RICOH

RICOH Ri 1000

Troubleshooting Guide

Issue/ Error	Possible reason	Countermeasure
1) Fuzzy blurry prints	Table height is to low	For most T-shirts the indicator below the height adjustment knob on the table should be set to 0 or near 0. The best printing is achieved when the print head is 1.5mm away from the printing surface
	Too much ink (oversaturated) causing bleeding (mostly for white or light shirts without pretreat	Check the settings in the RIP - especially rendering intent (perceptual is default and should be used in most cases). Make sure the ink set and profiles are correct. Profiles meant for 600 x 600 dpi will have to much ink if 1200 X 1200 dpi output is selected
	Nozzle check shows all nozzles but some areas show deflection. (See section 6.1 Nozzle check)	perform head clean or cleans and recheck nozzle to see if the deflection is gone
	For dark shirt with a white under base- poor pretreat - Not enough pretreat can make the white can CMYK areas of print to appear dull or fuzzy. Especially if a section of the print appears sharp and another section appears dull or fuzzy	See section 5 user manual
	Head alignment is off	Perform head alignment procedure (see section 7.1) make sure to rule out the above reasons before this adjustment
2) Horizontal banding - thin horizontal lines across the entire shirt	Nozzles missing - if nozzle check shows some nozzle missing	Perform head cleans until the CMYK nozzles are 100%
	Nozzles all there but some showing minor deflection	Check table height - the effect of any deflection will be exaggerated if the printing surface is too far away from the head - For most T-shirts the indicator below the height adjustment knob on the table should be set to 0 or near 0. The best printing is achieved when the print head is 1.5mm away from the printing surface

		Perform head cleans until the deflection is reduced
	Nozzles 100% and little to no deflection	Perform table alignment procedure (see section 7.2)
3) Horizontal banding - thick horizontal lines across the entire shirt	Nozzles 100% - appears in solid colors of dark or gray - bi directional banding - has to do with the colors laying down in different sequence depending on which direction the carriage is traveling	Uncheck the bi directional box in the RIP.
	Nozzles 100% - appears in solid colors - the color is inconsistent in the scanning direction of the carriage. This is caused by the different drops of CMYK not combining consistently	This can show in Speed Quality mode for CMYK - Print in Fine Quality mode for CMYK - if still persists - print in 1200 X 1200 dpi (Kothari RIP) or Superfine
4) Several nozzles out – improves not at all or just a little with normal and strong head cleans	During an initial ink fill - air has been introduce to the head or after a head clean cleaning fluid or air was inadvertently pushed into the head by the cleaning applicator	Let the printer sit overnight which will give the air a chance to settle – after the nozzle should be good
5) Dark shirt prints look dull	White nozzles 100 % or near 100%. - In adequate amount of pretreat on shirt - this can cause the white ink to mostly sink into the shirt	Increase the amount of pretreat being sprayed on the shirt
	White nozzles 100 % or near 100% but look dull. - White ink has settled	If the white cartridges have not been agitated per instructions - will need to agitate the white ink cartridges (2 min). Then perform 3 to 4 strong head cleans - this will replace most of the settled ink
	Missing many nozzles on one or both white heads	Perform head cleans to recover the nozzle to 100% or near 100%
6) Light shirt looks too dull	Nozzle is 100% - Wrong output profile is selected	If printing in 600 X 600 Dpi and using a profile meant for 1200 X 1200 DPI then the shirt will look dull
7) Cartridge reads 0% but was just at a high % (example 65%) at the previous operation. (before	Temporary loss of Comm caused cartridge reading error	Pull out the cartridge that reads 0%. The status should change to NC and the cartridges not loaded message will appear in the status bar. Put the cartridge back in and the % reading should go back to normal. If the %

	printing or before cleaning)		still reads 0 after reinserting the cartridge then turn the printer off and turn it back on and the cartridge will read correctly
8)	**Cartridge reads 0% but was just at a high % (example 65%) at the previous operation. (before printing or before cleaning)**	Ink pump has timed out and ink was not detected in the damper and the chip on the ink cartridge will be written to 0% . In this case, the cartridge will remain reading 0% even after a restart of the printer - possibly accompanied by an **Ink pump time out error**	1) Release the carriage and make sure that the feeler for that channel is not obstructed (see Detail below) 2) If no obstruction for the feeler then check the ink line for that channel to ensure the is no kink or possible air leak (See detail below) 3)If this continues to occur then check the connections to the ink supply unit - the ink supply unit may have to be replaced as the ink pump may be failing (See Detail below)
9)	**During a fill cycle - filling with cleaning fluid or filling with ink. The sequence completes but one or more of the cartridges % change is low (less than 5%) and the lines to appear correct (if ink to cleaning fluid - ink is still present is some lines, if cleaning fluid to ink then ink has not completely filled in some lines)**	Temporary loss of Comm caused a channel to not completely fill	To complete charging you can either - perform the opposite charging operation - (if ink - fluid was initially attempted then perform fluid to ink, put ink carts back or if fluid to ink was attempted then perform ink to fluid). After the charging is complete. Perform the original charging operation. OR - You can reset the flag in the service menu to the ink stage the printer was in prior to performing the operation. The states you can choose are 1) After ink charging 2) After cleaner charging 3) After ink with out White - Choose the stage the printer was in prior to performing the fill cycle (for example if it was full of ink you can set this to after ink charging) then you can repeat the charging operation. (See detail below)

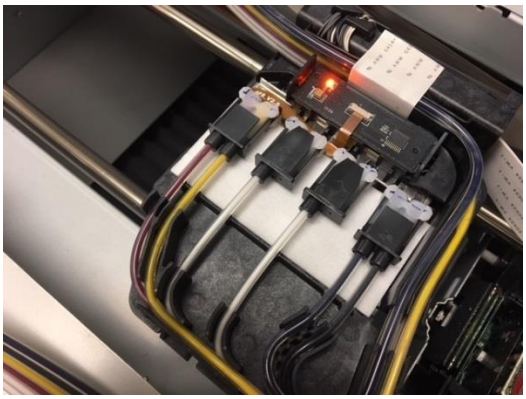
Detail for 8)

If the printer has written a cartridge to 0% erroneously and the cartridge cannot be recovered (keeps at 0% even after restart)

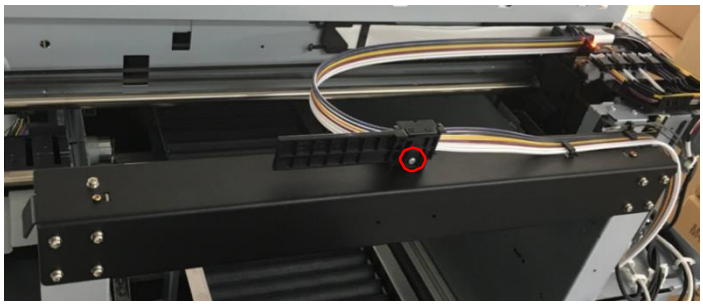
Then check the carriage to make sure the feelers that indicate if a damper or tank inside the carriage that exists for each channel are full are obstructed from moving correctly.

Feeler - should be free to move – there are six of them one for each channel MYW1W2CK

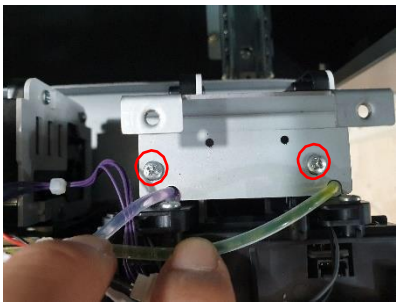
If no obstruction - check the ink line for possible kinks or leaks. NOTE: normally this will not be a problem but if there was recently some parts replaced – the carriage – the ink supply unit – or the tubing then check the connections.



Connections at the carriage



Check for any kinks in the lines



Check tune connections at the ink supply unit

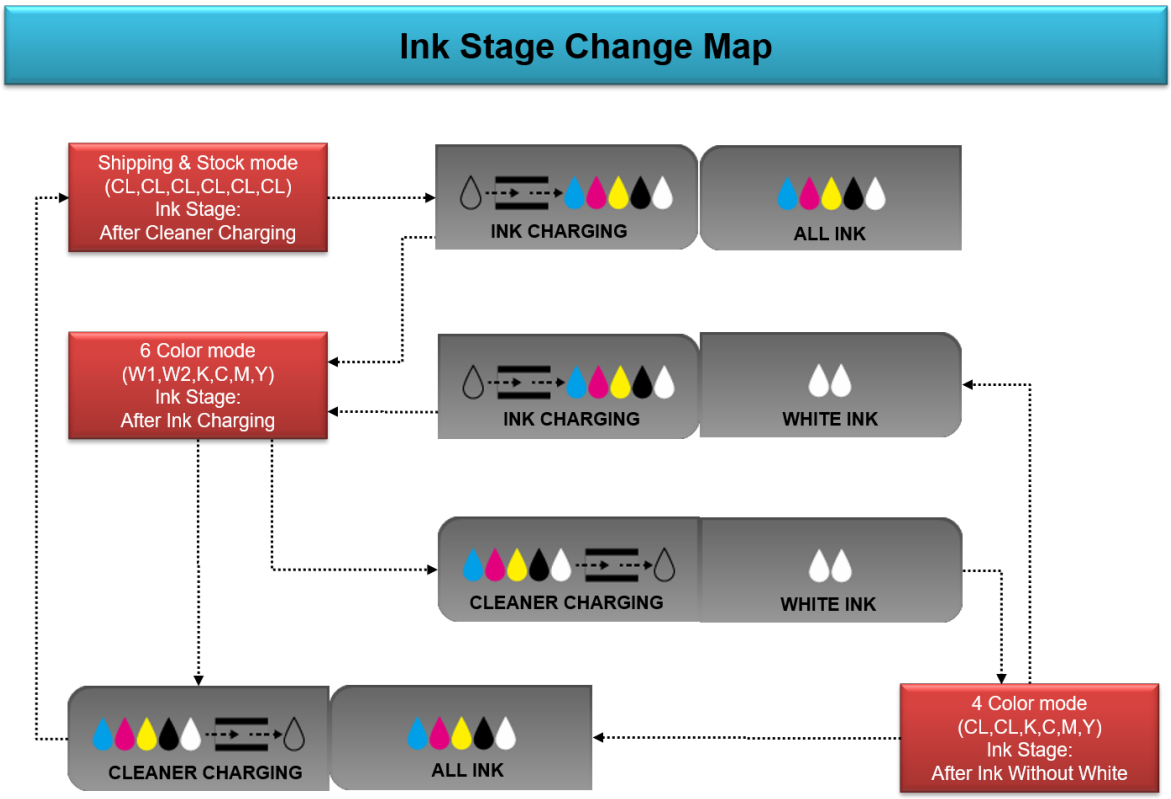
If the problem continues to occur then the ink supply unit may be replaced.

Detail for 9)

This printer has 3 ink status and the user can switch them by ink path control.

Status	Printable media	Remarks
Ink in all channels **6 Color mode** **After ink charging state**	White media, Dark media (requiring underbase)	All kinds all printing

Color ink in color channel **Cleaner in white channel** **4 color mode** **After ink without white state**	White media	OK for any printing that does not require a white under base The Cleaner in white channel is for protect the nozzle of print head.
Cleaner in all channels. **After cleaner charging state**	unprintable	For long term storage./ Shipping



So if there is a problem with charging – low % of ink cartridge used and visible check of the tubes do not look correct.

It can be corrected by:

Method 1

If going from 6 color mode to cleaner charging (storage and shipping) – Go back to cleaner charging (select cleaner charging – all ink) – Then go to cleaner charging again (ink charging – all ink). It is unlikely to get a temporary com problem again.

Below is a description of how to do ink and cleaner charges.

- In order to change the setting of ink path control, touch the button [INK PATH CONTROL] on the [SETTING] tab.

- Then dialogue box shown upper will be displayed to charge of ink or cleaner.
- You can touch [INK CHARGING] for ink, [CLEANER CHARGING] for cleaner.

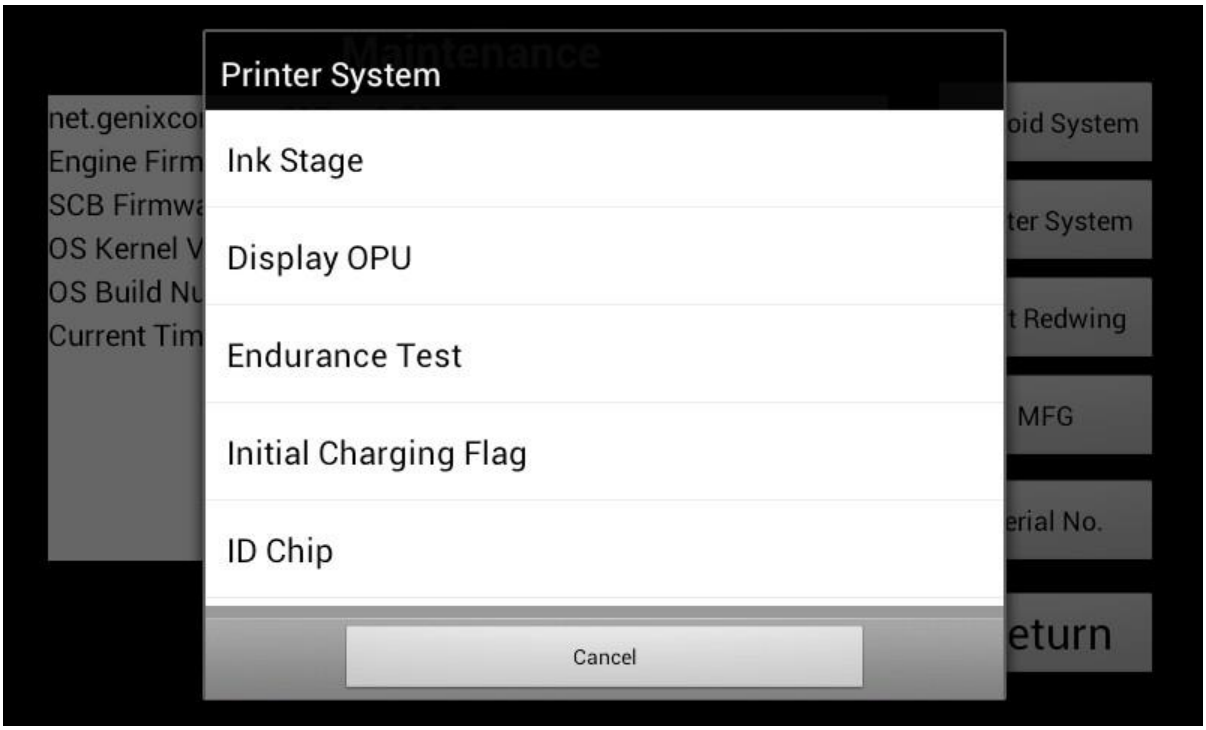
- If you choose the Ink charging, upper dialogue box is displayed to charge for all color channel or white only channel.
- For the cleaner, the dialogue box is displayed as the same Charging all channel with cleaner
- When you store the printer in long-term period or transport, it is necessary to charging cleaner in all channel.

The printer will always look for the correct type of cartridge to be inserted depending on the state.

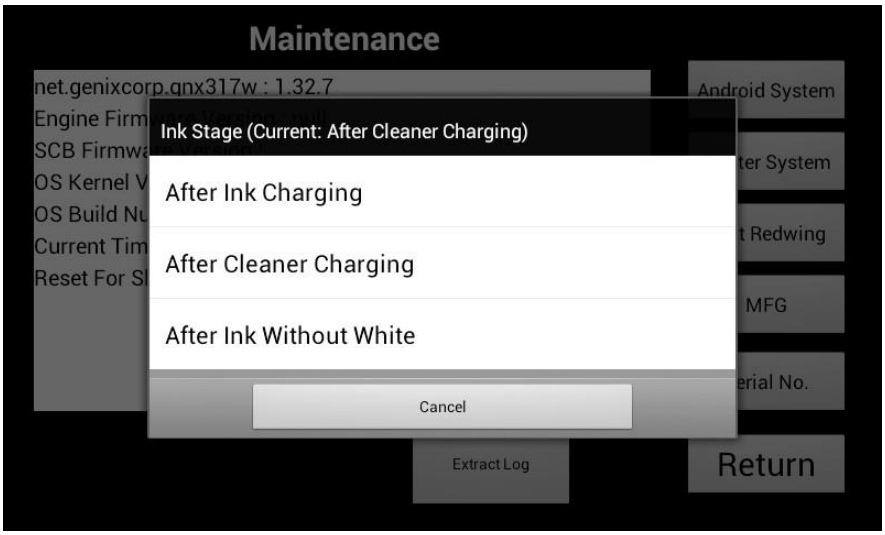
1) For 6 color mode – all ink cartridges must be inserted - cleaner carts will not be accepted (ink error will show in status bar)
2) For 4 color mode – CMYK ink cartridges and Cleaner carts for W1 and W2. W1 and W2 ink carts will not be accepted (ink error will show in status bar)
3) For storage/shipping mode all cleaner carts must be inserted, ink carts will not be accepted. (ink error will show in status bar)** except for when sent from the factory or depot – in the case the Initial charging flag will be set and the printer will expect ink cartridges to be loaded and initial charging will automatically start just like when the printer was initially started up as described in the manual

Method 2 is to reset the ink stage.

In the service menu (tech service will let you know how to access) Select printer systems



Then select ink stage – there are 3 choices



Set internal flag of ink charging status. Should be matched with actual situation of the printer after replacing the Android Board. (display) or CTL or if you want to charge in a state you are already in. (ie. You want to set After Ink Charging when initially ink charging was not successful and you want to repeat)

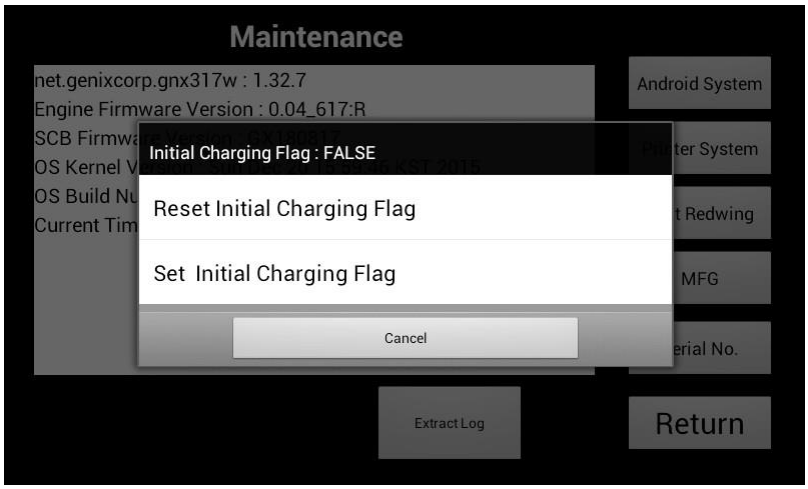
- After Ink Charging: Ink has been charged in the printer.

- After Cleaner Charging: Cleaner has been charged in the printer.

- After Ink Without White: Cleaner for white channels and Ink for color channels has been charged

In the case where you suspect that an ink charging has not been completed successfully. (1 or more carts do not show the expected % drop and visually 1 or more of the tubes do not seem to be charged correctly) You can:
Set the Ink stage to what it was prior to you attempting at ink charging. Example. You are setting a machine for storage, so you charged with cleaning fluid and you noticed one line not completely cleared of ink. The printer is now in the After cleaner charging ink state. You can change the ink state back to After ink charging in the service menu.

Finally – set the initial charging flag correctly



- Set Initial charging flag of the CTL.
- Reset (False): performing this, CTL does not start initial ink charging during the boot up.

  Should be performed after replacing CTL on already charged printer.
- Set (True): performing this, CTL will start initial ink charging during the next boot up.

Ink Stage	Initial Charging Flag
After Ink Charging	False - Reset
After Cleaner Charging	True - Set
After Ink Without White	False -Reset

The only time you should select “Set Initial Charging Flag” is when the printer is full of cleaning fluid for storage of shipment AND you want to charge with ink at the next boot up.

Here are some common warning errors

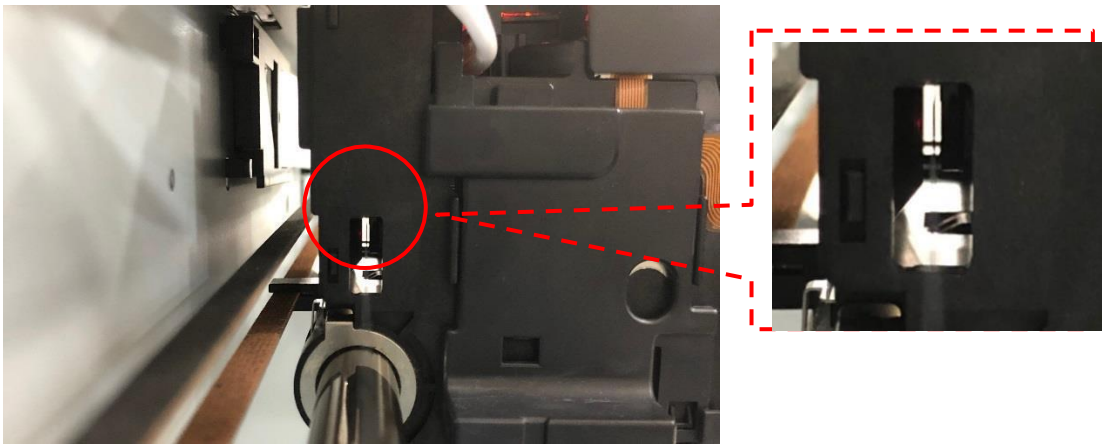
10) CR encoder error	Obstruction in printer is stopping the carriage	Remove the obstruction
	Encoder is dirty	Clean the encoder (refer to section 8.2 Maintenance)
	Encoder is not in carriage	Set into carriage correctly - see detail below

11) Ink Supply error	Maintenance station is not drawing ink correctly - (if this error is on all or most channels)	Check connections on the maintenance station. (See Detail below) Make sure the motor is connected properly and the home position optical sensor is connected properly
		Clean the maintenance station (refer to user manual 8.2 Maintenance)
		Restart the printer to set correct capping position
		If continues - after restart and clean - replace maintenance station
	Air release solenoid did not operate	Check this operation by performing a strong clean - should see solenoid activate during the clean - (see Detail below) - if the solenoid does not activate - replace this assembly
	If this error on one head and nozzle check is also bad	Head could be clogged - replace carriage
12) Ink level feeler position error	Maintenance station is not drawing ink correctly - (if this error is on all or most channels)	Check connections on the maintenance station. (Refer to the pictures in Detail for 10) Make sure the motor is connected properly and the home position optical sensor is connected properly
		Clean the maintenance station (refer to user manual 8.2 Maintenance)
		If continues - after restart and clean - replace maintenance station
	Carriage in wrong position to detect feeler	Restart the printer to set correct capping position
		Check the encoder and clean and check for large scratches - replace if necessary
	One of the feelers on the carriage is obstructed	Release the carriage and make sure that the feeler for that channel is not obstructed (see picture in Detail for 7)

	If this error on one head and nozzle check is also bad	Head could be clogged - replace carriage
	Air leak/kink in plumbing	Check the line - replace if necessary
13) Ink Pump time out error	One of the feelers on the carriage is obstructed	Release the carriage and make sure that the feeler for that channel is not obstructed (see picture in Detail for 7)
	Air leak/kink in plumbing	Check the line - replace if necessary
	Ink pump is not working properly	Check connections on the ink supply unit. Replace if necessary

Details for 9) CR encoder error

Check - for obstruction blocking carriage – Encoder not dirty or scratched – Encoder is installed in the carriage correctly. (especially if maintenance such as carriage or encoder replacement have happened)



Encoder should be in this location on carriage.

Details for 10) Ink supply error

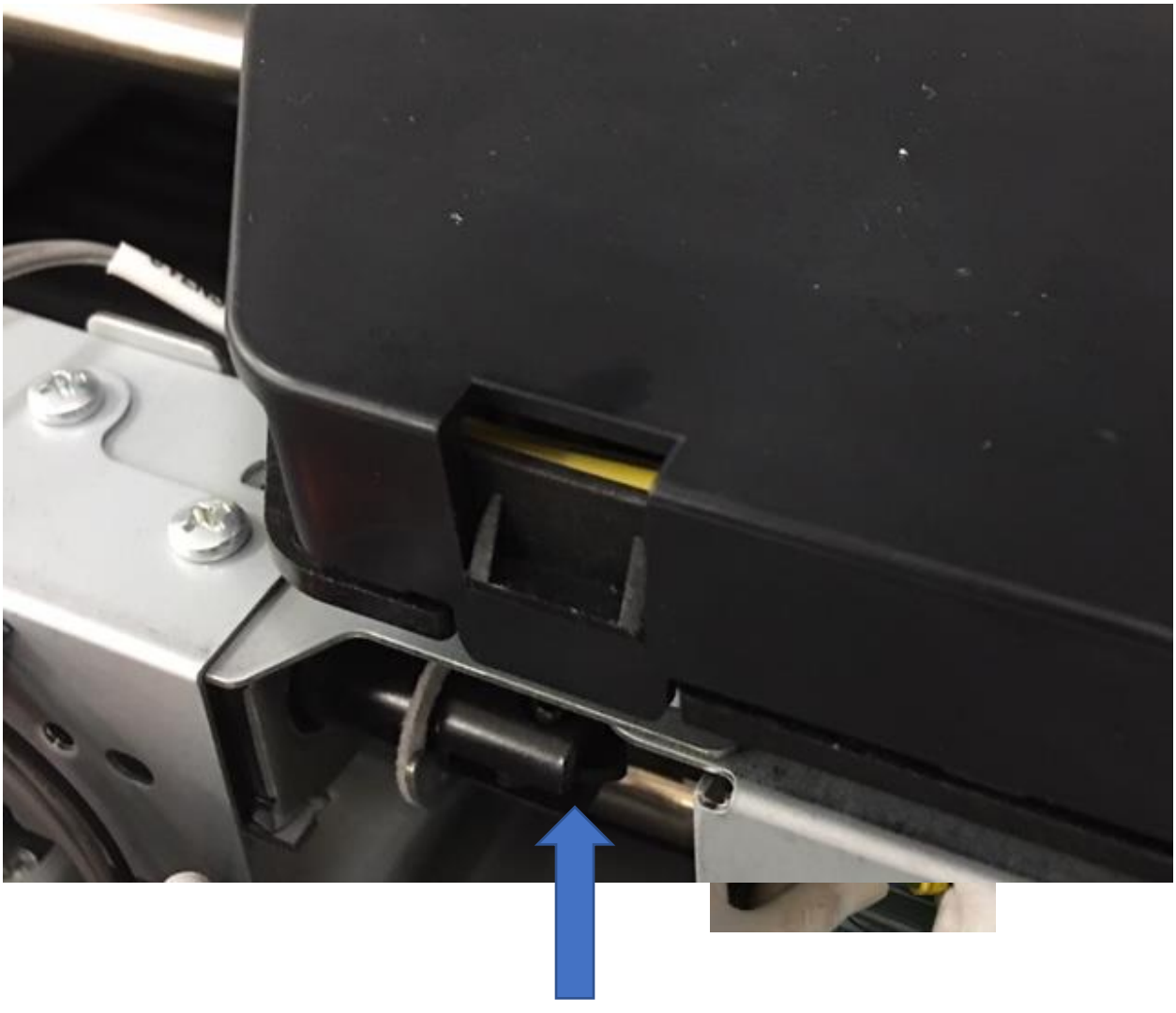
May be caused by the maintenance unit not operating properly

Check that the optical sensor for the maintenance home position flag is connected correctly (especially if the unit was recently removed or replaced)

Check the motor cable or the maintenance unit is connected (especially if the unit was recently removed or replaced)

Make sure that there is no kink in the drain tube.

The air release solenoid could also cause this error. Check its operation by running a strong clean and observe if it activates.



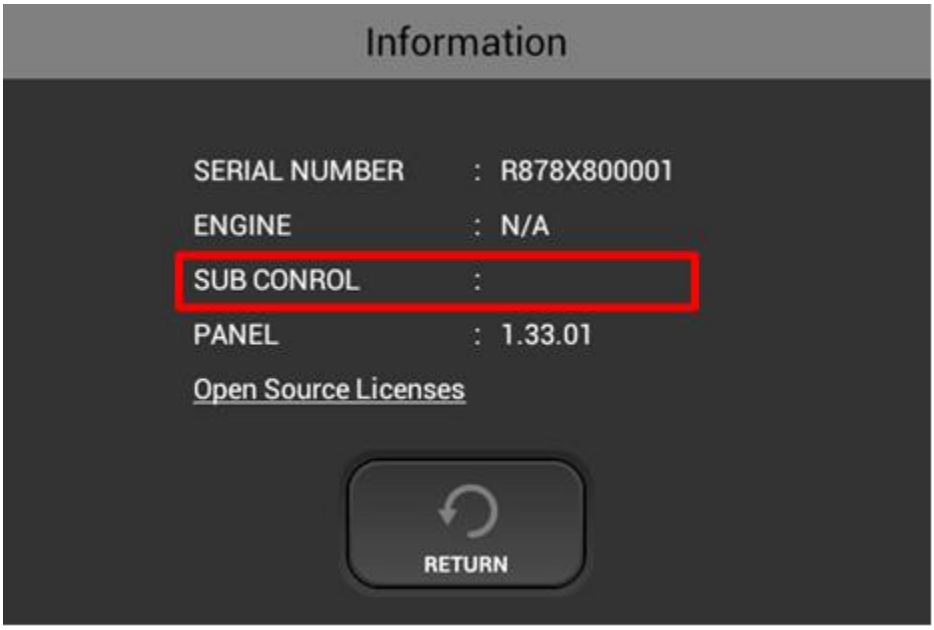
This shaft should move during a strong clean

Communication errors

1) IF there is a USB connection failure (GIB display to CTL) the following appears

If this can not be reset by retry or power off and then back on – check the connection of the USB cable from the display assembly to the CTL board (see wire diagram) – also check the ribbon cable to CN 114 - this has the power signal to the CTL or check the memory prom on the back of the CTL to see if is installed correctly. If all connections are OK you may have to exchange the CTL board.

2) If the RS 422 (between the GIB display and the sub control board) communication has failed then the table will not move.
Under the settings TAB - pressing the information button the SUB CONTROL firmware version will not show.



Check the RS 424 cable connection at the GIB display and the Sub control board

3) if serial communication has failed from the GIB display to the CTL - the cartridges will not be detected.

Explanation of different types of status messages by the Ri 1000

Service Call	Operation is impossible. Machine is critical damaged.	SC 999 Maintenance failed to reach home position
Error	Operation is impossible. (be able to recover)	Cover Open CR encoder error Ink Cartridge Not Set Ink Cartridge End Waste Ink Tank Full Ink supply error
Warning	Operation is possible. Later, operation can be stopped.	Ink Cartridge Near End Waste Ink Tank Near Full Replace Part Lifetime

Here is a list of message and error codes

String	**Definition**
Cleaning	Printer is cleaning except for change ink path maintenance
4-color only	Current Ink stage is "After Ink Without white"
Canceling printing. Please wait.	Printing is canceling.
Cartridge Cover Open	Cartridge Cover Open
	It is error status. To recover, Close Cartridge Cover
Cartridge error. Please check cartridge and try again.	(Ink or Cleaner) Mixed cartridges is inserted.
	It is error status. To recover, Insert correct type cartridge.
Cartridge is not loaded	Any Cartridge is not set
	It is error status. To recover, Insert cartridge.
Charging canceled : {REASON}	(Ink or Cleaner) White Channel filling is failed

	It is warning status. To recover, Retry (Ink or Cleaner) filling of white channel
Cleaner cartridge is loaded.(W1)	Mixed cartridge (CL,W,K,C,M,Y) when current ink stage is "after ink charging"
	It is error status. To recover, insert White1 Ink Cartridge.
Cleaner cartridge is loaded.(W2)	Mixed cartridge (W,CL,K,C,M,Y) when current ink stage is "after ink charging"
	It is error status. To recover, insert White2 Ink Cartridge.
Cleaner cartridges are loaded.	Cleaner Cartridge is inserted when ink is already filled in printer.
	It is error status. To recover, Insert ink cartridge and filling ink.
Cleaner cartridges are loaded.(W1,W2)	Mixed cartridge (CL,CL,K,C,M,Y) when current ink stage is “after ink charging”
	It is error status. To recover, Do white cleaner filling process or Insert ink cartridge.

	stage is “After ink Without White”
Ink drying..	during dry time for next layer
Ink Empty ({COLOR})	Cartridge is empty.
	It is error status. To recover, insert new cartridge.
Ink filling (White only)	White ink is filling
Ink Filling canceled :	Ink filling is failed
	It is warning status. To recover, Do ink filling process again.

Ink low ({COLOR})	Remain amount of cartridge is low (Under 20%)
	It is warning status, Prepare new cartridge.
Ink Supply Error	Service Call 988 or 990 or 991 But printer operation is possible.
	It is warning status, To recover, reboot machine. It can be caused by, 1. Air interfuse in head 2. Nozzle Clogging For the detail, refer service call list.
Job Pending. Please SET table.	Table is not printing position when printer receive print data.
Left Ink Sump Full Empty the box before reset the left ink sump counter.	Left Flushing Box is full
	It is error. To recover, replace left ink sump
Left Ink Sump is nearly full Printer will stop working when the box comes to full	Left Flushing Box is nearly full
	It is warning. To recover, prepare to replace left ink sump
Load garment and tap SET button.	Table is Media Load Position
{PART_NAME} Near End	Replacement part life time is near end
	It is warning. Prepare new replacement part
Non-supported cartridge is loaded.	Cartridge ID Chip is not available

	It is error status. To Recover, insert genuine cartridge.
Pausing. Close front cover.	printing is paused by open front cover or Moving table is stopped by open front cover
	It is error. To recover, close the front cover

Pausing. Tap SET or EJECT button to start table moving.	Moving table is stopped
Pausing. Tap STOP button to start printing.	Printing is pausing.
Performing white ink circulation	While W1W2 circulation
Please wait	table is moving
Printing	Machine is printing.
Receiving data	Receiving the Job data
Right Ink Sump Full Empty the box before reset the right ink sump counter.	Right Flushing Box is full
	It is error status. To recover, replace right ink sump
Right Ink Sump is nearly full Printer will stop working when the box comes to full	Right Flushing Box is nearly full
	It is warning. To recover, prepare to replace left ink sump
Roomtemperature is too high, it can cause printing quality problem	Room temperature is higher than 30.0 ℃
Roomtemperature is too low, it can cause printing quality problem	Room temperature is higher than 10.0 ℃
The temperature is too high	When it's in the operation state already, if the temperature become high(more than approximately 40℃), it will occur. It is necessary to do power off
The temperature is too high. Able to print.	When an operator make power on, but the temperature is high(more than approximately 40℃). After wait a moment, if the temperature is less than 40℃, printer will become active.
The temperature is too low	When it's in the operation state already, if the temperature become low(below approximately 1℃), it will occur.

	It is necessary to do power off.

The temperature is too low. Able to print.	When an operator make power on, but the temperature is low(below approximately 1℃). After wait a moment, if the temperature is more than 1℃, printer will become active
Updating CTL Firmware. Please wait.	while update Merlot Controller
Updating SCB Firmware. Please wait.	while update SCB
Waste ink bottle is nearly full	Waste ink is nearly full
	It is warning status. Prepare to empty waste ink bottle.
Waste Ink Full Empty the waste ink bottle before reset the waste ink counter.	Waste ink is full
	It is error status. To recover, Empty waste ink bottle.

Here is a list of SC Service call

The SC must be cleared by fixing and rebooting the printer

Code	Description
900	**HRB Fuse Blown**
	The fuse on the HRB (Head Relay Board) mounted behind the print heads on the carriage unit has blown.
	• The fuse cannot be replaced.
	1. Replace the carriage unit 2. Replace CTL
910	FAN 1 Lock Detection
	Exhaust Fan 1 lock behind printer is detected
	• There is obstacle in exhaust fan 1

	1. Remove obstacle. 2. Replace exhaust fan 1
911	FAN 2 Lock Detection
	Exhaust Fan 2 lock behind printer is detected
	• There is obstacle in exhaust fan 2
	1. Remove obstacle. 2. Replace exhaust fan 2
912	**FAN 1,2 Both Lock Detection**
	Both of Exhaust Fan lock behind printer is detected
	• The fuse cannot be replaced.
	1. Remove obstacle. 2. Replace exhaust fan
971	**Flash ROM Write Error**
	The device writing to the Flash ROM generated an error.
	• Flash ROM device defective.
	1. Cycle printer on/off, check result. 2. Replace control board.
972	**Flash ROM Verify Error**
	• The verify operation after write failed (the data written to the Flash ROM did not match the content of the data in the Flash ROM). • Flash ROM device defective.
	1. Cycle printer on/off, check result. 2. Replace control board.
973	**EEPROM Write Error**
	• An EEPROM write error was detected at power on, or during a print job. • The EEPROM device is defective. 1) Cycle printer on/off, check result. 2) Replace control board.

974	**RTC Abnormal**
	The RTC (Real Time Clock) malfunctioned.
	• Electrical flow to RTC interrupted. • Excessive condensation in machine.

	1. Check the ambient temperature and humidity. 2. Make sure the readings are within the ranges for optimum operation of the machine. (See installation").
975	**Right Ink Sump Full DFU**
	The count prescribed for the right ink sump has expired
	1. Replace right ink sump.
976	**Air Detection Frequency Error 1: Initialization**
	The occurrences of air detection in the print head ink tanks by the terminal pins have exceeded the number allowed within a 10 day period after installation or replacement of the carrier unit. 30 occurrences allowed per month.
	• Print head tank not sealed correctly
	1. Replace carriage unit.
977	**Air Detection Frequency Error 2**
	The occurrences of air detection in the print head tanks by the terminal pins exceeded the number of detections twice within a one-month period. 30 occurrences allowed per month.
	• The print head tank is worn out, and there is a slow leak due to poor seals.
	1. Replace carriage unit.
978	**Left Ink Sump Full DFU**
	The left ink sump on the left side of the printer is full.
	Note: A software counter monitors the usage of the ink sump. There are no sensors associated with the ink sump.
	1. Cycle printer on/off, check result. 2. Push [Menu], select "List/Test Print" then push [#Enter] to print the System Summary. 3. Check the Total Counter reading of the System Summary. 4. Replace the left ink sump.
979	**Ink Supply Timeout DFU**
	• This error code is issued if full auto cleaning is done before the bubbles inside the print head are consumed (within 24 hours after power on).

	• Cycle the machine off/on
980	**Carriage Position Lever Error DFU**
981	**Version Error DFU**

982	**PSU Temperature Sensor Error DFU**
983	**Temperature/Humidity Sensor Error DFU**
984	**DRV Circuit Temperature Abnormal**
	The temperature of the DRV board (driver board) is out of range.
	• The temperature of the DRV board (driver board) circuit is not within the specified range: -13°C to 55°C (11.2°F to 131°F)
	1. Cycle printer on/off, check result. 2. Check fan operation. 3. Replace control board.
985	**Print Head Temperature Sensor Abnormal DFU**
	• Print head temperature sensor was detected as abnormal when the printer was turned on. • Print head temperature sensor was detected as abnormal when the printer was turned on without the product number registered.
986	**Humidity Sensor Abnormal**
	The printer detected that the humidity sensor was abnormal.
	• Sensor connector loose, damaged, or defective. • Sensor defective
	1. Cycle printer on/off, check result. 2. Check control board connections. 3. Replace control board.
987	**Protection During Transport DFU**
	• At power on the printer detected that the ink in a cartridge is non-standard ink. • Use only ink cartridges that are designed for use with this printer.
	Note: Never use re-filled ink cartridges.

989	**HRB Version Mismatch DFU**
	The HRB (Head Relay Board) mounted on the carriage unit behind the print heads is the wrong type for the machine.
	• The HRB must be replaced with the correct type.

993	**High Voltage Leak DFU**
	At power on or during a print job, a leak detection signal was detected. The signal was triggered by the accumulation of condensation or ink spillage onto the transport belt.

	• This signal is triggered by the HVPS due to an accumulation of condensation or ink spillage onto the transport belt.
	1. Cycle printer on/off, check result. 2. Raise top cover and check condition of transfer belt surface. 3. Push [Menu > select "Maintenance" > "De-Condensation" to feed 3 sheets of blank paper through the paper path to absorb condensation. This cleans the transport belt. 4. Clean ink from transport belt. 5. Replace HVPS pack.
994	**Vertical Motor Error DFU**
	The vertical encoder input signal was judged to be abnormal when the vertical motor was operating.

	• Vertical encoder connector loose, broken, or defective. • SENC defective.
	1. Cycle printer on/off, check result. 2. Remove paper jam. 3. Replace encoder sensor. 4. Replace vertical motor.
996	**No Input Signal from the Horizontal Encoder**
	No input signal from the horizontal encoder was detected during operation of the horizontal motor.
	• Horizontal encoder sensor loose, broken, or defective. • Horizontal encoder film broken, disconnected, or installed upside down. • HRB defective
	1. Cycle printer on/off, check result. 2. Confirm film encoder not loose. 3. Replace horizontal motor.
997	**Input Signal from the Horizontal Encoder Abnormal**
	When the carriage moved to the right, the carriage did not stop at the HP. Or, the carriage scan check failed.
	• Horizontal encoder sensor loose, broken, or defective. • Horizontal encoder film broken, disconnected, or installed upside down. • HRB defective

	1. Cycle printer on/off, check result. 2. Replace encoder sensor. 3. Check encoder film position. 4. Check carriage FFC (Flat Film Connector).
999	**Maintenance Stepping Motor Out of Home Position**
	The maintenance motor HP sensor failed to detect the motor at the home position.
	• Maintenance HP sensor connector loose, broken, or defective • Maintenance motor connector loose, broken, or defective • Movable Feeder connector loose, broken.
	1. Cycle printer on/off, check result. 2. Clean wiper. 3. Check HP sensor connector. 4. Replace maintenance unit.