JV33 Precautions of replacing PCB

D900674 Ver1.1

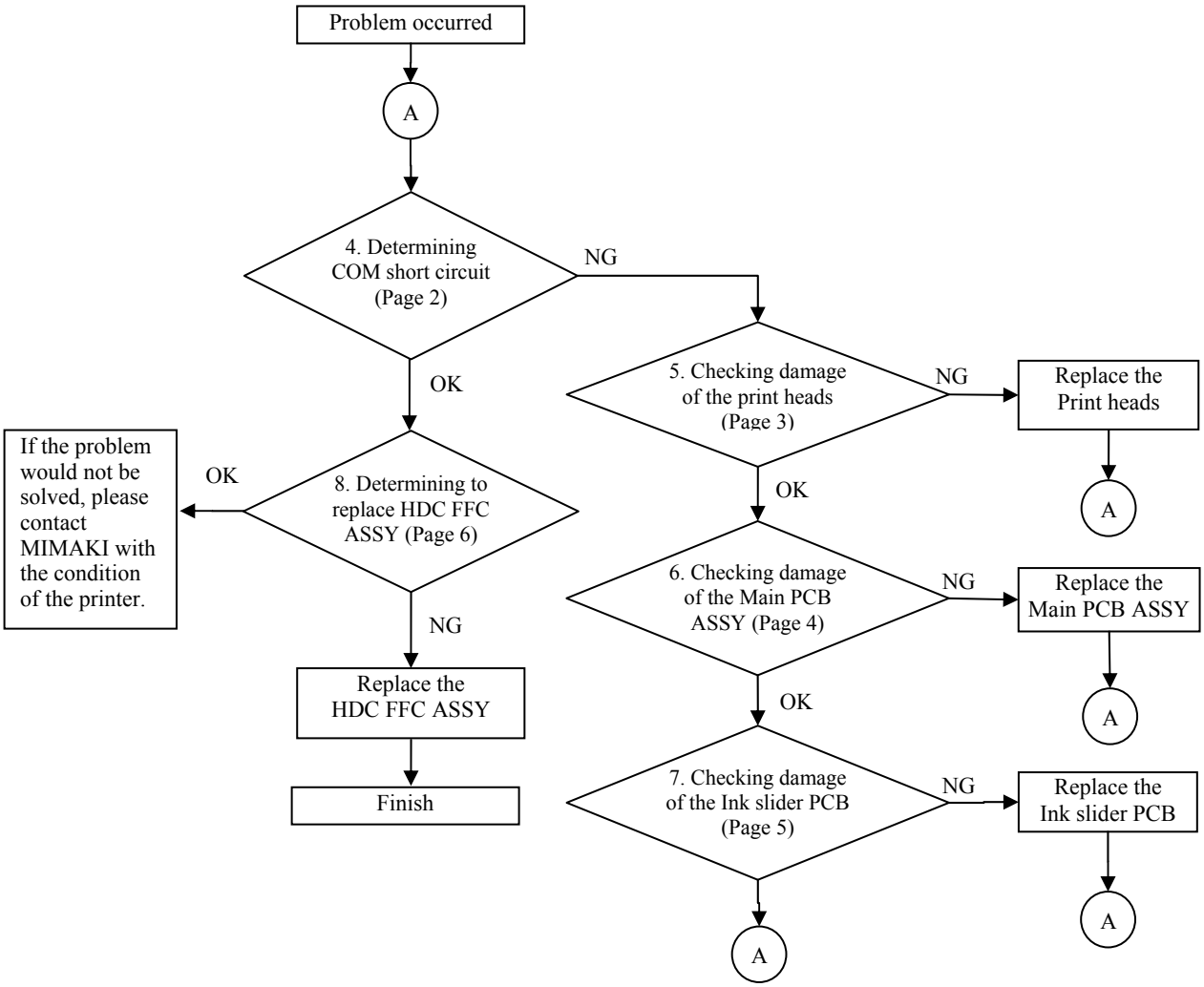
1. Overview

This document describes to determine whether a problem is caused by a damage of the PCB ASSY related to a print head control. If the problem mentioned below occurred, it is necessary to check condition of the damage of each part (ASSY) since the PCB could have been broken:

(1) All nozzles or nozzle line of each color would not fire. Nozzle drop out would be caused by a certain scanning position.
(2) The printer would not be turned on. Nothing would be shown on LCD even if turning on the power.
(3) Occurred “ERROR 07 VOLTAGE” or “ERROR 07 HEAD 0”
(4) Occurred “ERROR 09 HDC ERROR”
(5) Occurred “ERROR 200 HEAD MEMORY”
(6) Occurred “ERROR 50 MEDIA DETECT”

2. Tools to be used

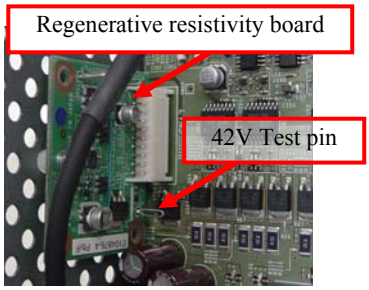
Digital tester (or analog tester): it is used for measuring resistance and DC voltage



3. Before work

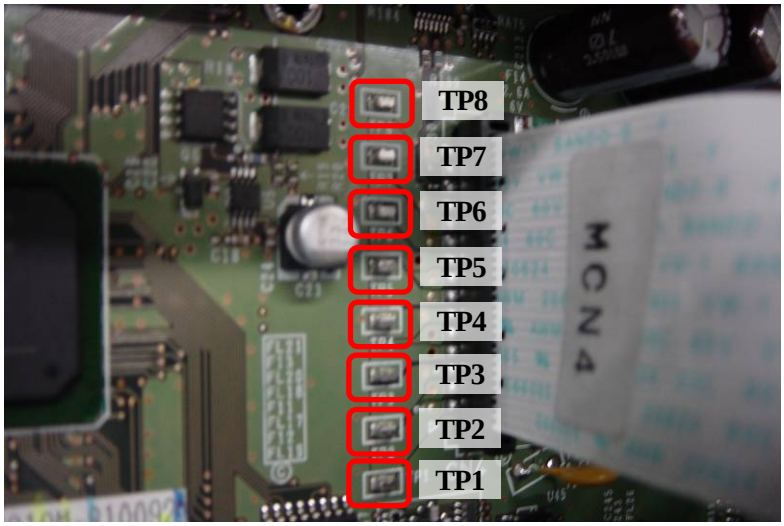
CAUTION: Be sure to follow the instructions below to confirm that there is no residual voltage in the circuit board every time turning OFF the power not to limit the extent of damage.

(1) Turn the front switch (green button) off, then turn the main power off and pull the power cable out.
(2) Wait approx. **15** minutes for the residual voltage to be discharged from the circuit board. In the meantime, remove the covers such as the electric BOX.
(3) Check if 42V voltage in the Main PCB ASSY is discharged by using the tester. If the voltage is shown more than 1V, wait a few more minute.



4. Determining COM short circuit

(1) Measure resistance between the test pin TP1-TP8 and GND on the Main PCB ASSY and judge whether the COM circuit is good or not with List 1.
Connect the Negative terminal of the tester to the GND test pin (GND1-9) and measure the resistance by getting the Positive terminal touch to TP1-8
In case of the machine which would not be turned on, it is highly possibility of impedance anomaly of the COM circuit and short circuit between 42V and GND in the Main PCB.
(2) If any of COM circuit defect is suspected, check the condition of each part by following the instructions described from the next page.



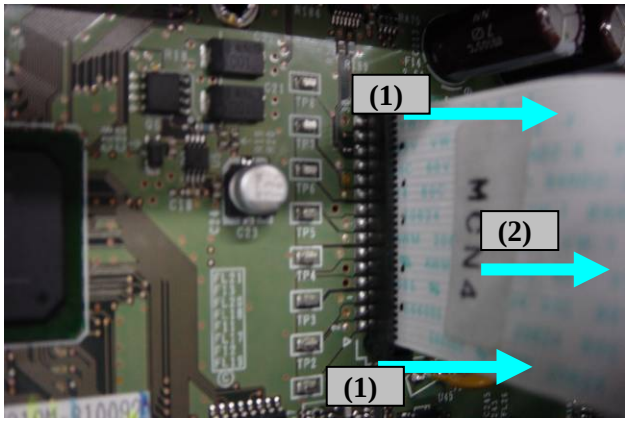
List 1

Test pin	Normal COM circuit	Abnormal COM circuit
TP1	17K-18KΩ **Good**	Less than 17KΩ, More than 18KΩ **Bad**
TP2		
TP3		
TP4		
TP5		
TP6		
TP7		
TP8		

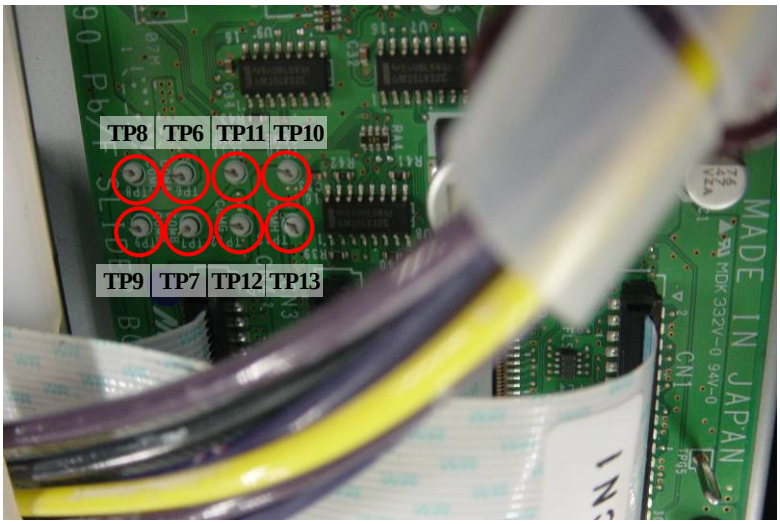
Notes:
If all the measured value of the TP is shown in the range of Abnormal COM circuit, please measure that of normal circuit board and compare with them since it may be variety of the tester.

5. Checking damage of the print heads

(1) Release the lock for HDC_FFC 130/160 ASSY connected to CN1-CN4 in the Main PCB ASSY.
(2) Remove HDC_FFC 130/160 ASSY.



(3) Measure resistant between the test pin TP6-13 and GND in the Ink slider PCB and judge whether the value is good or not with List 2
Connect the Negative terminal of the tester to the GND test pin (TPG1-5) and measure the resistance by getting the Positive terminal touch to TP6-13



List 2

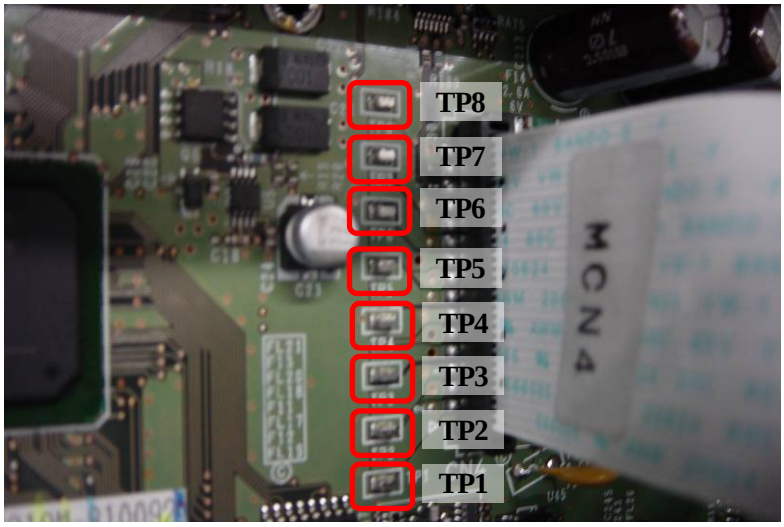
Test pin	Normal print head	Abnormal print head
TP6	10MΩ and more **Good**	Less than 10MΩ **Bad**
TP7		
TP8		
TP9		
TP10		
TP11		
TP12		
TP13		

Notes:
If any of COM line defect is found, the print head is broken. Please replace the print heads first.
If connecting normal Main PCB without replacing them, it will cause the PCB damage continuously.

6. Checking damage of the Main PCB ASSY

(1) Release the lock located both sides of the connector for HDC_FFC 130/160 ASSY connected to CN1-CN4 in the Main PCB ASSY and then remove HDC_FFC 130/160 ASSY.

(2) Measure resistance between the test pin TP1-TP8 and GND on the Main PCB ASSY and judge whether the COM circuit is good or not with List 3.
Connect the Negative terminal of the tester to the GND test pin (GND1-9) and measure the resistance by getting the Positive terminal touch to TP1-8
In case of the machine which would not be turned on, it is highly possibility of impedance anomaly of the COM circuit and short circuit between 42V and GND in the Main PCB.



List 3

Test pin	Normal Main PCB COM	Abnormal Main PCB COM
TP1	17K-18KΩ **Good**	Less than 17KΩ, More than 18KΩ **Bad**
TP2		
TP3		
TP4		
TP5		
TP6		
TP7		
TP8		

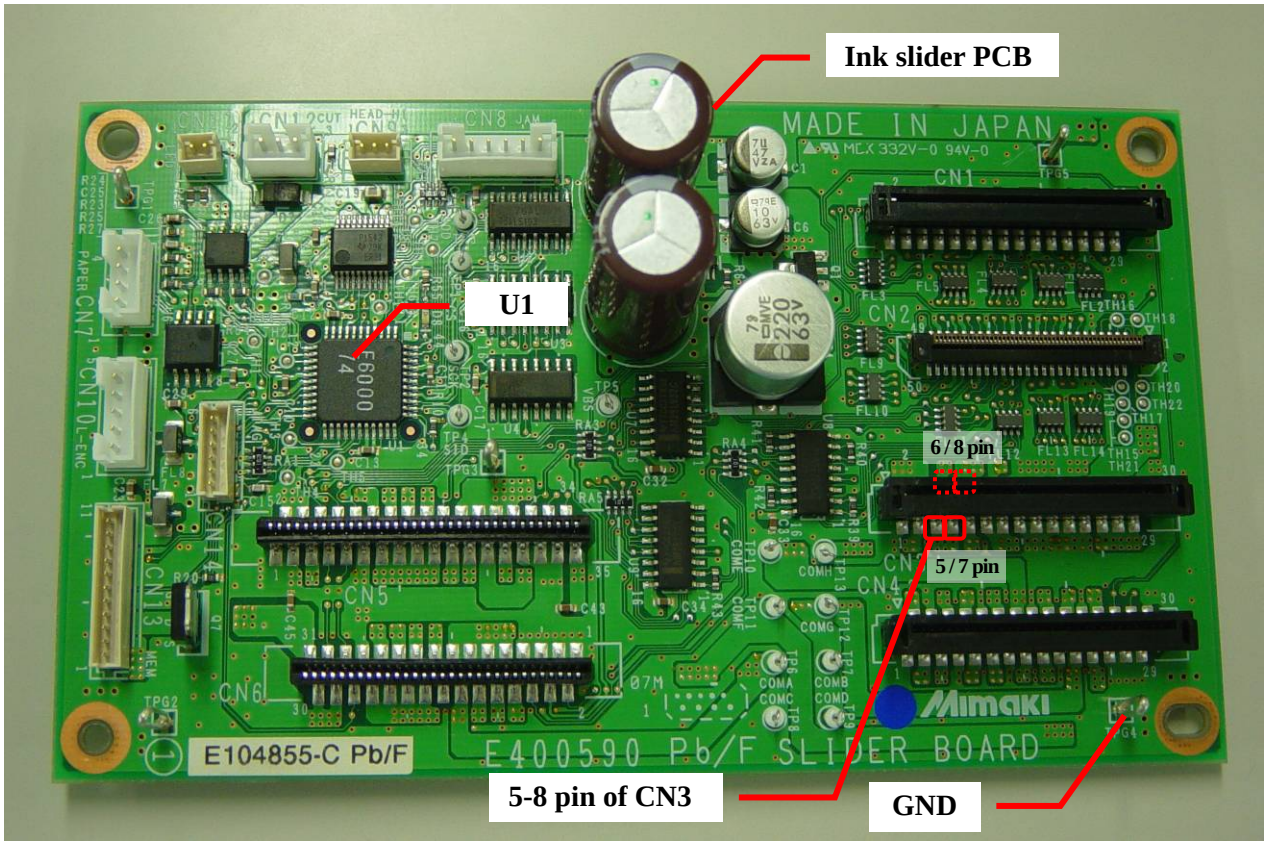
Notes:
If all the measured value of the TP is shown in the range of Abnormal COM circuit, please measure that of normal circuit board and compare with them since it may be variety of the tester.

7. Checking damage of the Ink slider PCB

(1) Remove 6 FFC at CN1-CN6 on the Ink slider PCB.

(2) Measure resistance between 3.3V pattern and GND pattern in Ink slider PCB and judge whether it is good or not with List 4.

* Connect the Negative terminal of the tester to the GND test pin (TPG1-4) and measure the resistance by getting the Positive terminal touch to 5-8 pin of CN3.
* In the case ERROR 200 or ERROR 50 occurred even if replaced the print heads, it is highly likely that U1 (CPLD, E600074) of Ink slider PCB is damaged.



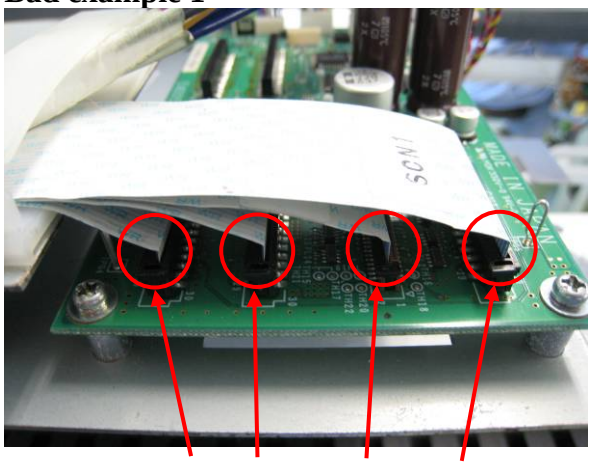
List 4

Test pin	Normal U1	Abnormal U1
CN3-5 CN3-6 CN3-7 ~~CN3-8~~	5KΩ and more **Good**	Less than 5KΩ **Bad**

8. Determining to replace HDC FFC 130/160 ASSY

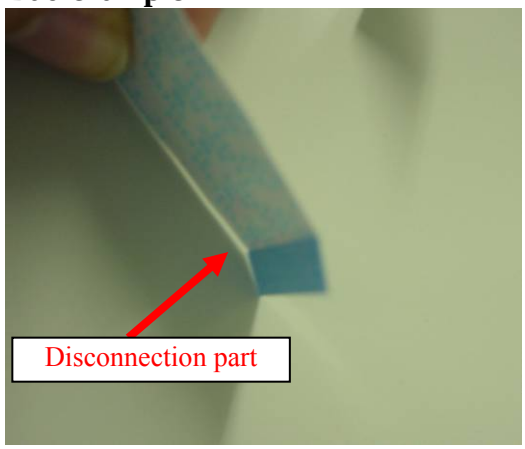
(1) Check whether the reinforcing part (light blue) of HDC FFC 130/160 ASSY connected to the Ink slider PCB is folded or not. If they are folded, please replace them since the folded FFC may cause disconnection.

Bad example 1



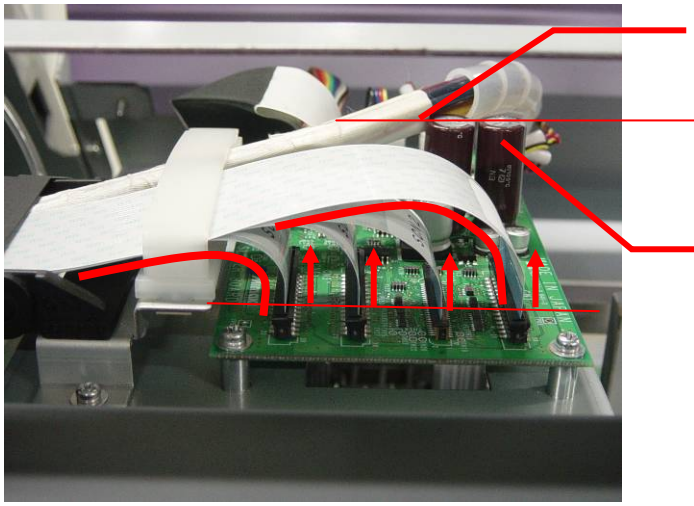
It is bad because FFC are folded obviously

Bad example 2



Please replace the FFC if it is obviously folded along the edge of the reinforcing part shown above.

Good



Attach the FFC vertically from the connector and have a margin of the curved FFC.

Caution:

- **Take care not to touch the connecting part of the FFC with your finger and prevent the FFC from liquid such as ink and washing fluid. If not, contact failure may be caused.**
- **If the FFC is slipped and pulled at the outlet of the connecter on the Slider PCB, when operating [#TEST]-[MOTOR TEST]-[Y SERVO MOTOR] to make the carriage scan with full-width of the machine continuously, fix the twisted ink tubes in the cable bear and the position of FFC with keeping the margin of the curve to reduce slide slip.**

Ver	Date	Revision history
1.0	2008/6/18	Newly issue
1.1	2008/7/2	[1] Added “ERROR 07 HEAD 0” [3] Added photo Added a step to turn off the power [7] Corrected the List 4 [8] Added a caution to handle the contact part of FFC