

# HC Series Troubleshooting

Rev. 1.6



RISO KAGAKU CORPORATION  
Overseas Technical Department  
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## Before maintenance

### Step1) Separation of RIP from HC main unit.

- 1) Separate RIP should be done before start repairing
  - Now you can turn off HC main SW anytime you want without unexpected errors during repairing.
- 2) Remove a Power control cable to stop completely.



Power control cable

### Step2) Cover the floor or carpet.

- 1) Putting curing mat to prevent floor or carpet from ink.

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**Case** Papers are stained with ink on the subsequent prints after Print Head cleaning action.

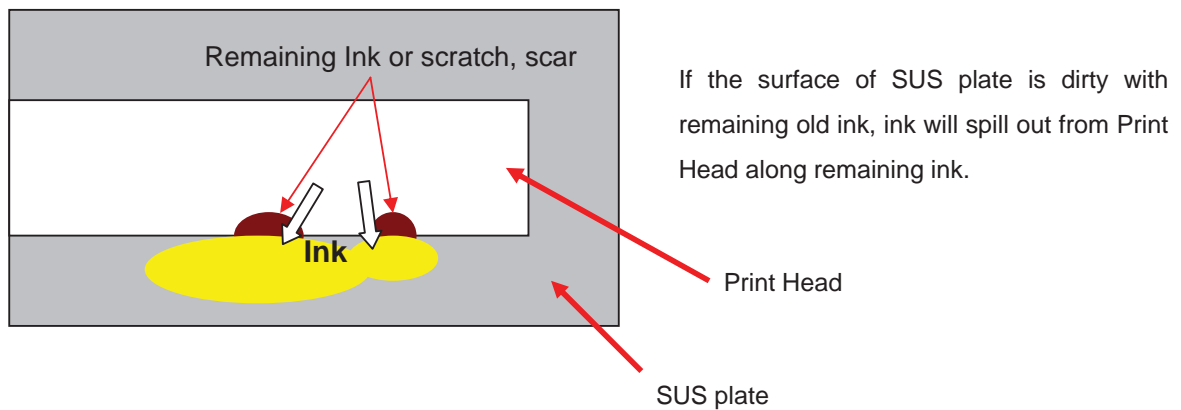
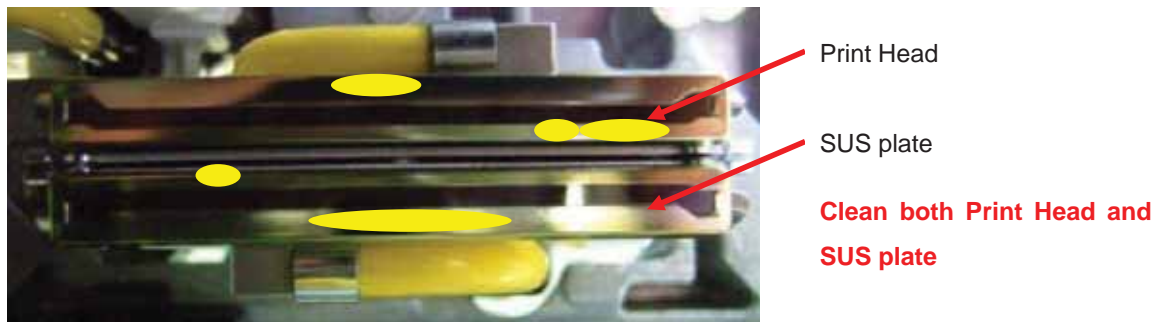
- Ink spill out to the transfer belt from Print Head, therefore the papers are stained.
- This trouble likely occurs after Print Head cleaning action.
- Misfire may occur instead of ink stain occasionally

### Cause of the problem (1)

If the surface of SUS plate is dirty with remaining old ink, ink will spill out from Print Head along remaining ink.

### Solutions

Remove remaining old ink on SUS plate manually with fresh ink.



### Cause of the problem (2)

#### **Maintenance parameter**

- The compressed air in the Reservoir will be released at the end of Print Head cleaning action and to what extent this air releasing is performed is affecting the ink meniscus of Print Head.
- You can change the air releasing level by **SE mode 8.6.6** and there is a trade-off condition between the misfire and ink spilling trouble.

### Solutions

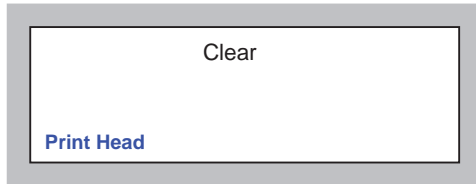
- Adjust the "CLEANING CONFIG" by **SE mode 8.6.6** (HC5500)
- This parameter has the values of OFF(default), WEAK, NORMAL and HARD.(HC5500)
- When [ HARD ] is selected, the possibility of the ink spilling trouble will decrease but the possibility of misfire will increase.



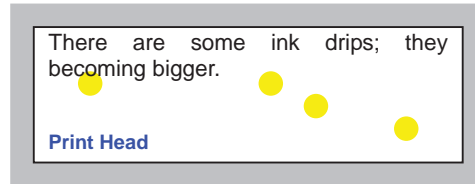
## Reference

Print Head condition after cleaning

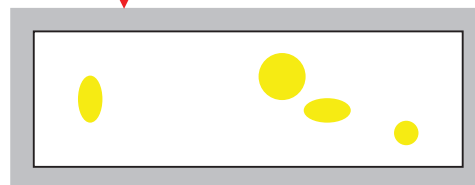
No problem



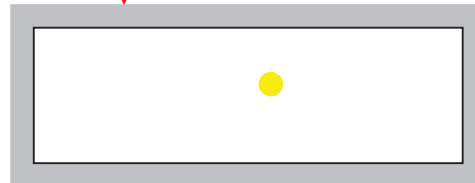
Adjustment is required



30sec later



After adjusting the parameter



If there are many ink drips on the Print Head even if change parameter to "HARD", it is necessary to replace **ink reservoir** or to clean up the Print Head again.

- If you adjust the parameter with HC5000, please refer to a following chart.

HC5000 Ver2.00 or later

HC5000 Ver2.05 or later

8-6-6	OFF(default)	WEAK	NORMAL	HARD
8-6-6-5	50ms	150ms	250ms	350ms
8-6-6-9	50ms	50ms	100ms	100ms

## Cause of the problem (3)

**There is a problem in the Reservoir.**

- Solenoid valve of Reservoir cannot work properly and cannot release compressed air in the Reservoir during Print Head cleaning operation, it causes ink spilling out from Print Head.

## Solutions

- Replace the Ink Reservoir.

#### Cause of the problem (4)

**There is a problem in the Print Head.**

- If there are some scratches on coating of surface of Print Head, ink will stick there after Print Head cleaning action and ink will spill out from Print Head.

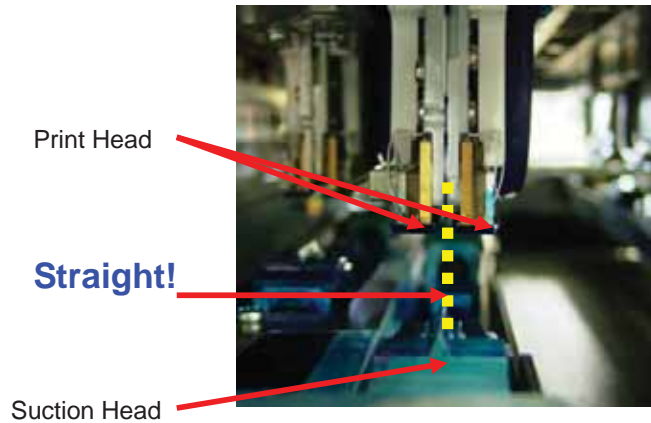
#### Solutions

- Replace the Print Head.
- You can not check this problem in field.

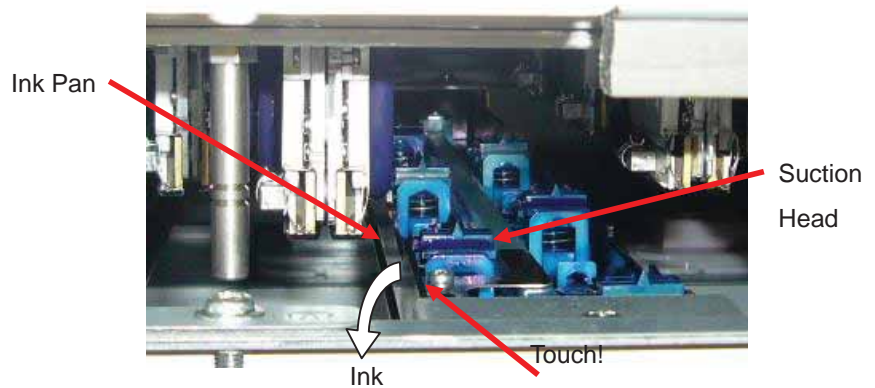
#### Cause of the problem (5)

**There is a problem in the stopping position of maintenance unit.**

- If the stopping position of maintenance unit is not proper during Print Head cleaning operation, Suction head cannot wipe the surface of Print Head sufficiently.



- If there is a problem with the stopping position of maintenance unit, Ink might drop down from "Ink Pan" because the "Suction Head" touches "Ink Pan".



#### Solutions

- Repair the deformed unit or replace the unit.

### Case Edge of paper is stained with ink.

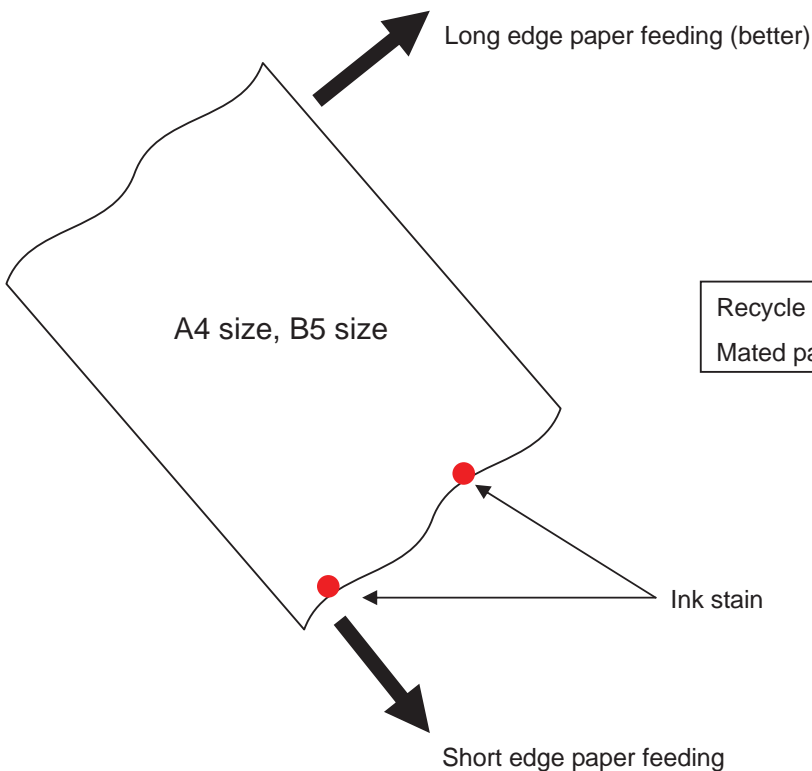
#### Cause of the problem (1)

Due to curled paper or waved paper, edge of paper is stained.

- If curled paper or waved paper is used for printing, the paper will touch the surface of Print Head slightly and the leading edge of the paper will be stained with ink.
- In worse condition, the error **X02-223** [Paper lift detection] will occur.

#### Solutions

- Change papers with non-curved and non-waved papers if possible.
- Change the paper feeding direction if the paper size is small or than A4. (Short edge paper feeding -> long edge paper feeding)
- Use the paper feeding from Multi-Tray Paper Feed Tray to avoid influence of the outside air. And putting "silica gel" is effective for humidity.
- Remedy of paper curl.



Curl of paper



Wave of paper



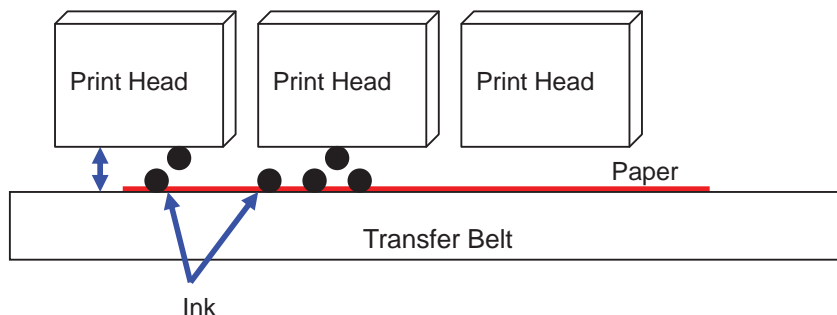


## Cause of the problem (2)

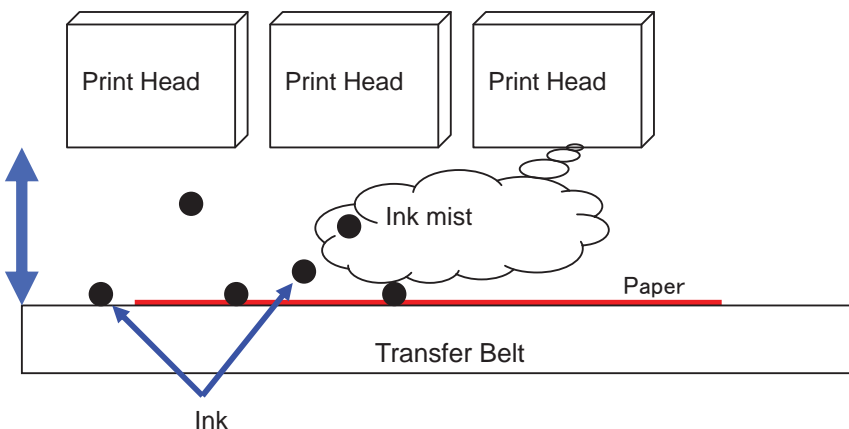
**The gap between Print Head and the transfer belt is too far.**

- Ink mist, a minute particle of ink, may be sometimes generated from Print Head during printing.
- Such ink mist drifts in the air and comes toward the transfer belt.
- Most of them reach to the paper on the transfer belt so it is a problem.
- But if the gap between Print Head and the transfer belt is too far, misting ink may reach to the transfer belt and it can be misting a cause of the problem.
- As a result, the surface of the transfer belt becomes dirty with ink and the edge of paper gets stained with ink.
- If the margin around the printing paper is reduced by **menu 4.10** [Print Area], this problem occurs easily.

The gap is small (Normal)



The gap is big



## Solutions

- Adjust the gap by **SE mode 5.9.1.32** for HC5000. (It is possible to widen with 0.1mm step)
- The gap is alternated automatically by the paper type. If you print normal paper with envelope setting, the gap becomes too big.(HC5500)
- Adjust print area(margin) by **menu 4.10**.(HC5000, HC5500)

## <Tips>

- Default margin of normal paper by **menu 4.10** is 5mm.(HC5000, HC5500)
- Maximum margin of normal paper by **menu 4.10** is 1mm.(HC5000, HC5500)
- Default margin of envelope by **menu 4.10** is 10mm.(HC5500) HC5000 cannot print with envelope.

## Center area of paper is stained with ink

Item 1-3

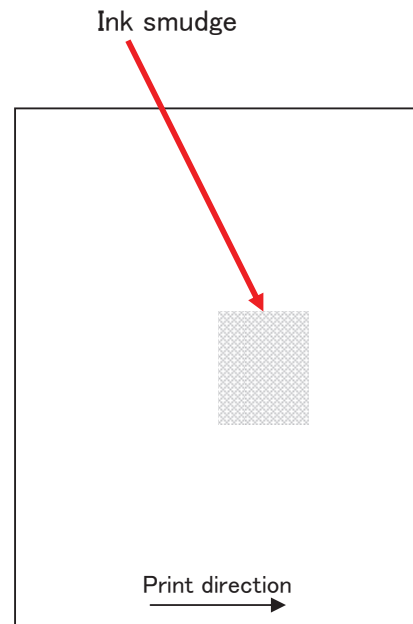
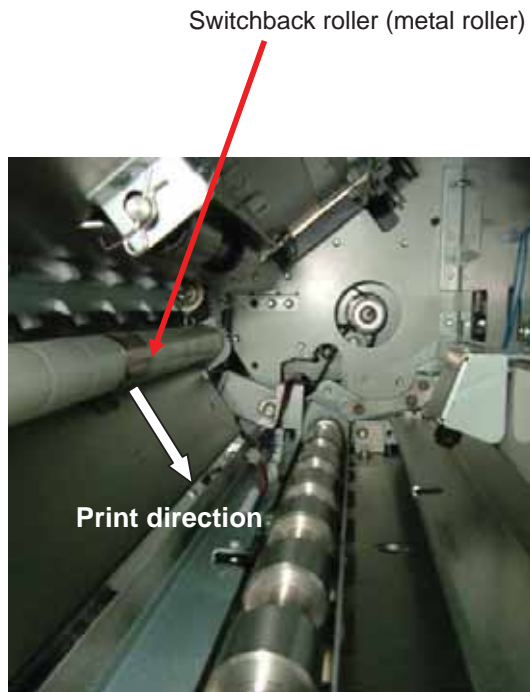
**Case** The center of a paper is stained with ink for the duplex printing.

### Cause of the problem

The center portion of the switchback roller is dirty with ink.

### Solutions

- Wipe off ink from the center portion of the switchback roller.
- The switchback roller needs to be cleaned every 300,000 sheets printing.



### **Case** Image deformation in the direction of paper feeding such as image shrink or image shift

- There is an image shrink partially in the direction of paper feeding.
- Colors of image don't align.
- Sometimes the edges of papers are stained with ink. (leading edge and trailing edge)

#### Cause of the problem (1)

**The reverse surface of transfer belt is dirty with ink.**

- The transfer belt cannot rotate smoothly because there is a friction due to ink on the reverse surface of the belt.
- This trouble may be caused by the problem of non-stable rotation speed of the transfer belt and you can confirm whether it is in correct condition with **SE mode 8.1.3.1**.

#### Solutions (Step1)

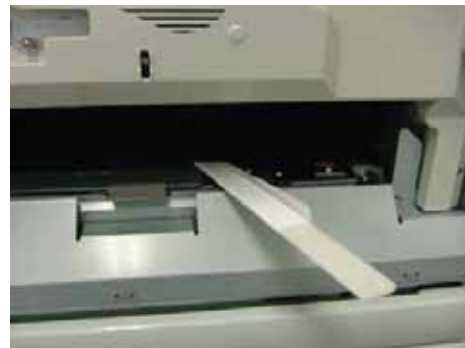
- Clean the belt with cleaning jig or replace the transfer belt.

Confirm if the BELT-FG speed is stable



Cleaning jig

Wrap the cleaning jig with paper and moisten it with alcohol.



Insert the jig under the transfer belt and clean the transfer belt by move it in right and left.

#### Solutions (Step2)

- Adjust the motor speed by correct procedure again
- Adjust transfer motor speed at first. (**SE mode 8.3.1**)
- Adjust paper feed motor speed next. (**SE mode 8.3.2**)



Usually paper feed motor speed is adjusted around 99.0% to 99.5%.

If paper is having buckle with 95%(limit) or size of the buckle is not stable, clean the belt again or replace the BP unit. (transfer belt unit)

### Cause of the problem (2)

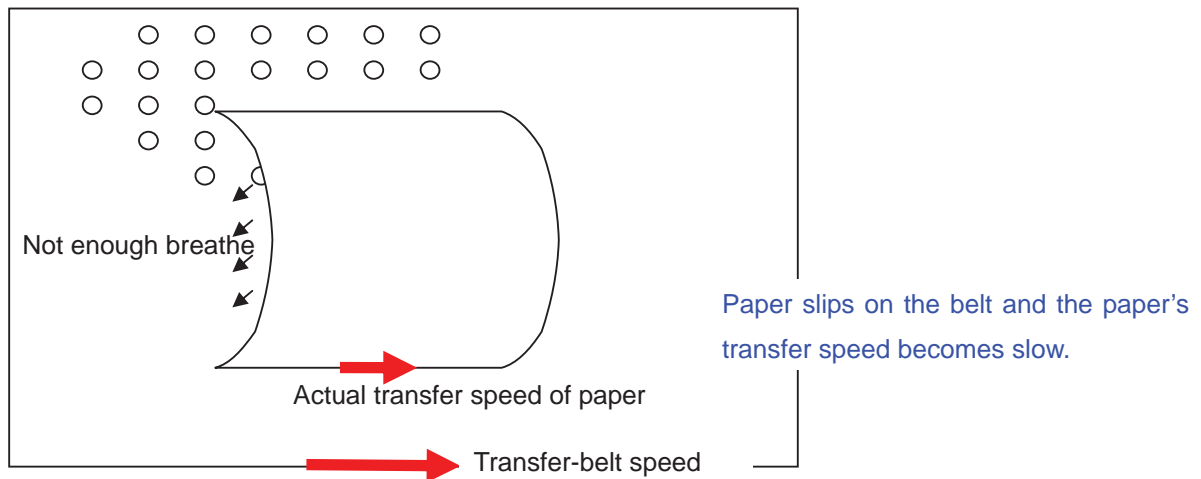
**Due to the paper condition, image shift occurs.**

- This trouble may occur due to the problem of paper.
- A printing paper is transferred by registration roller and transfer belt, paper's transfer speed by transfer belt may become slow due to the problem of paper.
- If there are some difference of paper's transfer speed between roller and belt, image shift occurs between 1st color and the other colors.

Colors of image don't align between **black and the others** (HC5000)

Colors of image don't align between **cyan and the others** (HC5500)

- If curled papers are used, the paper touches with paper guide under maintenance unit.
- Paper can not breathe enough by the transfer belt if stiff papers are used. (Cardboard, Envelope ...etc)



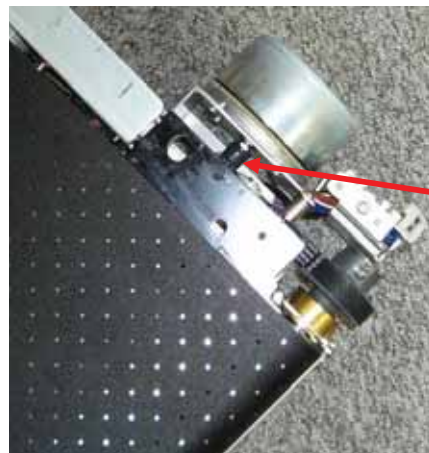
### Solutions

- If stiff papers are used, be careful the paper condition (curl or wave)
- Post-card printing, paper-size detection sensor should be covered to be skip-printing mode.

### Cause of the problem (4)

**Set-screw of the motor-gear loosens.**

- If the set screw of the gear loosens, transfer belt does not carry a paper with stability.



Please check whether the set screw does not loosen.

**Case** Image is not printed in the center position in the vertical direction of paper feeding.

### Cause of the problem (1)

#### **Transfer belt skew.**

- If transfer-belt skews, the print position is different between up side and reverse side of the paper.
- When customer cleans the transfer-belt, the belt may go over from side-plate.
- If the transfer-belt goes over, it skews.

### Solutions

- Check if transfer-belt does not go over from side-plate.(belt onto side-plate)
- Confirm whether transfer-belt moves straight.(by **SE mode 8.1.3.1**)

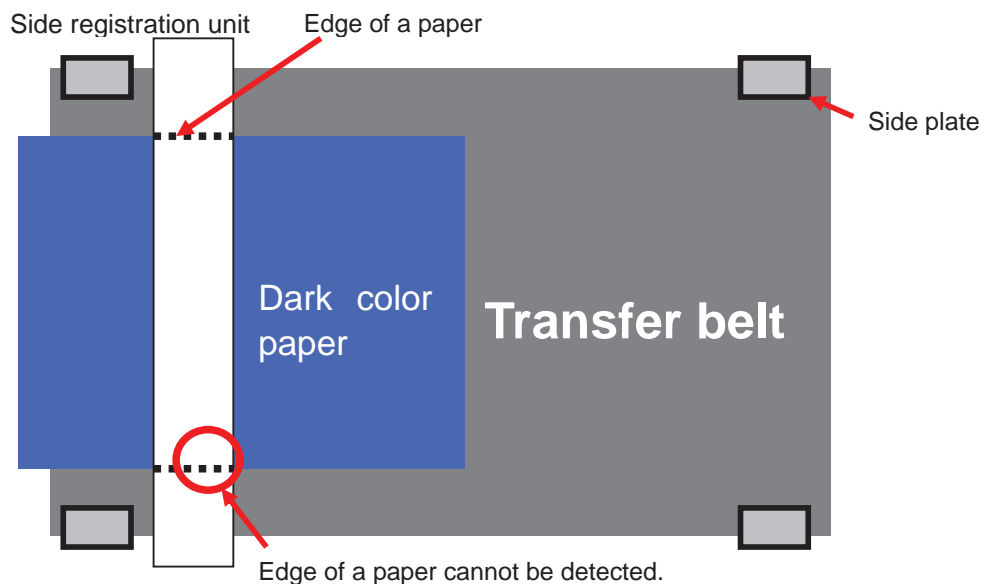
### Cause of the problem (2)

#### **Side registration unit cannot detect the edge of printing paper correctly.**

- Side registration unit detects the edge of printing paper and determines the printing position.
- If a dark-colored paper is used, the side registration unit cannot detect correctly the edge of the paper.

### Solutions

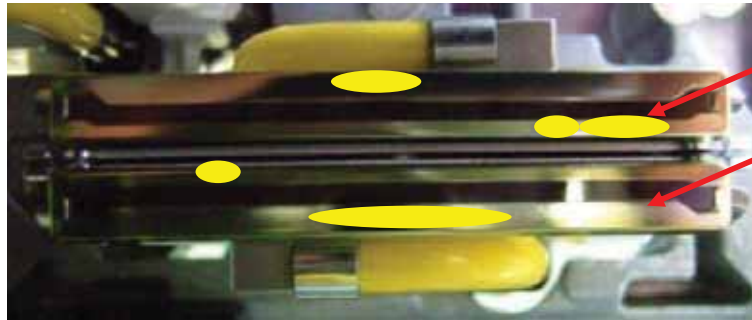
- Clean the side registration unit.(CCD unit)
- If it is under repair works and the covers are removed, light from outside may affects the detection of the side registration unit.
- If you have to use dark color paper, it is necessary to change CCD-mode by **SE mode 5.9.\*.39**  
**SE-mode 5.9.1.39** (normal paper) **5.9.2.39** (thick paper) **5.9.3.39** (thin paper)
- If the CCD-mode is changed "OFF", image-position is decided by width of paper-fence.
- If the CCD-mode is changed "OFF", print-margin becomes from 5mm to 10mm. Then it is necessary to adjust print-position by **SE mode 8.5.2.7.x**.



**Case** Cleaning method of Print Head which has stain of SUS plate problem.. (magenta or yellow Head)

### Solutions

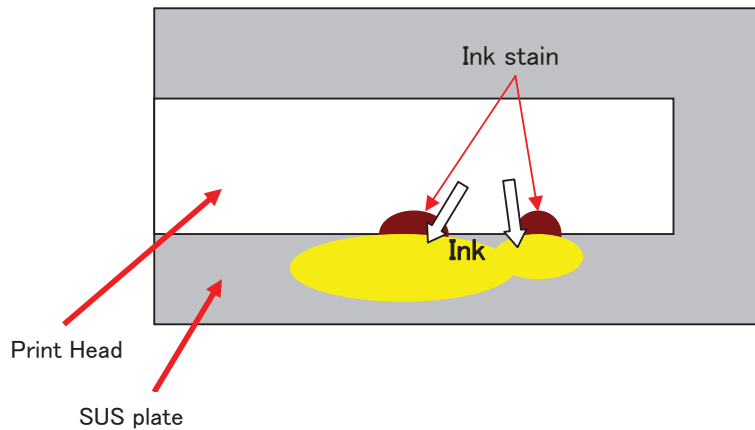
Use fresh HC ink and wipe-stick



Print Head

SUS plate

Clean enough both Print  
Head and SUS plate



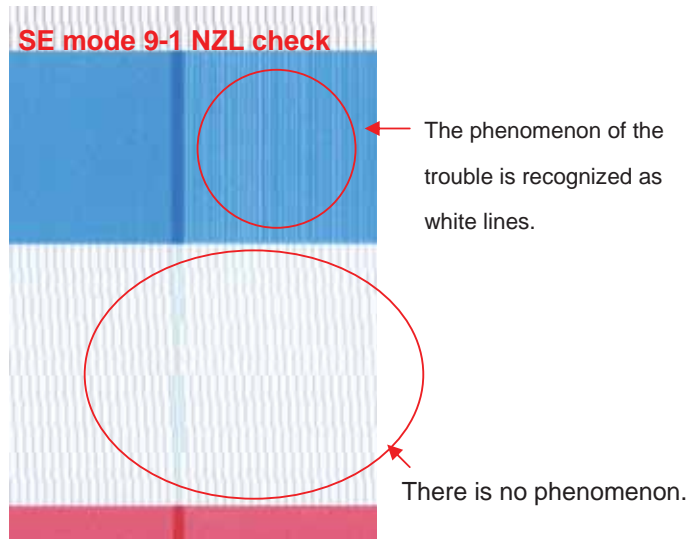
If the surface of the SUS plate is dirty with remaining old ink, ink will spill out from Print Head along the remaining ink.

**Case** Cleaning method of Print Head which has the mis-direction problem.

### Solutions

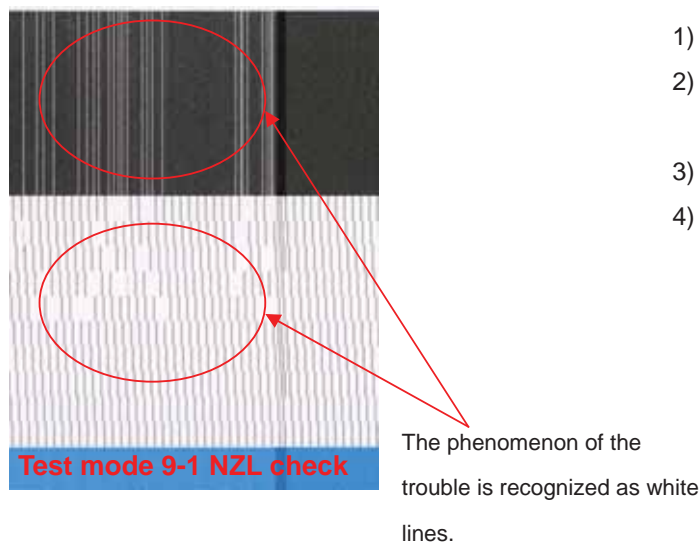
#### [ In case of miss-direction ]

- Ink ejects down from all piezo-nozzle of Print Head but it seems that ink goes down in irregular direction.
- Use A and B cleaning fluid for Print Head cleaning.



- 1) Apply 'A' fluid to the Print Head with a wipe stick.  
(Don't scrape)
- 2) Perform **SE mode 5.5.4.2**
- 3) Apply 'B' fluid to the Print Head with a wipe stick.  
(Don't scrape)
- 4) Perform **SE mode 5.5.4.2**
- 5) Check by **SE mode 9.1**  
Same action should be repeated if not improved.

#### [ In case of miss-fire ]



- 1) Apply HC fresh ink to the Print Head with a wipe stick.
- 2) Scrape 20-30 times with a wipe stick.  
(Don't scrape strongly)
- 3) Perform **SE mode 5.5.4.x**
- 4) Check by **SE mode 9.1**

## Phenomenon

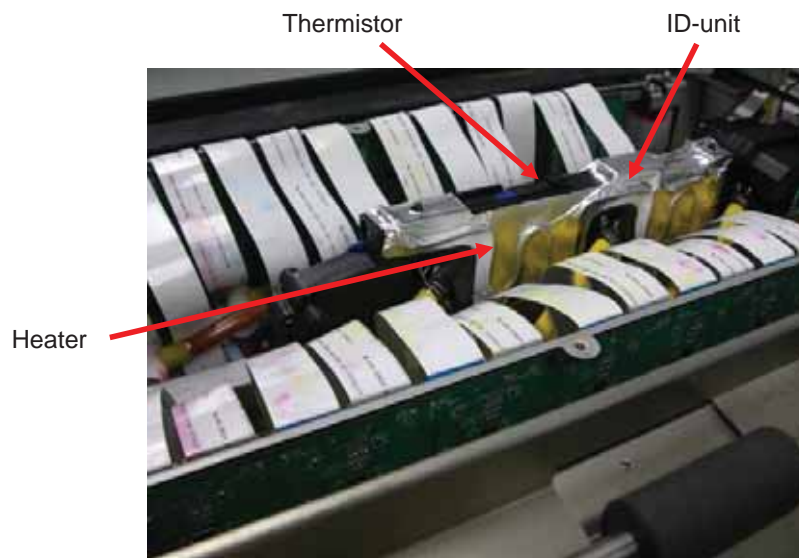
- “White line” occurs easily when beginning to use it in the morning.
- “White line” occurs easily with the same color.
- “White line” does not occur during a day after “Head maintenance” has been done.

## Cause of the problem (1)

- When HC5500 wake-up 8 hours later, “Recovery Cleaning” will start in default setting.
- If “Recovery Cleaning setting” has been changed from default setting, this trouble occurs easily.
- Recovery Cleaning setting: **SE mode 5.5.7.1~5.5.7.5** Default setting is all “ON”.

## Cause of the problem (2)

- If “a thermistor of ID-unit” does not work normally, HC try to print with cold ink. Then “White line” occurs easily.
- If “white line” occurs by the same color every time, it is necessary to replace ID-unit.
- You can check temperature of ID-unit by **SE mode 8.2.8.5**.





## Printed image is deformed diagonally

Item 4-1

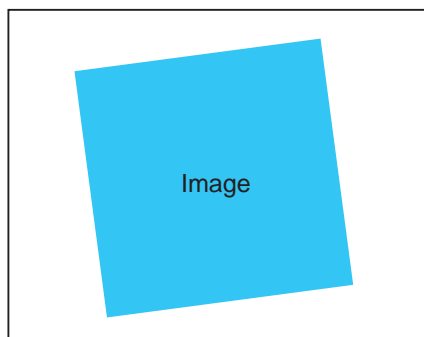
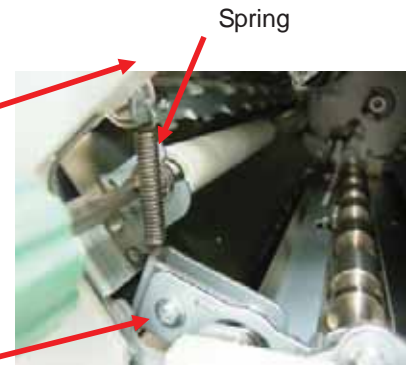
**Case** The printing image is deformed in a series of papers.

### Solutions

- Adjust spring pressure of registration roller.
- Do not adjust the position of registration roller for printing image trouble, "Ghosts image" may occur and it is hard to restore the trouble. (Ref A)
- Adjustment range is about 2mm in A3 paper by spring pressure.

Lift up or down the plate and adjust spring pressure.

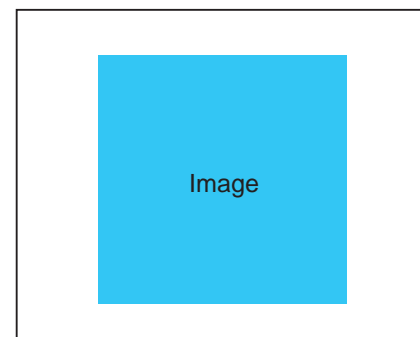
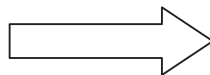
Do not adjust



Strengthen the **rear side** spring.

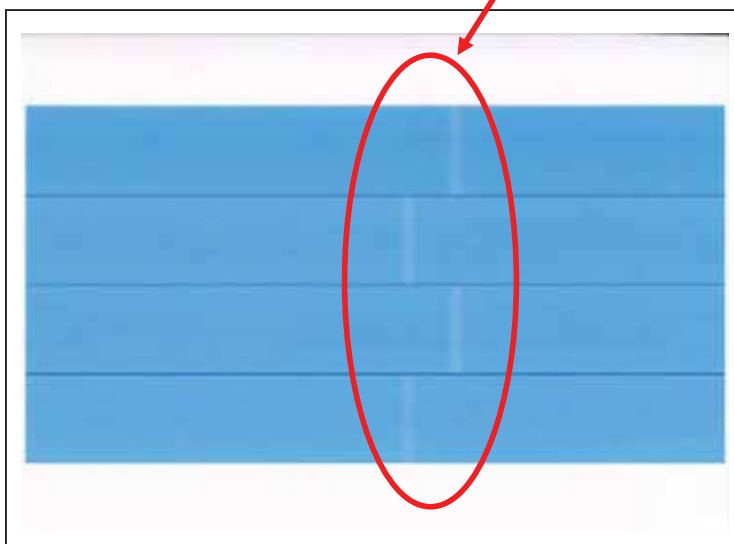
OR

Weaken the **front side** spring



(Ref A)

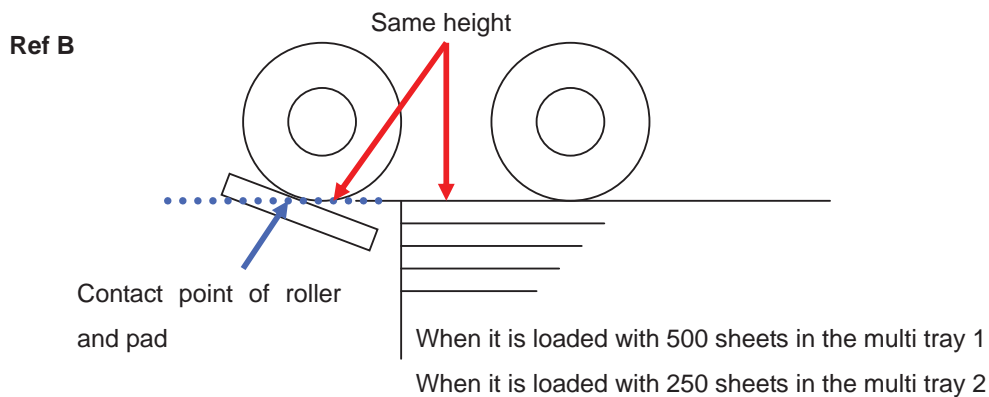
Ghosts



**Case** The printing image is deformed in a series of papers fed from multi-tray.( paper skew)

**Solutions**

- Confirm whether Pickup roller and Stripper pad are not worn out.
- Confirm whether pressure of the pad is not too strong.
- Adjust the elevator upper limit position at multi-tray. (**Ref B**)  
If the elevator upper limit position is adjusted high, the print image may be diagonally.
- Confirm whether bottom plate of the multi tray is stored horizontally. (**Ref C**)  
If the plate is not proper condition, adjust it with putting a washer between the tray and the rail. (**Ref D**)



**Ref C**

Confirm whether bottom plate of the multi tray is horizontal

Lift up the bottom plate by turning the pulley

It should be same height at that position.



Rear side of the tray



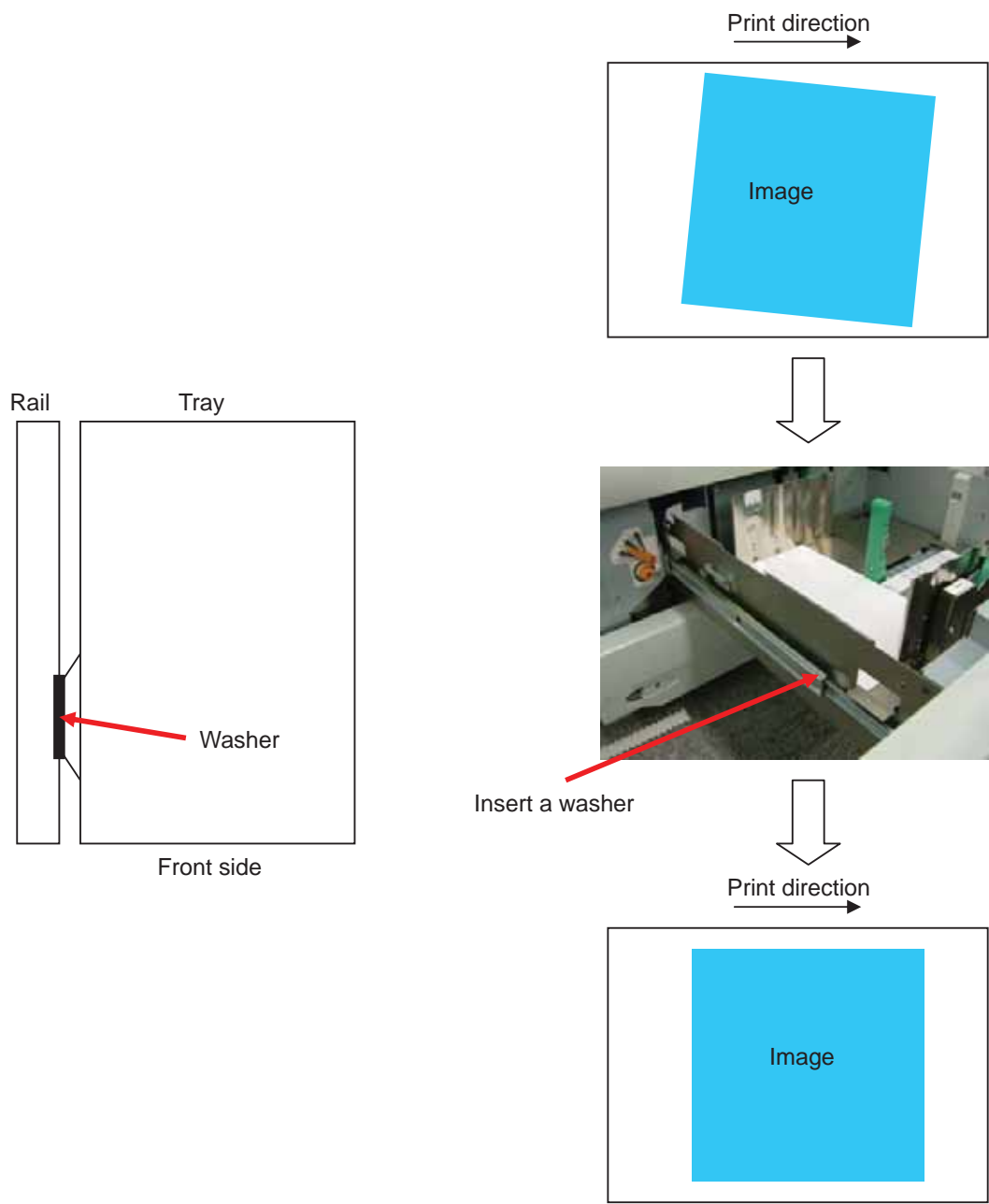
Horizontal of the plate is adjusted by mounted position of wire

**<Note>**

Standard position of stripper pad is "3".

- Insert a washer between the tray and rail to adjust the diagonal position of the tray.

Ref D



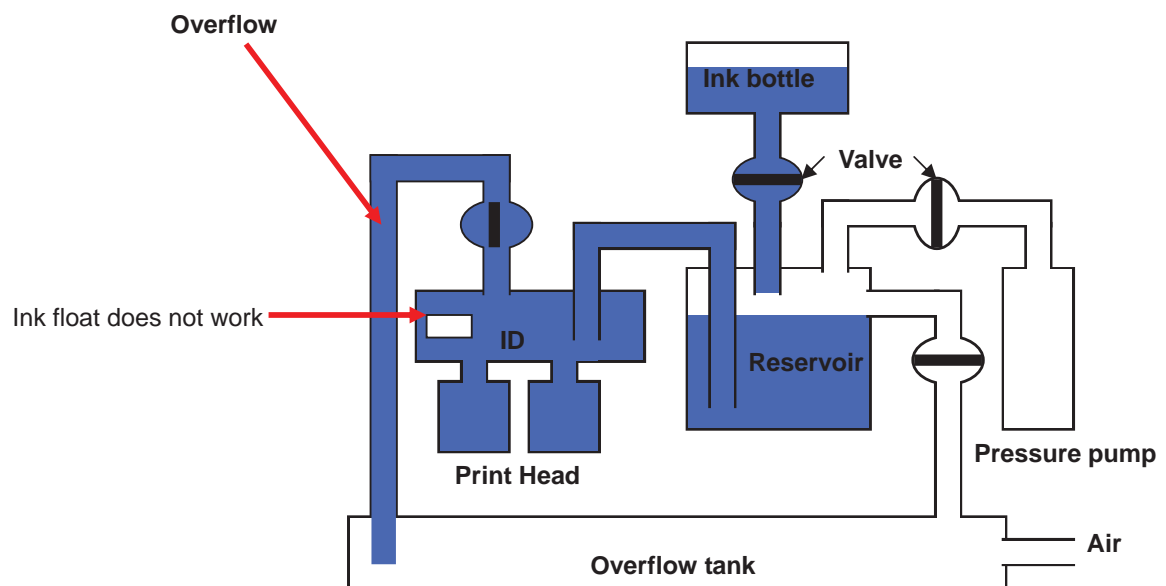
**Case** Ink flow from ID unit. Ink flow from ID solenoid valve.

**Cause of the problem**

→ Float of ID unit malfunction

**Solutions**

→ Replace ID unit



### Case Ink sometimes flow from reservoir

#### Solutions (1)

Ink does not flow from reservoir to overflow tank when joint **A** and **B** are unconnected.

But

Ink flow from reservoir to overflow tank when only joint **A** is connected.

- Replace reservoir unit
- Replace ORCNR-PCB.
- Replace wire harness from ORCNR-PCB to reservoir.

#### Solutions (2)

Ink does not flow from reservoir to overflow tank when joint **A** and **B** are unconnected.

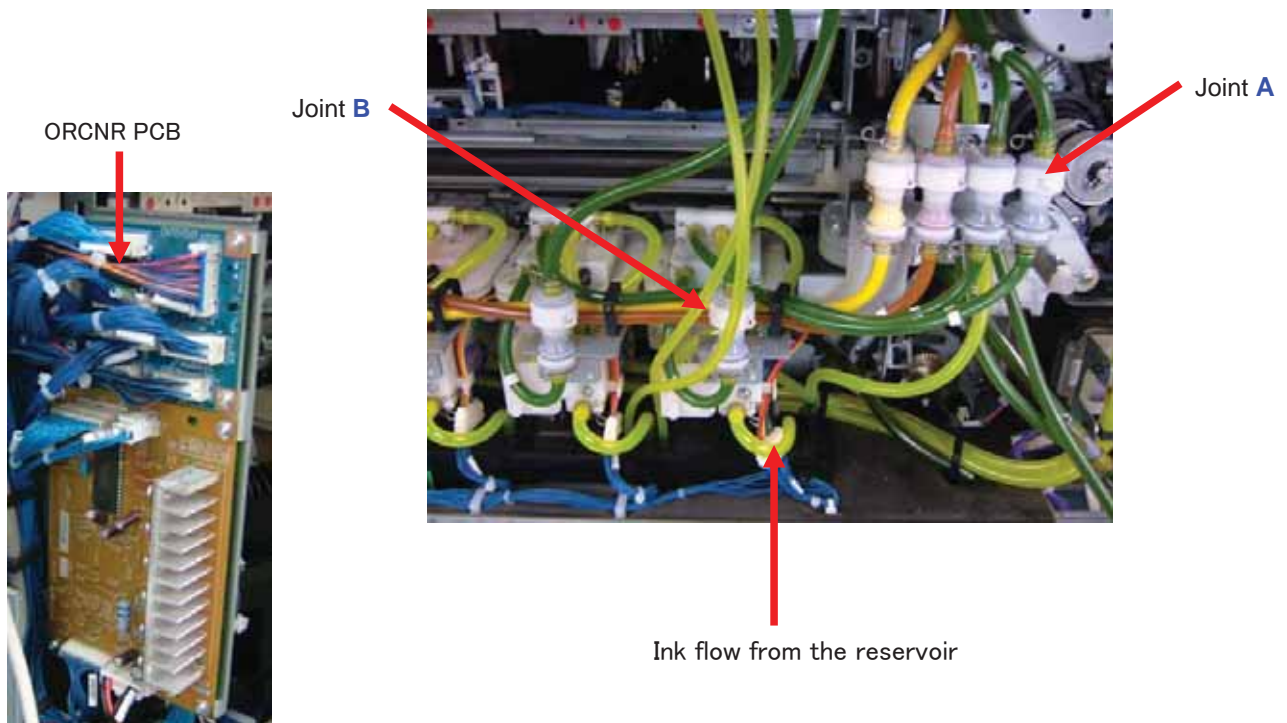
But

Ink flow from reservoir to overflow tank when only joint **B** is connected.

- Dismounting a joint before changing **Print Head**, and connect it after open a [menu 5.5.5](#)
- Replace ID valve.
- Replace ID unit.
- Replace **Print Head**.

#### Cause of the problem

- After replace the **Print Head**, ink in the ID unit move to the reservoir for air in the **Print Head**.
- Air leak from ID unit or joint of **Print Head**.



**Case** After ID UNIT or Print Head is exchanged, Ink flow from reservoir

**Cause of the problem**

- When **ID unit** or **Print Head** is replaced, air is in **ID unit** so much.
- When much air is in **ID unit** or **Print Head**, ink flow to reservoir.
- If ink flow to reservoir, reservoir overflow.

**Solutions**

- 1) Open the menu and select **menu 5.5.5**.
- 2) Start **menu 5.5.5**
- 3) Connect the joint **B** as soon as possible after start **menu 5.5.5**
- 4) Print Head cleaning action will be performed.
- 5) Confirm whether the transfer belt is not stained by ink before printing.

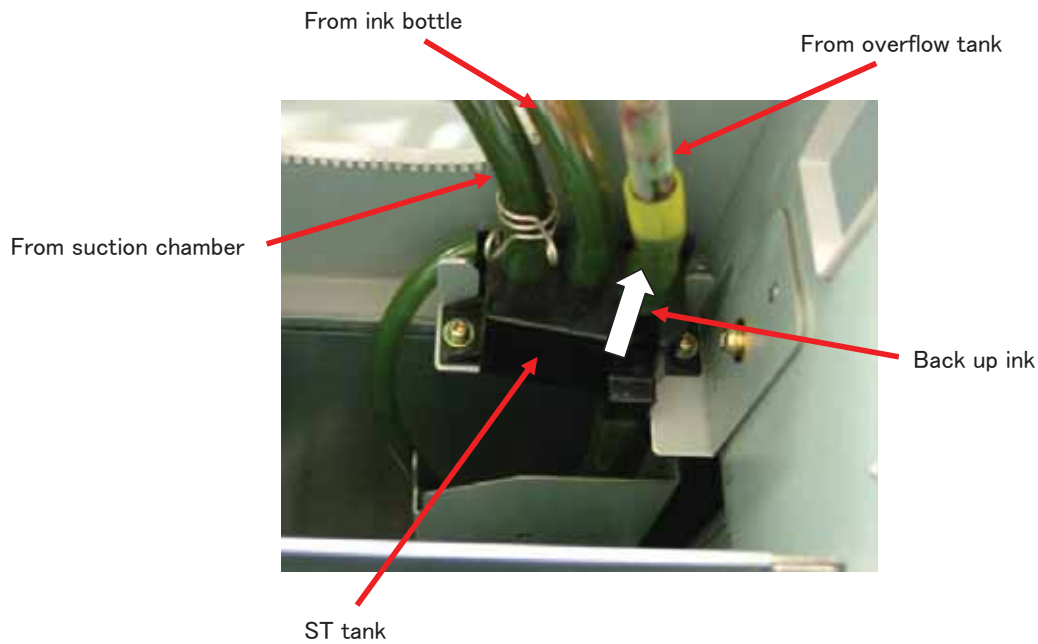
Joint **B**



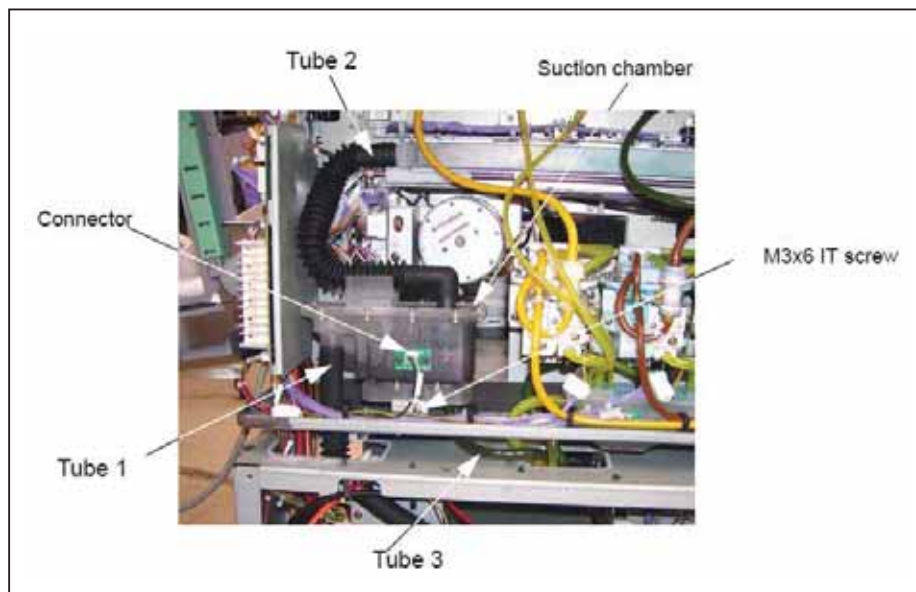
**Case** Ink flow from Suction chamber to Overflow tank.

### Solutions

- Check whether ink-hose which joint with **Waste ink tank** is twisted.
- Clean old Ink in the ST tank.
- Replace the ST tank.
- Replace the suction chamber.



Suction chamber







## Case Y01-328

- This error will be displayed in the case that the sensor in the reservoir can not detect the presence of ink.
- After setting ink cartridge, from 50 to 60 seconds later, this error is displayed again.

## Cause of the problem

- Ink fuse solenoid valves which connect with reservoir can not open enough.
- Joint of ink passage does not connect certain.
- Solenoid valves in the reservoir can not open enough.
- OR-CNR-PCB which leads to a reservoir is broken.

## Solutions

- Check whether Joint of ink passage is correct.
- Check whether ink-tubes from cartridges are having stress or twisted.
- Replace reservoir and OR-CNR-PCB and Ink fuse solenoid.

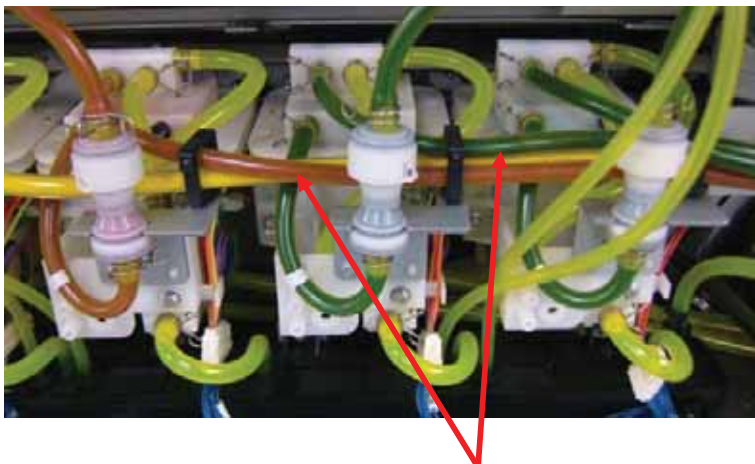
Ink fuse solenoid ( HC5500 )



Joint of ink passage







OR-CNR-PCB leads to reservoir

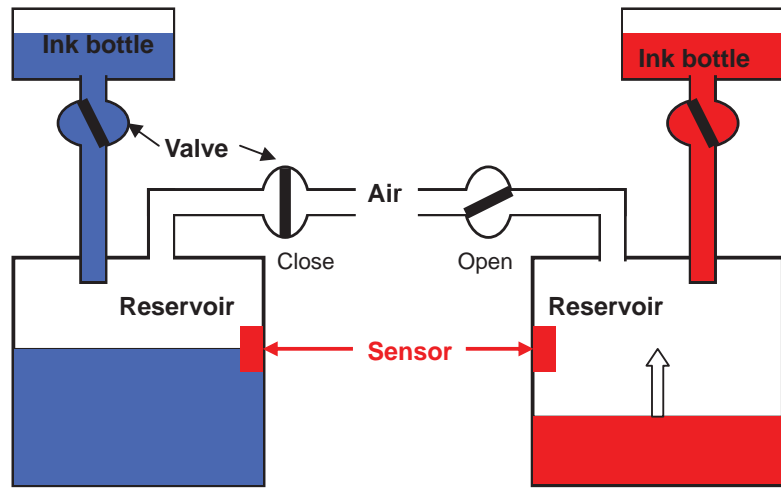


Check whether ink-tubes from cartridges are having stress or twisted.

[ Normal condition ]





Cyan and magenta both normal

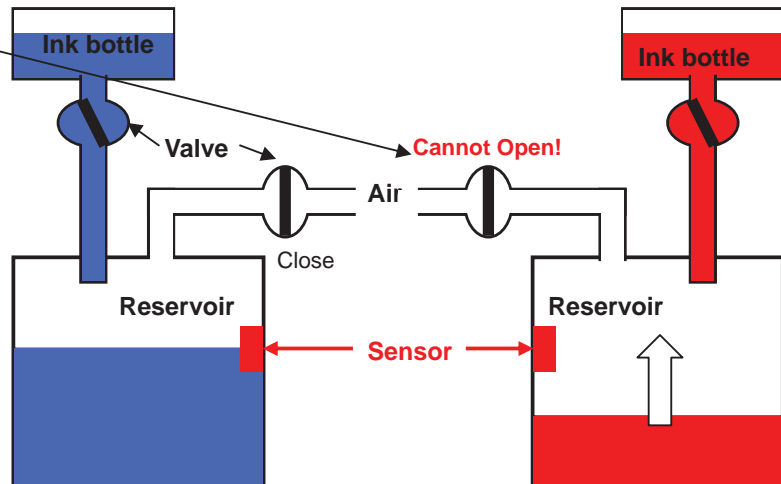
Detection in OR-CNR-PCB	
	Sensor ON
	Valve close
	Sensor OFF
	Valve open



[ Reservoir(valve) is broken ]

Y01-328M display

Detection in OR-CNR-PCB	
	Sensor ON
	Valve close
	Sensor ON
	Valve open







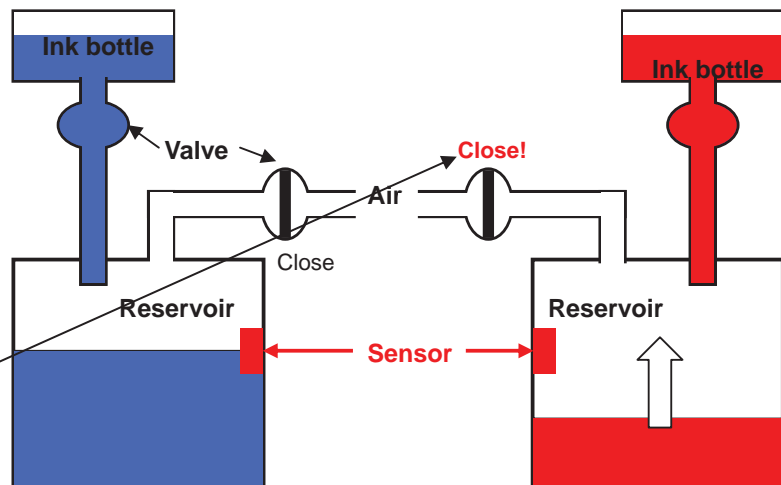
PCB detection is correct

Cannot rise!

[ PCB is broken 1 ]

Y01-328M display

Detection in OR-CNR-PCB	
	Sensor ON
	Valve close
	Sensor OFF
	Valve <b>close</b>



PCB detection is not correct

(Wire in the PCB break off)

Cannot rise!

[ PCB is broken 2]

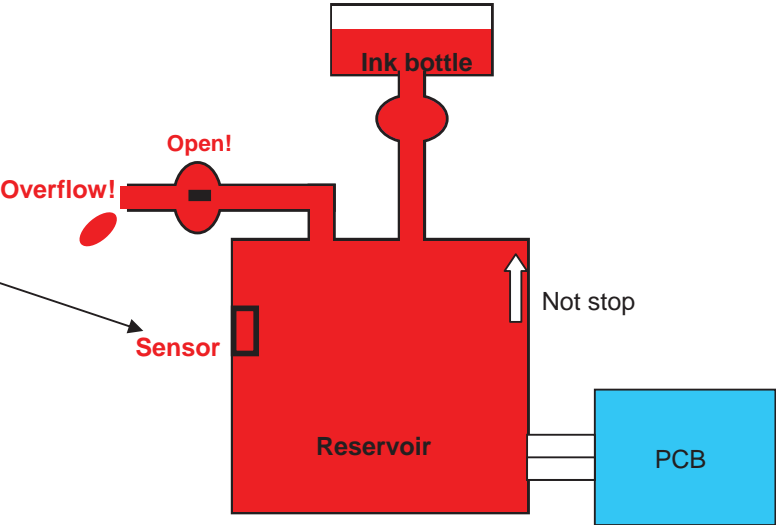
Overflow

Detection in OR-CNR-PCB

Sensor **OFF (Can not ON)**

Valve OPEN

**PCB detection is not correct**  
(Wire in the PCB break off)



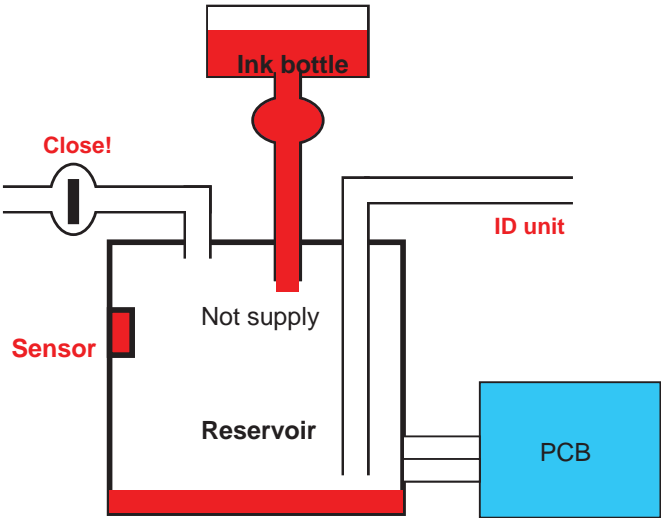
[ PCB is broken 3]

W99-315M display

Detection in OR-CNR-PCB

Sensor **ON (Can not OFF)**

Valve Close

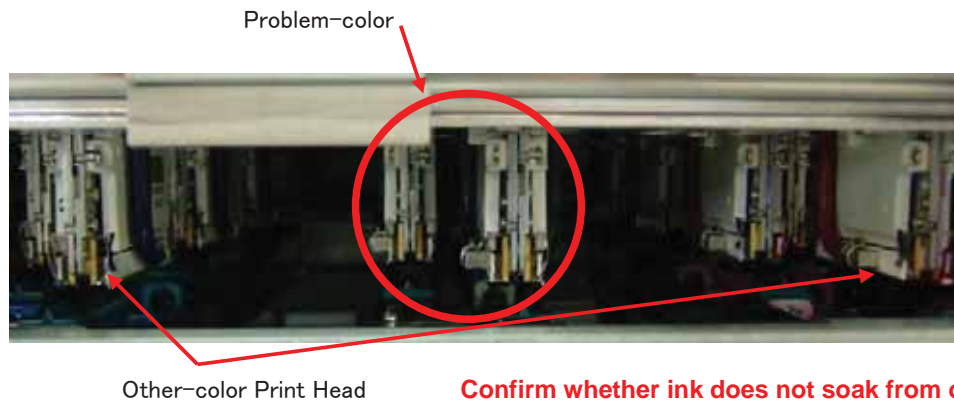


## Case Y01-329

- After set ink cartridge, an error is displayed soon.

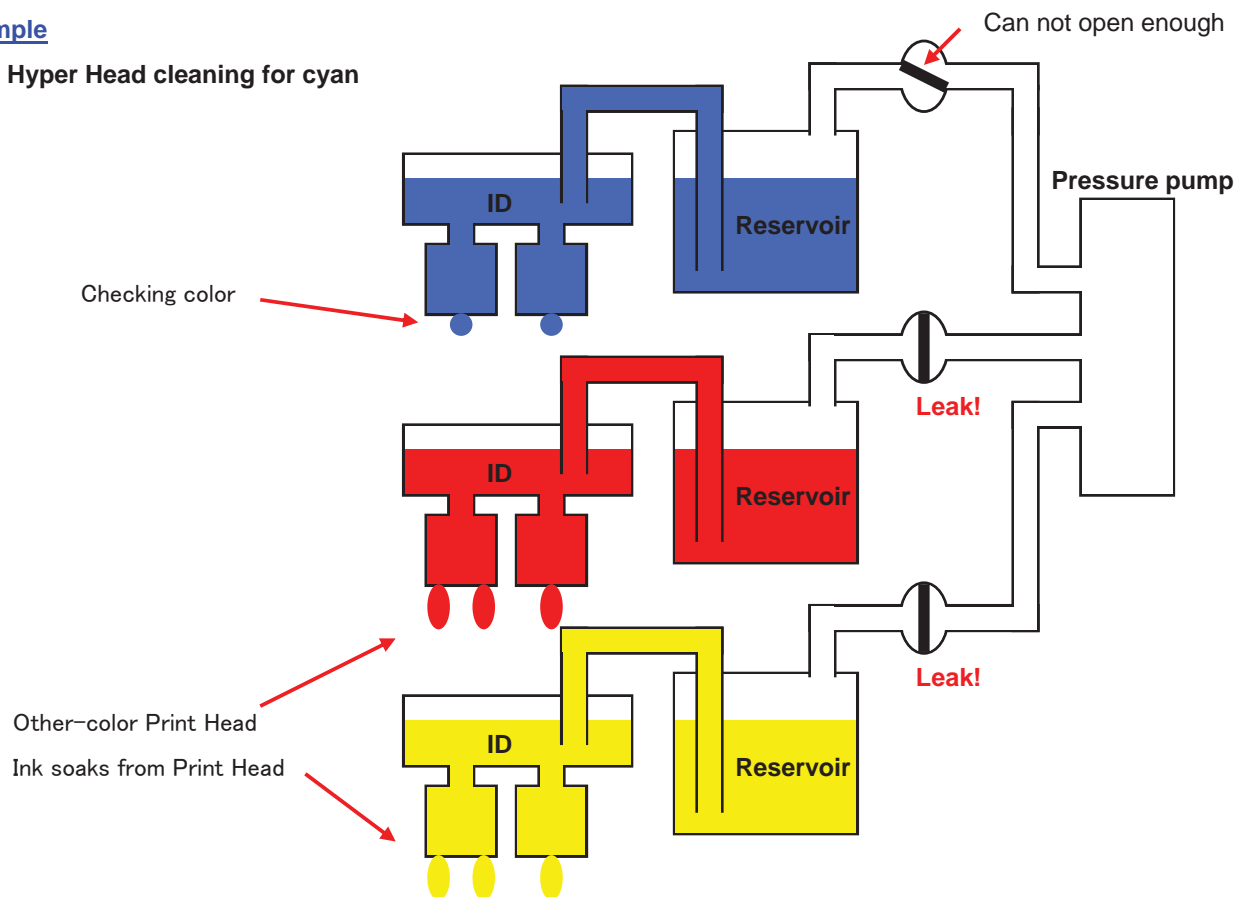
## Solutions

- Do Hyper Head cleaning(SE mode 5.5.4.x) of problem color, then confirm whether ink does not soak from **other-color** Print Head
- If ink soaks from **other-color** Print Head, replace reservoir of **problem-color**. And more do Head cleaning
- If ink does not soak, replace pressure pump.
- Y01-329 trouble have still occurred after replace these parts, replace pressure chamber.



## Example

Start Hyper Head cleaning for cyan



If valve of checking color can not open enough, Ink soaks from Print Head of other color too.

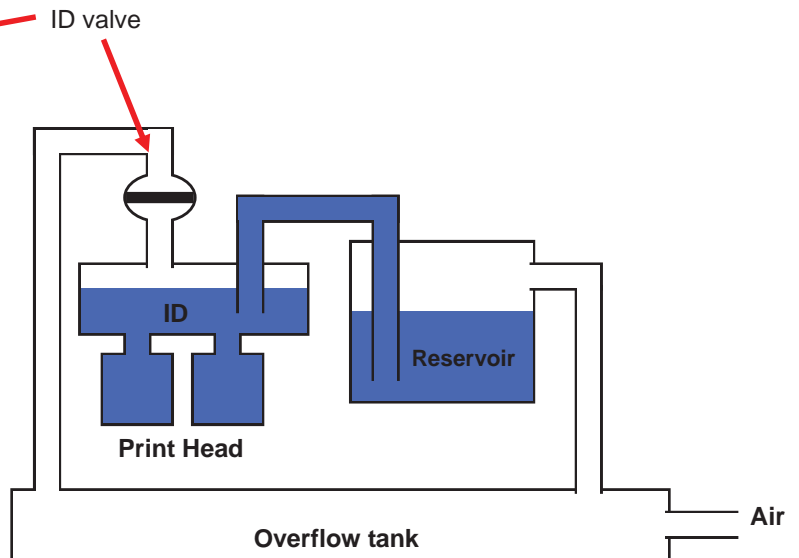
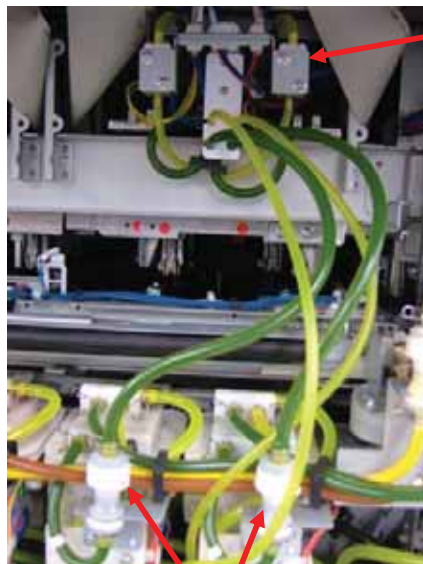
**Then decrease of problem ink is smaller than decrease of be calculated on the printer.**

### Cause of the problem

- If the "ID valve" can not open enough, air can not eject from ID unit.
- If air can not eject enough from the ID unit, ink can not flow from Reservoir to ID unit.
- When the ID valve does not work correctly, W99-315 error occurs frequently.

### Solutions

- Replace ID valve.
- Replace Reservoir or OR-CNR-PCB.



**When you replace the "ID valve", it is necessary to remove the joint before this work.**  
**If you do not remove the joint, ink flows from reservoir to overflow tank.**

# Paper jam in duplex area

Item 8-1

## Phenomenon

Paper jam occurs only duplex printing

## Solutions

- You should check many points when paper jam occurs in duplex area.
- Trouble area and jam area may be different because of the route of duplex is so long.
- Then not all error No and trouble area are same.

## Check points

- Confirm whether the timing belt does not come off from pulley. (**Ref. A**)
- Confirm whether rollers of switchback unit aren't stained. (**Ref. B**)
- Confirm whether shafts of duplex unit haven't got loosened. (**Ref. C**)
- Confirm the movement of duplex clutch. (**Ref. D**)
- Confirm whether Flipper gate moves smoothly. (**Ref. F**)
- Confirm whether the drive gear of duplex unit is not damaged.
- Confirm whether the registration clutch does not slip. If the counter exceeds 2 million, you should replace it. (**Ref. E**)

(Ref. A) Timing belt



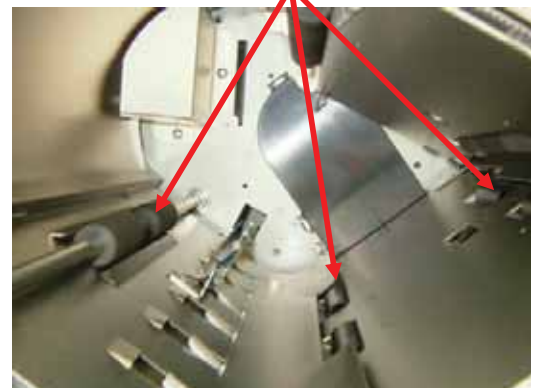
(Ref. B)



Clean the rollers

(Ref. C)

Shaft of duplex unit



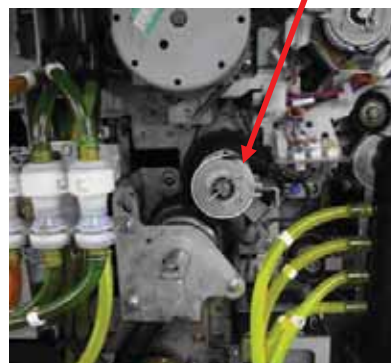
(Ref. D)

Flipper gate



(Ref. E)

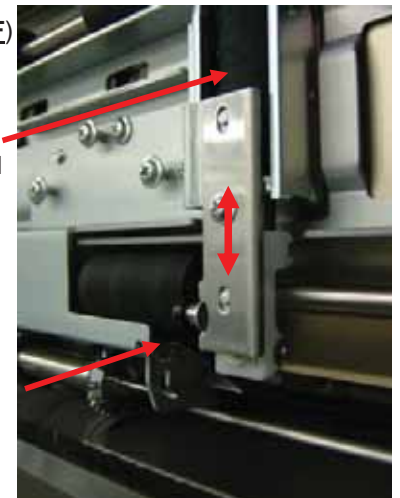
Registration clutch



(Ref. F)

Solenoid

Spring





### First step

Confirm whether Pickup roller and Stripper pad are not worn out.

### Solutions

**[Paper jam occurs at previous section of first paper feed]** (Paper jam looks like bellow)

- Confirm whether one-way clutch moves smoothly. (Pickup roller side)
- Confirm whether Stripper pad are not worn out.
- Confirm whether pad pressure is not too strong.
- Replace Pickup roller and Stripper pad.

**[Paper is hardly fed at previous section of first paper feed]**

- Confirm whether one-way clutch moves smoothly. (Scraper roller side)
- Confirm whether Stripper pad are not worn out.
- Confirm whether pad pressure is not too strong.
- Replace Scraper roller.

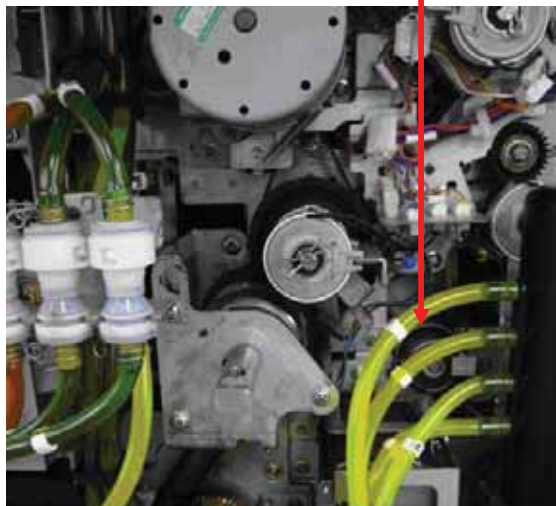
**[Paper jam at multi-tray or X02-210 error is displayed]**

- Confirm whether paper is hardly fed at first paper feed section.
- Adjust pressure of pad weakly.
- Replace Pickup roller and Stripper pad.
- Clean paper registration sensor.
- Change the value of “**SE mode 5.9.1.30** single page gap” into 45 from 35.

**[Paper jam occurs at exit of multi-tray]**

- Paper jam that looks like bellows might occur at exit of multi-tray.
- Replace multi-tray pickup clutch

Multi-tray pickup clutch



### Cause of the problem

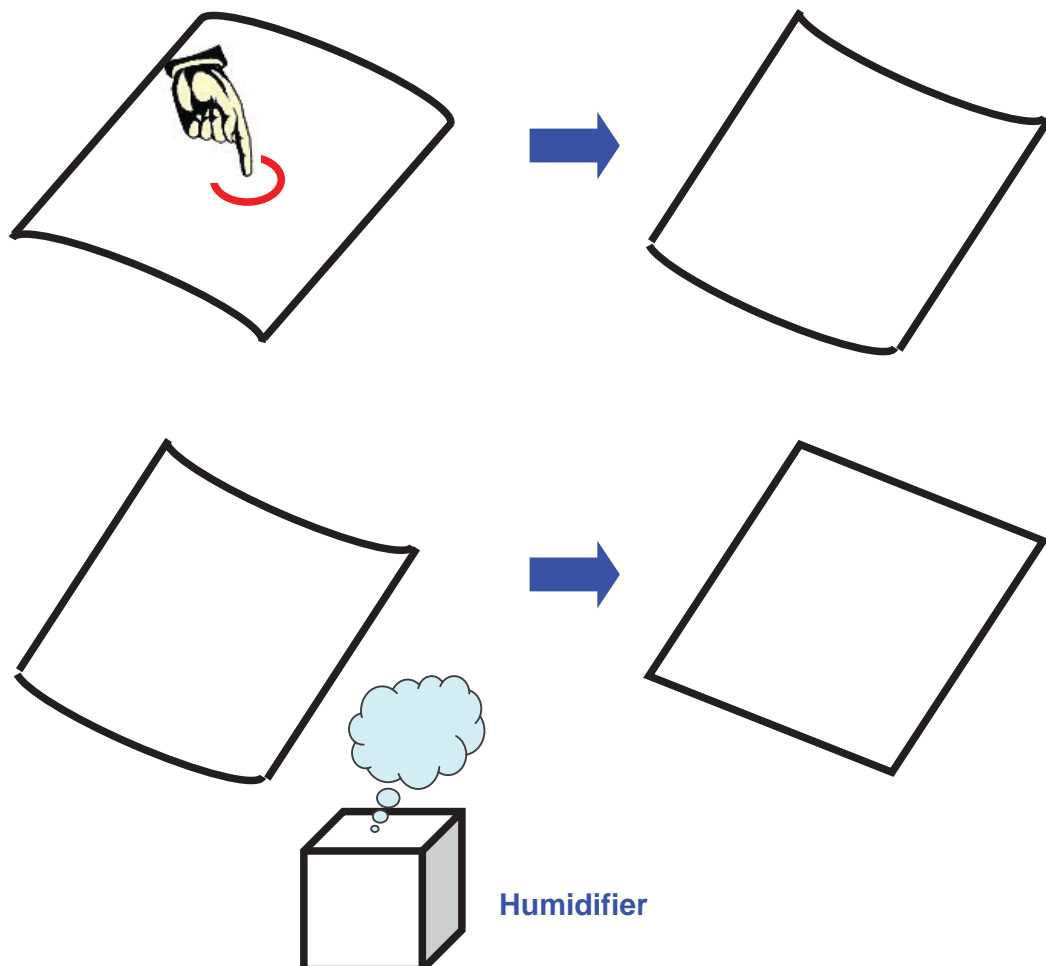
- "Postcard for inkjet" curls easily when leaving in dry room.
- If postcards have any curl, paper jam or Image deformation occurs easily.

### Solutions

- If you reform postcard, it is easy when putting it near the humidifier.



- The direction of curl may be changeable when pushing center of postcard by the finger.
- When this phenomenon occurs, the postcard dry up.
- The postcard becomes soft when putting it near the humidifier.





### Phenomenon

The vacuum positioning sensor fails to activate when the belt platen operates.

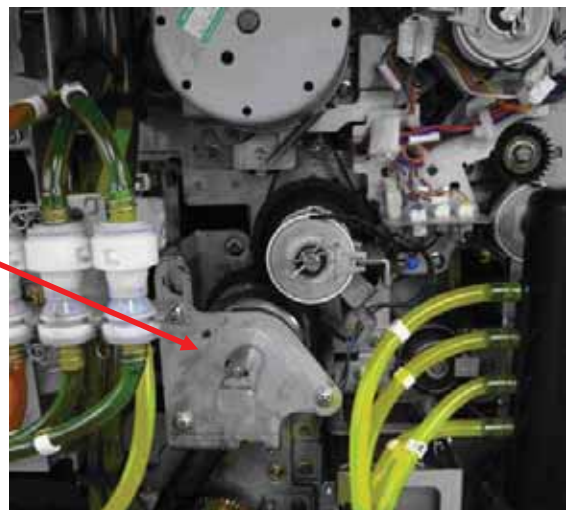
### Cause of the problem

- If the lift gear unit clutch slips, the elevating mechanism can not move up the transfer unit in time.
- The error occurs easily on "HC5500 arm type model".
- Especially the error occur easily when the elevating mechanism move from limit position to vacuum position.

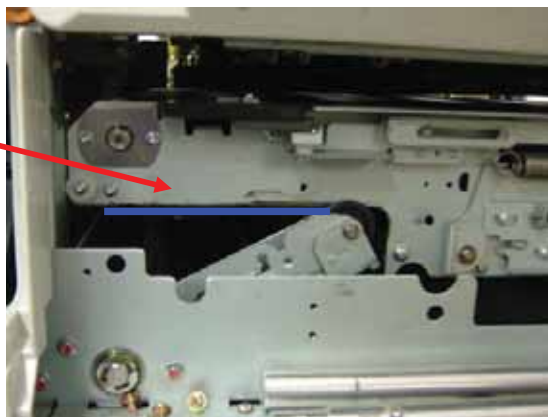
### Solutions

- Replace Lift gear unit clutch
- Apply grease under the transfer unit as follow to prevent this error again

Lift gear unit clutch



Please apply grease on this point

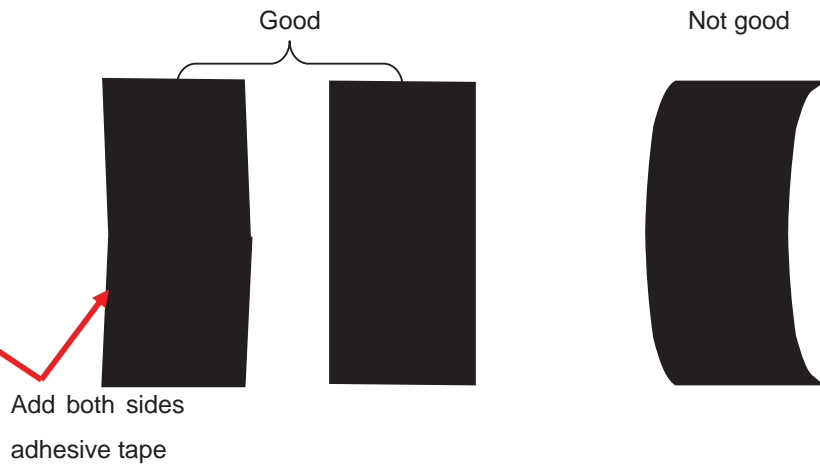


### Solutions

#### [ In the case of the Auto Paper receiving tray ]

- Mend the end fence cushion if it is bent.
- Mend the angle of side fence if it is not suitable condition.
- Adjust the wing position of exit unit. (SE mode 5.9.1.40)
- Adjust the width of the side fence. (SE mode 5.9.1.60)

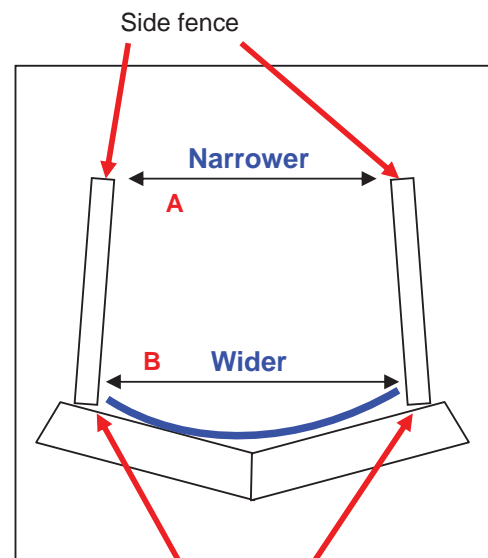
If this part is bent, ejected paper will bounce too much.



Concerning the width between the side-fences, top is slightly narrower about 5mm than bottom in normal condition.

If the width is not appropriate, the ejected papers curl and will be stacked up disorderly.

$$B - A = 5\text{mm}$$



Add plate to change angle

#### [ In the case of HC finisher ]

- Use not top-tray but stack-tray.
- For stack-tray, 20 or 30 sheets of paper will be ejected together and stacked properly.

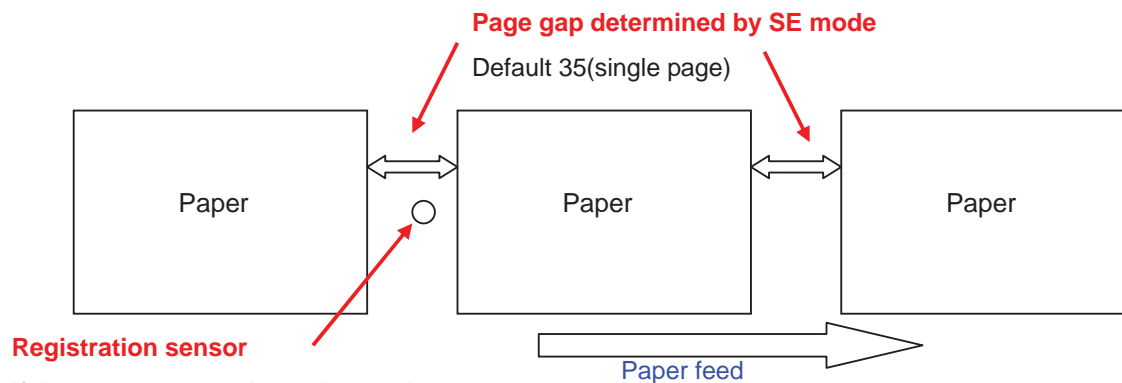
**Case** Error X02-210 occurs in case of paper feeding from multi-paper feed tray.

## Detection of error

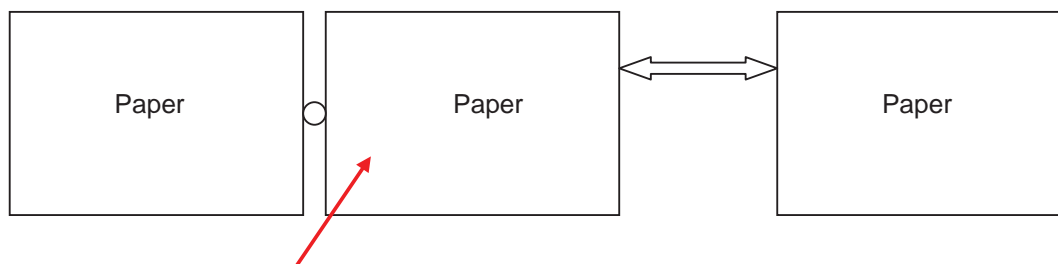
- Paper-end pass is delay at registration sensor.
- The trailing edge of paper does not pass the registration sensor within the specified interval based on the belt encoder pulse count.

## Solutions

- Confirm whether papers are fed smoothly from multi-tray.
- Adjust pressure and angle of pad at multi tray.
- Confirm whether warped post cards are used.
- Increase the value of **SE mode 5.9.1.30** (single page gap) from 35(default) to 45.
- Increase the value of **SE mode 5.9.1.31** (duplex page gap) from 60(default) to 70.
- These values can be set individually by the paper type and if the value is increased, the printing speed will get slow.



If the sensor cannot detect the gap between the papers, **X02-210 error** occurs.



Even if the paper feeding get delay by some reasons and the gap become narrow, the sensor can detect the gap if the gap is adjusted widely enough.

## Duplex unit cannot set smoothly

Item 12-1

### Cause of the problem

- The lock shaft of the front side of duplex unit is out of position.
- The lock plate cannot move smoothly.
- The screws mounting the guide shaft of the rear side of duplex unit are loosened.

### Solutions

- Check the movement of lock plate is smooth.
- Reform the front side lock shaft.
- Check the screws of guide shaft

Front side lock shaft



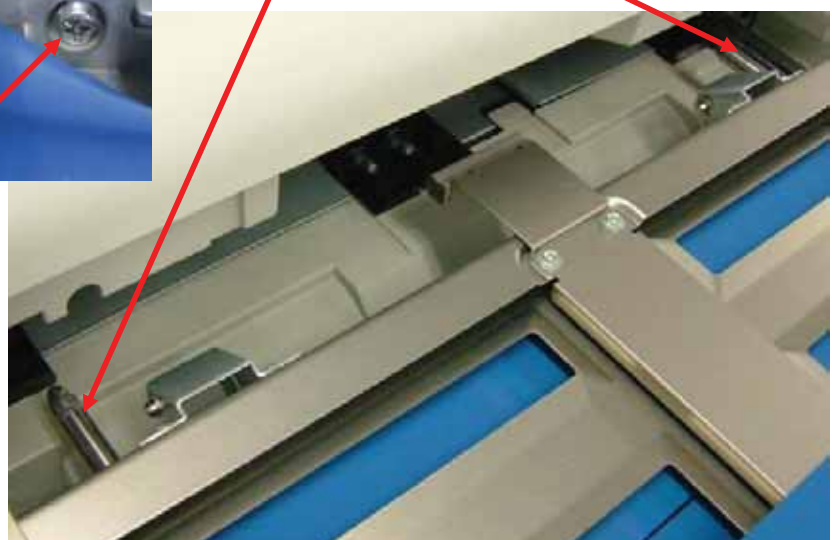
Lock plate



Gear

Screw

Guide shaft

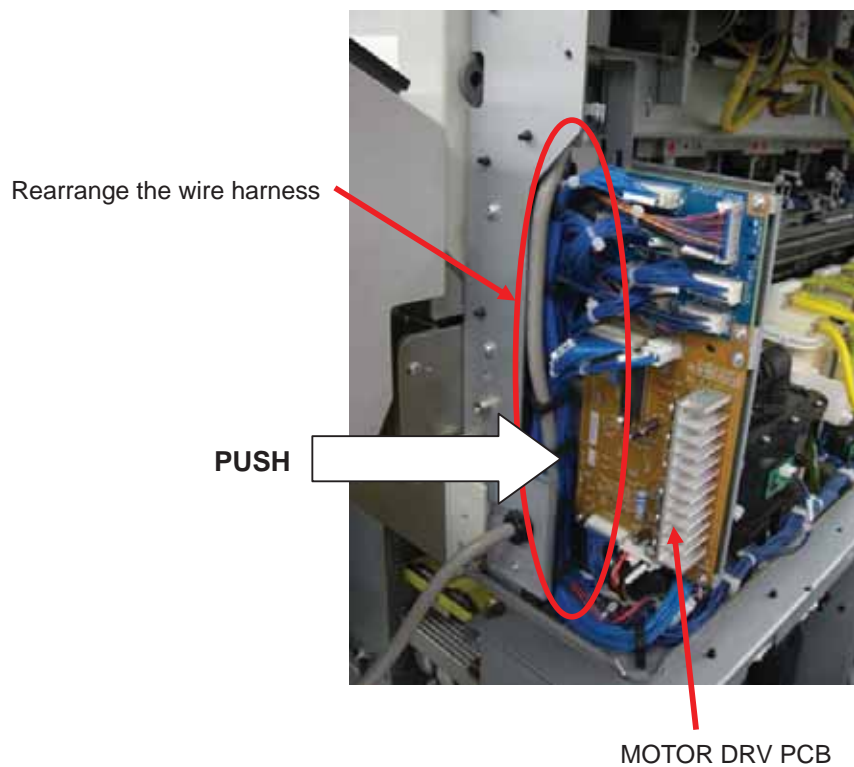


### Cause of the problem

- MOTOR DRV PCB is broken.
- "Belt encoder sensor" can not work correctly if the sensor soaks with ink.
- If the MOTOR DRV PCB is pushed by wire harness or rear cover, the PCB is broken easily.

### Solutions

- Replace MOTOR DRV PCB.
- Replace BP unit or Belt encoder sensor.
- You should rearrange the wire harness before you replace MOTOR DRV PCB.



### Phenomenon

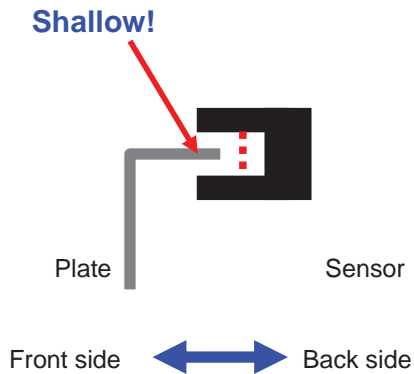
- This error is displayed that when "BP-unit" is moving up, "Ink-pan position sensor" has left from home-position.

### Cause of the problem (1)

- If the plate of position sensor is deformed, it has left from the sensor easily.
- The sensor plate does not cut the light path of the sensor

### Solutions

- Reform the plate of position sensor.

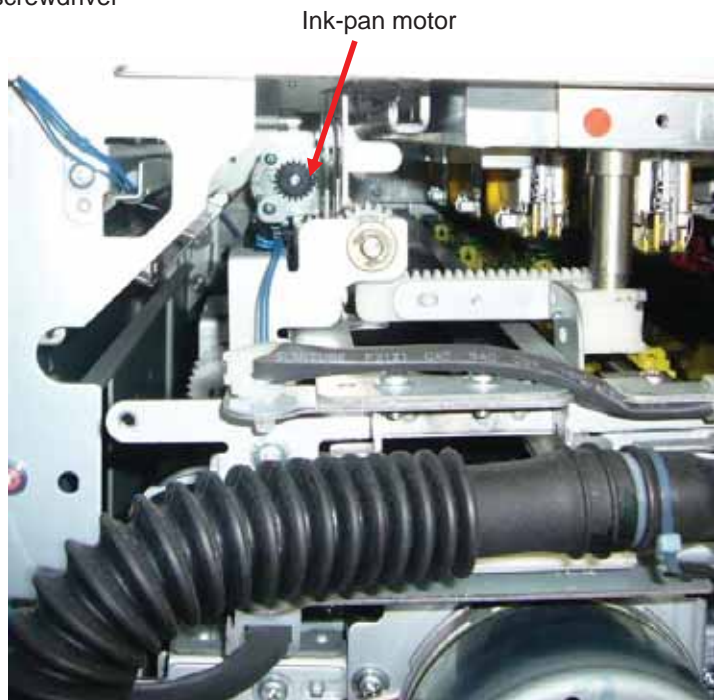


### Cause of the problem (2)

- If the screw of "Ink-pan motor" gets loose, it has left from the sensor easily.
- If the screw gets loose, **S04-300** error may occur depending on the situation.

### Solutions

- Check whether the screw of "Ink-pan motor" does not get loose.
- You can tighten the screw from back-side by a long screwdriver





**Cause of the problem**

- This error occurs easily when rotation of transfer-belt is not stable.
- Please confirm it according to the following.
- If the reverse surface of transfer belt is dirty with ink, S99-06x error occurs easily.

**S99-018** and **S99-066**: "Black color" trouble

**S99-019** and **S99-067**: "Cyan color" trouble

**S99-020** and **S99-068**: "Magenta color" trouble

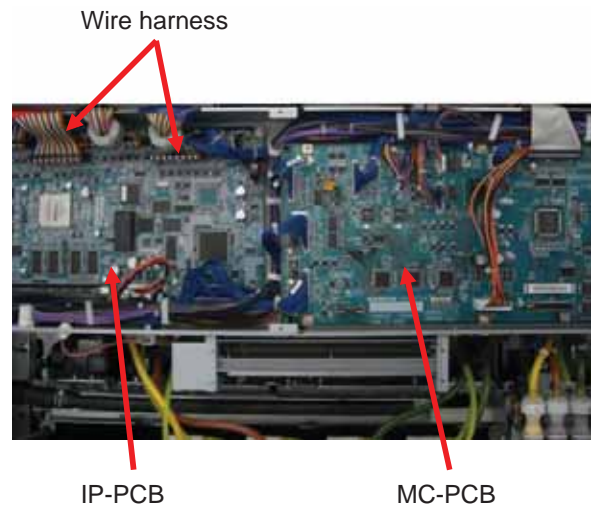
**S99-021** and **S99-069**: "Yarrow color" trouble

**Solutions****S99-018~021 error (HC5000,HC5500)**

- Step1) Check connection between IP-PCB and HDR-PCB
- Step2) Replace HDR-PCB of correspondence.
- Step3) Replace IP-PCB

**S99-066~069 error (HC5500)**

- Step1) Clean both side of transfer belt.
- Step2) Clean "Top-edge sensor".
- Step3) Check connection between IP-PCB and HDR-PCB
- Step4) Replace HDR-PCB of correspondence.
- Step5) Replace IP-PCB
- Step6) Replace MC-PCB



Top-edge sensor



### Cause of the problem

- S98-320 error is displayed when short circuit occurs in print head or HDR-PCB
- Print head number is displayed after this S98-320 error usually.

**Example: S98-320 K1 , S98-320 C1**

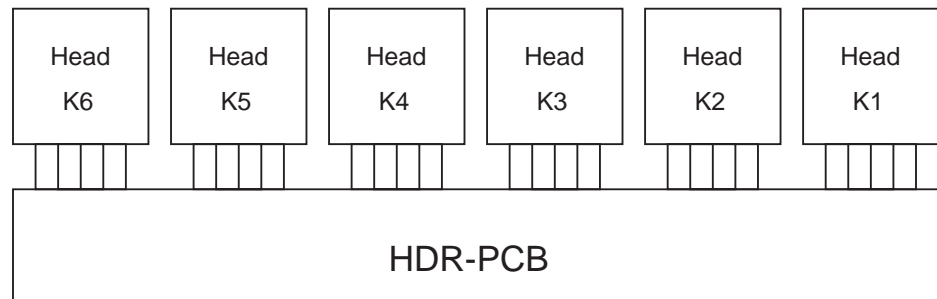
- Color of the damaged head is accurate, but print head number is not accurate.

### Solutions

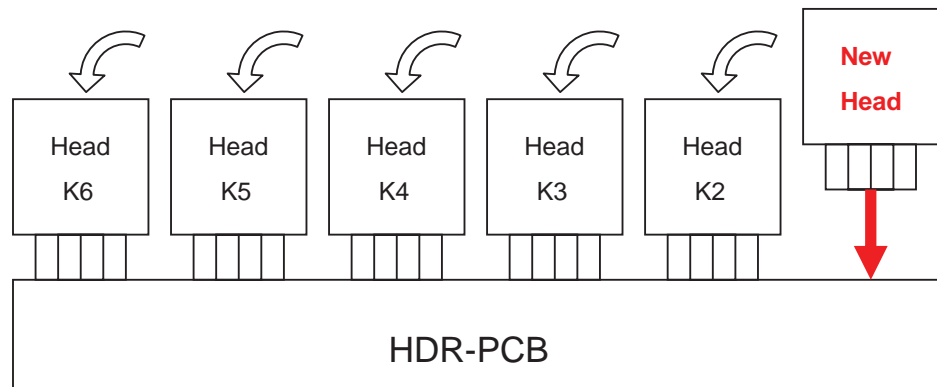
- Clean flat-cable between HDR-PCB and print head.
- Preparing new Print Head, and it connects to the HDR-PCB in turn.
- If the error is not displayed when connecting other print head with **specific "Print Head No"**, the print head has been damaged.
- If the error is still displayed though all print heads have been checked, it is necessary to replace HDR PCB.

**Example: S98-320 K1**

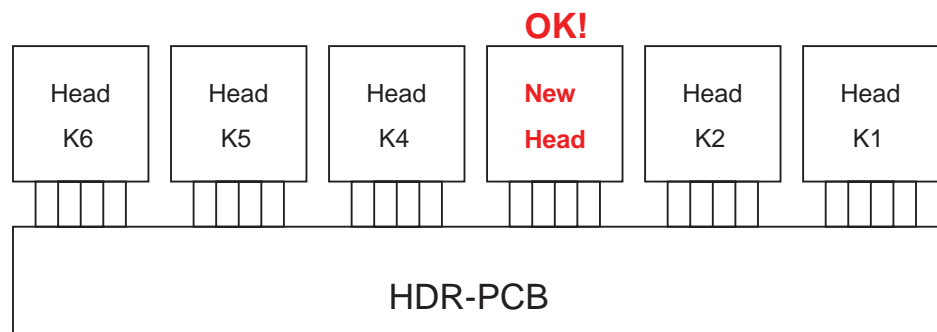
Displayed **S98-320 K1**



Connecting new Print Head in turn



You can check which print head has been damaged.



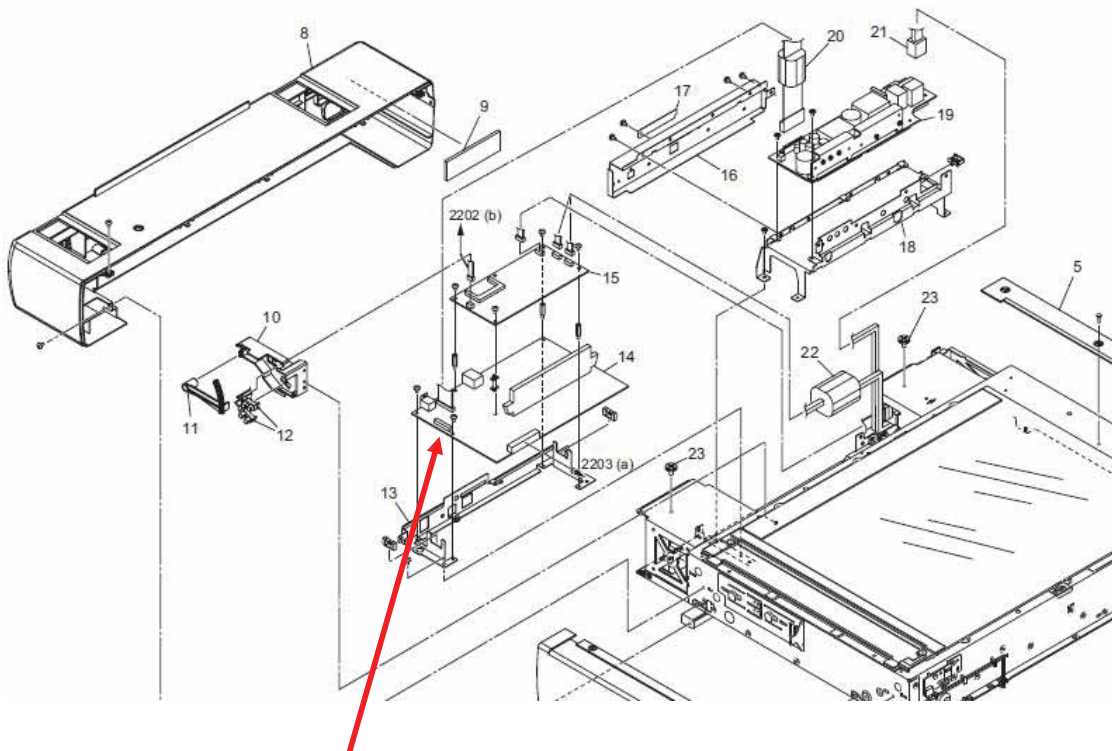


### Cause of the problem

- R98-142 error occurs when data is broken in EEPROM at optional scanner.
- If the error displayed on touch panel, please reset the data by following method.

### Solutions

- 1) Run SE mode for HS2000 on the touch panel.
  - 2) Perform **SE mode 385** and change a set value from "0" to "1".
  - 3) Reboot the HS2000.
- If the error has still occurred after executing this method, it is necessary to replace scanner PCB(CS MAIN PCB).



CS MAIN PCB 033-50500-803

- (1) Unpack and assemble HC finisher or Paper receiving tray or HC stacker.
- (2) Unpack and assemble HC printer.
- (3) Unpack the Controller.
- (4) Connect HC finisher and Controller with HC printer and download the firmware program to the machines.
- (5) After finish sending the firmware program into HC controller will shut down automatically.
- (6) Disconnect the controller then download the controller firmware program individually.

----- The following works can be performed at the same time of program downloading .

- (7) Unpack and assemble the scanner stand.
- (8) Set the scanner and AF unit on the scanner stand.
- (9) Set the ink cartridges to the HC printer.
- (10) Adjust the height of HC finisher with HC machine.

----- Clean up the packing materials until the program download are finished.

- (11) Connect the Scanner with the Controller and release two locks of scanner.
- (12) Perform the test printing.

**It needs about 3.0 hours for installations of “Printer + HC finisher + Scanner”.**  
**It needs about 2.5 hours for installations of “Printer + HC stacker + Scanner”.**

Initialization procedure of IS700C is different from other controllers as follows.

Therefore please do not mix up these procedures.

## [ For IS700C series ]

### Initialization of network setting, scanner setting and touch panel calibration setting

Keep pressing the RESET switch until there is a beep sound once.

Above settings will return to the default condition.

### Initialization of HDD

Keep pressing the RESET switch until there is a beep sound twice.

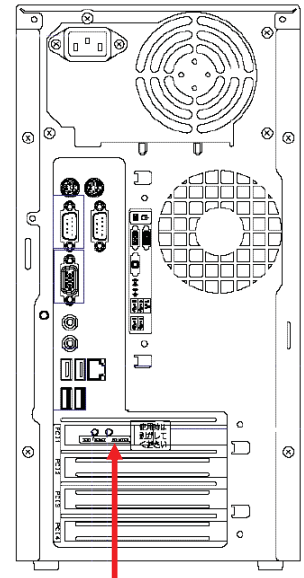
After release from the RESET switch, there is a beep sound third.

And then keep pressing the RESET switch again until there is a beep sound fourth.

After that, HDD is initialized and it will be in a factory- default state.

- 1) Keep pressing the RESET switch for a few seconds
- 2) Beep sound twice
- 3) Release from the RESET switch
- 4) Beep sound third
- 5) Keep pressing the RESET switch for a few second
- 6) Beep sound fourth
- 7) Release from the RESET switch

Back of controller



RESET switch

## [ For PS7R and HC3R series ]

### Initialization of network setting, scanner setting and touch panel calibration setting

Keep pressing the RESET switch until there is a beep sound twice.

Above settings will return to the default condition.

By pressing the switch, there is a beep sound.

### Initialization of HDD

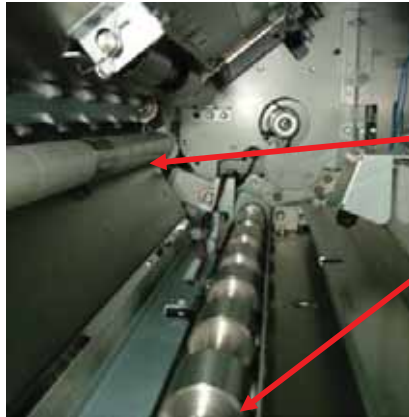
By keep pressing the RESET switch for three seconds, there is a beep sound twice.

And then keep pressing the RESET switch for one second again.

After that, HDD is initialized and it will be in a factory- default state.

- 1) Keep pressing the RESET switch for three seconds
- 2) Release from the RESET switch
- 3) Beep sound twice
- 4) Keep pressing the RESET switch immediately for one second

- Clean the rollers.
- Clean the sensors.
- Clean the side registration unit (CCD unit).
- Confirm whether Pickup rollers and Stripper pad are not worn out.
- Confirm whether there is no miss fire or miss direction by **SE mode 9.1**.
- Confirm whether the first print paper is fed straight.
- Clean the top and reverse surface of transfer belt.
- Confirm whether the duplex unit can open and close smoothly.



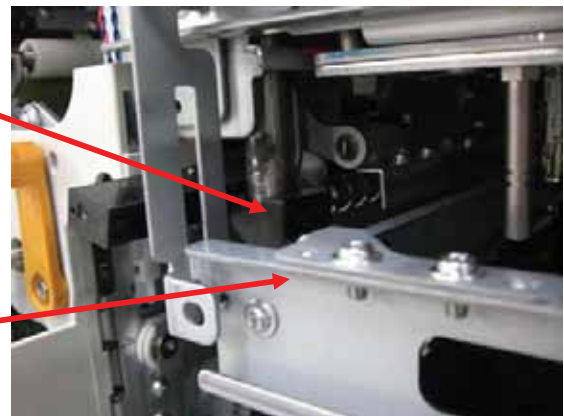
Clean the rollers



- Check whether the slide hole on the maintenance unit has moderate grease.
- If this part does not have any grease, S03-201 error occurs easily.

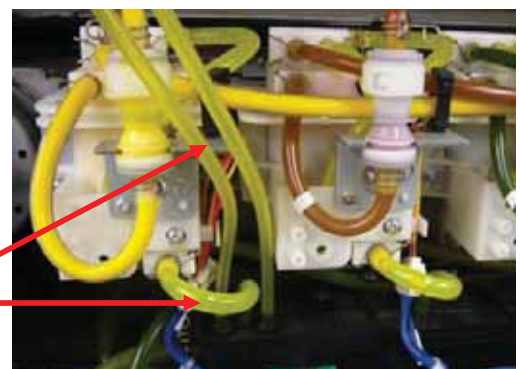
Slide hole

Maintenance unit



- Check whether the movement of stripper shaft in multi tray unit is smooth
- Confirm whether Print-heads take opposite position with Suction Head straight.
- Check whether Ink have never flowed from reservoir to overflow tank.

Ink does not usually flow in this tube



## Image adjustment

There are three ways to adjust 4 colors image position as follows.

**1) Image adjustment with scanner and PC**

**2) Manual image adjustment with PC**

**3) Temporary image adjustment on HC5500**

After replace Print Head, it is usually necessary to adjust image position.

If you know how to use "Temporary image adjustment", it is needless to bring PC and scanner to your customer.

In next page, "Temporary image adjustment" is explained as three steps.

1) B2B image adjustment

2) Vertical image adjustment

3) Over lap of Head adjustment

There is a knack to use it, but if you can use this function well, it is helpful for you

## Temporary image adjustment method (manual adjustment) Item 21-1

[ B2B image adjustment ]

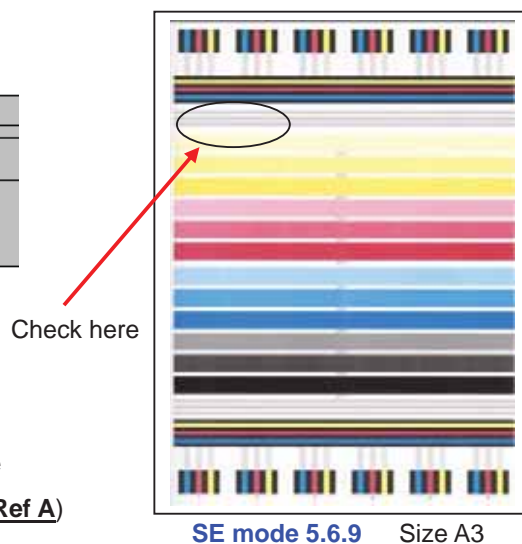
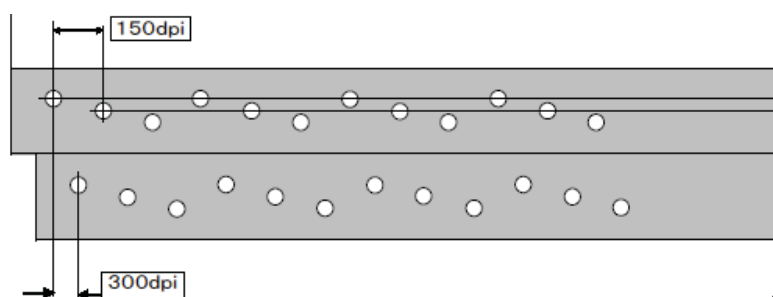
This function is available on "HC5500 firmware **Ver2.02**" or later.

In addition, controller version is required the following version or later.

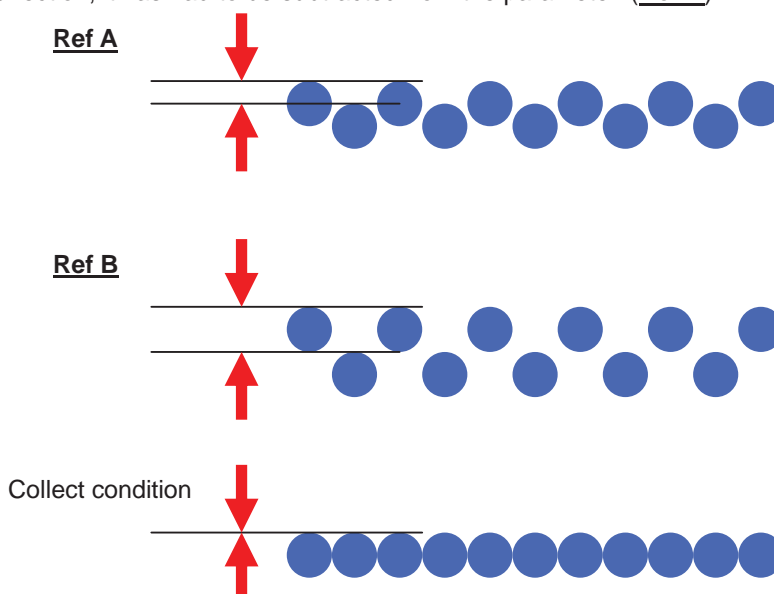
**HC3R-5000; Ver1.30**    **PS7R-9000; Ver3.30**

### [ B2B image adjustment ]

- Two 150 dpi Print Head compose a 300 dpi Print Head.
- Since there is an actual distance between these two parts, in order to print in the same position, it is necessary to drive two parts with a suitable time lag.
- If the time lag is not suitable, the image will become like a wavy line and it needs adjustment.



- Perform **SE mode 5.6.9** and get the print.
- Measure the distance between the lines of dots and decide the value to add to the parameter by **SE mode 8.5.1.7.x (x: Head position)** (**Ref A**)  
(The diameter of a dot is equivalent to 16 points.)
- Add that value to the parameter on try.
- If the image shifts opposite to assumed direction, it has had to be subtracted from the parameter. (**Ref B**)



### [ Horizontal image adjustment ]

- You can not adjust it on the machine .

## Temporary image adjustment method (manual adjustment) Item 21-2

### [ Vertical image adjustment ]

This function is available on "HC5500 firmware **Ver2.02**" or later.

In addition, controller version is required the following version or later.

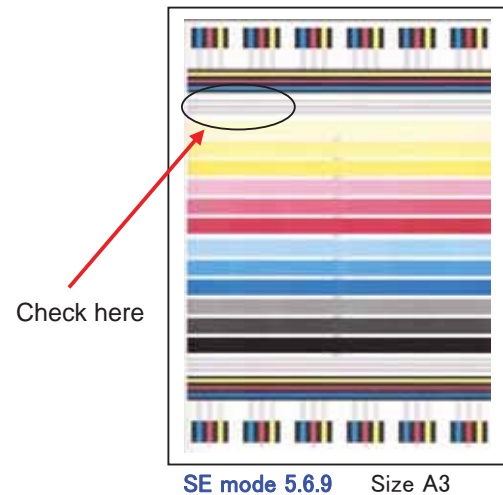
**HC3R-5000; Ver1.30**     **PS7R-9000; Ver3.30**

### [ Vertical image adjustment ]

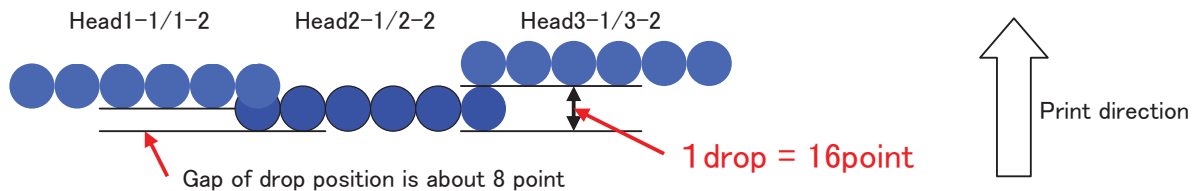
Point

#### SE mode 5.6.9

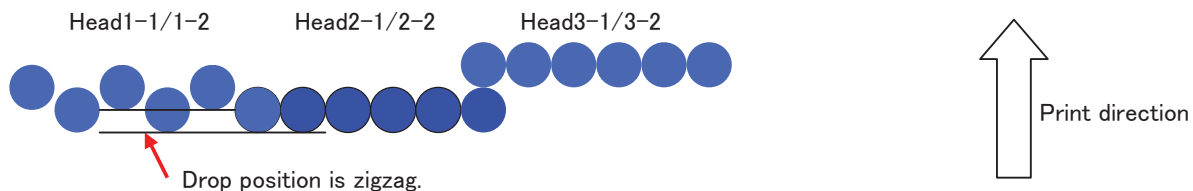
- Move for 1 drop when input 16 point.
- Move for head direction when input numerical value of minus.
- Input numerical same value that is gap quantity.



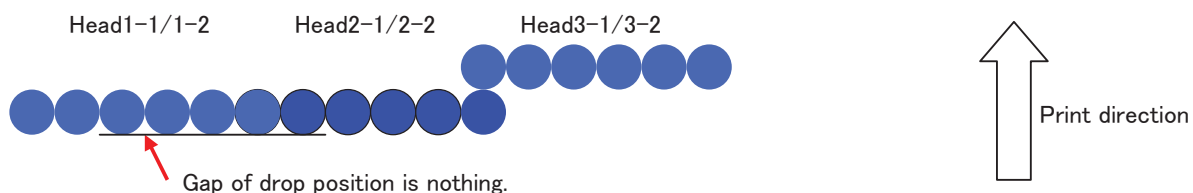
Case of **Cyan 1 head**



First, Input value that is joined with original value and 8 by **SE mode 8.5.1.7.13**



Next, Input value that is joined with original value and 8 by **SE mode 8.5.1.7.14**



# Temporary image adjustment method (manual adjustment) Item 21-3

[ Over lap of Head adjustment ]

This function is available on "HC5500 firmware **Ver2.02**" or later.

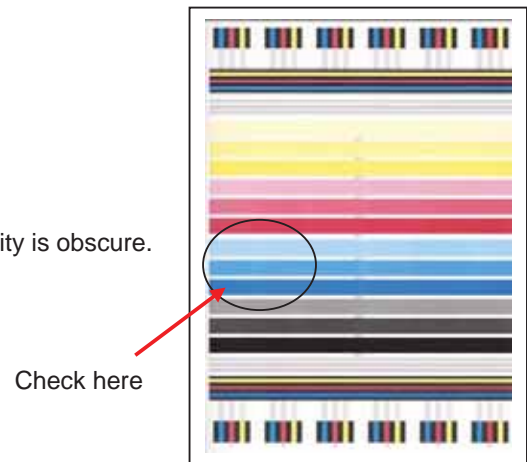
In addition, controller version is required the following version or later.

**HC3R-5000; Ver1.30**    **PS7R-9000; Ver3.30**

## [ Over lap of Head adjustment ]

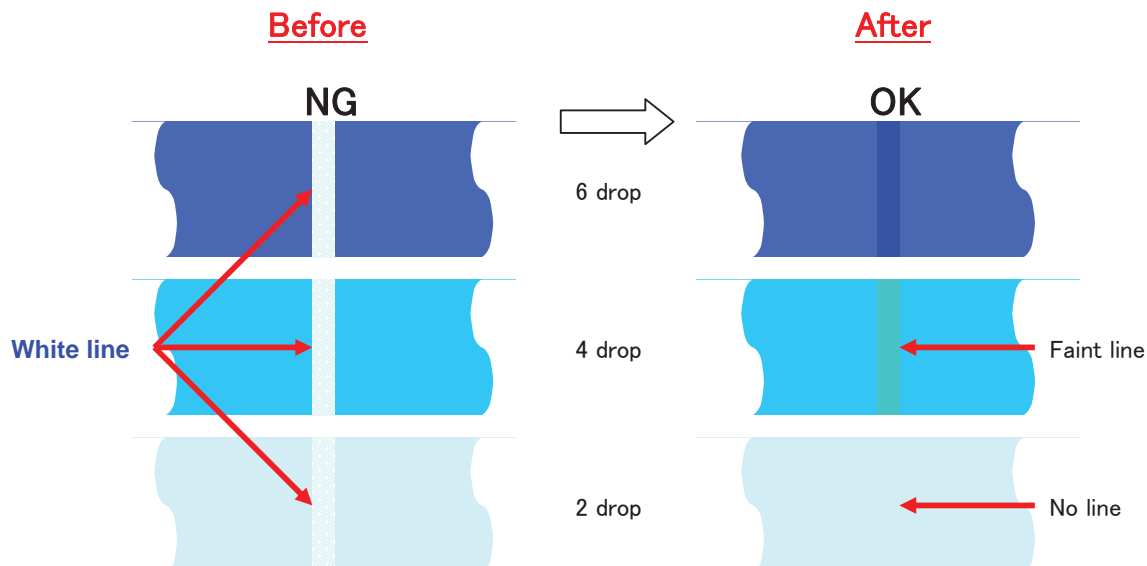
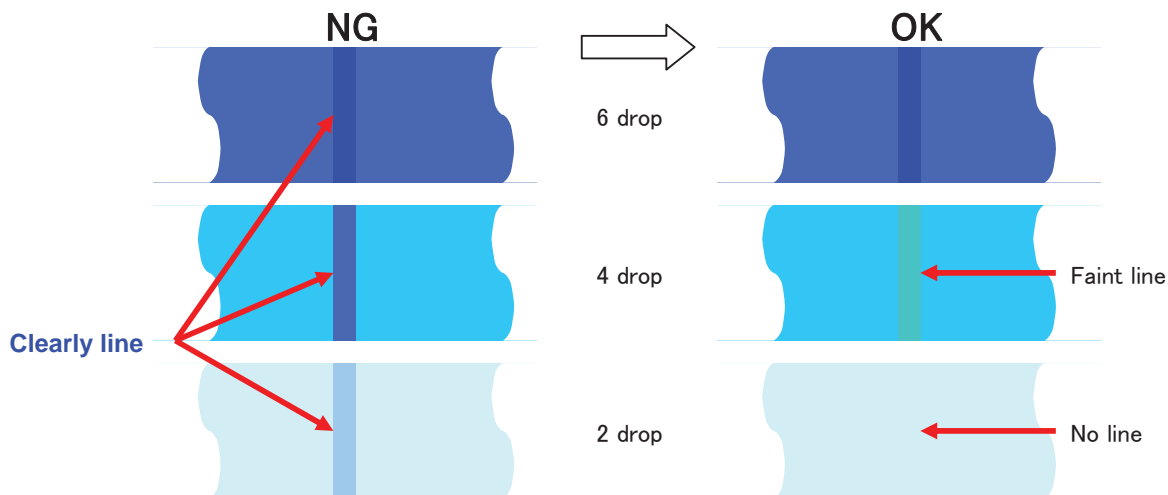
Point

- Over-Lap is increased when input numerical value of minus.
- Input by 20~30 points. If input numerical value is small, change quantity is obscure.
- Perform **SE mode 8-5-1-5-x (x: Head position)**
- Adjustment for 4 drops is enough for normal papers



SE mode 5.6.9    Size A3

Adjust about faint line with 4 drop on and no line with 2 drop on





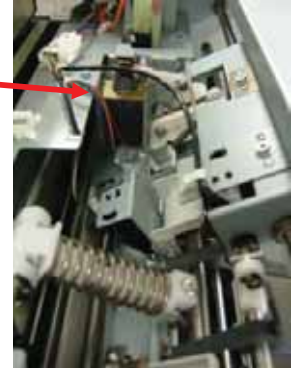
## HC Finisher maintenance

- SE mode of HC finisher is in menu **8-10(Finisher test)**.
- This menu is displayed when HC finisher is connected with printer.
- If you changed setting of HC finisher by SE mode, it is necessary to restart printer to reflect setting.
- Value of setting is memorized on Finisher control PCB.

### Cause of the problem

- Confirm whether Sub-paddle or Main-paddle has not been worn out.
- Confirm whether Sub-paddle is low position when stacked papers in stack-tray are less than 50 sheets. (Ref-A)
- Confirm whether Sub-paddle is lowered by Paddle clutch for every paper. (Ref-B)
- Confirm whether movement of tamper is smooth. (Ref-C)
- Confirm whether position of keep paper in paper tray is right.
- Confirm whether the movement of the end-wall is smooth.

Solenoid



(Ref-A)



### Up position

The solenoid is turned off when more than 51 sheets of paper are stacked.

Confirm the movement of the solenoid by **SE mode 012-052** and **012-053**.



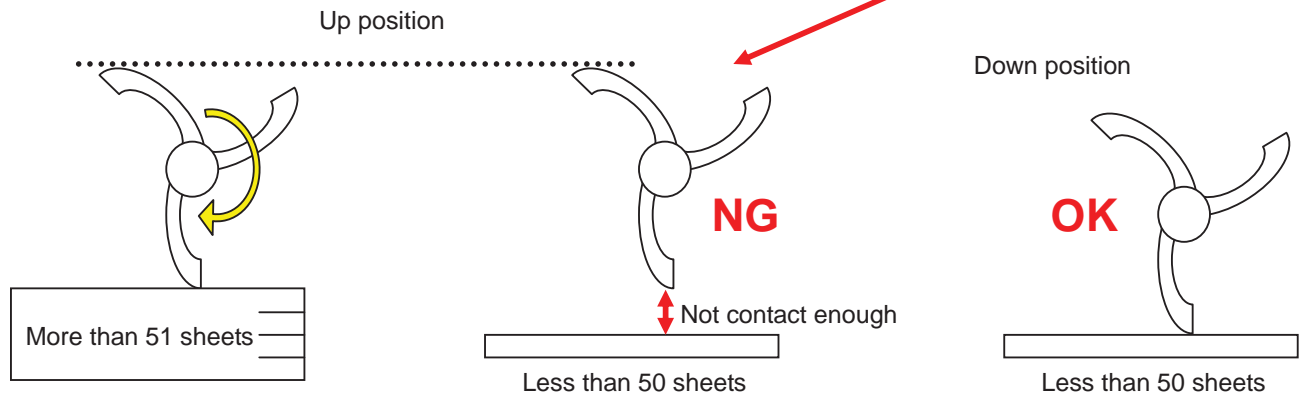
Sub-paddle

### Down position

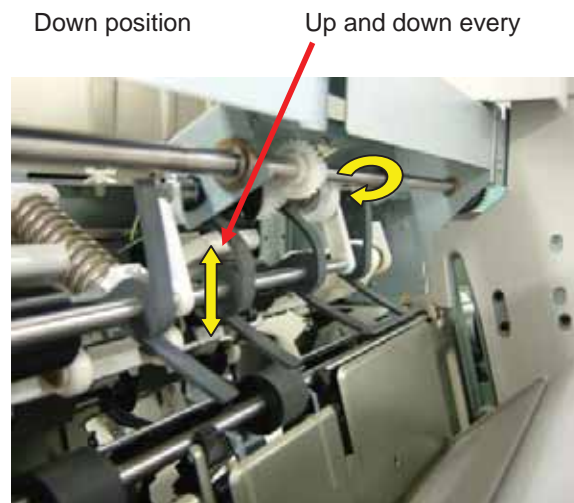
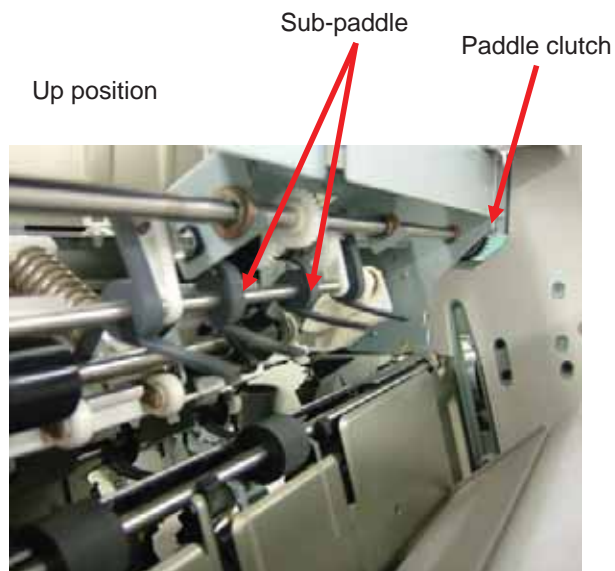
The solenoid is turned on when less than 50 sheets of paper is stacked.

Confirm the movement of the solenoid by **SE mode 012-052** and **012-053**.

If the solenoid does not work, Sub-paddle cannot contact papers properly.



(Ref-B)

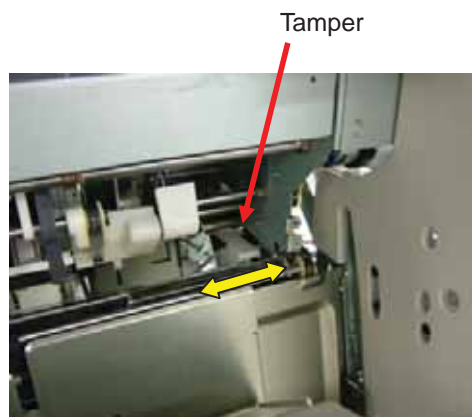


If **Sub-paddle** does not move up and down properly, contact with a printout and paper jam occurs easily.  
Confirm whether paddle clutch and Sub-paddle home sensor work properly.

In addition

If Sub-paddle does not move smoothly (does not stop at the same position every time), leading paper into tamper area is prevented by Sub-paddle.

(Ref-C)



If tamper dose not move smoothly, papers cannot aligned properly.

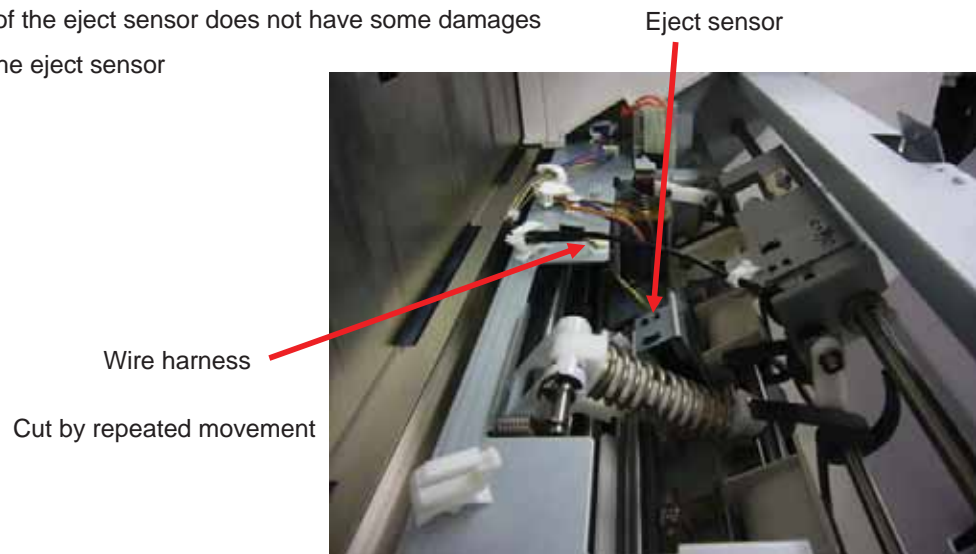
Clean the tamper and tamper motor or replace the tamper motor and timing belt

If the tamper position dose not fit with the paper size, adjust the tamper home position by **SE mode 763-225**.

### Solutions

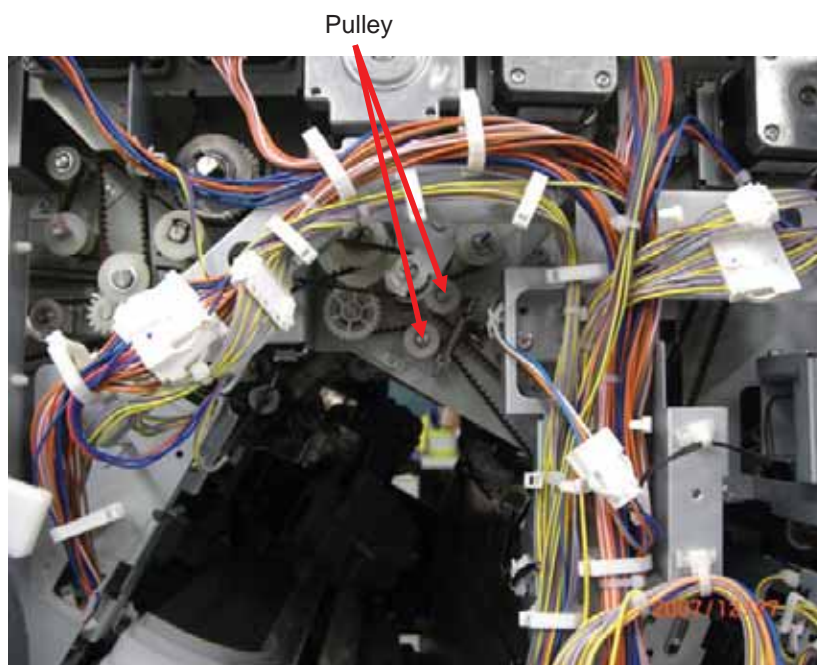
#### A paper reaches to eject sensor

- Check whether wire harness of the eject sensor does not have some damages
- Replace the wire harness of the eject sensor



#### A paper does not reach to eject sensor

- If a paper does not reach to the eject sensor, it is almost displayed **X19-711 error**
- Check whether the pulley and belt which move the exit roller is smooth.
- There are some pulleys on the mechanism; the belt is a little long.
- In case the movement of these pulleys is not smooth, the exit roller can not eject a paper to eject sensor in time.
- Clean the inside of the pulley.



## Cause of the problem

- If one-way pulley slips, a paper does not transfer by belt in time.
- If transportation of paper is not smooth, paper jam error sometimes occurs in the HC finisher.

## Solutions

- Replace One-way pulley and transfer roller.

Back side of Finisher Transfer Unit

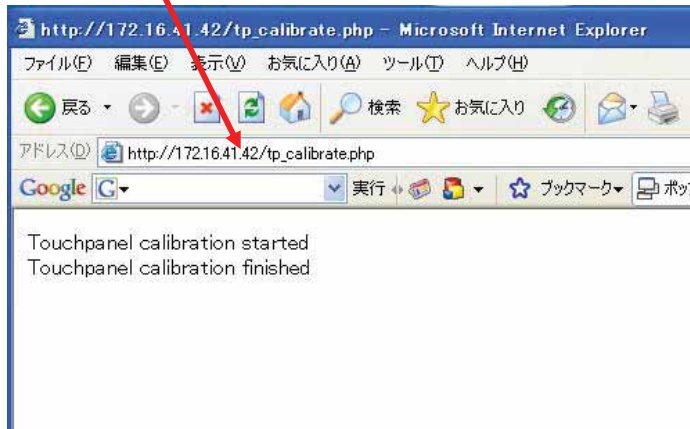
One-way pulley





- It is required to calibrate the touch panel display if the touch panel does not respond or response is not good.
- In PS7R model, there is a pointer on the display, but in IS700C model, there is not a pointer on it.
- Therefore you can not confirm if the touch panel display works normally.
- You can adjust the touch panel on the display if response of the touch panel is not good.
- It is required to calibrate by network if the touch panel does not respond at all.

1) Enter **http://(IP address of the controller)/tp\_calibrate.php** in the URL input area on the web browser.



2) The following screen is displayed



### Reference

#### Ways for calibrating the touch panel display

##### PS7R or HC3R (2 ways)

(1)Adjust on touch panel (2)Initialization for controller

##### IS700C (3 ways)

(1)Adjust on touch panel (2)Initialization for controller (3)Using with the web browser

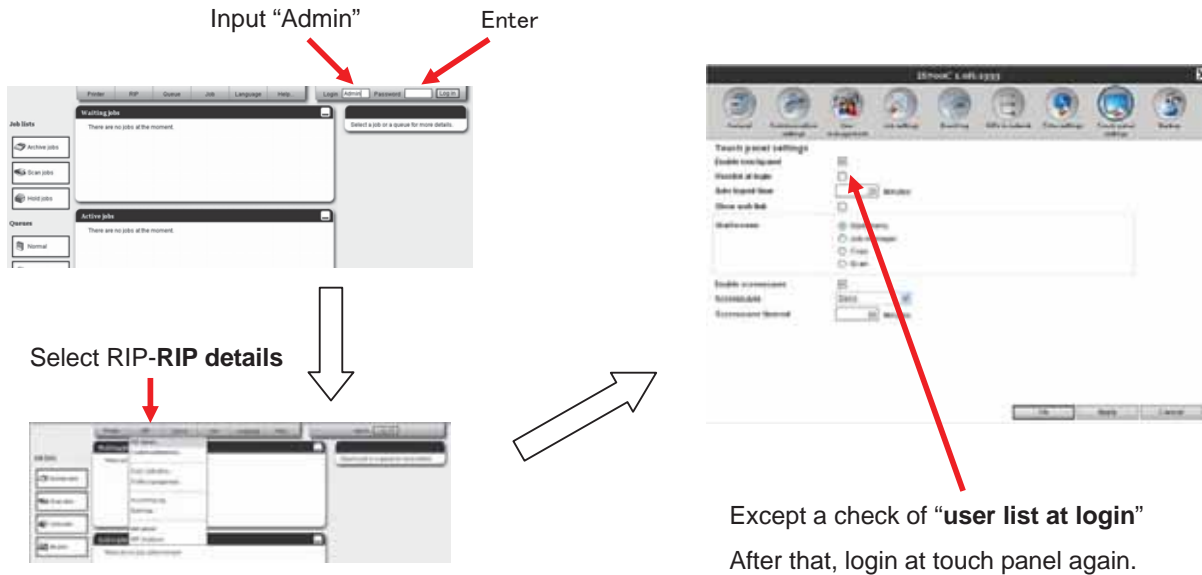


Operation procedure of SE mode is as follows

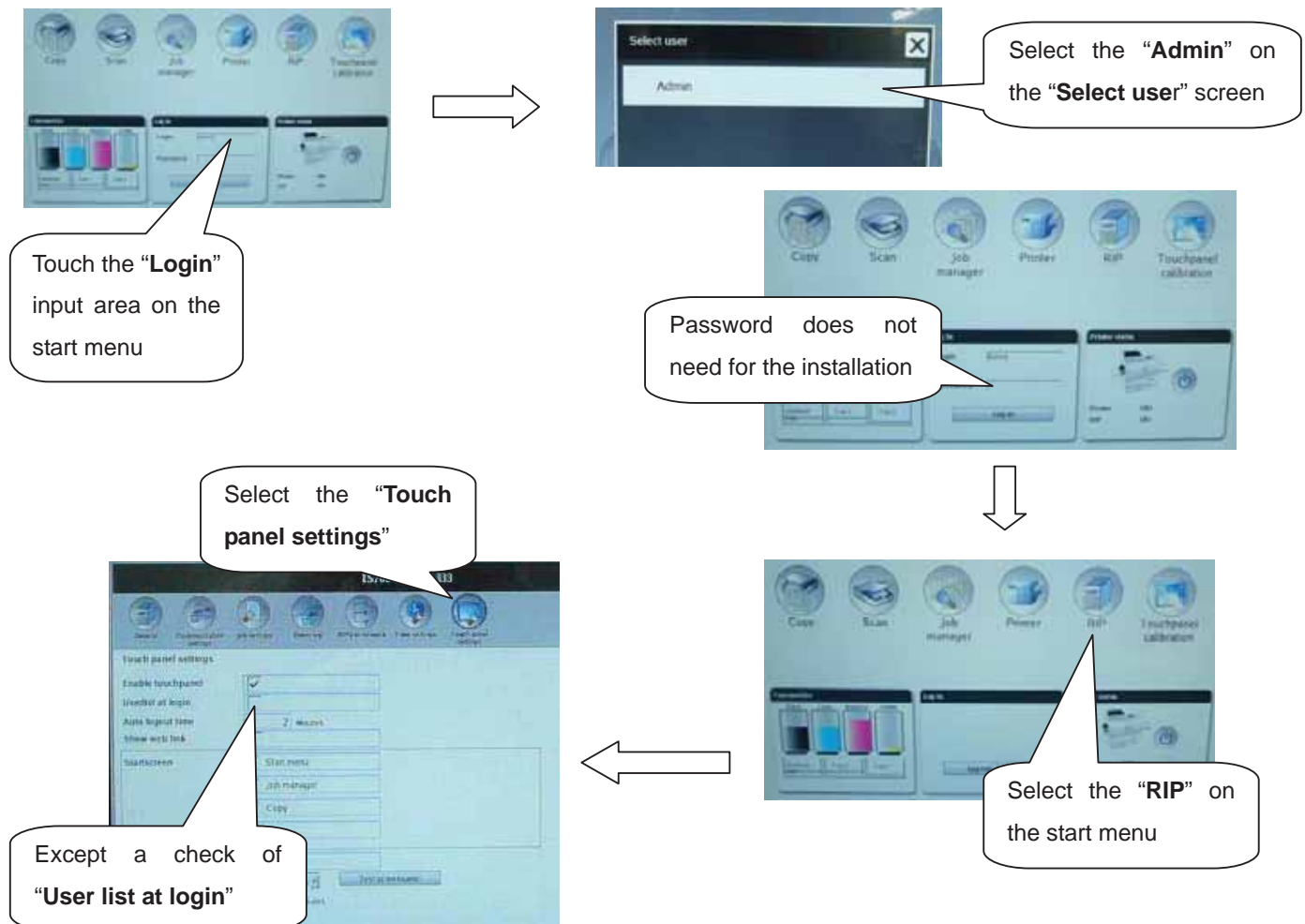
**Step1:** An indication procedure of the text entry screen. There are two ways to change the screen setting.

This operation is to be displayed the text input area on the touch panel after touch the “Login” input area on the start menu of IS700C.

**Case** It is ordered by RISO Console



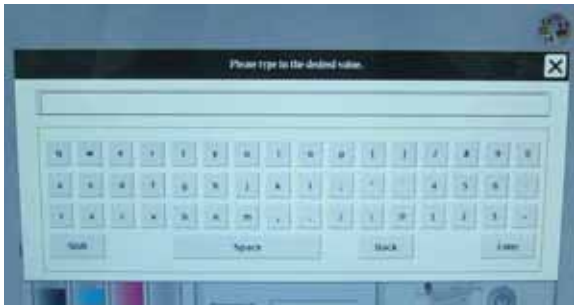
**Case** It is ordered by Touch panel





**Step2: Startup procedure for Service mode on Touch-panel of IS700C**

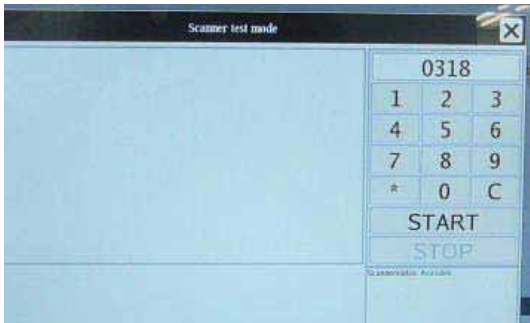
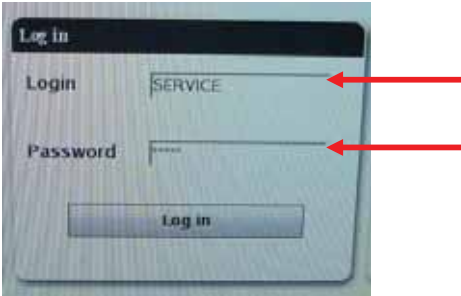
It is needed to change the screen setting on “Step 1” to display the text entry screen as below.



“The Text input area” is displayed after touch the “Login” input area on the start menu of IS700C.



Login: It is inputted “SERVICE” in capital  
Password: It is inputted “ASTU~” in capital



SERVICE screen  
When “HS2000” is installed, it is needed to change setting of scanner lock  
No384 “1”(default) → “0”

1. Copy the program file on the CD to USB memory.

File Name: upgrxxx.ps

2. Plug the USB memory to USB port on IS700C and turn ON the IS700C by pressing the power button on the unit.

\*Make sure not to turn OFF the power until the firmware upgrading is completed.

\*It will take 10 to 15 minute to upgrade, and it reboot automatically.

\*Do not remove the Dongle. (If Dongle is not set, upgrading can not be completed.)



3. After completed the upgrading of IS700C, "RIP UPGRADE 1.XR-1333.xx done" will be printed out as below.

\* No paper comes out if IS700C is not connected with Printer correctly.

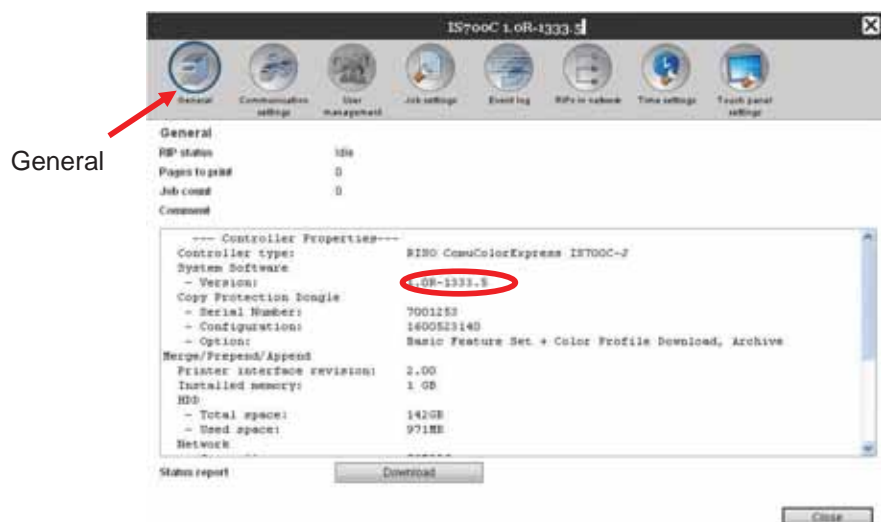
\*There is no problem even If IS700C has not printed.

\* It remains on list of Finished Jobs as "Status: Cancel".



4. Firmware version can be confirmed from Touch Panel.

"RIP" to "General "



5. Every time “upgrade done file” is produced to the USB memory after download the program.

Case1) When you upgrade firmware in the USB memory with new one, it is necessary to delete two files both “upgr file” and “upgrade done file” before copy new program file.

Case2) When you update firmware continually by using same USB memory, it is necessary to delete “upgrade done file” before copy new program.

If “upgrade done file” have still stayed in the USB memory, IS700C can not start to update.

“upgrade done file”



6. After download the program, touch-panel calibration screen is displayed.



## Uninstall

**Step1:** Delete IS700C icons in “Printers and Faxes folder”.

Delete all IS700C icons

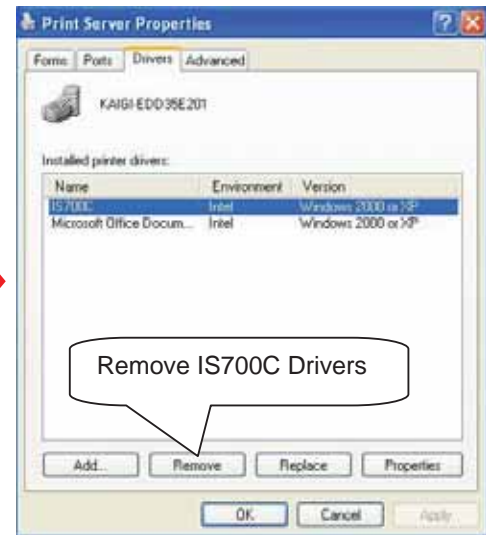


**Step2:** Remove IS700C Drivers in “Print Server Properties”  
(File – Server Properties – drivers)

Server Properties



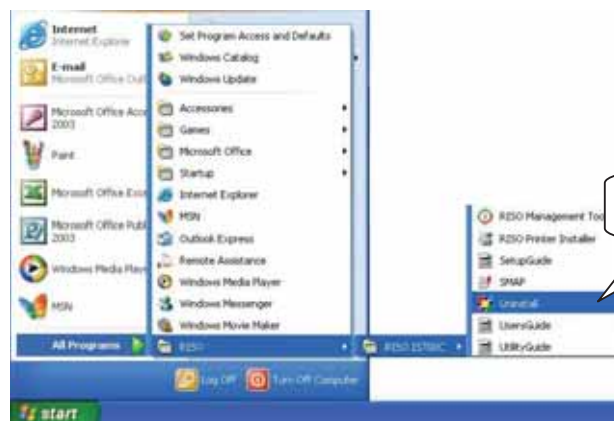
Remove IS700C Drivers



**Step3:** Uninstall IS700C utilities.

(All Programs – RISO – RISO IS700C – Uninstall)

Select “Uninstall”



## Install

Install IS700C Client Software(Printer Driver) with CD-ROM.









HC Series Troubleshooting  
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**RISO KAGAKU CORPORATION**