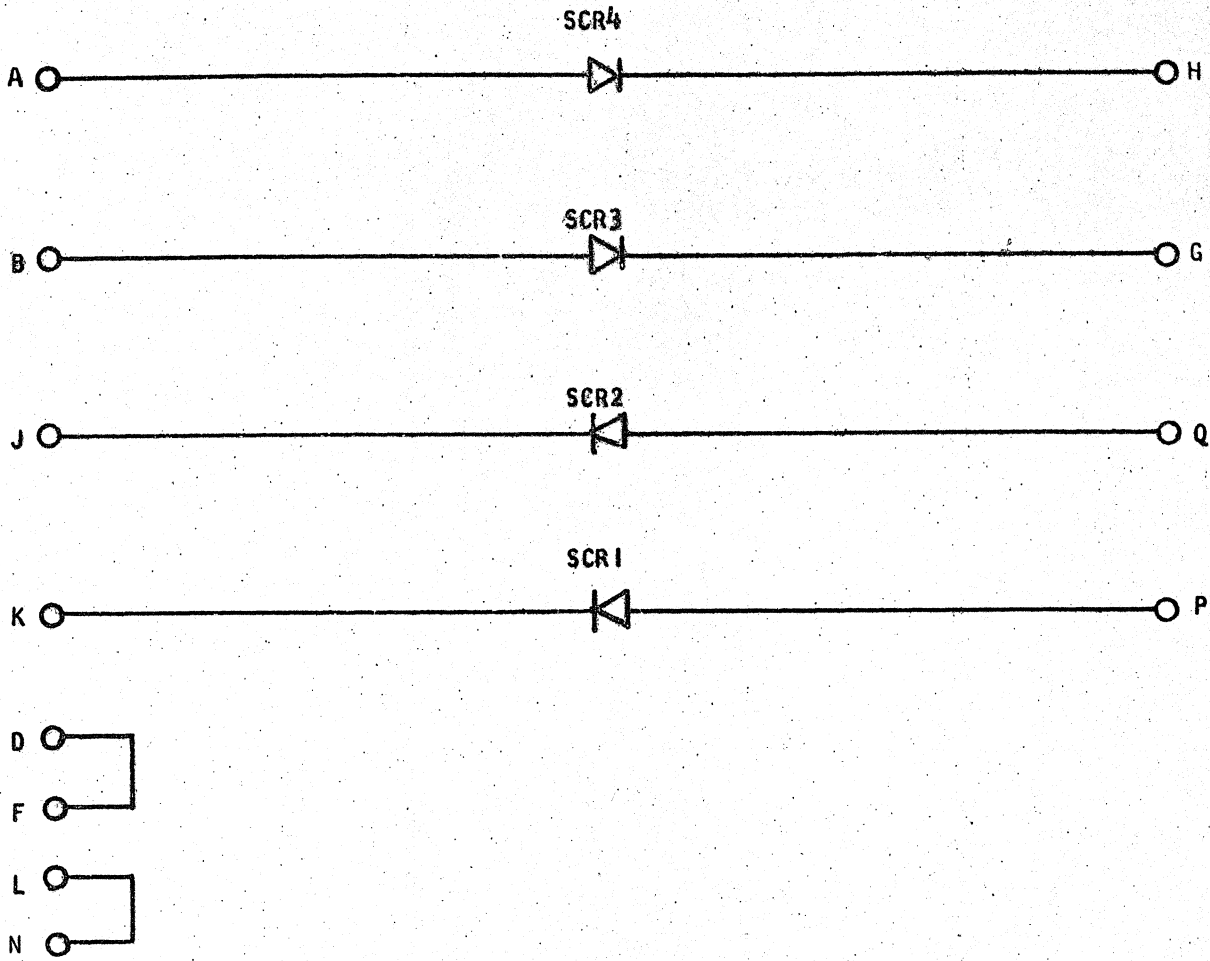
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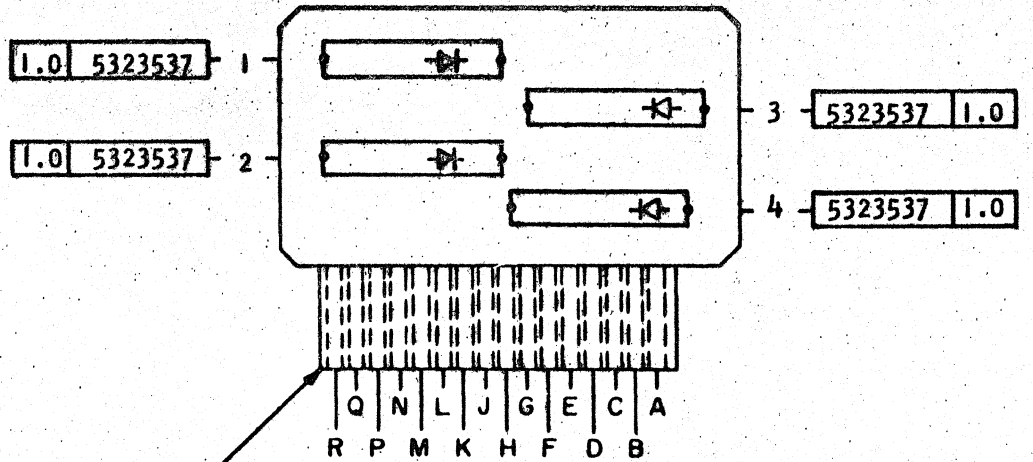
STANDARDS
CODE

2-1045



NOTES

- X CIRCUIT MUST CONFORM TO ENGINEERING SPECIFICATION
- II ASSEMBLE TO ENGINEERING SPECIFICATION 895396 AND 891999



B	MFG ENG	PW	11-11-70
	DPD CIRCUIT & PACKAGING STANDARD		

APPROVAL	DATE
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WS	25 SEP 70
----	-----------

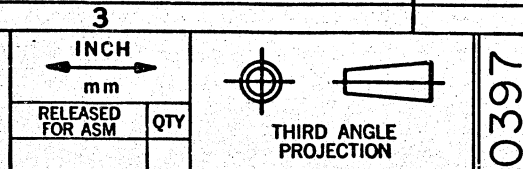
HOLE PATTERN
2525645

COMPONENT SIDE

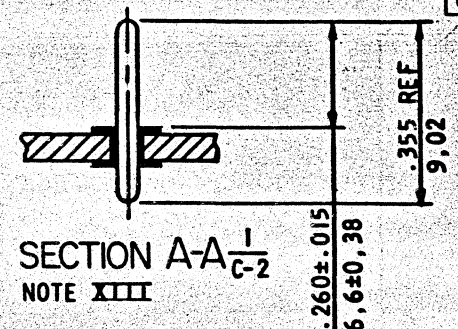
INTERNATIONAL BUSINESS MACHINES CORP.				DATE	CHANGE NO.	APPROVAL	DATE	CHANGE NO.	APPROVAL	DEVELOPMENT NO.
NAME	CARD ASM TSTR -			07 JAN 71	135494	<i>[Signature]</i>				
DESIGN	WS	25 SEP 70	MODEL	SMS						
DETAIL	JD	26 SEP 70	SCALE	NONE						
CHECK	JD	2 NOV 70	DRAW	VE	22 OCT 70					
APPRO	WS	2 NOV 70	CHECK	JD	5 NOV 70					

375444

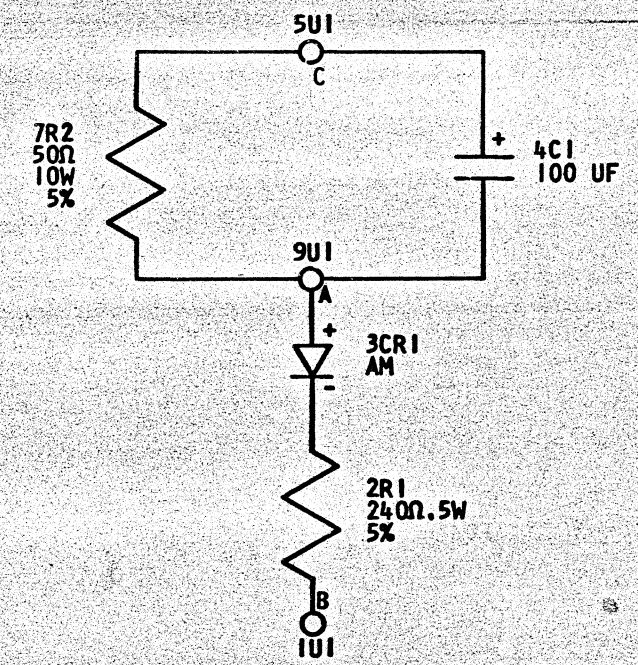
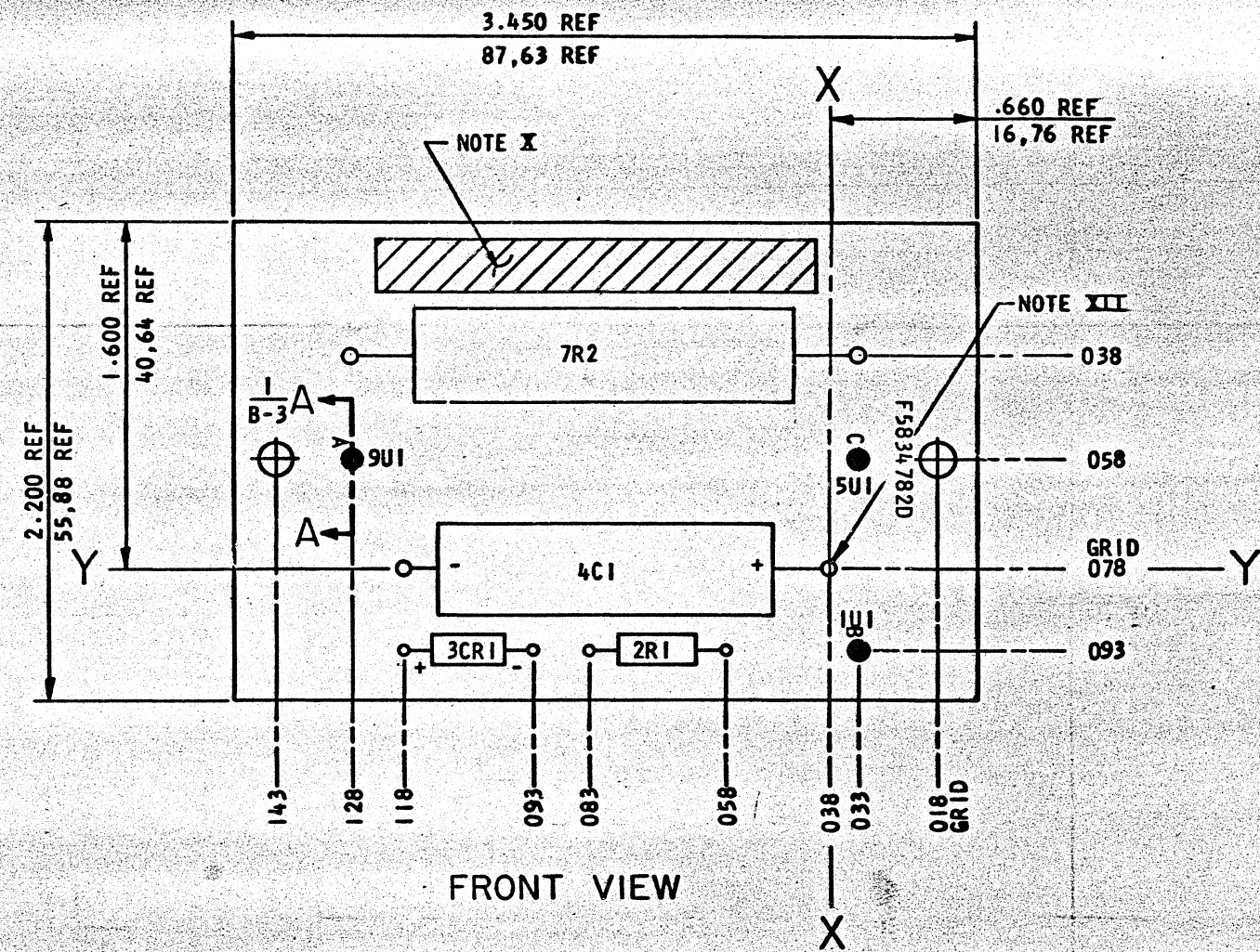
CODE	PART NUMBER	VALUE	QTY
R1	333202	24Ω .5W 5%	1
R2	501551	50Ω 10W 5%	1
C1	207310	100 UF	1
CR1	2111232	AM	1
UI	814247	PIN-PROGRAM	3



TECHNICAL APPROVAL			DATE		CHANGE NO		DATE		CHANGE NO		DEVELOPMENT NO	Q/M
ELEC	AEH	21DEC67	15FEB68	172621A	10MAR71	562878E					5800397	
MET			11SEP68	174943B								
PLASTIC			3FEB69	178703C								
			27JUN69	181437D								



- NOTES
- X LOCATION OF "EC" AND "SHOP DATE" IS IN THE APPROXIMATE AREA SHOWN
 - XI ENGINEERING SPECIFICATION 890913 APPLIES
 - XII CIRCLES INDICATE HOLES FOR LEADS
 - XIII ASSEMBLE PINS TO ENGINEERING SPECIFICATION 871185



5800397

FRONT VIEW

SPECIAL APPLICATIONS

IBM MATERIAL	NO MAKE FROM	TOLERANCE UNLESS OTHERWISE NOTED	INCH (mm)	NOTES	MUST CONFORM TO ENG SPEC 890350	INCH (mm)	IBM
5834782		LINEAR	±	I	ALIGNMENT WITHIN		NAME
CASE DEPTH		ANGLES	±	II	CONC TO DU WITHIN	TIR	CARD ASSEMBLY - COMPONENT CD
HARDNESS		CORNERS AND / OR EDGES BROKEN		III	FLAT WITHIN		DES'GN
SURFACE TREATMENT		RADIUS UNLESS OTHERWISE NOTED		IV	PARALLEL TO DU WITHIN		WS
				V	STRAIGHT WITHIN		NOV67
				VI	SQUARE TO DU WITHIN		SCALE
							NONE
							DETAIL
							VE
							11OCT67
							CHECK
							JJK
							19DEC67
							STANDARDS CODE
							APPRO
							HKW
							21DEC67
							2-6279

5800397

IBM FORM 8-65-7700-4

2640762

B

USING SYSTEM INTERFACE PAGE							PRINTER SYSTEM DIAGRAM PAGE								
370/135	3284 MOD III	3284/ 3286 MOD I & II	370/155	370/145	3/6	2770	SIGNAL NAME	2213 MOD I	2213 MOD II	3215 MOD I	22MP	5213 MOD I	5213 MOD II MOD III	2222 MOD I MOD II	
					PRO21		MANUAL EJECT SWITCH N/O							ZZ103	
							LEDGER CARD IN SWITCH N/C								
							LEDGER CARD IN SWITCH N/O								
							LEDGER CARD OUT SWITCH N/C								
							LEDGER CARD OUT SWITCH N/O								
FC602	DP901	BP911	PT081	PN995	PRO21	MP921	COVER INTERLOCK SWITCH N/O	ZZ103	ZZ103	ZZ103	ZZ103	ZZ103	ZZ103	ZZ103	
						MP921	CARRIAGE MOTOR SENSE RELAY N/O	ZZ103	ZZ103						
						MP921	STOP KEY N/C	ZZ103	ZZ103						
							TAB KEY N/O								
							NEW LINE KEY N/O								
							CARR RESTORE KEY N/O								
							+CARR CHECK INDICATOR	ZZ103							
							+PRINT CHECK INDICATOR	ZZ103							
						MP921	TAB STOP SW N/O	ZZ103	ZZ103						
							FORMS JAM SWITCH N/O								
							6/8 NEUTRAL INLK N/O								
					PRO21		6 NEUTRAL INLK N/O						ZZ103		
						MP921	CARR TAPE INLK N/O		ZZ103						
FC602	DP901	BP911	PT081	PN995	PRO21	MP921	RETURN FOR SWITCH	ZZ103	ZZ103	ZZ103	ZZ103	ZZ103	ZZ103	ZZ103	
					PRO21		FEATURE INTERLOCK						ZZ103		

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NAME PRINTER-SYSTEM
 INTERFACE PAGE
 DESIGN RAP 9FEB SHT OF
 RAP 9FEB
 CHECK CEP 9FEB CLASSIFICATION
 APPRO JGB 9FEB

DATE CHANGE NO DATE CHANGE NO
 11 MAR 71 135580R 14 JUL 72 138883
 29 JUL 71 135584
 27 OCT 71 135644
 4 APR 72 138845
 MUST CONFORM TO ENG SPEC DEVELOPMENT NO LOGIC PG NO
 WP020

PRINTER-SYSTEM INTERFACE PAGE

PART NO 2640762 LOGIC PG NO WP020

2640762

B

2640764 B

PRINTER-SYSTEM INTERFACE PAGE

PART NO 2640764 LOGIC PG NO WPO40

USING SYSTEM INTERFACE PAGE							PRINTER SYSTEM DIAGRAM PAGE									
370/135	3284 MOD III	3284/3286 MOD I & II	370/155	370/145	3/6	2770	SIGNAL NAME	2213 MOD I	2213 MOD II	3215 MOD I	22MP	5213 MOD I	5213 MOD II MOD III	2222 MOD I MOD II		
FN111	DP901	BP911	PT081	PN991	PR023	MP921	FORWARD FEEDBACK EMITTER	ZZ102	ZZ102	ZZ102	ZZ102	ZZ102	ZZ102	ZZ102		
							FORWARD FEEDBACK EMITTER RETURN									
							FORWARD FEEDBACK EMITTER SHIELD									
							REVERSE FEEDBACK EMITTER									
							REVERSE FEEDBACK EMITTER RETURN									
							REVERSE FEEDBACK EMITTER SHIELD									
							PRINT RIGHT EMITTER									
							PRINT RIGHT EMITTER RETURN									
							PRINT RIGHT EMITTER SHIELD	↓	↓	↓	↓	↓				
							PRINT LEFT EMITTER									
							PRINT LEFT EMITTER RETURN									
							PRINT LEFT EMITTER SHIELD									
							FORMS EMITTER									
							FORMS EMITTER RETURN									
							FORMS EMITTER SHIELD						↓			
							LEDGER CARD EMITTER SHIELD									
							LEDGER CARD EMITTER RETURN									
							LEDGER CARD EMITTER									
							OMR SENSE AMP NO. 1 SHIELD									
							OMR SENSE AMP NO. 1 RETURN									
							OMR SENSE AMP NO. 1									
							OMR SENSE AMP NO. 2 SHIELD									
							OMR SENSE AMP NO. 2 RETURN									
							OMR SENSE AMP NO. 2									
							OMR SENSE AMP NO. 3 SHIELD									
							OMR SENSE AMP NO. 3 RETURN									
							OMR SENSE AMP NO. 3									
							OMR SENSE AMP NO. 4 SHIELD									
							OMR SENSE AMP NO. 4 RETURN							↓		
							OMR SENSE AMP NO. 4									

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NAME	PRINTER-SYSTEM	DATE	11 MAR 71	CHANGE NO	135580R	DATE		CHANGE NO	
INTERFACE PAGE			29 JUL 71		135584				
DESIGN RAP IOFEB	SHT OF		27 OCT 71		135644				
DETAIL RAP IOFEB			14 JUL 72		138883				
CHECK CEP IOFEB	CLASSIFICATION	MUST CONFORM TO ENG SPEC		DEVELOPMENT NO		LOGIC PG NO			
APPRO JGB IOFEB						WPO40			

2640764 B

2640765 B

PRINTER-SYSTEM INTERFACE PAGE

PART NO 2640765 LOGIC PG NO WP050

USING SYSTEM INTERFACE PAGE							PRINTER SYSTEM DIAGRAM PAGE								
370/135	3284 MOD III	3284/3286 MOD I & II	370/155	370/145	3/6	2770	SIGNAL NAME	2213 MOD I	2213 MOD II	3215 MOD I	22HP	5213 MOD I	5213 MOD II MOD III	2222 MOD I MOD II	
YAI70	YE100	YF100	YB218	YE305	YB130	YA041	+24 VOLTS D.C.	ZZ102	ZZ102	ZZ102	ZZ103	ZZ103	ZZ103	ZZ103	
YAI05	↓	↓	↓	↓	↓	↓	GROUND	↓	↓	↓	↓	↓	↓	↓	
YAI70	↓	↓	↓	↓	↓	↓	+24 VOLTS D.C.	↓	↓	↓	↓	↓	↓	↓	
YAI05	↓	↓	↓	↓	↓	↓	GROUND	↓	↓	↓	↓	↓	↓	↓	
---	---	---	---	---	---	---	7.25 VOLTS A.C.	---	---	---	---	---	---	---	
---	YE100	YF100	---	---	---	---	-12 VOLTS D.C.	---	---	---	ZZ103	---	---	---	
---	---	---	---	---	---	---	+12 VOLTS D.C.	---	---	---	---	---	---	---	
YAI50	YE100	YF100	YB218	YE305	YB130	↓	GROUND	↓	↓	---	ZZ102	ZZ103	ZZ103	ZZ103	
---	---	---	---	---	---	↓	+12 VOLTS D.C.	↓	↓	---	---	---	---	---	
YAI50	YE100	YF100	YB218	YE305	YB130	↓	GROUND	↓	↓	ZZ102	ZZ103	ZZ103	ZZ103	ZZ103	
---	---	---	---	---	↓	---	-4 VOLTS D.C.	---	---	---	---	↓	↓	↓	
YAI50	---	---	YB218	YE305	↓	---	+6 VOLTS D.C.	---	---	ZZ102	---	↓	↓	↓	
YAI50	---	---	YB218	YE305	↓	---	+6 VOLTS D.C.	---	---	ZZ102	---	↓	↓	↓	
---	YE100	YF100	---	---	---	---	+5 VOLTS D.C.	---	---	---	ZZ103	---	---	---	
---	YE100	YF100	---	---	---	---	+5 VOLTS D.C.	---	---	---	ZZ103	---	---	---	
YAI40	---	---	YB218	YE305	---	---	-3 VOLTS D.C.	---	---	ZZ102	---	---	---	---	
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
---	YE100	YF100	---	---	---	---	110V/115V 60HZ AC	---	---	---	ZZ102	---	---	---	
---	---	---	---	---	---	---	100V/123.5V 50HZ AC	---	---	---	↓	---	---	---	
YAI00	---	---	YB201	YE120	YB100	YA011	208V/230V 60HZ AC	ZZ102	ZZ102	ZZ102	↓	ZZ102	ZZ102	ZZ102	
↓	---	---	↓	↓	↓	↓	220V/235V 50HZ AC	↓	↓	↓	↓	↓	↓	↓	
↓	YE100	YF100	↓	↓	↓	↓	GROUND	↓	↓	↓	↓	↓	↓	↓	
↓	YE100	YF100	↓	↓	↓	↓	SHIELD	↓	↓	↓	↓	↓	↓	↓	

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NAME	PRINTER-SYSTEM	DATE	CHANGE NO	DATE	CHANGE NO
INTERFACE PAGE		11 MAR 71	135580R		
DESIGN RAP IOFEB	SHT OF	29 JUL 71	135584		
DETAIL RAP IOFEB		27 OCT 71	135644		
CHECK CEP IOFEB	CLASSIFICATION				
APPRO JGB IOFEB					
MUST CONFORM TO ENG SPEC		DEVELOPMENT NO		LOGIC PG NO	
				WP050	

2640765

2632645

B

CONSOLE-SYSTEM INTERFACE PAGE

PART NO 2632645
LOGIC PG NO WP060

USING SYSTEM INTERFACE PAGE				CONSOLE SYSTEM DIAGRAM PAGE			
	370/ 135	370/ 145	370/ 155	SIGNAL NAME	3215 MODI		
	FC606	WPO12	PT081	+ END KEY N/C	ZZI09		
				- END KEY N/O			
				+ REQUEST KEY N/C			
				- REQUEST KEY N/O			
	FC605			SWITCH COMMON			
	FC606			- READY KEY N/O			
	FC605			INTERV REQUIRED IND			
				ALTER/DISPLAY MODE IND			
				PROCEED IND			
				REQUEST PENDING IND			
	FC606			+ CANCEL KEY N/C			
				- CANCEL KEY N/O			
				+ READY KEY N/C			
	FC605			- NOT READY KEY N/O			
	FC605			+ NOT READY KEY N/C			
	FC606			+ ALTER DISPLAY N/C			
	FC606			- ALTER DISPLAY N/O			
	FC605			+ALARM RESET N/C			
				ALARM IND			
				- ALARM RESET N/O			
	YAI05	YEI55	YB218	7.25 VAC	ZZI09		
	YAI05	YEI55	YB218	7.25 VAC RETURN	ZZI09		

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NAME	CONSOLE-SYSTEM		DATE	11 MAR 71	CHANGE NO	135580R	DATE		CHANGE NO	
INTERFACE PAGE				27OCT71		135644				
DESIGN	RAP	22FEB	SHT	OF						
DETAIL	RAP	22FEB								
CHECK	CEP	22FEB	CLASSIFICATION							
APPRO	JGB	22FEB								
			MUST CONFORM TO ENG SPEC		DEVELOPMENT NO		LOGIC PG NO	WP060		
										2632645

B

2632644

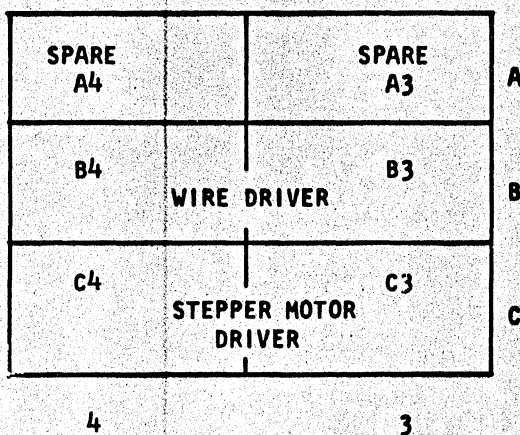
COMPONENT LISTINGPART NO
2632644LOGIC PG NO
ZZ101

COMPONENT	NUMBER	DESCRIPTION	FUNCTION	PAGE LOCATION
C1	2195276	2 MFD	CARRIAGE MOTOR CAPACITOR	ZZ104
C2	252580	1000 MFD ASM	+24V FILTER CAPACITOR	ZZ104
C3-C4	725009	3 MFD	STEPPER MOTOR CAPACITOR	ZZ107
C5-C6	737806	.01 MFD ASM	ARC SUPPRESSION	ZZ104
C7-C20	2526741	CAP ASM 22 MFD 35 VDC	PRINT WIRE R/C NETWORK	ZZ105
CR5-CR11	849096	DIODE ASM	PRINT WIRE R/C NETWORK, CLAMP	ZZ107
E1-E4	854610	TRANSDUCER	PRINT & MOTOR CONTROL EMIT	ZZ106
E5	854610	TRANSDUCER	FORMS EMITTER	ZZ106
L1-L7	2526491	BUCK COIL ASM	PRINT WIRES #1-#7	ZZ105
L8	350187	SOLENOID ASM	CARRIAGE SOLENOID	ZZ107
M1	2526778	MOTOR, 208V AC	CARRIAGE DRIVE	ZZ104
M2	2526734	MOTOR, STEPPER	TRANSPORT DRIVE	ZZ107
R1-R2	2391623	13 OHM 60 W	STEPPER MOTOR RESISTORS	ZZ107
R3-R9	2526739	RESISTOR ASM 15 OHM 10 W	PRINT WIRE R/C NETWORK	ZZ105
RY 1-2-3 (NOTE 1)	2526421	REED RELAY ASM	LEFT MARGIN SWITCH	ZZ106
RY 4	2526432	REED RELAY ASM	RIGHT MARGIN SW (MOD II ONLY)	ZZ106
RY 4-5-6 (NOTE 2)	2617922	REED RELAY ASM	RIGHT MARGIN SW (MOD III ONLY)	ZZ106
RY 7	2525948	REED RELAY ASM	COVER INTERLOCK	ZZ106
SLT CONNECTOR	813392	CONNECTOR	DRIVER CARD CONNECTOR	ZZ105,6,7
SW1	804707	SWITCH-TOGGLE	AC LINE SWITCH	ZZ104
CONTACT (ASM)	2526815	CONTACT	FORMS MOVING CONTACT	ZZ106
TB3	302090	8 POS TAPER PIN BLOCK	PRINT & MOTOR CONTROL EMIT	ZZ106
TB5	323839	12 POS TERM BLOCK	DC VOLTAGE DISTRIBUTION	ZZ104
TB6	302090	8 POS TAPER PIN BLOCK	CARRIAGE	ZZ107
TB7	302090	8 POS TAPER PIN BLOCK	VERTICAL FORMS EMITTER	ZZ106
CARD ASM #1, #2	NOTE 3	6X - 2.2 AMP MAGNET DRIVER	WIRE, STEPPER MOTOR & CARRIAGE SOLENOID DRIVERS	ZZ105
CARD ASM #3	5300397	CARRIAGE SOL R/C NETWORK	CARRIAGE SOL RC NETWORK	ZZ107
CARD ASM #4	375444	SERIES DIODE	STEPPER MOTOR	ZZ107
SW4	528324	SWITCH, MICRO	NEUTRAL, 6 LINE INTERLOCK	ZZ106
FUSE CARTRIDGE	53436	0.2 AMP, 250V	CARRIAGE DRIVE MOTOR	ZZ104
FUSE HOLDER	433566	FUSE HOLDER	FUSE HOLDER	ZZ104
TB 10 - TB 17	302090	8 POS TAPER PIN BLOCK	PRINT WIRE R/C NETWORK	ZZ105
P1 CONTACT	5412642	CONTACT, MALE	DC POWER	ZZ103
P1 HOUSING	5412609	HOUSING, MALE	DC POWER	ZZ103
P2 CONTACT	5412642	CONTACT, MALE	AC POWER	ZZ102
P2 HOUSING	1160983	HOUSING, MALE	AC POWER	ZZ102
P3 CONTACT	2513254	CONTACT, FEMALE	MAGNETIC EMITTERS	ZZ102
P3 CONTACT	5412643	CONTACT, FEMALE	MAGNETIC EMITTERS (SHIELDS)	ZZ102
P3 HOUSING	2495446	HOUSING, FEMALE	MAGNETIC EMITTERS	ZZ102
P4 CONTACT	2513254	CONTACT, FEMALE	MAINTENANCE MONITOR	ZZ104
P4 HOUSING	5214572	HOUSING, FEMALE	MAINTENANCE MONITOR	ZZ104
MONITOR	2529089	6V DC MONITOR	MAINTENANCE	ZZ104

TOP VIEW OF SLT SOCKET PLUGGING ARRANGEMENT

NOTES

- RY-1,2,3 ARE WITHIN ONE ASSEMBLY.
- RY-4,5,6 ARE WITHIN ONE ASSEMBLY.
- 5861753 REPLACES 5805160



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IBM				DATE	CHANGE NO	DATE	CHANGE NO	2632644
NAME	SYSTEM DIAGRAM			22JAN71	135570R			
	ZZ103 5213 MOD 2,3 STAGE 2			30CT72	138904			
DESIGN	LFJ	22JAN71	SHT OF					
DETAIL	RAP	22JAN71						
CHECK	RAP	22JAN71	CLASSIFICATION	MUST CONFORM TO ENG SPEC		DEVELOPMENT NO		LOGIC PG NO
APPRO	JGB	22JAN71						ZZ101

B

VERTICAL ELECTRICAL FORMAT

MRO# 780522203

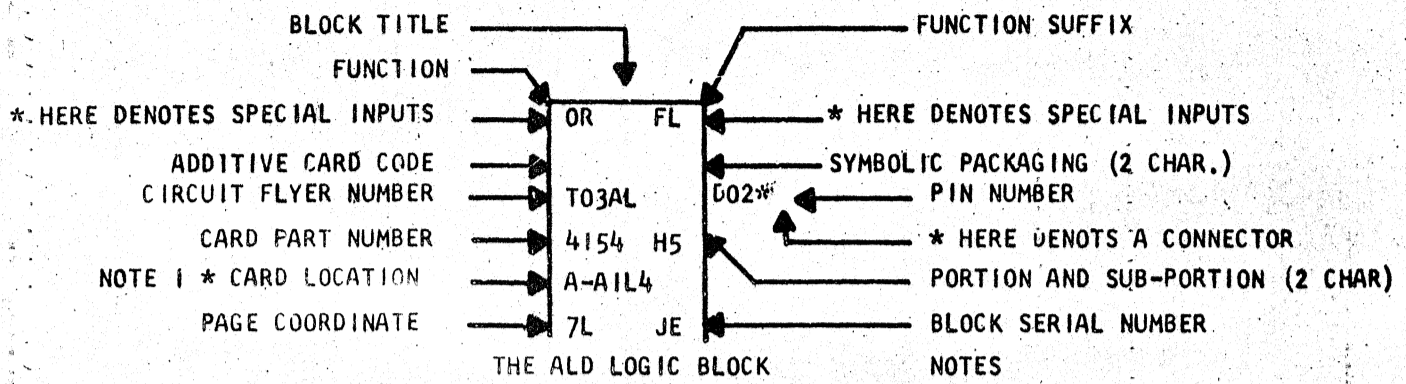
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ORATING MEDIA] GRAPHIC CONTROLS CORPORATION Buffalo, New York Printed in U.S.A. ASTROCLON 148374

5271

PRINTER POWER

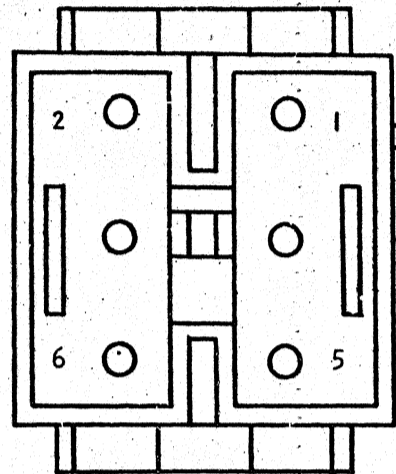
2529077



NOTES
*A REPRESENTS WHICH GATE
A1 REPRESENTS WHICH LOGIC BOARD IS USED
L4 REPRESENTS SOCKET LOCATION

P2 AC PRINTER POWER

POWER PLUG PIN ASSIGNMENTS				
PRINTER		POWER CABLE		
PIN NO.	VOLTAGE OR CONTROL	WIRE SIZE	TYPE	SYSTEM PAGE
1	NOT USED			
2	NOT USED			
3	208/230V-60HZ	# 16	AC	ZZ104
4	220/235V-50HZ	# 16	AC	ZZ104
5	GROUND			
6	SHIELD			

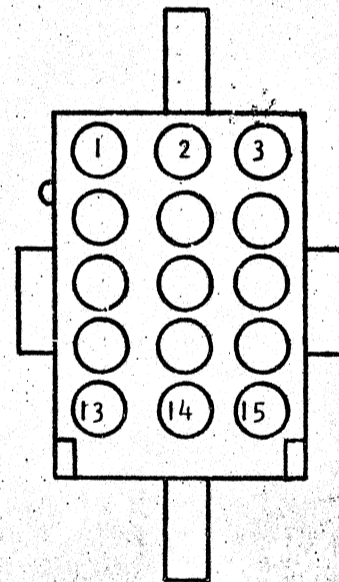


P2 AC POWER PLUG
PIN LAYOUT
MALE END PIN SIDE

SEE INTERFACE PAGE WP050 FOR CROSS REFERENCES.

P3 MAG EMMITER PLUG FEMALE

PLUG PIN ASSIGNMENT		
PIN NO.	SIGNAL NAME	PAGE
1	FORWARD FEEDBACK EMITTER	ZZ106
2	FORWARD FEEDBACK EMITTER RETURN	ZZ106
3	FORWARD FEEDBACK EMITTER SHIELD	ZZ106
4	REVERSE FEEDBACK EMITTER	ZZ106
5	REVERSE FEEDBACK EMITTER RETURN	ZZ106
6	REVERSE FEEDBACK EMITTER SHIELD	ZZ106
7	PRINT RIGHT EMITTER	ZZ106
8	PRINT RIGHT EMITTER RETURN	ZZ106
9	PRINT RIGHT EMITTER SHIELD	ZZ106
10	PRINT LEFT EMITTER	ZZ106
11	PRINT LEFT EMITTER RETURN	ZZ106
12	PRINT LEFT EMITTER SHIELD	ZZ106
13	FORMS EMITTER	ZZ106
14	FORMS EMITTER RETURN	ZZ106
15	FORMS EMITTER SHIELD	ZZ106



P3 EMITTER PLUG
FEMALE END PIN SIDE

SEE INTERFACE PAGE WP040 FOR CROSS REFERENCES.

INTERNATIONAL BUSINESS MACHINES CORP.				DATE	CHANGE NO.	DATE	CHANGE NO.	NOTE	DEVELOPMENT NO.
NAME	SYSTEM DIAGRAM ZZ102 5213			24NOV69	133608	8FEB71	137417	X PRINT TO ENG. SPEC. NO.	ZZ102
MODEL 2 AND 3				15DEC69	134270				
DESIGN	TAM	31AUG69	MODEL	25FEB70	134305				
DETAIL	TAM	31AUG69		8JUL70	134305C				
CHECK	TAM	12DEC69	DRAW	1SEP70	135908 ^B				
APPRO	EIK	12DEC69	CHECK						

2529077

C.B. CO., NO. 44311A

2632646

PRINTER MAGNETIC EMITTER CABLE AND EDGE CONNECTORS

W2A2 IS PADDLE CARD 30 INCHES BELOW PRINTER

PART NO
2632646

LOGIC PG NO
ZZ103

PTR PIN	SYS PIN	SIGNAL	PAGE	I.D. NO.
D02	B02	-PRINT WIRE DRIVE #1	ZZ105	AB9
D03	B03			
D04	B04	-PRINT WIRE DRIVE #2	ZZ105	AC1
D05	B05	-PRINT WIRE DRIVE #3	ZZ105	AC2
D06	B06			
D07	B07			
D08	B08	-PRINT WIRE DRIVE #4	ZZ105	AC3
D09	B09	-PRINT WIRE DRIVE #5	ZZ105	AC4
D10	B10	-PRINT WIRE DRIVE #6	ZZ105	AC5
D11	B11			
D12	B12	-PRINT WIRE DRIVE #7	ZZ105	AC6
D13	B13			
B02	D02	-STEPPER MOTOR DRIVE NOT A	ZZ107	AC7
B03	D03			
B04	D04			
B05	D05	-STEPPER MOTOR DRIVE NOT B	ZZ107	AC9
B06	D06	-PRIMARY FORMS DRIVE	ZZ107	AD1
B07	D07	-STEPPER MOTOR DRIVE A	ZZ107	AD2
B08	D08	GROUND		
B09	D09			
B10	D10			
B11	D11	-STEPPER MOTOR DRIVE B	ZZ107	AC8
B12	D12			
B13	D13			

SEE INTERFACE PAGE WPO10 FOR CROSS REFERENCES.

TERMINAL BLOCK LISTING

TERM. BLOCK NUMBER	POSITION USED	SYSTEM DIAGRAM LOCATION	MACHINE LOCATION
1	NOT	USED	NOT USED
2	NOT	USED	NOT USED
3	A,B,C,D, E,F,G,H	ZZ106	MOUNTED ON REAR OF STEPPER MOTOR FRAME LEFT SIDE
4	NOT	USED	NOT USED
5	1,7,8,9, 10,11	ZZ104	ELECTRICAL PANEL ASSEMBLY IN REAR OF MACHINE
6	F,G,H, C,D,E	ZZ106 ZZ107	MOUNTED ON SIDE PLATE RIGHT SIDE OF MACHINE
7	G,H	ZZ105	LEFT CARRIAGE SIDE PLATE
10,11,12 13,14,16 15,17	A,B,C,D,E F,G,H A,B,C,D	ZZ105	MOUNTED ON R/C PLATE ASSEMBLY IN LEFT REAR OF MACHINE

W2A1 IS PADDLE CARD 30 INCHES BELOW PRINTER

PTR PIN	SYS PIN	SIGNAL	PAGE	I.D. NO.
D02	B02	LEFT MARGIN SLOW SWITCH N/O	ZZ106	AA5
D03	B03			
D04	B04	LEFT MARGIN STOP SWITCH N/O	ZZ106	AA6
D05	B05	RIGHT MARGIN STOP SWITCH N/O	ZZ106	AA7
D06	B06			
D07	B07			
D08	B08			
D09	B09	PRI FORMS MOVING CONTACT N/O	ZZ106	AB3
D10	B10	PRI END OF FORMS SWITCH N/O	ZZ106	AB5
D11	B11			
D12	B12			
D13	B13			
B02	D02			
B03	D03	FEATURE INTERLOCK	ZZ106	AB4
B04	D04			
B05	D05			
B06	D06	COVER INLK-6/NEUTRAL SWITCH N/O	ZZ106	AB7
B07	D07	RIGHT MARGIN SLOW SWITCH N/O	ZZ106	AD3
B08	D08	RETURN FOR SWITCHES	ZZ106	AB6
B09	D09			
B10	D10			
B11	D11			
B12	D12			
B13	D13			

SEE INTERFACE PAGE WPO10,WPO20 FOR CROSS REFERENCES.

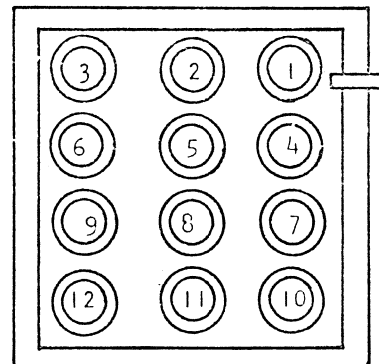
NOTE

PADDLE CARDS W2A1 AND W2A2 HAVE "B" PINS AND "D" PINS REVERSED WITH RESPECT TO THE EDGE CONNECTOR LISTING. BECAUSE OF THE REVERSING CHARACTERISTICS OF THE "BACK TO BACK" SOCKETS USED TO INTERFACE TO SYSTEM

PI D.C. PRINTER POWER

POWER PLUG PIN ASSIGNMENTS				
PRINTER		POWER CABLE		
PIN NO.	VOLTAGE OR CONTROL	WIRE SIZE	TYPE	SYSTEM PAGE
1	+24 VOLTS	#16	DC	ZZ104
2	GROUND	#16	DC	ZZ104
3	+24 VOLTS	#16	DC	ZZ104
4	GROUND	#16	DC	ZZ104
5	SPARE			
6	SPARE			
7	SPARE			
8	-4 VOLTS	#18	DC	ZZ104
9	+6 VOLTS	#16	DC	ZZ104
10	GROUND	#16	DC	ZZ104
11	+6 VOLTS	#16	DC	ZZ104
12	GROUND	#16	DC	ZZ104

SEE INTERFACE PAGE WPO50 FOR CROSS REFERENCES.



PI DC POWER PLUG PIN LAYOUT
MALE END PIN SIDE

VERTICAL ELECTRICAL FORMAT

IBM				DATE	CHANGE NO	DATE	CHANGE NO
NAME	SYSTEM DIAGRAM			22JAN71	135570R		
	ZZ103 5213 MOD 2,3 STAGE 2			26APR71	135566		
DESIGN	LFJ	21JAN	SHT OF	29SEP71	135604		
DETAIL	RAP	21JAN		4APR72	138845		
CHECK	CEP	21JAN	CLASSIFICATION	MUST CONFORM TO ENG SPEC		DEVELOPMENT NO	LOGIC PG NO
APPRO	JGB	21JAN					ZZ103

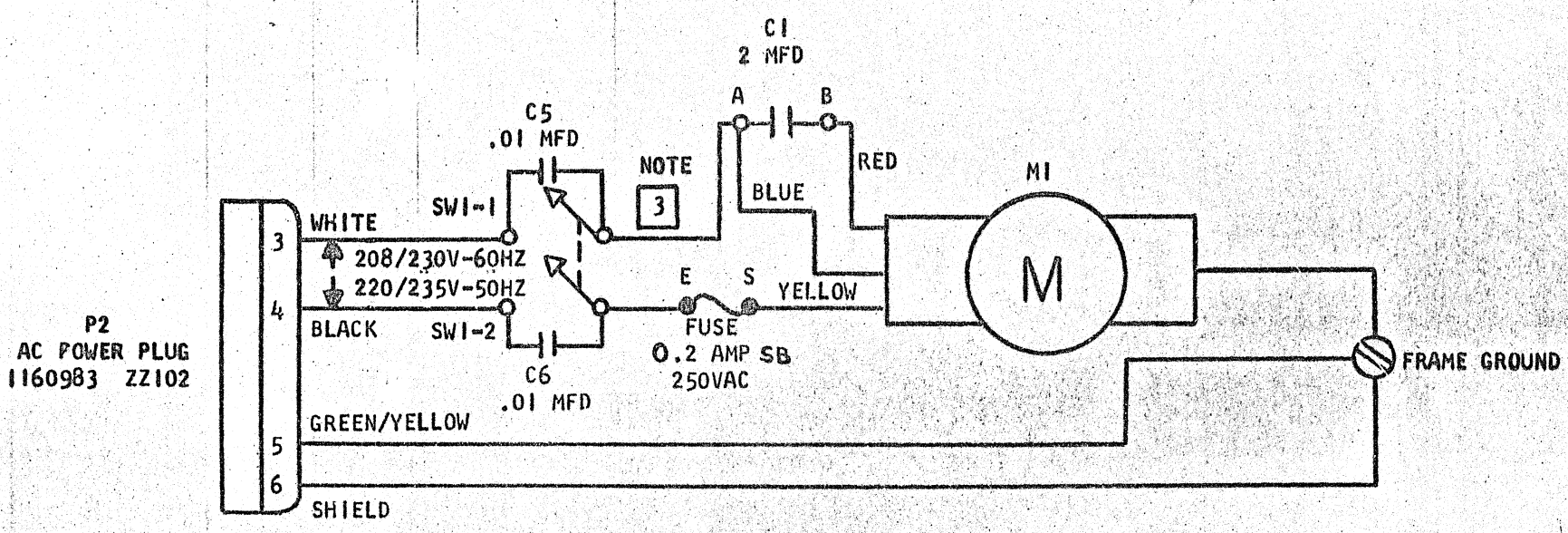
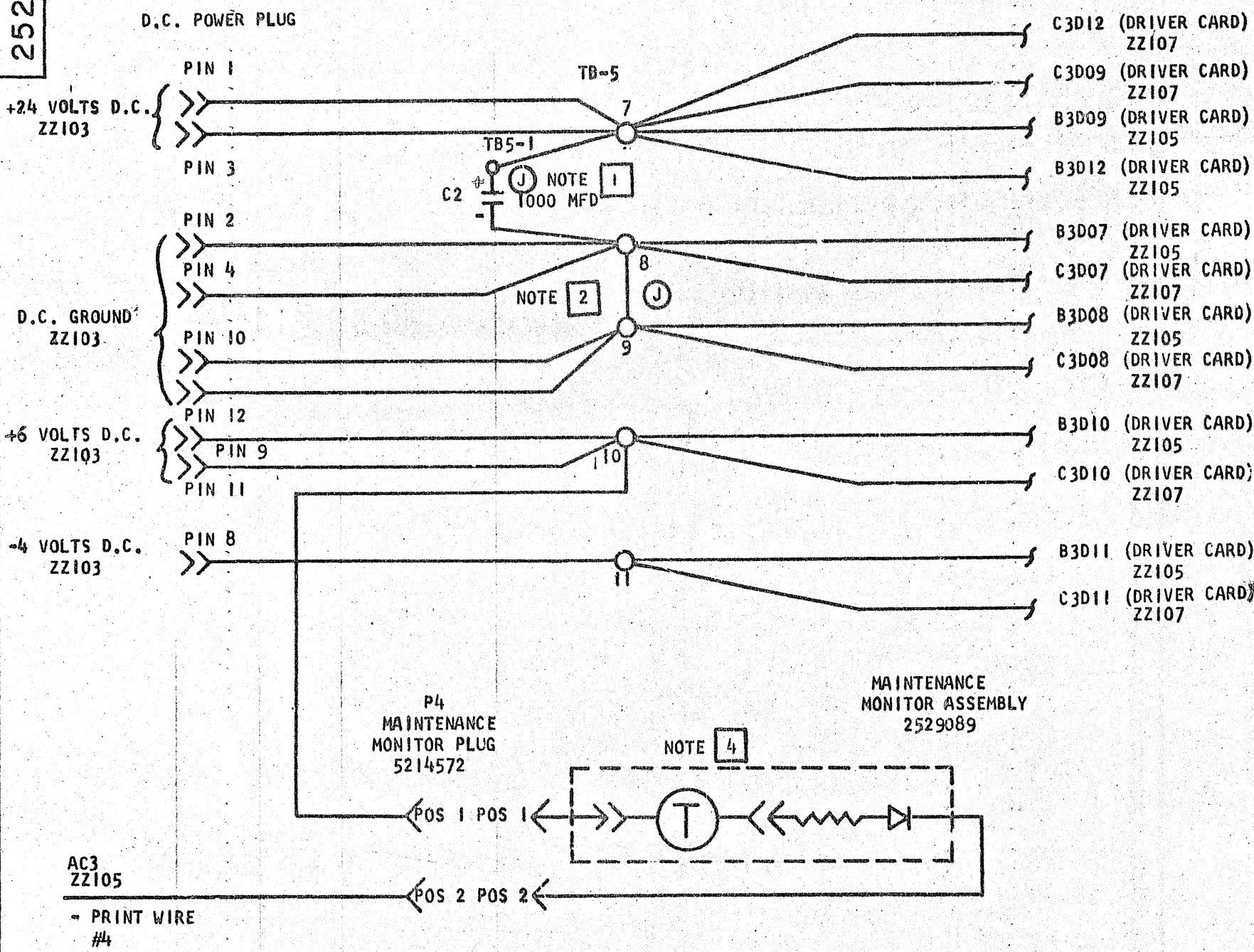
2632646

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2529079

VOLTAGE DISTRIBUTION, CARRIAGE MOTOR, AND MAINTENANCE MONITOR

ZZ104



NOTES

- 1 JUMPER WITHIN CABLE
- 2 METAL JUMPER
- 3 .01 MFD CAPACITORS ARE OF THE DISC TYPE AND ARE USED FOR ARC SUPPRESSION
- 4 METER MAY BE REVERSED 180° AFTER TIME HAS LAPSED, IN ORDER TO RESET TO "0" TIME

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INTERNATIONAL BUSINESS MACHINES CORP.				DATE	CHANGE NO.	DATE	CHANGE NO.	NOTE	DEVELOPMENT NO.
NAME				25NOV69	133608	8FEB71	137417	X PRINT TO ENG. SPEC. NO.	ZZ104
5213 MODEL II AND III				15DEC69	134270	7OCT71	138168		
DESIGN	TAM	31AUG69	MODEL	3MAR70	134305				
DETAIL				8JUL70	134305C				
CHECK	TAM	12DEC69	DRAW LIG 19SEP69	1SEP70	135908B				
APPRO	EIK	12DEC69	CHECK						

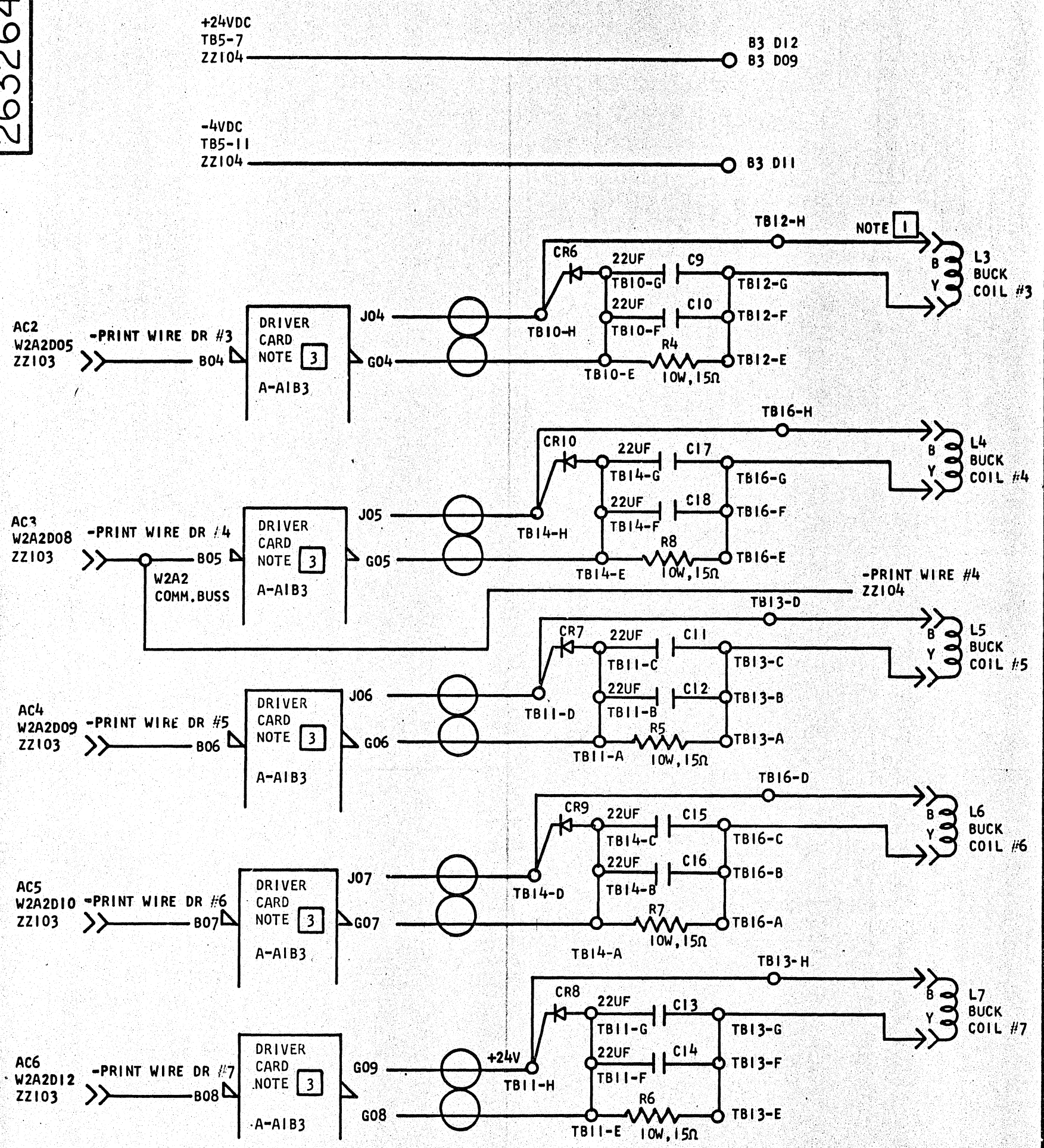
2529079

C. B. CO., NO. 44-811A

2632648 B

WIRE DRIVERS 3,4,5,6 AND 7

PART NO 2632648 LOGIC PG NO ZZ105
SHEET 1 OF 2



- NOTES
1. WITH SYSTEM POWER ON, ALL BUCK COILS HAVE 24V PRESENT.
 2. BLACK LEADS OF FLAT CABLE PLUG TO LEFT POSITION OF BUCK COIL HOUSING ' Y IS YELLOW, B IS BLACK
 3. DRIVER CARD PART NUMBER 5861753 REPLACES OLD CARD PART NUMBER 5805160

620-0133-0 MRO# 75J422203 VERTICAL ELECTRICAL FORMAT

IBM				DATE	CHANGE NO	DATE	CHANGE NO
NAME	SYSTEM DIAGRAM			25 JAN 71	135570 R	30CT72	138904
ZZ105	5213 MOD2,3 STAGE 2			27MAY71	135571		
DESIGN	LFJ	25JAN	SHT 1 OF 2	29SEP71	135604		
DETAIL	RAP	25JAN		25JUL72	138890		
CHECK	CEP	25JAN	CLASSIFICATION	MUST CONFORM TO ENG SPEC		DEVELOPMENT NO	
APPRO	JGB	25JAN				LOGIC PG NO	
						ZZ105	

2632648 B

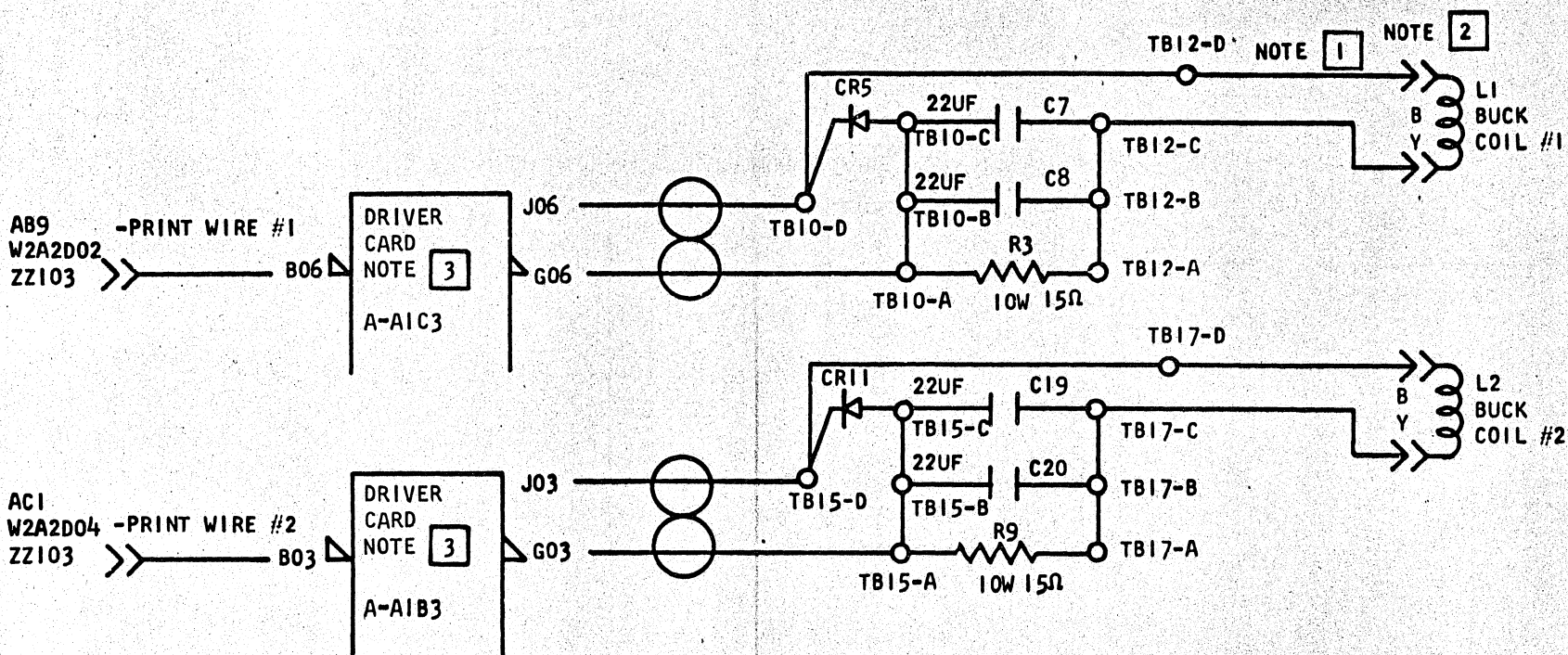
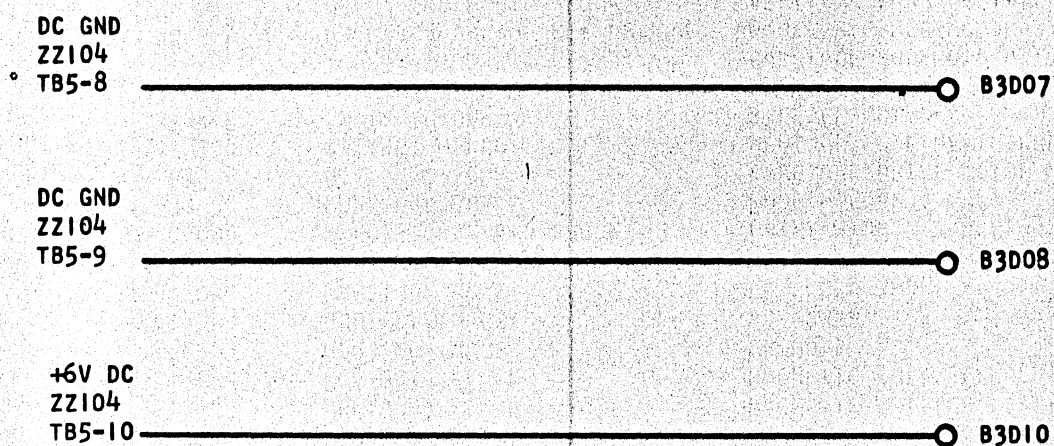
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2632648 B

WIRE DRIVERS 1 AND 2

PART NO 2632648 LOGIC PG NO ZZ105

SHEET 2 OF 2



NOTES
1. SEE NOTES ON SHEET 1

620-0133-0 MICROFILM 780822203 VERTICAL ELECTRICAL FORMAT

IBM				DATE	CHANGE NO	DATE	CHANGE NO
NAME	SYSTEM DIAGRAM			28JAN71	135570R	30CT72	138904
	ZZ105 5213 MOD2,3 STAGE 2			27MAY71	135571		
DESIGN	LFJ	27JAN	SHT 2 OF 2	29SEP71	135604		
DETAIL	RAP	27JAN		25JUL72	138890		
CHECK	CEP	27JAN	CLASSIFICATION	MUST CONFORM TO ENG SPEC		DEVELOPMENT NO	LOGIC PG NO
APPRO	JGB	27JAN					ZZ105

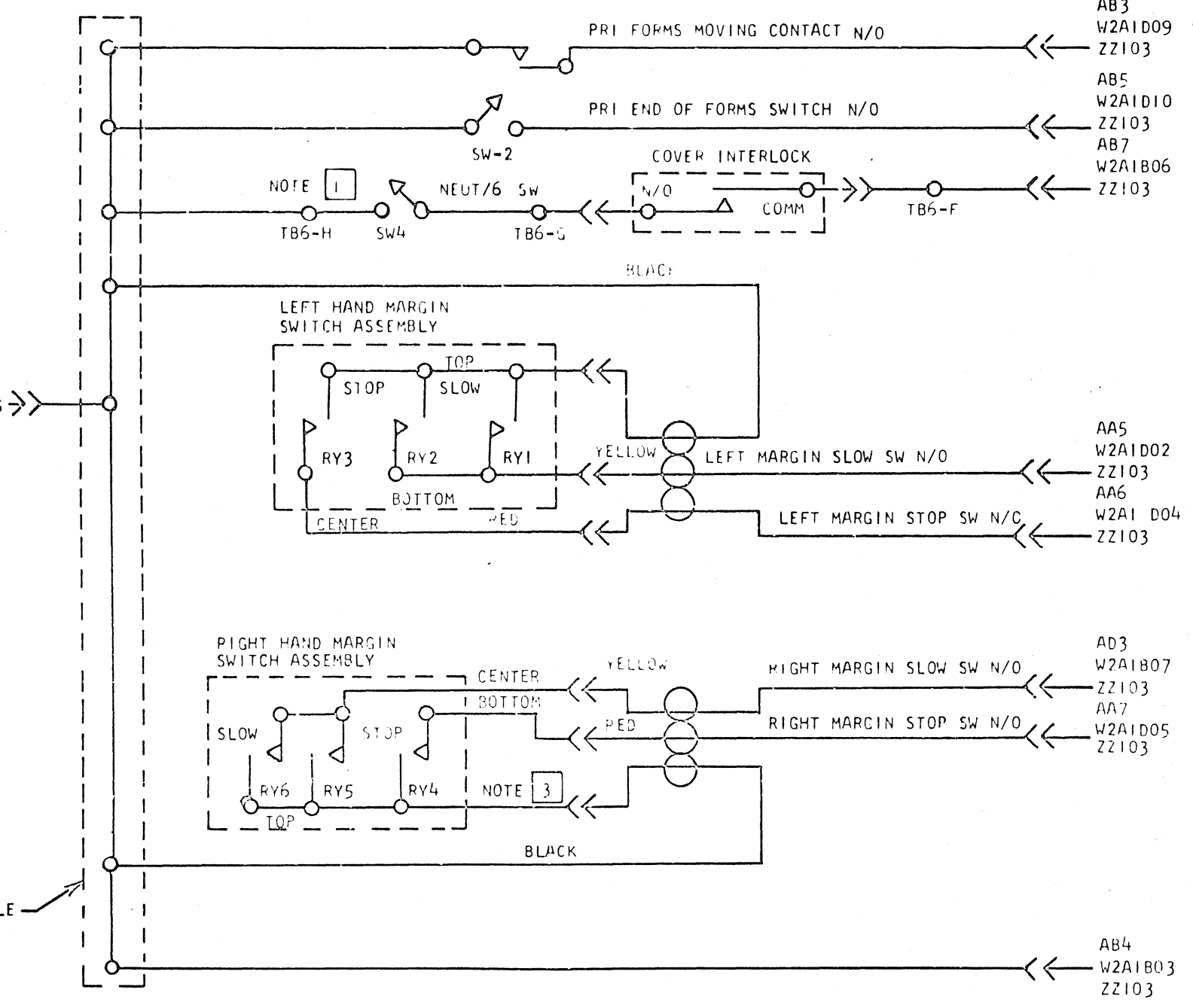
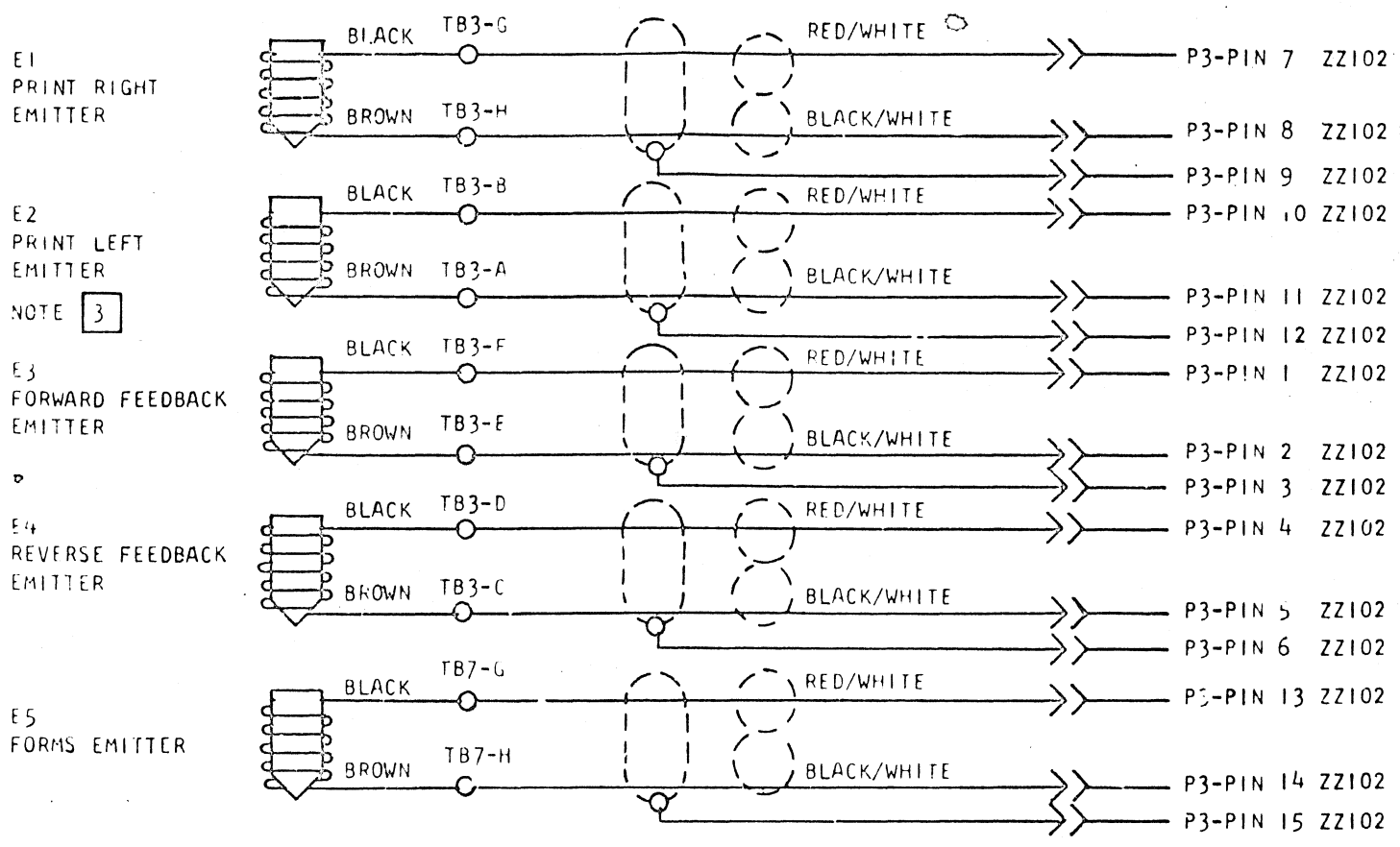
2632648 B

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MAGNETIC EMITTERS AND CONTROL SWITCHES

ZZ106

2632649



- NOTES
1. NEUTRAL/6 SWITCH IS WIRED IN SERIES WITH THE COVER INTERLOCK SWITCH.
 2. RY5 AND RY6 ARE USED ONLY ON MODEL III.
 3. THE PRINT LEFT EMITTER IS USED ON MODEL III ONLY.

INTERNATIONAL BUSINESS MACHINES CORP.			DATE	CHANGE NO.	DATE	CHANGE NO.	NOTE	DEVELOPMENT NO.
NAME			22 JAN	135571B			X PRINT TO ENG. SPEC. NO.	
MOD II AND III STAGE 2			29 SEP 71	135604				
DESIGN	LFV	22 JAN	24 NOV 71	138822				
DETAIL	WSP	22 JAN	4 APR 72	138845				
CHECK	WSP							
APPRO	WSP							
								ZZ106

2632649

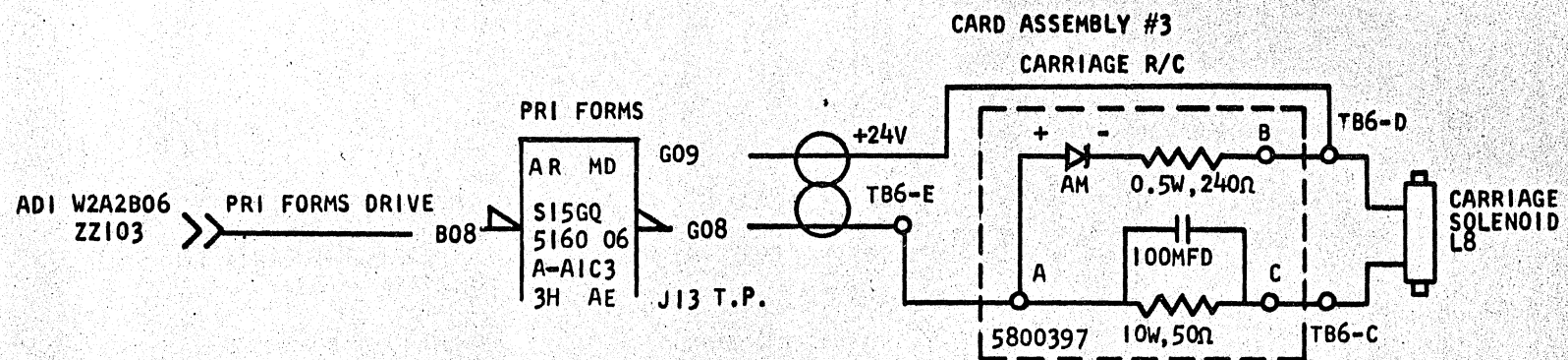
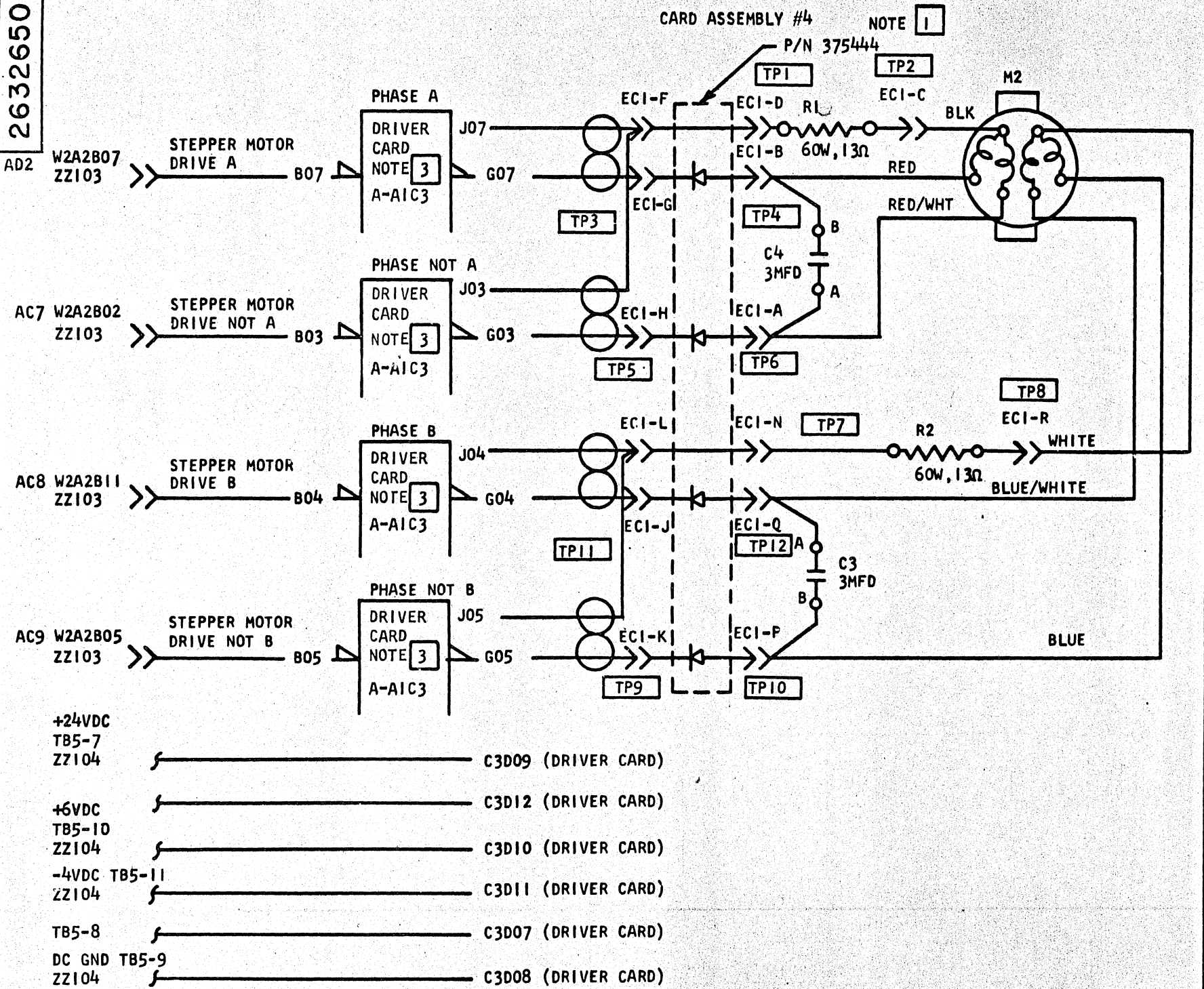
01263 029 MUV

C.D. CO. NO. 448114 4294

STEPPER MOTOR, AND PRIMARY FORMS DRIVERS

ZZ107

2632650



NOTES

1. NUMBERS IN RECTANGLES ARE TEST POINTS FOR STEPPER MOTOR TROUBLE SHOOTING. SEE SYSTEM DIAGRAM PAGE ZZ111 FOR VOLTAGE LEVELS AND TEST CONDITIONS.
2. CIRCLES INDICATE TWISTED PAIR.
3. DRIVER CARD PART NUMBER 5861753 REPLACES OLD CARD PART NUMBER 5805160

INTERNATIONAL BUSINESS MACHINES CORP.				DATE	CHANGE NO.	DATE	CHANGE NO.	NOTE	DEVELOPMENT NO.
NAME SYSTEM DIAGRAM ZZ107 5213				22JAN71	135570R			X PRINT TO ENG. SPEC. NO.	
MODEL 2 AND 3 STAGE 2				21JUN71	135577				
DESIGN	LFJ	22 JAN	MODEL	30OCT72	138904				
DETAIL	RAP	22JAN							
CHECK	RAP	22JAN	DRAW						
APPRC	JGB	22JAN	CHECK						

ZZ107

2632650

C. B. CO. NO. 44-1114

