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# ML H/W TROUBLE SHOOTING MANUAL

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## REMARK

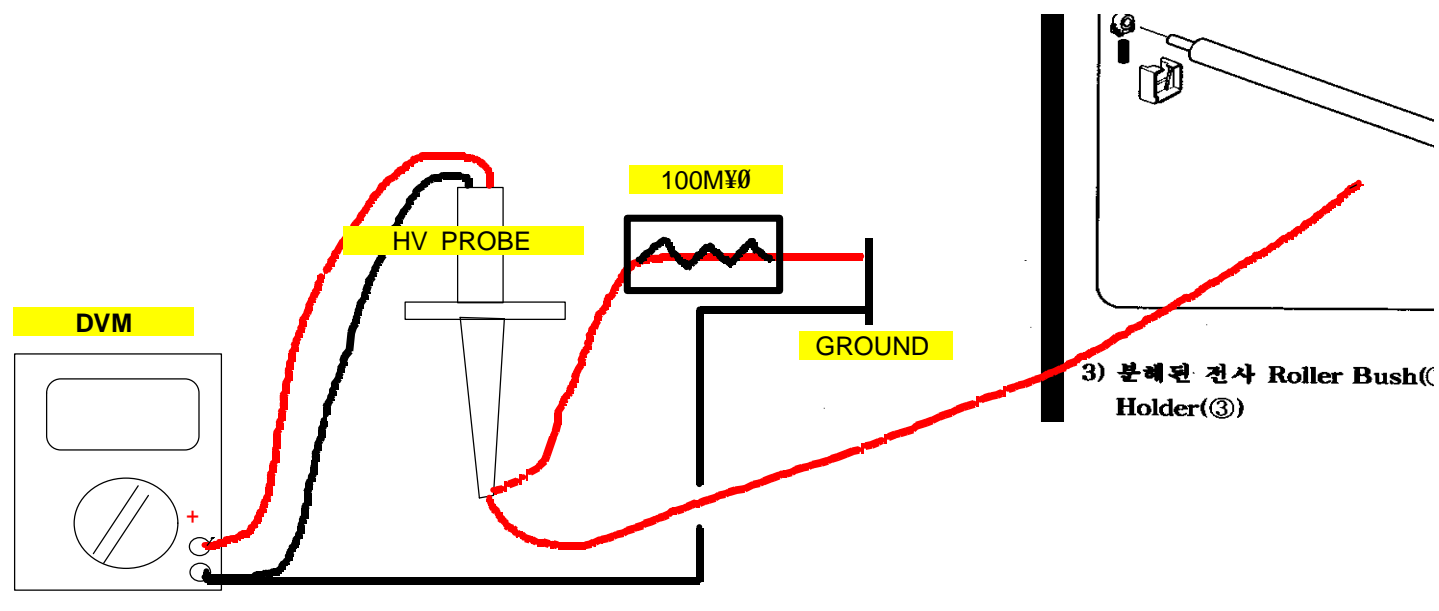
Perform Contents click

->Move Engine B'D location area

->**CD** Click

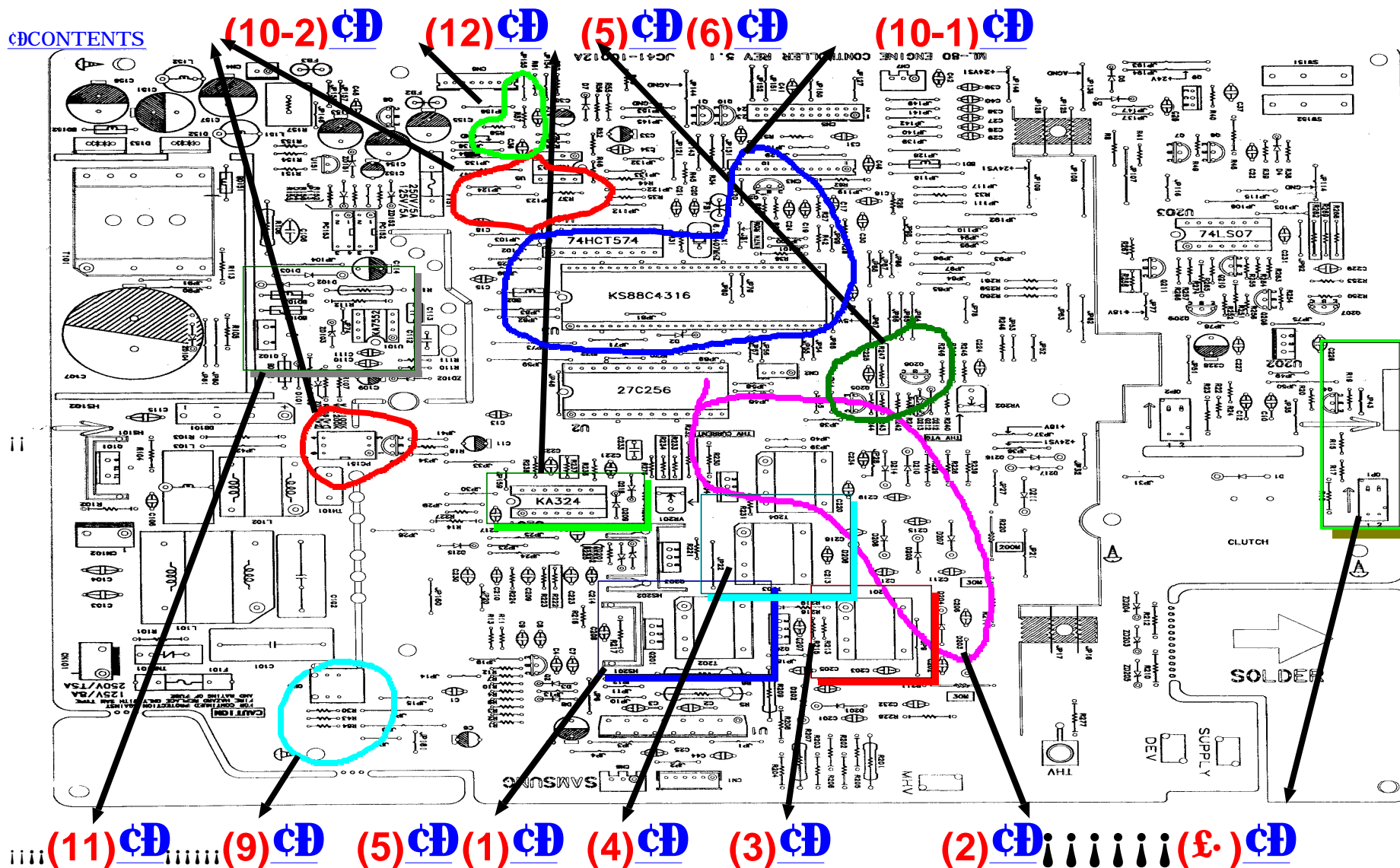
->Move detail area

## Wire map for transfer voltage probe

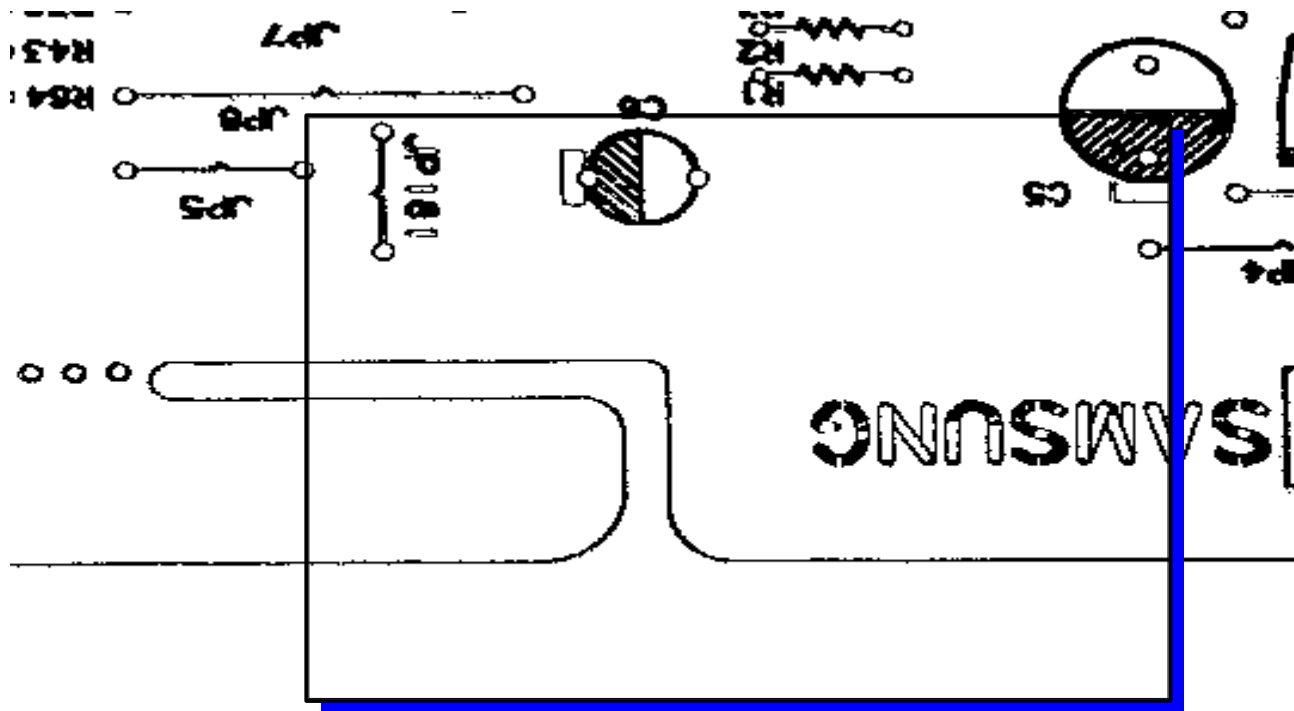


# 1111 11L ENGINE CONTROLLER B'D 1111

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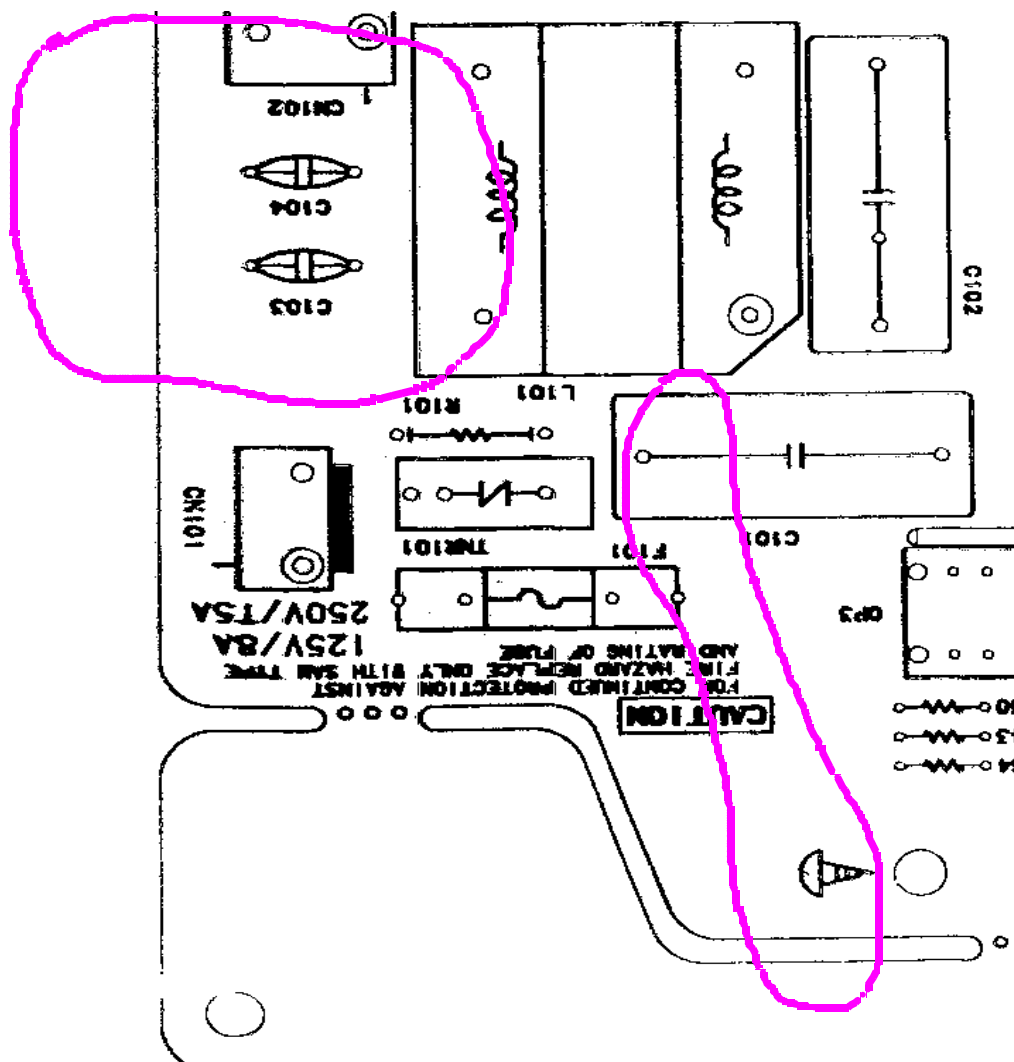
## (1) When Charge voltage is not appeared



- a. LOCK SW151,SW152 WITH WIRE
- b. Perform DCU DIAGNOSTIC '01' , CHECK
- c. CHECK BASE, EMITTER switching of Q201 orderly,  
IF it is NOT SWITCHING, CHECK T202
- e. CHECK Q201,R217

## (2) When DEV and Supply voltage is not appeared

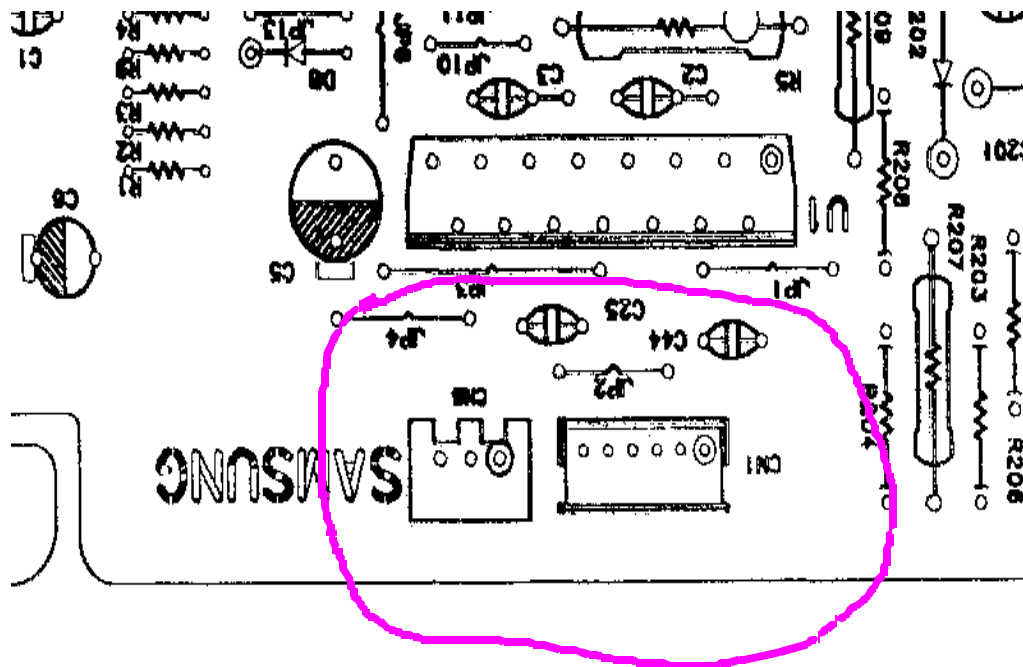
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- Lock SW151, SW152 with WIRE .
  - Perform DCU DIAGNOSTIC '04', Check.
  - If Supply voltage is not appeared Check BASE, EMITTER of Q204 orderly
  - If it is not switching, CHECK T204
  - Check Q204, R230
- If Deve Voltage is not appeared  
Check ZD203, ZD204, ZD205 whether to be opened.

### (3)When (-)Transfer voltage is not appeared

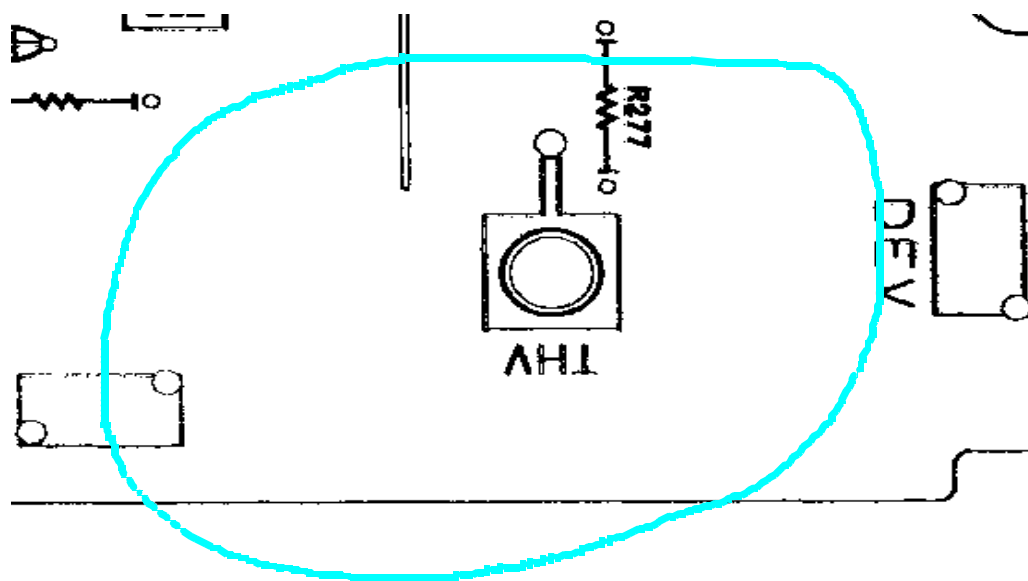
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- Lock SW151,SW152 with WIRE, Check
- Perform DCU DIAGNOSTIC '02' , Check
- If (-)Transfer Voltage is not appeared, Check BASE,COLLECTOR switching of Q202 orderly
- Check T201,Q202

#### (4)When (+)Transfer voltage is lower than -900V

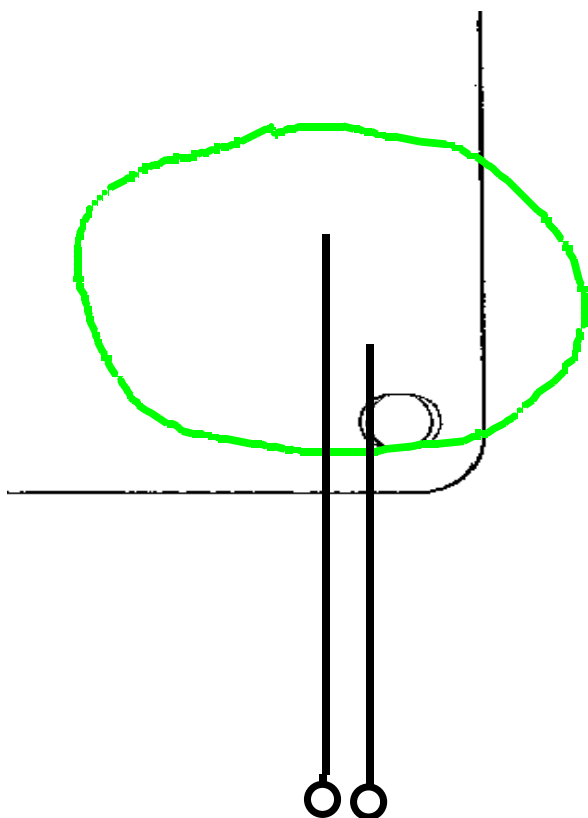
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- a.Lock SW151,SW152 with wire
- b.Perform DCU DIAGNOSTIC i<sup>®</sup>14i<sup>-</sup> CHECK.
- c.Check Q203.
- d.Check T203,Q203.

## (5)When (+)Transfer voltage is lower than 600V

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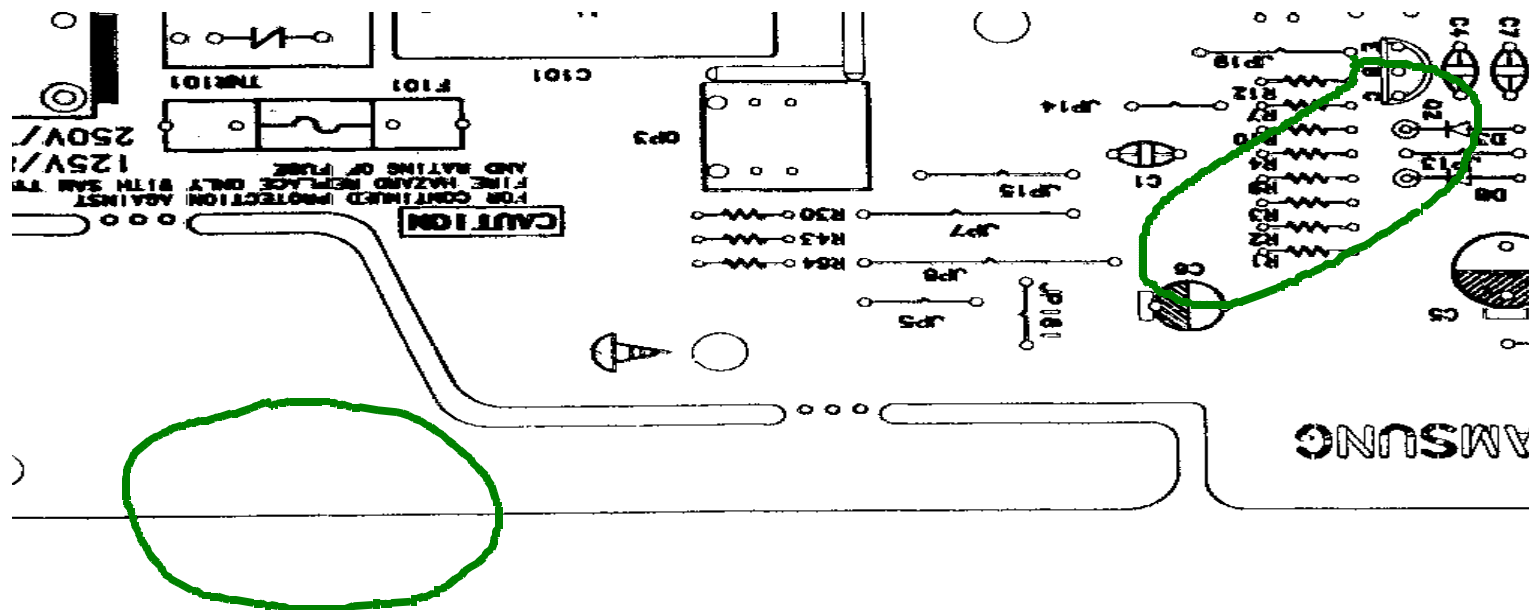


- Lock SW151,SW152 with wire
- Perform DCU DIAGNOSTIC '03' ,Check
- Check #5pin of U201 and ground(U201#11)  
whether the resistor has a regular resistance
- If not , replace U201



## (6)When (+)Transfer voltage is higher than 2300V

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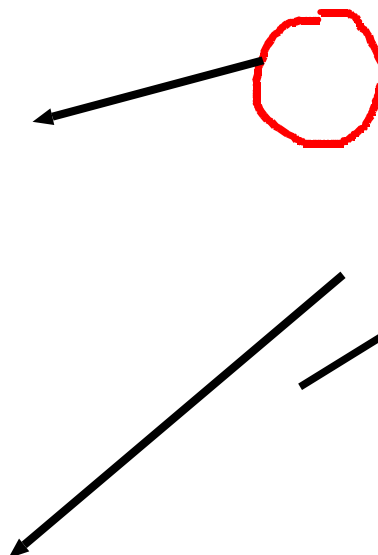


- Check if resistance between #9pin of U201 and ground is hundres of ohm replace U201
- Check Q206. Set DVM to Diode Range and probe BASE-EMITTER voltage  
---Turn board power off
- Check Q205. Set DVM to Diode Range and Check BASE-EMITTER Voltage  
---Turn board power off

## (7)JAM 0

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- Paper pick-up fail (error code DCU "71")
- Perform DCU "06"
- Check Solenoid operation
- Q4 Collector:0.5V
- Base,Emitter:0.7~0.85V
- If not, Check Q4



- Dcu "08"
- R16 "Left" 1.2V Check

When pick-up is occurred and  
DCU "71" is displayed

-Perform DCU "08"

Check if R15 "Right " is below 0.7V

-When OP1 is blocked

Check if R15"right is over 3.5V

if not, Check OP1,R15,R16,R17

## (8) JAM 1

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Phenomenon--PAPER MULTI-FEEDING , DCU "72" DISPLAY

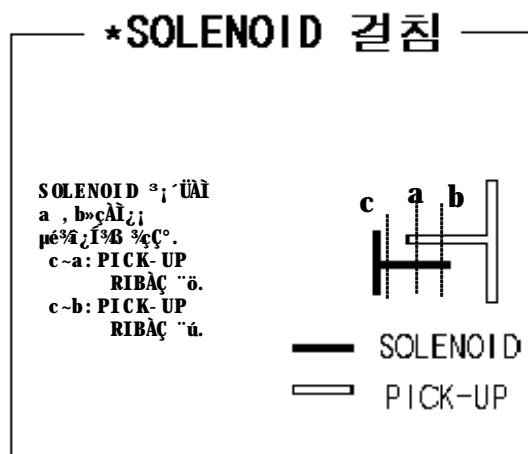
-> Perform DCU DIAGNOSTIC 06, Check SOLENOID operation

1) Solenoid is returned to initial state

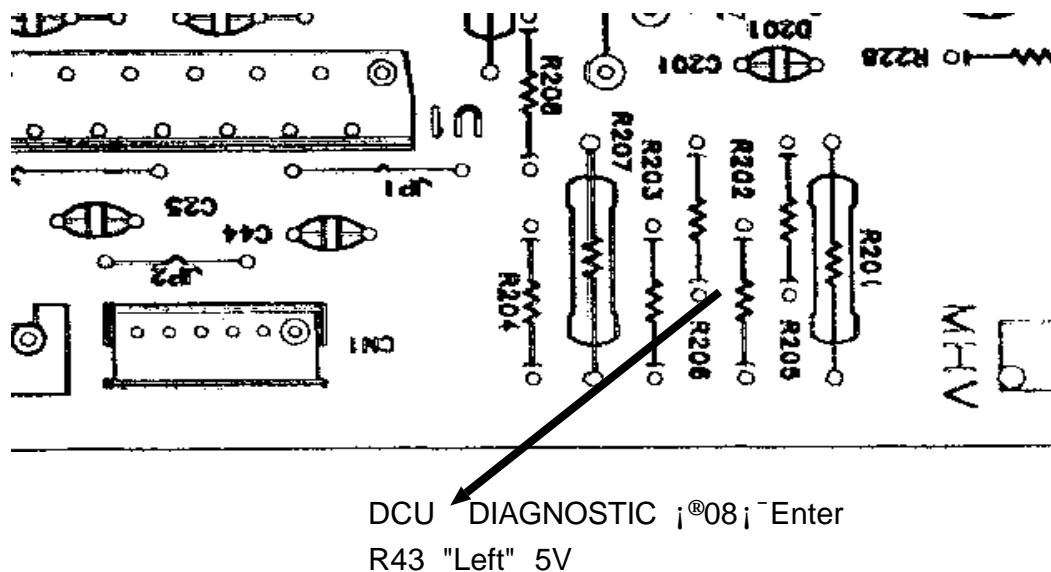
IS SOLENOID SPRING LOOSE?

Without YOKE PAD

2) SOLENOID ARMATURE and HOUSING PICK-UP problem



## (9) JAM 2

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Phenomenon 1--PAPER JAM, DCU "73" DISPLAY

-> Check if paper is rolled in fuser

Phenomenon 2-Feeding PAPER JAM, DCU "73" DISPLAY

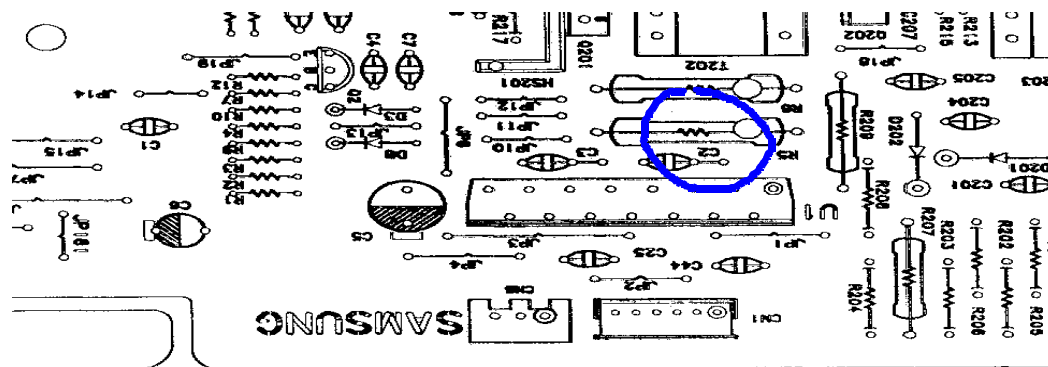
1)Check EXIT-SENSOR OP3

2)Perform DCU DIAGNOSTIC '08', Check if R43 "Left" is  
5V ,R43 is not operated, and R43 is below 0.7V

3)Check if Exit Actuator is deformed

## (10-1) ALL LED BLINKING (Scanner Error)

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Phenomenon : ALL LED BLINKING, DCU "95" DISPLAY

-->LSU or LSU driving circuit of ENGINE CONTROLLER B'D has default

©Perform DCU diagnostic "05" , If DCU error code 95 is displayed, replace LSU.

If you cannot solve the problem after you replace LSU, follow the steps below.

(2)When you press ENTER key in DCU mode "05",if the LSU motor does not run, Check Q5, that times, collector and base of Q5 are 0V and 0.7V respectively.

(3)If Q5 is normal, Check CPU pin 40 and related parts.

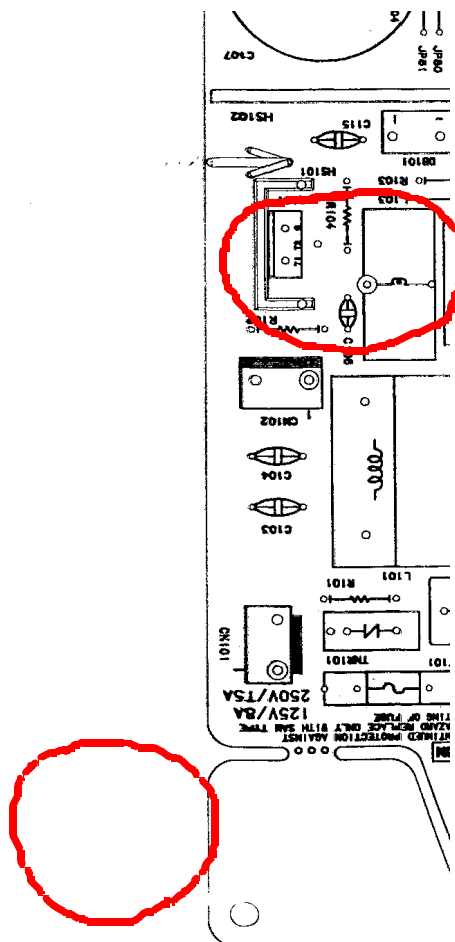
(4)If motor drives properly and CPU pin 25 is not below 0.5, replace R26 and CPU.

(5)When you press UP key in DCU mode "05",if ON and OFF lamps do not turn on, Check CPU pins 28 and 41, and related parts.. Normally pin 28 is over 3.5V when high, and below 0.7V when low; pin 41 is below 0.7V when low.

(6)If transformer works normally, replace CPU

## (10-2) ALL LED BLINKING (Fuser Error)

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If ALL LED is BLINKING When power is on, FUSER ERROR.

FUSER or engine board fusing temperature control circuit problem

• Check resistance of HEAT LAMP WIRE (regularly about 6 ohm)

When it is opened, replace HEAT LAMP

• After linking engine board and FUSER UNIT, lock SW151, SW152 with wire and perform DCU'10', pressing ENTER and SHIFT+ENTER rotationally. Check following states

a. When pressing ENTER but HEAT LAMP isn't turned on

• Q3 BASE : 0.6V - 0.8V,

COLLECTOR : below 0.7V

If BASE VOLTAGE isn't same as values of •

U5 LM393 -#6 is about 2.7V - if not, Check R37, R47, assembly

status

Check If U5 LM393 -#5 is regular

If U5 LM393 -#7 is below 2.7V Check THERNISTOR .

If COLLECTOR isn't 0V, CHECK Q3.

After Turning off power between #1 and #2, set DIODE VOLTAGE

Check if it is 1V

b. When pressing SHIFT+ENTER but HEATLAMP isn't turned off

If Q3 BASE is below 0.2V and COLLECTOR is 23V - 25V, it's good.

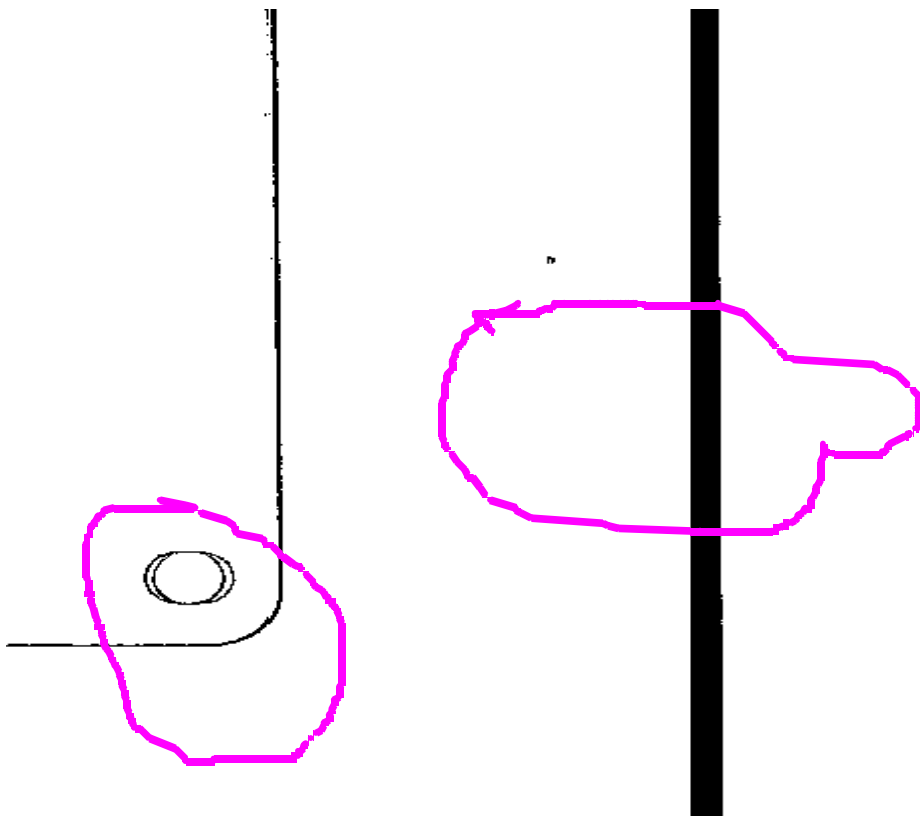
Check if Q3 COLLECTOR -EMITTER resistance is below hundreds

ohm .

Check resistance between #4 and #6 betw

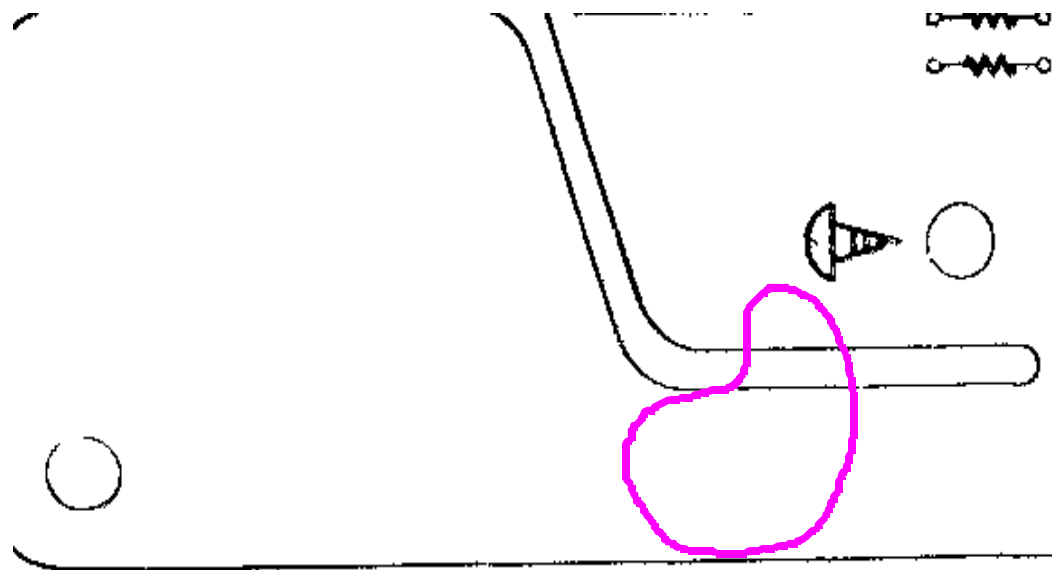
## (11) NO POWER

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- Check short between DRAIN and SOURCE of F101,R114,Q102
- Check if respective pins of DB1 are SHORT
- Check if F151 has default
- Check if resistance between +5V and ground is over 50 $\Omega$  if it is below 50 $\Omega$  , then find short point .

## (12) FUSING DEFECTS

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Check R58: 1K $\Omega$ , R57:3.3K $\Omega$ , find breaking, cold soldering, miss soldering



## (13)WHITE COPY

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### Description

Blank page is printed.

### Check

Bad ground contacts in OPC and/or developer.

### Cause

1. Bad ground contacts in OPC and/or developer.
2. Improper OPC ground connection.

### Solution

1. Clean the contaminated contacts
2. Open the cover and check/repair the connection

### Description

One or more blank pages are printed. When the printer turns on, several blank pages print.

### Check

Video controller

### Cause

1. Defective engine board
2. Defective oscillator or CPU in video controller

### Solution

1. Perform the engine self test using DCU. If blank page prints, the engine board is defective. If the printer works normally, refer to next solution (2). If the engine board is defective, check the connectivity on the control board, CPU pin 23, and R33.
2. If blank page is prints once time or continuously, check that the video controller oscillates properly at 30.075 MHz.  
(Low ; less than 0.7V, more than ; 3.5V)
3. If black pages print continuously when the printer turns on, check the CPU and
4. replace if defective.

## (14) DATA ERROR

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### Description

Incomplete or missing characters.

### Check

Video controller

### Cause

1. Port connections defective.
2. Defective oscillators in the Video Controller.
3. Defective CPU in the video controller

### Solution

1. Check that the port and related parts are properly connected and soldered.
2. Check the oscillators(30.075MHz, 40.0MHz) on the Video Controller.
3. Replace video controller CPU.

## (15) VERTICAL WHITE LINE

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### Description

White vertical voids in the image.

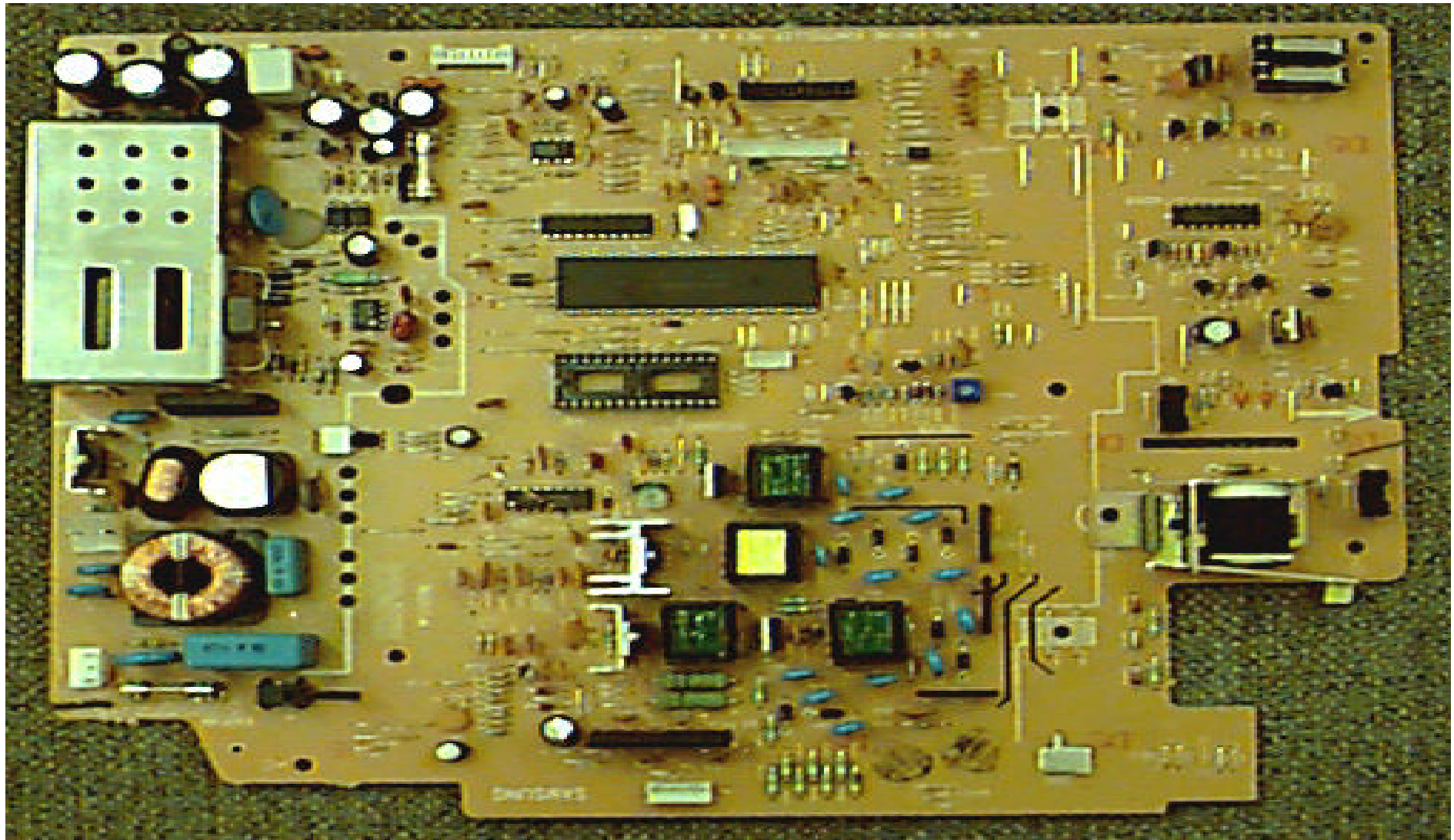
### Check

1. LSU
2. Developer cartridge
3. Fuser

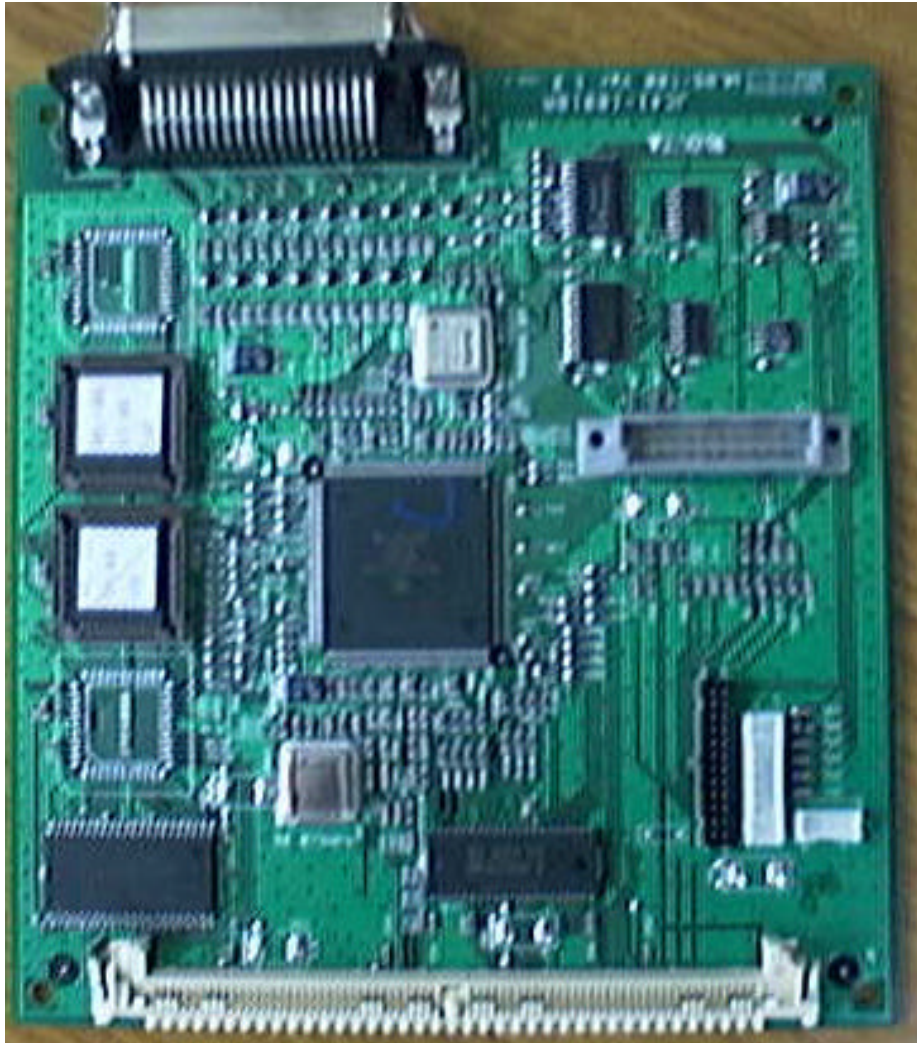
### Cause

1. Foreign matter on LSU mirror.
2. Foreign matter or toner particles between the developer roller and blade.
3. In case of a defective fuser, voids occur periodically at the top of a black image.

## ML ENGINE CONTROLLER B'D



ML-85 CONTROLLER B'D



ML-85G CONTROLLER B'D

