ColorQube[®] 8570/8870 Service Manual

Xerox



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ColorQube 8570/8870 Service Manual

Service Documentation

ColorQube 8570/8870 Service Manual

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About This Manual

The ColorQube 8570/8870 Service Manual is the primary document used for diagnosing, repairing, maintaining, and troubleshooting the printer. The Service Manual is the controlling publication for a service call. Information on using this document is found in the Introduction section. To ensure understanding of this product, complete the Xerox Service Training Program for this particular printer.

For manual updates, Service Bulletins, knowledge base, and technical support, go to:

Xerox Global Service Net - https://www.xrxgsn.com/secure/main.pl •

For further technical support, contact your assigned Xerox Technical Support for this product.

Service Manual Revision

Updates are issued as the printer changes or as corrections are identified.

Organization

The titles of the sections and a description of the information contained in each chapter are contained in the following paragraphs:

Introduction and General Information

This chapter contains documentation organization, symbology and nomenclature, translated warnings, safety symbols, regulatory requirements, and general information about the printer.

Chapter 1 Service Call Procedures

This chapter contains procedures to be taken during a service call and in what sequence they are to be completed. This is the entry level for all service calls.

Chapter 2 Status Indicator RAPs

This chapter contains descriptions of the diagnostic aids for troubleshooting that include Power On Self Test (POST), Fault Codes and Messages procedures.

Chapter 3 Image Quality

This chapter contains the diagnostic aids for troubleshooting image guality problems, as well as image quality specifications and image defect samples.

Chapter 4 Repairs/Adjustments

This chapter contains the removal, replacement, and adjustments procedures.

Repairs

Repairs include procedures for removal and replacement of spare parts listed in the Parts List. Use the repair procedures for the correct order of removal and replacement, for warnings, cautions, and notes.

Adjustments

Adjustments include procedures for adjusting the parts that must be within specification for the correct operation of the printer. Use the adjustment procedures for the correct sequence of operation for specifications, warnings, cautions and notes.

Chapter 5 Parts List

This chapter contains exploded views of the print engine and optional Field Replaceable Units (FRUs), as well as part numbers for orderable parts and illustrated Parts List.

Chapter 6 General Troubleshooting

This chapter contains details of the embedded Service Diagnostics test suite, as well as troubleshooting procedures for printer problems not related to a specific fault code.

Chapter 7 Wiring Data

This chapter contains drawings, lists of plug/jack locations, and diagrams of the power distribution wire networks in the printer.

Chapter 8 Theory of Operation

This chapter contains detailed functional information on the print engine components.

How to Use this Manual

Always start with the Service Call Procedures in Chapter 1. Perform Initial Actions and verify the problem, then follow the directions provided.

Power Safety

Power Source

For 115 VAC printers, do not apply more than 135 volts RMS between the supply conductors or between either supply conductor and ground. For 230 VAC printers, do not apply more than 254 volts RMS between the supply conductors or between either supply conductor and ground. Use only the specified power cord and connector. This manual assumes that the reader is a qualified service technician.

Plug the three-wire power cord (with grounding prong) into a grounded AC outlet only. If necessary, contact a licensed electrician to install a properly grounded outlet. If the product loses its ground connection, contact with conductive parts may cause an electrical shock. A protective ground connection by way of the grounding conductor in the power cord is essential for safe operation.

Disconnecting Power

WARNING

Do not use the on/off switch as a safety disconnect device. The on/off switch is not a disconnect device. Disconnect the power cord from the supply to isolate the equipment. DANGER: Ne pas utiliser l'interrupteur comme système d'arrêt d'urgence. Déconnecter le cordon d'alimentation de la prise pour isoler l'équipement.

AVVERTENZA: Non usare l'interruttore di accensione/spegnimento come dispositivo di sicurezza per il disinserimento dell'elettricità, in quanto l'interruttore non è stato disegnato per questa funzione. Per isolare la macchina dalla corrente elettrica, scollegare il cavo dell'alimentazione dalla presa a muro.

VORSICHT: Der Netzschalter reicht zur Trennung von der Netzspannung NICHT aus. Um das Gerät von der Netzspannung zu trennen, den Netzstecker abziehen.

AVISO: No utilice el interruptor de encendido/apagado como dispositivo de desconexión seguro. El interruptor de encendido/apagado no es un dispositivo de desconexión.

Para aislar el equipo totalmente, desconecte el cable de alimentación de la toma de corriente.

Disconnect the power cord in the following cases:

- if the power cord or plug is frayed or otherwise damaged,
- if any liquid or foreign material is spilled into the product,
- if the printer is exposed to any excess moisture,
- if the printer is dropped or damaged,
- if you suspect that the product needs servicing or repair,
- whenever you clean the product.

Service Safety Summary

General Safety

The printer and recommended supplies have been designed and tested to meet strict safety requirements. Attention to the following information will ensure the continued safe operation of the printer.

Electrical Safety

WARNING

Ensure all ground leads are connected.

DANGER: Vérifiez que tous les câbles de mise à la terre sont bien branchés. AVVERTENZA: Verificare che tutte le connessioni di messa a terra siano collegate. VORSICHT: Sicherstellen, dass sämtliche Erdungskabel richtig angeschlossen sind. AVISO: Asegúrese de que todas las derivaciones a tierra estén conectadas.

- Use the power cord supplied with the printer.
- Plug the power cord directly into a properly grounded electrical outlet.
- Do not use a ground adapter plug to connect the printer to an electrical outlet that does not have a ground connection terminal.
- Do not use an extension cord or power strip.
- Do not place the printer in an area where people might step on the power cord.
- Do not place objects on the power cord.

• Do not block the ventilation openings. These openings are provided to prevent overheating of the printer.

- Do not drop paper clips or staples into the printer.
- The power cord is attached to the printer as a plug-in device on the side of the printer. If it is necessary to disconnect all electrical power from the printer, disconnect the power cord from the electrical outlet.

Maintenance Safety

- Do not attempt any maintenance procedure that is not specifically described in the documentation supplied with the printer.
- Do not use aerosol cleaners. The use of supplies that are not approved may cause poor performance and could create a hazardous condition.
- Do not burn any consumables or routine maintenance items. For information on Xerox supplies recycling programs, go to www.xerox.com/gwa.

Operational Safety

The printer and supplies were designed and tested to meet strict safety requirements. These include safety agency examination, approval, and compliance with established environmental standards.

Pay attention to these safety guidelines to ensure the continued, safe operation of the printer.

- Use the supplies specifically designed for your printer. The use of unsuitable materials may cause poor performance and a possible safety hazard.
- Follow all warnings and instructions marked on, or supplied with, the printer, options and supplies.

CAUTION

Use of other than Genuine Xerox solid ink may affect print and copy quality and printer reliability. It is the only ink designed and manufactured under strict quality controls by Xerox for specific use with this printer. The Xerox Warranty, Service Agreements, and Total Satisfaction Guarantee do not cover damage, malfunction, or degradation of performance caused by use of non-Xerox supplies or consumables, or the use of Xerox supplies not specified for this printer.

NOTE: The Total Satisfaction Guarantee is available in the United States and Canada. Coverage may vary outside these areas; please contact your local representative for details.

General Guidelines

For qualified service personnel only - Refer also to the preceding Power Safety Precautions.

Avoid servicing alone - Do not perform internal service or adjustment of this printer unless another person capable of rendering first aid or resuscitation is present.

Use care when servicing with power - Dangerous voltages may exist at several points in this printer. To avoid personal injury, do not touch exposed connections and components while power is on. Disconnect power before removing the power supply shield or replacing components.

Do not wear jewelry - Remove jewelry prior to servicing. Rings, necklaces and other metallic objects could come into contact with dangerous voltages and currents.

Introduction Power Safety, Service Safety Summary

Warning Labels

Read and obey all posted warning labels. Throughout the printer, warning labels are displayed on potentially dangerous components. As you service the printer, check to make certain that all warning labels remain in place.

Safety Interlocks

Make sure all covers are in place and all interlock switches are functioning correctly after you have completed a printer service call. If you bypass an interlock switch during a service call, use extreme caution when working on or around the printer.

Moving the Printer

- Allow the printer to cool to avoid ink spills which can damage the printer.
- Use the shutdown procedure from the Control Panel before moving the printer.
- Never move the printer if a Power Down Error-Head not Parked message is displayed. Damage to the printer can occur if the Printhead is not locked before shipment.
- The printer is heavy and must be lifted by two people.



Figure 1 Printer Lifting Technique

• Always move the printer separately from the Optional Trays 3, 4, and 5.

When shipping the printer, repack the printer using the original packing material and boxes or a Xerox Repackaging Kit. Instructions for repacking the printer are included in the Kit. If you do not have all the original packaging, or are unable to repackage the printer, contact your local Xerox service representative.

CAUTION

Failure to repackage the printer properly for shipment can result in damage to the printer. Damage to the printer caused by improper packaging is not covered by the Xerox warranty, service agreement, or Total Satisfaction Guarantee.

Symbols Used on the Printer

Warnings, Cautions, and Notes

Be aware of all symbols and terms when they are used, and always read Note, Caution, and Warning statements.

A translated version of all warnings is in Translation of Warnings section.

Warnings, Cautions, and Notes can be found throughout the service manual. The words **WARNING** or **CAUTION** may be listed on an illustration when the specific component associated with the potential hazard is pointed out; however, the message of the **WARNING** or **CAU-TION** is always located in the text. Their definitions are as follows:

WARNING

A warning is used whenever an operating or maintenance procedure, practice, cond ition or statement, if not strictly observed, could result in personal injury.

DANGER: Une note Danger est utilisée chaque fois qu'une procédure d'utilisation ou de maintenance peut être cause de blessure si elle n'est pas strictement respectée.

AVVERTENZA: Un segnale di avvertenza è utilizzato ogni volta che una procedura operativa o di manutenzione, una pratica, una condizione o un'istruzione, se non strettamente osservata, potrebbe causare lesioni personali.

VORSICHT: Weist darauf hin, dass ein Abweichen von den angeführten Arbeits- und Wartungsanweisungen gesundheitliche Schäden, möglicherweise sogar schwere Verletzungen zur Folge haben kann.

AVISO:Un aviso se utiliza siempre que un procedimiento de operación o mantenimiento, práctica o condición puede causar daños personales si no se respetan estrictamente. CAUTION

A Caution is used whenever an operating or maintenance procedure, a practice, condition, or statement, if not strictly observed, could result in damage to the equipment.

NOTE: A Note is used whenever it is necessary to highlight an operating or maintenance procedure, practice, condition, or statement.

Common Warnings and Safety Icons

The following common warnings are used throughout the documentation and the safety icons are displayed on the printer. Additional specific warnings are included for the listed chapters.

The following chapters have additional specific warning information.

Table 1 Additional Warnings

Chapter 1 - Empty the Waste Tray
Chapter 2 - 99,002, 99,003 PEST - Jetstack Disconnect
Chapter 4 - REP 2.1 Funnel Cap
Chapter 4 - REP 2.2 Jetstack Cap
Chapter 4 - REP 2.3 Printhead Assembly
Chapter 4 - REP 2.9 Left and Right Printhead Restraints
Chapter 4 - REP 3.12 525-Sheet Feeder
Chapter 4 - REP 5.1 Electronics Module
Chapter 4 - REP 5.6 Boards (Power Supply, Main Controller, Power Control)
Chapter 4 - REP 5.9 Wave Amplifier
Chapter 8 - Power Supply

Use caution (or draws attention to a particular component).



Figure 3 Use Caution Symbol

Line Voltage present on the Fuse and Fuse Holder Contacts.



Figure 4 Electrical Shock Symbol

The surface is hot while the printer is running. After turning off the power, wait 30 minutes.

Machine Safety Icons

The following precautionary symbols may appear on the printer.

This symbol indicates hot surface on or in the printer. Use caution to avoid personal injury.



Figure 1 Hot Surface Symbol

Avoid pinching fingers in the printer. Use caution to avoid personal injury.



Figure 2 Pinch Injury Symbol



Figure 5 Wait 30 Minutes Symbol

Electrostatic Discharge Precautions

Some semiconductor components, and the respective sub-assemblies that contain them, are vulnerable to damage by Electrostatic Discharge (ESD). These components include Integrated Circuits (ICs), Large-Scale Integrated circuits (LSIs), field-effect transistors, and other semiconductor chip components. The following techniques will reduce the occurrence of component damage caused by static electricity.

Be sure the power is off to the chassis or the circuit board, and observe all other safety precautions.

- Immediately before handling any semiconductor components assemblies, drain the electrostatic charge from your body. This can be accomplished by touching an earth ground source or by wearing a wrist strap device connected to an earth ground source. Wearing a wrist strap will also prevent accumulation of additional bodily static charges. Be sure to remove the wrist strap before applying power to the unit under test to avoid potential shock.
- After removing a static sensitive assembly from its anti-static bag, place it on a grounded conductive surface. If the anti-static bag is conductive, you may ground the bag and use it as a conductive surface.
- Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage some devices.
- Do not remove a replacement component or electrical sub-assembly from its protective package until you are ready to install it.
- Immediately before removing the protective material from the leads of a replacement device, touch the protective material to the chassis or circuit assembly into which the device will be installed.
- Minimize body motions when handling unpacked replacement devices. Motion such as your clothes brushing together, or lifting a foot from a carpeted floor can generate enough static electricity to damage an electro-statically sensitive device.
- Handle IC's and Erasable Programmable Read-Only Memories (EPROM's) carefully to avoid bending the pins.
- Pay attention to the direction of parts when mounting or inserting them on the Printed Circuit Boards (PCB's).

Regulatory Requirements

Xerox has tested this printer to electromagnetic emission and immunity standards. These standards are designed to mitigate interference caused or received by this printer in a typical office environment.

United States (FCC Regulations)

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy. If it is not installed and used in accordance with these instructions, it may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his/her own expense.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiver.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/television technician for help.

Any changes or modifications not expressly approved by Xerox could void the user's authority to operate the equipment. To ensure compliance with Part 15 of the FCC rules, use shielded interface cables.

Canada (Regulations)

This Class A digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

European Union

CE

The CE mark applied to this product symbolizes Xerox's declaration of conformity with the following applicable Directives of the European Union as of the dates indicated:

- December 12, 2006: Low Voltage Directive 2006/95/EC
- December 15, 2004: Electromagnetic Compatibility Directive 2004/108/EC

This product, if used properly in accordance with the user's instructions, is neither dangerous for the consumer nor for the environment.

To ensure compliance with European Union regulations, use shielded interface cables.

A signed copy of the Declaration of Conformity for this product can be obtained from Xerox.

Translation of Warnings

WARNING

Switch off the electricity to the machine. Disconnect the power cord from the customer supply while performing tasks that do not need electricity. Electricity can cause death or injury. Moving parts can cause injury.

DANGER: Mettez la machine hors tension. Déconnectez le cordon d'alimentation de l'alimentation du client lorsque vous réalisez des tâches qui ne nécessitent pas d'électricité. L'électricité peut être à l'origine de blessures, voire d'un accident mortel. Les pièces amovibles peuvent être à l'origine de blessures.

AVVERTENZA: Spegnere la macchina. Scollegare il cavo di alimentazione dall'alimentatore quando si eseguono attività che non richiedono elettricità. L'elettricità può causare morte o lesioni personali. Le parti in movimento possono causare lesioni personali.

VORSICHT: Schalten Sie die Stromversorgung der Maschine ab. Ziehen Sie das Stromkabel ab, wenn Sie Aufgaben ausführen, für die keine Stromversorgung benötigt wird. Stromschläge können Todesfällen oder Verletzungen verursachen. Bewegliche Teile können zu Verletzungen führen.

AVISO: Apague la electricidad de la máquina. Desconecte el cable de alimentación eléctrica de la toma de pared mientras esté realizando tareas que no necesiten corriente. La electricidad puede causar daños o la muerte. Las partes móviles pueden causar daños.

WARNING

Do not attempt to remove or lift the following component with less than 2 people. The component is very heavy and requires at least 2 people to lift of remove it. Any attempt to remove or lift the component with less than 2 people could result in serious personal injury.

DANGER: Ne pas tenter d'enlever ou soulever l'élément suivant tout seul. Cet élément est très lourd; au moins X personnes doivent être présentes pour le soulèvement ou la dépose. Toute tentative d'enlever ou soulever cet élément sans la collaboration d'au moins X personnes peut causer de graves blessures.

AVVERTENZA: Non tentare di togliere o sollevare il componente seguente con meno di X persone. Il componente è molto pesante e richiede almeno X persone per sollevarlo o rimuoverlo. Tentare di rimuovere o sollevare questo componente con meno di X pesone può provocare gravi ferite.

VORSICHT: Versuchen Sie keinesfalls, die folgende Komponente mit weniger als X Personen zu entfernen oder zu heben. Die Komponente ist sehr schwer, daher werden mindestens X Personen benötigt, um sie zu heben oder zu entfernen. Der Versuch, die Komponente mit weniger als X Personen zu entfernen oder zu heben, kann schwere Körperverletzung zur Folge haben.

AVISO: No intente levantar o retirar el componente siguiente usando menos de X personas. El componente es muy pesado, y se necesitan por lo menos X personas para levantarlo o retirarlo. Intentar retirar o levantar el componente usando menos de X personas puede resultar en lesionales personales serias.

WARNING

Do not touch the ink reservoir while it is hot. DANGER: Ne pas toucher au réservoir d'encre tant qu'il est chaud.

AVVERTENZA: non toccare il serbatoio di inchiostro quando è caldo.

VORSICHT: Den Tintenbehälter erst anfassen, wenn er abgekühlt ist.

AVISO: No toque el depósito de tinta mientras éste esté caliente.

WARNING

Use only Xerox materials and components. This product is safety certified using Xerox materials and components. The use of non Xerox materials and components may invalidate the safety certificate.

DANGER: N'utilisez que des matières premières et des composants Xerox. La sécurité du produit est assurée dans le cadre de son utilisation avec des matières premières et des composants Xerox. L'utilisation de matières premières et de composants autres que ceux de Xerox risque d'invalider le certificat de sécurité.

AVVERTENZA: Utilizzare solo materiali e componenti Xerox per avvalersi della certificazione di protezione. L'utilizzo di materiali e componenti non Xerox può rendere nulla la certificazione di protezione.

VORSICHT: Verwenden Sie nur Materialien und Komponenten von Xerox. Dieses Produkt besitzt die Sicherheitszertifizierung bei Verwendung von Xerox-Materialien und -Komponenten. Die Verwendung von Materialien und Komponenten anderer Hersteller setzt möglicherweise das Sicherheitszertifikat außer Kraft.

AVISO: Utilice solo los materiales y componentes Xerox. Este producto dispone de un certificado de seguridad si se utilizan los materiales y componentes Xerox. Este certificado de seguridad no será válido si se utilizan materiales y componentes que no sean de Xerox.

WARNING

Use extreme care when working near this power supply. High voltage is present on the power supply when the machine is in standby mode. Contact with electrical components or high voltage cables represents a shock potential that could result in serious personal injury.

DANGER: Faire très attention en intervenant près de ce module d'alimentation. Une haute tension y est présente lorsque la machine est en mode d'attente. Tout contact avec les éléments électriques ou les câbles haute tension représente un risque de choc et de graves blessures.

AVVERTENZA: Fare estrema attenzione quando si lavora vicino a questo gruppo statico. Il gruppo statico è caricato ad alta tensione quando la macchina è in modalità standby. Il contatto con componenti sotto tensione o cavi elettrici comportano un seriopericolo di scossa elettrica e gravi ferite.

VORSICHT: Bei der Verwendung unterbrechungsfreier Stromversorgung benutzt äußerste Vorsichtkeit. Während die Machine sich im Energiespar-Modus befindet, steht es unter Hochspannung. Beim Umgang mit elektrischen Bauteilen und Hochspannungsleitungen erhöht sich das Unfallrisiko. Äußerste Vorsicht ist geboten.

AVISO: Tenga mucho cuidado al trabajar en las proximidades de la fuente de alimentación. Hay voltaje muy alto en la fuente de alimentación cuando la máquina se encuentra en el modo de espera. El contacto con componentes eléctricos o cables de alto voltaje representa peligro de descarga eléctrica que puede ocasionar daños personales graves.

WARNING

Do not perform repair activities with the power on or electrical power supplied to the machine. Some machine components contain dangerous electrical voltages that can result in electrical shock and possible serious injury.

DANGER: Ne pas effectuer de dépannnage avec le contact principal activé ou avec l'alimentation électrique appliquée à la machine. Certains éléments de la machine comportent des tensions électriques dangereuses qui peuvent causer un choc électrique et de graves blessures.

AVVERTENZA: Non effettuare alcuna riparazione con l'alimentazione elettrica inserita.

Alcuni componenti contengono corrente ad alta tensione che può provocare forti scosse e gravi ferite.

VORSICHT: Es dürfen erst Reparaturarbeiten durchgeführt werden, wenn das Gerät ausgeschaltet ist oder der Netzstecker nicht mehr mit der Stromquelle verbunden ist. Einige Komponenten des Gerätes sind stromführend und können daher zu ernsthaften Verletzungen oder Stromschlägen führen.

AVISO: No realice reparaciones con la máquina encendida o conectada a la corriente. Algunos componentes de la máquina contienen voltajes eléctricos peligrosos que pueden producir una descarga eléctrica y causar daños graves.

ColorQube 8570/8870 Overview

The ColorQube 8570/8870 are solid ink technology printers utilizing a new formulation of solid ink and ink stick sensing technology. It also features new power saving features that make the printer ENERGY STAR TEC Tier II compliant.

The printers include an image processor supporting PostScript 3 and PCL5c page description languages. The printer supports up to 40 page per minute (PPM) and resolutions up to 525 x 2400 dots-per-inch (dpi). The product features USB and 10/100/1000 Base Tx Ethernet ports.

The ColorQube 8570/8870 provides two standard paper trays. The 100-sheet Tray 1 supports manual feed of specialty media, card stock, and envelopes. Tray 2 provides 525 sheets of capacity. The Output Tray holds 400 sheets facedown.

The ColorQube 8570/8870 options add memory, media capacity, Hard Disk Drive, Duplex, Wireless, and functionality. RAM memory upgrades are available to increase the standard installed memory from standard 512 MB to 2 GB maximum. A 525-Sheet Feeder is also available. Three 525-Sheet Feeders may be installed to raise the maximum media input storage capacity to 2200 sheets. The Printer Stand is available for mobility and increased media storage.

Printer Configurations

The ColorQube 8570/8870 is available in five configurations.

Table 1 Printer Configurations

Features	8570N		8570DN	8570DT		8870EE	
Processor and Clock Speed	1 GHz		1 GHz	1 GHz		1 GHz	
Memory Configuration*	512 MB		512 MB	512 MB		512 MB	
Adobe Postscript 3 Fonts	Standard		Standard	Standard		Standard	
PCL5 Fonts	Standard		Standard	Standard		Standard	
USB 2.0	Standard		Standard	Standard		Standard	
Ethernet Interface	10/100/100	00	10/100/1000	10/100/1000	1	0/100/1000	
	Base-TX		Base-TX	Base-TX		Base-TX	
Tray 1 (100 sheet)	Standard		Standard	Standard		Standard	
Tray 2 (250 sheet)	Standard		Standard	Standard		Standard	
Tray 3 (250 sheet)	Optional		Optional	Standard		Optional	
Tray 4 (250 sheet)	Optional		Optional	Optional		Optional	
Tray 5 (250 sheet)	Optional		Optional	Optional		Optional	
Duplex	Optional		Standard	Standard		Standard	
Hard Disk Drive	Optional		Optional	Optional		Optional	
Printer Stand	Optional		Optional	Optional		Optional	
Wireless LAN	Optional		Optional	Optional		Optional	
Print Speed (ppm)				•			
Fast Color	• 40/30	•	40/30	• 40/30	•	40/30	
 Standard 	• 30/25	•	30/ 25	• 30/25	•	30/25	
Enhanced	• 19/18	•	19/18	• 19/18	•	19/18	
Photo	• 6/4	•	6/4	• 6/4	•	6/4	
• PCL 600x400 Mode	• 20/18	•	20/18	• 20/18	•	20/18	
• PCL 600x600 Mode	• 12/10	•	12/10	• 12/10	•	12/10	
Printer Resolution - Pos	tScript			•			
Fast Color	• 225x40	• 0	225x400	• 225x400	•	225x400	
Standard	• 300x45	0 •	300x450	• 300x450	•	300x450	
Enhanced	• 525x45	• 0	525x450	• 525x450	•	525x450	
Photo	• 525x24	• 00	525x2400	• 525x2400	•	525x2400	
* All configurations have two memory slots supporting 512 MB / 1 GB DDR2 SODIMMs, to a							
maximum of 2.0 GB total.							

Parts of the Printer Front View





Table 1 Front View

- 1 Tray 5 (Optional 525-Sheet Feeder)
- 2 Tray 4 (Optional 525-Sheet Feeder)
- 3 Tray 3 (Optional 525-Sheet Feeder)
- 4 Tray 2 (Standard 525 Sheet)
- 5 Tray 1 (MPT) (100 Sheet)
- 6 Control Panel
- 7 Exit Door Release
- 8 Front Door Release
- 9 Exit Door B
- 10 Ink Loader Door C
- 11 Legal/ A4 Output Tray Extension
- 12 Interface (I/O) Door E
- 13 Side Door D
- 14 Front Door A



Figure 2 Top View

Table 2 Top View

- 1 Ink Loader Door
- 2 Ink Stick

Right Side View



Figure 3 Right Side View

Table 3 Right Side View

- 1 Drum Maintenance Unit
- 2 Waste Tray
- 3 Power Cord Connection
- 4 Power Switch
- 5 USB Connection
- 6 Configuration Card
- 7 Ethernet 10/100/1000 Base-Tx Connection

Rear View

The rear view consists of the printer's main electronics and power supply, which are enclosed in a metal case called the Electronics Module. The rear panel allows access to the Electronics Module, RAM, and NVRAM. The optional Hard Disk Drive, if installed, is mounted on the rear panel.

When replacing an Electronics Module, transfer the following components to the new Electronics Module.

- RAM
- Configuration Card
- NVRAM
- Hard Disk Drive (if installed)



Figure 4 Rear View

Table 4 Rear View

- 1 Hard Disk Drive (Optional)
- 2 Memory (RAM) Connectors (Primary Left Side, Secondary Right Side)
- 3 NVRAM

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Printer Options

ColorQube 8570/8870 printer options include:

- Additional Memory (512 MB or 1 GB)
- Wireless LAN
- Hard Disk Drive
- Optional 525-Sheet Feeder (Tray 3, 4, or 5)
- Printer Stand

Additional Memory

The ColorQube 8570/8870 features 2 slots that accept a 512 MB or 1 GB of DDR2 SODIMMs. Memory modules must meet the following characteristics:

- 200 Pin SODIMMS
- Unbuffered, Non-parity

The printer's Configuration page lists the amount of RAM installed in the printer.



Figure 1 RAM

Optional 525-Sheet Feeder (Tray 3, 4, or 5)

The Optional 525-Sheet Feeder increases the input capacity of the printer and can be attached to the printer underneath Tray 2. The Optional 525-Sheet Feeder is customer installable.



Figure 2 Optional 525-Sheet Feeder (Tray 3, 4, or 5)

Printer Stand

The Printer Stand supports a fully-optioned printer and provides space for media storage.



Figure 3 Printer Stand

Hard Disk Drive

The ColorQube 8570/8870 supports an optional internal Hard Disk Drive. The Hard Disk Drive has a minimum 160 GB capacity. Features include:

- Secure Print
- Proof Print
- Save Print
- Disk Collation



Figure 4 Hard Disk Drive

Wireless Network Adapter

The Wireless Network Adapter enables the printer to connect to a wireless network.

Control Panel Layout

The Control Panel consists of one LED, a display window, and seven buttons. These buttons are used to navigate the menu system, perform functions, and select modes of operation for the printer.



Figure 1 Control Panel

Table 1 Control Panel Description

	Button/Feature	Description
1	Status Indicator LED	Green: Printer is ready to print.
		Yellow: Warming condition, printer continues to print.
		Red: Startup sequence or error condition.
		• Blinking:
		 Red: Error Condition
		 Green: Warming up
2	Graphic Control Panel Display	Displays printer settings, status, and messages and menus.
3	Cancel Button	Cancels the current print job.
4	Back Button	Returns to the previous menu item.
5	Up Arrow Button	Scrolls upward through the menus.
6	Down Arrow Button	Scrolls downward through the menus.
7	OK Button	Accepts the selected settings.
8	Help (?) Button	Displays a help message with information about the printer, such as Printer Status, Error Messages, and Maintenance Information. Also describes Control Panel menu items.
9	Power Saver Button/ Indicator Light	 Brings the printer out of, or puts the printer into, Power Saver mode. On Steady: Printer can be put in Power Saver mode at this time. Off: Printer cannot be put in Power Saver mode at this time. Blinking: Printer is in Power Saver mode.

Control Panel Shortcuts

Table 2 Control Panel Shortcuts

Mode or Menu	Press These Buttons
Service Tools Menu	From any menu, press and hold the Up Arrow , then press OK .
Hidden Service Menu	From the Service Tools menu, press and hold the Up Arrow, and then press the Down Arrow.
Service Diagnostics	When the Display turns black, press and hold Back and Help until Beginning Service Mode appears.
Control Panel Language	Press and hold the Cancel button, then press the Help button.
Bypass Protected Menus	Press and hold the Cancel button, then press the Back button.
FTTR (Fast Time To Ready)	Printer goes to the Ready state without waiting for temperatures to reach operating values. On power-up, when the Xerox splash screen displays, press and release the Up Arrow button, then press the Down Arrow button. If the printer detects ink on the Drum, the display indicates a warming-up status. The printer will not actually print until it reaches its operating temperatures.
Manufacturing Mode	Hold Up and Cancel . Turn On the printer. Release the buttons when XEROX scrolls across the screen.

Menu Map

Figure 1 and Figure 2 illustrate the Menu Map for the ColorQube 8570/8870. The Menu Map can be accessed through the Control Panel: **Control Panel Menu** -> **Information** -> **Menu Map**.





Figure 1 Menu Map (page 1)

Routine Maintenance Items

Drum Maintenance Unit life expectancy depends on the unit capacity. For example, the standard-capacity Drum Maintenance Unit produces 10,000 prints regardless of the colors used. Extended-capacity Drum Maintenance Unit for the ColorQube 8570/8870 produces 30,000 pages up to 20% coverage and 20,000 pages when coverage exceeds 20%. The ColorQube 8570/8870 uses a unique Drum Maintenance Unit. See Parts List in Chapter 5 for the correct replacement part.

Table 1 Routine Maintenance Life Expectancy

ltem	Description	Print Life
1	Drum Maintenance Unit (Extended- Capacity)	30,000 cycles (0-20%) coverage 20,000 cycles (20-100%) coverage
	Drum Maintenance Unit (Standard- Capacity)	10,000 cycles
2	Waste Tray	Empty every 7 purges (70g)



Figure 1 Routine Maintenance Items

Consumables

CAUTION

The ColorQube 8570/8870 printer uses a new formulation of Ink having unique properties. The Ink Loader on these products is keyed to accept this Ink shape only. The use of Ink not specifically designed for this product can result in printer failures.

NOTE: Print life is based on "typical" office printing and 5% coverage per color.

Table 1 Consumables

ltem	Description	Print Life (per stick)
1	Black Ink Stick - 8570N/ DN/ DT	2,200 pages
2	Cyan, Magenta, Yellow Ink Sticks - 8570N/ DN/ DT	2,200 pages
3	Black Ink Stick - 8870EE	2,800 pages
4	Cyan, Magenta, Yellow Ink Sticks - 8870EE	2,800 pages



Figure 1 ColorQube 8570/ 8870 Ink Sticks

CAUTION

Only use ink designed exclusively for the printer.

Use of ink other than Genuine Xerox solid ink may affect print quality and printer reliability. It is the only ink designed and manufactured under strict quality controls by Xerox for specific use with these printers.

NOTE: Verify that the molded Xerox label is shown on top of the ink stick.

- 1. ColorQube 8570 N/ DN/ DT
- 2. ColorQube 8870 EE



Figure 2 ColorQube Ink Sticks

Learning Mode - The printer is programmed to lock the sensor to use a particular ink stick when the 1st non-Factory ink stick is used.

Factory Ink Sticks - Factory ink sticks of each color are provided with new printers and replacement Printheads.

Different ink stick types or SKU's meant for particular geographic regions can be determined by looking at size of the ink stick and the bottom of the ink stick. Compare the letter pattern in Table 2 and Table 3 for the different regions on the ColorQube 8570 and 8870 ink sticks.

NOTE: The ColorQube 8570 North America ink sticks are not compatible with the ColorQube 8870 North America printers, and the ColorQube 8570 Xerox Europe ink sticks are not compatible with the ColorQube 8870 Xerox Europe printers.

NOTE: The ColorQube 8570 Factory ink sticks A_D are compatible with both the ColorQube 8570 and 8870 printers. Customers are limited to using a maximum of three Factory ink sticks for each color.

ColorQube 8570 Ink SKU

Table 2 Ink SKU Definitions - 8570N/ DN/ DT

Location	Α	В	С	D	8570
North America (NA)	A		С		х
Xerox Europe (XE)	A	В	С		Х
Developing Markets Organization (DMO)	A	В			х
Metered	А	В		D	х
Factory	А			D	х
NOTE: ColorQube 8570 Metered ink stick shown in Figure 3.					



Figure 3 Ink Stick Keys and SKU Flags Example - 8570

ColorQube 8870 Ink SKU

Table 3 Ink SKU Definitions - 8870

Location	Е	F	G	н	К	8870
North America (NA)	E	F	G	Н		х
Xerox Europe (XE)	E	F		Н		х
Developing Markets Organization (DMO)	E	F	G			х
Metered	E	F	G		К	х
NOTE: ColorQube 8870 Metered ink stick shown in Figure 4.						

Top Bottom

Figure 4 Ink Stick Keys and SKU Flags Example - 8870

Printer Specifications Print Engine Specifications

Table 1 Functional Specifications					
Characteristic	Specifications				
Printing Process	Four-color (CMYK) solid ink Printhead architecture.				
Image System	Transfix transfer from oil coated Drum.				
Color Medium	Cyan, Magenta, Yellow, and Black Ink Sticks, each shape-coded. the printer uses the subtractive color system to produce the colors Red, Green, and Blue.				
Color Management	Automatic, Black & White				
	Office: sRGB, sRGB Scientific, LCD Display, Vivid Color, None				
	Press: Commercial, Euroscale, SWOP				
Resolution	Fast Color: 225 x 400 dpi				
	• Standard: 300 x 450 dpi				
	Enhanced: 525 x 450 dpi				
	• Photo: 525 x 2400 dpi				
Warm-Up Time	From Cold Start: Less than 10 minutes				
	From ENERGY STAR Mode: 2.5 minutes				
Printer Life	5 year/ 225,000 pages				
Recommended AMPV	4,000 prints/month				
Operating System	Windows 2000/ 2003 Server/ XP/ Vista				
	Macintosh: OS 10.3 or higher				
	• Linux				
* Assumes a 30 day mo	onth of printing.				

Memory Specifications

Table 2 Memory Specifications

Characteristic	Specifications
Minimum RAM	512 MB
Maximum RAM	2 GB
Supported RAM	Supports up to 2 GB of 512 MB or 1 GB DDR2 SDRAM using 2 slots.

Electrical Specifications

Table 3 Electrical Specifications

Characteristic	Specifications
Primary Line Voltages	• 90 - 140 VAC
	• 180 - 264 VAC
Primary Line Voltages Frequency Range	47 - 63 Hz
Power Consumption at Rated Voltage Input	Warm-Up:
	– Peak: 1250 W
	 Typical: 930 W
	Printing: 250 W
	• Idle: 104 W
	Power Saver: 45 W
	– 38 W (110)
	– 41 W (220)
In-rush Current	• Less than 12A (110)
	• Less than 6A (220)
Leakage Current	Less than 3.5 mA

Environmental Specifications

Table 4 Environmental Specifications

Characteristic	Specifications	
	Operating	Storage
Temperature	10° to 32° C (50° to 90° F)	-30° to 60° C (-22° to 140° F)
Humidity	10% to 80% RH Non-Condensing	10% to 95% RH, non-condensing
Altitude	0 to 2,438 meters (8,000 ft.)	0 to 15,000 meters (49,212 ft.)
Acoustic Noise	Operation	Standby or Ready
Sound Power Level (Bels)	7.0 B(A)	4.4 B(A)
Sound Pressure (Deci- bels)	57.0 dB(A)	31.0 dB(A)

NOTE: Check that the printer is on a stable, non-vibrating surface. Advise the customer to use care not to shake the printer excessively when loading media or closing the Front Door. During operation, the ink is in liquid form and can spill from the Printhead reservoir resulting in output defects.

Print Speed

Table 5 Print Speed Specifications

Resolution/ Tray	Simplex, A4 Paper Auto Duplex, A4 Paper	
Tray 1		
Fast Color (225x400)	13 ppm	13 ppm
Standard (300x450)	11 ppm	11 ppm
Enhanced (525x450)	10 ppm	9 ppm
Photo (525x2400)	6 ppm	6 ppm
PCL 600x400 Mode	10 ppm	9 ppm
PCL 600x600 Mode	6 ppm	6 ppm
Tray 2		
Fast Color (225x400)	40 ppm	30 ppm
Standard (300x450)	30 ppm	25 ppm
Enhanced (525x450)	19 ppm	18 ppm
Photo (525x2400)	6 ppm	4 ppm
PCL 600x400 Mode	20 ppm	18 ppm
PCL 600x600 Mode	12 ppm	10 ppm

First Print Output Time

First Print Output Time (FPOT) is defined as the time from when the engine receives a Start signal in Ready state, until a single page is printed and delivered to the output tray.

From Ready State

Resolution	FPOT
Fast Color (225x400)	4 seconds or less
Standard (300x450)	7 seconds or less
Enhanced (525x450)	9 seconds or less
Photo (525x2400)	15 seconds or less

From Non-Ready State

First Print Out Time includes the time required to print any maintenance pages (such as the mud page) and a single customer page on A size media from Tray 2.

Table 7 Non-Ready State

Starting State	FPOT
Off (cold)	12 minutes
Power Saver	2.5 minutes
Low Power (Standby)	30 seconds
Quiet Warm-Up	10 seconds

Cool Down Transition Time

At nominal ambient conditions, the printer will cool to a movable condition within specified times listed in Table 8.

Table 8 Cool Down Transition Time

Transition	Maximum Transition Time
From Ready	35 minutes
From ENERGY STAR	20 minutes

Cold Print Process Settings

The printer uses lower temperature settings to allow the printer to have a lower FPOT from power saver and low power modes. This allows printing to occur sooner, but at slower print speed. Certain print types (duplex, transparencies, etc.) may be excluded from cold print process and will therefore have a longer FPOT.

Table 9 Cold Print Process Settings

Characteristic	Setting
Drum Temperature	47° C
Preheat Temperature	Normal Range
Transfix Speed	5 ips up to Drum temperature of 50 [°] C 10 ips up to Drum temperature of 57 [°] C
Reservoir Temperature	Normal Range
Jetstack Temperature	Normal Range

Media and Tray Specifications

The media trays accommodate most sizes and types of paper, transparencies, or other specialty media. Print the Paper Tips page for a list of supported media.

To access the Paper Tips page:

- 1. On the Control Panel menu, select Information, and then press the OK button.
- 2. Select Information Pages, and then press the OK button.
- 3. Select Paper Tips Page, and then press the OK button to print.

Media that may Damage to the Printer

The printer can use a variety of media for print jobs. However, some media can cause poor output quality, increased jams, or damage. Unacceptable media includes:

- Rough, plastic, or porous media
- Paper that has been stapled, folded, photocopied, or wrinkled
- Envelopes with windows, metal clasps, padding, or adhesives with release strips
- Media that is less than 60 g/m² or more than 220 g/m²

Media Storage Guidelines

If media handling problems are a common occurrence, review the following storage guidelines with the customer.

- Store paper in dark, cool, relatively dry locations. Most paper items are susceptible to damage from ultraviolet (UV) and visible light. UV radiation, which is emitted by the sun and fluorescent bulbs, is particularly damaging to paper items. The intensity and length of exposure to visible light on paper items should be reduced as much as possible.
- Maintain constant temperatures and relative humidity
- Avoid light, heat, and dampness.
- Avoid attics, kitchens, garages, and basements for storing paper. Inside walls are drier than outside walls where moisture can collect.
- Store paper flat. Paper should be stored on pallets, cartons, shelves, or in cabinets.
- Avoid having food or drinks in the area where paper is stored or handled.
- Do not open sealed packages of paper until needed. Leave paper in the original packaging. For most commercial grades, the wrapper's inner lining protects the paper.
- Some specialty media is packaged inside sealed plastic bags. Leave the media inside the bag until needed; return unused media to the bag.

Supported Media

Information about paper sizes and weights that can be used in the printer trays is available on the Paper Tips page (Control Panel Menu -> Information -> Information Pages -> Paper Tips Page).

See also: Recommended Media List at www.xerox.com/paper

Media and Weight	Tray 1	Tray 2	Trays 3, 4, and 5
Standard Paper	100 Sheets	525 Sheets	525 Sheets
Transparency	50 Sheets	400 Sheets	400 Sheets
Envelope	10	40	40
Weight	60-220 g/m ²	60-220 g/m ²	60-220 g/m ²

Table 10 Tray Capacity

Power Saver

The ColorQube 8570 & 8870 printers have Power Saver settings to reduce energy consumption without turning off the printer. The Power Saver settings can be set at the Control Panel or in CentreWare IS. The Power Saver button on the Control Panel can be used to put the printer in or bring it out of Power Saver mode.

When the printer is in Power Saver or Standby mode, any of the listed actions cause the printer to exit Power Saver or Standby mode and start warming up.

- The printer receives a print job.
- The Power Saver button is pressed.

NOTE: Any other action, such as opening a door or inserting a tray, may or may not exit Power Saver or Standby mode.

If the Power Saver button is lit solid, pressing the button causes a menu with no items to be displayed for 5 seconds. Pressing the button again returns the printer to Ready state.

Power Saver Mode

When the printer enters Power Saver mode, the Control Panel is displayed and printer status show Power Saver mode. The printer does not enter Power Saver mode at the following conditions:

- The printer is in Standby mode displaying a Non-Xerox ink or maintenance kit query.
- The printer is out of any ink, due to that it might not be able to purge the Printhead if necessary on exit from Power Saver mode.
- A static Tray is missing.

Standby Mode

The printer can be set up to go into Standby mode periodically to save energy. Standby mode uses the least power and the printer can take several minutes to warm up and come to Ready to print. When the printer enters Standby mode, the Control Panel is displayed and printer status shows Standby mode.

Warm-up Settings

Warm-up Setting can be used to warm up the printer automatically.

Table 1 Warm-up Settings

Mode	Description	Note
Intelligent Ready	The printer automatically monitors the printer usage patterns and follows a warm-up schedule based on the printer usage.	Causes the printer to exit Standby and Power Saver modes.
Scheduled	The printer warms up at scheduled times. The Warm-up Settings can be used to set one warm-up time for each day. The printer can also be set to enter Standby mode at a specific time.	Causes the printer to exit Standby and Power Saver modes.
Job Activated	The printer warms up when it receives a print job.	

Fast Resume

Fast Resume brings the printer out of Power Saver and Standby modes more quickly. This changes the default Sleep/ Low Power timeouts and increases energy usage. Fast Resume can be set to On/Off.

Physical Dimensions and Clearances Printer Dimensions

Table 1 Print Engine		
Dimensions	8570N/ DN/ DT	8870DN
Width	16.0 in. (40.6 cm)	16.0 in. (40.6 cm)
Depth	20.5 in. (52.1 cm)	20.5 in. (52.1 cm)
Height	14.6 in. (37.0 cm)	14.6 in. (37.0 cm)
Weight	60.5 lbs. (27.4 kg)	60.5 lbs. (27.4 kg)

Table 2 525-Sheet Feeder (Trays 3, 4, and 5)

Dimensions	8570N/ DN/ DT	8870DN
Width	15.5 in. (40.0 cm)	15.5 in. (40.0 cm)
Depth	20.0 in. (50.8 cm)	20.5 in. (52.1 cm)
Height	5.0 in. (12.7 cm)	5.0 in. (12.7 cm)
Weight	12.0 lbs. (5.4 kg)	12.0 lbs. (5.4 kg)

Table 3 Printer Stand

Dimensions	8570N/ DN/ DT, 8870DN
Width	19.75 in. (50.2 cm)
Depth	27.0 in. (68.6 cm)
Height	14.0 in. (35.6 cm)
Weight	63.5 lbs. (28.8 kg)

Clearance and Mounting Surface Specifications

These specifications apply to any printer used as a table-top printer, without a Lower Tray Assembly or Printer Stand.

1. In order to function properly, the printer must be placed on a flat surface with the following minimum clearances.



Figure 1 Clearance Specifications

- 2. Mounting surface flatness must be within the specified range.
- 3. The printer must not be tipped or tilted more than 10 degrees angle.



Figure 2 Tilting Specifications

Information Pages, Troubleshooting Pages, and Test Prints

The following Information, Troubleshooting, and Test Prints Pages are available in the ColorQube 8570/8870 printer. These pages can be accessed through the Control Panel at various locations.

Table 1 Page Description		
Page	Control Panel Menu Access and Description	
Information Pages		
Menu Map	Control Panel Menu -> Information -> Menu Map	
Menu Map	Lists all main and second level Control Panel menu headings.	
Information Pages	Control Panel Menu -> Information -> Information Pages	
Configuration Page	Lists all information about the current configuration of the printer.	
Paper Tips Page	Lists supported paper and provides tips on setting up and load- ing paper trays.	
Supplies Usage Page	Provides coverage information and part numbers for reordering supplies.	
Connection Setup Page	Contains information about setting up the printer on a network, or connecting directly to a computer on a Windows or Macin- tosh.	
Startup Page	Contains basic printer configuration and network information. The Startup Page prints during the startup sequence when enabled, or if the printer detects an error during the Power-On Self Test (POST).	
Usage Profile	Provides summary page of printer usage information.	
PostScript Font List	Contains list of PostScript fonts available within the printer or installed on the printer's Hard Drive, if the optional Hard Drive is installed.	
PCL Font List	Contains list of PCL fonts available internally within the printer or installed on the printer's Hard Drive, if the optional Hard Drive is installed.	
Disk Directory	Prints pages listing all downloaded files on the Hard Drive, such as fonts and macros. This feature requires optional Hard Drive.	
Sample Pages	Control Panel Menu -> Information -> Sample Pages	
Graphics Demonstration	Prints a page containing a graphic image.	
Office Demonstration	Prints a page containing text.	
2-Sided Demonstration	This feature requires automatic 2-sided printing option. Prints two pages on one sheet containing a graphic image on one side, and text on the other side.	
Print Mode Demonstration	Prints three copies of the Office Demonstration Page in each print-quality mode (Fast Color, Standard, Enhanced, Photo) to demonstrate printer speed and resolution.	
CMYK Sampler Pages	Prints spectrum of color rectangles with the values of each component color (Cyan, Magenta, Yellow, Black).	

Table 1 Page Description

Page	Control Panel Menu Access and Description	
RGB Sampler Pages	Prints spectrum of color rectangles with the values of each component color (Red, Green, Blue).	
PANTONE Color Sampler Pages	Prints the PANTONE/256 Color Sampler chart to help you choose the best PANTONE/256 colors to use in applications.	
Supplies Info	Control Panel Menu -> Information -> Supplies Info	
Supplies Usage Page	Prints a page describing the status of the supplies used by the printer.	
Printer Setup	Control Panel Menu -> Information -> Printer Setup	
Configuration Page	Lists all information about the current configuration of the printer.	
Connection Setup Page	Contains information about setting up the printer on a network, or connecting directly to a computer on a Windows or Macin- tosh.	
Troubleshooting Pages		
Paper Jams	Control Panel Menu -> Troubleshooting -> Paper Jams	
Paper Tips Page	Prints a page with information on recommended paper types and weights.	
Paper Path Test Single Print Continuous Print 	Picks paper from a selected tray. A rectangle is printed on the page to indicate minimum margins. Text is printed on the page's upper-left corner to indicate orientation. Custom-size paper will be picked, but no graphics or text will be printed.	
Print Quality Problems Control Panel Menu -> Troubleshooting -> Print Q Problems		
Troubleshooting Print Qual- ity Page	Prints four pages with information on correcting print quality problems.	
Eliminate Light Stripes	Provides cleaning procedures to clean light stripes in prints and prints a Light Stripe Test page; these processes take about five minutes.	
Remove Print Smears	Performs a cleaning procedure to eliminate ink smears on prints; this process takes about 5 minutes, heats some rollers, and runs up to 15 or more sheets of paper through the printer. The printer prints 6 blank pages after the cleaning procedure is complete.	
Network Problems	Control Panel Menu -> Troubleshooting -> Network Prob- lems -> Network Log Pages	
TCP/IP Start Log	Prints a report containing TCP/IP conditions at startup.	
TCP/IP Runtime Log	Prints pages with a recent sequence of TCP/IP network events, the network routing table, the ARP table and the DNS cache.	
AppleTalk Start Log	Prints a report containing AppleTalk conditions at startup.	
AppleTalk Runtime Log	Prints a report containing AppleTalk recent runtime conditions.	
Troubleshooting	Control Panel Menu -> Troubleshooting -> Service Tools	
Printer Status Page	Provides information about the printer including Jam History and Fault History. A Light Stripe Test page is included with the Printer Status Page.	

Table 1 Page Description

Page	Control Panel Menu Access and Description		
Service Usage Profile	Contains a detailed log of printer use, tallying numbers of jams, how often features are used, usage by tray, job and page counts, and so on.		
Solid Fill Prints Cyan Print Magenta Print Yellow Print Black Print Ink Flush Prints Cyan Refresh Magenta Refresh Yellow Refresh Black Refresh The following Test Print From the Control I Press the OK butt	Prints 2 double-sided pages of solid fill print for each color. Performs cleaning procedure to correct color mixing and prints 20 pages of solid fill prints. s can be accessed through the Hidden Service Menu. Panel menu, select Troubleshooting -> Service Tools. on to access Service Tools.		
 With the cursor highlighted Printer Status Page, press both the Up and Down Arrow buttons to display the Hidden Service Menu. 			
Manufacturing (for Manufacturing use only)			
Jet Check	Checks the jets and prints a blank page and a Cleaning Page.		
Yellow Jet Check	Checks the yellow jet and prints a red Solid Page and a green Solid Page.		
Eliminate Light Stripes	Performs clean process and prints 1 Cleaning Page and 1 Light Stripes Test page.		
Solid Fills Manufacturing 1x 10x Continuous Manufacturing Skew M Check Ink Levels for St ping	 Prints 6 Solid Fill Pages of the selected color. Prints 1 Solid Fill Page of the selected color. Prints 10 Solid Pages of the selected color. Prints Solid Fill Pages up to 999 pages. Prints 1 Skew Margin page. Prints 1 Ink Stick Shipping Status page. 		
Test Prints			
Weak/ Missing Jets	Contains diagnostic image for evaluating jetting performance of the Print head and prints a Weak and Missing Jets Print page.		
 Cleaning & Light Stripes Prints a Cleaning Page and a Light Stripes Test page. Cleaning Page (Mud Page): Removes discolored inliprint head. Light Stripes Test: Prints lines from each jet to see if jet is clogged. This page is formatted for Letter, Lega A4 sizes, and output may vary on other sizes. Color Bands RGBK Dithers Prints 5 pages of dithered and solid fill regions of all color constraints. 			

Table 1 Page Description

Dog	Dana Control Danal Many Assess and Description			
гау	e	CO	ni ol Panel Menu Access and Description	
Рар	er Path	Performs a general test of paper path, print process, and quickly assesses the Printhead performance and prints 2 blank pages and 1 Skew Margin page.		
Soli	d Fills	Prir	ts solid fill print for each color.	
•	YMCKRGB Solid Fills	•	Prints 7 solid fill pages for YMCKRGB.	
Cya	n Solid Fills			
•	1x	•	Prints 1 page of Cyan solid fill.	
•	10x	•	Prints 10 pages of Cyan solid fill.	
•	Continuous	•	Prints Cyan solid fill pages up to 999 pages.	
•	Adhere Ink Stick	•	Prints 26 double-sided pages of Cyan solid fill.	
•	Cyan Refresh	•	Prints 20 double-sided pages of Cyan solid fill.	
Mag	genta Solid Fills			
•	1x	•	Prints 1 page of Magenta solid fill.	
•	10x	•	Prints 10 pages of Magenta solid fill.	
•	Continuous	•	Prints Magenta solid fill pages up to 999 pages.	
•	Adhere Ink Stick	•	Prints 26 double-sided pages of Magenta solid fill.	
•	Magenta Refresh	•	Prints 20 double-sided pages of Magenta solid fill.	
Yello	ow Solid Fills			
•	1x	•	Prints 1 page of Yellow solid fill.	
•	10x	•	Prints 10 pages of Yellow solid fill.	
•	Continuous	•	Prints Yellow solid fill pages up to 999 pages.	
•	Adhere Ink Stick	•	Prints 26 double-sided pages of Yellow solid fill.	
•	Yellow Refresh	•	Prints 20 double-sided pages of Yellow solid fill.	
Blac	k Solid Fills			
•	1x	•	Prints 1 page of Black solid fill.	
•	10x	•	Prints 10 pages of Black solid fill.	
•	Continuous	•	Prints Black solid fill pages up to 999 pages.	
•	Adhere Ink Stick	•	Prints 26 double-sided pages of Black solid fill.	
•	Black Refresh	•	Prints 20 double-sided pages of Black solid fill.	
Red	Solid Fills			
•	1x	•	Prints 1 page of Red solid fill.	
•	10x	•	Prints 10 pages of Red solid fill.	
Gre	en Solid Fills			
•	1x	•	Prints 1 page of Green solid fill.	
•	10x	•	Prints 10 pages of Green solid fill.	
Blue	e Solid Fills			
•	1x	•	Prints 1 page of Blue solid fill.	
•	10x	•	Prints 10 pages of Blue solid fill.	
Manufacturing Skew Margin Evaluates image alignment to the page. This print includes a blank page and Skew/Margin Test print.		luates image alignment to the page. This print includes a hk page and Skew/Margin Test print.		
Cha	se Pages	Prir	its a blank sheet of paper.	

Table 1 Page Description

Page	Control Panel Menu Access and Description		
Oil Bar Chase	Provides information on the Drum Maintenance system diag- nostic image for location of the oil bar and the printer prints 3 Oil Bar Chase pages.		
Purge Efficiency	Provides diagnostic image for evaluating jetting performance of the Printhead after "eliminate light stripes" and the printer prints 1 Purge Efficiency page.		
X-Axis Motion	For manufacturing use only. Prints 1 X-Axis Motion page.		
Drop Mass Calibration	Provides diagnostic image for setting print head voltage and the printer prints a Drop Mass Calibration page.		
Head Roll	For manufacturing use only. Prints 1 Head Roll page.		
Intensity CMYK	For manufacturing use only. Prints 1 Intensity CMYK page.		
Solid Fill Red Scan	For manufacturing use only. Prints 1 red solid fill regions page.		
Solid Fill Green Scan	For manufacturing use only. Prints 1 green solid fill regions page.		
Solid Fill Blue Scan	For manufacturing use only. Prints 1 blue solid fill regions page.		
Startup Page	Provides information about the printer. The Startup Page is printed each time the printer is turned on. The page can be turned off through the Control Panel menu.		
Eliminate Light Stripes	 Includes three procedures to remove the effects of missing jets and prints 1 Cleaning Page. Light Stripe Test: Prints a page to determine if any jets are printing incorrectly. A4, letter or legal paper must be available. Start Basic Clean Cycle: Performs a cleaning procedure to remove light stripes in prints; this process will take about 5 minutes. The printer prints 1 Cleaning Page and 1 Light Stripes Test page after the cleaning process is complete. Advanced: Fixes missing light stripes that were not corrected by Basic Eliminate Light Stripes. The printer prints 5 double-sided pages prior to start the cleaning procedure. Jet Substitution Mode: Substitutes a good jet for a weak or missing jet. Use jet substitution mode ONLY if the Basic and Advanced Eliminate Light Stripes functions (at least 2 cleanings) cannot fix a print quality problem caused by a weak or missing jet. 		
Adjust X-Axis Scale	Calibrates the X-Axis to position the Printhead in the proper place. The printer prints a Scale Calibration Print page.		
Service Usage Profile	Provides a detailed log of printer use, tallying numbers of jams, how often features are used, usage by tray, job and page counts, etc.		
OCR Usage Profile	Provides a detailed log of printer use, tallying numbers of jams, how often features are used, usage by tray, job and page counts, etc.		

Acronyms and Abbreviations

Table 1 Acronyms and Abbreviations			
Acronyms/			
Abbreviations	Description		
A3	Paper size 297 millimeters (11.69 inches) x 420 millimeters (16.54 inches).		
A4	Paper size 210 millimeters (8.27 inches) x 297 millimeters (11.69 inches).		
A5	Paper size 148 millimeters (5.82 inches) x 210 millimeters (2.10 inches).		
AC	Alternating Current is type of current available at power source for printer.		
AD	Auto Duplex		
A/D	Analog to Digital refers to conversion of signal		
AMPV	Average Monthly Print Volume		
ARP	Address Resolution Protocol		
ASIC	Application Specific Integrated Circuit		
ASSY	Assembly		
ATM	Adobe Type Manager		
ATVC	Auto Transfer Voltage Control		
BLK	Black		
BOOTP	Bootstrap Protocol		
BSD	Block Schematic Diagram		
BTM	Bottom		
С	Degrees Celsius		
CAM	Camshaft		
CCW	Counterclock-Wise		
CD	Circuit Diagram		
CD	Compact Disc		
CE	CE mark is a mandatory conformity mark on products on a single market in		
	the European Economic Area (EEA).		
CLT	Clutch		
СМ	Centimeter		
CMD	Command line interpreter		
CMYK	Cyan, Magenta, Yellow, Black		
COMM	Communication		
CRU	Customer Replaceable Unit		
CSE	Customer Service Engineer		
CW	Clockwise		
CWIS	CentreWare Internet Services		
dB	Decibel		
DC	Direct Current is type of power for machine components. Machine converts		
	AC power from power source to DC power.		
DNS	Domain Name System		
DDNS	Dynamic Domain Name System		
DDR2 DIMM	Double Data Rate Dual In-Line Memory Module		

Table 1 Acronyms and Abbreviations

Acronyms/ Abbreviations	Description
DHCP	Dynamic Host Configuration Protocol
DIMM	Dual In-line Memory Module
DM	Drum Maintenance
DMM	Digital Multimeter is generic name for meter that measures voltage, current, or electrical resistance.
DMO	Developing Markets Organization
DMU	Drum Maintenance Unit
DNS	Domain Main System
DPI	Dots Per Inch
DPM	Documents Per Minute
DR	Drum
DRV	Drive
Duplex	2-sided printing
EDOC	Electronic Documentation
EEA	European Economic Area
EC	European Community
EEPROM	Electronically Erasable Programmable Read-Only Memory
EMI	Electromagnetic Interference
EOM	End of Message
ER/ERR	Error
ESD	Electrostatic Discharge. A transfer of charge between bodies at different elec- trostatic potential.
ETN	Engine Tracking Number
ENV	Environment
F	Degrees Fahrenheit
FANG	Fang is an ASIC found on the Main Board that deals with a lot of low-level printer control operations. The FPGAs are the interface chips that allow the separate boards to communicate to each other over the gray ribbon cables.
FCC	Federal Communications Commission
FE	Field Engineer
FFC	FFC Cable
FIFO	First In First Out
FPGA	Field Pre-programmable Gate Array (Printhead interface and motor controller for the printer)
FPOT	First Print Output Time
FR/FRNT	Front
FRU	Field Replaceable Unit
FT	Foot
FTP	File Transfer Protocol
FTTR	Fast Time To Ready
FUNC	Function

Acronyms/ Abbreviations	Description	Acro Abbi
FX	Fuji-Xerox	LCD
G	Gram	LE
GB	Giga Byte	LED
GND	Ground	LEF
GSM/ gsm	Grams per Square Meter	L/H
GUI	Graphical User Interface	LJ
HARN	Harness	LPR
HCF	High Capacity Feeder	LTR
HDD	Hard Disk Drive	LSI
HFSI	High Frequency Service Items	mA
HTML	Hyper Text Markup Language	MAC
HTTP	Hyper Text Transfer Protocol	MAR
HUM	Humidity	MB
Hz	Hertz (Cycles per second)	MHz
HW	Hardware	MM
IC	Integrated Circuit	MOS
I/F	Interface	MOT
IM	Ink Melter	MP
IME	Image Marking Engine	MPT
IN	Inches	NA
IOT	Image Output Terminal	NBN
IP	Internet Protocol	NCL
IPA	Isopropyl Alcohol	NetB
IPM/ ipm	Images Per Minute	NOH
IPP	Internet Printing Protocol	NPP
IPSec	IP Security	NVM
IPV4	Internet Protocol Version 4	NVR
IPV6	Internet Protocol Version 6	OCR
IPX	Internet Protocol eXchange	OEM
IQ	Image Quality	OHP
IR	InfraRed	OPT
IR	Intelligent Ready	OS
ISC	Ink Stick Count	PC
JPEG	Joint Photographic Experts Group File Interchange Format	PCB
JS	Jetstack	PCL
JSM	Jet Substitution Mode	PES
KB	Kilo Byte	PDF
KG	Kilogram	PDL
LAN	Local Network Area	PH
LBS	Pounds	P/J

Table 1 Acronyms and Abbreviations

Acronyms/ Abbreviations	Description
LCD	Liquid Crystal Display
LE	Leading Edge
LED	Light Emitting Diode
LEF	Long Edge Feed
L/H	Left Hand
LJ	Left Jetstack
LPR	Line Printer Remote
LTR	Letter size paper (8.5 x 11 inches)
LSI	Large Scale Integrated Circuit
mA	Mili-amp
MAC Address	Media Access Control Address
MARKDWR	Marking Drawer/Unit
MB	Mega Byte
MHz	Mega Hertz
MM	Millimeter
MOSFET	Metal-Oxide Field-Effect Transistor
MOT	Motor
MP	Media Path
MPT	Multi-Purpose Tray
NA	North America
NBNS	NetBIOS Name Service
NCL	Nest Configuration Library
NetBIOS	Network Basic Input/ Output System
NOHAD	Noise, Ozone, Heat, Air, Dust
NPP	No Paper
NVM	Non Volatile Memory
NVRAM	Non-Volatile Random Access Memory
OCR	Optical Character Recognition
OEM	Original Equipment Manufacturer
OHP	Over Head Paper (Transparency)
OPT	Optional
OS	Operating System
PC	Personal Computer
PCB	Printed Circuit Board
PCL	Printer Command Language
PEST	Print Engine Self Test
PDF	Adobe Acrobat Portable Document Format
PDL	Page Description Language
PH	Preheater
P/J	Plug Jack (electrical connections)

Acronyms/ Abbreviations	Description
PJL	Printer Job Language
PL	Parts List
P/N	Part Number
PO	Part of (Assembly Name)
POP3	Post Office Protocol version 3
POPO	Power Off/ Power On
POST	Power On Self Test
PPD	PostScript Printer Description
PPM	Pages Per Minute
PPS	Pages
PQ	Print Quality
PS	PostScript
PVM	Print Volume Management
PWB	Printed Wiring Board
PWBA	Printed Wiring Board Assembly
PWS	Portable Work Station
PZT	Piezo-Electric Transducer
RAM	Random Access Memory
RAP	Repair Analysis Procedure for diagnosis of machine status codes and abnor- mal conditions.
RE	Reservoir
REF	Refer to
REP	Repair Procedure for disassembly and reassembly of component on the printer.
RET	Retard
RGB	Three primary colors of light - Red Green Blue
RH	Relative Humidity
RJ	Right Jetstack
RLS	Release
RMS	Root-Mean Square
ROM	Read-Only Memory
RTD	Retard
SCP	Service Call Procedure
SCSI	Small Computer Systems Interface
SEC	Second
SEF	Short Edge Feed
Self-Test	An automatic process that is used to check Control Logic circuitry. Any fault that is detected during self-test is displayed by fault code or by LEDs on PWB.
SIMM	Single Inline Memory Module used to increase printing capacity.
Simplex	Single sided copies

Table 1 Acronyms and Abbreviations

Acronyms/ Abbreviations	Description
SKU	Stock Keeping Unit
SLP	Service Location Protocol
SMTP	Simple Mail Transfer Protocol
SNMP	Simple Network Management Protocol
SNR	Sensor
SOL	Solenoid
sRGB	A standard RGB color space created cooperatively by HP and Microsoft in for use on monitors, printers, and the Internet.
SSDP	Simple Service Discovery Protocol
SW or S/W	Software
SWOP	Specifications for Web Offset Publications
T/A	Takeaway
TAR	Takeaway Roller
TCP/IP	Transmission Control Protocol/ Internet Protocol
TE	Trailing Edge
TFTP	Trivial File Transfer Protocol
TIFF	Tagged Image File Format
TP	Test Point
UI	User Interface
UL	Underwriters Laboratories
UM	Unscheduled Maintenance
UP	Usage Profile
USB	Universal Serial Bus
UV	Ultraviolet
VAC	Volts Alternating Current
VDC	Volts of Direct Current
VGA	Video Graphics Array
VPP	The waveform is a voltage waveform or Peak to Peak Voltage. Difference between a waveform's positive peak value and its negative peak value.
VSS	Negative Supply
W	Watt
W/	With - indicates machine condition where specified condition is present.
W/O	Without - indicates machine condition where specified condition is not present.
WSD	Web Services Description
XE	Xerox Europe
ZIF	Zero Insertion Force (ZIF connector)

1 Service Call Procedures

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Service Call Procedures

This section provides an overview of the steps a service technician should take to service the printer and attached options. The printer's diagnostic routines report problems using fault messages and codes displayed on the Control Panel, logged in the Service Usage Profile, or by flashing LEDs. These error indications serve as the entry point into the troubleshooting process. System problems not directly indicated by or associated with an error message or fault code are covered in Chapter 6, General Troubleshooting. Print-quality problems are covered in Chapter 3, Image Quality.

The steps listed here are a guide for performing any service on this printer. If you choose not to use these steps, it is recommended that you start at the appropriate troubleshooting procedure and proceed from there. When servicing the printer, follow the safety measures detailed in the Introduction chapter, Service Safety Summary.

- 1. Identify the problem.
 - Verify the reported problem does exist.
 - Check for any fault codes and write them down.
 - Print normal customer prints and service test prints.
 - Make note of any print-quality problems in the test prints.
 - Make note of any mechanical or electrical abnormalities present.
 - Make note of any unusual noise or smell coming from the printer.
 - Print a Service Usage Profile, if the printer is able to print.
 - View the Engine Error and Jam Error Histories under the Service Tools menu.
 - Verify the AC input from the wall outlet is within specifications.
- 2. Inspect and clean the printer.
 - Follow the Cleaning Procedures given in Chapter 1, Service Call Procedures.
 - Verify that the power cord is in serviceable condition.
 - Restart the printer to check if the error reoccurs.
- 3. Find the cause of the problem.
 - Use the troubleshooting procedures to find the root cause of the problem.
 - Use Service Diagnostics to check the printer and optional components.
 - Use the Wiring Diagrams and Plug/Jack Locator in Chapter 7, Wiring Data to locate test points.
 - Take voltage readings as instructed in the troubleshooting procedure.
- 4. Correct the problem.
 - Use the Parts List in Chapter 5 to locate a part number.
 - Use the Repair procedures in Chapter 4 to replace the part.
- 5. Final Checkout
 - Test the printer to verify the problem is corrected and no new problems arose.

Accessing Engine Error History, Jam History, and Diagnostics History

NOTE: Definitions of the codes that appear in the Fault and Jam History appear in Chapter 2, Fault Messages and Codes Troubleshooting.

There are three ways that you can access and view the Error History records: On the Control Panel Menu, Printed Error History, and CentreWare Internet Services (CWIS).

On the Control Panel Menu

Three options are available for accessing the Engine Fault History, Jam History, and Diagnostics History: Button Shortcut, Button Selection, and Hidden Service Menu.

Error History Examples

Engine Error History	Jam History	Diagnostics History	
Engine Copy Count:5267	Engine Copy Count:9132		
15:92,602.00:5245	20:	0:	
14:92,602,00:5245	19:	1:	
13:92,602.00:5238	18:	2:	
12:92,602.00:5238	17:	3:	

Button Shortcut

- 1. From the Control Panel Menu, press and hold the **Up** and **Down** arrow buttons and press the **OK** button.
- 2. The Service Tools menu is displayed.
- 3. Scroll through the menu to select **Engine Error History**, **Jam History**, or **Diagnostics History**.
- 4. Press the OK button to display the result for each error history.

Button Selection

- 1. From the Control Panel Menu, scroll through the menu and select **Troubleshooting** -> **Service Tools**.
- 2. The Service Tools menu is displayed.
- 3. Scroll through the menu to select **Engine Error History**, **Jam History**, or **Diagnostics History**.
- 4. Press the **OK** button to display the results for each error history.

Hidden Service Menu

- 1. From the Control Panel menu, scroll down and select **Troubleshooting** --> **Service Tools**.
- 2. With the cursor at the top of the **Service Tools** menu (**Printer Status Page**), press both the **Up** and **Down Arrow** buttons to display the Hidden Service menu.
- 3. The Service menu is displayed.
- 4. Scroll through the menu to select **Engine Error History**, **Jam History**, or **Diagnostics History**.
- 5. Press the **OK** button to display the results for each error history.

On the Printed Fault History

- 1. Print (if possible) the **Printer Status Page**. The Jam History and Fault History are listed on the second page of the report.
- 2. From the Control Panel Menu, scroll through the menu and select **Troubleshooting** -> **Service Tools** -> **Printer Status Page**.
- 3. The Printer Status page and Light Stripes Test pages are printed. The Jam History and Fault History are listed on the second page of the report.

Example:

Jam History

Date

Page Count Code

Fault History

Date	Page Count	Code	Description
Apr 22, 2010, 16:49:56	8968	99,022.00	Print Engine Self Test
Apr 22, 2010, 16:51:23	8968	92,602.00	Electronics
Apr 22, 2010, 16:52:24	8968	92,602.00	Electronics
Apr 22, 2010, 16:53:01	8968	92,602.00	Electronics
Apr 22, 2010, 17:04:05	8968	92,602.00	Electronics
Apr 22, 2010, 17:04:49	8968	99,021.00	Print Engine Self Test
Apr 22, 2010, 17:04:49	8968	99,022.00	Print Engine Self Test
Apr 26, 2010, 16:44:58	8968	99,008.00	Print Engine Self Test
Apr 26, 2010, 16:44:58	8968	99,006.00	Print Engine Self Test
May 18, 2010, 15:40:39	9047	93,967.00	Ink Delivery and ink thermals
May 18, 2010, 17:36:51	9047	93,967.00	Ink Delivery and ink thermals
May 18, 2010, 17:37:57	9047	91,720.00	Marking drawer unit
May 18, 2010, 17:40:34	9047	91,720.00	Marking drawer unit
May 18, 2010, 17:43:13	9047	91,720.00	Marking drawer unit
May 18, 2010, 17:45:52	9047	91,720.00	Marking drawer unit

Figure 1 Jam History and Fault History

On CWIS

If the printer is connected to a network and has a TCP/IP address, view the printer's web page using a web browser.

- 1. Open a web browser.
- 2. Enter the printer's IP address as the URL.
- 3. Click Support -> Troubleshooting -> Diagnostics Logs.
- 4. A list of logs is displayed:
 - Network Startup
 - TCP/IP Startup
 - TCP/IP Runtime
 - AppleTalk Startup
 - AppleTalk Runtime

Example



Figure 2 CWIS
Recommended Tool Kit

Table 1 lists required recommended and optional tools to service this and other similar products.

Table 1 Service Tools

Description	Detail
Required Tools	
Assorted Nut Drivers	
Cleaners	Multipurpose surface cleaner and Alcohol
Driver Extension	
ESD Strap	
Ethernet Crossover Cable	Tech tool to connect the printer directly to a laptop or computer without a hub or router.
Flashlight	
Flathead Drivers	5.0 x 75 mm, 3.0 x 75 mm
Lint-Free Cloths	
Lubricant/ Grease	Reolube P/N 070E00890
Multimeter	Volts, Ohms, Current
Needle Nose Pliers	Tech
Phillips Drivers	Phillips # 2 and # 1 5.0 x 75 mm, 3.0 x 75 mm, 6.0 x 100 mm
Serial Adapter Cable	600T80374
Small Channel Lock Pliers	
Torque Screw Driver	Required for this printer - P/N 003082700
Torx Driver Bits	T5, T8, T10, T15, T20 Extended Shank 3" (75 mm)
Wire Cutters	
Highly Recommended Tools	
Nut Driver	5.5 mm (magnetic) - P/N 600T2123
Serial Adaptor Cable	To connect a computer's serial port to the printer's Service Only port to obtain BackChannel Trace information. Requires use of a RS-232 Null Modem cable.
RS-232 Serial Null Modem Cable	P/N 600T80375
Toner Vac	Toner and general cleaning
Optional Tools	
3 -Prong Claw Part-Retriever	
Bootable CDs	
Canned Air	
Dental Mirror	
Electrical Tape	
Heat Shrink Tubing	
IC Chip Puller	
Jeweler's Screwdriver Kit	
Pointer with Magnetized Head	

Table 1 Service Tools Description Detail Precision/ Hobby Tool Set Phillips, flathead, pliers, small torx drivers Screw Box Soldering Iron Tweezers Image: Stress Stre

Utility Knife

Initial Actions

Purpose

Use the following procedure to determine the reason for the service call and to identify and organize the actions which must be performed.

Procedure

- 1. Gather the information about the service call and the condition of the printer.
 - Question the operator(s). Ask about the location of most recent paper jams. Ask about the image quality and the printer performance in general, including any unusual sounds or other indications.
 - After informing the customer that the printer will not be available for printing, disconnect the printer from the customer's network.
 - If a new installation, be sure all packing material is removed.
 - Check that the power cords are in good condition, directly plugged in to the power source, and free from defects. Repair or replace the power cords as required. Check that the circuit breaker, if present, is not tripped.
 - If the printer appears is inoperative, go to Chapter 6 Electrical Troubleshooting and repair the problem, then continue below.
 - Inspect any rejected copies. Inquire as to, or otherwise determine, the paper quality and weight. Print the **Paper Tips** page for specific media specifications. Look for any damage to the prints, oil marks, image quality defects, or other indications of an unreported problem.

NOTE: If a fault code is displayed while performing a diagnostics procedure, go to that fault code RAP and repair the fault. Return to Diagnostics and continue with the procedure that you were performing.

- Display and review the information in the Fault History, Jam History, and Service Usage Profile. Classify this information into categories:
 - Information that is related to the problem that caused the service call.
 - Information that is related to secondary problems.
 - Information that does not require action, such as a single occurrence of a problem.
- 2. Perform any required routine maintenance activities. Refer to the Routine Maintenance Activities section.
- 3. Try to duplicate the problem by running the same jobs that the customer ran once repairs are complete to verify repairs are effective.
- 4. Go to Chapter 6 General Troubleshooting to further investigate the problem.

Routine Maintenance Activities

Procedure

- 1. Clean the Pick Rollers on every call.
- 2. Use the Control Panel to check maintenance item counters.
- 3. Compare the counter values to those listed in Table 1.
- 4. Advise the customer of any routine maintenance items that are approaching or over the service limit.

Table 1 Routine Maintenance Item Life Expectancy

ltem	Routine Maintenance Items	Print Life
1	Drum Maintenance Kit (Extended- Capacity)	30,000 cycles (0-20% coverage) 20,000 cycles (20-100%) coverage
	Drum Maintenance Kit (Standard- Capacity)	10,000 cycles
2	Waste Tray	Empty every 7 Purges

Inspection

Rollers

Replace the Rollers when you see any of the following defects:

- Flat spots
- Out of roundness
- Cracked rubber
- Loss of traction (tackiness) causing pick or feed failures

Gears

Replace Gears that show any signs of wear or damage. Look for these problems:

- Thinned gear teeth
- Bent or missing gear teeth; check especially where a metal gear drives a plastic gear.
- Fractured or cracked Gears (oil or incorrect grease on a plastic Gear can cause the Gear to crack).

Belts

There are 3 rubber Belts in the printer. Inspect the Belts for wear. Look for these problems:

- Loose rubber particles below the Belts indicate a worn Belt.
- Missing teeth in the Belts.
- Cracking or moderate fraying; a small amount of fraying is inevitable, so look for other signs of wear before replacing the Belt.

Empty the Waste Tray

The Waste Tray must be emptied when the Control Panel displays a message stating that the Waste Tray is full.

CAUTION

Never reuse waste ink in the printer; it will damage the Printhead.

1. Open the Side Door.



Figure 1 Opening the Side Door

WARNING

The Waste Tray may be hot. Handle the Waste Tray carefully.

2. Pull the Waste Tray completely out of the printer.



Figure 2 Removing the Waste Tray

NOTE: The Waste Tray may be locked if the printer is in a warm-up cycle, or if the ink is cooling down following the Eliminate Light Stripes troubleshooting routine. If the tray is locked, close the Door and wait 15 minutes before repeating steps 1 and 2.

3. Empty the Waste Tray in a waste container. The ink is non-toxic and can be discarded as normal office waste.



Figure 3 Emptying the Waste Tray

NOTE: The Waste Tray must be out of the printer for more than five seconds or you will continue to receive a **Waste Tray Full** message on the Control Panel.

4. Insert the Waste Tray into the printer and push it completely into the Waste Tray slot.



Figure 4 Inserting the Waste Tray

5. Close the Side Door.

Lubrication

The printer is lubricated during assembly at the factory and does not require periodic lubrication. Some parts require lubrication following replacement. These parts are identified in the replacement procedures. When lubricating during replacement, use the grease approved for all Phaser printers.

CAUTION

Plastic parts will deteriorate when unspecified grease and chemicals are used. To avoid damage to the printer, use only Rheolube 768 grease.

Rheolube 768 Grease: Part Number 070E00890

Cleaning Procedures

Purpose

The purpose is to provide cleaning procedures to be performed at every call.

Cleaning is indicated if the printer is having print-quality or paper-feeding problems. Some cleaning procedures, such as purging the jet nozzles are done automatically when necessary. Other procedures, such as scrubbing the Paper Feed Rollers with a moistened lint-free wipe, must be done by the customers, but only if the Rollers are visibly dirty.

Cleaning is indicated by any of the following:

- Light stripes or missing colors appear in prints.
- Ink smears or random streaks appear on the front or back of prints.
- Only spots appear along the tops of prints.
- Mispicks or multiple picks occur at the media tray.
- Persistent paper jams inside the printer or at the media tray if the Rollers are visibly dirty.
- Wiggly vertical stripes caused by too much oil created by a dirty Drum Maintenance Unit blade.
- Most print-quality problems can be corrected by running the cleaning procedures on the printer's Control Panel menu.

Procedure

CAUTION

Do not use any solvents unless directed to do so in this manual.

General Cleaning

Use a dry lint-free cloth or a lint-free cloth moistened with water for all cleaning unless directed otherwise in this manual. Wipe with a dry, lint-free cloth if a moistened cloth is used.

Inspect the vents on the exterior of the printer for dust. Clean as necessary.

Appropriate cleaning procedures, as listed in Table 1 and Table 2, should be performed when specific print-quality or paper transport problems occur.

NOTE: Clear packaging tape (such as 3M 3750) is recommended for cleaning the Pick Roller and Separator Pad.

Problem Type	Solution		
Missing or light-colored stripes on prints.	From the Control Panel menu, select Troubleshooting -> Print Quality Problems -> Eliminate Light Stripes -> Start Basic Clean Cycle.		
Ink smears on the front, back, or edges of a page.	From the Control Panel menu, select Troubleshooting -> Print Quality Problems -> Remove Print Smears . Check the Drum Maintenance Unit for ink and paper-dust build-up on the Blade.		
Oil (Drum fluid) on top edge of print.	From the Control Panel menu, select Troubleshooting -> Print Quality Problems -> Remove Print Smears.		

Table 1 Light Stripes or Missing Colors

Table 2 Media Jams

Problem Type	Solution	
Tray 1 (MPT) jams.	Clean the Pick Roller. Refer to the Clean the Tray 1 Pick Roller procedure.	
Front Door jams.	Clean the Transport Rollers.	
Exit jams.	Clean the Exit Rollers and Stripper Blade.	
Tray 2-5 jams.	Clean the appropriate Tray Feed Roller.	
Duplex path jam.	Clean the Preheater, Duplex Rollers, and Exit Rollers.	
Double picks.	Clean the Pick Rollers and Separator Pad using a moistened lint-free cloth. Clean the pick pad with clear packaging tape (refer to Clean- ing the Pick Roller procedure).	

1. Feed Components (Rolls and Pads)

Follow the General Cleaning procedure in Table 1 and Table 2.

2. Jam Sensors

Clean the Sensors with a dry cotton swab.

Clean the Preheater

The Preheater cleaning is necessary when stray ink is left in the Preheater. resulting in ink streaks on media as it travels through the Preheater.

- 1. From the Control Panel Menu, perform the **Remove Print Smears** routine: **Control Panel Menu -> Troubleshooting -> Print Quality Problems -> Remove Print Smears**.
- 2. The Preheater cleaning cycle consists of processing 5 simplex cleaning sheets at an elevated preheat temperature of 90 degrees Celsius. The Preheater is then turned off, and up to 20 duplex sheets are processed through the printer until the Preheater temperature reaches the stability band maximum for a given print mode.

Clean the Printhead

The Printhead cleaning is an auto-purge process when the printer comes up from a Cold state (less than 90 degrees Celsius). The Printhead cleaning cycle consists of the following operations: applying pressure to the reservoir of the Printhead to push ink out of the jets and wiping ink from the face of the Printhead.

Two routines are available for Printhead cleaning from the Control Panel: Manual Purge and Advanced Purge.

- Manual Purge (Control Panel Menu -> Troubleshooting -> Print Quality Problems > Eliminate Light Stripes -> Start Basic Clean Cycle): A cleaning cycle initiated by the
 user from the Control Panel.
- Advanced Purge (Control Panel Menu -> Troubleshooting -> Print Quality Problems -> Eliminate Light Stripes -> Advanced): A cleaning cycle initiated by the user from the Control Panel that focuses on the problematic jet selected by the user.

Clean the Tray 1 Pick Roller

1. Open Tray 1.



2. Use a moistened lint-free cloth to clean the Pick Roller. Be sure the Pick Roller is not damaged. Replace the Pick Roller if it appears to be excessively worn or damaged.



Clean the Tray 2/ 3/ 4/ 5 Retard Roller

1. Open the affected Tray.



NOTE: Clear packaging tape can also be used to clean the Retard Roller.

- 1. Remove the affected Tray.
- 2. Peel off a strip of tape. Stretch the tape across the table with the sticky side up. Fasten it to the table at both ends.
- 3. Remove the Retard Roller (REP 3.10).
- 4. Roll the Retard Roller across the tape to remove the debris from the Roller.
- 5. Install the Retard Roller.
- 6. Close the affected Tray.

2. Use a moistened cloth to clean the Retard Roller.



3. Close the affected tray.

Clean the Pick Assembly

1. Remove Tray 2.



2. Use a moistened lint-free cloth to clean the Pick Assembly. Be sure the Pick Assembly is not damaged. Replace the Pick Assembly if it appears to be excessively worn or damaged.



Figure 6 Cleaning the Pick Assembly

3. Close Tray 2.

Clean the Drum Temperature Sensor

CAUTION

Cleaning under the Sensor is not recommended. Only perform this procedure when there is an issue with Drum temperatures (too hot or too cold) or there is a significant amount of debris accumulated under the Sensor. Use care not to bend the Sensor.

- 1. Remove the Control Panel Cover (REP 1.5).
- 2. Remove the Left Side Cover (REP 1.10).
- 3. Remove the Right Side Cover (REP 1.11).
- 4. Remove the Exit Cover (REP 1.7).
- 5. Remove the Ink Loader (REP 1.8).
- 6. Remove the Exit Module (REP 3.13).
- 7. Using a dry swab, carefully clean the Sensor.



Figure 7 Cleaning the Drum Temperature Sensor

Clean the Paper Release Blade

1. Open the Exit Cover.



2. Lift the Paper Guide toward the front of the printer.



Figure 9 Opening the Lower Paper Guide

3. Use a moistened lint-free cloth to wipe the plastic paper release blade on the Lower Paper Guide.



Figure 10 Cleaning the Paper Release Blade

- 4. Lower the Paper Guide to its original position.
- 5. Close the Exit Cover.



Figure 11 Lowering the Paper Guide and Closing the Exit Cover

Clean the Drum Maintenance Wiper Blade Assembly

- 1. Remove the Front Door (REP 1.1).
- 2. Remove the Control Panel Cover (REP 1.5).
- 3. Remove the Right Side Cover (REP 1.11).
- 4. Remove the Lower Inner Duplex Guide (REP 3.2).
- 5. Remove the Inner Simplex Guide with Deskew Sensor and Harness (REP 3.1).
- 6. Remove the Preheater and Deskew Assembly (REP 2.20).
- 7. Remove the Drum Maintenance Unit (REP 1.16).
- 8. Remove the Drum Cooling Fan (REP 4.12).
- 9. Remove the Drum Maintenance Pivot Plate/Drum Wiper Blade Assembly (REP 2.17).
- 10. Use a lint-free cloth to clean the top and sides of the flexible plastic Wiper Blade.

Figure 12 Cleaning the Wiper Blade



Purpose

The intent of this procedure is to be used as a guide to follow at the end of every service call.

Procedure

- 1. Check that the exterior of the printer and the adjacent area is clean. Use a dry cloth or a cloth moistened with water to clean the exterior of the printer. Do not use solvents.
- 2. Check the supply of consumables. Ensure that an adequate supply of consumables is available according to local operating procedures.
- 3. Conduct any operator training that is needed. Ensure the operator understands the periodic maintenance procedures in the User Guide.
- 4. Reconnect the printer to the customer network. Verify function by printing one or more test prints. Present the test prints to the customer as examples of printer performance.
- 5. Discuss the service call with the customer to ensure that the customer understands what has been done and is satisfied with the results of the service call.

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Introduction

This chapter describes fault messages and numeric codes displayed on the Control Panel or listed on the Fault History page. These fault indications serve as the entry point into the troubleshooting process.

Troubleshooting of problems not directly indicated by or associated with a fault message or fault code is covered in Section 6 - General Troubleshooting. Print quality problems are covered in Section 3 - Image Quality.

The printer tracks and reports errors in a number of ways. The two types of error reporting discussed in this chapter include:

- Fault codes and messages display on the Control Panel.
- Engine Error and Jam Error logs display on the Control Panel or listed on the Fault History Report.

Check the main menu for current data and historical error data.

- Status Page
- Usage Profile
- Fault History
- Diagnostic History

Accessing Fault History Report

- 1. From the Control Panel Menu, select **Troubleshooting** -> **Service Tools** -> **Printer Status Page**.
- 2. Press the **OK** button to print the Printer Status Page.

NOTE: The Printer Status Page contains a Printer Status, a Jam History & Fault History, and a Light Stripes Test page.

Fault History and Jam History Reports

The Fault History and Jam History Reports provide a list of error messages and fault codes relating to Engine errors and Jam errors. The printer can retain up to 15 Engine errors and 20 Jam errors.

Examples

Table 1 Jam History

Date	Page Count	Code	Description
Aug 3, 2009, 22:50:50	1098	R2F0	Unknown sensor, Sensor Tripped unexpect- edly, Fault, Unknown sensor

Table 2 Fault History

Date	Page Count	Code	Description
Aug 3, 2009, 17:28:20	1018	93,603.00	Ink delivery and ink thermals

Power On Self Tests

This section covers the start-up, Power-On Self Test (POST), Service Diagnostics, and power supply operations of the printer to aid in troubleshooting problems not associated with a reported error. For problems associated with a fault message, see Fault Messages and Codes Troubleshooting. Troubleshooting tips are available at: www.xerox.com/support.

POST is the Power-On Self Test that runs during the boot process and prior to loading of the operating systems (OS) and the Engine software regions. POST and the Boot loader share the same OS and much of the same linkage.

Power-Up Fault Messages and LED Codes

The printer has two sets of tests that are performed when first powered on.

- Power-On Self Test (POST)
- Print Engine Self Test (PEST)

NOTE: POST errors are not stored in the Fault History logs.

In addition to the numeric fault codes appearing on the Control Panel display, the printer uses the Control Panel, PostScript (PS), and Print Engine (PE) LEDs to communicate errors. Figure 1 shows location of the PS and PE LEDs on the Electronics Module. The PE/PS error LEDs can be used to determine the problem with the printer when the Control Panel is not functioning.



Figure 1 Power-On Self Test and Print Engine LED Locations

POST Error Reporting

POST checks the communication path within the Electronics Module and to other various printer components.

POST testing initializes the Control Panel, and in most cases if an error occurs, a text message is displayed on the Control Panel along with an LED blink code flashing on all three LEDs (Control Panel LED, PS LED and PE LED). If initialization of the Control Panel fails, POST errors will still report using the LED blink patterns. The sum of the flashes equal the fault code. If the code has more than 5 flashes, there is a brief pause between each set of 5 flashes to make them easier to count. After all flashes occur within the code, there is a long pause and then the flash pattern repeats.

All faults detected in POST are considered hard faults. In the event a fault is detected, then POST will first write a message to the Control Panel LCD indicating the type of fault. This assumes that the Control Panel is functioning otherwise the Control Panel activities are bypassed. As a final action, POST will then flash the fault type to the Control Panel LED and the LED located on the Controller Board indefinitely. The operator will need to power-down the printer to stop POST from flashing the LED.

"Soft" POST errors, that do not prevent the printer from powering up completely, are displayed on the Control Panel for 5 seconds, and then the printer continues through the remainder of POST. There are no rear panel LED codes associated with soft errors. Most soft errors will cause the printer to print a Startup Page with the error message on it.

The Main Controller Board includes a debug serial port for use in development. It can also be used by manufacturing and service as well. Depending on the condition of the printer, the debug serial port may or may not function.

Supported POST Tests

The following list contains tests that are performed in the context of POST.

• Field Pre-programmable Gate Array (FPGA) Testing

NOTE: FPGA is the Printhead interface and motor controller for the ColorQube 8570/ 8870 printer.

- 1. Verifies FPGA loaded properly.
- 2. Reads chip ID and number.
- 3. Tests Image Output (IO) read and write.
- 4. Tests interrupt.
- Electronically Erasable Programmable Read-Only Memory (EEPROM) Testing
 - 1. Tests read and write.
- Control Panel
 - 1. Tests link valid.
 - 2. Tests FP init.
 - 3. Tests data path.
- Real Time Clock
 - 1. Halts Clock and verify halted and attempt to restart.
 - 2. Checks that clock can be read.

- 3. Checks trickle charge register.
- RAM Size
 - 1. Verifies minimum amount of RAM.

Control Panel LCD Notification

POST attempts to write to the Control Panel LCD. This is the primary notification method for conveying faults detected in POST.

Control Panel LED Notification

As a secondary method of notification, POST will write blink codes to the Control Panel and Controller Board LEDs. This is a backup notification system in the event the Control Panel cannot be written.

The LED blink method encodes a fault code number into a series of flashes that can be read as that fault number. For example a fault code number 0x254 would be flashed using the following blink sequence.

- 1. Start by fluttering the LED, this indicates that start of the blink sequence.
- 2. Pause by turning off the LED for a brief period of time.
- 3. Flash the LED with 2 consecutive blinks.
- 4. Pause between digits.
- 5. Flash the LED with five consecutive blinks.
- 6. Pause between digits.
- 7. Flash the LED with four consecutive blinks.
- 8. Pause between digits.
- 9. Start sequence over at step 1.

Using this blink method requires that no fault codes contain a zero digit.

Detected POST Faults

Table 1 lists possible detected errors and their associated fault codes.

NOTE: POST error 226 can indicate blown Fuse F501 in the Electronics Module, or Control Panel is unplugged or its cable is damaged.

Table 1 POST Error Type

Description	Fault Code
POST_BAD_ERROR_CODE	211
POST_RTC_READ_FAILURE	212
POST_RTC_WRITE_FAILURE	213
POST_RTC_REREAD_FAILURE	214
POST_RTC_NOT_TICKING	215
POST_RTC_TRICKLE_CHRG_FAILURE	216
POST_EEPROM_READ_FAILURE	217
POST_EEPROM_WRITE_FAILURE	218
POST_EEPROM_REREAD_FAILURE	219
POST_EEPROM_DATA_FAILURE	221
POST_RAM_INSUFFICIENT	222
POST_FP_LINK_INVALID	223
POST_FP_WONT_INIT	225
POST_FP_DATA_PATH_FAILURE	226
POST_PROG_MACHINE_CHECK	227
POST_FPGA_LOAD_FAILURE	228
POST_FPGA_ID_READ_FAILURE	229
POST_FPGA_ID_MISMATCH	231
POST_FPGA_WRITE_MISMATCH	232
POST_FPGA_INTERRUPT_FAIL	233
POST_FPGA_ACCESS_FAIL	234

Sequence

The following sequence describes the operational steps just prior to, during, and just after the loading of POST stand-alone code. Whenever any of the following sequence steps fail, POST will halt at the failed test, writes the failed test fault code to the Control Panel LCD and flashes the Control Panel LED with the associated blink code.

- 1. When power is turned on, the Control Panel LED is turned off and dim. The Control Panel LCD is blank.
- 2. The Boot loader is run.
- 3. The Boot loader loads the flash image of FPGA.
- 4. The Boot loader loads and runs the POST stand-alone code.
- 5. POST turns on the Electronics Module Fan full. The Fan remains on until the Engine region is loaded and PEST takes over control of the Fan.
- 6. POST checks the load status of FPGA.
- 7. POST turns LEDs off.
- 8. POST checks if the Control Panel link is valid.
 - a. If valid attempt to initialize the Control Panel. Verify LCD data connection is OK. Display Control Panel header. POST checks for POST Cancel button from the Control Panel. If cancel received, exits POST and return control back to the Boot loader.
 - b. If invalid skips initializing the Control Panel.
- 9. POST attempts to read config space by reading FPGA's vendor ID.
- 10. POST attempts to read and write a defined FPGA register.
- 11. POST attempts to interrupt FPGA.
- 12. POST attempts EEPROM tests.
- 13. POST attempts Real Time Clock tests.
- 14. POST checks RAM size.
- 15. POST sets the Control Panel LED on green.
- 16. POST stand-alone code exits and returns control back to the Boot loader.
- 17. The OS is loaded.

Print Engine Self-Test

Print Engine Self-Test (PEST) tests components if they are drawing power. PEST tests occur after POST tests have been run and PostScript has been initialized. PEST checks the connections and operation of various components. PEST runs as part of the print engine.

PEST Error Reporting

Fault codes for PEST are displayed on the Control Panel and are in the 99,XXX series. For troubleshooting PEST fault codes, see Fault Messages and Codes Troubleshooting.

PS NVRAM Reset

Many of the troubleshooting procedures in this section include an PS NVRAM reset as a procedural step. Following an NVRAM reset, the printer is unable to communicate on the network and has lost several parameters specific to the customer's configuration. If possible, print a Configuration page to capture networking parameters. and discuss the customer's configuration to document these settings before resetting NVRAM.

Table 1 lists the parameters reset by NVRAM Reset. Required parameters (Yes) must be configured to restore default printer operation on the network.

Table 1	Daramotors	Posot with	Service	Diagnostics	DC N	Posot	Command
Table I	Falameters	Reset with	Service	Diagnostics	FON	reset	Commanu

Menu	Parameter	Default	Required	Comment
TCP/IPv4 Setup	IPv4	On	Yes	
	DHCP/BOOTP	On	Yes	
	AutoIP	On	Yes	
	IPv4 Address	0.0.0.0	Yes	Set automati- cally if DHCP/ BOOTP is enabled
	IPv4 Network Mask	0.0.0.0	Yes	Automatically calculated based on IP Address
	IPv4 Gateway	0.0.0.0	Yes	Automatically set per RIP.
TCP/IPV6 Setup	IPv6	Disabled	Yes	
	Auto Assign	On	Yes	Applicable when IPv6 is enabled.
	Manual Address	Off	Yes	Appears when IPv6 is enabled.
Network Ser- vices	Port 9100	On	Yes	
	LPR	On	Yes	
	IPP	On	Yes	
	FTP	On	Yes	
	TFTP	On	Yes	
	WSD	On	Yes	
	SLP	Off	Yes	
	SSDP	Off	Yes	
	CentreWare IS	On	Yes	
	IPSec	Off	Yes	
Network Setup	Ethernet Speed	Auto	Yes	
	EtherTalk	On	Yes	
USB Setup	USB Port	On	Yes	
	Wait Timeout	30 secs	Yes	

Table 1 Parameters Reset with Service Diagnostics PS NVRAM Reset Command

Menu	Parameter	Default	Required	Comment
	Page Description Language	AutoSelect	Yes	
Control Panel Setup	Language	English	No	
	Control Panel Brightness	8	No	
	Control Panel Contrast	5	No	
	Accessible Control panel	Off	No	
	Menu Timeout	30 secs	No	
File Security	Overwrite Removals	Off	No	
	Daily Removal	Off	No	
	Age-based Removal	Off	No	
Paper Handling Setup	Paper Source	Auto Select	No	
	2-Sided Printing	Off	No	
	Load Paper Timeout	3 mins	No	
	Letter/A4 Substitution	On	No	
	Custom Units	Inches	No	
	Cleaning Page Source	Highest	No	
Printer Controls	Startup Page	On	No	
	Low Ink Warning Level	1000	No	
	Date and Time	NA	No	Set by on-board RTC.
	Warm-up Mode	Intelligent Ready	No	
	Metric Defaults	Off	No	
	Fast Resume	Off	No	
Paper Tray Setup	Tray 1 Paper - Media Size	Guide Size	No	
	Tray 1 Paper - Media Type	Plain	No	
	Tray 2 Paper Type	Plain	No	
	Tray 3 Paper - (if installed)	Plain	No	
	Tray 4 Paper - (if installed)	Plain	No	
	Tray 5 Paper - (if installed)	Plain	No	
	Tray 1 Mode	Dynamic	No	
	Tray 1 Prompt	30 secs	No	
	Tray 2 Mode	Dynamic	No	Dependent on number of installed trays.
	Tray 2-3 Mode	Dynamic	No	Dependent on number of installed trays.

Table 1 Parameters Reset with Service Diagnostics PS NVRAM Reset Command

Menu	Parameter	Default	Required	Comment
	Tray 2-4 Mode	Dynamic	No	Dependent on number of installed trays.
	Tray 2-5 Mode	Dynamic	No	Dependent on number of installed trays.
PostScript Setup	PostScript Error Info	Off	No	
	Print-Quality Mode	Enhanced	No	
	Color-Correction	Automatic	No	
	User-Defined Screens	Off	No	
PCL Setup	Font Number	0	No	
	Pitch	10	No	
	Point Size	12	No	
	Symbol Set	PC-8	No	
	Orientation	Portrait	No	
	Form Length	60	No	
	Line Termination	On	No	
	Enhanced Mode	Off	No	
	Color Mode	Color	No	
-	Wide A4	Off	No	

Table 2 summarizes printer parameters not affected by an NVRAM Reset.

Table 2 Parameter Not Affected by a PS NVRAM Reset

Parameter	Comment
Metric Defaults	Set to Off, default sizes are interpreted in inches.
MAC Address	Set by the Configuration Card.
Serial Number	
Model Number	
License Number	
VxWorks Version	
PostScript Version	
PostScript Revision	
Engine Version	
Network Version	
Activision Date	
Print Count	
Billing Meters	
Substituted Jets	
Warm-up Mode	Set to Intelligent Ready
Warm-up Settings	Set to Job Activated

Parameter	Comment
Stand-by Settings	Set to idle after timeout

Configuration Card Parameters

Information stored on the Configuration Card includes the ethernet address and personality parameters. The printer model configuration is determined by a combination of printer hard-ware capabilities. Feature value and ethernet address are configured at the factory and are "read only". The feature value is fixed in the Configuration Card and does not change. Ethernet address is stored only on the Configuration Card and cannot be rewritten. The ethernet address is not written to the NVRAM chip.

Personality parameters are a subset of network configuration parameters, which are populated to the Configuration Card over time as the printer is configured by the customer. The personality parameters are copied, or "shadowed", from the Main Controller Board's NVRAM Chip to the Configuration Card during the normal operation of the printer. When the Configuration Card is inserted into a new printer, the personality parameters on the Configuration Card are written into the NVRAM Chip of the new printer. When a printer is powered on, if it contains the Configuration Card of another printer, the personality parameters are automatically copied to the NVRAM Chip. If the Configuration Card is removed, the printer reboots as a non-networking, non-duplexing model.

Fault Messages and Codes Troubleshooting

This section covers troubleshooting procedures utilizing Control Panel fault messages and codes. Some procedures require running Service Diagnostic test functions to verify that a component is operating correctly. Procedures that direct a test to be run are referencing tests from within the Hidden Service menu. For information on Service Diagnostics, see Service Diagnostics in Chapter 6 - General Troubleshooting.

For troubleshooting problems not associated with a fault code or message, such as startup or power on, media, paper path, print-quality or image problems, and electrical failures, see General Troubleshooting in Chapter 6.

Fault Code Error Reporting

Fault codes are saved to NVRAM and can be retrieved from the printer's fault history.

In normal customer mode, the printer will reboot each time a fault occurs. If three of the same faults occur within 72 hours, or 1000 pages, the fault will be displayed on the printer's Control Panel.

Interpreting Fault Codes

- Failing system (XX,yyy.00)
- Failing subsystem (xx,YYY.00)
- Print engine page count when the error occurred (xx,yyy.00:123)

Device faults indicate a hardware problem. The most common device faults troubleshooting procedures are documented in this chapter.

Software faults occur when the printer has a corrupted data, incorrect instructions, errors in floating point math, or the execution of code that should not have been reached. Sometimes this is caused by hardware but it is usually due to a problem with software. Most of the time a reboot of the printer will fix these problems. All software errors are combined into one fault code, 92,571, and if they are chronic that error will be displayed on the Control Panel.

Fault Code Definition

Fault Code contains Chain number (0-99) and Link number (0-999).

- Chain Number indicates target feature area.
- Link Number The fault type is defined by the Link number.

Table 1 Chain Definition

Chain	Sub-system	Definition
1	System	Power and Interlock
10	Drum	Transfix, Post Transfix, Media Path
71	Feeder MPT	Tray 1 (MPT)
72	Feeder MT	Tray 2
73	Feeder HCF1 - Paper Path	HCF1 Tray 3
74	Feeder HCF2 - Paper Path	HCF2 Tray 4
75	Feeder HCF3 - Paper Path	HCF3 Tray 5
82	Prereg MP	Media path up to Registration
83	Duplex	Duplex portion of Media Path
88	Preheater	Preheater
89	Reg MP	Registration portion media path
91	MARKDWR	Components in the marking drawer/unit.
92	Electronic	Electronics not specific to another chain
93	Ink	Ink delivery and Ink Thermals
94	Drum Maintenance	Drum, Stripper, Drum Maintenance
99	PEST	Print Engine Self-Test

Testing Clutch, Motor, and Solenoid Resistance

- 1. Turn off the printer and disconnect the power cord.
- 2. With a Digital Multimeter (DMM) set for measuring resistance, test each motor's windings for correct resistance (disconnected from the printer). Rotate the motor's drive shaft slightly while taking the measurement.

Table 1 Clutch, Motor, and Solenoid Resistance

Clutch, Motor, and Solenoid	Resistance (approximate)
Head Maintenance Clutch	186 ohms +/- 15%
Paper-Pick Clutch Deskew Clutch	186 ohms +/- 15%
Process Drive Motor Media Path Drive Motor	2.85~3.85 ohms (Difficult to measure due to variability at the brush/commutator interface.)
Tray Lift Motor	50~500 ohms
X-Axis Motor	5.9 ohms/phase +/- 10% (pins 2 to 4 and pins 3 to 5)
Y-Axis Motor	1.05~1.43 ohms (Difficult to measure due to variability at the brush/commutator interface.)
MPT Pick Solenoid	124 ohms +/- 5%
Ink Loader Solenoid	~10 ohms blue-red, ~10 ohms yellow-red, ~20 ohms blue-yellow
Preheater Lift Solenoid	~18 ohms blue-red, ~18 ohms yellow-red, ~36 ohms blue-yellow

10,550 Y-Axis Fault

A Y-Axis error has occurred. The following troubleshooting procedure applies to this error.

Table 1 Applicable Fault Code

10,550 Drum Stall

Initial Actions

- Reboot the printer and verify the error persists. ٠
- Check all the Drum cable connections. ٠
- ٠ If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- Drum Assembly, PL 2.1 Item 4 ٠
- Y-Axis Motor Assembly, PL 4.1 Item 2 ٠
- Harness, Right Side Power Control, PL 5.1 Item 13 •

Wiring and Plug/Jack References (Chapter 7 - Wiring Data)

- Figure 1, Right Side Wire Routing ٠
- Figure 6, Hard Drive, Drum Heater, Paper Preheater ٠
- Figure 7, Drum Heater Load Dump, Motors, Head Maintenance Clutch, Strip Solenoid ٠

Procedure

Verify that user is setting correct paper type when running thick media or envelopes. Does the media selection have the correct media type?

Ν Υ

Set the correct media type.

Check the Drum power and encoder wiring harness connectors P/J114, P/J120, and P/J122. Are the connections secure and undamaged?

Υ Ν

Reseat and/or repair the wiring harnesses.

Clean the Y-Axis Belt and Pulley with Isopropyl Alcohol. Turn on the printer. Does the error persist? Ν

Υ

Troubleshooting complete.

Replace the Drum Assembly (REP 2.4). Does the error persist?

Υ Ν

Troubleshooting complete.

Replace the Y-Axis Motor Assembly (REP 4.2).

72,215 Tray 2 Raise Failure

A Tray 2 error has occurred. The following troubleshooting procedure applies to this error.

Table 1 Applicable Fault Code

72.215 Tray 2 Raise Failure

Initial Actions

- Reboot the printer and verify the error persists.
- Check the paper path in the printer for obstructions or jammed sheets.
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- 525-Sheet Tray, PL 3.1 Item 11
- Tray 2 Lift Motor, PL 4.1 Item 6
- Sensor, Tray Lift, PL 6.1 Item 3

Procedure

Reinsert Tray 2. Does the error persist?

Y N

Troubleshooting complete.

Check Tray 2 Lift Sensor for blockages, and check function of the Tray 2 Lift Motor.

72,217 Tray 2 Bump-up Failure

A Tray 2 error has occurred. The following troubleshooting procedure applies to this error.

Table 1 Applicable Error Code

72,217 Tray 2 Bump Failure

Initial Actions

- Reboot the printer and verify the error persists.
- Check the paper path in the printer for obstructions or jammed sheets.
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- 525-Sheet Tray, PL 3.1 Item 11
- Tray 2 Lift Motor, PL 4.1 Item 6
- Sensor, Tray Lift, PL 6.1 Item 3

Procedure

Reinsert Tray 2. Does the error persist?

Y N

Troubleshooting complete.

Check Tray 2 Lift Sensor for blockages, and check function of the Tray 2 Lift Motor.

73,215, 73,952 525-Sheet Feeder Faults

A 525-Sheet Feeder error has occurred. The following troubleshooting procedure applies to these errors.

Table 1 Applicable Fault Codes

73,215 HCF1 Raise Failure

73,952 HCF1 Motor Stall Fault

Initial Actions

- Reboot the printer and verify the error persists.
- Check paper path in the printer and High-Capacity Feeders (HCFs) for obstructions or jammed sheets.
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- 525-Sheet Feeder (HCF) with Tray, PL 3.1 Item 12
- Harness, Left Side Power Control, PL 5.1 Item 17

Wiring and Plug/Jack Reference (Chapter 7 - Wiring Data)

• Figure 2, Left Side Wire Routing

Procedure

Check paper path in the printer and HCFs for obstructions or jammed sheets. Remove obstructions.

- For HCF Motor Stall failure, send a print job to feed paper from the tray at fault.
- For HCF Raise failure, reinsert the tray and verify that it raised properly.

Does the error persist?

Y N

Troubleshooting complete.

Replace the 525-Sheet Feeder (REP 3.12).

74,215, 74,952 525-Sheet Feeder Faults

A 525-Sheet Feeder error has occurred. The following troubleshooting procedure applies to these errors.

Table 1 Applicable Fault Codes

74,215 HCF2 Raise Failure

74,952 HCF2 Motor Stall Fault

Initial Actions

- Reboot the printer and verify the error persists.
- Check paper path in the printer and HCFs for obstructions or jammed sheets.
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- 525-Sheet Feeder (HCF) with Tray, PL 3.1 Item 12
- Harness, Left Side Power Control, PL 5.1 Item 17

Wiring and Plug/Jack Reference (Chapter 7 - Wiring Data)

• Figure 2, Left Side Wire Routing

Procedure

Check paper path in the printer and HCFs for obstructions or jammed sheets. Remove obstructions.

- For HCF Motor Stall failure, send a print job to feed paper from the tray at fault.
- For HCF Raise failure, reinsert the tray and verify that it raised properly.

Does the error persist?

Y N

Troubleshooting complete.

Replace the 525-Sheet Feeder (REP 3.12).

75,215, 75,952 525-Sheet Feeder Faults

A 525-Sheet Feeder error has occurred. The following troubleshooting procedure applies to these errors.

Table 1 Applicable Fault Codes

75,215 HCF3 Raise Failure

75,952 HCF3 Motor Stall Fault

Initial Actions

- Reboot the printer and verify the error persists.
- Check paper path in the printer and HCFs for obstructions or jammed sheets.
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- 525-Sheet Feeder (HCF) with Tray, PL 3.1 Item 12
- Harness, Left Side Power Control, PL 5.1 Item 17

Wiring and Plug/Jack Reference (Chapter 7 - Wiring Data)

• Figure 2, Left Side Wire Routing

Procedure

Check paper path in the printer and HCFs for obstructions or jammed sheets. Remove obstructions.

- For HCF Motor Stall failure, send a print job to feed paper from the tray at fault.
- For HCF Raise failure, reinsert the tray and verify that it raised properly.

Does the error persist?

Y N

Troubleshooting complete.

Replace the 525-Sheet Feeder (REP 3.12).

88,500 ~ 88,504 Preheater Thermal Faults

A Preheater Thermal error has occurred. The following troubleshooting procedure applies to these errors.

Table 1 Applicable Fault Codes

- **88,500** Preheat heater is too hot.
- **88,501** Preheat is heating too slow.
- 88,502 Preheat thermistor is bad.
- 88,503 Preheater thermistor is open.
- 88,504 Preheater thermistor is shorted.

Initial Actions

- Reboot the printer and verify the error persists.
- Check the ambient room temperature.
- Check that the Preheater is plugged in.
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- Preheater and Deskew Assembly, PL 2.1 Item 20
- Right Side Power Control Harness, PL 5.1 Item 13

Wiring and Plug/Jack References (Chapter 7 - Wiring Data)

- Figure 6, Hard Drive, Drum Heater, Paper Preheater
- Figure 9, I/O Board, Sensors (2 of 2)

Procedure

Verify that the ambient temperature is within environmental specifications (refer to Environmental Specifications in the Introduction Chapter. Is the temperature within specifications?

Y N

Advise customer of operational requirements.

Check the Preheater wiring harness connectors P/J115 and P/J125. Are the connections secure and undamaged?

Y N

Reseat and/or replace the wiring harnesses.

Check the Right Side Power Control Harness for damage. Is the Right Side Power Control Harness damaged?

Y N

A

Check the Preheater Thermistor for continuity.

- Disconnect the wiring harness connector P/J401 from the I/O Board.
- Measure the connector between pins 1 (red) and 2 (red). The measurement should be about 110 ohms at room temperature.

Does the error persist?

Y N

Troubleshooting complete.

Xerox Internal Use Only - Revised, 3rd Revision ColorQube 8570/8870 Service Manual Replace the Preheater and Deskew Assembly (REP 2.20).

Replace the Right Side Power Control Harness.

A B



Figure 1 Measuring the Preheater Thermistor

89,570, 89,571 Media Drive Faults

A Media Drive error has occurred. The following troubleshooting procedure applies to these errors.

Table 1 Applicable Fault Codes

89.570 Media Path Over Current Fault

89,571 Media Path Stall Fault

Initial Actions

- Reboot the printer and verify the error persists.
- Check the Media Drive wiring harnesses. ٠
- Check the printer for jammed sheet in the paper path.
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- Exit Roller, PL 3.1 Item 6
- Takeaway Roller, PL 3.1 Item 7 ٠
- Duplex Roller, PL 3.1 Item 8 .
- Media Drive with 2 Clutches, PL 4.1 Item 5 ٠
- Left Side Power Control Harness, PL 5.1 Item 17 ٠

Wiring and Plug/Jack Reference (Chapter 7 - Wiring Data)

Figure 2, Left Side Wire Routing ٠

Procedure

Remove the Media Drive Assembly (REP 4.5) and turn each printer Shaft by hand. Do vou feel any unusual resistance? Ν

Υ

Troubleshooting complete.

Clear the obstruction or replace the defective Drive Shaft or Bushing (see Mechanical Hardware Kit in Chapter 5, Parts List). Does the error persist?

Ν Υ

Troubleshooting complete.

Replace the Media Drive Assembly (REP 4.5).

89,572 Media Path Motor Fault

A Media Path Motor error has occurred. The following troubleshooting procedure applies to this error.

Table 1 Applicable Fault Code

89.572 Media Path Motor/ Wiring Fault

Initial Actions

- Reboot the printer and verify the error persists.
- Check the Media Drive wiring harnesses.
- Check the Preheater wiring harness not caught in the Takeaway Roller.
- Check the Takeaway Roller D-Shaft is properly meshed to the Drive Train.
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- Media Drive with 2 Clutches, PL 4.1 Item 5
- Left Side Power Control Harness, PL 5.1 Item 7 ٠

Wiring and Plug/Jack Reference (Chapter 7 - Wiring Data)

Figure 2, Left Side Wire Routing •

Procedure

Ν

Inspect the Motor Cable for bent pins, loose connections or damaged wires, **Does the error** persist?

Υ

Troubleshooting complete.

Replace the Media Drive Assembly (REP 4.5). Does the error persist? Υ

Ν

Troubleshooting complete.

Replace the Left Side Power Control Harness.

91,500 X-Axis Fault

An X-Axis error has occurred. The X-Axis position is 0.0254 mm away from desired position. The following troubleshooting procedure applies to this error.

Table 1 Applicable Fault Code

91,500 Sfwa Image Initial Position

Initial Actions

- Reboot the printer and verify the error persists.
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- X-Axis Motor, PL 4.1 Item 11
- Harness, Right Side Power Control, PL 5.1 Item 13

Wiring and Plug/Jack References (Chapter 7 - Wiring Data)

- Figure 1, Right Side Wire Routing
- Figure 7, Motors, Head Maintenance Clutch, Strip Solenoid

Procedure

Check the X-Axis wiring harness and connections. Are the connections secure and undamaged?

Y N

Reseat and/or replace the Right Side Harness.

Replace the X-Axis Motor (REP 4.11).

91,523, 91,527, 91,531, 91,850, 91,862 Left Jetstack Thermal Faults

A Left Jetstack Thermal error has occurred. The following troubleshooting procedure applies to these errors.

	Table 1 Applicable Fault Codes
91,523	Left Jetstack Heater is too hot.
91,527	Left Jetstack Heater too slow, did not stabilize in time.
91,531	Left Jetstack Thermistor bad reading, cannot trust temperature.
91,850	Left Jetstack Thermistor is open.
91.862	Left Jetstack thermistor is shorted.

Initial Actions

- Reboot the printer and verify the error persists.
- Check the Printhead wiring harness connectors.
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- Printhead Assembly, PL 2.1 Item 3
- Cable, Printhead Interface, PL 5.1 Item 20

Wiring and Plug/Jack References (Chapter 7 - Wiring Data)

- Figure 2, Wave Amplifier, Printhead
- Figure 6, Printhead P/J Locations

Procedure

Check the Printhead wiring harness connectors P/J180 and P/J240 and wiring. Are the connections secure and undamaged?

Y N

Reseat and/or replace the wiring harness (Printhead Interface Cable). **Does the error persist?**

Y N

Troubleshooting complete.

Replace the Printhead Assembly (REP 2.3).

Turn off the printer.

Check the Thermistor for continuity on P/J110 connector (see Figure 1).

- Short pin 4 to pin 10.
- Measure the Thermistor to ground.
 - Pin 2 (Left Jetstack Thermistor) to pin 4
- Check the results as follows:
 - Good: 4.88 kohms at room temperature (The Printhead must be cool.)
 - Open: >5 kohms
 - Short: 0 ohms

Does the error persist?

Υ

N Troubleshooting complete.

Replace the Printhead Assembly (REP 2.3).



Figure 1 Printhead Wiring Harness Connectors

91,535, 91,539, 91,543, 91,854, 91,866 Right Jetstack Thermal Faults

A Right Jetstack Thermal error has occurred. The following troubleshooting procedure applies to these errors.

	Table 1 Applicable Fault Codes
91,535	Right Jetstack Heater is too hot.
91,539	Right Jetstack Heater is too slow, did not stabilize in time.
91,543	Right Jetstack Thermistor bad reading, cannot trust temperature.
91,854	Right Jetstack Thermistor is open.
04.000	Dight laters of Thermister is charted

91,866 Right Jetstack Thermistor is shorted.

Initial Actions

- Reboot the printer and verify the error persists.
- Check the Printhead wiring harness connectors.
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- Printhead Assembly, PL 2.1 Item 3
- Cable, Printhead Interface, PL 5.1 Item 20

Wiring and Plug/Jack References (Chapter 7 - Wiring Data)

- Figure 2, Wave Amplifier, Printhead
- Figure 6, Printhead P/J Locations

Procedure

Download the snippet file from the Xerox Support Website. Update the Printhead with snippet 8570-8870_SetPH-NVM.ps. Reboot the printer. **Does the error persist?**

Y N

Troubleshooting complete.

Check the Printhead wiring harness connectors P/J180 and P/J240 and wiring. Are the connections secure and undamaged?

Y N

Reseat and/or replace the wiring harness (Printhead Interface Cable). **Does the error persist?**

Y N

Troubleshooting complete.

Replace the Printhead Assembly (REP 2.3).

Turn off the printer.
Check the Thermistor for continuity on P/J110 connector (see Figure 1).

- Short pin 4 to pin 10.
- Measure the Thermistor to ground.
 - Pin 1 (Right Jetstack Thermistor) to pin 4
- Check the results as follows:
 - Good: 4.88 kohms at room temperature (The Printhead must be cool.)
 - Open Thermistor: 4.99 kohms
 - Shorted Thermistor: 0 Ohm

Does the error persist?

Y N

Troubleshooting complete.

Replace the Printhead Assembly (REP 2.3).



Figure 1 Printhead Wiring Harness Connectors

91,547, 91,551, 91,555, 91,858, 91,870 Printhead Reservoir Thermal Faults

A Printhead Reservoir Thermal error has occurred. The following troubleshooting procedure applies to these errors.

Table 1 Applicable Fault Codes

- 91,547 Reservoir Heater is too hot.
- 91,551 Reservoir Heater is too slow.
- **91,555** Reservoir Heater thermistor is bad.
- 91,858 Reservoir thermistor is open.
- **91,870** Reservoir thermistor is shorted.

Initial Actions

- Reboot the printer and verify the error persists.
- Check the Printhead wiring harness connectors.
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- Printhead Assembly, PL 2.1 Item 3
- Cable, Printhead Interface, PL 5.1 Item 20

Wiring and Plug/Jack References (Chapter 7 - Wiring Data)

- Figure 2, Wave Amplifier, Printhead
- Figure 6, Printhead P/J Locations

Procedure

Restart the printer and allow to warm up. Check the Reservoir Thermistor wiring harness connector P/J190 (2-pin) on the Printhead Board. **Is the connection secure and undamaged?**

```
Y N
```

Reseat and/or replace the wiring harness (Printhead Interface Cable).

Check the Printhead wiring harness connectors P/J180 and P/J240 and wiring. Are the connections secure and undamaged?

Y N

Turn off the printer.

Check the Thermistor for continuity on P/J110 connector (see Figure 1).

- Short pin 4 to pin 10.
- Measure the Thermistor to ground.
 - Pin 3 (Reservoir Thermistor) to pin 4
- Check the results as follows:
 - Good: 4.88 kohms at room temperature (The Printhead must be cool.)
 - Open Thermistor: 4.99 kohms
 - Shorted Thermistor: 0 Ohm

Does the error persist?

- Y N
 - Troubleshooting complete.

Fault Messages and Codes 91,547, 91,551, 91,555, 91,858, 91,870 Δ

Replace the Printhead Assembly (REP 2.3).

Replace the Printhead Assembly (REP 2.3).



Figure 1 Wiring Harness Connectors

91,610 Printhead Calibration Fault

A Printhead Calibration error has occurred. The following troubleshooting procedure applies to this error.

Table 1 Applicable Fault Code

91.610 Head Calibration Fault

Initial Actions

- Reboot the printer and verify the error persists.
- Check the Printhead wiring harness connectors.
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- Printhead Assembly, PL 2.1 Item 3 .
- Wave Amp, PL 5.1 Item 9 ٠
- Cable, ZIF, Wave Amp Drive, PL 5.1 Item 19 .
- Cable, Printhead Interface, PL 5.1 Item 20 ٠

Wiring and Plug/Jack References (Chapter 7 - Wiring Data)

- Figure 2, Wave Amplifier, Printhead
- Figure 6, Printhead P/J Locations

Procedure

Check the Printhead wiring harness connectors P/J180 and P/J240.

Release the Printhead end of the cable and carefully examine the conductor ends (a magnifier helps) to see that they are not cracked or torn. If the cable looks good, carefully reinstall it using a ZIF tool (refer to REP 2.3 for how to use the ZIF tool for unlocking/locking the ZIF cable connector).

NOTE: Failure to properly unlock the connector will damage the cable.

Are the connections secure and undamaged?

Υ Ν

Reseat and/or replace the wiring harness (Printhead Interface Cable or Wave Amp Cable). Does the error persist?

Ν Υ

Troubleshooting complete.

Replace the Printhead (REP 2.3).

Reboot the printer. Does the error persist?

Υ Ν

Troubleshooting complete.

Replace the Printhead Assembly (REP 2.3). Does the error persist?

Υ Ν

Troubleshooting complete.

Replace the Wave Amplifier (REP 5.9).

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91,710 ~ 91,716, 94,704 Wiper or Media Drive Faults

A Wiper or Media Drive error has occurred. The following troubleshooting procedure applies to these errors.

	Table 1 Applicable Fault Codes
91,710	Wiper Homing Stall
91,711	Wiper Move Up Stall
91,712	Wiper Move Down Stall
91,713	Wiper Cannot Verify Home
91,714	Wiper No Stall Homing
91,715	Wiper Away from Home
91,716	Wiper No Clutch Stall

94.704 Wiper Stall Fault

Initial Actions

- Reboot the printer and verify the error persists.
- Check the printer for a jammed sheet in the paper path.
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- Printhead Wiper, PL 2.1 Item 6
- Media Drive, with 2 Clutches, PL 4.1 Item 5
- ٠ Head Maintenance Clutch, PL 4.1 Item 10

Procedure

Check that no wiring harness is interfering with the take away rollers (behind the simplex guide). Check the printer for obstruction. Is there a jammed sheet, partial sheet or other obstruction in the printer?

Υ N

Check for oil contamination of the Head Maintenance Clutch from the nearby bushing. Inspect the Wiper system for improper operation, obstructions or damage. Verify that the Wiper is aligned properly left to right. Is everything in place?

Υ N

Remove obstruction. Replace damaged part or re-align the Wiper (refer to the Wiper Alignment procedure, ADJ 1.1).

Tilt the head back and run the Wiper all the way up and down in its track. Does it move smoothly?

Υ Ν

Replace the Printhead Wiper (REP 2.6).

Turn on the printer and observe the Media Path Drive during the wipe portion of a purge. Do the Gearbox Gears turn smoothly but not the Wiper Gears?

Υ Ν

Replace the Media Drive Assembly (REP 4.5).

Remove the sheet or obstruction.

Δ

91,720 Printhead Tilt Fault

A Printhead Tilt error has occurred. The following troubleshooting procedure applies to this error.

Table 1 Applicable Fault Code

91,720 Motor did not stall while moving from Print to Park.

Initial Actions

- Reboot the printer and verify the error persists.
- Check that the Process Drive gear train is properly homed (ADJ 1.3).
- Check for obstructions or ink spills around the Printhead.
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- Printhead Assembly, PL 2.1 Item 3
- Left Printhead Restraint, PL 2.1 Item 9
- Right Printhead Restraint, PL 2.1 Item 10
- Head Tilt Solenoid, PL 4.1 Item 4
- Head Tilt Missing Tooth Gear, PL 4.1 Item 8
- Process Drive with Gear Box and Motor, PL 4.1 Item 13

Wiring and Plug/Jack Reference (Chapter 7 - Wiring Data)

• Figure 3, Purge Pump, Media Path Motor, Fans, Printhead Tilt Solenoid

Procedure

Rehome the Process Drive (ADJ 1.3). Reboot the printer. Does the error persist?

Y N

Troubleshooting complete.

Remove the Printhead Restraints (REP 2.9). Inspect the Printhead journals, bearings surfaces, chassis base under the Head Tilt gear, and Roll Block for ink puddles or debris. Is there visible ink outside of the Printhead that would hinder the Head Tilt Gear or Printhead motion?

Y N

Check the Head Tilt Latch movement. Does the latch move during the MechInit sequence?

Ϋ́Ν

Manually check latch motion. Does it move up and down freely?

```
Y N
```

Inspect the Head Tilt Latch for damage. Slightly loosen the screw on the Head Tilt Latch and verify for free movement.

Check the Solenoid connector. Is the Solenoid connector fully seated and wires are not cut?

Y N

Reconnect the wiring harness connector and reroute the wiring to prevent pinching. Replace the Solenoid if necessary (REP 4.4).

Check for an E-ring. Is there an E-ring on the end of the Head Tilt Cam Shaft outside of the Damper Assembly?	91,721 Printhead Tilt Fault A Printhead Tilt error has occurred. The following troubleshooting procedure applies to this
Remove the Damper Gear and Bracket. Install the E-ring. Lift the latch pull cam	error.
away from the frame to seat fully. Install the Damper Assembly, Damper Gear, and E-ring.	Table 1 Applicable Fault Code
NOTE: Be careful not to push the Head Tilt Gear back into the printer.	91,721 Motor stalled while tilting Head Forward from Park
Remove the Printhead Restraints (REP 2.9). Inspect the Printhead journals, bearings surfaces, chassis base under the Head Tilt gear, and Roll Block for ink puddles or debris. Is there visible ink outside of the Printhead that would hinder the Head Tilt Gear or Printhead motion? Y N Install the Printhead Restraints. Rehome the Process Drive (ADJ 1.3). Reboot the printer. Does the Process Drive chatter before engaging the Head Tilt Drive? Y N Rehome the Process Drive (ADJ 1.3). Lift the latch and verify the Head Tilt	 Initial Actions Reboot the printer and verify the error persists. Check that the Process Drive gear train is properly homed (ADJ 1.3). Check for obstructions or ink spills around the Printhead. If the problem persists, perform the following procedure. Troubleshooting Reference Applicable Parts (Chapter 5 - Parts List)
Gear has engaged the Drive Train. Turn the DM Cam Shaft. Does the Head Tilt Drive tilt the Head? Y N The Head Tilt Gear is broken. Replace the Head Tilt Gear (REP 4.8). The Process Drive is worn. Replace the Process Drive (REP 4.13).	 Printhead Assembly, PL 2.1 Item 3 Left Printhead Restraint, PL 2.1 Item 9 Right Printhead Restraint, PL 2.1 Item 10 Roll Block, PL 2.1 Item 28 Head Tilt Solenoid, PL 4.1 Item 4 X-Axis Motor, PL 4.1 Item 11
The Process Drive is worn. Replace the Process Drive (REP 4.13).	 Process Drive with Gear Box and Motor, PL 4.1 Item 13
The Printhead has overflowed. Remove the Printhead (REP 2.3). Clean the chassis and gear train of ink debris. Reinstall a new Printhead.	 Wiring and Plug/Jack Reference (Chapter 7 - Wiring Data) Figure 1, Right Side Wire Routing Procedure
 Notes the Process Drive chatter before engaging the Head Tilt Drive? N Rehome the Process Drive (ADJ 1.3). Lift the latch and verify the Head Tilt Gear has engaged the Drive Train. Turn the DM Cam Shaft. Does the Head Tilt Drive tilt the Head? Y N The Head Tilt Gear is broken. Replace the Head Tilt Gear (REP 4.8). The Process Drive is worn. Replace the Process Drive (REP 4.13). the Process Drive is worn. Replace the Process Drive (REP 4.13). the Process Drive is worn. Replace the Process Drive (REP 4.13). the Process Drive is worn. Replace the Process Drive (REP 4.13). 	Rehome the Process Drive (ADJ 1.3). Reboot the printer. (Use the Sleep button on the Control Panel to cycle the Printhead into and out of Sleep 10 times to test the Printhead Tilt.) Does the Process Drive stay in time? Y N Check the wiring harnesses. Are the wires around the Process Drive Swing Arm routed incorrectly? Y N Remove the Printhead Restraints (REP 2.9). Inspect the Printhead journals, bearings surfaces, chassis base under the Head Tilt gear, and Roll Block for ink puddles or debris. Is there visible ink outside of the Printhead that would hinder the Head Tilt gear or Printhead motion? Y N Check the top and left sides of the Printhead. Is there collected ink on the top and left sides of the Printhead?
rinthead.	Y N Rehome the Process Drive (ADJ 1.3). Reboot the printer. Does the Pro- cess Drive chatter before engaging the Head Tilt Drive?

Inspect the Cone-nut on the X-Axis Motor lead screw shaft. Is the Cone-nut damaged or broken?

D



Has the printer been running large continuous print job recently? Υ

Ν

Troubleshooting complete.

Replace the Process Drive (REP 4.13).



Figure 1 Right Side Wire Routing

91,722 Printhead Tilt Fault

A Printhead Tilt error has occurred. The following troubleshooting procedure applies to this error.

Table 1 Applicable Fault Code

91,722 Motor stalled while tilting Printhead from Print to Park

Initial Actions

- Reboot the printer and verify the error persists.
- Check that the Process Drive gear train is properly homed (ADJ 1.3).
- Check for obstructions or ink spills around the Printhead.
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- Printhead Assembly, PL 2.1 Item 3
- Left Printhead Restraint, PL 2.1 Item 9
- Right Printhead Restraint, PL 2.1 Item 10
- Roll Block, PL 2.1 Item 28
- X-Axis Motor, PL 4.1 Item 11
- Process Drive with Gear Box and Motor, PL 4.1 Item 13

Procedure

Rehome the Process Drive (ADJ 1.3). Reboot the printer. Does the error persist?

Y N

Troubleshooting complete.

Check the wiring harnesses. Are the wires around the Process Drive Swing Arm routed incorrectly? Could the Swing Arm be biased to one side of its motion?

Y N

Remove the Printhead Restraints (REP 2.9). Inspect the Printhead journals, bearings surfaces, chassis base under the Head Tilt gear, and Roll Block for ink puddles or debris. Is there visible ink outside of the Printhead that would hinder the Head Tilt gear or Printhead motion?

Y N

Check the top and left sides of the Printhead. Is there collected ink on the top and left sides of the Printhead?

Y N

Reboot the printer. Does the Process Drive stall in the swing arm section? Y $\ N$

Rehome the Process Drive (ADJ 1.3). Reboot the printer. **Does the Process Drive chatter during or at end of Printhead tilt motions?**

Y N

Inspect the Cone-nut on the X-Axis Motor lead screw shaft. Is the Cone-nut damaged or broken?

Y

BCDE

Δ

Inspect the anti-rotation feature of the Cone-nut where it engages the chassis rib. Is the Cone-nut not engaged on both sides of the chassis rib?

Y N

Ν

Replace the X-Axis Motor (REP 4.11) and Cone-nut Assembly.

Remove and reinstall the X-axis Motor (REP 4.11) with the Cone-nut correctly engaged on chassis rib.

Replace the X-Axis Motor (REP 4.11) and Cone-nut Assembly.

The Process Drive is worn. Replace the Process Drive (REP 4.13).

The Process Drive is worn. Replace the Process Drive (REP 4.13).

The Ink Loader has mis-dripped. Remove the Printhead (REP 2.3). Clean the chassis and gear train of ink debris. Install the Printhead.

The Printhead has overflowed. Remove the Printhead (REP 2.3). Clean the chassis and gear train of ink debris. Reinstall a new Printhead.

Reroute the wiring harnesses as shown in Figure 1. The wires should not contact the swing arm section of the Process Module.



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91,723 Printhead Tilt Fault

A Printhead Tilt error has occurred. The following troubleshooting procedure applies to this error.

Table 1 Applicable Fault Code

91,723 Printhead is not following forward on Headtilt Cam

Initial Actions

- Reboot printer and verify the error persists.
- Check that Process Drive gear train is properly home.
- Check for obstructions or ink spills around the Printhead.
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- Printhead Assembly, PL 2.1 Item 3
- Printhead Restraints, PL 2.1 Item 9, PL 2.1 Item 10
- Drum Maintenance Camshaft, PL 2.1 Item 11
- Roll Block, PL 2.1 Item 28
- Process Drive with Gear Box and Motor, PL 4.1 Item 13
- Head Tilt Missing Tooth Gear, PL 4.1 Item 15

Procedure

Rehome the Process Drive (ADJ 1.3). Reboot printer. Does the error persist?

Y N

Troubleshooting complete.

Is the Head Tilt Spring (located on the Left Printhead Restraint) is installed on the vnotch on the Printhead?

Y N

Install the Head Tilt Spring on proper notch on the Printhead as shown in Figure 1.

Inspect the Jetstack Cap. Is there visible ink collected on the Printhead side of the cap?

Y N

Check the Wiper Alignment. Is the Wiper misaligned?

Y N

Remove the Printhead Restraints (REP 2.9). Inspect the Printhead journals, bearings surfaces, chassis base under the Head Tilt gear, and Roll Block for ink puddles or debris. Is there visible ink outside of the Printhead that would hinder the Head Tilt Gear of Printhead motion? Is there ink outside of funnels or on the circuit board of the Printhead?

Y N

Rehome the Process Drive (ADJ 1.3). **Does the Drum Maintenance move and down in correlation to the Camshaft movement?**

Y N

Replace the Drum Maintenance Camshaft (REP 2.11) and Process Drive (REP 4.13).

B C D

Δ

Rehome the Process Drive (ADJ 1.3). Is the Overload Spring (underneath the Left Side of the Printhead) applying pressure to the Printhead during the head motion cycle?

Y N

The Overload Spring mechanism is broken. Replace the printer.

Troubleshooting complete.

The Printhead has overflowed. Remove the Printhead (REP 2.3). Clean the chassis and gear train of ink debris. Reinstall a new Printhead.

The Wiper Clip is interfering with Head Tilt motion. Rehome the Wiper Blade (ADJ 1.1) at bottom of travel.

Remove the collected ink. Tilt the Printhead to **Standby** position. Verify wiper motion rotates the Jetstack Cap away from the Printhead. Verify the lift posts on the Wiper Clips are not broken or bent.



Figure 1 Installing the Printhead Tilt Spring

91,724 Head Park Fault (Soft)

Could not park head in tilted-back position.

Procedure

Not applicable for soft fault.

91,725 Process Drive Fault

A Process Drive error has occurred. The following troubleshooting procedure applies to this error.

Table 1 Applicable Fault Code

91,725 Process Motor is skipping during head tilt.

Initial Actions

- Reboot the printer and verify the error persists.
- Check that the Process Drive gear train is properly homed (ADJ 1.3).
- Check that the Printhead is home (ADJ 1.2).
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

• Process Drive with Gear Box and Motor, PL 4.1 Item 13

Procedure

Check the Process Drive alignment. Rehome the Process Drive (ADJ 1.3). **Does the error persist?**

Ý N

Troubleshooting complete.

Home the Printhead (ADJ 1.2). Reboot the printer. Does the problem persist?

Y N

Troubleshooting complete.

Replace the Process Drive (REP 4.13).

91,726 Process Drive Fault

A Process Drive error has occurred. The following troubleshooting procedure applies to this error.

Table 1 Applicable Fault Code

91,726 Process Motor is stalled before engaging Head Tilt.

Initial Actions

- Reboot the printer and verify the error persists.
- Check that the Process Drive gear train is properly homed (ADJ 1.3).
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- Head Tilt Solenoid, PL 4.1 Item 4
- Process Drive with Gear Box and Motor, PL 4.1 Item 13

Procedure

Check Process Drive alignment. Rehome the Process Drive (ADJ 1.3). Does the error persist?

Y N

Troubleshooting complete.

Check that the Printhead is home (ADJ 1.2). Does the error persist?

Y N

Troubleshooting complete.

Check the Head Tilt Solenoid. Is the Head Tilt Solenoid latch "home position" down with the Printhead forward as shown in Figure 1?

Y N

Loosen the Head Tilt Latch or replace the Head Tilt Solenoid (REP 4.4).

Replace the Process Module (REP 4.13).



Tilt Gear lock position

Lift latch to engage Tilt Gear s8570-176

Figure 1 Head Tilt Gear Position

91,900, 91,903, 91,904, 93,901 Printhead NVRAM or PLD Fault

A Printhead NVRAM error has occurred. The following troubleshooting procedure applies to this error.

Table 1 Applicable Fault Codes

- 91,900 Printhead NVRAM Read Error
- 91,903 Printhead NVRAM Read/Write Error
- 91,904 Printhead has wrong PLD version.
- 93,901 Head Waveform Zero Drop Mass

Initial Actions

- Reboot the printer and verify the error persists.
- Check the Printhead wiring harness connectors.
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- Printhead Assembly, PL 2.1 Item 3
- Cable, Printhead Interface, PL 5.1 Item 20

Wiring and Plug/Jack References (Chapter 7 - Wiring Data)

- Figure 2, Wave Amplifier, Printhead
- Figure 6, Top Side Wire Routing

Procedure

Ν

Check the Printhead wiring harness connectors P/J180, P/J201, and P/J240. Are the connections secure and undamaged?

Y

Reseat and/or replace the wiring harness. Does the error persist?

Y N

Troubleshooting complete.

Replace the Printhead Assembly (REP 2.3).

Replace the Printhead Assembly (REP 2.3).

92,500, 92,550, 92,555, 92,558 Electronics Module

An Electronics Module error has occurred. The following troubleshooting procedure applies to these errors.

Table 1 Applicable Fault Codes

- 92,500 Driver Board Serial Link Down
- 92,550 Safety Timer Timeout Fault
- 92,555 System Timer Skipped Fault
- 92,558 Ecm PS Link Broken

Initial Actions

- Reboot the printer and verify the error persists.
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Part (Chapter 5 - Parts List)

• Electronics Module, PL 5.1 Item 1

Wiring and Plug/Jack References (Chapter 7 - Wiring Data)

- Figure 1, System Block Diagram
- Figure 2, Right Side Electronics Module P/J Locations
- Figure 3, Left Side Electronics Module P/J Locations
- Figure 4, Top Side Electronics Module P/J Locations

Procedure

Replace the Electronics Module (REP 5.1).

92,553 Ink Loader or I/O Board Disconnected

An Ink Loader or I/O Board error has occurred. The following troubleshooting procedure applies to this error.

Table 1 Applicable Fault Code

92,553 Ecm Board Link Broken

Initial Actions

- Reboot the printer and verify the error persists.
- Verify the Ink Loader cable connection to the Ink Loader and Electronics Module.
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- Ink Loader & Bezel, PL 1.1 Item 8
- Electronics Module, PL 5.1 Item 1
- Cable, Ink Loader Data, PL 5.1 Item 11
- Cable, I/O Board Data, PL 5.1 Item 14

Wiring and Plug/Jack References (Chapter 7 - Wiring Data)

- Figure 2, Right Side Electronics Module P/J Locations
- Figure 5, I/O Board P/J Locations
- Figure 9, I/O Board, Sensors (1 of 2)
- Figure 9, I/O Board, Sensors (2 of 2)
- Figure 11, Ink Loader Board P/J Locations

Procedure

Check the Ink Loader Board wiring harness connectors $\mbox{ P/J702 \& P/J401 and I/O}$ Board connectors $\mbox{ P/J801 \& P/J402.}$ Are the connections secure and undamaged?

Y N

Reseat and/or replace the wiring harness.

Replace the Electronics Module (REP 5.1).

92,563, 92,570, 92,579 Electronics Module Faults

An Electronics Module error has occurred. The following troubleshooting procedure applies to these errors.

Table 1 Applicable Fault Codes

92,563 PS Version Mismat

- 92,570 Interrupt Storm Fault
- 92,579 CDI Submit Sheet Error

Initial Actions

- Reboot the printer and verify the error persists.
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Part (Chapter 5 - Parts List)

Electronics Module, PL 5.1 Item 1

Wiring and Plug/Jack References (Chapter 7 - Wiring Data)

- Figure 1, System Block Diagram
- Figure 2, Right Side Electronics Module P/J Locations
- Figure 3, Left Side Electronics Module P/J Locations
- Figure 4, Top Side Electronics Module P/J Locations

Procedure

Check all the Electronics Module cabling. Are the connections secure and undamaged?

Y N

Reseat and/or replace the wiring harnesses.

Replace the Electronics Module (REP 5.1).

92,571 Software Fault

A software error has occurred. The following troubleshooting procedure applies to this error.

Table 1 Applicable Fault Code

92,571 Software Fault

Initial Actions

- Reboot the printer and verify the error persists.
- Check code version of the printer.
- If the problem persists, perform the following procedure.

Procedure

Check code version on the printer. Is the code latest release?

- Y N
 - Download the latest code.

Reset NVRAM (refer to PS NVRAM Reset in Chapter 2).

92,587 Wave Amp Fault

A Wave Amp error has occurred. The following troubleshooting procedure applies to this error.

Table 1 Applicable Fault Code

92,587 Wave Amp Fault

Initial Actions

- Reboot the printer and verify the error persists.
- Check the Wave Amp wiring connections.
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- Printhead Assembly, PL 2.1 Item 3
- Wave Amplifier, PL 5.1 Item 9
- Cable, Wave Amp Signal, PL 5.1 Item 18
- Cable, ZIF, Wave Amp Drive, PL 5.1 Item 19

Wiring and Plug/Jack References (Chapter 7 - Wiring Data)

- Figure 2, Wave Amplifier, Printhead
- Figure 6, Top Side Wire Routing
- Figure 6, Printhead P/J Locations
- Figure 7, Wave Amp P/J Locations

Procedure

CAUTION

Handle the ribbon cables carefully. Check that each cable is square to the socket and fully inserted. Damage to the Wave Amplifier could result from improper cable connections.

Check the wiring harness connectors P/J640 & P/J800 on the Wave Amp, P/J240 on the Printhead Board, and P/J901 on the Power Control Board. Inspect the ends of the drive cable conductors of damage.

Release the end of the cable and carefully examine the conductor ends (a magnifier helps) to see that they are not cracked or torn. If the cable looks good, carefully reinstall it using a ZIF tool (refer to REP 2.3 for how to use the ZIF tool for unlocking/locking the ZIF cable connector).

NOTE: Failure to properly unlock the connector will damage the cable.

Are the connections secure and undamaged?

Y N

Reseat the wiring harnesses.

Replace the Wave Amp Signal Cable and/or Wave Amp Drive Cable. Does the error persist?

Y N

Troubleshooting complete.

Unplug the Wave Amp Drive cable, then test VPP/VSS points on the Printhead Board wiring harness connector P/J110) (see Figure 1). Measure resistance of each to ground.

- Pin 1 (VSS)
- Pin 2 (Ground)

Pin 3 (VPP)

Is either one shorted?

Y N

Replace the Wave Amp (REP 5.9).

Replace the Printhead Assembly (REP 2.3).



Figure 1 Test Points on the Printhead Board

92,588 ~ 92,596 Electronics Module Faults

An Electronics Module error has occurred. The following troubleshooting procedure applies to these errors.

Table 1 Applicable Fault Codes

- 92,589 PS Parity ErrTx
- 92,590 PS Line FreqErrTx
- 92,591 PS Data ErrTx
- 92,592 PS Secure PgrmErrTx
- 92,593 PS Framing ErrRx
- 92,594 PS Parity ErrRx
- 92,595 PS Over Flow ErrRx
- 92,596 PS Comm ErrRx

Initial Actions

- Reboot the printer and verify the error persists.
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Part (Chapter 5 - Parts List)

- Electronics Module, PL 5.1 Item 1
- Power Supply Board, PL 5.1 Item 6

Wiring and Plug/Jack References (Chapter 7 - Wiring Data)

- Figure 1, System Block Diagram
- Figure 2, Right Side Electronics Module P/J Locations
- Figure 3, Left Side Electronics Module P/J Locations
- Figure 4, Top Side Electronics Module P/J Locations

Procedure

Check the wiring harness connectors. Are the connections secure and undamaged?

Y N

Reconnect the wiring harness connectors.

Replace the Power Supply Board (REP 5.6) (Electronics Module).

92,597, 92,601 Electronics Module Faults

An Electronics Module error has occurred. The following troubleshooting procedure applies to these errors.

	Table 1 Applicable Fault Codes
92,597	PS 50 Volts Down
92,601	PS Over Voltage Watchdog Timer

Initial Actions

- Reboot the printer and verify the error persists.
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Part (Chapter 5 - Parts List)

- Electronics Module, PL 5.1 Item 1
- Power Supply Board, PL 5.1 Item 6

Wiring and Plug/Jack References (Chapter 7 - Wiring Data)

- Figure 1, System Block Diagram
- Figure 2, Right Side Electronics Module P/J Locations
- Figure 3, Left Side Electronics Module P/J Locations
- Figure 4, Top Side Electronics Module P/J Locations

Procedure

Check all the Electronics Module cabling. Are the connections secure and undamaged? Y N

N Reseat and/or replace the wiring harnesses.

Follow the diagnostic procedure for +50V Short Circuits (Printer Fails Power-up: +50V LED Does Not Illuminate) in Chapter 6, General Troubleshooting. Is there a short circuit?

Y N

Replace the Electronics Module (REP 5.1).

Repair circuit or replace the Power Supply Board (REP 5.6) (Electronics Module).

92,602 Power Supply Overvoltage Watchdog Timer Went Off

The load dumping to the Power Supply exceeded the allowable time limit. Currently not display on the Control Panel.

Table 1 Applicable Fault Code

92,602 Power Supply Overvoltage Watchdog Timer Went Off

Procedure

NOTE: The fault code will only appear on the Fault History.

92,604 ~ 92,606 Electronics Fan Faults

An Electronics Fan error has occurred. The following troubleshooting procedure applies to these errors.

Table 1 Applicable Fault Codes

92,604	Processor exceeded panic temperature
92,605	Wave Amp Thermistor exceeded maximum temperature
92,606	Electronics Fan not working properly

Initial Actions

- Check for any blockages in the air path flow or vents.
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- Electronics Module Fan, PL 4.1 Item 7
- Electronics Module, PL 5.1 Item 1
- Power Control Board, PL 5.1 Item 8
- Harness, Left Side Power Control, PL 5.1 Item 17

Wiring and Plug/Jack Reference (Chapter 7 - Wiring Data)

• Figure 2, Left Side Wire Routing

Procedure

Ensure the vents of the printer are not blocked. Provide adequate clearance (refer to Clearance and Mounting Surface Specifications in the Introduction Chapter). Check the Electronics Fan wiring harness connector P/J105. Is the connection secure and undamaged? Y N

Reseat and/or replace the wiring harness. Turn on the printer. Is the Electronics Module Fan turning?

Y N

Replace the Electronics Module Fan (REP 4.7). Turn on the printer. Is the Fan turning?

```
Y
```

Ν

Replace the Power Control Board (REP 5.6) (Electronics Module).

Troubleshooting complete.

Troubleshooting complete.

Turn on the printer. Is the Electronics Module Fan turning?

N Replace the Electronics Fan Module (REP 4.7). Turn on the printer. Is the Fan turning?

N Replace the Power Control Board (REP 5.6) (Electronics Module).

Troubleshooting complete.

Troubleshooting complete.

Υ

Υ

92,607 ~ 92,609 Wave Amp Faults

A Wave Amp error has occurred. The following troubleshooting procedure applies to these errors.

Table 1 Applicable Fault Codes

92,607	Wave Amp thermistor is open.	

- **92,608** Wave Amp thermistor is shorted.
- **92,609** Wave Amp thermistor gave a bad reading.

Initial Actions

- Reboot the printer and verify the error persists.
- Check the Wave Amp wiring connections.
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Part (Chapter 5 - Parts List)

- Wave Amp, PL 5.1 Item 9
- Cable, Wave Amp Signal, PL 5.1 Item 18

Wiring and Plug/Jack References (Chapter 7 - Wiring Data)

- Figure 2, Left Side Wire Routing
- Figure 2, Wave Amplifier, Electronics Module
- Figure 3, Left Side Electronics Module P/J Locations
- Figure 7, Wave Amp P/J Locations

Procedure

Reseat the Wave Amp cable connection $\mbox{ P/J800}$ to the Printhead and $\mbox{ P/J901}$ to the Electronics Module.

Release the end of the cable and carefully examine the conductor ends (a magnifier helps) to see that they are not cracked or torn. If the cable looks good, carefully reinstall it using a ZIF tool (refer to REP 2.3 for how to use the ZIF tool for unlocking/locking the ZIF cable connector).

NOTE: Failure to properly unlock the connector will damage the cable.

Does the error persist?

Y N

Troubleshooting complete.

Check the +50V LED on the Power Supply. Is the LED on?

Y N

Follow the diagnostic procedure for +50V short circuits (Printer Fails Power-up: +50V LED Does Not Illuminate) in Chapter 6, General Troubleshooting.

Replace the Wave Amp cable. Does the error persist?

Y N

Troubleshooting complete.

Replace the Wave Amp (REP 5.9).

92,808 ~ 92,813 Configuration Card Faults

A Configuration Card error has occurred. The following troubleshooting procedure applies to these errors.

	Table 1 Applicable Fault Codes
92,808	Configuration Card Missing.
92,809	Configuration Card Invalid.
92,810	Configuration Card Unknown.
92,811	Configuration Card Mismatch.
92,812	Configuration Card Blank.

98,813 Configuration Card Bad.

NOTE: If fault 92,811 occurs following Ink Loader replacement, see Figure 1 for location of the Jumper.

- Jumper is not installed on the ColorQube 8570 Ink Loader.
- Jumper is installed on the ColorQube 8870 Ink Loader.

Initial Actions

- Check that the Configuration Card is correct for the printer.
- Reboot the printer and verify the error persists.
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- Electronics Module, PL 5.1 Item 1
- Main Controller Board, PL 5.1 Item 7
 - Configuration Card, PL 5.1 Item 5

Procedure

CAUTION

Handle the Configuration with care to prevent damaging the Card.

Replace the Configuration Card (REP 5.5) (see Figure 2 for correct card orientation). Restart the printer. **Does the error persist?**

- Y N
 - Troubleshooting complete.

Check the ground integrity as shown in FIgure 3. Are the printer grounds connected?

Y N

Reconnect the printer grounds.

Replace the Main Controller Board (REP 5.6) (Electronics Module).



Figure 1 Jumper Location on ColorQube 8570 Ink Loader



Figure 2 Installing the Configuration Card



Figure 3 Printer Ground Locations

92,900 Ink Loader Disconnect

An Ink Loader error has occurred. The following troubleshooting procedure applies to this error.

Table 1 Applicable Fault Codes

92,900 Ink Loader Disconnect

Initial Actions

- Reboot the printer and verify the error persists.
- Verify the Ink Loader cable connection to the Ink Loader and Electronics Module.
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- Ink Loader & Bezel, PL 1.1 Item 8
- Electronics Module, PL 5.1 Item 1
- Power Control Board, PL 5.1 Item 8
- Cable, Ink Loader Data, PL 5.1 Item 11
- Cable, I/O Board Data, PL 5.1 Item 14

Wiring and Plug/Jack References (Chapter 7 - Wiring Data)

- Figure 2, Right Side Electronics Module P/J Locations
- Figure 5, Ink Level Sensors, Gate Solenoids, Ink Loader Board
- Figure 11, Ink Loader Board P/J Locations

Procedure

Check the lnk Loader Board wiring harness connectors $\mbox{ P/J702 \& P/J401. Are the connections secure and undamaged?}$

YN

Reseat and/or replace the wiring harness.

Replace the Power Control Board (REP 5.6) (Electronics Module.

93,501, 93,506, 93,511, 93,516 Ink Loader Faults

An Ink Loader error has occurred. The following troubleshooting procedure applies to these errors.

Table 1 Applicable Fault Codes

- 93.501 Black Ink Stick Jam Fault
- 93,506 Magenta Ink Stick Jam Fault
- 93.511 Cyan Ink Stick Jam Fault
- 93,516 Yellow Ink Stick Jam Fault

Initial Actions

- Reboot the printer and verify the error persists.
- Verify that ink stick is Xerox ink. ٠
- If the problem persists, perform the following procedure. ٠

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- ٠ Ink Loader & Bezel, PL 1.1 Item 8
- Xerox Ink Sticks (Cyan, Magenta, Yellow, Black)

Procedure

NOTE: Check the Electronics Module Fan for function, as proper cooling is required to prevent ink stick jams. Ensure the vents are not blocked. Provide adequate clearance (refer to Clearance and Mounting Surface Specifications in the Introduction and General Information Chapter). If the Electronics Module Fan is not functioning, refer to RAP 92,604 ~ 92,606 (Electronics Fan Faults).

Remove all ink sticks from color that is failing (only loose sticks, some sticks may be melted to the Heater at the front of the Ink Loader).

NOTE: You may need to manually manipulate the Solenoid-activated ink gates to lower them to remove the ink sticks.

Open and close the cover multiple times. Does the black plastic push block in the channel travel freely with the black bar that spans the width of the lnk Loader?

Υ Ν

Υ

A

Replace the Ink Loader (REP 1.8). Transfer the ink sticks to the new Ink Loader.

Using a flashlight, look for ink shards or other obstruction in the track. Are there any ink shards or obstructions?

Ν Remove the lnk Loader from the printer. Is there any ink hanging from the bottom of the lnk Loader that is not on the metal heater? (Look for ink debris on top of the Printhead. Ink dust is normal, pools of frozen ink are not normal.) Y Ν Reboot the printer. Does the error persist? Υ Ν

```
Troubleshooting complete.
```

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Δ

С

Replace the Ink Loader (REP 1.8). Transfer the ink sticks to the new Ink Loader. Verify that the Electronics Module is plugged in.

Replace the Ink Loader (REP 1.8). Transfer the ink sticks to the new Ink Loader.

Remove any obstructions and replace at least 2 ink sticks. Reboot the printer. Does the error persist?

Υ Ν

Troubleshooting complete.

Replace the Ink Loader (REP 1.8). Transfer the ink sticks to the new Ink Loader.

93,523, 93,526, 93,529, 93,532 Ink Loader Thermal Faults

An Ink Loader Thermal error has occurred. The following troubleshooting procedure applies to these errors.

Table 1 Applicable Fault Codes

- 93,523 Cyan ink melt heater is too hot.
- 93,526 Magenta ink melt heater is too hot.
- 93,529 Yellow ink melt heater is too hot.
- 93,532 Black ink melt heater is too hot.

Initial Actions

- Reboot the printer and verify the error persists.
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- Ink Loader & Bezel, PL 1.1 Item 8
- Cable, Ink Loader Data, PL 5.1 Item 11

Wiring and Plug/Jack References (Chapter 7 - Wiring Data)

- Figure 1, System Block Diagram
- Figure 2, Right Side Electronics Module P/J Locations
- Figure 4, Top Side Electronics Module P/J Locations
- Figure 5, Level Sensors, Gate Solenoids, Ink Loader Board

Procedure

Reseat the Ink Loader Data cable connectors P/J401 and P/J702. Does the error persist?

Y N Troubleshooting complete.

Check the Ink Loader Thermistor for continuity.

- Disconnect the wiring harness connector P/J703 from the Ink Loader Board as shown in Figure 1.
- Measure the connector for continuity. The measurement should read ~200k Ohms at room temperature ~25 Degree Celsius between the white and each colored wire.

Check the Ink Loader Heater for continuity.

- Disconnect the wiring harness connector P/JAC1 from the Electronics Module.
- Measure the connector for continuity. The measurement should read ~120 ohms between the white and each colored wire.

Does the error persist?

Y N

Troubleshooting complete.

Replace the Ink Loader (REP 1.8).



Figure 1 Ink Loader Thermistor and Heater Test Points

93,524, 93,527, 93,530, 93,533 Ink Loader Thermal Faults

An Ink Loader Thermal error has occurred. The following troubleshooting procedure applies to these errors.

Table 1 Applicable Fault Codes

- 93,524 Cyan ink melt heater is too slow.
- 93,527 Magenta ink melt heater is too slow.
- 93,530 Yellow ink melt heater is too slow.
- 93,533 Black ink melt heater is too slow.

Initial Actions

- Reboot the printer and verify the error persists.
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- Ink Loader & Bezel, PL 1.1 Item 8
- Cable, Ink Loader Data, PL 5.1 Item 11

Wiring and Plug/Jack References (Chapter 7 - Wiring Data)

- Figure 1, System Block Diagram
- Figure 2, Right Side Electronics Module P/J Locations
- Figure 4, Top Side Electronics Module P/J Locations
- Figure 5, Level Sensors, Gate Solenoids, Ink Loader Board

Procedure

Reseat the Ink Loader Data cable connectors P/J401 and P/J702. Does the error persist?

Y N

Troubleshooting complete.

Check the Ink Loader Thermistor for continuity.

- Disconnect the wiring harness connector P/J703 from the Ink Loader Board as shown in Figure 1.
- Measure the connector for continuity. The measurement should read ~200k Ohms at room temperature ~25 Degree Celsius between the white and each colored wire.

Check the Ink Loader Heater for continuity.

- Disconnect the wiring harness connector P/JAC1 from the Electronics Module.
- Measure the connector for continuity. The measurement should read ~120 ohms between the white and each colored wire.

Does the error persist?

Y N

Troubleshooting complete.

Replace the Ink Loader (REP 1.8).



Figure 1 Ink Loader Thermistor and Heater Test Points

93,525, 93,528, 93,531, 93,534 Ink Loader Thermal Faults

An Ink Loader Thermal error has occurred. The following troubleshooting procedure applies to these errors.

Table 1 Applicable Fault Codes

- 93,525 Cyan thermistor reading bad
- 93,528 Magenta thermistor reading bad
- 93,531 Yellow thermistor reading bad
- 93,534 Black thermistor reading bad

Initial Actions

- Reboot the printer and verify the error persists.
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- Ink Loader & Bezel, PL 1.1 Item 8
- Cable, Ink Loader Data, PL 5.1 Item 11

Wiring and Plug/Jack References (Chapter 7 - Wiring Data)

- Figure 1, System Block Diagram
- Figure 2, Right Side Electronics Module P/J Locations
- Figure 4, Top Side Electronics Module P/J Locations
- Figure 5, Level Sensors, Gate Solenoids, Ink Loader Board

Procedure

Reseat the Ink Loader Data cable connectors P/J401 and P/J702. Does the error persist?

Y N

Troubleshooting complete.

Check the Ink Loader Thermistor for continuity.

- Disconnect the wiring harness connector P/J703 from the Ink Loader Board as shown in Figure 1.
- Measure the connector for continuity. The measurement should read ~200k Ohms at room temperature ~25 Degree Celsius between the white and each colored wire.

Check the Ink Loader Heater for continuity.

- Disconnect the wiring harness connector P/JAC1 from the Electronics Module.
- Measure the connector for continuity. The measurement should read ~120 ohms between the white and each colored wire.

Does the error persist?

Y N

Troubleshooting complete.

Replace the Ink Loader (REP 1.8).



Figure 1 Ink Loader Thermistor and Heater Test Points

93,581 ~ 93,584 Printhead Level Sense Faults

A Printhead Level Sense error has occurred. The following troubleshooting procedure applies to these errors.

Table 1 Applicable Fault Codes

- 93,581 Head Open or Shorted LS Black
- 93,582 Head Open or Shorted LS Magenta
- 93,583 Head Open or Shorted LS Cyan
- 93,584 Head Open or Shorted LS Yellow

Initial Actions

- Reboot the printer and verify the error persists.
- Check for ink spills around the Printhead.
- Check for mixed ink in the Printhead reservoirs.
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- Printhead Assembly, PL 2.1 Item 3
- Cable, Printhead Interface, PL 5.1 Item 20

Wiring and Plug/Jack Reference (Chapter 7 - Wiring Data)

- Figure 2, Wave Amplifier, Printhead Heaters
- Figure 6, Top Side Wire Routing Section 7, Wiring Data

Procedure

Check the Printhead cable connector P/J130 and the Gray Printhead Data Cable P/J180 for damage. Are the cables damaged?

N Replace the Printhead Assembly (REP 2.3).

Replace or repair the wiring harnesses. Does the error persist?

Y N

Troubleshooting complete.

Check the +50V LED on the Power Supply. Is the LED on?

Y N

Follow the diagnostic procedure for +50V short circuits (Printer Fails Power-up: +50V LED Does Not Illuminate) in Chapter 6, General Troubleshooting.

Replace the Printhead Assembly (REP 2.3).

93,597, 93,598, 93,599, 93,800 Printhead Level Sense Faults

A Printhead Level Sense error has occurred. The following troubleshooting procedure applies to these errors.

Table 1 Applicable Fault Codes

93,597	An over range level sense error occurred in the Black Printhead reservoir.
93,598	An over range level sense error occurred in the Magenta Printhead reservoir.
93,599	An over range level sense error occurred in the Cyan Printhead reservoir.
93,800	An over range level sense error occurred in the Yellow Printhead reservoir.

Initial Actions

- Check the Ink Loader for improperly installed ink sticks.
- Turn the printer power off and allow the printer to cool until the ink solidifies (approximately 30 minutes).
- Investigate where the contamination came from and remove the contamination source. One ink color contaminating another color can cause this error.
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- Ink Loader and Cover, PL 1.1 Item 8
- Printhead Assembly, PL 2.1 Item 3
- Electronics Module, PL 5.1 Item 1
- Main Controller Board, PL 5.1 Item 7
- Power Control Board, PL 5.1 Item 8
- Xerox Ink Sticks

Procedure

Check the lnk Loader chutes for improperly installed lnk Sticks. Has the lnk Sticks been loaded incorrectly or the wrong ink used?

- Y N
 - Disable the Ink Loader Level Sensing.
 - 1. Turn off the printer
 - 2. Open the Ink Loader Door.
 - 3. Turn on the printer.
 - 4. Press and hold the **Up + Back** buttons until Ink Level Sense disabled.

NOTE: If the message **Level Sense Disabled** does not appear, turn the printer off and perform the procedure again.

The Ink Level Sensing remains disabled for approximately 5 minutes. Is level sense disabled?

Y N

Continue to perform disable the Ink Loader Level Sensing procedure until level sensing is disabled.

B Close the lnk Loader Door and allow the printer to reach **Ready**. Is the printer ready? Y N

Replace the Printhead Assembly (REP 2.3). Does the error persist?

Y N

Δ

Troubleshooting complete.

Replace the Power Control Board (REP 5.6) (Electronics Module).

Perform the Flush Prints routine to purge the Printhead contamination: **Control Panel Menu -> Troubleshooting -> Service Tools -> Ink Flush Prints**. Select affected color to prints 20 solid prints. **Were 20 solid fills printed?**

Y N

Continue printing the solid fills for the affected color(s).

Check that the contamination has been purged.

- 1. Power off the printer.
- 2. Turn the printer on.

Did the printer reach Ready without error?

Y N

Repeat the Disable Ink Loader Level Sensing procedure. If the printer continues to fail, replace the Printhead Assembly (REP 2.3). **Does the error persist?**

Y N

Troubleshooting complete.

Replace the Power Control Board (REP 5.6) (Electronics Module).

Troubleshooting complete.

CAUTION

Do not attempt to remove ink from the Printhead reservoir. Purge the reservoir using Solid Color Test Prints as described.

Clear the Ink Loader of ink. For these types of errors, clear the Ink Loader of the incorrect ink.

- 1. Remove the Ink Loader (REP 1.8).
- 2. Load the correct ink into the chutes.
- 3. Clean the area surrounding the Printhead reservoir for the affected color(s).
- 4. Install the Ink Loader.

Has all the improper ink been removed from the Ink Loader and Printhead areas?

Y N

Continue cleaning until no residual ink remains in the Ink Loader or area surrounding the Printhead.

Disable the Ink Loader Level Sensing.

- 1. Open the Ink Loader Door.
- 2. Press and hold the **Up** and **Back** buttons and turn on the printer until the **Level Sense Disabled** message is displayed.

If successful, the message **Level Sense Disabled** momentarily appear on the display. If the message does not appear, power off the printer and attempt the procedure again. The Ink Level Sensing remains disabled for approximately 5 minutes. **Is level sense disabled?**

r N

Continue to perform disable the Ink Loader Level Sensing procedure until level sensing is disabled.

Close the Ink Loader Door and allow the printer to reach Ready. Is the printer ready?

Y N

Replace the Printhead Assembly (REP 2.3). Does the error persist?

Troubleshooting complete.

Replace the Electronics Module (REP 5.1).

Perform the Flush Prints routine to purge the Printhead contamination: Control Panel Menu - > Troubleshooting -> Service Tools -> Ink Flush Prints. Select the affected color to prints 20 solid fill prints. Were 20 solid fills printed?

N Continue printing the solid fills for the affected color(s).

Check that the contamination has been purged.

- 1. Power off the printer.
- 2. Turn the printer on.

Did the printer reach Ready without error?

Y N

Υ

Repeat Disable Ink Loader Level Sensing procedure. If the printer continues to fail, replace the Printhead Assembly (REP 2.3). **Does the error persist?**

Y N

Troubleshooting complete.

Replace the Main Controller Board (REP 5.6) (Electronics Module).

Troubleshooting complete.

93,600, 93,603, 93,606, 93,609 Ink Loader Thermal Faults

An Ink Loader Thermal error has occurred. The following troubleshooting procedure applies to these errors.

Table 1 Applicable Fault Codes

- 93,600 Cyan ink melt thermistor is open.
- 93,603 Magenta ink melt thermistor is open.
- 93,606 Yellow ink melt thermistor is open.
- 93,609 Black ink melt thermistor is open.

Initial Actions

- Reboot the printer and verify the error persists.
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- Ink Loader & Bezel, PL 1.1 Item 8
- Cable, Ink Loader Data, PL 5.1 Item 11

Wiring and Plug/Jack References (Chapter 7 - Wiring Data)

- Figure 2, Right Side Electronics Module P/J Locations
- Figure 5, Level Sensors, Gate Solenoids, Ink Loader Board
- Figure 11, Ink Loader Board P/J Locations

Procedure

Reseat the Ink Loader Data cable connectors P/J401 and P/J702. Does the error persist?

Troubleshooting complete.

Check the Ink Loader Thermistor for continuity.

- Disconnect the wiring harness connector P/J703 from the Ink Loader Board as shown in Figure 1.
- Measure the connector for continuity. The measurement should read ~200k Ohms at room temperature ~25 Degree Celsius between the white and each colored wire.

Does the error persist?

Y N

Y N

Troubleshooting complete.

Replace the Ink Loader (REP 1.8).



Figure 1 Ink Loader Thermistor and Heater Test Points

93,601, 93,604, 93,607, 93,610 Ink Loader Thermal Faults

An Ink Loader Thermal error has occurred. The following troubleshooting procedure applies to these errors.

Table 1 Applicable Fault Codes

- 93.601 Cyan ink melt thermistor is shorted.
- 93,604 Magenta ink melt thermistor is shorted.
- 93,607 Yellow ink melt thermistor is shorted.
- 93,610 Black ink melt thermistor is shorted.

Initial Actions

- Reboot the printer and verify the error persists.
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- Ink Loader & Bezel, PL 1.1 Item 8
- Cable, Ink Loader Data, PL 5.1 Item 11 ٠

Wiring and Plug/Jack References (Chapter 7 - Wiring Data)

- Figure 2, Right Side Electronics Module ٠
- Figure 5, Level Sensors, Gate Solenoids, Ink Loader Board
- ٠ Figure 11, Ink Loader Board P/J Locations

Procedure

Reseat the Ink Loader Data Cable connectors P/J401 and P/J702, Does the error persist?

Ν Troubleshooting complete.

Check the Ink Loader Thermistor for continuity.

- Disconnect the wiring harness connector P/J703 from the Ink Loader Board as shown in ٠ Figure 1.
- Measure the connector for continuity. The measurement should read ~200k Ohms at ٠ room temperature ~25 Degree Celsius between the white and each colored wire

Does the error persist? Ν

Υ

Υ

Troubleshooting complete.

Replace the Ink Loader (REP 1.8).



Figure 1 Ink Loader Thermistor and Heater Test Points

93,602, 93,605, 93,608, 93,611 Ink Loader Electrical Faults

An Ink Loader error has occurred. The following troubleshooting procedure applies to these errors.

Table 1 Applicable Fault Codes

93,602	Cyan ink melt thermistor bad reading	

93,605 Magenta ink melt thermistor bad reading

- **93,608** Yellow ink melt thermistor bad reading
- 93,611 Black ink melt thermistor bad reading

Initial Actions

- Reboot printer and verify the error persists.
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- Ink Loader & Bezel, PL 1.1 Item 8
- Electronics Module, PL 5.1 Item 1
- Power Control Board, PL 5.1 Item 8
- Cable, Ink Loader Data, PL 5.1 Item 11

Wiring and Plug/Jack References (Chapter 7 - Wiring Data)

- Figure 2, Right Side Electronics Module P/J Locations
- Figure 5, Ink Level Sensors, Gate Solenoids, Ink Loader Board
- Figure 11, Ink Loader Board P/J Locations

Procedure

Reseat the Ink Loader Data Cable wiring harness connectors P/J702 and P/J401. **Does the error persist?**

Y N

Troubleshooting complete.

Replace the Power Control Board (REP 5.6) (Electronics Module). Reboot the printer with the new Electronics Module. **Does the error persist?**

Y N

Troubleshooting complete.

Replace the Ink Loader (REP 1.8). Transfer the ink sticks to the new Ink Loader.

93,893 ~ 93,896 Ink Loader Faults

The lnk Loader error has occurred. The following troubleshooting procedure applies to these errors.

Table 1 Applicable Fault Codes

93,893	Black Ink Stick Potential Jam
93,894	Magenta Ink Stick Potential Jam
93,895	Cyan Ink Stick Potential Jam
93,896	Yellow Ink Stick Potential Jam

Initial Actions

- Reboot the printer and verify the error persists.
- Verify that ink stick is Xerox ink.
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Parts (Chapter 5, Parts List)

- Ink Loader & Bezel, PL 1.1 Item 8
- Xerox Ink Sticks (Cyan, Magenta, Yellow, Black)

Procedure

Remove all ink sticks from color that is failing (only loose sticks, some sticks may be melted to the Heater at the front of the Ink Loader).

Open and close the cover multiple times. Does the black plastic push block in the channel travel freely with the black bar that spans the width of the lnk Loader?

Y N

Replace the Ink Loader (REP 1.8). Transfer the ink sticks to the new Ink Loader.

Using a flashlight, look for ink shards or other obstruction in the track. Are there any ink shards or obstructions?

Y N

Remove the lnk Loader from the printer. Is there any ink hanging from the bottom of the lnk Loader that is not on the metal heater? (Look for ink debris on top of the Printhead. Ink dust is normal, pools of frozen ink is not normal.)

Y N

Reboot the printer. **Does the error persist?** Y N

```
Y
```

Troubleshooting complete.

Replace the Ink Loader (REP 1.8). Transfer the ink sticks to the new Ink Loader. Verify that the Electronics Module is plugged in.

Replace the Ink Loader (REP 1.8). Transfer the ink sticks to the new Ink Loader.

Remove any obstructions and replace at least 2 ink sticks. Remove the Ink Loader from the printer (REP 1.8). Is there any ink hanging from the bottom of the Ink Loader that is not on the metal heater? (Look for ink debris on top of the Printhead. Ink dust is normal, pools of frozen ink is not normal.)

Ν Υ

Reboot the printer. Does the error persist?

Υ Ν

Troubleshooting complete.

Replace the Ink Loader (REP 1.8). Transfer the ink sticks to the new Ink Loader. Verify that the Electronics Module is plugged in.

Replace the Ink Loader (REP 1.8). Transfer the ink sticks to the new Ink Loader.

93,962 ~ 93,965 Incorrect Ink Sticks

An Ink Stick Sense error has occurred. The following troubleshooting procedure applies to these errors.

Table 1 Applicable Fault Codes

93,962	Cyan channel detected incorrect ink stick
93,963	Magenta channel detected incorrect ink stick
93,964	Yellow channel detected incorrect ink stick
93,965	Black channel detected incorrect ink stick

Initial Actions

- ٠ Verify ink sticks in question are the correct SKU/Re-Order number for the customer.
- Verify, using the Control Panel menus, that the locked SKU/Re-Order number is correct.
- Reboot the printer and verify the error persists.
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- Ink Loader and Cover, PL 1.1 Item 8 .
- Ink, Rainbow Pack, Xerox Supplies and Accessories ٠

Procedure

Troubleshooting Procedure for Incorrect Ink Stick

Open the Ink Loader Door "C". Is there an ink stick visible in the insertion opening?

```
Υ
   N
```

Υ

Replace the Ink Loader (REP 1.8).

Remove the ink stick identified as incorrect (refer to ColorQube 8570 Ink SKU and ColorQube 8870 Ink SKU in Introduction and General Information chapter). Does the ink stick SKU match what the printer is set to?

```
Ν
     Is the printer set to the correct ink SKU for the customer?
     Υ
          Ν
          Install neutral region snippet and set printer using correct SKU sticks.
     Insert a stick of the correct SKU into the printer. Does the error persist?
     Υ
         Ν
          Troubleshooting complete.
     Upgrade printer firmware (Firmware Upgrade). Does the error persist?
     Υ
         Ν
          Inform customer of correct ink sticks to use.
     Replace the Ink Loader (REP 1.8).
Is the ink stick damaged?
     Ν
     Re-insert the stick in question. Does the error persist?
```

Υ

```
A
```

v

N Inform customer to re-try sticks, and inform Xerox of sticks which will not work.

Insert a different stick of the correct SKU. Does the error persist?

Y N

Inform customer to re-try sticks, and inform Xerox of sticks which will not work.

Replace the Ink Loader (REP 1.8).

Insert a different stick of the correct SKU. Does the error persist?

Y N

Inform customer to re-try sticks, and inform Xerox of sticks which will not work.

Replace the Ink Loader (REP 1.8).

93,966 ~ 93,969 Unidentified Ink Sticks

An Ink Stick Sense error has occurred. The following troubleshooting procedure applies to these errors.

Table 1 Applicable Fault Codes

93,966	Cyan channel detected unidentified ink stick
93,967	Magenta channel detected unidentified ink stick
93,968	Yellow channel detected unidentified ink stick
93.969	Black channel detected unidentified ink stick

Initial Actions

- Verify ink sticks in question are the correct SKU/Re-Order number for the customer.
- Verify, using the Control Panel menus, that the locked SKU/Re-Order number is correct.
- Reboot the printer and verify the error persists.
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- Ink Loader and Cover, PL 1.1 Item 8
- Ink, Rainbow Pack, Xerox Supplies and Accessories

Procedure

Try to remove the ink stick. Are you able to remove the ink stick?

```
Ν
```

Υ

Υ

Replace the Ink Loader (REP 1.8).

Close the lnk Loader Door "C". Does the error persist after the door is closed? If so, remove the next stick and close the door again. Repeat until no sticks are left. Did the error finally clear?

```
N
Boplage the
```

Replace the Ink Loader (REP 1.8).

Check the removed stick(s) and verify the ink SKU matches what the printer is set to. **Does** the ink stick SKU match what the printer is set to?

```
Y N
```

Is the printer set to the correct ink SKU for the customer?

```
Y N
```

Install neutral region snippet and set printer using correct SKU sticks.

Insert a stick of the correct SKU into the printer. Does the error persist after the Ink Loader Door "C" is closed?

```
Y N
```

Υ

Did the ink stick click when inserted?

```
N
```

Replace the Ink Loader (REP 1.8).

Inform customer of the correct ink stick SKU to use.

```
B
Replace the Ink Loader (REP 1.8).
```

Re-insert a stick into the printer. Does the error persist after the ink loader door "C" is closed?

Y N

Α

Did the ink stick click when inserted?	
Υ	Ν
	Replace the Ink Loader (REP 1.8).

Inform customer of procedure for removing and re-inserting sticks if it happens again.

Replace the Ink Loader (REP 1.8).

93,982 ~ 93,985 Ink Load Obstruction Faults

An Ink Loader error has occurred. The following troubleshooting procedure applies to these errors.

Table 1	Applicable	Fault Codes
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93,982	Black obstructed, reservoir not filled
93,983	Magenta obstructed, reservoir not filled
93,984	Cyan obstructed, reservoir not filled
93,985	Yellow obstructed, reservoir not filled

Initial Actions

- DO NOT REBOOT THE PRINTER this could cause head overfill.
- Check for ink spills around the Printhead.
- Check the Ink Loader for bent melt tips.
- Check the Ink Loader power cable misrouting around melt tips.
- Check height of ink levels in the head reservoir.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- Ink Loader & Bezel, PL 1.1 Item 8
- Printhead Assembly, PL 2.1 Item 3
- Xerox Ink Sticks

Procedure

Remove the Printhead (REP 2.3) to inspect for ink spills. Clean if necessary. Check the reservoir for evidence of overfill. Is the head overfilled or the Purge Tube full of ink?

```
Y N
```

Remove the lnk Loader (REP 1.8) and inspect the melt tip for color that is failing. Is the melt tip bent or angled incorrectly?

Y N

Is any ink hanging from the bottom of the Ink Loader that is not on the metal heater? (Look for ink debris on top of the Printhead. Ink dust is normal, pools of frozen ink is not normal.)

```
Y N
```

Inspect the Ink Loader for any cabling or obstruction to the melt tips. Is any obstruction?

```
YN
```

Replace the Printhead Assembly (REP 2.3).

Reroute the wiring cables or remove obstruction.

Reroute the wiring cables.

```
Replace the Ink Loader (REP 1.8).
```

```
Replace the Printhead Assembly (REP 2.3).
```

93,994 ~ 93,997 Ink Loader Faults

The lnk Loader error has occurred. The following troubleshooting procedure applies to these errors.

Table 1 Applicable Fault Codes

- 93,994 Black Ink Stick Potential Jam2
- 93,995 Magenta Ink Stick Potential Jam2
- 93,996 Cyan Ink Stick Potential Jam2
- 93,997 Yellow Ink Stick Potential Jam2

Initial Actions

- Reboot the printer and verify the error persists.
- Verify that ink stick is Xerox ink.
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Parts (Chapter 5, Parts List)

- Ink Loader & Bezel, PL 1.1 Item 8
- Xerox Ink Sticks (Cyan, Magenta, Yellow, Black)

Procedure

NOTE: Check the Electronics Module Fan for function, as proper cooling is required to prevent ink stick jams. Ensure the vents are not blocked. Provide adequate clearance (refer to *Clearance and Mounting Surface Specifications* in the Introduction and General Information Chapter). If the Electronics Module Fan is not functioning, refer to RAP *92,604* ~ *92,606* (Electronics Fan Faults).

Remove all ink sticks from color that is failing (only loose sticks, some sticks may be melted to the Heater at the front of the Ink Loader).

Open and close the cover multiple times. Does the black plastic push block in the channel travel freely with the black bar that spans the width of the lnk Loader?

Y N

Replace the Ink Loader (REP 1.8). Transfer the ink sticks to the new Ink Loader.

Using a flashlight, look for ink shards or other obstruction in the track. Are there any ink shards or obstructions?

Y N

A

Remove the lnk Loader from the printer. Is there any ink hanging from the bottom of the lnk Loader that is not on the metal heater? (Look for ink debris on top of the Printhead. Ink dust is normal, pools of frozen ink is not normal.)

Y N

Reboot the printer. Does the error persist?

Y N

Troubleshooting complete.

Replace the lnk Loader (REP 1.8). Transfer the ink sticks to the new lnk Loader. Verify that the Electronics Module is plugged in. Replace the Ink Loader (REP 1.8). Transfer the ink sticks to the new Ink Loader.

Remove any obstructions and replace at least 2 ink sticks. Reboot the printer. Does the ${\it error}$ ${\it persist?}$

Y N

A B

Troubleshooting complete.

Replace the Ink Loader (REP 1.8). Transfer the ink sticks to the new Ink Loader.

94,000 ~ 94,003 Trapped Ink Stick Faults

An Ink Loader error has occurred. The following troubleshooting procedure applies to these errors.

Table 1 Applicable Fault Codes

94,000 Black channel has trapped ink stick

94,001 Magenta channel has trapped ink stick

- 94,002 Cyan channel has trapped ink stick
- 94,003 Yellow channel has trapped ink stick

Initial Actions

- Check for trapped ink stick inside the Ink Loader.
- If the problem persists, perform the following procedure.

Procedure

Remove the trapped ink stick.

Perform the Ink SKU Sensor test in Service Diagnostics (**Diagnostics Menu > Monitor Menu > Ink SKU Sensor**).

94,004 ~ 94,007 Factory Ink Stick Exceeded Quota Faults

An ink stick error has occurred. The following troubleshooting procedure applies to these errors.

Table 1 Applicable Fault Codes

94,004	Black channel exceeded factory ink stick quota
94,005	Magenta channel exceeded factory ink stick quota
94,006	Cyan channel exceeded factory ink stick quota
94,007	Yellow channel exceeded factory ink stick quota

Initial Actions

- Check the type of ink stick in the Ink Loader.
- If the problem persists, perform the following procedure.

Procedure

Remove the ink stick.

Perform the Ink SKU Sensor test in Service Diagnostics (**Diagnostics Menu > Monitor Menu > Ink SKU Sensor**).

94,510 ~ 94,513 Y-Axis Faults

A Y-Axis error has occurred. The following troubleshooting procedure applies to these errors.

Table 1 Applicable Fault Codes

- 94,510 Drum Image Initial Position
- 94,511 Drum stall During Imaging Acceleration
- 94,512 Drum stall During Imaging at Constant Velocity
- 94,513 Drum stall During Imaging Deceleration

Initial Actions

- Reboot the printer and verify the error persists.
- Check all the Drum cable connections.
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Parts (Chapter 5, Parts List)

- Drum Assembly, PL 2.1 Item 4
- Y-Axis Motor Assembly, PL 4.1 Item 2
- Harness, Right Side Power Control, PL 5.1 Item 13

Wiring and Plug/Jack References (Chapter 7, Wiring Data)

- Figure 1, Right Side Wire Routing
- Figure 6, Hard Drive, Drum Heater, Paper Preheater
- Figure 7, Drum Heater Load Dump, Motors, Head Maintenance Clutch, Strip Solenoid

Procedure

Check the Drum power and encoder wiring harness connectors P/J114, P/J120, and P/J122. Are the connections secure and undamaged?

Y N

Reseat and/or replace the wiring harness.

Clean the Y-Axis Belt and pulley with Isopropyl Alcohol. Power on the printer. **Does the error persist?**

Y N

Troubleshooting complete.

Replace the Y-Axis Belt (REP 2.5). Does the error persist?

Y

Ν

Troubleshooting complete.

Replace the Drum Assembly (REP 2.4). Does the error persist?

Y N

Troubleshooting complete.

Replace the Y-Axis Motor Assembly (REP 4.2).

94,524, 94,526 Y-Axis Faults

A Y-Axis error has occurred. The following troubleshooting procedure applies to these errors.

Table 1 Applicable Fault Codes

94,524	Y-Axis Over Current Fault
94,526	Y-Axis Stall Fault

Initial Actions

- Reboot the printer and verify the error persists.
- Check all the Drum cable connections.
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Parts (Chapter 5, Parts List)

- Drum Assembly, PL 2.1 Item 4
- Y-Axis Motor Assembly, PL 4.1 Item 2
- Harness, Right Side Power Control, PL 5.1 Item 13

Wiring and Plug/Jack References (Chapter 7, Wiring Data)

- Figure 1, Right Side Wire Routing
- Figure 2, Left Side Wire Routing
- Figure 7, Motors, Head Maintenance Clutch, Strip Solenoid

Procedure

Check the Drum Power and Encoder wiring harness connector P/J122. Is the connection secure and undamaged?

```
Y N
```

Reseat and/or replace the wiring harness.

Check the Y-Axis Motor wiring harness connector P/J301. Is the connection secure and undamaged?

Y N

Reseat and/or replace the wiring harness.

Clean the Y-Axis Belt and Pulley with Isopropyl Alcohol. Power on the printer. **Does the error persist?**

. YN

Troubleshooting complete.

Replace the Y-Axis Belt (REP 2.5). Does the error persist?

Y N

Troubleshooting complete.

Replace the Drum Assembly (REP 2.4). Does the error persist?

- Y N
 - Troubleshooting complete.

Replace the Y-Axis Motor Assembly (REP 4.2).
94,536, 94,538 ~ 94,541 Drum Thermal Faults

A Drum Heater error has occurred. The following troubleshooting procedure applies to these errors.

Table 1 Applicable Fault Codes

- 94,536 Drum Heater is too hot.
- 94,538 Drum is heating too slow.
- 94,539 Drum Thermistor is open.
- 94,540 Drum Thermistor is bad.
- 94,541 Drum Thermistor bad reading, cannot trust temperature.

Initial Actions

- Reboot the printer and verify the error persists.
- Check the ambient room temperature.
- Check the Fan operation and vents.
- Check that the Drum Heater and Thermistor are plugged in.
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- Drum Assembly, PL 2.1 Item 4
- Drum Fan, PL 4.1 Item 12
- Drum Thermistor (Temperature Sensor), PL 6.1 Item 5

Wiring and Plug/Jack References (Chapter 7 - Wiring Data)

- Figure 5, I/O Board P/J Locations
- Figure 8, I/O Board, Sensors (1 of 2)

Procedure

Verify that the ambient temperature is within environmental specifications (room temperature) (refer to Environmental Specifications in the Introduction and General Information Chapter). Is the temperature within specifications?

Y N

Advise customer of operational requirements.

Check resistance across the Drum Thermistor.

- Check resistance on the wiring harness connector P/J902.
 - At Room Temperature: 280 kohms
 - At Operating Temperature: 50 kohms

Is it open or shorted?

Y N

Check airflow at the vents. Is there adequate clearance, and are the vents clean?

Y N

Clean the vents and/or advise customer of clearance requirements (refer to Clearance and Mounting Surface Specifications in the Introduction Chapter).

Check the Drum Fan for operational. Does the Drum Fan operate?



Ν

Replace the Drum Fan (REP 4.12).

Replace the Drum Assembly (REP 2.4).

Replace the Drum Temperature Sensor (REP 6.5) and or wiring cable.



Figure 1 Checking Drum Thermal Resistance

94,548, 94,550 Y-Axis Faults

A Y-Axis error has occurred. The following troubleshooting procedure applies to these errors.

Table 1 Applicable Fault Codes

Y-Axis Calibration Error 94,550

Initial Actions

- Reboot the printer and verify the error persists.
- Check all the Drum cable connections.
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- ٠ Drum Assembly, PL 2.1 Item 4
- Y-Axis Motor Assembly, PL 4.1 Item 2 ٠
- Harness, Right Side Power Control, PL 5.1 Item 13 ٠

Wiring and Plug/Jack References (Chapter 7 - Wiring Data)

- Figure 1, Right Side Wire Routing ٠
- Figure 6, Hard Drive, Drum Heater, Paper Preheater
- Figure 7, Motors, Head Maintenance Clutch, Strip Solenoid •

Procedure

Check the Drum power and encoder wiring harness connectors P/J114, P/J120, and P/J122, Are the connections secure and undamaged?

Υ Ν

Reseat and/or replace the wiring harness.

Clean the Y-Axis Belt and Pulley with Isopropyl Alcohol. Power on the printer. Does the error persist?

Υ Ν

Troubleshooting complete.

Replace the Drum Assembly (REP 2.4). Does the error persist?

γ Ν

Troubleshooting complete.

Replace the Y-Axis Motor Assembly (REP 4.2).

94,570 Drum Maintenance Fault

A Drum Maintenance error has occurred. The following troubleshooting procedure applies to this error.

Table 1 Applicable Fault Code

94,570 DM	Write	Error
-----------	-------	-------

N/A Chronic "maintenance kit missing" messages even when it is installed.

Initial Actions

- Reboot the printer and verify the error persists.
- Verify the Drum Maintenance Unit is genuine Xerox.
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- Drum Maintenance Unit, PL 1.1 Item 16
- Drum Maintenance Pivot Plate Assembly, PL 2.1 Item 17

Wiring and Plug/Jack References (Chapter 7 - Wiring Data)

- Figure 1, Right Side Wire Routing
- Figure 8, I/O Board, Sensors (1 of 2) ٠

Procedure

Check the Drum Maintenance Pivot Plate wiring harness connector P/J901. Is the connection secure and undamaged?

Y Ν

Ν

Reseat and/or replace the wiring harness.

Replace the Drum Maintenance Unit (REP 1.16). Does the error persist? Υ

Troubleshooting complete.

Replace the Pivot Plate Assembly (REP 2.17).

94,626 Drum Thermal Fault

A Drum Heater error has occurred. The following troubleshooting procedure applies to this error.

Table 1 Applicable Fault Code

94,626 Drum Fan has been on too long.

Initial Actions

- Reboot the printer and verify the error persists.
- Check the ambient room temperature.
- Check the Fan operation and vents.
- Check that the Drum Heater and Thermistor are plugged in.
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- Drum Assembly, PL 2.1 Item 4
- Drum Fan, PL 4.1 Item 12
- Electronics Module, PL 5.1 Item 1
- Drum Thermistor (Temperature Sensor), PL 6.1 Item 5

Wiring and Plug/Jack References (Chapter 7 - Wiring Data)

- Figure 1, Right Side Wire Routing
- Figure 8, I/O Board, Sensors (1 of 2)

Procedure

Verify that the ambient temperature is within environmental specifications (room temperature) (refer to Environmental Specifications in the Introduction and General Information Chapter). Is the temperature within specifications?

Y N

Advise customer of operational requirements.

Check resistance across the Drum Thermistor.

- Check resistance on the wiring harness connector P/J902.
 - At Room Temperature: 280 kohms
 - At Operating Temperature: 50 kohms

Is it open or shorted?

Y N

Check airflow at the vents. Is there adequate clearance, and are the vents clean?

Y N

Υ

A

Clean the vents and/or advise customer of clearance requirements (refer to Clearance and Mounting Surface Specifications in the Introduction and General Information Chapter).

Check the Drum Fan for operational. Does the Drum Fan operate?

N Replace the Drum Fan (REP 4.12). Turn off the AC switch. If the heaters immediately turn on and glow before the printer has finished booting up, then a triac is stuck on. Are the Heater Coils glowing? (indicates stuck triac in the Electronics Module)

Y N

Replace the Drum Temperature Sensor (REP 6.5).

Replace the Electronics Module (REP 5.1).

Replace the Drum Temperature Sensor (REP 6.5) and or wiring cable.

94,700 Process Drive Fault

A Process Drive error has occurred. The following troubleshooting procedure applies to this error.

Table 1 Applicable Fault Code

94,700 Process Module Homing Error

Initial Actions

- Reboot the printer and verify the error persists.
- Check that the Process Drive gear train is properly homed (ADJ 1.3).
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- Drum Maintenance Camshaft, PL 2.1 Item 11
- Transfix Camshaft, PL 2.1 Item 12
- Transfix Load Module, PL 2.1 Item 16
- Transfix Arm Kit (with pins), PL 2.1 Item 21
- Process Drive with Gear Box and Motor, PL 4.1 Item 13

Procedure

Check the Drum Maintenance Camshaft for a rotated cam on the cam closest to the opening for the DMU on the right side. Is the cam rotated with respect to the cam at the other end?

Y N

Check Process Drive alignment. Rehome the Process Drive (ADJ 1.3). **Does the error persist?**

Y N

Troubleshooting complete.

NOTE: Transfix load is required to home the Process Drive correctly. Without adequate transfix load, the Process Drive will not home properly.

Check the Load Arm Hooks. Are the Load Arm Hooks connected to the Load Arms?

Y N

Hook the Load Arms (see Figure 1).

CAUTION

Be careful not to pry against the Transfix Cam to prevent damaging the Cam as shown in Figure 1.

Check the Transfix Camshaft for movement. Does the Transfix Camshaft spin a full 360 degrees during homing sequence?

Y N

Replace the Process Drive (REP 4.13). Does the error persist?

Y N

Troubleshooting complete.

Check the Transfix Load Arms for damage.

AB

NOTE: Also look for polished metal on the Transfix Cams. This happens when the followers no longer spin and are sliding on the surface of the Cam.

Do the removed Transfix Load Arms show excessive wear at the Transfix Roller Shaft interface? Does the follower Roller Bearing show excessive resistance to spinning?

Y N

Replace the Transfix Camshaft (REP 2.12).

Replace the Transfix Load Arms (REP 2.21).

Replace the Transfix Load Arms (REP 2.21).

NOTE: Transfix load is insufficient. Too much wear in the printer from a high cycle count is a common culprit.

Replace the Drum Maintenance Camshaft (REP 2.11).



Figure 1 Attaching the Transfix Load Module Arm

94,701, 94,702 Process Drive Faults

A Process Drive error has occurred. The following troubleshooting procedure applies to these errors.

Table 1 Applicable Fault Codes

94,701 Process Drive Over Current Fault

94,702 Process Drive Stall Fault

Initial Actions

- Reboot the printer and verify the error persists.
- Check that the Process Drive gear train is properly homed.
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- Drum Maintenance (DM) Camshaft, PL 2.1 Item 11
- Transfix Camshaft, PL 2.1 Item 12
- Process Drive with Gear Box and Motor, PL 4.1 Item 13

Procedure

NOTE: A failing transfix camshaft can force the Process Drive out of time.

Check the Process Drive Transfix Camshaft, Cams and End Bearings. Check the Process Drive alignment. Rehome the Process Drive (ADJ 1.3). **Does the error persist?**

Y N

Troubleshooting complete.

Check the printer usage.

NOTE: An overheated Motor will lose ability to maintain torque requirements. Lots of slow (photo-mode) printing, or thick media, or jobs over 500 pages will cause this problem.

Has the printer been under heavy print loads?

Y N

Check the Drum Maintenance and Transfix Camshafts movement.

NOTE: The transfix will only move freely for 45 degrees of motion before a torque load is developed.

Do the Drum Maintenance and Transfix Camshafts move smoothly?

Y N

Replace the faulty Camshaft (DM Camshaft - REP 2.11, Transfix Camshaft - REP 2.12).

Replace the Process Drive (REP 4.13).

Replace the Process Drive (REP 4.13).

94,703 X-Axis Fault

An X-Axis error has occurred. The following troubleshooting procedure applies to this error.

Table 1 Applicable Fault Code

94,703 X-Axis Stall Fault

Initial Actions

- Reboot the printer and verify the error persists.
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- X-Axis Motor, PL 4.1 Item 11
- Harness, Right Side Power Control, PL 5.1 Item 13

Wiring and Plug/Jack References (Chapter 7 - Wiring Data)

- Figure 1, Right Side Wire Routing
- Figure 7, Motors, Head Maintenance Clutch, Strip Solenoid

Procedure

Check the X-Axis wiring harness connector $\mbox{ P/J123.}$ Is the connection secure and undamaged?

Y N

Reseat and/or replace the Right Side Harness.

Replace the X-Axis Motor (REP 4.11).

94,704 Wiper and Media Drive Fault

A Wiper or Media Drive error has occurred. The following troubleshooting procedure applies to this error.

Table 1 Applicable Fault Code

94,704 Wiper or Media Drive Fault

Procedure

Refer to RAP 91,710 ~ 91,716, 94,704 troubleshooting procedure.

99,001 PEST - Generic Error

An error has occurred. The following troubleshooting procedure applies to this error.

Table 1 Applicable Fault Code

99,001 **PEST - Generic Error**

Procedure

Reboot the printer.

99,002, 99,003 PEST - Jetstack Disconnect

A Printhead Left/Right Jetstack error has occurred. The Jetstack is not drawing the expected power from the Power Supply. The following troubleshooting applies to these errors.

Table 1	Applicable	Fault Codes
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99,002	PEST - Left Jetstack Disconnect
99,003	PEST - Right Jetstack Disconnect

Initial Actions

- Reboot the printer and verify the error persists. .
- Check the Printhead wiring harness connections. ٠
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- Printhead Assembly, PL 2.1 Item 3 ٠
- Electronics Module, PL 5.1 Item 1 .
- Power Supply Board, PL 5.1 Item 6 .
- Jetstack Fuse, PL 5.1 Item 21 .

Wiring and Plug/Jack References (Chapter 7 - Wiring Data)

- Figure 2, Wave Amplifier, Printhead Heaters ٠
- ٠ Figure 4, Top Side Electronics Module P/J Locations
- Figure 6, Printhead P/J Locations
- Figure 6, Top Side Wire Routing ٠

Procedure

WARNING

Line Voltage present on the Fuse and Fuse Holder Contacts.

Check the wiring harness connectors P/JAC2 and P/J132 to the Jetstack Fuse (Figure 1). Are the connections secure and undamaged?

Υ Ν

Reseat and/or replace the wiring harness.

NOTE: In very rare cases a Jet Stack Heater may be visibly delaminate.

Measure the Pin 1-4 black-red circuit and the Pin 1-5 black-yellow circuit (P/JAC2). Each should measure ~250 ohms.

NOTE: A Jetstack Heater may delaminate and cause Jetstack Thermal Fault 91,523 or 91,535 (Jetstack Heater is Too Hot) and yet its resistance will measure correctly. In the event of such an error, replace the Printhead Assembly (REP 2.3).

Is a circuit shorted? Υ

- N
- A circuit is open.

Check the Jetstack Fuses as shown in Figure 1 (Fuses are connected Pin 1 to 3 and Pin 2 to 4 of P/J132. Are the Jetstack Fuses OK?



Ν

Perform the following checks:

- Test F2 in the Power Supply. Refer to Testing F2 and F3 in the Electrical Troubleshooting section in Chapter 6.
- Test for bad Jetstack triac. Refer to Checking for Shorted and Leaky Triacs in the Electrical Troubleshooting section in Chapter 6, General Troubleshooting.
- Test for shorts to Earth. Measure the resistance of P/JAC2 Pin 1 to Pin 7. It • should be greater than 2 Megaohms.

Are F2 and the triacs OK, and is P/JAC2 Pin 1 to Pin 7 greater than 2 Megaohms? (Ensure your DMM is rated to measure high-impedance resistance.)

Υ Ν

- Replace the following components:
- Electronics Module (REP 5.1)
- Printhead Assembly (REP 2.3)
- Jetstack Fuse Assembly

Replace the Jetstack Fuse Assembly.

Did either the Pin 1-4 or Pin 1-5 check above give an open reading?

Υ Ν

Replace the Printhead Assembly (REP 2.3).

Replace the Power Supply Board (REP 5.6) (Electronics Module).

Replace the following components:

- Printhead Assembly (REP 2.3)
- Electronics Module (REP 5.1)



99,004, 99,005 PEST - Reservoir Disconnect

A Printhead Reservoir error has occurred. The Reservoir is not drawing the expected power from the Power Supply. The following troubleshooting applies to these errors.

Table 1	Applicable Fault Codes
---------	------------------------

99,004	PEST - Reservoir0 Disconnect
99,005	PEST - Reservoir1 Disconnect

Initial Actions

- Reboot the printer and verify the error persists.
- Check the Printhead wiring harness connections.
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- Printhead Assembly, PL 2.1 Item 3
- Electronics Module, PL 5.1 Item 1
- Power Supply Board, PL 5.1 Item 6

Wiring and Plug/Jack References (Chapter 7 - Wiring Data)

- Figure 2, Wave Amplifier, Printhead Heaters
- Figure 4, Top Side Electronics Module P/J Locations
- Figure 6, Printhead P/J Locations

Procedure

Check the Printhead wiring harness connector P/JAC2. Is the connection secure and undamaged?

Ν

Υ

Reseat and/or replace the wiring harness.

Measure the Pin 1-2, black-white circuit and the Pin 1-3 black-white circuit. Each should measure ~49 ohms. Are they open or shorted? Υ

Ν

Check the Heater. Is the Heater test open? Ν

Υ

Perform the following checks:

- Test F2 in the Power Supply. Refer to Testing F2 and F3 in the Electrical Troubleshooting section in Chapter 6.
- Test for bad Jetstack triac. Refer to Checking for Shorted and Leaky Triacs in the Electrical Troubleshooting section in Chapter 6, General Troubleshooting.
- Test for shorts to Earth. Measure the resistance of P/JAC2 Pin 1 to Pin 7. It should be greater than 2 Megaohms.

Are F2 and the triacs OK, and is P/JAC2 Pin 1 to Pin 7 greater than 2 Megaohms? (Ensure your DMM is rated to measure high-impedance resistance.)

γ Ν

Replace the following components: •

- Power Supply Board (REP 5.6) (Electronics Module)
- Printhead Assembly (REP 2.3)

Replace the Printhead Assembly (REP 2.3).

Perform procedures in RAP 99,002, 99,003 Jetstack Disconnect.

Replace the Printhead Assembly (REP 2.3).

99,006 PEST - Drum Heater Disconnect

A Drum Heater error has occurred. The Drum Heater is not drawing the expected power from the Power Supply. The following troubleshooting applies to this error.

Table 1 Applicable Fault Code

99,006 PEST - Drum Heater Disconnect

Initial Actions

- Reboot the printer and verify the error persists.
- Check the Drum Heater's wiring connection.
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- Drum Assembly, PL 2.1 Item 4
- Electronics Module, PL 5.1 Item 1
- Power Supply Board, PL 5.1 Item 6
- Right Side Power Control Harness, PL 5.1 Item 13

Wiring and Plug/Jack References (Chapter 7 - Wiring Data)

- Figure 1, Right Side Wire Routing
- Figure 6, Hard Drive, Drum Heater, Paper Preheater

Procedure

Check the Drum Heater wiring harness connector P/J114. Is the connection secure and undamaged?

Y N

Reseat and/or replace the wiring harness.

Check the Drum Heater for proper resistance. Disconnect the Drum Heater wiring harness connector P/J114 from the right side harness. Measure the red-black circuit and the white-black circuit. Each heater element in the circuit should measure ~65 ohms (white-black ~65 ohms). Is it open or shorted?

Ν

Υ

Check the Heater. Is the Heater test open?

Y N

•

Perform the following checks:

- Test F3 in the Power Supply. Refer to Testing F2 and F3 in the Electrical Troubleshooting section in Chapter 6, General Troubleshooting.
- Test for bad Jetstack triac. Refer to Checking for Shorted and Leaky Triacs in the Electrical Troubleshooting section in Chapter 6, General Troubleshooting.
- Test for shorts to Earth. Measure the resistance of P/JAC2 Pin 1 to Pin 7. It should be greater than 2 Megaohms.

Are F3 and the triacs OK and is P/JAC2 Pin 1 to Pin 7 greater than 2 Megao-hms? (Ensure your DMM is rated to measure high-impedance resistance.) Y N

- Replace the following components:
- Power Supply Board (REP 5.6) (Electronics Module)

A B (

Printhead Assembly (REP 2.3).

Replace the Right Side Power Control Harness.

Perform procedures in RAP 99,002, 99,003 Jetstack Disconnect.

Replace the Drum Assembly (REP 2.4). Does the error persist?

Y N

Troubleshooting complete.

Replace the Electronics Module (REP 5.1).

99,008 PEST - Preheat Heater Disconnect

A Preheat Heater error has occurred. The Preheat Heater is not drawing the expected power from the Power Supply. The following troubleshooting applies to this error.

Table 1 Applicable Fault Code

99,008 PEST - Preheat Heater Disconnect

Initial Actions

- Reboot the printer and verify the error persists.
- Check the Preheat Heater's wiring connection.
- Check that the Preheater is plugged in.
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- Preheater and Deskew Assembly, PL 2.1 Item 20
- Electronics Module, PL 5.1 Item 1
- Right Side Power Control Harness, PL 5.1 Item 13

Wiring and Plug/Jack References (Chapter 7 - Wiring Data)

- Figure 2, Right Side Electronics Module P/J Locations
- Figure 3, Front Side Wire Routing
- Figure 4, Bottom Front Wire Routing
- Figure 6, Hard Drive, Drum Heater, Paper Preheater
- Figure 9, I/O Board, Sensors (2 of 2)

Procedure

Check the wiring harness connectors P/JAC3, P/J115, and P/J125. Are the connections secure and undamaged?

Y N

Reseat and/or replace the wiring harnesses.

Disconnect the wiring harness connector P/JAC3 from the right side of the Electronics Module.

 At the harness, measure the red-black Preheater circuit; the circuit should measure ~55 ohms.

Are they open or shorted?

Y N

Check the Heater. Is the Heater test open?

- Y N
 - Perform the following checks:
 - Test F3 in the Power Supply. Refer to Testing F2 and F3 in the Electrical Troubleshooting section in Chapter 6, General Troubleshooting.
 - Test for bad Jetstack triac. Refer to Checking for Shorted and Leaky Triacs in the Electrical Troubleshooting section in Chapter 6, General Troubleshooting.
 - Test for shorts to Earth. Measure the resistance of P/JAC2 Pin 1 to Pin 7. It should be greater than 2 Megaohms.

Are F3 and the triacs OK and is P/JAC2 Pin 1 to Pin 7 greater than 2 Megaohms? (Ensure your DMM is rated to measure high-impedance resistance.)



Replace the Electronics Module (REP 5.1).

NOTE: Can indicate blown fuse in the Preheater.

99,009 ~ 99,013 PEST - Ink Melters are Disconnected

An Ink Melter error has occurred. One or more Ink Melters are not drawing the expected power from the Power Supply. The following troubleshooting applies to these errors.

99,009	PEST - All Ink Melters are Disconnected
99,010	PEST - Inkmelt 0 Disconnect
99,011	PEST - Inkmelt 1 Disconnect
99,012	PEST - Inkmelt 2 Disconnect
99,013	PEST - Inkmelt 3 Disconnect

Initial Actions

- Reboot the printer and verify the error persists.
- Check the Ink Melters' wiring connections.
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- Ink Loader & Bezel, PL 1.1 Item 8
- Electronics Module, PL 5.1 Item 1
- Power Supply Board, PL 5.1 Item 6
- Jetstack Fuse, PL 5.1 Item 21

Wiring and Plug/Jack References (Chapter 7 - Wiring Data)

- Figure 2, Right Side Electronics Module P/J Locations
- Figure 5, Ink Level Sensors, Gate Solenoids, Ink Loader Board
- Figure 11, Ink Loader Board P/J Locations

Procedure

Check the Ink Loader Data cable connectors P/J401 and P/J702. Are the connections secure and undamaged?

Y N

Reseat and/or replace the wiring harness.

Check the Ink Loader Thermistor for continuity.

- Disconnect the wiring harness connector P/J703 (see Figure 1) from the Ink Loader Board.
- Measure the connector for continuity. The measurement should read ~200 kohms at room temperature ~25 Degree Celsius.

Is it open or shorted?

- Y N
 - Check the Jetstack Fuses. Is the Heater test open?
 - Y N

Perform the following checks:

• Test F2 in the Power Supply. Refer to Testing F2 and F3 in the Electrical Troubleshooting section in Chapter 6, General Troubleshooting.

- A B
- Test for bad Jetstack triac. Refer to Checking for Shorted and Leaky Triacs in the Electrical Troubleshooting section in Chapter 6, General Troubleshooting.
- Test for shorts to Earth. Measure the resistance of P/JAC2 Pin 1 to Pin 7. It should be greater than 2 Megaohms.

Are F2 and the triacs OK and is P/JAC2 Pin 1 to Pin 7 greater than 2 Megaohms? (Ensure your DMM is rated to measure high-impedance resistance.) Y N

Replace the following components:

- Electronics Module (REP 5.1)
- Printhead Assembly (REP 2.3)

Replace the Jetstack Fuse Assembly.

Perform procedures in RAP 99,002, 99,003 Jetstack Disconnect.

Replace the Ink Loader (REP 1.8). Does the error persist?

Y N

Troubleshooting complete.

Replace the Power Supply Board (REP 5.6) (Electronics Module).



Figure 1 Ink Loader Thermistor Test Point

99,015 PEST - Drum Cooling Fan Disconnect

A Drum Cooling Fan error has occurred. The Drum Cooling Fan is not drawing the expected power from the Power Supply. The following troubleshooting applies to this error.

Table 1 Applicable Fault Code

99,015 PEST - Drum Cooling Fan Disconnect

Initial Actions

- Reboot the printer and verify the error persists.
- Check the Drum Fan for function.
- Check the Drum Fan's wiring connection.
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- Drum Cooling Fan, PL 4.1 Item 12
- I/O Board, PL 5.1 Item 10

Wiring and Plug/Jack References (Chapter 7 - Wiring Data)

- Figure 5, I/O Board P/J Locations
- Figure 8, I/O Board, Sensors (1 of 2)

Procedure

Upgrade firmware (Firmware Upgrade). Reboot the printer. Does the error persist?

Y N

Troubleshooting complete.

 $\rm \dot{C}$ heck the Drum Fan wiring harness connector $\rm P/J903.$ Is the connection secure and undamaged?

Y N

Reseat and/or replace the wiring harness.

Check resistance on the wiring harness connector P/J903. Is it open or shorted?

Y

N Replace the I/O Board (REP 5.10).

Replace the Drum Cooling Fan (REP 4.12). Does the error persist?

Y N

Troubleshooting complete.

Replace the I/O Board (REP 5.10).

99,016 PEST - All Three Clutches Failed

The Clutch error has occurred. The Clutches are not drawing the expected power from the Power Supply. The following troubleshooting applies to this error.

Table 1 Applicable Fault Code

99,016 PEST - All Three Clutches Failed

Initial Actions

- Reboot the printer and verify the error persists.
- Check the Clutches' wiring connections.
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- Media Drive with 2 Clutches, PL 4.1 Item 5
- Head Maintenance Clutch, PL 4.1 Item 10
- Electronics Module, PL 5.1 Item 1
- I/O Board, PL 5.1 Item 10
- Harness, Right Side Power Control, PL 5.1 Item 13
- Harness, Left Side Power Control, PL 5.1 Item 17

Wiring and Plug/Jack References (Chapter 7 - Wiring Data)

- Figure 1, Right Side Wire Routing
- Figure 2, Right Side Electronics Module P/J Locations
- Figure 2, Left Side Wire Routing
- Figure 3, Left Side Electronics Module P/J Locations
- Figure 4, Optional Tray, Clutches, Solenoids, Tray 2 Lift Motor
- Figure 7, Drum Heater Load Dump, Motors, Head Maintenance Clutch, Strip Solenoid

Procedure

Check the following wiring harness connectors.

- Tray 2 Pick Clutch, P/J109
- Deskew Clutch, P/J111
- Head Maintenance Clutch, P/J119

Are the connections secure and undamaged?

Y N

Reseat and/or replace the wiring harnesses.

Check resistance on the Clutches' wiring harness connectors P/J109, P/J111, and P/J119. Are they open or shorted?

Y N

Check resistance on the Right Side Wiring Harness and Left Side Wiring Harness P/J302. Are they open or shorted?

Y N

Troubleshooting complete.

Replace the Right Side Wiring Harness/Left Side Wiring Harness.

Replace the Head Maintenance Clutch (REP 4.10) and Media Drive (REP 4.5). Does error persist?

Y Ń

Α

Troubleshooting complete.

Replace the I/O Board (REP 5.10) and Electronics Module (REP 5.1).

the

99,017 PEST - Head Maintenance Clutch Disconnect

The Head Maintenance Clutch error has occurred. The Head Maintenance Clutch is not drawing the expected power from the Power Supply. The following troubleshooting applies to this error.

Table 1 Applicable Fault Code

99.017 PEST - Head Maintenance Clutch Disconnect

Initial Actions

- Reboot the printer and verify the error persists.
- Check the Clutch's wiring connection.
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- Head Maintenance Clutch. PL 4.1 Item 10 ٠
- Electronics Module, PL 5.1 Item 1 ٠
- Power Control Board, PL 5.1 Item 8 ٠
- Harness, Right Side Power Control, PL 5.1 Item 13

Wiring and Plug/Jack References (Chapter 7 - Wiring Data)

- ٠ Figure 1, Right Side Wire Routing
- Figure 7, Drum Heater Load Dump, Motors, Head Maintenance Clutch, Strip Solenoid

Procedure

Check the Head Maintenance Clutch wiring harness connector P/J119. Is the connection secure and undamaged? Υ Ν

Reseat and/or replace the wiring harness.

Check resistance on the Head Maintenance Clutch wiring harness connector P/J119. Is is open or shorted?

Υ Ν

Check resistance on the Right Side Wiring Harness P/J701 (pin 7). Is it open or shorted?

Ν Υ

Troubleshooting complete.

Replace the Right Side Wiring Harness.

Replace the Head Maintenance Clutch (REP 4.10). Does the error persist?

γ Ν

Troubleshooting complete.

Replace the Power Control Board (REP 5.6) (Electronics Module).

NOTE: Can indicate blown fuse (F401) in the Electronics Module, especially if preceded by many C3T jams. Refer to Checking Fuses for location of the Fuses.

99,018 PEST - Main Tray Deskew Clutch Disconnect

The Main Tray Deskew Clutch error has occurred. The Clutch is not drawing the expected power from the Power Supply. The following troubleshooting applies to this error.

Table 1 Applicable Fault Code

99.018 PEST - Main Trav Deskew Clutch Disconnect

Initial Actions

- Reboot the printer and verify the error persists.
- Check the Clutch's wiring connection.
- If the problem persists, perform the following procedure.

Troubleshooting Procedure

Applicable Parts (Chapter 5 - Parts List)

- Media Drive with 2 Clutches, PL 5.1 Item 5
- Electronics Module, PL 5.1 Item 1
- Power Control Board, PL 5.1 Item 8
- Harness, Left Side Power Control, PL 5.1 Item 17

Wiring and Plug/Jack References (Chapter 7 - Wiring Data)

- Figure 2, Left Side Wire Routing
- Figure 3, Left Side Electronics Module P/J Locations
- Figure 4, Optional Tray, Clutches, Solenoids, Tray 2 Lift Motor

Procedure

Check the Main Tray Deskew Clutch wiring harness connector P/J111. Is the connection secure and undamaged? Υ

Reseat and/or replace the wiring harness.

Check resistance on the Main Tray Deskew Clutch wiring harness connector P/J111. Is it open or shorted?

Ν

Υ

Ν

Check resistance on the Left Side Wiring Harness P/J302 (pin 25). Is it open or shorted?

γ

Ν

Troubleshooting complete.

Replace the Left Side Wiring Harness.

Replace the Media Drive (REP 5.5). Does the error persist?

N Troubleshooting complete.

Replace the Power Control Board (REP 5.6) (Electronics Module).

NOTE: Can indicate blown fuse (F304) in the Electronics Module, especially if preceded by many R3M jams. Refer to Checking Fuses for location of the Fuses.

99,019 PEST - Main Tray Pick Clutch Disconnect

The Main Tray Pick Clutch error has occurred. The Clutch is not drawing the expected power from the Power Supply. The following troubleshooting applies to this error.

Table 1 Applicable Fault Code

99,019 PEST - Main Tray Pick Clutch Disconnect	99,020 PEST - Multipurpose Tray Pick Solenoid Disconnect
Initial Actions	Initial Actions
Reboot the printer and verify the error persists.	Reboot the printer and verify the error persists.
Check the Clutch's wiring connection.	Check the Solenoid's wiring connection.
If the problem persists, perform the following procedure.	If the problem persists, perform the following procedure.
Troubleshooting Procedure	Troubleshooting Reference
Applicable Parts (Chapter 5 - Parts List)	Applicable Parts (Chapter 5 - Parts List)
Media Drive with 2 Clutches, PL 5.1 Item 5	Tray 1 Pick Solenoid, PL 4.1 Item 3
Electronics Module, PL 5.1 Item 5	Electronics Module, PL 5.1 Item 1
Power Control Board, PL 5.1 Item 8	Power Control Board, PL 5.1 Item 8
Harness, Left Side Power Control, PL 5.1 Item 17	Harness, Left Side Power Control, PL 5.1 Item 17
Wiring and Plug/Jack References (Chapter 7 - Wiring Data)	Wiring and Plug/Jack References (Chapter 7 - Wiring Data)
Figure 2, Left Side Wire Routing	Figure 2, Left Side Wire Routing
Figure 3, Left Side Electronics Module P/J Locations	Figure 3, Left Side Electronics Module P/J Locations
 Figure 4, Optional Tray, Clutches, Solenoids, Tray 2 Lift Motor 	 Figure 4, Optional Tray, Clutches, Solenoids, Tray 2 Lift Motor
Procedure	Procedure
Check the Main Tray Pick Clutch wiring harness connector P/J109. Is the connection secure and undamaged? Y N	Check the Tray 1 Pick Solenoid wiring harness connector P/J110. Is the connection secure and undamaged? Y N
Reseat and/or replace the winnig namess.	Reseat and/of replace the winnig namess.
Check resistance on the Main Tray Deskew Clutch wiring harness connector P/J109. Is it open or shorted?	Check resistance on the Tray 1 Pick Solenoid wiring harness connector P/J110. Is it open or shorted?
Y N Charles and the Left Cide Wining Harrage D/1900 (nin 94) In the array	Y N
shorted?	shorted?
Y N	YN
Troubleshooting complete.	Troubleshooting complete.
Replace the Left Side Wiring Harness.	Replace the Left Wiring Harness.
Replace the Media Drive (REP 5.5). Does the error persist?	Replace the Tray 1 Pick Solenoid (REP 4.3). Does the error persist?
Troubleshooting complete.	Troubleshooting complete.
Replace the Power Control Board (REP 5.6) (Electronics Module).	Replace the Power Control Board (REP 5.6) (Electronics Module).

99,020 PEST - Multipurpose Tray Pick Solenoid Disconnect

The Multipurpose Tray Pick Solenoid error has occurred. The Solenoid is not drawing the

Table 1 Applicable Fault Code

expected power from the Power Supply. The following troubleshooting applies to this error.

99,021 PEST - Strip Solenoid Disconnect

The Strip Solenoid error has occurred. The Solenoid is not drawing the expected power from the Power Supply. The following troubleshooting applies to this error.

Table 1 Applicable Fault Code

99,021 PEST - Strip Solenoid Disconnect

Initial Actions

- Reboot the printer and verify the error persists.
- Check the Solenoid's wiring connection.
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- Upper Duplex Guide w/Strip Solenoid, PL 3.1 Item 5
- Electronics Module, PL 5.1 Item 1
- Power Control Board, PL 5.1 Item 8
- Harness, Right Side Power Control, PL 5.1 Item 13

Wiring and Plug/Jack References (Chapter 7 - Wiring Data)

- Figure 1, Right Side Wire Routing
- Figure 2, Right Side Electronics Module P/J Locations
- Figure 7, Drum Heater Load Dump, Motors, Head Maintenance Clutch, Strip Solenoid

Procedure

Check the Strip Solenoid wiring harness connector P/J121. Is the connection secure and undamaged?

Y N

Reseat and/or replace the wiring harness.

Check resistance on the Strip Solenoid wiring harness connector P/J121. Is it open or shorted?

Y N

Check resistance on the Right Side Wiring Harness P/J701 (pins 11~12). Is it open or shorted?

Y N

Troubleshooting complete.

Replace the Right Side Wiring Harness.

Replace the Strip Solenoid (REP 3.5). Does the error persist?

Y N

Troubleshooting complete.

Replace the Power Control Board (REP 5.6) (Electronics Module).

99,022 PEST - Preheat Solenoid Disconnect

The Preheat Solenoid error has occurred. The Solenoid is not drawing the expected power from the Power Supply. The following troubleshooting applies to this error.

Table 1 Applicable Fault Code

99,022 PEST - Preheat Solenoid Disconnect

Initial Actions

- Reboot the printer and verify the error persists.
- Check the Solenoid's wiring connection.
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- Preheater Lift Solenoid, PL 4.1 Item 1
- Electronics Module, PL 5.1 Item 1
- Power Control Board, PL 5.1 Item 8
- Harness, Left Side Power Control, PL 5.1 Item 17

Wiring and Plug/Jack References (Chapter 7 - Wiring Data)

- Figure 2, Left Side Wire Routing
- Figure 3, Left Side Electronics Module P/J Locations
- Figure 4, Optional Tray, Clutches, Solenoids, Tray 2 Lift Motor

Procedure

Check the Strip Solenoid wiring harness connector P/J112. Is the connection secure and undamaged? Y N

N Reseat and/or replace the wiring harness.

Check resistance of the Preheat Lift Solenoid at the wiring harness connector P/J112 (refer to Testing Clutch, Motor, and Solenoid Resistance for testing Motor and Solenoid resistance. Is it open or shorted?

Y N

Check resistance on the Left Side Wiring Harness connector P/J302 (pins 27~29). Is it open or shorted?

Y N

Troubleshooting complete.

Replace the Left Side Wiring Harness.

Replace the Preheat Lift Solenoid (REP 4.1). Does the error persist?

Y N

Troubleshooting complete.

Replace the Power Control Board (REP 5.6) (Electronics Module).

99,023 PEST - Head Tilt Solenoid Disconnect

The Head Tilt Solenoid error has occurred. The Solenoid is not drawing the expected power from the Power Supply. The following troubleshooting applies to this error.

Table 1 Applicable Fault Code

99,023 PEST - Head Tilt Solenoid Disconnect

Initial Actions

- Reboot the printer and verify the error persists.
- Check the Solenoid's wiring connection.
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- Head Tilt Solenoid, PL 4.1 Item 4
- Electronics Module, PL 5.1 Item 1
- Power Control Board, PL 5.1 Item 8
- Harness, Left Side Power Control, PL 5.1 Item 17

Wiring and Plug/Jack References (Chapter 7 - Wiring Data)

- Figure 2, Left Side Wire Routing
- Figure 3, Left Side Electronics Module P/J Locations
- Figure 3, Purge Pump, Media Path Motor, Fans, Printhead Tilt Solenoid

Procedure

Check the Head Tilt Solenoid wiring harness connector P/J107. Is the connection secure and undamaged?

Y N Reseat and/or replace the wiring harness.

Check resistance on the Head Tilt Solenoid wiring harness connector P/J107. Is it open or shorted?

Y N

Check resistance on the Left Side Wiring Harness connector P/J302 (pins 17~18). Is it open or shorted?

Y N

Troubleshooting complete.

Replace the Left Side Wiring Harness.

Replace the Head Tilt Solenoid (REP 4.4). Does the error persist?

Y N

Troubleshooting complete.

Replace the Power Control Board (REP 5.6) (Electronics Module).

NOTE: Can indicate blown fuse (F303) in the Electronics Module. Refer to Checking Fuses for location of the Fuses.

99,024 PEST - Main Tray Elevator Disconnect

The Main Tray Elevator error has occurred. The Main Tray Elevator is not drawing the expected power from the Power Supply. The following troubleshooting applies to this error.

Table 1 Applicable Fault Code

99,024 PEST - Main Tray Elevator Disconnect

Initial Actions

- Reboot the printer and verify the error persists.
- Check the Main Tray Motor's wiring connection.
- If the problem persists, perform the following procedure.

Troubleshooting References

Applicable Parts (Chapter 5 - Parts List)

- Tray 2 Lift Motor, PL 4.1 Item 6
- Electronics Module, PL 5.1 Item 1
- Power Control Board, PL 5.1 Item 8
- Harness, Left Side Power Control, PL 5.1 Item 17

Wiring and Plug/Jack References (Chapter 7 - Wiring Data)

- Figure 2, Left Side Wire Routing
- Figure 3, Left Side Electronics Module P/J Locations
- Figure 4, Optional Tray, Clutches, Solenoids, Tray 2 Lift Motor

Procedure

Check the Tray 2 Lift Motor wiring harness connector P/J108. Is the connection secure and undamaged?

N Reseat and/or replace the wiring harness.

Check resistance on the Tray 2 Lift Motor wiring harness connector P/J108. Is it open or shorted?

Ν

Υ

Check resistance on the Left Side Wiring Harness connector P/J302 (pins 19~20). Is it open or shorted?

Y N

Troubleshooting complete.

Replace the Left Side Wiring Harness.

Replace the Tray 2 Lift Motor (REP 4.6). Does the error persist?

N Troubleshooting complete.

Replace the Power Control Board (REP 5.6) (Electronics Module).

99,030 ~ 99,034 PEST - X-Axis Motor Disconnect

The X-Axis Motor error has occurred. The Motor is not drawing the expected power from the Power Supply. The following troubleshooting applies to these errors.

Table 1 Applicable Fault Codes

- 99,030 PEST X-Axis Motor Disconnect
- 99,031 PEST X-Axis Motor Phase A Disconnect
- 99,032 PEST X-Axis Motor Phase A Short
- 99,033 PEST X-Axis Motor Phase B Disconnect
- 99,034 PEST X-Axis Motor Phase B Short

Initial Actions

- Reboot the printer and verify the error persists.
- Check the X-Axis Motor's wiring connection.
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- X-Axis Motor, PL 4.1 Item 11
- Electronics Module, PL 5.1 Item 1
- Power Control Board, PL 5.1 Item 8
- Harness, Right Side Power Control, PL 5.1 Item 13

Wiring and Plug/Jack References (Chapter 7 - Wiring Data)

- Figure 1, Right Side Wire Routing
- Figure 2, Right Side Electronics Module P/J Locations
- Figure 7, Drum Heater Load Dump, Motors, Head Maintenance Clutch, Strip Solenoid

Procedure

Check the X-Axis Motor wiring harness connector P/J123. Is the connection secure and undamaged?

Y N

Reseat and/or replace the wiring harness.

Check resistance on the X-Axis Motor wiring harness connector P/J123. Is it open or shorted?

Y N

Check resistance on the Right Side Wiring Harness P/J701 (pins 17-20). Is it open or shorted?

Y N

Troubleshooting complete.

Replace the Right Side Wiring Harness.

Replace the X-Axis Motor (REP 4.11). Does the error persist?

```
Y N
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Troubleshooting complete.

99,035, 99,036 PEST - Y-Axis Motor Disconnect

The Y-Axis Motor error has occurred. The Motor is not drawing the expected power from the Power Supply. The following troubleshooting applies to these errors.

Table 1 Applicable Fault Codes

99,036 PEST - Y-Axis Motor Short

Initial Actions

- Reboot the printer and verify the error persists.
- Check the Y-Axis Motor's wiring connection.
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- Y-Axis Motor, PL 4.1 Item 2 .
- . Electronics Module, PL 5.1 Item 1
- Power Control Board, PL 5.1 Item 8 ٠

Wiring and Plug/Jack References (Chapter 7 - Wiring Data)

- Figure 2, Left Side Wire Routing ٠
- Figure 3, Left Side Electronics Module P/J Locations
- ٠ Figure 7, Drum Heater Load Dump, Motors, Head Maintenance Clutch, Strip Solenoid

Procedure

Check the Y-Axis Motor wiring harness connector P/J301. Is the connection secure and undamaged?

Reseat and/or replace the wiring harness.

Check resistance on the Y-Axis Motor wiring harness connector P/J301. Is it open or shorted?

Υ Ν

Υ Ν

Replace the Power Control Board (REP 5.6) (Electronics Module).

Replace the Y-Axis Motor (REP 4.2). Does the error persist?

```
γ
  N
```

Troubleshooting complete.

Replace the Power Control Board (REP 5.6) (Electronics Module).

99,037, 99,038 PEST - Media Path Motor Disconnect

The Media Path Motor error has occurred. The Motor is not drawing the expected power from the Power Supply. The following troubleshooting applies to these errors.

Table 1 Applicable Fault Codes

99,037	PEST - Media Path Motor Disconnect
99,038	PEST - Media Path Motor Short

Initial Actions

- Reboot the printer and verify the error persists.
- Check the Media Path Motor's wiring connection.
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- Media Drive with 2 Clutches, PL 4.1 Item 5
- Electronics Module, PL 5.1 Item 1
- Power Control Board, PL 5.1 Item 8
- Harness, Left Side Power Control, PL 5.1 Item 17

Wiring and Plug/Jack References (Chapter 7 - Wiring Data)

- Figure 2, Left Side Wire Routing
- Figure 3, Left Side Electronics Module P/J Locations
- Figure 3, Purge Pump, Media Path Motor, Fans, Printhead Tilt Solenoid

Procedure

٠

Check the Media Path Motor wiring harness connector P/J106. Is the connection secure and undamaged? Υ Ν

Reseat and/or replace the wiring harness.

Check resistance on the Media Path Motor connector P/J106. Is it open or shorted? Υ

Ν

Check resistance on the Left Side Wiring harness connector P/J302 (pins 11-16). Is it open or shorted?

Y Ν

Replace the Electronics Module (REP 5.1).

Replace the Left Side Wiring Harness.

Replace the Media Drive (REP 4.5). Does the error persist?

Ν Troubleshooting complete.

Check resistance on the Left Side Wiring Harness connector P/J302 (pins 11-16). Is it open or shorted?

Ν

Replace the Power Control Board (REP 5.6) (Electronics Module).

Υ

Υ

99,039, 99040 PEST - Process Motor Disconnect

The Process Motor error has occurred. The Motor is not drawing the expected power from the Power Supply. The following troubleshooting applies to these errors.

Table 1 Applicable Fault Codes

99,039	PEST - Process Motor Disconnect
99.040	PEST - Process Motor Short

Initial Actions

- Reboot the printer and verify the error persists.
- Check the Process Motor's wiring connection.
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- Process Drive with Gear Box and Motor, PL 4.1 Item 13
- Electronics Module, PL 5.1 Item 1
- Power Control Board, PL 5.1 Item 8
- Harness, Right Side Power Control, PL 5.1 Item 13

Wiring and Plug/Jack References (Chapter 7 - Wiring Data)

- Figure 3, Front Side Wire Routing
- Figure 7, Drum Heater Load Dump, Motors, Head Maintenance Clutch, Strip Solenoid

Procedure

Check the Process Motor wiring harness P/J118. Is the connection secure and undamaged?

Ϋ́Ν

Reseat and/or replace the wiring harness.

Check resistance on the Process Motor wiring harness connector P/J118. Is it open or shorted?

Y N

Check resistance on the Right Side Wiring Harness connector P/J125 (pins 1-6). Is it open or shorted?

```
Y N
```

Troubleshooting complete.

Replace the Right Side Wiring Harness.

Replace the Process Motor (REP 4.13. Does the error persist?

Y N

Troubleshooting complete.

Replace the Power Control Board (REP 5.6) (Electronics Module)

99,042 ~ 99,051 PEST - Power Supply Faults

A Power Supply error has occurred. The following troubleshooting procedure applies to these errors.

Table 1 Applicable Fault Codes

99,042	PEST - Power Supply +1.0 Over Limit
99,043	PEST - Power Supply +1.0 Under Limit
99,044	PEST - Power Supply +1.2 Over Limit
99,045	PEST - Power Supply +1.2 Under Limit
99,046	PEST - Power Supply +1.8 Over Limit
99,047	PEST - Power Supply +1.8 Under Limit
99,048	PEST - Power Supply +2.5 Over Limit
99,049	PEST - Power Supply +2.5 Under Limit
99,050	PEST - Power Supply +3.3 Over Limit
99,051	PEST - Power Supply +3.3 Under Limit

Initial Actions

- Reboot the printer and verify the error persists.
- Check the component power connections and harness condition.
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- Printhead Assembly, PL 2.1 Item 3
- Electronics Module, PL 5.1 Item 1
- Main Controller Board, PL 5.1 Item 7

Wiring and Plug/Jack Reference (Chapter 7 - Wiring Data)

• Figure 8, Main Controller Board P/J Locations

Procedure

Test the Power Supply. Test voltages at P/J802 (see Figure 1).

- +1.0 V (pin 10)
- +1.2 V (pin 6)
- +1.8 V (pin 8)
- +2.5 V (pin 14)
- + 3.3 V (Ferrite FL802, see Figure 1)

Are measurements within +/- 5%?

Y N

Unplug the Printhead gray data cable and remeasure voltages. Are the voltages within specification (+/- 5%)?

Ý N

Replace the Electronics Module (REP 5.1).

Replace the Printhead (REP 2.3).

Replace the Main Controller Board (REP 5.6) (Electronics Module).



Figure 1 Test Points on the Main Controller Board

99,052, 99,053 PEST - Power Supply +12V or -15V Faults

A Power Supply error has occurred. The following troubleshooting procedure applies to these errors.

Table 1 Applicable Fault Codes

99,052	PEST - Power Supply +12V or -15V Over Limit
99,053	PEST - Power Supply +12V or -15V Under Limit

Initial Actions

- Reboot the printer and verify the error persists.
- Check the component power connections and harness condition.
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Part (Chapter 5 - Parts List)

- Electronics Module, PL 5.1 Item 1
- Power Supply Board, PL 5.1 Item 6
- Power Control Board, PL 5.1 Item 8

Wiring and Plug/Jack Reference (Chapter 7 - Wiring Data)

• Figure 9, Power Control Board P/J Locations

Procedure

CAUTION

Be careful when measuring voltages on the test pads that you do not short the probe to the metal shell of the Electronics Module as you may cause damage.

Test the Power Supply. Check voltage at TP +12V and TP -15V (see Figure 1). Are the voltages within specification (+/- 5%)?

Y N

Unplug all cables from the Electronics Module and power on the printer. Remeasure TP +12V and TP -15V. Are the voltages within specification?

Y N

Replace the Power Control Board (REP 5.6) (Electronics Module).

Plug in the cables one at a time and remeasure to determine cable/subsystem causing the failure.

Replace the Power Control Board, Power Supply Board (REP 5.6) (Electronics Module).



Figure 1 +12V and -15V Test Points on the Power Control Board

99,056, 99,057 PEST - Power Supply +12V Sleep Faults

A Power Supply error has occurred. The following troubleshooting procedure applies to these errors.

Table 1	Applicable	Fault	Codes
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99,056	PEST - Power Supply +12V Sleep Over Limit
99,057	PEST - Power Supply +12V Sleep Under Limit

Initial Actions

- Reboot the printer and verify the error persists.
- Check the component power connections and harness condition.
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- Electronics Module, PL 5.1 Item 1
- Power Control Board, PL 5.1 Item 8

Wiring and Plug/Jack Reference (Chapter 7 - Wiring Data)

- Figure 2, Wave Amplifier, Printhead Heaters
- Figure 6, Top Side Wire Routing

Procedure

CAUTION

Be careful when measuring voltages on the test pads that you do not short the probe to the metal shell of the Electronics Module as you may cause damage.

Check voltage at TP +12V Sleep (see Figure 1). Is the voltage within specification (+/-5%)?

Y N

Replace the Electronics Module (REP 5.1).

Check the Printhead wiring harness connectors P/J180 and P/J201. Are the connections secure and undamaged?

Y N

Reseat and/or replace the wiring harness.

Replace the Power Control Board (REP 5.6) (Electronics Module).



Figure 1 +12V Sleep Test Point on the Power Control Board

99,059, 99,060 PEST - VPP/ VSS Measurement Too Low

A Wave Amp error has occurred. VPP/ VSS measurement is too low. The Printhead power cable may be disconnected. The following troubleshooting procedure applies to these errors.

Table 1 Applicable Fault Codes

99,059PEST - VSS measurement too low, head power cable may be disconnected.99,060PEST - VPP measurement too low, head power cable may be disconnected.

Initial Actions

- Reboot the printer and verify the error persists.
- Check the component power connections and harness condition.
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- Printhead Assembly, PL 2.1 Item 3
- Wave Amplifier, PL 5.1 Item 9
- Cable, ZIF, Wave Amp Drive, PL 5.1 Item 19

Wiring and Plug/Jack Reference (Chapter 7 - Wiring Data)

- Figure 2, Wave Amplifier, Printhead Heaters
- Figure 3, Left Side Electronics Module P/J Locations
- Figure 6, Printhead P/J Locations
- Figure 7, Wave Amp P/J Locations

Procedure

CAUTION

The white Printhead Data cable connects using locking ZIF connectors. Handle the ribbon cables carefully. Check that each cable is square to the socket and fully inserted before locking the connector. Damage to the Wave Amplifier could result from improper cable connections.

Check the wiring harness connectors $\mbox{P/J640}$ & $\mbox{P/J800}$ on the Wave Amp, $\mbox{P/J240}$ on the Printhead Board, and $\mbox{P/J901}$ on the Power Control Board.

Release the end of the cable and carefully examine the conductor ends (a magnifier helps) to see that they are not cracked or torn. If the cable looks good, carefully reinstall it using a ZIF tool (refer to REP 2.3 for how to use the ZIF tool for unlocking/locking the ZIF cable connector).

NOTE: Failure to properly unlock the connector will damage the cable.

Are the connections secure and undamaged?

Y N

Reseat the wiring harnesses.

Replace the Wave Amp Signal Cable and/or Wave Amp Drive Cable. Does the error persist?

Y N

Troubleshooting complete.

Unplug the Wave Amp Drive cable, then test VPP/VSS points on the Printhead Board wiring harness connector P/J110 (see Figure 1). Measure resistance of each to ground.

• Pin 1 (VSS)

- Pin 2 (Ground)
- Pin 3 (VPP)

Is either one shorted? Y N

Replace the Wave Amplifier (REP 5.9).

Replace the Printhead Assembly (REP 2.3).



Figure 1 Printhead Board Test Points

99,061 PEST - The Wave Amp Shorted

A Wave Amp error has occurred. The Wave Amp appears to be shorted. It is drawing too much power. The following troubleshooting procedure applies to this error.

Table 1 Applicable Fault Code

99,061 PEST - The wave amp appears to be shorted. It is drawing to much power.

Initial Actions

- Reboot the printer and verify the error persists.
- Check the component power connections and harness condition.
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- Printhead Assembly, PL 2.1 Item 3
- Electronics Module, PL 5.1 Item 1
- Power Control Board, PL 5.1 Item 8
- Wave Amplifier, PL 5.1 Item 9
- Cable, Wave Amp Signal, PL 5.1 Item 18
- Cable, ZIF, Wave Amp Drive, PL 5.1 Item 19

Wiring and Plug/Jack References (Chapter 7 - Wiring Data)

- Figure 2, Wave Amplifier, Printhead Heaters
- Figure 3, Left Side Electronics Module P/J Locations
- Figure 6, Top Side Wire Routing
- Figure 6, Printhead P/J Locations
- Figure 7, Wave Amp P/J Locations
- Figure 9, Power Control Board P/J Locations

Procedure

CAUTION

Handle the ribbon cables carefully. Check that each cable is square to the socket and fully inserted. Damage to the Wave Amplifier could result from improper cable connections.

Check the wiring harness connectors P/J640 & P/J800 on the Wave Amp, P/J240 on the Printhead Board, and P/J901 on the Power Control Board. Inspect the ends of the drive cable conductors of damage.

Release the end of the cable and carefully examine the conductor ends (a magnifier helps) to see that they are not cracked or torn. If the cable looks good, carefully reinstall it using a ZIF tool (refer to REP 2.3 for how to use the ZIF tool for unlocking/locking the ZIF cable connector).

NOTE: Failure to properly unlock the connector will damage the cable.

Are the connections secure and undamaged?

Y N

Reseat the wiring harnesses.

Replace the Wave Amp Signal Cable and/or Wave Amp Drive Cable. Does the error persist?

Y N

Troubleshooting complete.

Unplug the Wave Amp Drive cable, then test VPP/VSS points on the Printhead Board wiring harness connector P/J110 (see Figure 1). Measure resistance of each to ground.

- Pin 1 (VSS)
- Pin 2 (Ground)
- Pin 3 (VPP)

Is either one shorted?

Y N

Unplug the Wave Amp signal cable from the Electronics Module. Power on the printer. Measure voltage at test point TP801 Power on the Controller Board (see Figure 2). Is it shorted?

Y N

Replace the Wave Amp (REP 5.9)

Replace the Power Control Board (REP 5.6) (Electronics Module).

Replace the Printhead Assembly (REP 2.3).



Figure 1 Measuring Resistance on the Printhead Board



Figure 2 Power Control Board Test Points

99,062 ~ 99,069 PEST - Ink Loader Solenoid Gate Push/Pull Disconnected

An lnk Loader Solenoid Gate error has occurred. The lnk Loader Solenoid Gate 0/1/2/3 seems to be disconnected. The following troubleshooting procedure applies to these errors.

Table 1 Applicable Fault Codes

99,062	PEST - Ink Loader Solenoid Gate0 push seems to be disconnected.
99,063	PEST - Ink Loader Solenoid Gate0 pull seems to be disconnected.
99,064	PEST - Ink Loader Solenoid Gate1 push seems to be disconnected.
99,065	PEST - Ink Loader Solenoid Gate1 pull seems to be disconnected.
99,066	PEST - Ink Loader Solenoid Gate2 push seems to be disconnected
99,067	PEST - Ink Loader Solenoid Gate2 pull seems to be disconnected.
99,068	PEST - Ink Loader Solenoid Gate3 push seems to be disconnected.
99.069	PEST - Ink Loader Solenoid Gate3 pull seems to be disconnected.

Initial Actions

- Reboot the printer and verify the error persists.
- Check the component power connections and harness condition.
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

• Ink Loader & Bezel, PL 1.1 Item 8

Wiring and Plug/Jack References (Chapter 7 - Wiring Data)

• Figure 11, Ink Loader Board P/J Locations

Procedure

NOTE: The ability of the Solenoid to move back and forth should not affect the result of the PEST test.

Check the Ink Loader Solenoid wiring harness connectors P/J701, P/J801, P/J802, and P/J901 on the Ink Loader Board. Are the connections secure and undamaged?

Y N

Reseat the wiring harnesses.

Replace the Ink Loader (REP 1.8).

99,070 PEST - All Ink Loader Gates Failed

An Ink Loader Gate error has occurred. The following troubleshooting procedure applies to this error.

Table 1 Applicable Fault Code

99,070 PEST - All Ink Loader Gates Failed

Initial Actions

- Reboot the printer and verify the error persists.
- Check the component power connections and harness condition.
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- Ink Loader & Bezel, PL 1.1 Item 8
- Electronics Module, PL 5.1 Item 1
- Power Control Board, PL 5.1 Item 8
- Cable, Ink Loader Data PL 5.1 Item 11

Wiring and Plug/Jack References (Chapter 7 - Wiring Data)

- Figure 2, Right Side Electronics Module P/J Locations
- Figure 5, Ink Level Sensors, Gate Solenoids, Ink Loader Board
- Figure 11, Ink Loader Board P/J Locations

Procedure

Check the wiring harness connectors $\mbox{ P/J401}$ and $\mbox{ P/J702}.$ Are the connections secure and undamaged?

Y N

Reseat and/or replace the wiring harness.

Check that the 50V red LED on the Ink Loader Board is active (see Figure 1 for location from the top side of the printer).

NOTE: The +50V will not be on at all time. The +50V can be Off when the printer is at Ready mode.

Is the red LED on?

Y N

Replace the Power Control Board (REP 5.6) (Electronics Module).

Replace the Ink Loader (REP 1.8).

NOTE: Can indicate blown fuse (F402) in the Electronics Module. Refer to Checking Fuses for location of the Fuses.



Figure 1 Ink Loader Board 50V LED (top view, reflection of the LED on the Ink Loader Board)

99,071 PEST - Power Dump Circuit Disconnected

A power dump circuit error has occurred. The following troubleshooting procedure applies to this error.

Table 1 Applicable Fault Code

99,071 PEST - Power Dump Circuit seems to be disconnected.

Initial Actions

- Reboot the printer and verify the error persists.
- Check the component power connections and harness condition.
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- Drum Assembly, PL 2.1 Item 4
- Electronics Module, PL 5.1 Item 1
- Power Control Board, PL 5.1 Item 8
- Cable, AC Heater, Drum, Preheater, PL 5.1 Item 12

Wiring and Plug/Jack References (Chapter 7 - Wiring Data)

- Figure 1, Right Side Wire Routing
- Figure 2, Right Side Electronics Module P/J Locations
- Figure 7, Drum Heater Load Dump, Motors, Head Maintenance Clutch, Strip Solenoid

Procedure

Check the wiring harness connectors $\mbox{ P/J701}$ and $\mbox{ P/J120}.$ Are the connections secure and undamaged?

- Y N
 - Reseat and/or replace the wiring harness.

Unplug the connector P/J120 and measure resistance on the Drum side. The measurement should be at 13 ohms. Is it open or shorted?

Y N

Replace the Power Control Board (REP 5.6) (Electronics Module).

Replace the Drum Assembly (REP 2.4).

Close Front Door A (when actually closed)

A Front Door error has occurred. The following troubleshooting procedure applies to this error.

Initial Actions

- Check that there is nothing blocking the Front Door.
- Check that connection to the I/O Board is secure.
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- Front Door Assembly, PL 1.1 Item 1
- I/O Board, PL 5.1 Item 10
- Front Door Switch, PL 6.1 Item 6
- Wiring and Plug/Jack References (Chapter 7 Wiring Data)
 - Figure 1, Right Side Wire Routing
- Figure 8, I/O Board, Sensors (1 of 2)

Procedure

Open the Front Door. Check area around the door sensor (right side). Inspect the plastic component that engages the sensor when the door is closed. Is the plastic component damaged?

Y N

•

Check the Front Door Switch wiring harness connector P/J117. Is the connection secure and undamaged?

Y N

Reseat and/or replace/repair the wiring harness.

Check resistance on the Front Door Switch wiring harness connector P/J117. Is is open or shorted?

Y N

Replace the I/O Board (REP 5.10).

Replace the Front Door Switch (REP 6.6).

Replace the Front Door (REP 1.1).

Close Exit Door B (when actually closed)

An Exit Door error has occurred. The following troubleshooting procedure applies to this error.

Initial Actions

- Check that there is nothing blocking the Exit Assembly.
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- Exit Door B, PL 1.1 Item 7
- Exit Module Assembly, PL 3.1 Item 13
- I/O Board, PL 5.1 Item 10
- Wiring and Plug/Jack Reference (Chapter 7 Wiring Data)

• Figure 8, I/O Board, Sensors (1 of 2)

Procedure

Open the Exit Door B. Check area around the door sensor (left side). Inspect the plastic component that engages the sensor when the door is closed. **Is the plastic component damaged?**

Y N

Replace the Exit Assembly (REP 3.13). Does the error persist?

Y N

Troubleshooting complete.

Replace the I/O Board (REP 5.10).

Replace the Exit Door B (REP 1.7).

Close Ink Loader Door C (when actually closed)

An lnk Loader Door error has occurred. The following troubleshooting procedure applies to this error.

Initial Actions

- Check that there is nothing blocking the Ink Loader Door.
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Part (Chapter 5 - Parts List)

- Ink Loader & Bezel, PL 1.1 Item 8
- Wiring and Plug/Jack References (Chapter 7 Wiring Data)
- Figure 5, Ink Level Sensors, Gate Solenoids, Ink Loader Board
- Figure 11, Ink Loader Board P/J Locations

Procedure

Check that Door Sensor cabling is undamaged and $\mbox{ P/J301}$ is plugged in on the Ink Loader Board. Is the connection secure and undamaged?

Y N

Reseat the wiring harness connector.

Replace the Ink Loader (REP 1.8).

Paper Jam - Open Front Door to Clear (no jam is present and message won't clear)

A paper jam has occurred. The following troubleshooting procedure applies to this error.

Initial Actions

- Check the paper path for obstructions.
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- Preheater and Deskew Assembly, PL 2.1 Item 20
- Inner Simplex Guide with Pre-deskew and Harness, PL 3.1 Item 1

Wiring and Plug/Jack References (Chapter 7 - Wiring Data)

- Figure 3, Front Side Wire Routing
- Figure 9, I/O Board, Sensors (2 of 2)

Procedure

Check the Front Door Sensor wiring harness connector P/J128 for damage or being unplugged. Is the connection secure and undamaged?

Y N

Reseat and/or replace the wiring harness.

Replace the Inner Simplex Guide (REP 3.1). Does the error persist?

N

Troubleshooting complete.

Replace the Preheater and Deskew Assembly (REP 2.20).

Paper Jam - Open Exit Door B to Clear (no jam is present and message won't clear)

A paper jam has occurred. The following troubleshooting procedure applies to this error.

Initial Actions

- Check the paper path for obstructions. ٠
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Part (Chapter 5 - Parts List)

Exit Module Sensor Assy, PL 6.1 Item 9 •

Wiring and Plug/Jack References (Chapter 7 - Wiring Data)

- Figure 5, Top Front Wire Routing ٠
- Figure 8, I/O Board, Sensors (1 of 2) ٠

Procedure

Check the Top Door sensor wiring harness connector P/J116 for damage or being unplugged, Is the connection secure and undamaged?

Υ Ν

Reseat and/or replace the wiring harness.

Check the Strip Sensor wiring for damage or being unplugged. Check that Strip Flag can move freely (is not stuck). Does the Strip Flag move freely and is the connection secure and undamaged?

Y N

Troubleshooting complete.

Replace the Exit Module Sensor Assembly.

Tray 2 Empty (when it has paper)

A Tray 2 error has occurred. The following troubleshooting procedure applies to this error.

Initial Actions

- Remove any paper from Tray 2.
- Inspect the Paper Tray for damage.
- Reload Tray 2 with fresh paper and confirm the Paper Guides are set correctly.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- Preheater and Deskew Assembly, PL 2.1 Item 20
- Tray 2 Lift Motor, PL 4.1 Item 6
- I/O Board, PL 5.1 Item 10
- Tray Lift Sensor, PL 6.1 Item 3

Wiring and Plug/Jack References (Chapter 7 - Wiring Data)

- Figure 2, Left Side Wire Routing
- Figure 3, Front Side Wire Routing ٠
- Figure 4, Optional Tray, Clutches, Solenoids, Tray 2 Lift Motor
- Figure 9, I/O Board, Sensors (2 of 2)

Procedure

If the I/O Board has been recently removed, check that the ground plane on the top left corner has been properly installed on top of the I/O Board instead of underneath. Otherwise, remove the Preheater (REP 2.20) and check that wires are not blocking the Tray Lift Sensor (orange flag) located on the chassis base under the Preheater. Is the Tray Lift Sensor blocked by the wiring harnesses? Υ Ν

```
Check that the Tray Lift Sensor wiring harness P/J126 is properly plugged in and wires
are undamaged. Is the connection secure and undamaged?
```

Υ Ν

Reseat and/or replace the wiring harness.

Check that the Tray Lift Motor wiring harness connector P/J108 (on the left side chassis) is plugged in and wires are undamaged. Is the connection secure and undamaged? Y Ν

Reseat and/or replace the wiring harness.

Replace the Tray 2 Lift Motor (REP 4.6).

Move the wiring harnesses away from the Tray Lift Sensor. Does the error persist?

Υ Ν

Troubleshooting complete.

Replace the Tray Lift Sensor. Does the error persist?

Ν

Υ

Troubleshooting complete.

```
Replace the I/O Board (REP 5.10).
```

Tray 2 is Missing (when inserted)

A Tray 2 error has occurred. The following troubleshooting procedure applies to this error.

Initial Actions

- Remove the tray and inspect the tray cavity to ensure that it is free of obstructions or debris.
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Part (Chapter 5 - Parts List)

- Paper Size Switch, PL 6.1 Item 1
- Wiring and Plug/Jack References (Chapter 7 Wiring Data)
- Figure 5, I/O Board P/J Locations
- Figure 8, I/O Board, Sensors (1 of 2)

Procedure

Check the Paper Size Switch wiring connector P/J701 for damage or being unplugged. Is the connection secure and undamaged?

Y N

Reseat and/or replace the wiring harness.

Replace the Paper Size Switch (REP 6.1).

Unload Output Tray (when not full)

An Output Tray error has occurred. The following troubleshooting procedure applies to this error.

Initial Actions

- Remove all paper from the Output Tray.
- If the problem persists, perform the following procedure.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- Exit Assembly, PL 3.1 Item 13
- Engine Exit Flag, PL 6.1 Item 8

Wiring and Plug/Jack References (Chapter 7 - Wiring Data)

- Figure 1, Right Side Wire Routing
- Figure 8, I/O Board, Sensors (1 of 2)

Procedure

Check the Exit Flag for free movement. Is the Flag bent, warped, or unseated?

Y N

Check the Exit Flag wiring harness connector P/J601. Is the connection secure and undamaged?

Y N

Reseat and/or replace the wiring harness.

Replace the Exit Assembly (REP 3.13).

Reseat or replace the Exit Flag.

Maintenance Kit Missing (when installed)

A Maintenance Kit error has occurred. The following troubleshooting procedure applies to this error.

Procedure

Refer to Maintenance Kit Missing troubleshooting procedure in Chapter 6, General Troubleshooting.

Waste Tray Missing (when installed)

A Waste Tray error has occurred. The following troubleshooting procedure applies to this error.

Procedure

Refer to Waste Tray Missing troubleshooting procedure in Chapter 6, General Troubleshooting.

Ink Sticks Jammed

An Ink Sticks Jammed error has occurred. The following troubleshooting procedure applies to this error.

Procedure

Refer to RAP 93,501, 93,506, 93,511, 93,516 Ink Loader Faults for troubleshooting procedure.

Remove Incorrect Ink Sticks (Cyan, Magenta, Yellow, Black)

An incorrect ink stick error has occurred. The following troubleshooting procedure applies to these errors.

Table 1 Applicable Fault Messages

Remove incorrect yellow ink stick (slot 1) Remove incorrect cyan ink stick (slot 2) Remove incorrect magenta ink stick (slot 3) Remove incorrect black ink stick (slot 4)

Procedure

Refer to RAP 93,962 ~ 93,965, Incorrect Ink Sticks RAP for troubleshooting procedure.

Remove Unidentified Ink Sticks (Cyan, Magenta, Yellow, Black)

An unidentified ink stick error has occurred. The following troubleshooting procedure applies to these errors.

Table 1 Applicable Fault Messages

Remove unidentified yellow ink stick (slot 1) Remove unidentified cyan ink stick (slot 2) Remove unidentified magenta ink stick (slot 3) Remove unidentified black ink stick (slot 4)

Procedure

Refer to $93,966 \sim 93,969$, Unidentified Ink Sticks RAP for troubleshooting procedure.

Jam Codes

The printer stores the most recent 20 events in Jam History. To access this information, from the Control Panel menu, select **Troubleshooting** -> **Service Tools** -> **Jam History** and press **OK**. Jam Codes for Process Events differ between models. Table 1 list the code keys for the printer. Table 2 provides troubleshooting information for the most common jams.

Table 1 Jam Code Key

Process Event	Basis for Jam	Printer Status	Media Supply
A Deskew Flag	2 Sensor Event	A Abnormal Shutdown	0 N/A
B Preheater Flag	3 Timeout	B Normal Shutdown	1 Tray 1
C Strip Flag	4 Motor Stall	C Mechanical Recovery	2 Tray 2
D Exit Flag	5 Motor Position	D Warmup	3 Tray 3
E Tray 1 Width	6 Length Short	E Ready	4 Tray 4
F Front Door	7 Length Long	F Fault	5 Tray 5
G Tray 2 Media	8 Pipeline Rsc	G Auto Drum Maintenance	
H Tray 3 Media	9 Media Lift Sensor	H Printhead Maintenance	
J Tray 4 Media		J Printhead Purge	
K Tray 5 Media		K Oil Transfix Roller	
M Media Drive		L Standby	
N Y-Axis Motor		M Pick from Tray 2	
P Process Drive		N Pick from Tray 3, 4 or 5	
Q DMU Missing		Q Pick from Tray 1	
R Pre-Deskew Flag		R Pick from Duplex	
T Exit Door		S Stage for Transfix	
U Pipeline Resource		T Transfix	
V Tray 2 Media Present		U Off	
X Tray 3 Pick Flag		V Drum Maintenance	
Y Tray 4 Pick Flag		W Imaging	
Z Tray 5 Pick Flag		X Exit	
		Y Shell	
		Z Shutdown	

NOTE: Table 2 defines the first 2 or 3-digits. The 4th digit represents the tray number (1-5). Numbers following the 4th digit are the printer page count.

Table 2 Jam Code Troubleshooting

Code	Fault Code	Description	Procedure
A2*	00,203	The Deskew Flag tripped unex- pectedly or is stuck open dur-	 Verify no paper is stuck in paper path around entrance to the Preheater.
		ing any action.	 Instruct customer to remove media from Tray 1 before opening the Front Door.
			3. Try using different, supported media.
			 Ensure the Paper Guides are snug against the media in the tray.
			5. Push up on Tray (2 - 5) Nudger Roller until it is captured by the Actuator Arm.
			6. Check printer grounding.
			7. Verify all doors and covers are fully closed and not moving during printing.
			 Replace the Preheater and Deskew Assembly (REP 2.20).
A3M	89,108	The Deskew Flag timed out	1. Verify media is appropriate for the tray.
		waiting for the paper picked from Tray 2.	2. Verify the tray is not overfilled and the Guides are positioned correctly.
A3N	89,108	The Deskew Flag timed out waiting for the paper picked from Tray 3, 4 or 5.	 Check for obstructions in the paper path, especially around preheat entrance.
A3Q	89,108 The I waitir from	The Deskew Flag timed out waiting for the paper picked	 Try using a different lighter weight or less glossy media.
		from Tray 1.	5. Ensure the Take Away rollers are in good condition.
			6. Clean the Tray 1 Pick Roller (refer to Service Call Procedures Chapter).
			7. Replace the appropriate Separator Pad Assembly (REP 3.9).
			8. Replace the Pick Assembly (REP 3.10).
			 Replace the Preheater and Deskew Assembly (REP 2.20).

Table 2 Jam Code Troubleshooting

Code	Fault Code	Description	Procedure
A3R	89,108	The Deskew Sensor timed out during movement from the Exit Roller to the Deskew Roller	 Ensure the media is appropriate for two-sided printing. Not too short, not too smooth.
		when auplexing print.	Check the condition of the Exit Roller and the Duplex Roller.
			 Check that the Lower Inner Duplex Guide is fully seated.
			 Check the Front Door for obstructions or damage. Replace the Front Door (REP 1.1) if necessary.
B2*	00,015	The Preheater Exit Sensor in unexpected state or stuck open	 Verify no paper is stuck in paper path around entrance to the Preheater.
		during any action.	2. Check printer grounding.
			 Replace the Preheater and Deskew Assembly (REP 2.20).
B3S	89,112	The Preheater Exit Sensor	1. Verify media is appropriate for the tray.
B5S	89,120	timed out during stage. Sheet is too late at Preheater	2. Verify the tray is not overfilled and the Guides are positioned correctly.
		Exit Sensor to start approach.	 Ensure the Paper Guides are snug against the media in the tray.
			 Check for paper path obstructions. Ensure the Preheater Plate moves freely.
			 Replace the Preheater and Deskew Assembly (REP 2.20).
C2*	00,017	Strip Flag unexpected event or stuck open during any action.	 Verify the Strip Sensor Flag moves freely and is not caught on wiring behind it.
			 Replace the Lower Exit Guide (REP 3.3).
Table 2 Jam Code Troubleshooting

Code	Fault Code	Description	Procedure
СЗТ	89,121	The Strip Flag time-out during	1. Check that the media is the correct size
СЗХ	89,122	The Strip Flag time-out during exit.	 Check for service bulletin related to fault 89,121 (C3T) Jams. If unavailable, replace the Process Drive (REP 4.13). Check the Drum Maintenance Unit for proper operation. Replace if necessary or near end of life (REP 1.6). If the image is off-center (top to bot- tom), replace Preheater and Deskew Assembly (REP 2 20)
			 Check the Stripper Blade for damage or bending. Replace the Stripper Carriage Assembly (REP 2.13) if damaged. Replace the Upper Duplex Guide and Solenoid (REP 3.5).
			NOTE: Maybe caused by overheated Motor.
			7. Open all doors and Tray 2, wait 1 hour and try printing again.
D2*	83,149	The Exit Flag unexpected event or stuck open during any action.	 Check printer grounds. Verify the Exit Sensor Flag (PL 3.1 Item 13) moves freely and is not blocked by paper in the output tray.
			 Check the Exit Sensor Flag for proper installation or damage. Replace if nec- essary.
D3R	83,151	The Exit Flag timed out during duplexing.	 Check that the media is not too thick and is supported by the printer.
D3T	89,147	The Exit Flag timed out during transfix.	 Check that the exit path is free of obstructions.
			3. Ensure the paper guides are snug against the media in the tray.
			4. If the Drum Maintenance Unit is near end of life, replace it (REP 1.16).
			 Clean and inspect the Exit Rollers (PL 3.1 Item 6). Check that the Rollers rotate freely.
			 Check the Exit Sensor Flag (PL 3.1 Item 13) for proper installation or dam- age. Replace the Exit Module (REP 3.13) if necessary.

Table 2 Jam Code Troubleshooting

Code	Fault Code	Description	Pro	cedure
F2*	01,510	The Front Door Interlock	1.	Check the Front Door for damaged
		tripped during any action.		hinges, latch, or Interlock Actuator.
			2.	Check the covers for proper alignment and fit.
			3.	Check the Front Door Interlock Switch installation and wiring. Replace if necessary (REP 6.6).
H2N	73,300	Tray 3 removed during pick from Tray 3.	1.	Check the Tray Switch Sensor opera- tion. Replace if necessary (REP 6.1).
J2N	74,300	Tray 4 removed during pick from Tray 4.		
K2N	75,300	Tray 5 removed during pick from Tray 5.		
N2T	89,119	Y-Axis Motor event during transfix (Tray 1 only - probably	1.	Check that the media is supported by the printer.
		a multi-pick).	2.	Try a heavier media.
			3.	Clean the Tray 1 Pick Roller (refer to Service Call Procedures Chapter).
			4.	Replace the appropriate Separator Pad Assembly (REP 3.9).
N4*	94,526	The Y-Axis Motor stalled during any action.	1.	Check for supported media, generally label, trifold or envelopes cause this error.
			2.	Check that the correct media type is selected in the Control Panel.
			3.	Try running fewer sheets through the tray. Watch for multi-picks.
			4.	Clean the Y-Axis pulley and belt with Isopropyl Alcohol (IPA).
			5.	Replace the Tray 1 Separator Pad Assembly (REP 3.9).
				NOTE: Possibly due to motor overheat- ing.
			6.	Open all doors and Tray 2. Wait 1 hour and try printing again.
N5*	10,550	Y-Axis Motor position error dur- ing any action.	1.	Check for supported media, generally label, trifold or envelopes cause this error.
			2.	Check that the correct media type is selected in the Control Panel.
			3.	Try using heavy media setting even for non-heavy media.

Table 2 Jam Code Troubleshooting

Code	Fault Code	Description	Procedure		Code	F
N6T	89,111	The Y-Axis Motor media short	1. Check for supported media.		R2*	C
		during transfix. The media was shorter than expected.	2. Ensure the Paper Guides are snug against the media in the tray.			
			 Remove the Preheater and Deskew Assembly (REP 2.20) and check the Preheater Exit Flag for ink or paper interference. 		R3M	8
			 Replace the Preheater and Deskew Assembly (REP 2.20) if the error per- sists. 		R3Q	٤
N7T	89,110	The Y-Axis Motor media long	1. Check for supported media.			
		during transfix. The media was	2. Try heavier media.			
		longer than expected.	 Try loading only a few sheets. Some photo media may require running on sheet at a time. 	•	R3R	8
			 Replace the Pick Assembly and Reta Roller (REP 3.10). 	rd		
			 Remove the Preheater and Deskew Assembly (REP 2.20) and check the Preheater Flag for ink or paper interference. 	er-		
			 Replace the Preheater and Deskew Assembly (REP 2.20) if the error per- sists. 			
			NOTE: Possibly due to motor overhe ing.	at-		
			 Open all doors and Tray 2. Wait 1 ho and try printing again. 	ır		
P4*	94,702	The Process Drive stalled dur-	1. Check for supported media.			
		ing any action.	 Check that the Process Drive is cor- rectly homed (ADJ 1.3). 			
			NOTE: Possibly due to motor overhe ing.	at-	R3N	8
			 Open all doors and Tray 2. Wait 1 ho and try printing again. 	ır		
			 Replace the Process Drive (REP 4.1 if necessary. 	3)	T2*	

Table 2 Jam Code Troubleshooting

Code	Fault Code	Description	Pro	cedure
R2*	00,202	The Pre-deskew Sensor tripped unexpectedly or is stuck open during any action.	1. 2.	Check for paper or other obstruction in pre-deskew area. Check the Pre-deskew Flag (PL 3.1 Item 1) for correct operation. Replace the Inner Simplex Guide (REP 3.1) if necessary.
R3M	89,106	The Pre-deskew Sensor time- out while picking from Tray 2 (Mispick).	1.	If duplexing, check that output tray is low and output tray sheets are not being pulled back into the duplex path.
R3Q R3R	89,104 89,105	The Pre-deskew Sensor time- out while picking from Tray 1 (Mispick). The Pre-deskew Sensor time-	2. 3.	Check for supported media. Reduce the amount of media loaded in the tray and reposition the Guides to fit snugly against the media.
		out while duplexing.	4. 5.	Try running media from another tray. Check the Pre-deskew Flag (PL 3.1 Item 1) for correct operation. Replace the Inner Simplex Guide (REP 3.1) if necessary.
			6.	Check the Pick and Retard Rollers for damage, debris or excessive wear. Clean Tray 1 Pick Roller/Tray 2/3/4/5 Retard Roller.
				Replace the Pick and Retard Rollers (REP 3.10).
			7.	Check that the Tray Lift Motor is func- tioning properly. Replace the Motor (REP 4.6) if necessary.
			8.	If the printer is declaring this fault from Tray 2 and Tray 2 does not have any media in it, check the Paper Presence Sensor (PL 6.1 Item 4, black Flag located on chassis base under the Pre- heater) for misalignment.
R3N	89,106	The Pre-deskew Sensor time- out while picking from tray 3, 4, or 5.	1.	Check the Pre-deskew Flag (PL 3.1 Item 1) for correct operation. Replace the Inner Simplex Guide (REP 3.1) if necessary.
			2.	Check for paper or obstruction in HCF paper path.
T2*	01,509	The Exit Door Interlock tripped during any action.	1. 2.	Check for supported media. Check that the correct media type is selected in the Control Panel Menu.
			3.	Check the Exit Door Interlock Switch. Replace the Switch (REP 6.6) if necessary.

Table 2 Jam Code Troubleshooting

Code	Fault Code	Description	Procedure
V2M	72,300	Tray 2 removed during pick from Tray 2.	 Check the Paper Size Switch (PL 6.1 Item 1) operation. Replace the Switch (REP 6.1) if necessary.
	NOTE: P	Refer to Checking Fuses for locat	tion of the Fuses.
X2*	73,910	Tray 3 Pick Flag actuated unexpectedly or stuck open during any action	1. Check that the Tray Media Guides are set correctly.
Y2*	74,910	Tray 4 Pick Flag actuated unexpectedly or stuck open	 Check the tray pick area for paper or any obstruction. Replace the 525-Sheet Feeder (REP)
Z2*	75,910	during any action. Tray 5 Pick Flag actuated	3.12).
		unexpectedly or stuck open during any action.	Fuse F301 or F302 on the Power Control Board. Power cycle the printer to reset the Fuse.
X3N	73,101	Tray 3 Pick Flag timed-out pick from Tray 3 (Mispick).	 Check the Pick Flag (located on the top front of the 525-Sheet Feeder - PL 3.1
Y3N	74,101	Tray 4 Pick Flag timed-out pick from Tray 4 (Mispick).	Item 12) for correct operation. Replace the 525-Sheet Feeder (REP 3.12) if
Z3N	75,101	Tray 5 Pick Flag timed-out pick from Tray 5 (Mispick).	 Check for supported media.
			 Reduce the amount of media loaded in the tray and reposition the Guides to fit snugly against the media.
			 Check the Pick and Retard Rollers for damage, debris or excessive wear. Clean Tray 1 Pick Roller/Tray 2/3/4/5 Retard Roller or replace the Roller (REP 3.10) as necessary.
			5. Try running media from another tray.
			 Check that the Tray Lift Motor (PL 4.1 Item 6) is functioning properly. Replace the Motor (REP 4.6) if necessary.
			7. Replace the 525-Sheet Feeder (REP 3.12).

Table 2 Jam Code Troubleshooting

Code	Fault Code	Description	Proc	cedure
X4*	73,952	Tray 3 Motor stall during any action.	1.	Check the Pick Flag (located on the top front of the 525-Sheet Feeder - PL 3.1
Y4*	74,952	Tray 4 Motor stall during any action.		Item 12) for correct operation. Replace the 525-Sheet Feeder (REP 3.12) if
Z4*	75,952	Tray 5 Motor stall during any action.	2.	necessary. Check for supported media.
			3.	Reduce the amount of media loaded in the tray and reposition the Guides to fit snugly against the media.
			4.	Check the Pick and Retard Rollers for damage, debris or excessive wear. Clean Tray 1 Pick Roller/Tray 2/3/4/5 Retard Roller or replace the Roller (REP 3.10) as necessary.
			5.	Try running media from another tray.
			6.	Check that the Tray Lift Motor (PL 4.1 Item 6) is functioning properly. Replace the Motor (REP 4.6) if necessary.
			7.	Replace the 525-Sheet Feeder (REP 3.12).

Printer Fault Codes

The fault codes in the table below may not require troubleshooting procedures and or do not have procedures. These Chain Link codes may appear as an information when the printer operates.

	Table 1 Fault Codes			
Fault Code	Name	Description		
10,540	Transfix Timing	The Transfix sequence started too late.		
71,120	Guides Moved In Run	The multipurpose tray guides were moved while		
		printing.		
72,215	Raise Failure	The Main Tray failed to raise.		
72,217	Bump up Failure	The main tray failed to raise during printing as media was consumed from the tray.		
75,101	Leading Edge Late At Feed	The HCF Tray #3 detected the leading edge late at the Feed Sensor.		
75,106	Leading Edge Late At TAR1	The HCF Tray #3 detected the leading edge late at the TAR1 Sensor (aka Feed Sensor for HCF #1)		
75,110	Leading Edge Late At TAR2	The HCF Tray #3 detected the leading edge late at the TAR2 Sensor (aka Feed Sensor for HCF #2)		
82,140	Sheet Offset Too Wide, pos- sible media mismatch			
82,142	Sheet Offset Too Narrow, possible media mismatch			
83,149	Duplex Exit Sensor Leading Edge Missing	The duplex sheet is no longer in nip 13 (exit nip) and can't be used for the second side.		
83,151	Duplex Exit Sensor Trailing Edge Timeout	The duplex sheet is no longer in nip 13 (exit nip) and can't be used for the second side.		
89,104	Pre-Deskew Sensor Lead- ing Edge Timeout	The leading edge as fed from the MPT never reached the confirm Sensor.		
89,105	Pre-Deskew Sensor Duplex Leading Edge Timeout	The leading edge as fed through the duplex path never reached the confirm Sensor.		
89,106	Pre-Deskew Sensor Lead- ing Edge Timeout	The leading edge as fed from the MT, HCF1, HCF2, or HCF3 never reached the confirm Sensor.		
89,107	Pre-Deskew Sensor Trail- ing Edge Timeout	The trailing edge was not detected within the time- out period calculated after the leading edge reached the Pre-Deskew Sensor.		
89,108	Deskew Sensor Leading Edge Timeout	Media Leading Edge is not detected.		
89,109	Deskew Sensor Trailing Edge Timeout	Media Trailing Edge is not detected.		
89,110	Sheet Too Long	Media length is longer than expectation.		
89,111	Sheet Too Short	Media length is shorter than expectation.		
89,112	Preheat Exit Sensor Lead- ing Edge Timeout	Media Leading Edge is not detected.		
89,113	Preheat Exit Sensor Trail- ing Edge Timeout	Media Trailing Edge is not detected.		

Table 1 Fault Codes

Fault Code	Name	Description
89,119	MPT Reverse Shingle	A reverse shingle has been detected on a sheet
00.400	Delected	
89,120	Sheet 100 Late At Approach	
89,121	Timeout	
89,122	Strip Sensor Trailing Edge Timeout	
89,147	Exit Sensor Leading Edge Timeout	
89,148	Exit Sensor Trailing Edge Timeout	
89,600	Jam at Zone 0, check paper trays	Jam at Paper Trays
89,601	Jam at Zone 1, open Front Door	Jam at Front Door A Sum of Preheater paper path faults 89,108, 89,109, 89,110, 89,111, 89,112, 89,113
89,602	Jam at Zone 2, open Top Door	Jam at Exit Door B
89,603	Jam at Zone 3, check Exit Tray	Jam at Exit Tray
91,501	Sfwa Image Timing	The sequence for the current imaging pass started too late.
91,502	Marking Sequence Timing	The marking sequence, which coordinates the tim- ing of the dm, drum, X-Axis, and headfire during imaging, started too late.
91,503	PrintSeq Image Data Time- out	
91,591	Waste Tray Full	The Waste Tray is full and needs to be emptied.
91,724	Failed Parked Head Check - didn't stall to find standby	A parked Head on power down did not properly stall during mech init or power down. Either the Head was not parked properly or there is a prob- lem with the Process Motor/Drive or Solenoid for tilting the Printhead.
91,727	Failed Power Off Parked head check	Checking to see if the Head was parked on power down and it failed. The following error on the Pro- cess Motor did not indicate that the Head was locked and not moving.
93,500	Black Ink out	Black Ink Stick Out
93,505	Magenta Ink out	Magenta Ink Stick Out
93,510	Cyan Ink out	Cyan Ink Stick Out
93,515	Yellow Ink out	Yellow Ink Stick Out
93,876	Ink Load Door Open	The Ink loader door is open or the sensor for the door is not working.

Table 1 Fault Codes

Fault Code	Name	Description
94,514	Drum Image Race Timing	The imaging data was not filled and/or received soon enough from PS to start imaging the current Y-Axis rev.
94,516	Drum Image Abort	
94,518	Drum Image Timing	The imaging sequence started too late.
94,558	Dm Timing Error	

3 Image Quality

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Print-Quality Problems Overview

Print-quality defects can be attributed to printer components, consumables, media, internal software, external software applications, and environmental conditions. To successfully troubleshoot print-quality problems, as many variables as possible must be eliminated. The first step to generate prints using printable pages embedded in the printer on paper from the Recommended Media List (RML). Print the Paper Tips Page for a list of supported media. The paper should be from an unopened ream that has been acclimated to room temperature.

Print-Quality Defect Definitions and Procedure

After determining the source of the image quality problem, examine the image and select the relevant corrective procedure from Table 1.

Table 1 Print-Quality Definitions

RAP	Defect	Description
IQ1	Image Quality Entry RAP	General RAP information.
IQ2	Random Light Stripes	There is one or more color bars are missing on the page.
IQ3	Predominant Light Stripes, Scratches or Marks Down the Print or Parallel to the Long Axis of Printing	Color bars of all 4 colors are missing on the page.
IQ4	Streaks, Smudges, or Smears Down the Print	Ink displaced in the process direction. Variation in gloss seen as a line in the process direction.
IQ5	Partial Image/ Color Missing	All of the image does not transfer to the paper.
IQ6	The Printed Image is too Light or Dark	The overall image density is too light or too dark.
IQ7	No Image is Printed	The entire image area is blank.
IQ8	Color is Uneven or Wrong (Uni- formity)	How dark or light a single color appears in multiple areas.
IQ9	Skew	The printed image is not parallel with both sides of the paper.
IQ10	Ink on White Portion of the Printed Page	Color on a print where no color should be printed is often called a latent image.
IQ11	Fuzzy or Blurry Printing	The image or text appears blurry on the page.
IQ12	Vertical Lines Appear Wavy	The printed image has wavy column line in the direction of the paper travel.
IQ13	Ghosting	Latent image
IQ14	Oil on Print	Oil stains the edge of the print.
IQ15	Incomplete Image Transfer, Drop Out, Loss of Image Pixels	Portion of image is not transferred from the Drum to page.
IQ16	Repeating Print Defects	Image defect occurring at regular intervals.
IQ17	White Stripes (Pinstripes)	This print-quality problem has a series of regularly spaced white stripes approximately 0.7 mm (0.03 in.) apart.
IQ18	Media Wrinkling or Damage	Areas of prints have distinctive "worm track" pat- terns, and/or wrinkles in the paper itself

Table 1 Print-Quality Definitions

RAP	Defect	Description
IQ19	Image is Offset or Cutoff	Image is not centered on the page.
IQ20	Poor Ink Adhesion, Poor Image Durability	The overall image density is too light in all colors.
IQ21	Gloss Irregularities	Variations in the glossiness of the printed image.
IQ22	Grainy	Speckled or sand-like appearance in what is meant to be a smooth area.

Table 2 provides definitions of various defects that are not referenced in IQ1 - IQ22 RAPs.

Table 2 General Print-Quality Definitions

Defect	Description
Banding	Image irregularities in the cross process direction.
Blocking	Ink transfer from an adjacent print in the stack.
Cohesion	Image transfer to media (transfix quality).
Contamination	Ink or other debris easily wiped from image or component.
Damage	The media is cut, wrinkled, or folded.
Freckles	Pixels not removed from the drum deposited on later prints.
Ink Discoloration	Color shift due to the ink remaining molten but unused in the delivery path for long periods of time or different ink colors mixing.
Intensity	How dark or light a color appears (saturation).
Offset	Ink deposited on incorrect area of print.
Pixel	Single image pixel of ink.
Process Defect	Media or image irregularity from media transport.
Roller Mark	Variation in gloss seen as a line in the process direction.
Spot	One or more random spots transfixed to the media.
Stripper Blade Marks	Line in the cross process direction from the stripper blade.
Void	Area of image without ink.

IQ1 Image Quality Entry RAP

The purpose of this RAP is to establish the source of the imaging defect. After following the Initial Actions, select the RAP that best describes the observed defect.

Initial Actions

Computer applications, hardware malfunctions, or communication can cause print-quality issues. Hardware failures that result in image quality problems can occur in the Print Engine. Use the following steps to determine which part of the printer is at fault.

- 1. Cycle power to the printer.
- Print the 2-sided demo page and Solid Prints (for each color) from the Control Panel (Control Panel Menu -> Information -> Sample Pages -> 2-Sided Demonstration). If the image defect appears on the printed page, the problem is within the Print Engine. When analyzing a print-quality defect from a Print Engine malfunction, determine if the defect occurs:
 - in all colors
 - in only one color
 - as a repeating or random defect

NOTE: To aid in troubleshooting image quality issues, print the Paper Tips page. The paper should be from an unopened ream that has been acclimated to room temperature.

Diagnosing Print-Quality Problems

The Troubleshooting Print-Quality page provides a good overview of the most common printquality problems. To print the Troubleshooting Print-Quality page, follow these steps:

- 1. From the Control Panel, scroll to **Troubleshooting**, then press the **OK** button.
- 2. Scroll to Print Quality Problems, then press the OK button.
- 3. Select Troubleshooting Print Quality Page, then press the OK button.

The Troubleshooting Print Quality page includes the Eliminate Light Stripes test print. The Eliminate Light Stripes test print indicates individual weak or missing jets or an obstruction in the imaging page that affects a vertical band down the entire page. Also, you may see color variation from jet to jet on the Eliminate Light Stripes test print. Some variation is normal, occasionally occurs, and usually self-corrects within a few printed pages.

If a print-quality problem is not resolved with the information provided in the Diagnosing Print-Quality Problems section, refer to the Test Prints section.

IQ2 Random Light Stripes

Random light stripes typically result from an obstructed Printhead jet. Most jet obstructions are caused by paper fibers or air bubbles.

NOTE: If there are discolored jets, as shown in Figure 2, print several Solid Fill test prints in the affected color. In the following example, the center yellow stripe has discolored jets, therefore you would print the yellow solid fill.

Discolored jets will self-correct with normal printing.



Figure 1 Random Light Stripes



Figure 2 Discolored Jets on the Light Stripes Page

Primary Causes

The reference parts in the troubleshooting procedure are listed below.

• Printhead Assembly, PL 2.1 Item 3

Initial Actions

- 1. Print the Light Stripes test print (Control Panel Menu -> Troubleshooting -> Print Quality Problems -> Eliminate Light Stripes -> Light Stripes Test).
- 2. Check the exit path for debris or contamination.

Procedure

If jets are discolored (see Figure 2), print Solid Fills page to clear jets. If jets present, but lighter than surrounding jets, they will not likely not show in customer prints. Print the Solid Fills page to verify that defect is acceptable.

Clean the Print Engine exit path, and wipe the Stripper Blade with a lint-free cloth. **Does** the error persist?

Y N

Troubleshooting complete.

Check the area around the Drum to make sure nothing is scraping the image from the Drum. **Does the error persist?**

Y N

Troubleshooting complete.

Perform Eliminate Light Stripes routine (Control Panel Menu -> Troubleshooting -> Print Quality Problems -> Eliminate Light Stripes).

A list of choices is available: Print Light Stripes Test, Start Basic Clean Cycle, Advanced, and Jet Substitution Mode.

• Select Start Basic Clean Cycle, then press the OK button.

Does the problem persist?

Y N

Troubleshooting complete.

Repeat the Start Basic Clean Cycle routine. **Does the problem persist?**

Y N

Troubleshooting complete.

Select **Advanced** and press the **OK** button. Follow the Advanced menu's instructions to select the missing jet's color and number. **Does the problem persist?**

Y N

Troubleshooting complete.

Perform Jet Substitution Mode routine (Control Panel Menu -> Troubleshooting -> Print Quality Problems -> Eliminate Light Stripes).

- 1. Select Jet Substitution Mode.
- 2. Select the color of the weak or missing jet.
- 3. Use the **Up** or **Down** button to change the number of the affected jet. Press the **OK** button.
- 4. Select Save Change and Exit, and press the OK button to complete the procedure.

NOTE: Jet Substitution Mode substitutes a jet for the malfunctioning jet causing the light stripe. The printer has been designed to compensate for a malfunctioning jet. See Print Quality Problems on the Control Panel Menu for more information.

After substituting a jet, print the Light Stripes Test page (Control Panel Menu -> Troubleshooting -> Print Quality Problems -> Eliminate Light Stripes -> Light Stripes Test) to verify Jet Substitution Mode is enabled for the correct jet. Does the error persist? Y N

Troubleshooting complete.

Replace the Printhead Assembly (REP 2.3).

IQ3 Predominant Light Stripes, Scratches or Marks Down the Print or Parallel to the Long Axis of Printing

Predominant light stripes typically result from something scraping the image off the Drum before Transfixing. All 4 colors missing on the test page or output indicate a predominant white stripe condition. Scratches or marks typically result from debris in the paper path that damages the paper or image. Some burnish marks from the flag or paper path is normal.



Figure 1 Scrape from Preheater Cable



Figure 2 Predominant White Stripes

Initial Actions

- 1. Check that supported media is being used.
- 2. Check for any debris or jammed media in the exit path.
- 3. Print the Light Stripes Test print (Control Panel Menu -> Troubleshooting -> Print Quality Problems -> Eliminate Light Stripes -> Light Stripes Test).

NOTE: If there are a series of regularly spaced white lines approximately 0.7 mm (0.03 in.) apart, see IQ17 - White Stripes (Pinstripes).

Troubleshooting Reference

Applicable Part (Chapter 5 - Parts List)

- Drum Maintenance Unit, PL 1.1 Item 16
- Printhead Assembly, PL 2.1 Item 3
- Drum Maintenance Camshaft, PL 2.1 Item 11
- Stripper Blade (Stripper Carriage Assembly), PL 2.1 Item 13
- Drum Wiper Blade Assembly, PL 2.1 Item 18
- Preheater and Deskew Assembly, PL 2.1 Item 20
- Inner Simplex Guide with Predeskew Sensor and Harness, PL 3.1 Item 1
- Lower Inner Duplex Guide, PL 3.1 Item 2
- Lower Exit Guide Assembly w/Strip Flag, PL 3.1 Item 3
- Process Drive with Gear Box, PL 4.1 Item 13
- Wave Amp, PL 5.1 Item 9

Procedure

Check the exit area, exit frame, Preheater, Drum Maintenance Unit (DMU), DMU Blade, Printhead, and the Stripper Blade to see that nothing is in contact with the Drum. **Are there any parts contacted with the Drum?**

Ý N

Troubleshooting complete.

The scratch occurred during the pick or transport process from Tray 2, 3, 4, or 5. Inspect the Pick Guides, Front Door, and Maintenance Kit. Replace or clean parts as needed. **Does** the error persist?

Y N

Troubleshooting complete.

If ink is missing in only one color (see IQ2 Random Light Stripes). If the stripe of missing ink is in all colors, check for:

- Obstruction or debris around the Drum scraping the image on the Drum
- Properly functioning Head Maintenance Wiper Blade
- Debris or foreign material in and around the Drum Maintenance Unit

Remove the Preheater and Deskew Assembly (REP 2.20). Check for ink debris on the Preheater wires or connectors indicating wiring touching the Drum. Reinstall the Preheater and carefully dress and route the wires. Perform the **Remove Print Smears** routine (**Control Panel Menu -> Troubleshooting -> Print Quality Problems -> Remove Print Smears**) (see IQ4 Streaks, Smudges, or Smears). **Does the problem persist?**

Y N

Troubleshooting complete.

Α

Check the Paper Guides for nicks, cuts, or debris. Are the Guides damaged?

Y N

Clean all parts in the paper path.

Replace the Paper Guides:

- Inner Simplex Guide with Predeskew Sensor and Harness (REP 3.1)
- Lower Inner Duplex Guide (REP 3.2)
- Lower Exit Guide Assembly w/Strip Flag (REP 3.3)

If the mark shows as vertical line with dull or low gloss surface, replace the Drum Wiper Blade Assembly (REP 2.17). **Does the error persist?**

Y N

Troubleshooting complete.

Replace the Drum Maintenance Camshaft (REP 2.11) and Process Drive (REP 4.13). **Does the error persist?**

Y N

Troubleshooting complete.

Perform extra purge procedure (Control Panel Menu -> Troubleshooting -> Print Quality Problems -> Eliminate Light Stripes -> Light Stripes Test). Does the error persist?

Y N

Troubleshooting complete.

Check the Wave Amp and cables.

Release the end of the cable and carefully examine the conductor ends (a magnifier helps) to see that they are not cracked or torn. If the cable looks good, carefully reinstall it using a ZIF tool (refer to REP 2.3 for how to use the ZIF tool for unlocking/locking the ZIF cable connector).

NOTE: Failure to properly unlock the connector will damage the cable.

Are the cables secured?

Y N

Reconnect the cables.

Replace the Printhead Assembly (REP 2.3).

IQ4 Streaks, Smudges, or Smears Down the Print

Smudges or smears typically result from ink residue in the paper path. Residue can collect on the rollers, paper guide ribs, or inside the Preheater. Smudges or smears.



Figure 1 Streaks, Smudges, or Smears



Smudges or Smea

Figure 2 Smudges or Smears

Initial Actions

1. Check that supported media is being used. Some glossy media can cause smearing or blocking.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- Drum Maintenance Unit, PL 1.1 Item 16
- Drum Wiper Blade Assembly, PL 2.1 Item 18
- Preheater and Deskew Assembly, PL 2.1 Item 20
- Lower Inner Duplex Guide, PL 3.1 Item 2
- Upper Duplex Guide with Solenoid, PL 3.1 Item 5

Procedure

If ink is transferred from adjacent print in the stack, this is blocking. To prevent this, do not allow print job to sit in the Exit Tray for long time or allow large stack to accumulate in the Exit Tray. Some glossy media are susceptible to blocking and should be removed from the tray immediately.

Clean the Print Engine exit path and Lower Duplex Guide, and wipe the Stripper Blade with a lint-free cloth. **Does the error persist?**

Y N

Troubleshooting complete.

Perform the **Remove Print Smears** routine (**Control Panel Menu** -> **Troubleshooting** -> **Print Quality Problems** -> **Remove Print Smears**). Does the error persist?

Y N

Troubleshooting complete.

Repeat the previous step up to 3 times if ink is seen on the **Remove Print Smears** page. Load fresh media and reprint the test page. **Does the error persist**?

Y N

Troubleshooting complete.

If smudges occur only on 1st printed side of 2-sided print:

- For manually printing 2-sided prints, when you load a tray with paper already printed on one side, at the printer Control Panel, set the tray's paper type to **2nd Side**. Also, at your computer's printer driver, select **2nd Side** as the Paper Type. This ensures the best print quality.
- Check that the Preheater Solenoid works correctly (Service Diagnostics Menu -> Exercise Menu -> Activators -> Preheater Solenoid).

Open the Front Door. Remove the Lower Inner Duplex Guide (REP 3.2). The Preheater should alternate between open and closed position. Replace the Solenoid (REP 3.5) and/ or the Preheater and Deskew Assembly (REP 2.20) if necessary.

Check for possible random light stripes (IQ2). Clean the Rollers and Stripper Blade. **Does the error persist?**

Y Ń

Troubleshooting complete.

Check the Drum Wiper Blade Assembly for damage or debris. Replace the Wiper Blade Assembly (REP 2.17) if necessary. **Does the error persist?**

Y N

Troubleshooting complete.

Does the error persist?

Y N

Troubleshooting complete.

Check the Drum Maintenance Unit. Replace the Drum Maintenance Unit (REP 1.16) if necessary. **Does the error persist?**

Ν

Υ

Troubleshooting complete.

Replace the Preheater and Deskew Assembly (REP 2.20).

If ink spots appear after **Eliminate Light Stripes**, inspect the Face Plate for ink and follow the Printhead Checklist if ink is seen.

IQ5 Partial Image/ Color Missing

Significant jet loss can occur during high-coverage printing due to ink starvation. Restricted ink flow typically occurs in individual jets and is caused by air bubbles that form while the ink cools. These bubbles are usually cleared during the warm-up process or periodic cleaning cycles. More significant ink flow restrictions can occur when the system is mishandled while the ink is in liquid form. While ink is liquid, tipping, tilting, or using excessive force to close a tray can cause ink to infiltrate the upper portions of the Printhead blocking the flow of ink and air.

Symptoms of mishandling include:

- Ink in the Purge Hose
- Ink reservoir overflow
- Ink accumulations under the Printhead obstructing Printhead movement.
- Massive jet loss in one or more colors. Figure 1 is an example of massive jet loss



Figure 1 Massive Jet Loss

Initial Actions

Inspect the Printhead Assembly for blockage of the Purge Hose or accumulations of ink underneath the Printhead. If there is a blockage, replace the Printhead Assembly (REP 2.3).

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- Drum Assembly, PL 2.1 Item 4
- Drum Maintenance Pivot Plate/Wiper Assembly, PL 2.1 Item 17

Procedure

Print a Light Stripes Test page. Is there single color missing on the page?

Ν

Υ

Check the stripe of missing ink for all colors. Are there multiple colors missing on the page?

Y N

Check that the Drum Maintenance Pivot Plate/Wiper Assembly is correctly installed. Is there an even space between the Wiper Assembly and the Drum Assembly (underneath the Drum Maintenance location)?

Y N

Re-install the Drum Maintenance Pivot Plate/Wiper Assembly (REP 2.17).

Troubleshooting complete.

Check for:

- Obstruction or debris around the Drum scraping the image on the Drum
- Properly functioning Head Maintenance Wiper Blade
- Debris or foreign material in and around the Drum Maintenance Unit

Remove the Preheater (REP 2.20). Check for wiring touching the Drum. **Does the error persist?**

Ý N

Troubleshooting complete.

Check the Head Maintenance Wiper Blade, Wave Amp and Printhead Data Cables, and cable connectors, and Wave Amp.

Release the end of the cable and carefully examine the conductor ends (a magnifier helps) to see that they are not cracked or torn. If the cable looks good, carefully reinstall it using a ZIF tool (refer to REP 2.3 for how to use the ZIF tool for unlocking/locking the ZIF cable connector).

NOTE: Failure to properly unlock the connector will damage the cable.

Does the error persist?

Y N

Troubleshooting complete.

Replace the defective part.

See IQ2 Random Light Stripes. Does the error persist?

Y N

Troubleshooting complete.

Refer to the Printhead Troubleshooting Checklist.

IQ6 The Printed Image is Too Light or Too Dark

The overall image density is too light or too dark.



Figure 1 Printed Image is Too Light or Too Dark

Initial Actions

- 1. Check the supported media is being used.
- 2. Check that correct color ink sticks are in the Ink Loader.
- 3. Perform Light Stripes test. Check for missing or discolored jets (see IQ2, Random Light Stripes).
- 4. Check the driver setting. There are advanced option controls that allow the user to lighten and darken prints.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- Ink Sticks
- Media
- Printhead Assembly, PL 2.1 Item 3
- Lower Inner Duplex Guide, PL 3.1 Item 2
- Upper Duplex Guide with Solenoid, PL 3.1 Item 5

Procedure

Verify that paper type is not set to **Transparency**. Set paper type to Plain Paper (**Paper Tray Setup** -> **Tray** 2/3/4/5 Paper Type -> Plain Paper). **Does the error persist after making the** adjustments?

Y N

Troubleshooting complete.

Check and/or adjust the Control Panel print mode settings.

- Print the Troubleshooting Print Quality page (Control Panel Menu -> Troubleshooting -> Print Quality Problems -> Troubleshooting Print Quality Page) and evaluate the Output Quality and Color Settings section.
- 2. Check that the print mode is not set to Fast Color or Standard.

Does the error persist?

N Troubleshooting complete.

Check that correct driver setting and color correction setting are correct.

- 1. From the Start menu, select Settings -> Printers and Faxes -> Xerox ColorQube 8570DN.
- 2. Highlight Xerox ColorQube 8570DN.
- 3. Right-click and select Printing Preferences.
- 4. Click the Color Options tab.
- 5. Under Color Correction, ensure Automatic Color (Recommended) is selected.
- 6. Under Saved Settings, verify that Driver Defaults is selected.
- 7. Click **OK** to close the window.

Print Solid Fills page to verify it's not a computer application issue.

Try **Custom Color Options** in the printer driver to adjust color to customer preference. Suggest **Photo Mode** for more saturated prints. **Does the error persist?**

Y N

Troubleshooting complete.

Check the Preheater Solenoid operation (Service Diagnostics Menu -> Exercise Menu -> Activators -> Preheater Solenoid).

Open the Front Door. Remove the Lower Inner Duplex Guide (REP 3.2). The Preheater should alternate between open and closed position. Replace the Solenoid (REP 3.5) and/or the Preheater (REP 2.20) if necessary.

Determine if all the colors appear too light. Do all the colors appear too light?

Y N

Insert new ink and perform the **Solid Fill Prints** routine until the affected color returns to normal (**Control Panel Menu** -> **Troubleshooting** -> **Service Tools** -> **Ink Flush Prints**). This could require several ink sticks of the affected color. **Does the error persist?**

Y N

Troubleshooting complete.

Check if Intelligent Ready power save mode is on. If necessary, advise the customer that using Intelligent Ready power saver mode may avoid future ink discoloration.

Replace the Printhead Assembly (REP 2.3).

Perform the **Head Adjust** procedure (ADJ 1.4 Manual Printhead Parking).

IQ7 No Image is Printed

The printer processes a sheet of paper, but no image appears on the output.

NOTE: Blank sheets accompanying multi-picks or chase pages following a jam are a part of normal operation.



Figure 1 No Image is Printed

Initial Actions

- 1. Check that supported media is being used.
- 2. Print the internal Demonstration page to verify issue is not caused by computer application.
- 3. Check for media or debris around the Printhead and Drum.
- 4. Check for jam code in Fault History to determine if the black page is actually a chase page following a jam.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- Printhead Assembly, PL 2.1 Item 3
- Electronics Module, PL 5.1 Item 1
- Wave Amp, PL 5.1 Item 9
- Cable, Wave Amp Signal, PL 5.1 Item 18
- Cable, ZIF, Wave Amp Drive, PL 5.1 Item 19

Procedure

Inspect and reseat the Wave Amp and data cables connected to the Printhead Assembly. Release the end of the cable and carefully examine the conductor ends (a magnifier helps) to see that they are not cracked or torn. If the cable looks good, carefully reinstall it using a ZIF tool (refer to REP 2.3 for how to use the ZIF tool for unlocking/locking the ZIF cable connector). Replace the defective cables.

NOTE: Failure to properly unlock the connector will damage the cable.

Does the error persist?

- Y N
 - Troubleshooting complete.

Replace parts in the following order until the problem is fixed.

- Wave Amp (REP 5.9)
- Electronics Module (REP 5.1)

Does the error persist? Y N

Troubleshooting complete.

Follow the instructions on the Printhead Troubleshooting Checklist.

IQ8 Color is Uneven or Wrong (Uniformity)

Uneven or incorrect colors typically result from incorrect colors in the Ink Loader, old ink in the Printhead, or color mixing at the faceplate.

NOTE: Using non-Xerox ink may cause unpredictable color results.



Figure 2 Uneven Color

Initial Actions

- 1. Check that supported media is being used.
- 2. Check that correct color ink sticks are in the Ink Loader.
- 3. Perform the Light Stripes test (Control Panel Menu -> Troubleshooting -> Print Quality Problems -> Eliminate Light Stripes -> Light Stripes Test). Check for missing or discolored jets (see IQ2 Random Light Stripes).

Troubleshooting Reference

Applicable Part (Chapter 5 - Parts List)

Printhead Assembly, PL 2.1 Item 3 •

Procedure

Check that print mode is not set to Fast Color or Standard. Verify that paper type is not set to Transparency. Set paper type to Plain Paper (Paper Tray Setup -> Tray 2/3/4/5 Paper Type -> Plain Paper). Does the error persist after making the adjustments?

Υ Ν

Troubleshooting complete.

Δ

Check that the correct driver setting and color correction setting are correct.

- 1. From the Start menu, select Settings -> Printers and Faxes -> Xerox ColorQube 8570DN.
- 2. Highlight Xerox ColorQube 8570DN.
- Right-click and select Printing Preferences. 3.
- Click the Color Options tab. 4.
- Under Color Correction, ensure Automatic Color (Recommended) is selected. 5.
- 6. Under Saved Settings, verify that Driver Defaults is selected.
- 7. Click **OK** to close the window.

Print Solid Fills page to verify it's not a computer application issue.

Try Custom Color Options in the printer driver to adjust color to customer preference. Suggest printing in Photo mode for more vibrant colors. Does the error persist?

N Υ

Troubleshooting complete.

NOTE: If the printer has a low print volume and the ink is exposed to too high temperature for a long period of time, color shift occurs slightly.

Example: Red changes to orange, cyan changes to light green.

Clear discolored jets in the Printhead. Print a Solid Fill test print (Control Panel Menu -> Troubleshooting -> Service Tools -> Ink Flush Prints) for the affected color.

Purge the ink (Control Panel Menu -> Troubleshooting -> Print Quality Problems -> Eliminate Light Stripes -> Advanced -> Cyan/Magenta/Yellow/Black) from the affected color up to 10 times, checking output every 3 purges until the discoloration clears. If some improvement is seen, the ink could be discolored due to exposure. Does the error persist? Υ

Ν

Troubleshooting complete.

Check if Intelligent Ready power save mode is on. If necessary, advise the customer that using Intelligent Ready power saver mode may avoid future ink discoloration.

Replace the Printhead Assembly (REP 2.3).

The printed image is not parallel with both sides of the paper.





Initial Actions

- 1. Check that supported media is being used.
- 2. Check for any debris or jammed media in the exit path.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- Preheater and Deskew Assembly, PL 2.1 Item 20
- Takeaway Roller, PL 3.1 Item 7
- Out Takeaway Guide Assembly, PL 3.1 Item 14

Procedure

Print the Manufacturing Skew Margin test print (Hidden Service Menu -> Test Prints -> Manufacturing Skew Margin). Check that the magenta box is squarely position on the paper as shown in Figure 2. Does the magenta box not positioned correctly?

Y N

Troubleshooting complete.

Check the Preheater that the Deskew Gate is operational (spring load movement). Are the Deskew Gates damaged?

Y N

Troubleshooting complete.

Replace the Preheater and Deskew Assembly (REP 2.20). Does the error persist?

Y N

Troubleshooting complete.

Check the Out Takeaway Guide Assembly for damage. Is the Out Takeaway Guide Assembly damaged?

YN

Δ

Troubleshooting complete.

Replace the Out Takeaway Guide Assembly (REP 3.14). Does the error persist?

Troubleshooting complete.

Check the Takeaway Roller for damage. Is the Takeaway Roller damaged?

Troubleshooting complete.

Replace the Takeaway Roller (REP 3.7).



Figure 2 Skew Margin

IQ10 Ink on White Portion of the Printed Page

Color appearing on blank areas can be caused by a latent image from previous print. Latent images typically result from insufficient oiling of the Drum. Insufficient oiling is often the result of a defective or expended Drum Maintenance Unit. Printing on pre-punched media can also contribute to latent images. Debris in the paper path or faulty Drum Thermistor can also be possible causes.



Figure 1 Ink on White Portion of Page



Figure 2 Latent Image from Previous Print

Initial Actions

- 1. Check that supported media is being used.
- 2. Check for any debris or jammed media in the exit path.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- Drum Maintenance Unit, PL 1.1 Item 16
- Stripper Blade (Stripper Carriage Assembly), PL 2.1 Item 13
- Drum Wiper Blade Assembly, PL 2.1 Item 18
- Preheater and Deskew Assembly, PL 2.1 Item 20
- Lower Inner Duplex Guide, PL 3.1 Item 2
- Exit Roller, PL 3.1 Item 6
- Retard Roller, PL 3.1 Item 10
- Drum Temperature Sensor, PL 6.1 Item 5

Procedure

Try printing using a smoother, higher quality paper. Some recycled papers are too coarse. Watermarked or punched paper could also cause latent images. **Does the error persist?**

Y N

Troubleshooting complete.

Check the Drum Maintenance Unit for sufficient oil. Remove the Drum Maintenance Unit and press loose piece of paper against Oil Roller with light finger pressure. If oil does not appear on page, replace the Drum Maintenance Unit (REP 1.16).

If ink is transferred from adjacent print in the stack, this is blocking. To prevent this, do not allow print job to sit in the Exit Tray for long time or allow large stack to accumulate in the Exit Tray. Some glossy media are susceptible to blocking and should be removed from the tray immediately.

Clean the Stripper Blade. Perform the **Remove Print Smears** routine (**Control Panel Menu** -> **Troubleshooting** -> **Print Quality Problems** -> **Remove Print Smears**). Does the error persist?

Y N

Troubleshooting complete.

Check condition of the Drum Temperature Sensor (debris and damage). Replace the Drum Temperature Sensor (REP 6.5) if necessary. **Does the error persist?**

Y N

Troubleshooting complete.

Check the X-Axis motion. Perform the X-Axis Motor test (Service Diagnostics Menu -> Exercise Menu -> Exercise Motors/Shafts Menu -> X-Axis Motor).

Is the X-Axis Motor impeded? If so, use the White Stripes (Pinstripes) procedure (IQ17) to troubleshoot the problem. Does the problem persist?

Y N

Troubleshooting complete.

Remove the Drum Wiper Blade Assembly (REP 2.17). Clean the plastic Wiper Blade with a lint-free cloth. **Does the error persist?**

Y N

Troubleshooting complete.

Replace the Drum Wiper Blade Assembly (REP 2.17). Does the error persist?

Y N

Troubleshooting complete.

Check for dust or debris on the Feed Rollers and Retard Rollers. Perform the **Remove Print** Smears routine (Control Panel Menu -> Troubleshooting -> Print Quality Problems -> Remove Print Smears). Replace the Feed Rollers (REP 3.10) if necessary. Does the error persist?

Y N

Troubleshooting complete.

If ink spots appear after Eliminate Light Stripes or after long time in Power Saver mode, check the Purge Pressure Pump, Printhead Wiper, and Printhead.

If defect occurs only on the 1st printed side of 2-sided prints:

- For manually printing 2-sided prints, when you load a tray with paper already printed on one side, at the printer Control Panel, set the tray's paper type to **2nd Side**. Also, at your computer's printer driver, select **2nd Side** as the Paper Type. This ensures the best print quality.
- Check that the Preheater Solenoid work correctly (Service Diagnostics Menu -> Exercise Menu -> Activators -> Preheater Solenoid).

Open the Front Door. Remove the Lower Inner Duplex Guide (REP 3.2). The Preheater should alternate between open and closed positions. Replace the Upper Duplex and Solenoid (REP 3.5) and/or the Preheater Assembly (REP 2.20) if necessary.

IQ11 Fuzzy or Blurry Printing

Fuzzy text typically results from one of the three causes illustrated. An error in Y-Axis Drum rotation results in text appearing as shown in Figure 1 at the upper left. Fuzzy text may also occur following a Printhead Assembly replacement if the Printhead or X-Axis Bias Hook is not correctly installed. X-Axis errors cause text to appear as shown at the lower right as shown in Figure 1.



Figure 2 Fuzzy Text Example

Initial Actions

- 1. Check that supported media is being used.
- 2. Check for dirt, debris or jammed media in the exit path.
- 3. Perform the Remove Print Smears routine: Control Panel Menu -> Troubleshooting -> Print Quality Problems -> Remove Print Smears.
- 4. Print the image in a higher print resolution.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- Printhead Assembly, PL 2.1 Item 3
- (Y-Axis Encoder) Drum Assembly, PL 2.1 Item 4
- Roll Block, PL 2.1 Item 28
- Wave Amp, PL 5.1 Item 9
- Cable, ZIF, Wave Amp Drive, PL 5.1 Item 19

Procedure

Try printing using a smoother, higher quality paper, some recycled papers are too coarse. **Does the error persist?**

Y N

Troubleshooting complete.

Use a higher quality print mode. Does the error persist?

Y N

Troubleshooting complete.

Check that the dot on the Printhead Roll Block match with the label of the left side of the frame as shown in Figure 3. Adjust the position of the dot if necessary.



Figure 3 Roll Block Orientation

Does the error persist? Y N

Troubleshooting complete.

Check that the Printhead is tilted forward against the Drum button. If necessary, realign the X-Axis Bias Plate and Spring so it is contacting the Roll Block. Check that the Head Tilt Spring is installed correctly.

Set the X-Axis Bias Hook and spring on the left end of the Printhead Shaft. Ensure the point of the hook is centered in the Printhead's stub shaft and the rest of the hook floats freely.



Figure 4 X-Axis Bias Hook Orientation

Does the error persist?

Y N

Troubleshooting complete.

Follow the White Stripes (Pinstripes) procedure (IQ17) to correct the X-Axis problem. **Does the error persist?**

Y N

Υ

Troubleshooting complete.

Check that the Printhead is tilted forward against the Drum in proper print position. Realign the Printhead if necessary. **Does the error persist?**

N Troubleshooting complete.

Check the Printhead Wave Amp cables.

Release the end of the cable and carefully examine the conductor ends (a magnifier helps) to see that they are not cracked or torn. If the cable looks good, carefully reinstall it using a ZIF tool (refer to REP 2.3 for how to use the ZIF tool for unlocking/locking the ZIF cable connector).

NOTE: Failure to properly unlock the connector will damage the cable.

Are the Printhead Wave Amp cables secured?

N Reconnect the cables.

Replace the Drum Assembly (REP 2.4) if encoder is faulty. Does the error persist?

Y N

Υ

Troubleshooting complete.

Replace the Wave Amp (REP 5.9).

IQ12 Vertical Lines Appear Wavy

Wavy or ill-formed vertical lines typically result from excessive Drum oiling. An error in X-Axis or Y-Axis motion could also cause this error.





Vertical Lines Appear Wavy

Figure 1 Wavy Vertical Lines on Output

Figure 2 X-Axis Motor Installed Incorrectly

Initial Actions

1. Check that supported media is being used.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- (Y-Axis Encoder) Drum Assembly, PL 2.1 Item 3
- Drum Maintenance Camshaft, PL 2.1 Item 11
- Drum Maintenance Pivot Plate, PL 2.1 Item 17
- X-Axis Motor, PL 4.1 Item 11
- Drum Temperature Sensor, PL 6.1 Item 5

Procedure

Check the X-Axis motion. Verify that there is nothing interfering with X-Axis motion. Replace any defective parts found. **Does the error persist?**

Y N

Troubleshooting complete.

Α

Check the Y-Axis motion.

• Ensure the X-Axis Motor is correctly installed with the cone-nut fork properly interfaced to its guide in the right side frame as shown in Figure 3.

IQ13 Ghosting

Ghosting typically results from stacked prints, faulty or expended Drum Maintenance Unit, or Drum thermal regulation. The resulting pressure and system heat causes "blocking" which has the appearance of ghosting.



Does the error persist?

Y N

Troubleshooting complete.

Check the Drum maintenance Cam Roller and Pivot Plate are functioning correctly. Perform the Drum Maintenance Drive test (Service Diagnostics Menu -> Exercise Menu -> Motors/ Shafts -> Drum Maintenance Cam Shaft). Does the error persist?

Y N

Troubleshooting complete.

Replace any defective parts found.



Residual Image/Ghosting

Figure 1 Ghosting



Figure 2 Ghosting (Transfix)



Figure 3 Ghosting (Drum)

Initial Actions

- 1. Check that supported media is being used.
- Check the Drum Maintenance Unit. 2.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- Drum Maintenance Unit. PL 1.1 Item 16 ٠
- Drum Maintenance Camshaft, PL 2.1 Item 11 .
- Drum Maintenance Pivot Plate/Wiper Assembly, PL 2.1 Item 17 ٠
- Drum Temperature Sensor, PL 6.1 Item 5

Procedure

Use a different type of media or media from a different ream. Flip media over to other side. For some media types, there is significant difference in performance from one side to another. Does the error persist?

Υ Ν

Troubleshooting complete.

Run multiple, 2-sided prints. Some amount of Transfix Roller ghosting is inherent to the printer. This type of ghosting is most pronounced on the first 2-sided print. Ghosting should fade on subsequent prints. Does the error persist?

Υ Ν

Troubleshooting complete.

If ink is transferred from adjacent print in the stack, this is blocking. To prevent this, do not allow print job to sit in the Exit Tray for long time or allow large stack to accumulate in the Exit Tray. Some glossy media are susceptible to blocking and should be removed from the tray immediatelv.

Check the Drum Maintenance print parts for damage or defects:

- **Drum Maintenance Pivot Plate** ٠
- Drum Maintenance Cam Shaft .
- Drum Wiper Blade Assembly ٠

Check the Drum Maintenance Unit for sufficient oil. Remove the Drum Maintenance Unit and press loose piece of paper against Oil Roller with light finger pressure. If oil does not appear on page, replace the Drum Maintenance Unit (REP 1.16).

Check that the Drum Maintenance Cam Roller and Pivot Plate are functioning correctly. Replace the Cam Roller (REP 2.11) and/or Pivot Plate (REP 2.17) if necessary.

Perform the Drum Maintenance Drive test (Service Diagnostics Menu -> Exercise Menu -> Motors/Shafts -> Drum Maintenance Cam Shaft). Does the error persist?

Υ Ν

Troubleshooting complete.

Check the Drum Temperature Sensor for debris or damage. Replace the Sensor (REP 6.5) if necessary.

IQ14 Oil on Print

Oil streaks or spots typically results from excessive or insufficient Drum oiling. A problem with the Drum Maintenance Unit is the likely cause.



Figure 1 Oil Streak on Print

Initial Actions

- 1. Check that supported media is being used.
- 2. Check the Drum Maintenance Unit.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- Drum Maintenance Camshaft, PL 2.1 Item 11
- Drum Maintenance Pivot Plate/Wiper Assembly, PL 2.1 Item 17

Procedure

Check the Drum Maintenance Plate ground connection. Verify that the ground connection is secure between the Drum Maintenance Shaft and Drum Fan. Does the error persist?

- Υ Ν
 - Troubleshooting complete.

Perform the Remove Print Smears routine (Control Panel Menu -> Troubleshooting -> Print Quality Problems -> Remove Print Smears). Does the error persist?

Υ Ν

Troubleshooting complete.

Clean the Stripper Blade and Exit Guide. Does the error persist? Υ

Ν Troubleshooting complete. A

Check the Drum Maintenance Unit for sufficient oil. Remove the Drum Maintenance Unit and press loose piece of paper against Oil Roller with light finger pressure. If oil does not appear on page, replace the Drum Maintenance Unit (REP 1.16).

Check that the Drum Maintenance Cam Roller and Pivot Plate are functioning correctly. Perform the Drum Maintenance Drive test (Service Diagnostics Menu -> Exercise Menu -> Motors/Shafts -> Drum Maintenance Cam Shaft). Does the error persist?

Y N

Troubleshooting complete.

Check and clean the Drum Wiper Blade Assembly. Replace the Wiper Blade Assembly (REP 2.17) if necessary.

Replace any defective parts found.

- Drum Maintenance Cam Roller (REP 2.11)
- Drum Maintenance Cam Pivot Plate (REP 2.17)

IQ15 Incomplete Image Transfer, Drop Out, Loss of Image Pixels

Incomplete image transfer typically results from coarse, underweight, watermarked media, or improper Transfix Load, Preheater, or Drum Thermals. Incomplete image transfer limited to one side of the page may be the result of improper Drum oiling.



Figure 1 Incomplete Image Transfer



Figure 2 Incomplete Image Transfer

Figure 3 Incomplete Image Transfer

Initial Actions

- 1. Check that supported media is being used.
- 2. Check the Drum Maintenance Unit.
- 3. Perform the **Remove Print Smears** routine: **Control Panel Menu -> Troubleshooting -> Print Quality Problems -> Remove Print Smears**.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- Drum Maintenance Unit, PL 1.1 Item 16
- Drum Maintenance Camshaft, PL 2.1 Item 11
- Transfix Load Module, PL 2.1 Item 16
- Drum Maintenance Pivot Plate/Wiper Assembly, PL 2.1 Item 17
- Transfix Arm Kit, PL 2.1 Item 21
- Lower Inner Duplex Guide, PL 3.1 Item 2
- Drum Cooling Fan, PL 4.1 Item 12
- Drum Temperature Sensor, PL 6.1 Item 5

Procedure

Try using a higher quality print mode. Does the error persist?

Y N

Troubleshooting complete. Some amount of incomplete transfer in low coverages is normal, especially of coarse media.

Try to print on different type of media, media from a different ream, or flipping media over to other side. **Does the error persist?**

Y N

Troubleshooting complete. For problematic media, set media type to **Card Stock** which prints slower but can improve transfer. For this case, **Card Stock** setting may be used for all media types.

Check life remaining in the Drum Maintenance Unit (Information -> Supplies Info -> Maintenance Kit Life). If less than 25% life remaining (or less than 1,000 pages is displayed in pages remaining) then the Maintenance Unit may be out of oil. Verify this by removing the Drum Maintenance Unit and press loose piece of paper against the oil roller with light finger pressure. If oil does not appear on the page, replace the Drum Maintenance Unit (REP 1.16).

If the Drum Maintenance Unit needs replacement, clean ink off the Drum by running Remove Print Smears (Control Panel Menu -> Troubleshooting -> Print Quality Problems -> Remove Print Smears) several times if necessary. Does the error persist?

Y N

Troubleshooting complete.

Perform the Drum Maintenance Drive test (Service Diagnostics Menu -> Exercise Menu -> Motors/Shafts -> Drum Maintenance Cam Shaft).

Check that the Drum Maintenance Cam Roller and Pivot Plate are functioning correctly. Replace the Drum Maintenance Camshaft (REP 2.11) and/or Pivot Plate Assembly REP 2.17) if necessary. **Does the error persist?**

Y N

Troubleshooting complete.

Α

Clean the Stripper Blade and Exit Guides. Does the error persist?

N Troubleshooting complete.

Check the Drum Cooling Fan (Service Diagnostics Menu -> Exercise Menu -> Motors/ Shafts -> Drum Fan Motor. Replace the Drum Cooling Fan (REP 4.12) if it does not operate during test. Does the error persist?

Y N

Troubleshooting complete.

Check the Drum Temperature Sensor for debris or damage. Replace the Sensor (REP 6.5) if necessary. **Does the error persist?**

Y N

Troubleshooting complete.

Is the image incomplete of only the sides of the print? This indicates incomplete Transfix Cam rotation. Check for a damaged Transfix Cam Roller or a malfunction of the Process Drive. Check the Transfix Arm movement. The Transfix Arms should move during transfix (Figure 1).

- 1. Remove the Control Panel Cover (REP 1.5).
- 2. Remove the Lower Inner Duplex Guide (REP 3.2).
- 3. Open the Front Door. While printing a test print page, look through the gap on each side between the printer frame and the Front Door and check to see if the Arm moves up or down. Replace the Load Arms (REP 2.21) if no movement is visible.



Figure 4 Checking the Transfix Arm

Replace any damaged parts found. Does the error persist?

N Troublochooti

Troubleshooting complete.

- 1. Replace the Drum Maintenance Unit (REP 1.16) if not done on previous step.
- 2. Replace the Drum Wiper Blade (REP 2.17).
- 3. Check that the Preheater Solenoid works correctly (Service Diagnostics Menu -> Exercise Menu -> Activators -> Preheater Solenoid.
- 4. Replace the Transfix Load Module (REP 2.16) and the Transfix Load Arms (REP 2.21).

IQ16 Repeating Print Defects

Repeating defects typically result from debris or damage to an imaging component. The interval between the defect can reveal the affected component.

IQ17 White Stripes (Pinstripes)

White striping appears as a series of evenly-spaced pinstripes approximately 0.7 mm (0.03 in.) apart. This indicates a malfunction in the X-Axis Drive. This can cause vertical lines to be wavy.

 Repeating Defects

Figure 1 Repeating Print Defects

Initial Actions

- 1. Check that supported media is being used.
- 2. Print several test prints as a sample.
- 3. Measure the interval between defects and note their position.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- Drum Assembly, PL 2.1 Item 4
- Transfix Roller, PL 2.1 Item 14

Procedure

Υ

Υ

Repeating defects that occur every 11.6 cm (4.58 in.) are caused by the Transfix Roller. Clean or replace the Transfix Roller (REP 2.13) as needed. **Does the error persist?**

N Troubleshooting complete.

A repeating defect that has a different Y position on each page, but has the same X position indicates a defect on the Drum. Clean the Drum. **Does the error persist?**

N Troubleshooting complete.

Replace the Drum Assembly (REP 2.4).



Pinstriping

Figure 1 White Stripes (Pinstripes)



Figure 2 White Stripes

Initial Actions

- 1. Check that supported media is being used.
- 2. Print the Light Stripes Test print (Control Panel Menu -> Troubleshooting -> Print Quality Problems -> Eliminate Light Stripes -> Light Stripes Test).
- 3. Print several solid-fill test prints as a sample.

Troubleshooting Reference

Applicable Part (Chapter 5 - Parts List)

- Preheater and Deskew Assembly, PL 2.1 Item 20
- Lower Inner Duplex Guide, PL 3.1 Item 2
- Upper Duplex Guide with Solenoid, PL 3.1 Item 5
- X-Axis Motor, PL 4.1 Item 11

Procedure

Print several solid-fill test prints. Does the error persist?

Υ Ν

Troubleshooting complete.

Check that the X-Axis Bias Hook and spring on the left end of the Printhead Shaft installed correctly. Ensure the point of the hook is centered in the shaft and the rest of the hook floats freely.



Figure 3 X-Axis Bias Hook Orientation

Does the error persist? Ν

Υ

Troubleshooting complete.

Check the X-Axis motion. Ensure the X-Axis Motor is correctly installed with its nose cone fork properly interfaced to its guide in the right side frame as shown in Figure 4.



Figure 4 Verifying the X-Axis Motor Installation

Does the error persist?

Υ Ν

Troubleshooting complete.

Check the Printhead Wiper is homed correctly and not restricting X-Axis motion. Remove any obstructions such as cables, screws, or damaged parts. Does the error persist?

Υ Ν

Troubleshooting complete.

Check the Printhead motion. Clear any interference with the horizontal motion of the Printhead. Does the error persist?

Υ Ν

Troubleshooting complete.

Check that the Preheater Solenoid works correctly (Service Diagnostics Menu -> Exercise Menu -> Activators -> Preheater Solenoid).

Open the Front Door. Remove the Lower Inner Duplex Guide (REP 3.2). The Preheater should alternate between open and closed position. Replace the Solenoid (REP 3.5) and/or the Preheater (REP 2.20) if necessary. Does the error persist?

Y N

Troubleshooting complete.

Replace the X-Axis Motor (REP 4.11).

IQ18 Media Wrinkling or Damage

Wrinkling generally appears in areas of solid fill near the image edge. This problem is more often seen on short-grain media. Some wrinkling of envelope flaps is expected. You may see wrinkling on the second side of a 2-sided print on solid prints. Wrinkling could indicate a malfunction in the Transfix mechanism.



Figure 1 Wrinkling

Initial Actions

- 1. Check that supported media is being used. Damp, moisture-laden paper may wrinkle and curl following printing
- 2. Print several solid-fill test prints as a sample.
- 3. Print using a higher-quality or heavier media type; try different ream of media.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- Control Panel Cover, PL 1.1 Item 5
- Drum Maintenance Unit, PL 1.1 Item 16
- Transfix Camshaft, PL 2.1 Item 12
- Stripper Carriage Assembly, PL 2.1 Item 13
- Transfix Roller, PL 2.1 Item 14
- Transfix Load Module, PL 2.1 Item 16
- Preheater and Deskew Assembly, PL 2.1 Item 20
- Transfix Arm Kit, PL 2.1 Item 21
- Lower Inner Duplex Guide, PL 3.1 Item 2

Procedure

Υ

Suggest increasing the margin size of the image. Does the error persist?

N Troubleshooting complete. Δ

Suggest printing high coverage pages as 1-sided job. Does the error persist?

Y N

Troubleshooting complete.

Check the Drum Maintenance Unit. Inspect, clean, or replace the Drum Maintenance Unit (REP 1.16). **Does the error persist?**

Y N

Troubleshooting complete.

Check the Transfix components. Verify that the Transfix Load is working. Check the Transfix Arm movement.

- 1. Remove the Control Panel Cover (REP 1.5).
- 2. Remove the Lower Inner Duplex Guide (REP 3.2).
- 3. Close the Front Door. While printing a test print page, look through the gap on each side between the printer frame and the Front Door and check to see if the Arm moves up or down. Replace the Load Arms (REP 2.21) if no visible movement.



Figure 2 Checking the Transfix Arm

Does the error persist?

Y N

Troubleshooting complete.

Check for media damage caused by the Stripper Carriage Assembly. Replace the Stripper Carriage (REP 2.13) if necessary.

Replace the parts in the following order:

- Transfix Roller (REP 2.13)
- Transfix Camshaft (REP 2.12)
- Transfix Load Arms (REP 2.21)
- Transfix Load Module (REP 2.16)

If image is very skewed on the page, replace the Preheater and Deskew Assembly (REP 2.20). Check the Preheater and Deskew Assembly is operating correctly. The upper plates on the Preheater should lay flat and not overlap. Replace the Preheater (REP 2.20) if necessary.

IQ19 Image is Offset or Cutoff

Image offset generally appears as a result of a mismatch between the application and the driver.



Image Not Centered

Figure 1 Image is Offset or Cut-Off

Initial Actions

- 1. Check that supported media is being used.
- 2. Print a Configuration page from the Control Panel Menu.
- 3. Print a Manufacturing Skew Margin page (Hidden Service Diagnostics Menu -> Test Prints -> Manufacturing Skew Margin).
- 4. Check the application print settings.

Troubleshooting Reference

Applicable Part (Chapter 5 - Parts List)

• Tray Guides

Procedure

Check the image location on the Skew Margin page to verify it's not a computer application issue. Does the error persist? Ν

Υ

Troubleshooting complete.

Check the application for correct image sizing and orientation. Does the error persist? Υ

Ν

Troubleshooting complete.

Correct the application settings. Some side to side adjustment can be made using Center Image (Hidden Service Diagnostics Menu -> Center Image). Does the error persist?

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Υ Ν

Troubleshooting complete.

Check the media size listed on the Configuration page and verify it matches media in the tray. This test print uses the tray selected in Paper Source on the Paper Handling menu. Does the media information match with the Configuration page? Ν

Υ

Correct the media information.

Check the Tray Guide adjustment. Are the Guides adjusted properly? Υ Ν

Adjust the Guides and verify paper is stacked neatly in the tray.

Troubleshooting complete.

If you have skew on simplex prints:

- In Trays 2, 3, 4, or 5 check for a worn Takeaway Roller or Pick Roller.
- In Tray 1, check for a worn Pick Roller. ٠

If you have skew on duplex prints, check for a worn Duplex Roller and verify that the Front Door is completely closed and latched on both the left and right sides. If the lead-edge margins are outside of tolerance, check the Preheater Flag.

IQ20 Poor Ink Adhesion, Poor Image Durability

Poor ink adhesion generally appears as a result of a overly glossy media coatings, or improper temperature regulation of the Preheater or Drum.

NOTE: Some customer actions will cause ink to be removed from the image such as scratch or abrading the surface of the image or applying/removing tape or sticky notes. This is expected behavior. No further service actions can correct this behavior.



Figure 1 Poor Ink Adhesion

Figure 2 Poor Ink Adhesion



Light or Undertone Print

Figure 3 Poor Ink Adhesion, Poor Image Durability

Initial Actions

- 1. Check that supported media is being used.
- 2. Print a **Configuration** page from the Control Panel.
- 3. Check the application print settings.

Troubleshooting Reference

Applicable Parts (Chapter 5 - Parts List)

- Transfix Camshaft, PL 2.1 Item 12
- Transfix Roller, PL 2.1 Item 14
- Transfix Load Module, PL 2.1 Item 16
- Transfix Load Arms, PL 2.1 Item 21
- Lower Inner Duplex Guide, PL 3.1 Item 2
- Upper Duplex Guide with Solenoid, PL 3.1 Item 5
- Drum Temperature Sensor, PL 6.1 Item 5

Procedure

Check the media type. If the media appears glossy, replace the media and reprint. Print the same image on standard office paper. **Does the error persist?**

Y N

Troubleshooting complete.

For problematic media, set media type to **Card Stock**, which prints slower but can improve durability. For this case, **Card Stock** setting may be used for all media types. **Does the error persist?**

Y N

Troubleshooting complete.

Check the position and cleanliness of the Drum Temperature Sensor. Is the Sensor positioned properly with no interference?

Y N

Clean or correctly position the Sensor.

Check the Transfix Load is working properly. The Transfix Arms should move during transfix (see Figure 4).

- 1. Remove the Control Panel (REP 1.5).
- 2. Remove the Lower Inner Duplex Guide (REP 3.2).
- 3. Close the Front Door. While printing a test print page, look through the gap on each side between the printer frame and the Front Door and check to see if the Arm moves up or down. Replace the Load Arms (REP 2.21) if no movement is visible.



Figure 4 Checking the Transfix Arm

Does the error persist?

Y N Troubleshooting complete.

Check that the Preheater Solenoid works correctly (Service Diagnostics Menu -> Exercise Menu -> Activators -> Preheater Solenoid).

Open the Front Door. Remove the Lower Inner Duplex Guide (REP 3.2). The Preheater should alternate between open and closed position. Replace the Solenoid (REP 3.5) and/or the Preheater (REP 2.20) if necessary.

Replace the following parts in this order:

- Transfix Roller (REP 2.13)
- Transfix Camshaft (REP 2.12)
- Transfix Load Arms (REP 2.21)
- Transfix Load Module (REP 2.16)

IQ21 Gloss Irregularities

There are variations in the glossiness of the printed image. Gloss is affected by media type, Drum surface, ink properties and ink density. Gloss defects can be in any direction.





Figure 1 Gloss Irregularities

Figure 2 Gloss Irregularities



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Figure 4 Glossy Vertical Lines

Initial Actions

- 1. Check that supported media is being used.
- 2. Check the application print settings.

Troubleshooting Reference

Applicable Part (Chapter 5 - Parts List)

- Drum Maintenance Unit, PL 1.1 Item 16
- Drum Maintenance Camshaft, PL 2.1 Item 11
- Drum Maintenance Pivot Plate Assembly, PL 2.1 Item 17
- Process Drive with Gear Box and Motor, PL 4.1 Item 13

Procedure

Print a Solid Fill page from the Hidden Service Menu. Check for oil and gloss on the page. Is there gloss or oil mark on the page?

Y N

Troubleshooting complete.

Check the Drum Maintenance Unit for sufficient oil. Remove the Drum Maintenance Unit and press loose piece of paper against Oil Roller with light finger pressure. If oil does not appear on page, replace the Drum Maintenance Unit (REP 1.16).

Check that the Drum Maintenance Cam Roller and Pivot Plate are functioning correctly. Perform the Drum Maintenance Drive test (Service Diagnostics Menu -> Exercise Menu -> Motors/Shafts -> Drum Maintenance Cam Shaft). Does the error persist?

Y N

Troubleshooting complete.

If glossy vertical line is visible, it's possible there is a defect on the Drum Wiper Blade Assembly. Clean and replace the Wiper Blade (REP 2.17) if necessary.

If glossy defects line up with Paper Path Rollers, Flags, or Guides, clean the paper path. Check operation of the Drum Maintenance Pivot Plate Assembly, Drum Maintenance Camshaft, and Process Drive. Replace the parts if necessary.

- Drum Maintenance Pivot Plate Assembly (REP 2.17)
- Drum Maintenance Camshaft (REP 2.11)
- Process Drive Assembly (REP 4.13)



There are specks or dots of color on the image.



Figure 1 Grainy

Procedure

Some graininess in image is normal.
Test Prints

A variety of test prints are available in the Hidden Service Menu to aid in determining the quality of output from the printer and to assist in troubleshooting problems. This section shows how to select and analyze all test prints available to the printer. To access the Test Print menu, open the Hidden Service Menu from the Control Panel.

NOTE: Defects revealed by the prints may not occur in the course of ordinary printing. In servicing the system, you should minimize the defects shown by the prints but not necessarily eliminate them.

Weak or Missing Jet

This print is similar to Light Stripes Test page. This print shows the jets not outputting enough ink, if any, compared to its neighboring jets. Note that the yellow jets' bands have a small amount of cvan ink added to them. This tints them green to make them more visible.



Figure 1 Weak or Missing Jet

Look for: No interlacing is used in this print: expect light/dark variation between jets. Look for much lighter colored vertical bands in the horizontal bars. Weak jets in the yellow band are distinguished by a cyan tint.

Causes: A jet may be partially clogged. Perform printhead clean/purge cycles on the printhead to remove contaminants from the poorly-performing jet.

If jet substitution mode is required, see Jet Substitution Mode. Test the purge system and the Wiper Blade performance. Turn the printer Off for 2 hours (or overnight, if practical). Print the Test pages to see if problems still persist. Perform a Clean/Purge cycle again if problem persists. There may be a problem in the Purge Pump assembly or the Wiper Assembly may not be compliant. Verify that the printer is using Xerox ink. Follow the instructions on the Printhead Troubleshooting Checklist.

Cleaning Page (Mud Page) & Light Stripes

The Cleaning Page and Light Stripes test pages are automatically printed following a purge. It is used to flush the Printhead jets of any possible contamination or color mixed jets. It can also be printed on its own.





Cleaning Page

Figure 2 Light Stripes Test Page

Figure 1 Cleaning Page (Mud Page)

Color Bands, RGBK Dither

The large, secondary colored areas in this print reveal banding and weak jets.

Look for: Vertical "bars" or "bands" of much lighter color or a different hue running in-line in one or more of the solid fills.

Causes: A weak jet can cause banding; see the Weak/Missing Jets test print. Use Service Diagnostics to ensure that the printhead and drum thermals are correct. Follow the instructions on the Printhead Troubleshooting Checklist.







Figure 5 Color Bans



Figure 3 Blue Dither



Figure 4 Black Dither

Manufacturing Skew Margin

This print includes a blank page and Skew/Margin Test print. This print is used by Manufacturing and Engineering only.



Figure 2 Skew Margin

YMCKRGB Solid Fills

This test prints a single-sided, solid-fill print in all seven colors to show uniformity of fill. If colors are uneven or wrong, see IQ8 - Color is Uneven or Color is Wrong.

Look for:

- Even, uniform fill throughout each print.
- Wrinkles or deformity of the paper.
- Proper ink transfer.
- White striping or banding.



Figure 1 YMCKRGB Solid Fill Test Prints

Causes:

- Weak jets or improper Drum heating can cause uneven fills.
- To solve wrinkling, try different print media. Replace the Drum Maintenance Unit to correct streaking. Check the Drum Temperature Sensor for debris build-up on the sensor. Check to see if the Sensor is in improper contact with the Drum. See the Reverse Text test print. As a last resort to fix wrinkling, replace the Transfix Roller (REP 2.12), Transfix Load Module (REP 2.16), and Transfix Load Arms (REP 2.21).
- If there is poor transfer on one side, check to see if the transfix load arm assemblies are moving easily. Clean any contamination that may be interfering with the transfix arm assembly movement. If either of the transfix load arm assemblies are worn, replace the worn load arm assembly.
- If there are repeating white stripes on the print, there may be a problem with the X-Axis motion, see IQ17 White Stripes (Pinstripes).

Cyan Solid Fills

This test prints Cyan solid fills in five modes.

- 1x: Prints 1 page of Cyan solid fills single-sided. ٠
- 10x: Prints 10 pages of Cyan solid fills single-sided. ٠
- Continuous: Prints 999 pages of Cyan solid fills double-sided. .
- Adhere Ink Stick: Prints 20 pages of Cyan solid fills double-sided. ٠
- Cyan Refresh: Prints 20 pages of Cyan solid fills double-sided. ٠



Figure 1 Cyan Solid Fills

Magenta Solid Fills

This test prints magenta solid fills in five modes.

- 1x: Prints 1 page of Magenta solid fills single sided.
- 10x: Prints 10 pages of Magenta solid fills single sided.
- Continuous: Prints 999 pages of Magenta solid fills double-sided.
- Adhere Ink Stick: Prints 20 pages of Magenta solid fills double-sided. .
- Magenta Refresh: Prints 20 pages of Magenta solid fills double-sided. ٠



Magenta Solid

Figure 1 Magenta Solid Fills

Yellow Solid Fills

This test prints Yellow solid fills in five modes.

- 1x: Prints 1 page of Yellow solid fills single-sided. ٠
- 10x: Prints 10 pages of Yellow solid fills single-sided. ٠
- Continuous: Prints 999 pages of Yellow solid fills double-sided. ٠
- Adhere Ink Stick: Prints 20 pages of Yellow solid fills double-sided. ٠
- Yellow Refresh: Prints 20 pages of Yellow solid fills double-sided. ٠



Figure 1 Yellow Solid Fills

Black Solid Fills

This test prints Black solid fills in five modes.

- 1x: Prints 1 page of Black solid fills single-sided. ٠
- 10x: Prints 10 pages of Black solid fills single-sided. ٠
- Continuous: Prints 999 pages of Black solid fills double-sided. .
- Adhere Ink Stick: Prints 20 pages of Black solid fills double-sided. .
- Black Refresh: Prints 20 pages of Black solid fills double-sided. ٠



Black Solid

Figure 1 Black Solid Fills

Red Solid Fills

This test prints Red solid fills in two modes.

- 1x: Prints 1 page of Red solid fills single-sided.
- 10x: Prints 10 pages of Red solid fills single-sided.



Figure 1 Red Solid Fills

Green Solid Fills

This test prints Green solid fills in two modes.

- 1x: Prints 1 page of Green solid fills single-sided.
- 10x: Prints 10 pages of Green solid fills single-sided.



Figure 1 Green Solid Fill

Blue Solid Fills

This test prints Blue solid fills in two modes.

- 1x: Prints 1 page of Blue solid fills single-sided.
- 10x: Prints 10 pages of Blue solid fills single-sided.



Blue Solid

Figure 1 Blue Solid Fills

Manufacturing Skew and Margins

This print is used to gauge skew and margins on 2-sided prints.

For Skew:

• The measurement between the edge of the paper and the magenta frame should be within tolerance along the entire length of the top of the paper.

For example, the measurement on the top left side of the sheet should be the same as the measurement on the top right side of the sheet (within tolerance).

• To calculate skew: Measure the margin at the leading edge of each corner, and then take the difference between them.

For example, if the margin at the right leading edge corner is 5.1 mm, and the margin at the left leading edge corner is 4.9 mm, then the skew would be (5.1 - 4.9) = 0.2 mm. The skew tolerance for the following media types are:

- All sizes except envelopes and custom sizes: 0.0 +/- 0.89 mm
- Envelopes: 0.0 +/- 1.04 mm
- Evaluate Custom media using this formula: Skew Spec (mm) = 998.4*(width-12.5)^(-1.02), where width is in millimeters

For Margins:

- Measure from the magenta frame to the edge of the paper at the midpoint on the top and left-edge margin (right side of paper, left side of system) of the paper.
- The tolerance for margin is the margin +/- 2. See the Media Margin Specifications.

NOTE: The measurement for skew and margins for Side 1 and Side 2 may not match.

Check that the media is supported for the tray and the guides are properly adjusted.

If you have skew on simplex prints:

- In Trays 2, 3, 4, or 5 check for a worn Takeaway Roller or Pick Roller.
- In Tray 1, check for a worn Pick Roller.

This test print uses the tray selected in **Paper Source** on the **Paper Handling** menu. If you have skew on duplex prints, check for a worn Duplex Roller and verify that the Front Door is completely closed and latched on both the left and right sides. If the lead-edge margins are outside of tolerance, check the Preheater Flag.

Center Image Function

Center Image allows the user to shift the image left-and right. Depending on the amount of shift when shifting to the right, the right edge of the image may be clipped.

To access Center Image: Troubleshooting -> Service Tools -> at Printer Status Page, press Up + Down Arrow buttons -> Hidden Service Menu -> Center Image.



Skew and Margin Measurement

Figure 1 Skew and Margin Measurement

Chase Pages

A blank piece of paper is used to remove contamination from the Drum, Transfix Roller, and media path.



Figure 1 Chase Page

Oil Bar Chase

This test prints 3 pages. This print is used by Manufacturing.



Purge Efficiency

This print is used by Manufacturing and Engineering.





X-Axis Motion

For X-Axis Motion problems, see Solid Fill Test Prints. This print is used by Manufacturing and Engineering.



Figure 1 X-Axis Motion

Drop Mass Calibration

This print must be printed on Xerox Photo paper. Using a lower grade paper results in inaccurate measurements.



Figure 1 Drop Mass Calibration

Intensity CMYK

This print is used for Manufacturing only.



Figure 1 Head Roll



Figure 1 Intensity CMYK

This print is used for Manufacturing only.



Figure 1 Solid Fill Red Scan

Solid Fill Green Scan

This print is used for Manufacturing only.



Figure 1 Solid Fill Green Scan

Solid Fill Blue Scan

This print is used for Manufacturing only.



Figure 1 Solid Fill Blue Scan

Jet Substitution Mode

Jet Substitution Mode provides a solution for print-quality problems when weak or missing jets are not recoverable by cleaning. This mode substitutes adjacent jets to print the area normally covered by the problem jet. Perform a cleaning procedure before disabling any jets. Substituted jets are stored and remain disabled until Jet Substitution Mode is turned Off. Substituted jets can recover on their own. When this occurs, jet sub can be turned off.

Jet Substitution Mode (see Figure 1), is not effective in correcting situations where 3 or more consecutively numbered jets (1) are weak or missing. Jet substitution requires the presence of a numerically adjacent functional jet to replace the affected jet. As an example, If jet 2 is missing, jet 1 or jet 3 could substitute for 2. If jets 1, 2, and 3 were all missing, no jet is available to substitute for jet 2. Once Jet Substitution mode is enabled for a particular jet, the Light Stripes Test page displays a black line (2) underneath the substituted jet number. It is normal for the substituted jet to appear either blank or filled on Light Stripes Test page. Also, Saved & Stored jobs stored on the hard drive will not print correctly because they were rendered before the Jet Substitution was made.



Figure 1 Jet Substitution Exception

Enabling Jet Substitution Mode

To correct print-quality problems, refer to the **Eliminate Light Stripes** test page to determine which jets are weak or missing.

To access Jet Substitution Mode from the Control Panel: Control Panel Menu -> Troubleshooting -> Print Quality Problems -> Eliminate Light Stripes.

- 1. Select Jet Substitution Mode and press the OK button.
- 2. Select the color of the weak or missing jet. To substitute the jet:
 - a. Use the **Up Arrow** or **Down Arrow** button to select the number of the affected jet. Press the **OK** button.
 - b. Select **Save Change** and **Exit**, and then press the **OK** button to complete the procedure.

After substituting a jet, print the Light Stripes Test page (Control Panel Menu -> Troubleshooting -> Print Quality Problems -> Eliminate Light Stripes -> Light Stripes Test) to verify Jet Substitution mode is enabled for the correct jet.

Other options on the Eliminate Light Stripes menu are:

- Light Stripes Test prints the Light Stripes Test page. Use this print to detect weak, missing, or discolored jets.
- Start Basic Clean Cycle initiates a cleaning cycle and print a Cleaning page and a Light Stripes Test page.
- Advanced requests a jet color and number, and then attempts to purge the jet by printing five, double-sided pages using a range of jets and color that include the affected jet. After the purge pages, the printer performs a cleaning cycle, prints a **Cleaning** page and a **Light Stripes Test** page.

Disabling Jet Substitution Mode

After replacing the Printhead, disable Jet Substitution Mode to restore normal operation.

To disable Jet Substitution Mode from the Control Panel: Control Panel Menu -> Troubleshooting -> Print Quality Problems -> Eliminate Light Stripes.

- 1. Select **Start Basic Cleaning Cycle** to begin a cleaning cycle, **Advanced** to select the Jet color, or **Jet Substitution Mode**.
- 2. Scroll to Turn Jet Substitution Mode Off and press OK.
- 3. Print the **Eliminate Light Stripes Test** page to verify that **Substitution Mode** is disabled for all jets.

Image Specifications Maximum Print Area

Table 1 Image Specification

Characteristic	Specification
Maximum Print Area	206 mm x 346 mm
Guaranteed Image Area	206 mm x 346 mm

Image Alignment (Skew)

Image Alignment is the location of the largest possible image with respect to the edges of the media. Margins are measured perpendicular to the respective media edges. The leading edge of the media, on a given image, is the edge that first exits the printer. Image skew is measured along the leading edge of the media and must reside completely within the allowable leading edge area. This specification applies to both simplex and duplex images.



Figure 1 Maximum Print Area

NOTE: To derive the skew specification for a particular media size, measure the width of the leading edge in millimeters. Next, divide the measured length by 1000, then multiply by the appropriate Image Area Tolerance specification in milli-radians. For example, A 5 in. by 7 in. custom page would have a leading edge width, in millimeters, of 127 mm (5 in.). Dividing the 127 by 1000 (127/1000), then multiplying the result by the 11 milli-radians specification results in a maximum skew of 1.4 mm (127/1000) x 11 = 1.4 mm.

Table 2 Printer Skew Specifications

Characteristic	Specification
Printed Left Side Margin	5.0 mm <u>+</u> 2.0 mm (0.197 in. <u>+</u> .080 in.)
Leading Edge Margin	5.0 mm <u>+</u> 1.3 mm (0.197 in. <u>+</u> .050 in.)
Image Area Tolerance Zone	
Image Skew, Envelopes	11.5 milli-radians max across the width of the leading edge.
Image Skew, 3x5 Card	14.0 milli-radians max across the width of the leading edge.
Image Skew, All other sizes	7.0 milli-radians max across the width of the leading edge.
Resolution/ Gradation	Fast Color: 225 x 400 dpi
	• Standard: 300 x 450 dpi
	Enhanced: 525 x 450 dpi
	• Photo: 525 x 2400 dpi

Maximum Print Area - Envelope

Maximum Print Area

- Lead Edge Margins: 0.5 mm
- Trail Edge Margins: 0.5 mm
- Right/Left Margins: 0.5 mm

The listed envelopes have Right/Left Margins at 0.15 mm.

• #10 Envelope, DL Envelope, C5 Envelope, #6 3/4 Envelope, and 6 x 9 Envelope



Figure 3 Maximum Print Area - Envelope

4 Repairs and Adjustments

Disassembly Overview

Disassembly Overview.....

Cover

REP 1.1 Front Door/ Tray 1 (MPT) Assembly	4-5 4-6
REP 1.6 Control Panel	4-7
REP 1.7 Exit Cover	4-7
REP 1.8 Ink Loader	4-8
REP 1.9 Ink Loader Bezel	4-9
REP 1.10 Left Side Cover	4-10
REP 1.11 Right Side Cover	4-11
REP 1.12 Drum Maintenance Door	4-11
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Disassembly Overview

This chapter contains the removal procedures for field-replaceable parts listed in Chapter 5, Parts List. In most cases, the replacement procedure is simply the reverse of the removal procedure. In some instances, additional steps are necessary and are provided for replacement of the parts.

WARNING

Unplug the AC power cord from the wall outlet before servicing the printer.

Standard Orientation of the Printer

When needed, printer orientation is called out in the procedure as an aid to locating parts. Refer to Figure 1 to identify the right, left, front, and back sides of the printer.



Figure 1 Printer Orientation

Preparation

CAUTION

Following reassembly, but before restoring power, be sure the components are all in their home positions, otherwise damage to the printer will occur. Refer to the Adjustment procedures at the end of this chapter for procedures on setting components to their home positions. Before you begin any removal procedure:

- 1. Switch off the printer power and disconnect the power cord from the wall outlet.
- 2. Disconnect all computer interface cables from the printer.
- 3. Wear an electrostatic discharge wrist strap to help prevent damage to the sensitive electronics of the printer circuit boards.
- 4. Allow adequate time for the printer to cool.

NOTE: Names of parts that appear in the removal and replacement procedures may not match the names that appear in the Parts List. For example, a part called the Registration Chute Assembly in a removal procedure may appear on the Parts List as Assembly, Chute REGI.

Notations in the Procedures

- The notation "(REP X.X.X)" points to a prerequisite procedure in the current disassembly procedure being performed.
- The notation "PLX.X.X" indicates that this component is listed in the Parts List.
- The notation "XX in.-lbs. is the torque specification for the subject fastener.
- Bold arrows in an illustration show direction of movement when removing or replacing a component.
- The notation "(plastic T-20)" or "(metal, T-20)" refer to the type of screw being removed. Plastic refers to a metal, self-tapping screw used to secure parts onto plastic. Metal refers to metal, fine-threaded screws used to secure parts onto metal.

Fastener Types

CAUTION

Many parts are secured by plastic tabs or hooks. Do not over flex or force these parts.

Refer to Recommended Tool Kit in the Service Call Procedures Chapter.

Recommended Tool Kit

CAUTION

Screws in plastic are torqued to 12 in.-lbs., metal to 15 in.-lbs., unless otherwise specified. Irreversible damage can result from over tightening the screws into plastic parts. Always use the correct type and size screw. Using the wrong screw can damage tapped holes.

Follow these guidelines for fasteners in this product:

- Always use the correct type and size screw; coarse thread, brass-colored screws into plastic and fine thread, silver-colored screws into metal.
- Using the wrong screw can damage tapped holes. This applies to the yellow reversethreaded screws on the Drum.
- Do not use excessive force to remove or install either a screw or a printer part. If using a power driver to install a screw into plastic, start the screw by hand.
- If you strip out threads in the plastic chassis, a silver-blue-tinted thread repair screw (included in the hardware kit) can be used to correct the problem.
- If you remove a silver-blue-tinted thread repair screw during disassembly, replace the screw the same location or additional damage to the printer will occur.
- When you re-install a screw into plastic, always rotate the screw 1/2 turn counter-clockwise to allow the screw to seat into the screw-hole's threads. You can usually feel and hear it seat. This ensures the screw's threads align into the existing threads of the screw hole instead of cutting new threads which will weaken the joint and possibly strip it.

Fasteners used in the product appear in Figure 2. Removal procedures include dimensional specifications for screws being removed.





REP 1.1 Front Door/ Tray 1 (MPT) Assembly

Parts List on PL 1.1 Item 1

Removal

- 1. Open the Front Door and release the 2 Stopper Straps.
- 2. Open the plug cover and disconnect P/J129 from the right side of the Front Door.
- 3. Release the wiring from cable retainers.
- 4. While releasing the left hinge pin from the frame, slide the Door to the right side to remove the Front Door (Tray 1).



Figure 1 Releasing the Stopper Straps and Removing the Front Door

Replacement

Be sure to push the Retainer upward and toward the front to lock it in place.



Figure 2 Installing the Retainer

REP 1.5 Control Panel Cover

Parts List on PL 1.1 Item 5

Removal

CAUTION

Use care not to damage the Control Panel Wiring Harness while removing or replacing the Control Panel Cover.

CAUTION

Do not disconnect the ZIF cable and remove the Control Panel unless necessary, as the Control Panel connector is fragile and can be easily damaged, even when correctly following the replacement procedures.

- 1. Open the Exit Cover.
- 2. Open the Front Door.



Figure 1 Opening the Exit Cover and Front Door

3. Using either your fingers or a small flathead screwdriver, loosen the Control Panel Cover on the left side, and then slide the Cover forward while lifting up to remove it from the printer.



Figure 2 Removing the Control Panel Cover

REP 1.6 Control Panel

Parts List on PL 1.1 Item 6

Removal

- 1. Remove the Control Panel Cover (REP 1.5).
- 2. Remove the Right Side Cover (REP 1.11).

CAUTION

Failure to take care when disconnecting or reconnecting the ZIF cable may result in erratic operation such as intermittent backlight and garbled or missing text.

CAUTION

Do not disconnect the ZIF cable and remove the Control Panel unless necessary, as the Control Panel connector is fragile and can be easily damaged, even when correctly following the replacement procedures.

CAUTION

Be sure to unlock the ZIF connector to release the ribbon cable. Be careful when disconnecting the ribbon cable to prevent damaging the cable. DO NOT pull on the cable until you have released the locks.

NOTE: The ribbon cable connector is the locking type connector and requires unlocking prior to removal and locking after reinstallation of the cable in order to make proper connection.

- 3. Disconnect the wiring harness connector P/J403 from the I/O Board.
- 4. Lift and remove the Control Panel.



Figure 1 Removing the Control Panel

Replacement

CAUTION

Be sure to lock the ZIF connector after connecting the ribbon cable to the I/O Board.

REP 1.7 Exit Cover

Parts List on PL 1.1 Item 7

Removal

- 1. Lift the Exit Cover from the chassis.
- 2. Release the Upper Duplex Guide from the Exit Cover.
- 3. Release the rails from the Exit Cover.
- 4. Flex the Exit Cover to release the left and right notches on the Cover from the printer and lift the Cover toward the rear of the printer
- 5. Slide the Exit Cover out from the Exit Module.



Figure 1 Removing the Exit Cover

Replacement

Lift the Upper Exit Guide slightly, and engage the pins on the Upper Exit Guide with the slots on the Exit Cover before inserting the cover hinge pins into the pivot points in the printer frame.

REP 1.8 Ink Loader Parts List on PL 1.1 Item 8

Removal

CAUTION

Allow adequate time for the printer to cool before servicing the Ink Loader.

- 1. Remove the Control Panel Cover (REP 1.5).
- 2. Remove the Left Side Cover (REP 1.10).
- Remove the Right Side Cover (REP 1.11).
 Remove the Exit Cover (REP 1.7).

CAUTION

Be careful not to damage the Ink Melt Plates.

- 5. Lift the Ink Loader to access the 2 wiring harness connectors.
- 6. Disconnect the Ink Loader Power harness connector P/JAC1 from the Electronics Module.
- 7. Disconnect the Data Cable connector P/J702 from the Ink Loader Board.
- 8. Lift and remove the Ink Loader.



Figure 1 Removing the Ink Loader

Replacement

CAUTION

Be careful not to damage the Melt Plates.

The Ink Loader data harness comes from the side of the chassis and plugs directly into the Ink Loader.

- 1. Place the front of the Ink Loader under the Exit Module while tilting the rear of Ink Loader upward.
- 2. Connect the Ink Loader Power wiring harness connector P/JAC1 to the Electronics Module.
- 3. Connect the Data Cable connector P/J702 to the Ink Loader Board.
- 4. Transfer the Ink Sticks to the replacement Ink Loader.



Figure 2 Installing the Ink Loader

REP 1.9 Ink Loader Bezel

Parts List on PL 1.1 Item 9

Removal

- 1. Remove the Control Panel Cover (REP 1.5).
- 2. Remove the Left Side Cover (REP 1.10).
- 3. Remove the Right Side Cover (REP 1.11).
- 4. Remove the Exit Cover (REP 1.7).
- 5. Remove the Ink Loader (REP 1.8).
- 6. Open the Ink Loader Cover.
- 7. Push the Ink Loader Cover Left and Right Handles towards the outer side of the Ink Loader Assembly and release the Handles.



Figure 1 Releasing the Handles

8. Push the lnk Loader Bezel outward and the lnk Loader Assembly towards the open side to release the tabs from the lnk Loader Assembly.



Figure 2 Removing the Ink Loader Assembly

CAUTION

Be careful not to damage the Ink Melt Plates.

9. Slide the Ink Loader Assembly out from the Bezel.



Replacement

Be sure to place the rail of the Ink Loader Assembly underneath the tab of the Bezel.



Figure 4 Aligning the Rail and Tab

REP 1.10 Left Side Cover

Parts List on PL 1.1 Item 10

Removal

- 1. Open the Exit Cover and Front Door.
- 2. Remove the Control Panel Cover (REP 1.5).
- 3. Remove 1 screw (metal, T-20) that secures the Left Side Cover.
- 4. Release the hooks on the Cover from the printer and remove the Left Side Cover.



REP 1.11 Right Side Cover

Parts List on PL 1.1 Item 11

Removal

- 1. Open the Exit Cover and Front Door.
- 2. Remove the Control Panel Cover (REP 1.5).
- 3. Remove 1 screw (metal, T-20) that secures the Right Side Cover.
- 4. Pull the Right Side Cover forward to release the hooks located near the AC connection and release the front hook while pulling the Right Side Cover outward at the top.



Figure 1 Removing the Right Side Cover

REP 1.12 Drum Maintenance Door

Parts List on PL 1.1 Item 12

Removal

1. Open the Drum Maintenance Door.



Figure 1 Opening the Drum Maintenance Door

2. Press the left and right sides of the Drum Maintenance Door towards the middle to release the tabs from the Right Cover and pull the Drum Maintenance Door towards you to remove it.



REP 1.13 I/O Access Door

Parts List on PL 1.1 Item 13

Removal

1. From the rear of the printer, pry the I/O Access Door outward while pushing it towards the front and remove the Access Door.



Figure 1 Removing the I/O Access Door

REP 1.14 Waste Tray Cover Parts List on PL 1.1 Item 14

Removal

- 1. Remove the Control Panel Cover (REP 1.5).
- 2. Remove the Left Side Cover (REP 1.10).
- 3. Remove the Right Side Cover (REP 1.11).
- 4. Remove the Exit Cover (REP 1.7).
- 5. Remove the Ink Loader (REP 1.8).
- 6. Remove the Printhead (REP 2.3).
- 7. Remove the Waste Tray (REP 1.15).
- 8. From the left side of the printer, remove the KL-Clip.



Figure 1 Removing the KL-Clip

9. Remove the X-Axis Bias Spring (REP 2.24).

- 10. Remove 1 screw (metal, T-20) that secures the X-Axis Bias Spring Retainer to the chassis and remove the X-Axis Bias Spring Retainer.

Figure 2 Removing the X-Axis Bias Spring Retainer

11. Unlock the Wiper Blade and raise the Wiper Blade to the top of its travel.



Figure 3 Unlocking and raising the Wiper Blade

12. Disconnect the wiring harness connector P/J102 from the I/O Board.



Figure 4 Disconnecting Wiring Harness Connector

- 13. Lift the center of the Waste Tray Cover and release the right side hook.
- 14. Move the Cover towards the back to release the 2 tabs from the chassis.
- 15. Pull the Waste Tray Cover towards the right side to release the left hook and remove the Cover.



REP 1.15 Waste Tray

Parts List on PL 1.1 Item 15

Removal

- 1. Open the Drum Maintenance Door.
- 2. Pull the Waste Tray out from the printer.

Figure 1 Removing the Waste Tray

REP 1.16 Drum Maintenance Unit

Parts List on PL 1.1 Item 16

Removal

1. Open the Drum Maintenance Door.



Figure 1 Opening the Drum Maintenance Door

2. Pull the Maintenance Unit out from the printer.



Figure 2 Removing the Drum Maintenance Unit

REP 1.17 Tray 1 Arm Parts List on PL 1.1 Item 17

Removal

1. Open the Tray 1 at about 30 degree angle.



2. Push the Arm towards the inside to release the Arm from the notch.

3. Rotate the Tray 1 Arm upward around a 90 degree angle to release the Arm from the open slot on Tray 1.



Figure 3 Removing the Tray 1 Arm



REP 1.18 Tray 1 (MPT) Pick Roller Assembly

Parts List on PL 1.1 Item 18

Removal

- 1. Remove Tray 1 (REP 1.1).
- 2. Remove the 2 KL Clips on the left and right sides.
- 3. Remove the Gear.



Figure 1 Removing the KL Clips and Gear

4. Lift the black Stopper and push towards the left side as shown in Figure 2.



Figure 2 Releasing the Stopper

- 5. Remove the 2 bearings on the left and right sides.
- 6. Slide the cover towards one side to remove it from the shaft.



Figure 3 Removing the Bearings and Cover

- 7. Open Tray 1 to place the Front Door at the standing position.
- 8. Push the shaft towards one side while sliding it outward to remove the Pick Roller Assembly.

Replacement

Be sure to press on the tray downward in order to rotate the Stopper and seat it in the correct position.



Figure 4 Removing the Pick Roller Assembly



Figure 5 Positioning the Stopper

REP 2.1 Funnel Cap

Parts List on PL 2.1 Item 1 Removal

WARNING

Allow adequate time for the printer to cool before servicing. The Printhead could still be hot.

- 1. Remove the Control Panel Cover (REP 1.5).
- 2. Remove the Left Side Cover (REP 1.10).
- 3. Remove the Right Side Cover (REP 1.11).
- 4. Remove the Exit Cover (REP 1.7).
- 5. Remove the Ink Loader (REP 1.8).
- 6. Release the Funnel Cap from the left and right pins.
- 7. Lift and remove the Funnel Cap.



Figure 1 Removing the Funnel Cap

REP 2.2 Jetstack Cap

Parts List on PL 2.1 Item 2

Removal

WARNING

Allow adequate time for the printer to cool before servicing. The Printhead could still be hot.

- 1. Remove the Control Panel Cover (REP 1.5).
- 2. Remove the Left Side Cover (REP 1.10).
- 3. Remove the Right Side Cover (REP 1.11).
- 4. Remove the Exit Cover (REP 1.7).
- 5. Remove the Ink Loader (REP 1.8).
- 6. Remove the Funnel Cap (REP 2.1).
- 7. Release the Jetstack Cap from the left and right pins.
- 8. Lift and remove the Jetstack Cap.



Figure 1 Removing the Jetstack Cap

REP 2.3 Printhead Assembly

10. Lower the Wiper Blade to its lowest position by rotating the Wiper Drive Gears.

Parts List on PL 2.1 Item 3 Removal

WARNING

Disconnect the Power Cord before servicing the printer. Line Voltage present on the Fuse and Fuse Holder Contacts.

NOTE: Use the Printhead Troubleshooting Checklist to troubleshoot Printhead operation before replacement. A copy of this checklist is included with the replacement Printhead. Return the completed checklist with the defective part if Printhead replacement is necessary.

When parked, the Printhead is held in place by pins that are captured by the left and right Printhead Restraints. If the Restraints are released, tension from the Printhead Tilt Spring will force the Printhead toward the Drum. Gradually release the spring tension when unlocking the Printhead Restraints.

WARNING

Allow adequate time for the printer to cool before servicing. The Roll Block that retains the Printhead Shaft remains hot longer than other nearby components.

CAUTION

To prevent the Printhead from contacting the Drum while releasing the Printhead Restraints, perform the Manual Printhead Parking procedure (ADJ 1.4) to move the Printhead away from the Drum.

CAUTION

Perform the Printhead removal steps in the order given and use the Printhead finger recesses to lift the Printhead from the chassis. Do not touch the Printhead Jetstack.

NOTE: For additional tips, refer to the Printhead Removal video (also available in the ColorQube 8570/8870 Training materials).

- 1. Remove the Control Panel Cover (REP 1.5).
- 2. Remove the Left Side Cover (REP 1.10).
- 3. Remove the Right Side Cover (REP 1.11).
- 4. Remove the Exit Cover (REP 1.7).
- 5. Remove the Ink Loader (REP 1.8).
- 6. Remove the Funnel Cap (REP 2.1).
- 7. Remove the Jetstack Cap (REP 2.2).
- 8. Place several sheets of paper between the Printhead and Drum to protect the Drum.
- 9. Hold the Printhead back.



Figure 1 Lowering the Wiper Blade

- 11. Use a small flat tip screwdriver to adjust the X-Axis Motor to center the Printhead and allow removing the Printhead Restraints.
 - Adjust counter-clockwise to remove the Printhead pin from the right Restraint (adjusting the Head to X-Axis Tilt position).
 - Turn the Motor counter-clockwise until resistance, then 1 rotation clockwise to set to tilt position.



Figure 2 Adjusting the X-Axis Motor

12. Insert a screwdriver into the Drum Maintenance Camshaft and rotate it clockwise to disengage the Head Tilt Gear.



Figure 3 Disengaging the Head Tilt Gear



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Figure 4 Head Tilt Gear Indicator

13. Move the Printhead Tilt Spring from its position on the Printhead to release its tension and hook it behind the notch as shown in Figure 5.



Figure 5 Releasing the Printhead Tilt Spring

- 14. Disconnect the Air Hose from the Purge Pump.
- 15. Pull the X-Axis Bias Spring and Hook out slightly, and then rotate downward to allow it to rest in detents provided on the frame as shown in Figure 6.



Figure 7 Removing the Printhead Restraint Screws

17. Shift the Restraint inwards toward the Printhead while lifting it.

16. Remove 1 screw (plastic, T-20) that secures each Restraint.



Figure 6 X-Axis Bias Spring Hook



Figure 8 Removing the Printhead Restraints
18. Remove the Roll Block on the left end of the Printhead Shaft.

NOTE: The check mark on the label indicates the proper orientation of the Roll Block.

Figure 9 Removing the Roll Block

19. Disconnect the Printhead Heater wiring harness connector P/JAC2 and free the wiring harness from the restraint.



- 20. Remove the Printhead Data ribbon cable retaining clip.
- 21. Disconnect the Printhead Fuse connector P/J132.



Figure 11 Removing the Ribbon Cable Retaining Clip

- 22. Remove 2 screws (metal, T-20) that secure the Ground cable.
- 23. Push the Air Hose into the chassis.
- 24. Hold and lift the Printhead using the finger recesses and place the ends of the shaft in the cradle notches near the top of the frame as shown in Figure 12.



CAUTION

Be sure to unlock the ZIF connector to release the ribbon cable. Be careful when disconnecting the ribbon cable to prevent damaging the cable. DO NOT pull on the cable until you have released the lock.

NOTE: The ribbon cable connector is the locking type connector and requires unlocking prior to removal and locking after reinstallation of the cable in order to make adequate connection. Be sure to use the Unlock/Lock Tool to disconnect the ZIF connector as shown in Figure 13 (see details in Unlocking/Locking the ZIF Connector procedure).

- 25. Disconnect the ribbon cable P/J180 from the Printhead Assembly.
- 26. Use the Unlock/Lock tool to unlock the ZIF connector P/J240 from the Printhead by gently lifting up on the ends of the connector lock as shown in Figure 13.



Figure 13 Printhead Cable Connections

Finger Recesses

27. Use the finger recesses to hold and lift the Printhead away from the printer.

Figure 14 Removing the Printhead

Repairs and Adjustments REP 2.3

Unlocking/ Locking the ZIF Connector

The printer uses a special, low-impedance cable to transmit the amplified drive waveform from the Wave Amp to the Printhead piezo-crystals. A locking, zero insertion force (ZIF) connector secures the cable to the Printhead Assembly. Due to the ZIF connector's location, a special tool assist with unlock and lock the connector.

Precautions

• Be sure to properly unlock the ZIF connector before removing the cable. NEVER pull a ZIF cable from a locked connector.



Be sure to use the Unlock/Lock tool to secure the ZIF connector.



Be sure to insert the cable fully and squarely in the ZIF connector before locking the connector.



Be sure the connector is securely locked.



- A cable restraint clip is used to keep the drive cable from interfering with the Printhead's Funnel Cap. Be sure the cable is properly restrained.
- Do not put sharp bends (creases) in the cable; particularly near the ends of the cable, it can crack the conductors and cause 99,059 and 99,060 Vss and Vpp faults.

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Replacement

Follow these steps to install the replacement Printhead.

1. Set the Head Tilt Gear to its home position by performing the Homing the Printhead Forward to Print Position procedure (ADJ 1.2).

NOTE: Be sure the gear (under the Process Drive) is at 6 o'clock position. Pressing down on the DMU handle will force the DM cam gear to its 6:00 position. Hold it in this position while you install the Process Drive Assembly.



Figure 19 Gear Alignment

NOTE: Be sure the Head Tilt Gear aligns with the Head Tilt Drive Gear (missing tooth facing forward).



- 2. If the Wiper Blade is not at its lowest position, rotate the Wiper Drive Gears to lower the Wiper Blade to the bottom of its travel.
- 3. Rest the Printhead in the Cradle Notches and attach the 2 ribbon cables. Be sure to fully insert and then lock the ZIF cable.

CAUTION

Do not push hard on the cable or otherwise bend the end of the cable.

NOTE: Be sure to use the Unlock/Lock Tool to secure the ZIF connector as shown in Figure 21 (see details in Unlocking/ Locking the ZIF Connector procedure).

- 4. Gently place the end of the Wave Amp Drive cable P/J240 squarely into the ZIF connector.
- 5. While maintaining slight downward pressure on the cable to keep the end in the connector gently reach in with the tool to squarely push the lock closed.





Figure 21 Securing the ZIF Connector

- 6. Seat and lock the Ribbon Cable P/J180.
- 7. Lower the Printhead Assembly into its mounts. The Printhead should tilt forward in the print position.
- 8. Route the Purge Pump Hose through the frame and connect it to the Purge Pump.

9. Install the Roll Block on the left end of the Printhead Shaft. Orient the Roll Black as shown on the label attached to the frame (see Figure 22). The check mark indicates the correct orientation.



Figure 22 Roll Block Orientation

10. Set the X-Axis Bias Hook and spring on the left end of the Printhead Shaft as show in Figure 23. Ensure the point of the hook is centered in the shaft and the rest of the hook floats freely.



Figure 23 X-Axis Bias Hook Orientation

11. Properly route the wiring harnesses and reconnect the Printhead Heater wiring harness connector P/JAC2.



NOTE: Errors 91,720 ~ 91,723 are often the result of Printhead interference by the Printhead Heater wiring harness. Make certain the wiring harness is properly restrained and does not obstruct Printhead movement.

- 12. Install the left and right Printhead Restraints. Check that the Restraints do not obstruct the Roll Block.
- 13. Be sure the Tilt Spring on the left Restraint is properly positioned in the notch on the back of the Printhead and does not pinch the Purge Pump Hose.





Figure 26 Installing the Retaining Clip

- 15. Install the Ground Strap and 2 screws.
- 16. Install the Jetstack Cap.
- 17. Install the Funnel Cap.
- 18. Install the Ink Loader.
- 19. Perform the Homing the Printhead Forward to Print Position procedure (ADJ 1.2) to home the Head Tilt Gear.
- 20. Reassemble the remaining components, and turn the printer power on.
- 21. Print the Light Stripes page. Check if any jets are being substituted. If necessary, use the Control Panel to reset the jet substitution.
- 22. Package the defective Printhead and completed Printhead Checklist in the replacement part's packaging.

REP 2.4 Drum Assembly

Parts List on PL 2.1 Item 4

Removal

NOTE: For additional tips, refer to the Drum Assembly Removal video (also available in the ColorQube 8570/8870 Training materials).

- 1. Remove the Control Panel Cover (REP 1.5).
- 2. Remove the Right Side Cover (REP 1.11).
- 3. Remove the Control Panel (REP 1.6).
- 4. Remove the Left Side Cover (REP 1.10).
- 5. Remove the Drum Maintenance Unit (REP 1.16).
- 6. Remove the Exit Cover (REP 1.7).
- 7. Remove the Ink Loader (REP 1.8).
- 8. If the Printhead is tilted forward, perform Printhead Parking procedure (ADJ 1.4) to park the Printhead.
- 9. If the Wiper Assembly is in raised position, perform Wiper Blade Alignment procedure (ADJ 1.1) to place the Printhead Wiper in its lowered, home position.
- 10. Remove the Media Drive Assembly (REP 4.5).
- 11. Remove the Y-Axis Belt (REP 2.5). Relieve tension on the belt by pulling the end of the Spring Arm toward the front. With the tension released, slide the belt off the pulley.
- 12. Remove the Exit Module (REP 3.13).
- 13. Remove the Lower Inner Duplex Guide (REP 3.2).
- 14. Remove the Inner Simplex Guide and Pre-Deskew Sensor (REP 3.1).
- 15. Remove the Outer Duplex Guide (REP 3.4).
- 16. Remove the Upper Duplex Guide and Solenoid (REP 3.5).
- 17. Remove the Stripper Carriage Assembly and Transfix Roller (REP 2.13).
- 18. Remove the Transfix Arm Kit with Pins (REP 2.21).
- 19. Remove the Drum Temperature Sensor (REP 6.5).

CAUTION

Use care when releasing the Transfix Module Spring Hooks. Move the lever handle towards the center of the printer as indicated in Figure 1.

CAUTION

Be careful not to pry against the Transfix Cams as shown in Figure 1 to prevent damaging the Cam.

20. Insert a T-20 Torx or T-15 Torx bit through the right side slotted hole in the Transfix Load Module. Engage the hole at the back of the module, and lever the module's spring cam towards the center of the printer while disconnecting the spring hooks from the Transfix Load Arms. Repeat this process for the left side.



Figure 1 Detaching the Transfix Load Module Spring Hooks

- 21. Disconnect the Drum Cooling Fan wiring harness connector P/J903 from the I/O Board.
- 22. Remove 3 screws (plastic, T-20) that secure the Drum Cooling Fan to the Drum and remove the Fan.

NOTE: Note the location of the Ground Plate behind the Fan.



Figure 2 Removing the Drum Cooling Fan

- 23. Disconnect the Drum Heater Load Dump wiring harness connector P/J120, Drum Heater wiring harness connector P/J114, and Encoder wiring harness connector P/J122 from the Right Side Harness.
- 24. Release the wiring harnesses from the restraint.
 - P/J122 P/J120 P/J114 s8570-347

Figure 3 Disconnecting the Wiring Harness Connectors

- 25. Remove 3 screws (metal, 5.5 mm hex-head), 2 washers, and the Ground Plate from the right side of the Drum Assembly as shown in Figure 4.
- 26. Remove 3 screws (metal, T-20) and 3 washers from the left side of the Drum Assembly.
- 27. Lift the Drum Assembly straight out of the chassis using the metal grips provided.



NOTE: Do not rest the Drum Assembly on the pulley. Allow the pulley to overhang the surface and rest the assembly on its feet.

28. Place the Drum Assembly on its feet on a flat surface with the wheel overhanging the surface area as shown in Figure 5. Do not rest the Drum Assembly on the pulley.



Figure 5 Drum Assembly Placement

Replacement

NOTE: For additional tips, refer to the Drum Assembly Installation video (also available in the ColorQube 8570/8870 Training materials).

CAUTION

The Drum Temperature Sensor wiring harness is routed through the Exit Module. Use care when reinstalling to avoid damaging the sensor.

NOTE: To help seat the Drum properly, steps 2-6 provide an explicit order of placement for installing the screws to secure the Drum Assembly to the chassis.

- 1. Seat the Drum Assembly into the chassis.
- 2. Align the screw holes in the left and right sides of the Drum Assembly to the holes in the chassis sides.
- 3. Install 1 screw (metal, T-20) and washer at the rear position on the left side to hold the Drum Assembly; keep the screw loose.
- 4. Install 1 screw (metal, hex-head) and washer at the rear position on the right-side to hold the Drum Assembly; keep the screw loose.
- 5. Align the clevis pins on the Transfix Load Arms with the holes in the mounting ears on the Drum Assembly. The Transfix Load Arms should point in the opposite direction as the Drum Thermistor. Position the Cam Followers on the Transfix Load Arms under the Transfix Cams.
- 6. Insert the Clevis Pins through the clevis and the mounting ears on the Drum Assembly (insert the pins from the outside). Check that the O-ring on each Clevis Pin is inside the chassis.



Figure 6 Installing the Transfix Load Arm Clevis Pins

CAUTION

Ensure to move the Spring Cam towards the center of the printer. Applying pressure in the wrong direction can damage the Transfix Load Module.

CAUTION

Be careful not to pry against the Transfix Cams as shown in Figure 7 to prevent damaging the Cam.

7. Insert a T-20 Torx bit through the right side slotted hole in the Transfix Load Module. Engage the hole at the back of the module, and lever the module's spring cam towards the center of the printer while connecting the spring hooks to the Transfix Load Arms. Repeat this process for the left side.



Figure 7 Attaching the Transfix Load Module Arm Cam Springs

- 8. Install the bottom screws (metal, T-20), one on each side, keeping them loose.
- 9. Install the front screws (metal, hex-head) (with a washer and Ground Plate), one on each side, keeping the screws loose.
- 10. Tighten and torque the six screws to 25 in.-lbs. in the following order: first back screws on both sides, second bottom screws on both sides, and third front screws on both sides.
- 11. Seat the Exit Module in the chassis by first engaging the 2 front locating pins, and then the rear locating pins. Connect the Drum Temperature Sensor wiring harness.

NOTE: Rotate the Drum Assembly to verify that the Drum rotates freely. If the Drum is not rotated freely, check the Drum Maintenance Cam at 6 o'clock position.



Figure 8 Installing the Exit Module

NOTE: After installing the Exit Module, perform the Wiper Blade Alignment procedure (ADJ 1.1). The printer may report errors 91,720~91,723 if the Wiper is misaligned.

- 13. Pull the lower end of the Y-Axis Spring Arm toward the front of the printer and install the Y-Axis Belt first on the motor pulley, and then on the drum pulley. Align the grooves of the belt with those on the motor pulley. Check that the cross-ribs are away from the pulleys.
- 14. Install the Media Drive and connect the wiring harness.
- 15. Connect the Drum Heater Load Dump wiring harness connector P/J120 to the Right Side Harness.
- 16. Connect the Drum Heater wiring harness connector P/J114 to the Right Side Harness.
- 17. Dress the left side cabling into the retainers in the frame. Secure the Drum Heater and Drum Encoder harnesses under the retainer located on the Process Drive.
- 18. Install the Drum Fan and secure it with 3 screws (plastic, T-20). Torque the screws to 12 lbs.

NOTE: Use care not to pinch the Drum Heater or Drum Encoder harnesses between the chassis and fan shroud.

- 19. Route the Strip Solenoid wiring harness through the right side of the chassis and install the Upper Duplex Guide and solenoid on the 4 mounting pins on the frame.
- 20. Connect the Drum Fan wiring harness connector P/J903 to the I/O Board.
- 21. Install the Ink Loader.
- 22. Install the Lower Duplex Guide.

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- 23. Install the Inner Simplex Guide and Pre-Deskew Sensor.
- 24. Install the Control Panel.
- 25. Install all Covers and Doors.
- 26. Perform the Wiper Alignment Adjustment (ADJ 1.1).
- 27. Perform the Printhead Parking procedure (ADJ 1.4).
- 28. Perform the Head Tilt Gear Homing procedure (ADJ 1.2).
- 29. Perform the Process Drive Homing Procedure (ADJ 1.3).
- 30. Turn printer power on and print a Configuration page to test operation.

REP 2.5 Y-Axis Belt

Parts List on PL 2.1 Item 5

Removal

- 1. Remove the Control Panel Cover (REP 1.5).
- 2. Remove the Left Side Cover (REP 1.10).
- 3. Release tension on the Y-Axis Belt by pushing the end of the Spring Arm toward the front of the printer.
- 4. Hold tension with one hand while removing the Y-Axis Belt with the other.



Figure 1 Removing the Y-Axis Belt

REP 2.6 Printhead Wiper and Wiper Drive Belt

Parts List on PL 2.1 Item 6, PL 2.1 Item 7

Removal

NOTE: Place several sheets of paper between the Printhead and Drum before servicing the Printhead Wiper.

- 1. Remove the Control Panel Cover (REP 1.5).
- 2. Remove the Left Side Cover (REP 1.10).
- 3. Remove the Right Side Cover (REP 1.11).
- 4. Remove the Exit Cover (REP 1.7).
- 5. Remove the Ink Loader (REP 1.8).
- 6. Remove the Funnel Cap (REP 2.1).
- 7. Remove the Jetstack Cap (REP 2.2).
- 8. Remove the Printhead (REP 2.3).
- 9. Using the gears, position the Printhead Wiper Blade at the top of its travel.
- 10. Remove the KL-Clip and large drive gear on the left side of the printer.
- 11. Hold the Wiper while rotating the small drive gear. This lowers the left end of the wiper producing slack in the Wiper Belt. Remove the Wiper Belt from the Wiper Clip to release the Wiper.



Figure 1 Removing the Printhead Wiper Belt and Wiper Drive Belt

Replacement

1. When reinstalling the belt into the wiper clip, place the belt partly on the clip, and then press the center of the clip with a small needle-nose pliers until the belt is secured in the clip.



Figure 2 Connecting the Printhead Wiper Blade and Belt

- 2. Perform the Wiper Blade Adjustment procedure (ADJ 1.1) to position the Wiper Blade so that both ends are all the way down following reassembly. Also, make sure the metal portion of the blade is nearest the Drum Assembly.
- 3. Install the Printhead.
- 4. Perform the Head Tilt Gear Homing procedure (ADJ 1.2).
- 5. Perform the Process Drive Homing procedure (ADJ 1.3).
- 6. Turn printer power on to check wiper operation.

REP 2.8 Purge Pressure Pump

Parts List on PL 2.1 Item 8

Removal

- 1. Remove the Control Panel Cover (REP 1.5).
- 2. Remove the Left Side Cover (REP 1.10).
- 3. Disconnect the Purge Pump Hose from the Pump.
- 4. Disconnect the wiring harness connector P/J103 from the Purge Pressure Pump.
- 5. Remove 3 screws (plastic, T-20) that secure the Purge Pressure Pump to the chassis and remove the Pump.



Figure 1 Removing the Purge Pressure Pump

REP 2.9 Left and Right Printhead Restraints

Parts List on PL 2.1 Item 9 PL 2.1 Item 10

Removal

NOTE: When parked, the Printhead is held in place by pins that are captured by the left and right Printhead Restraints. If the pins are released, tension from the Printhead Tilt Spring forces the Printhead toward the Drum. Gradually release the tension when unlocking the Restraints.

WARNING

Allow adequate time for the printer to cool before servicing the printer.

- 1. Remove the Control Panel Cover (REP 1.5).
- 2. Remove the Left Side Cover (REP 1.10).
- 3. Remove the Right Side Cover (REP 1.11).
- 4. Remove the Exit Cover (REP 1.7).
- 5. Remove the Ink Loader (REP 1.8).
- 6. Remove the Funnel Cap (REP 2.1).
- 7. Remove the Jetstack Cap (REP 2.2).
- 8. Place several sheets of paper between the Printhead and Drum to protect the Drum.
- 9. Lower the Wiper Blade to its lowest position by rotating the Wiper Drive Gears.

- 10. Use a small flat tip screwdriver to adjust the X-Axis Motor to center the Printhead and allow removing the Printhead Restraints.
 - Adjust counter-clockwise to remove the Printhead pin from the right Restraint (adjusting the Head to X-Axis Tilt position).
 - Turn the Motor counter-clockwise until resistance, then 1 rotation clockwise to set to tilt position.



Figure 2 Adjusting the X-Axis Motor

11. Move the Printhead Tilt Spring from its position on the Printhead to release its tension and hook it behind the notch as shown in Figure 3.





Figure 1 Lowering the Wiper Blade

- 12. Disconnect the Air Hose from the Purge Pump.
- 13. Pull the X-Axis Bias Spring and Hook out slightly, and then rotate downward to allow it to rest in detents provided on the frame as shown in Figure 4.

Figure 4 X-Axis Bias Spring Hook

14. Remove 1 screw (plastic, T-20) that secures each Printhead Restraint.





Figure 6 Removing the Printhead Restraints

Replacement

Check that the Left Printhead Restraint does not interfere with the Roll Block. Also, make sure the Tilt Spring on the Left Printhead Restraint is properly positioned in the notch on the back of the Printhead and does not pinch the Air Hose.

Perform the Homing the Printhead Forward to Print Position procedure (ADJ 1.2) and Process Drive Alignment procedure (ADJ 1.3) before restoring printer power.



Figure 5 Removing the Printhead Restraint Screws

REP 2.11 Drum Maintenance Camshaft

Parts List on PL 2.1 Item 11

Removal

- 1. Remove the Front Door (REP 1.1).
- 2. Remove the Control Panel Cover (REP 1.5).
- 3. Remove the Left Side Cover (REP 1.10).
- 4. Remove the Right Side Cover (REP 1.11).
- 5. Remove the Drum Maintenance Unit (REP 1.16).
- 6. Remove the Lower Inner Duplex Guide (REP 3.2).
- 7. Remove the Inner Simplex Guide and Pre-Deskew Sensor (REP 3.1).
- 8. Remove the Preheater and Deskew Assembly (REP 2.20).
- 9. Remove the Drum Maintenance Pivot Plate (REP 2.17).
- 10. Remove the Process Drive (REP 4.13).
- 11. Slide the Camshaft to the right, release the bushing by carefully prying it from the ground plate, and move the left end of the Camshaft towards the rear of the printer. Next, move the Camshaft to the right, then lift the Camshaft through the slot while removing it to the right.



Figure 1 Removing the Drum Maintenance Camshaft

Replacement

NOTE: For additional tips, refer to the Drum Maintenance Camshaft Installation video (also available in the ColorQube 8570/8870 Training materials).

CAUTION

When reinstalling the Camshaft, line up the hole on the bushing with the metal ground plate. Do not bend the Ground Plate while installing the Camshaft.

When installing the Camshaft, position the flat side of the D-shaped cams towards the rear of the printer as shown in Figure 2. Align the hole in the white Head Tilt Gear with the arrow on the chassis to put the Head Tilt Gear in home position.

Perform the Printhead Forward to Print Position procedure (ADJ 1.2) and Process Drive Alignment procedure (ADJ 1.3) before restoring printer power.



Figure 2 Camshaft Position

REP 2.12 Transfix Camshaft

Parts List on PL 2.1 Item 12

Removal

CAUTION

Use care when releasing the Transfix Module Spring Hooks. Move your lever handle towards the center of the printer as indicated in Figure 1.

- 1. Open the Front Door (REP 1.1).
- 2. Remove the Control Panel Cover (REP 1.5).
- 3. Remove the Control Panel (REP 1.6).
- 4. Remove the Left Side Cover (REP 1.10).
- 5. Remove the Right Side Cover (REP 1.11).
- 6. Remove the Exit Cover (REP 1.7).
- 7. Remove the Ink Loader (REP 1.8).
- 8. Remove the Media Drive Assembly (REP 4.5).
- 9. Remove the Exit Module (REP 3.13).
- 10. Remove the Outer Duplex Guide (REP 3.4).
- 11. Remove the Upper Duplex Guide and Solenoid (REP 3.5).
- 12. Remove the Duplex Roller (REP 3.8).
- 13. Remove the I/O Board (REP 5.10).
- 14. Remove the Transfix Load Arms (REP 2.21).
- 15. Remove the Process Drive (REP 4.13).
- 16. Slide the camshaft to the right, making sure the bearing slides over to the gear. Move the camshaft down and slightly to the right, and then up to the left to remove it from the chassis.



CAUTION

When replacing the I/O Board screws, torque to no more than 12 in.-lbs. Overtightening these fasteners can result in irreversible damage to the chassis.

Position the corner of the I/O Board behind the Ground Plane before installing the screws. Be sure to secure the Ground in front of the I/O Board.

CAUTION

Incorrectly mounting the I/O Board may short +3.3V power.



Figure 2 Installing the I/O Board - Correct Ground Plane position in front of the I/O Board



Figure 1 Removing the Transfix Camshaft



Figure 3 Installing the I/O Board - Incorrect Ground Plane position behind the I/O Board

REP 2.13 Stripper Carriage Assembly/ Transfix Roller

Parts List on PL 2.1 Item 13, PL 2.1 Item 14

Removal

- 1. Remove the Control Panel Cover (REP 1.5).
- 2. Remove the Control Panel (REP 1.6).
- 3. Remove the Left Side Cover (REP 1.10).
- 4. Remove the Right Side Cover (REP 1.11).
- 5. Prop open the Exit Door.
- 6. Remove the Outer Duplex Guide (REP 3.4).
- 7. Remove the Upper Duplex Guide and Solenoid (REP 3.5).

CAUTION

Be sure to unlock the ZIF connector to release the ribbon cable. Be careful when disconnecting the one ribbon cable to prevent damaging the cable.

NOTE: The ribbon cable connector is the locking type connector and require unlocking prior to ribbon cable removal and locking after reinstallation of the cable in order to make adequate connection.

- 8. Remove 2 screws (plastic, T-20) that secure the I/O Board.
- 9. Move the I/O Board away from the printer to access the I/O Board Ground screw.



Figure 1 Removing the I/O Board Screws

- 10. Remove 1 screw (plastic, T-20) that secures the I/O Board Ground and the Transfix Roller Shaft Restraint, then remove the Restraint.
- 11. Hold the Transfix Roller and Stripper Blade with one hand, engage the end of the Transfix Roller Shaft with the Transfix Roller Shaft Restraint and pull the shaft out of the Stripper Carriage Assembly.



Figure 2 Removing the I/O Board Ground Screw and Transfer Roller Shaft

- 12. Lift the Stripper Carriage Assembly and Transfix Roller up and out of the chassis.
- 13. Remove the Stripper Carriage Assembly.



Figure 3 Removing the Transfix Roller Shaft Restraint

14. Remove the Transfix Roller from the Stripper Carriage Assembly.



Replacement

Position the corner of the I/O Board behind the Ground Plane before installing the screws. Be sure to secure the Ground in front of the I/O Board.

CAUTION

CAUTION

Incorrectly mounting the I/O Board may short +3.3V power.



Figure 5 Installing the I/O Board - Correct Ground Plane position in front of the I/O Board



Figure 6 Installing the I/O Board - Incorrect Ground Plane position behind the I/O Board



REP 2.15 Y-Axis Tension Spring

Parts List on PL 2.1 Item 15

Removal

- 1. Remove the Control Panel Cover (REP 1.5).
- 2. Remove the Left Side Cover (REP 1.10).
- 3. Release Y-Axis Belt tension by pulling the end of the Spring Arm toward the front of the printer. Remove the belt from the Drum Pulley, then the motor.
- 4. Remove the Y-Axis Spring using either a spring hook or pliers.

NOTE: Brace the printer to prevent movement while removing the spring.



Figure 1 Removing the Y-Axis Spring

REP 2.16 Transfix Load Module Parts List on PL 2.1 Item 16

Removal

- 1. Remove the Front Door (REP 1.1).
- 2. Remove the Control Panel Cover (REP 1.5).
- 3. Remove the Control Panel (REP 1.6).
- 4. Remove the Left Side Cover (REP 1.10).
- 5. Remove the Right Side Cover (REP 1.11).
- 6. Remove the Exit Cover (REP 1.7).
- 7. Remove the Ink Loader (REP 1.8).
- 8. Remove the Lower Inner Duplex Guide (REP 3.2).
- 9. Remove the Inner Simplex Guide and Pre-Deskew Sensor (REP 3.1).
- 10. Remove the Outer Duplex Guide (REP 3.4).
- 11. Remove the Upper Duplex Guide and Solenoid (REP 3.5).
- 12. Remove the Preheater and Deskew Assembly (REP 2.20).
- 13. Remove the Media Drive Assembly (REP 4.5).
- 14. Remove the Exit Module (REP 3.13).
- 15. Remove the Duplex Roller (REP 3.8).

CAUTION

Use care when releasing the Transfix Module spring hooks. Move the lever handle towards the center of the printer as indicated in Figure 1.

CAUTION

Be careful not to pry against the Transfix Cam as shown in Figure 1 to prevent damaging the Cam.

16. Insert a T-20 or T-15 Torx bit through the right side slotted hole in the Transfix Load Module. Engage the hole at the back of the module, and lever the module's spring cam towards the center of the printer while disconnecting the spring hooks from the Transfix Load Arms. Repeat this process for the left side.



Figure 1 Detaching the Transfix Load Module Spring Hooks

NOTE: In the following step, the Media Release Blade, Transfix Roller, Transfix Roller Shaft, and the 2 Transfix Load Arms are removed as a single assembly.

CAUTION

Be careful not to lose the rubber O-ring. (The O-ring is for noise dampening during strip.)

17. Remove the Clevis Pins from the left and right Transfix Load Arms to release the Transfix Roller Assembly from the chassis.



Figure 2 Removing the Transfix Load Arm Clevis Pins

- 18. Disconnect the Preheater Lift Solenoid wiring harness connector P/J112.
- 19. Remove 1 screw that secures the Preheater Lift Solenoid to the Transfix Load Module.
- 20. Remove the Preheater Lift Solenoid.



Figure 3 Removing the Preheater Lift Solenoid

21. Remove the screw that secures the Transfix Load Module Ground Spring and remove the Ground Strap.



Figure 4 Removing the Transfix Module Ground Strap

22. Remove 4 screws (metal, T-20), 2 at each end, that secure the Transfix Load Module to the chassis.



23. Loosen 1 screw that secures the Process Drive until the tip of the screw is even with the inner side of the frame surface as shown in Figure 6.



Figure 6 Loosening the Process Drive Screw

24. Rotate the top of the Transfix Load Module forward and spread the chassis slightly at the right side to remove it.

NOTE: The Transfix Load Module fits tightly in the chassis. Some force is needed to remove it.



Figure 7 Removing the Transfix Load Module

Replacement

Place a small amount of Rheolube 768 grease (P/N 070E00890) in the groove at the end of each Transfix Load Arm before reattaching the Spring Hooks. Also, when replacing the Grounding Springs on the Transfix Load Module, make sure the springs rest below the Transfix Camshaft.

Be sure to tighten 1 screw to secure the Process Drive.



Figure 8 Tightening the Process Drive Screw

After replacing the Exit Module, perform the Wiper Blade Alignment procedure (ADJ 1.1). Fault codes 91,720 ~ 91,723 indicate misalignment of the Wiper Assembly.

REP 2.17 Drum Maintenance Pivot Plate/ Drum Wiper Blade Assembly

Parts List on PL 2.1 Item 17, PL 2.1 Item 18

Removal

- 1. Remove the Front Door (REP 1.1).
- 2. Remove the Control Panel Cover (REP 1.5).
- 3. Remove the Right Side Cover (REP 1.11).
- 4. Remove the Lower Inner Duplex Guide (REP 3.2).
- 5. Remove the Inner Simplex Guide and Pre-Deskew Sensor (REP 3.1).
- 6. Remove the Preheater and Deskew Assembly (REP 2.20).

NOTE: Be sure to place a sheet of paper through the front of the printer between the Drum Assembly and the Pivot Plate Assembly to prevent damaging the Drum while removing the Pivot Plate Assembly

- 7. Remove the Drum Maintenance Unit (REP 1.16).
- 8. Remove the Drum Cooling Fan (REP 4.12).
- 9. Push the Ground Plate out of the way to get access to the Shaft.
- 10. Disconnect the wiring harness connector P/J901 from the I/O Board.

NOTE: For the following step, be sure to keep the C-Clip attach to the shaft.

11. Pull the shaft out from the chassis,



Figure 1 Removing the Shaft

12. Feed the wiring harness through the hole in the chassis near the front of the Drum Assembly while sliding the Plate downward and out from the Drum Maintenance drawer cavity.



Figure 2 Removing the Drum Maintenance Pivot Plate

Removal Drum Wiper Blade Assembly

1. Lift and remove the Drum Wiper Blade Assembly from the Drum Maintenance Pivot Plate.



Figure 3 Removing the Drum Wiper Blade Assembly

Replacement

NOTE: For additional tips, refer to the Drum Maintenance Pivot Plate Installation video (also available in the ColorQube 8570/8870 Training materials).

Before installing the Process Drive, perform the Manual Printhead Parking procedure (ADJ 1.4) and Wiper Blade Alignment procedure (ADJ 1.1) to put the Printhead and Wiper Assembly in the Home position.

Be sure to place a sheet of paper through the front of the printer between the Drum Assembly and the Pivot Plate Assembly to prevent damaging the Drum while installing the Pivot Plate Assembly.

Do not unravel the wiring harness from the harness clips on the Pivot Plate. Be sure the Blade sits towards the edge of the Drum Maintenance Pivot Plate as in Figure 4. Verify the blade position.



Figure 4 Blade Location - Correct Position

Be careful to avoid touching the blade against the Drum.

Be sure to tilt and insert the Drum Maintenance Pivot Plate upward while holding the Pivot Plate from the rear.



Figure 5 Installing the Drum Maintenance Pivot Plate



Figure 6 Aligning the Shaft

Be sure to verify that the space between the Blade and Drum Assembly is even from one end to the other end at 1/4 in. (6 mm). There should be about a quarter of an inch level space between the Blade and Drum.



Figure 7 Verifying the space between the Blade and Drum

Check that the right end of the Pivot Plate Shaft is in contact with the Ground Plate following installation of the Drum Fan.

Be sure to connect the wiring harness connector P/J901 to the I/O Board.



Figure 8 Reconnecting the Wiring Harness Connector

Perform the Homing the Printhead Forward to Print Position procedure (ADJ 1.2) and Process Drive Alignment procedure (ADJ 1.3) before restoring printer power.

REP 2.20 Preheater and Deskew Assembly Parts List on PL 2.1 Item 20

Removal

- 1. Remove the Front Door (REP 1.1).
- 2. Remove the Control Panel Cover (REP 1.5).
- 3. Remove the Right Side Cover (REP 1.11).
- 4. Remove the Lower Inner Duplex Guide (REP 3.2).
- 5. Remove the Inner Simplex Guide and Pre-Deskew Sensor (REP 3.1)
- 6. Disconnect the Paper Preheater wiring harness connector P/J115 and the Preheater Sensor wiring harness connector P/J125 from the Preheater and Deskew Assembly.

NOTE: Note how the wiring harnesses are restrained to the printer frame bottom for reinstallation.



Figure 1 Disconnecting Wiring Harness Connectors

CAUTION

Use care when removing the Preheater. Do not pry the Preheater from the printer to prevent damaging the Preheater.

7. Slide the latches in and forward to release the Preheater as shown in Figure 2.



Figure 2 Removing the Preheater

Replacement

Orient the wiring harness flat in under the Preheater, then gently insert the Preheater into place. DO NOT force it. Once fully inserted, release the latches to secure the Preheater to the printer frame.



Figure 3 Installing the Preheater

Be careful not to release the spring under the wiring harnesses when dressing the wiring harnesses.

Be sure to dress the wiring harnesses under their tabs and routing guides.

The fingers on the Inner Simplex Guide go over the Deskew Roller. To install, first snap the left retainer in place, followed by the right. Make sure the sensors are properly positioned when completing the installation.



Figure 4 Wiring Harness Locations

REP 2.21 Transfix Arm Kit (with Pins)

Parts List on PL 2.1 Item 21

Removal

1. Open the Front Door and release the 2 Stopper Straps.



- 2. Remove the Control Panel Cover (REP 1.5).
- 3. Remove the Right Side Cover (REP 1.11).
- 4. Remove the Control Panel (REP 1.6).
- 5. Remove the Left Side Cover (REP 1.10).
- 6. Remove the Exit Cover (REP 1.7).
- 7. Remove the Ink Loader (REP 1.8).
- 8. Remove the Lower Inner Duplex Guide (REP 3.2).
- 9. Remove the Outer Duplex Guide (REP 3.4).
- 10. Remove the Upper Duplex Guide and Solenoid (REP 3.5).
- 11. Remove the Exit Module (REP 3.13).

CAUTION

Use care when releasing the Transfix Module Spring Hooks. Move the lever handle towards the center of the printer as indicated in Figure 2.

CAUTION

Be careful not to pry against the Transfix Cam as shown in Figure 2 to prevent damaging the Cam.

12. Insert a T-20 or T-15 Torx bit through the right side slotted hole in the Transfix Load Module. Engage the hole at the back of the module, and lever the module's spring cam towards the center of the printer while disconnecting the spring hooks from the Transfix Load Arms. Repeat this process for the left side.



Figure 2 Detaching the Transfix Load Module Spring Hooks

NOTE: In the following step, the Media Release Blade, Transfix Roller, Transfix Roller Shaft, and the two Transfix Load Arms are removed as a single assembly.

CAUTION

Be careful not to lose the rubber O-ring. (The O-ring is for noise dampening during strip.)

13. Remove the Clevis Pins from the left and right Transfix Load Arms to release the Transfix Roller Assembly with Transfix Load Arms from the chassis.



Figure 3 Removing the Transfix Load Arm Clevis Pins



Figure 4 Removing the Transfix Arm

Replacement

NOTE: Be sue to tighten the six screws to secure the Media Drive Assembly.

14. Pull the Shaft out from the Transfix Roller and remove the Transfix Arms.



Figure 5 Tightening the Media Drive Assembly Screws

REP 2.22 X-Axis Bias Spring Hook, X-Axis Roll Adjuster Spring

Parts List on PL 2.1 Item 22, PL 2.1 Item 23

Removal

- 1. Remove the Control Panel Cover (REP 1.5).
- 2. Remove the Left Side Cover (REP 1.10).
- 3. Remove the Right Side Cover (REP 1.11).
- 4. Remove the Exit Cover (REP 1.7).
- 5. Remove the lnk Loader (REP 1.8).
- 6. Place several sheets of paper between the Printhead and Drum to protect the Drum.
- 7. Move the Printhead Tilt Spring from its position on the Printhead and hook it behind the notch as shown in Figure 1.



Figure 1 Releasing the Printhead Tilt Spring

8. Pull the X-Axis Bias Spring and Hook out slightly, and then rotate downward to allow it rest in detent provided on the frame as shown in Figure 2.



Figure 2 Releasing the X-Axis Bias Spring Hook

9. Pull the X-Axis Bias Spring Hook out.

10. Disconnect the wiring harness connector on the X-Axis Bias Spring Hook.



Figure 3 Removing the X-Axis Bias Spring Hook

REP 2.24 X-Axis Bias Spring Parts List on PL 2.1 Item 24

Removal

CAUTION

The X-Axis Bias Spring is in close proximity to the Drum Assembly. Use care to not damage the Drum while servicing the Spring.

- 1. Remove the Control Panel Cover (REP 1.5).
- 2. Remove the Left Side Cover (REP 1.10).
- 3. Remove the Right Side Cover (REP 1.11).
- 4. Remove the Exit Cover (REP 1.7)
- 5. Remove the Ink Loader (REP 1.8).
- 6. Remove the Funnel Cap (REP 2.1).
- 7. Remove the Jetstack Cap (REP 2.2).
- 8. Remove the Printhead (REP 2.3).
- 9. Remove the X-Axis Bias Spring using a spring hook or pliers.



Figure 1 Removing the X-Axis Bias Spring

Replacement

DO NOT rotate the spring more than one-quarter turn. Perform the Homing the Printhead Forward to Print Position procedure (ADJ 1.2) and Process Drive Alignment procedure (ADJ 1.3) before restoring printer power.

REP 3.1 Inner Simplex Guide with Pre-deskew Sensor and Harness

Parts List on PL 3.1 Item 1

Removal

- 1. Open the Front Door.
- 2. Remove the Lower Inner Duplex Guide (REP 3.2).
- 3. Pry inward on the 2 retainers to release them from the mounting post.
- 4. Disconnect the wiring harness connector P/J128 from the Inner Simplex Guide. Release the wiring harness from the Inner Simplex Guide.



Figure 1 Disconnecting Wiring Harness Connector





Figure 2 Removing the Inner Simplex Guide

Replacement

Position the fingers on the Inner Simplex Guide over the segment roller. Install the Guide by snapping the left side to the retaining post, then the right side.

Ensure switch wiring harness is routed through the restraints.



Figure 3 Installing the Inner Simplex Guide

REP 3.2 Lower Inner Duplex Guide

Parts List on PL 3.1 Item 2

Removal

- Open the Front Door. 1.
- Pull the tabs at the bottom of the Guide forward and let the Guide swing free. 2.
- Pry on the right, upper retainer inward, towards the center of the printer, to release it from 3. the boss and remove the Guide.



Figure 1 Removing the Lower Inner Duplex Guide

REP 3.3 Lower Exit Guide Assembly

Parts List on PL 3.1 Item 3

Removal

1. Open the Exit Cover.



Figure 1 Opening the Exit Cover

2. Release the Lower Exit Guide Assembly from the Exit Roller and remove the Lower Exit Guide Assembly.



Figure 2 Removing the Lower Exit Guide Assembly

REP 3.4 Outer Duplex Guide

Parts List on PL 3.1 Item 4

Removal

- 1. Open the Front Door.
- 2. Remove the Control Panel Cover (REP 1.5).
- 3. Remove the Left Side Cover (REP 1.10).
- 4. Remove the Right Side Cover (REP 1.11).
- 5. Lift and let the Control Panel hang on the right side of the printer.
- 6. Disconnect the wiring harness connector $\mbox{ P/J101}$ from the I/O Board.
- 7. Remove the 4 screws (plastic, T-20) that secure the Outer Duplex Guide to the chassis.
- 8. Lift and remove the Outer Duplex Guide.



Figure 1 Removing the Outer Duplex Guide

REP 3.5 Upper Duplex Guide and Solenoid

Parts List on PL 3.1 Item 5

Removal

- 1. Open the Front Door.
- 2. Remove the Control Panel Cover (REP 1.5).
- 3. Remove the Left Side Cover (REP 1.10).
- 4. Remove the Right Side Cover (REP 1.11).
- 5. Lift and let the Control Panel hang on the right side of the printer.
- 6. Remove the Outer Duplex Guide (REP 3.4).
- 7. Disconnect the Solenoid wiring harness connector P/J121 from the Right Side Harness.



Figure 1 Disconnecting Wiring Harness Connector from Right Side Harness

8. Route the Solenoid wiring harness through the right side of the printer frame and remove the Upper Duplex Guide from the printer.



Figure 2 Removing the Upper Duplex Guide

Replacement

Route the Solenoid wiring harness through the right side of the frame. Also, route the Guide under the edges of the Exit Module frame. Check that the Stripper Solenoid actuator engages the hole in the Stripper Carriage Assembly.

REP 3.7 Takeaway Roller Parts List on PL 3.1 Item 7

Removal

- 1. Open the Front Door.
- 2. Remove the Control Panel Cover (REP 1.5).
- 3. Remove the Left Side Cover (REP 1.10).
- 4. Remove the Right Side Cover (REP 1.11).
- 5. Remove the Media Drive Assembly (REP 4.5).
- 6. Remove the Lower Inner Duplex Guide (REP 3.2).
- 7. Remove the Inner Simplex Guide (REP 3.1).
- 8. Remove the KL-Clip from the right end of the Takeaway Roller shaft.



Figure 1 Removing the KL-Clip from the Right Side of the Shaft
9. Remove the KL-Clip and bushing from the left end of the shaft. Slide the shaft to the left to release the right end from the chassis. Rotate the shaft forward, and then remove it to the right.

NOTE: Pressure from the Idler Rollers may make it difficult to slide the Takeaway Roller shaft to the left during removal.



Figure 2 Removing the Takeaway Roller

REP 3.8 Duplex Roller Parts List on PL 3.1 Item 8

Removal

- 1. Open the Front Door.
- 2. Remove the Control Panel Cover (REP 1.5).
- 3. Remove the Control Panel (REP 1.6).
- 4. Remove the Left Side Cover (REP 1.10).
- 5. Remove the Right Side Cover (REP 1.11).
- 6. Remove the Lower Inner Duplex Guide (REP 3.2).
- 7. Remove the Outer Duplex Guide (REP 3.4).
- 8. Remove the Upper Duplex Guide and Solenoid (REP 3.5).
- 9. Remove the I/O Board (REP 5.10).
- 10. Remove the KL-Clips on the left and right ends of the roller shaft, move the bearing to the right, slide the shaft to the left to release the right end from the chassis, and lift the right end upward to clear the top of the frame at the right.



Figure 1 Removing the Duplex Roller

CAUTION

When replacing the I/O Board screws, torque to no more than 12 in.-lbs. Overtightening these fasteners can result in irreversible damage to the chassis.

Position the corner of the I/O Board behind the Ground Plane before installing the screws. Be sure to secure the Ground in front of the I/O Board.

CAUTION

Incorrectly mounting the I/O Board may short +3.3V power.



Figure 2 Installing the I/O Board - Correct Ground Plane position in front of the I/O Board

REP 3.9 Separator Pad Kit

Parts List on PL 3.1 Item 9

Removal

- 1. Open the Front Door.
- 2. Pry the Separator Pad towards the front of the printer and lift the Pad away from the printer.



Figure 1 Removing the Separator Pad



Figure 3 Installing the I/O Board - Incorrect Ground Plane position behind the I/O Board

REP 3.10 Pick Assembly and Retard Roller

Parts List on PL 3.1 Item 10

Removal

1. Remove Tray 2/3/4/5.



Figure 1 Removing Tray 2/3/4/5

2. Release the Pick Roller catch and pull downward to remove the Roller.

NOTE: The Pick Roller catch is located on the ceiling of the tray cavity about 1/4 of the way across the unit from the right side, and about 5 in. (12.5 cm) back. When you forward on the catch, the Roller swings down.



Figure 2 Removing the Pick Roller

3. Lift the Retard Roller vertically, then pull the Roller from the shaft in the tray.



For the Pick Roller, insert the replacement Roller with the metal shaft at the top and toward the left. The Grey Rollers should be facing you. Position the Roller back about 2 inches (5 cm) in the tray cavity. Feel for a large plastic lip on the right and the mating gear on the left. Rotate the Pick Roller up and back to snap it into place.



Figure 4 Replacing the Pick Roller

REP 3.12 525-Sheet Feeder

Parts List on PL 3.1 Item 12

Removal

WARNING

Parts of the printer are hot. To avoid personal injury or damage to the printer, allow the ink to solidify. Run the shutdown procedure to park the Printhead and begin cooling the printer. Wait at least 30 minutes for the printer to cool before moving or packing the printer.

WARNING

Two people are required to move the printer from the Optional 525-Sheet Feeder. Use safety lifting and handling techniques when moving the printer.

1. Carefully lift the printer away from the 525-Sheet Feeder.



Figure 1 Removing the 525-Sheet Feeder

REP 3.13 Exit Module

Parts List on PL 3.1 Item 13 Removal

CAUTION

The Drum Temperature and Exit Module Sensor harnesses are routed through an opening in the Exit Module frame. Use care during removal to avoid damaging these harnesses.

- 1. Remove the Control Panel Cover (REP 1.5).
- 2. Remove the Left Side Cover (REP 1.10).
- 3. Remove the Right Side Cover (REP 1.11).
- 4. Remove the Exit Cover (REP 1.7).
- 5. Disconnect the following wiring harness connectors:
 - Exit Module P/J601 and Drum Temperature Sensor P/J902 from the I/O Board
 - Head Maintenance Clutch P/J119 from the Right Side Harness



Figure 1 Disconnecting Wiring Harness Connectors

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6. Loosen the 6 screws (plastic, T-20) that secure the Media Drive Assembly. Allow the Media Drive Assembly to hang next to the printer.



Figure 2 Loosening the Media Drive Screws

- 7. Open the Exit Module.
- 8. Open the Lower Exit Guide Assembly.
- 9. Disconnect the Drum Temperature Sensor wiring harness connector P/J130.



Figure 3 Disconnecting the Drum Temperature Sensor Wiring Harness Connector

- 10. Remove the 4 screws (metal, T-20) that secure the Exit Module.
- 11. Lift the Exit Module from the chassis.



Figure 4 Removing the Exit Module

Seat the Exit Module on the chassis. Torque the 4 screws to 12 in.-lbs and perform Wiper Blade Alignment procedure (ADJ 1.1). The printer may report errors 91,720~91,723, if the Wiper Assembly is misaligned.

REP 3.14 Takeaway Guide

Parts List on PL 3.1 Item 14

Removal

- 1. Remove Tray 2.
- 2. Use a flat tip screwdriver to release one of the latches of the Takeaway Guide and remove the Guide from the printer frame.



Figure 1 Removing the Takeaway Guide

REP 4.1 Preheater Lift Solenoid

Parts List on PL 4.1 Item 1

Removal

- 1. Remove the Control Panel Cover (REP 1.5).
- 2. Remove the Control Panel (REP 1.6).
- 3. Remove the Left Side Cover (REP 1.10).
- 4. Remove the Right Side Cover (REP 1.11).
- 5. Remove the Exit Cover (REP 1.7).
- 6. Remove the Ink Loader (REP 1.8).
- 7. Remove the Outer Duplex Guide (REP 3.4).
- 8. Remove the Upper Duplex Guide and Solenoid (REP 3.5).
- 9. Disconnect the Preheater Lift Solenoid wiring harness connector P/J112.
- 10. Remove 1 screw that secures the Preheater Lift Solenoid to the Transfix Load Module.
- 11. Remove the Preheater Lift Solenoid.



Figure 1 Removing the Preheater Lift Solenoid

REP 4.2 Y-Axis Motor Assembly

Parts List on PL 4.1 Item 2

Removal

- 1. Remove the Control Panel Cover (REP 1.5).
- 2. Remove the Left Side Cover (REP 1.10).
- 3. Release tension on the Y-Axis Belt by pulling the end of the Spring Arm toward the side of the printer.
- 4. Hold tension with one hand while removing the Y-Axis Belt with the other.
- 5. Remove 1 screw that secures the Ground Wire to the Y-Axis Motor Assembly.
- 6. Remove the Y-Axis Spring using either a spring hook or pliers, Brace the printer to prevent movement while removing the spring.



Figure 1 Removing the Y-Axis Spring

- 7. Disconnect the Y-Axis Motor wiring harness connector P/J301 from the Electronics Module and remove the wiring harness from the cable guide.
- 8. Disconnect the Tray 2 Pick Clutch wiring harness connector P/J109 and Tray 1 Pick Solenoid wiring harness connector P/J110 from the Left Side Harnesses.
 - 5 0 P/J109 P/J301 P/J110 s8570-133

Figure 2 Y-Axis Disconnecting Wiring Harness Connectors

9. Release the wiring harness from the retainers in the chassis.

NOTE: Observe the routing of the Y-Axis Motor harness. The harness exits the motor cavity through the notch provided at the bottom of the mount.

10. Remove 3 screws (plastic, T-20), and 2 screws (metal, T-20) with ground connections from the Spring Arm and slide the Y-Axis Motor Assembly out of the chassis.



Figure 3 Removing the Y-Axis Drive Assembly

CAUTION

When replacing the Y-Axis Drive screws, torque to no more than 12 in.-lbs. Overtightening these fasteners can result in irreversible damage to the chassis.

Check that the grounding lugs are captured by the screws, the spacers are present, and wiring is correctly routed.

Be sure the wiring harnesses are routed under the Motor.



Figure 4 Wiring Harness Locations

REP 4.3 Tray 1 Pick Solenoid

Parts List on PL 4.1 Item 3

Removal

- 1. Remove the Control Panel Cover (REP 1.5).
- 2. Remove the Left Side Cover (REP 1.10).
- 3. Disconnect the Solenoid wiring harness connector P/J110 from the Left Side Harness.
- 4. Remove 1 screw (plastic, T-20) that secures the Solenoid to the Media Drive Assembly.
- 5. Remove the Tray 1 Pick Solenoid.



Figure 1 Removing the Tray 1 Pick Solenoid

Replacement

Align the hole in the Solenoid with the boss on the Media Drive Assembly before tightening the screw.

REP 4.4 Head Tilt Solenoid

Parts List on PL 4.1 Item 4

Removal

- 1. Remove the Control Panel Cover (REP 1.5).
- 2. Remove the Left Side Cover (REP 1.10).
- 3. Remove the Right Side Cover (REP 1.11).
- 4. Lower the Wiper Blade to its lowest position by rotating the Wiper Drive Gears.



Figure 1 Lowering the Wiper Blade

- 5. Disconnect the Head Tilt Solenoid wiring harness connector P/J107 from the Left Side Harness.
- 6. Remove 1 screw (plastic, T-20) that secures the solenoid actuator to the frame. and remove it from the frame.
- 7. Release the hook to release the Solenoid from the frame.



Figure 2 Removing the Head Tilt Solenoid

CAUTION

When replacing the Head Tilt Solenoid screw, torque to no more than 12 in.-lbs. Overtightening this fastener can result in irreversible damage to the chassis.

CAUTION

To ensure proper operation of the Printhead following reassembly, perform these steps in the order given.

- 1. Insert the plastic end of Head Tilt Solenoid into the frame, swing to the right and replace the screw.
- 2. With the Printhead centered on the Drum, use a screwdriver to turn the lower screw of the Process Drive clockwise until you hear the Head Tilt Solenoid snap into place (see Figure 4 for Head Tilt Latch position).



Figure 3 Engaging the Head Tilt Solenoid



REP 4.5 Media Drive Assembly

Parts List on PL 4.1 Item 5

Removal

NOTE: DO NOT remove the Tray 1 Pick Solenoid screw. A new Solenoid is included with the new Media Drive Assembly. No screw loosening is required.

- 1. Remove the Control Panel Cover (REP 1.5).
- 2. Remove the Left Side Cover (REP 1.10).
- 3. Disconnect the Media Drive Assembly wiring harness connectors from the Left Side Harnesses:
 - Media Path Motor (P/J106)
 - Deskew Clutch (P/J111)
 - Tray 2 Pick Clutch (P/J109)
 - Tray 1 Pick Solenoid (P/J110)
 - Preheater Lift Solenoid (P/J112)
- 4. Remove 1 screw (metal, T-20) that secures the braided ground wire to the Media Drive Motor mounting plate.



- 5. Remove 6 screws (plastic, T-20) that secure the Media Drive Assembly to the frame.
- 6. Remove the Media Drive Assembly.



Figure 2 Removing the Media Drive Assembly

NOTE: For additional tips, refer to the Media Drive Installation video (also available in the ColorQube 8570/8870 Training materials).

CAUTION

When replacing the Media Drive screws, torque to no more than 12 in.-lbs. Overtightening these fasteners can result in irreversible damage to the chassis.

- 1. Remove Tray 2.
- 2. Remove the Lower Inner Duplex Guide (REP 3.2).
- 3. Remove the Inner Simplex Guide (REP 3.1).
- 4. While placing the Media Drive Assembly into its position on the frame, rotate the Rollers in this order to align the shafts and gears:
 - a. Pick Roller (to seat the D-shaped shaft into the Pick Clutch)
 - b. Takeaway Roller (to seat the shaft in the keyed gear)
 - c. Duplex Roller (to seat the shaft in the keyed gear)

Check that the Media Drive Assembly is correctly positioned before tightening the screws.



Figure 3 Aligning the Gear and Shafts



Figure 4 Verifying the Groove on the Shaft

REP 4.6 Tray 2 Lift Motor

Parts List on PL 4.1 Item 6

Removal

- 1. Remove the Control Panel Cover (REP 1.5).
- 2. Remove the Left Side Cover (REP 1.10).
- 3. Remove the Right Side Cover (REP 1.11).
- 4. Remove the Exit Cover (REP 1.7).
- 5. Remove the Ink Loader (REP 1.8).
- 6. Remove the Electronics Module (REP 5.1).
- 7. Remove Tray 2.
- 8. Remove the Lift Motor Gear by prying the Push Nut off the shaft.

NOTE: Replace the Push Nut with a new one when installing the gear.



Figure 1 Removing the Lift Motor Gear

- 9. Disconnect the Tray 2 Lift Motor wiring harness connector P/J108 from the Motor.
- 10. Remove 2 screws that secure the Tray 2 Lift Motor to the chassis.
- 11. Remove the Tray 2 Lift Motor.



Figure 2 Removing the Tray 2 Lift Motor

Replacement

Check that the bushing tabs are properly seated in the chassis. To seat the new Push Nut, position the Push Nut so the fingers point away from the shaft. Place a 3/8 in. nut driver over the nut and press firmly to seat the nut on the shaft.

REP 4.7 Electronics Module Fan

Parts List on PL 4.1 Item 7

Removal

- 1. Remove the Control Panel Cover (REP 1.5).
- 2. Remove the Left Side Cover (REP 1.10).
- 3. Disconnect the Fan wiring harness connector P/J105 from the Left Side Harness.
- 4. Remove 2 screws (plastic, T-20) that secure the Electronics Module Fan to the chassis.
- 5. Remove the Electronics Module Fan.



Figure 1 Removing the Electronics Module Fan

REP 4.8 Head Tilt Gear

Parts List on PL 4.1 Item 8

Removal

- 1. Remove the Control Panel Cover (REP 1.5).
- 2. Remove the Left Side Cover (REP 1.10).
- 3. Remove the Right Side Cover (REP 1.11).
- 4. Remove the Exit Cover (REP 1.7).
- 5. Remove the Ink Loader (REP 1.8).
- 6. Remove the Funnel Cap (REP 2.1).
- 7. Remove the Jetstack Cap (REP 2.2).
- 8. Remove the Printhead (REP 2.3).
- 9. Remove the KL-Clip from the left side.



Figure 1 Removing the KL-Clip

- 10. Remove the Waste Tray (REP 1.15).
- 11. Remove the X-Axis Bias Spring (REP 2.24).

12. Remove 1 screw (metal, T-20) that secures the X-Axis Spring Retainer to the chassis.



13. Unlock the Wiper Blade and raise the Wiper Blade to the top of its travel.



- 14. Remove the Waste Tray Cover without disconnecting the Waste Tray Sensor harness.
 - a. Lift the center of the cover to release the right side hook.
 - b. Move the cover towards the back to release the 2 tabs from the chassis.
 - c. Pull the cover right to release the left hook and position the cover out of the way.



Figure 4 Removing the Waste Tray Cover

15. Reach into the Waste Tray cavity and pull the gear and shaft from the chassis.



Figure 5 Removing the Head Tilt Gear

The leaf spring on the back side of the chassis must be behind the gear to engage. Lubricate the curved surface of the gear using a small amount of Rheolube 768 grease (P/N 070E00890).

- 1. Remove the Leaf Spring from the chassis.
- 2. Partially insert the Head Tilt Gear Shaft into the chassis.



Figure 6 Replacing the Head Tilt Gear

3. Replace the spring. Turn the Head Tilt Gear while inserting the spring to guide the spring to its proper position behind the gear.



Figure 7 Head Tilt Spring Alignment

- 4. Seat the gear by lifting the Head Tilt Solenoid Actuator.
- 5. Replace the KL-Clip on the end of the Head Tilt Gear Shaft.
- 6. Perform the Homing the Printhead Forward to Print Position procedure (ADJ 1.2) and Process Drive Alignment procedure (ADJ 1.3) before restoring the printer power.

REP 4.9 Tray 2 Lift Motor Gear

Parts List on PL 4.1 Item 9

Removal

- 1. Remove Tray 2.
- 2. Remove the Control Panel Cover (REP 1.5).
- 3. Remove the Left Side Cover (REP 1.10).
- 4. Remove the Right Side Cover (REP 1.11).
- 5. Remove the Exit Cover (REP 1.7).
- 6. Remove the Ink Loader (REP 1.8).
- 7. Remove the Electronics Module (REP 5.1).
- 8. Remove the Tray 2 Lift Motor Gear by prying the Push Nut off the shaft.

NOTE: Replace the Push Nut with a new one when installing the gear.



Replacement

Check that the bushing tabs are properly seated in the chassis. To seat the new Push Nut, position the Push Nut so the fingers point away from the shaft. Place a 3/8 in. nut driver over the nut and press firmly to seat the nut on the shaft.

REP 4.10 Head Maintenance Clutch

Parts List on PL 4.1 Item 10

Removal

- 1. Remove the Control Panel Cover (REP 1.5).
- 2. Remove the Right Side Cover (REP 1.11).
- 3. Disconnect the Head Maintenance Clutch wiring harness connector P/J119 from the wiring harness.
- 4. Remove the KL-Clip.
- 5. Remove the Head Maintenance Clutch.



Figure 1 Removing the Head Maintenance Clutch

Replacement

Perform the Homing the Printhead Forward to Print Position procedure (ADJ 1.2) and Process Drive Alignment procedure (ADJ 1.3) before restoring printer power.

REP 4.11 X-Axis Motor

Parts List on PL 4.1 Item 11

Removal

- 1. Remove the Control Panel Cover (REP 1.5).
- 2. Remove the Right Side Cover (REP 1.11).
- 3. Disconnect the X-Axis Motor wiring harness connector P/J123 from the Motor.
- 4. Remove 4 screws (plastic, T-20) that secure the motor to the frame.
- 5. Remove the X-Axis Motor.



Replacement

Engage the fork extending from the cone-nut of the Motor Assembly with the chassis rib as shown in Figure 1. Also, slip the mounting plate behind the ground strap and replace the cable retainer on the lower right screw. Perform the Homing the Printhead Forward to Print Position procedure (ADJ 1.2) and Process Drive Alignment procedure (ADJ 1.3) before restoring printer power. Note, do not over tighten the screws as the holes in the chassis strip out easily.

REP 4.12 Drum Cooling Fan

Parts List on PL 4.1 Item 12

Removal

- 1. Remove the Control Panel Cover (REP 1.5).
- 2. Remove the Right Side Cover (REP 1.11).
- 3. Disconnect the Drum Fan wiring harness connector P/J903 from the I/O Board.
- 4. Remove 3 screws (plastic, T-20) that secure the Drum Fan to the chassis.
- 5. Remove the Drum Cooling Fan.



Figure 1 Removing the Drum Cooling Fan

Replacement

NOTE: Check that the grounding strap contacts the Pivot Plate Shaft following installation.

REP 4.13 Process Drive

Parts List on PL 4.1 Item 13

Removal

CAUTION

If the Process Drive is being reinstalled, pin the gears using the holes provided in the Process Drive frame (Figure 1) to maintain gear alignment. Use a paper clip or similar object to pin the gears before removing the drive. Replacement drives have pins installed. Do not remove these pins until the drive has been installed. Installation of the Process Drive with misaligned gears can damage the printer. See Figure 1 to verify proper gear position before replacing the screws.



Figure 1 Process Drive Gear Alignment

- 1. Remove the Control Panel Cover (REP 1.5).
- 2. Remove the Right Side Cover (REP 1.11).
- 3. Remove the Lower Inner Duplex Guide (REP 3.2).
- 4. Remove the Inner Simplex Guide (REP 3.1).
- 5. Disconnect the Process Drive from the wiring harness connector P/J118.



Figure 2 Disconnecting the Wiring Harness Connector

- 6. Pin the Process Drive gears, if the drive is being reinstalled, using paper clips or similar objects.
- 7. Disconnect the three wiring harness connectors P/J114, P/J120, and P/J122 from the Right Side Harnesses.
- 8. Move all the wiring harnesses away from the Process Drive Assembly.
- 9. Release the Drum Encoder and Drum Fan wiring from the Process Drive wiring retainers.



Figure 3 Disconnecting and releasing the Wiring Harness Connectors

10. Remove 3 screws (plastic, T-20) that secure the Process Drive to the chassis.

11. Remove the Process Drive from the chassis.



Figure 4 Removing the Process Drive and Process Drive Gear Alignment

Replacement

NOTE: Before installing the Process Drive, perform the Manual Printhead Parking procedure (ADJ 1.4) and Wiper Blade Alignment procedure (ADJ 1.1) to put the Printhead and Wiper Assembly in the home position.

- 1. Slightly insert the Process Drive while rotating the Process Drive towards the left hand side until the flange sits behind the gear (Figure 5).
- 2. Before tightening the Process Drive mounting screws, align the holes in the Process Drive flange with the mounting bosses on the frame, seat the Gears, and press the Process Drive tightly against the frame (Figure 1).

CAUTION

Do not use the screws to pull the Process Drive into alignment.

 Next, seat all three screws before torquing the screws to a final tightness of 12 in-lbs. Tightening the screws individually before seating all three can put undue strain on the mounting bosses.



Figure 5 Installing the Process Drive

4. Perform the Homing the Printhead Forward to Print Position procedure (ADJ 1.2) and Process Drive Alignment procedure (ADJ 1.3) before restoring printer power.

NOTE: For additional tips, refer to the Process Drive Installation video (also available in the ColorQube 8570/8870 Training materials).

REP 5.1 Electronics Module

Parts List on PL 5.1 Item 1

Removal

WARNING

Disconnect the Power Cord before servicing the printer. Line Voltage present on the Fuse and Fuse Holder Contacts.

CAUTION

Touch the Electronics Module to discharge any static electricity before servicing the printer.

NOTE: Remove the Configuration Card, NVRAM, RAM, and the Hard Drive and install these components into the replacement module.

- 1. Remove the Control Panel Cover (REP 1.5).
- 2. Remove the Left Side Cover (REP 1.10).
- 3. Remove the Right Side Cover (REP 1.11).
- 4. Remove the Exit Cover (REP 1.7).
- 5. Remove the lnk Loader (REP 1.8).
- 6. Lift the wiring harness to release it from the velcro.



Figure 1 Removing Screws and Retaining Clips

7. Lift the tape towards one side and disconnect the wiring harness connectors P/J201 and P/JAC2 from the Electronics Module.



Figure 2 Disconnecting the Electronics Module Wiring Harness Connectors

- 8. Disconnect the wiring harness connectors from the left and right sides of the Electronics Module.
- 9. Remove 5 screws (metal, T-20) that secure the Electronics Module to the printer frame.
- 10. Hold and pull the Electronics Module out from the printer using the finger recesses.



REP 5.2 Hard Disk Drive

Parts List on PL 5.1 Item 2

Removal

1. Remove the 2 thumbscrews on the Rear Panel of the Electronics Module and remove the Rear Panel.



Figure 1 Remove the Screws and Rear Panel

2. Disconnect the Hard Disk Drive wiring harness connectors P/J505 and P/J803 from the Main Controller Board.



1. Be sure to connect the Hard Disk Drive wiring harness connectors securely.



Figure 3 Installing the Hard Disk Drive

REP 5.3 RAM

Parts List on PL 5.1 Item 3

Removal

CAUTION

RAM is vulnerable to ESD. Review the Electrostatic Discharge Precautions procedures in the Introduction Chapter.

1. Remove the 2 thumbscrews on the Rear Panel of the Electronics Module and remove the Rear Panel.



Figure 1 Removing the Screws and Rear Panel

NOTE: Observe the orientation of the RAM device before removing it from the Board.

CAUTION

Be careful when releasing the clips to prevent damaging them.

2. Release the clips that secure the RAM module and remove the RAM from the Main Controller Board.

Replacement

NOTE: Memory should be installed in the primary socket before installing in the secondary socket. The primary memory socket resides on the left side (away from the processor). Upgrade memory should be added to the secondary memory slot residing on the right side (close to the processor).

Be sure to secure the RAM in place.



Figure 3 Installing the RAM



REP 5.4 NVRAM

Parts List on PL 5.1 Item 4

Removal

CAUTION

NVRAM is vulnerable to ESD. Review the Electrostatic Discharge Precautions procedures in the Introduction Chapter.

1. Remove the 2 thumbscrews on the Rear Panel of the Electronics Module and remove the Rear Panel.



Figure 1 Removing the Back Cover

2. Exchange the NVRAM.



Figure 2 Removing the NVRAM

REP 5.5 Configuration Card Parts List on PL 5.1 Item 5 Removal

CAUTION

Handle the Configuration with care to prevent damaging the Card.

- 1. Remove the I/O Access Door (REP 1.13).
- 2. Press the Configuration Card towards the rear of the printer at angle and pull the Configuration Card out from the Electronics Module.



Figure 1 Removing the Configuration Card

REP 5.6 Circuit Boards (Power Supply, Main Controller, Power Control)

Parts List on PL 5.1 Item 6, PL 5.1 Item 7, PL 5.1 Item 8 Removal

WARNING

Be sure to disconnect AC power prior to disassemble the Electronics Module.

CAUTION

Touch the Electronics Module to discharge any static electricity before servicing the printer. CAUTION

The circuit board is vulnerable to ESD. Review the Electrostatic Discharge Precautions procedures in the Introduction Chapter.

- 1. Remove the Control Panel Cover (REP 1.5).
- 2. Remove the Left Side Cover (REP 1.10).
- 3. Remove the Right Side Cover (REP 1.11).
- 4. Remove the Exit Cover (REP 1.7).
- 5. Remove the Ink Loader (REP 1.8).
- 6. Remove the Electronics Module (REP 5.1).
- 7. Remove 2 thumbscrews that secure the Rear Panel and remove the Rear Panel.
- 8. Disconnect the Hard Disk Drive wiring harness connectors from the Main Controller Board (if a Hard Disk Drive is installed).



Figure 1 Removing the Rear Panel

- 9. Remove the 4 screws (metal, T-9) (2 on the left side, 1 on the top side, and 1 on the front side).
- 11. Remove 4 screws (metal, T-9) from the bottom side.



10. Remove 5 screws (metal, T-9) (3 on the right side and 2 on the rear side).





Figure 4 Removing the Screws

- 12. Lift and remove the Left Panel from the Electronics Module.
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 - Figure 5 Removing the Left Panel

13. Slide the Board Assembly out from the Electronics Module Cage.



Figure 6 Removing the Board Assembly Module

Be sure to connect P/J703 on the Main Controller Board and JDC1 on the Power Supply Board to the Power Control Board.



Figure 7 Connector and Screw Locations

Be sure to seat the two side corners of the Panel on top of the Power Control Board, and the middle section of the Panel on the outside of the Cage.



Figure 8 Installing the Side Panel

Power Control Board

Removal

WARNING

Be sure to disconnect AC power prior to disassemble the Electronics Module.

- 1. Turn the Board Assembly Module over with the bottom of the Power Control Board facing upward.
- 2. Remove 3 screws (metal, T-9) that secure the Power Control Board and remove the Power Control Board support rail.
- 3. Gently wiggle the Power Control Board to disconnect the P/J403 and P/J601 connectors from the Power Supply Board.



Power Supply Board Removal

WARNING

Be sure to disconnect AC power prior to disassemble the Electronics Module.

CAUTION



Up to 400V DC may be stored in the Power Supply Capacitors. Wait 10 minutes after disconnecting AC power before touching any Power Supply Heatsinks or handling the Power Supply PWB.

1. Remove the Power Control Board.

CAUTION

The Power Supply is heavy. Handle the Power Supply with care.

- 2. Remove 7 screws (metal, T9) that secure the Power Supply Board to the frame.
- 3. Lift and remove the Power Supply Board from the frame.



Figure 10 Removing the Screws and Power Supply Board

Main Controller Board

Removal

- 1. Remove 6 screws (metal, T-20) that secure the Main Controller Board to the metal frame.
- 2. Lift the Main Controller Board and disconnect the connector from the Power Control Board.



Figure 11 Removing the Screws and Main Controller Board

REP 5.9 Wave Amplifier

Parts List on PL 5.1 Item 9

Removal

WARNING

Disconnect the Power Cord before servicing the printer. Line Voltage present on the Fuse and Fuse Holder Contacts.

CAUTION

Handle the ribbon cables carefully. Check that each cable is square to the socket and fully inserted. Damage to the Wave Amplifier could result from improper cable connections.

- 1. Remove the Control Panel Cover (REP 1.5).
- 2. Remove the Left Side Cover (REP 1.10).
- 3. Remove the Right Side Cover (REP 1.11).
- 4. Remove the Exit Cover (REP 1.7).
- 5. Remove the Ink Loader (REP 1.8).
- 6. Manually tilt the Printhead Assembly forward (ADJ 1.2).
- 7. Remove the Funnel Cap (REP 2.1).
- 8. Remove the Jetstack Cap (REP 2.2).
- 9. Remove the Ribbon Cable Retaining Clip.



Figure 1 Removing the Ribbon Cable Retaining Clip

10. Use the Unlock/Lock tool to unlock the ZIF connector P/J240 from the Printhead Assembly by gently lifting up on the ends of the connector lock as shown in Figure 2.



11. Remove the Electronics Module (REP 5.1).

- 12. Disconnect the wiring harness connector P/J800 from the Wave Amp.
- 13. Remove 3 screws (metal, T-20) that secure the Wave Amp Board to the chassis.
- 14. Slide the Wave Amp towards the rear and tilt the Wave Amp to remove.



Figure 3 Removing the Wave Amplifier Board

CAUTION

Be sure to unlock the ZIF connector to release the ribbon cable. Be careful when disconnecting the ribbon cable to prevent damaging the cable. DO NOT pull on the cable until you have released the locks.

NOTE: The ribbon cable connector is the locking type connector and requires unlocking prior to removal and locking after reinstallation of the cable in order to make proper connection.

15. Disconnect the wiring harness connector P/J640 from the Wave Amp.



Figure 4 Disconnecting the Wave Amp Wiring Harness Connector
Replacement

Route the cables through the slots provided. Position the T-shaped strain relief near the Wave Amplifier following installation.

Be sure to align the pins in the rear of the Wave Amp Board.

Lay the Wave Amp on top of the flat surface on the rear of the printer to connect the wiring harness connector as shown in Figure 5.



Figure 5 Positioning the Wave Amp



Figure 6 Securing the ZIF Connector

Perform the Homing the Printhead Forward to Print Position procedure (ADJ 1.2) and Process Drive Alignment procedure (ADJ 1.3) before restoring the printer power.

REP 5.10 I/O Board

Parts List on PL 5.1 Item 10

Removal

CAUTION

The circuit board is vulnerable to ESD. Review the Electrostatic Discharge Precautions procedures in the Introduction Chapter.

- 1. Remove the Cover Panel Cover (REP 1.5).
- 2. Remove the Control Panel (REP 1.6).
- 3. Remove the Right Side Cover (REP 1.11).

CAUTION

Be sure to unlock the ZIF connector to release the ribbon cable. Be careful when disconnecting the one ribbon cable to prevent damaging the cable.

NOTE: The ribbon cable connector is the locking type connector and require unlocking prior to ribbon cable removal and locking after reinstallation of the cable in order to make adequate connection.

- 4. Disconnect the 12 wiring harness connectors from the I/O Board.
- 5. Remove 2 screws (metal, T-20) that secure the I/O Board to the chassis and remove the I/ O Board.



Figure 1 Removing the I/O Board

Replacement

CAUTION

When replacing the I/O Board screws, torque to no more than 12 in.-lbs. Overtightening these fasteners can result in irreversible damage to the chassis.

Position the corner of the I/O Board behind the Ground Plane before installing the screws. Be sure to secure the Ground in front of the I/O Board.

CAUTION

Incorrectly mounting the I/O Board may short +3.3V power.



Figure 2 Installing the I/O Board - Correct Ground Plane position in front of the I/O Board



Figure 3 Installing the I/O Board - Incorrect Ground Plane position behind the I/O Board

REP 6.1 Paper Size Switch

Parts List on PL 6.1 Item 1

Removal

- 1. Remove the Control Panel Cover (REP 1.5).
- $\mbox{2.} \quad \mbox{Remove the Right Side Cover (REP 1.11).}$
- 3. Remove Tray 2.
- 4. Disconnect the Paper Size Switch wiring harness connector P/J701 from the I/O Board.
- 5. Unlace the harness from the retainers.



Figure 1 Disconnecting the Wiring Harness Connector

- 6. From the right side of the printer, push the Paper Size Switch inward while pushing the latch rearward the latch rearward and releasing the front of the switch from the chassis.
- 7. Pull the wiring harness through the opening in the chassis and remove the switch from the tray cavity.



8. Disconnect the wiring harness connector P/J131 from the Paper Size Switch.



Figure 3 Disconnecting the Wiring Harness Connector

REP 6.2 No Paper Sensor

Parts List on PL 6.1 Item 2

Removal

- 1. Remove the Front Door (REP 1.1).
- 2. Remove Tray 2.
- 3. Remove the Pick Assembly and Retard Rollers (REP 3.10).
- 4. Remove the Lower Inner Duplex Guide (REP 3.2).
- 5. Remove the Inner Simplex Guide (REP 3.1).
- 6. Release the 4 hooks that secure the No Paper Sensor to the left side of the Pick Assembly recess.
- 7. Disconnect the wiring harness connector P/J127 from the wiring harness and remove the Sensor.



Figure 1 Remove the No Paper Sensor

Replacement

Disconnect the Preheater Assembly wiring harness connectors $\mbox{ P/J125}$ and $\mbox{ P/J115}$ to make additional room to replace the Sensor. Release the lock on the wiring harness connector $\mbox{ P/J115}$ to remove it from the Preheater Assembly.



Figure 2 Wiring Connector Locations

REP 6.3 Paper Height Sensor

Parts List on PL 6.1 Item 3

Removal

- 1. Remove the Front Door (REP 1.1).
- 2. Remove Tray 2.
- 3. Remove the Pick Assembly and Retard Roller (REP 3.10).
- 4. Remove the Lower Inner Duplex Guide (REP 3.2).
- 5. Remove the Inner Simplex Guide (REP 3.1).
- 6. Disconnect the wiring harness connector P/J126.
- 7. Release the 4 hooks that secure the Paper Height Sensor to the right side of the Pick Assembly recess.



Figure 1 Removing the Paper Height Sensor

Replacement

Disconnect the Preheater Assembly wiring harness connectors $\mbox{ P/J115}$ and $\mbox{ P/J125}$ to make additional room to replace the Sensor. Release the lock on the wiring harness connector $\mbox{ P/J115}$ to remove it from the Preheater Assembly.



Figure 2 Wiring Connector Locations

REP 6.5 Drum Temperature Sensor

Parts List on PL 6.1 Item 5

Removal

- 1. Remove the Control Panel Cover (REP 1.5).
- 2. Remove the Right Side Cover (REP 1.11).
- 3. Remove the Left Side Cover (REP 1.10).
- 4. Remove the Exit Cover (REP 1.7).
- 5. Remove the lnk Loader (REP 1.8).
- 6. Remove the Exit Module (REP 3.13).
- 7. Remove 1 screw that secures the Sensor to the Drum.
- 8. Remove the Drum Temperature Sensor.

REP 6.6 Front Door and Exit Door Interlock Switches

Parts List on PL 6.1 Item 6

Exit Door Interlock

Removal

- 1. Remove the Control Panel Cover (REP 1.5).
- 2. Remove the Control Panel (REP 1.6).

NOTE: Removal of the Outer Duplex Guide is not required to replace the Front Door Interlock Switch.

- 3. Remove the Left Side Cover (REP 1.10).
- 4. Remove the Right Side Cover (REP 1.11).
- 5. Remove the Outer Duplex Guide (REP 3.4).
- 6. Disconnect the wiring harness connector P/J116.
- 7. Remove the defective switch from the Outer Duplex Guide.

P/J116



Front Door Interlock P/J101 \$8570-334

Figure 1 Removing the Exit Door and Front Door Switches

Figure 1 Removing the Drum Temperature Sensor

REP 6.7 Waste Tray Detect Sensor

Parts List on PL 6.1 Item 7

Removal

CAUTION

Place a couple sheets of paper between the Wiper Assembly and the Drum to protect the Drum while performing this procedure.

- 1. Remove the Control Panel Cover (REP 1.5).
- 2. Remove the Left Side Cover (REP 1.10).
- 3. Remove the Right Side Cover (REP 1.11).
- 4. Remove the Exit Cover (REP 1.7).
- 5. Remove the Ink Loader (REP 1.8).
- 6. Remove the Funnel Cap (REP 2.1).
- 7. Remove the Jetstack Cap (REP 2.2).
- 8. Remove the Printhead (REP 2.3).
- 9. Remove the Waste Tray (REP 1.15).
- 10. Remove the X-Axis Bias Spring (REP 2.24).
- 11. Remove 1 (metal, T-20) screw that secures the X-Axis Spring Retainer to the chassis.



Figure 1 Removing the X-Axis Spring Retainer

12. Raise the Wiper Blade to the top of its travel.



13. Remove the Waste Tray Cover without disconnecting the Waste Tray Sensor harness.

- a. Lift the center of the cover to release the right side hook.
- b. Move the cover towards the rear to release the 2 tabs from the chassis.
- c. Pull the cover to the right to release the left hook and position the cover out of the way.



- 14. Disconnect the Waste Tray Detect Sensor wiring harness connector P/J102 from the I/O Board.
- 15. Unlace the Sensor wiring harness from the retainers and guides.
- 16. Release the hooks that secure the Sensor to the cover and remove the Sensor.



Figure 4 Removing the Waste Tray Detect Sensor

Replacement

Perform the Homing the Printhead Forward to Print Position procedure (ADJ 1.2) and Process Drive Alignment procedure (ADJ 1.3) before restoring printer power.

ADJ 1.1 Wiper Blade Alignment

Purpose

To set the Printhead Wiper Blade alignment or place the Wiper Blade at the bottom of its travel position.

Adjustment

NOTE: For additional information, refer to Wiper Blade Alignment video (also available in the ColorQube 8570/8870 Training materials).

To ensure Wiper Blade alignment, and ensure the Wiper is in the home position, remove the Wiper Drive Gear, lower the Blade, and then re-install the Gear.

- 1. Remove the Control Panel Cover (REP 1.5).
- 2. Remove the Left Side Cover (REP 1.10).
- 3. Remove the Right Side Cover (REP 1.11).
- 4. Remove the Exit Cover (REP 1.7).
- 5. Remove the Ink Loader (REP 1.8).
- 6. Remove the Funnel Cap (REP 2.1).
- 7. Remove the Jetstack Cap (REP 2.2).
- 8. Remove the KL-Clip that secures the left side Wiper Blade Drive Gear.



Figure 1 Removing the KL-Clip

9. Rotate the left and right Wiper Belt Gears to lower the Wiper Blade to the bottom of its travel. As you lower the Wiper Blade, keep the blade parallel to the Drum.



Figure 2 Lowering the Printhead Wiper Blade

10. Install the KL-Clip.

NOTE: If the printer is experiencing 91,710~91,716 Wiper Movement faults, readjust the Wiper alignment so that the left-end is slightly lower (one drive gear tooth) than the right-end.

ADJ 1.2 Homing the Printhead Forward to Print Position

Purpose

To home the Head Tilt Gear and as a result, the Printhead. Two procedures are given, one for when the Printhead is installed, and one for when the Printhead is not installed.

Printhead is Installed

Adjustment

NOTE: For additional information, refer to Homing the Printhead Forward to Print Position video (also available in the ColorQube 8570/8870 Training materials).

- Remove the Drum Maintenance Unit (REP 1.16) (optional or if possible). 1.
- 2. Use a small screwdriver to rotate the X-Axis Shaft with the Printhead centered over the Drum to clear the Left and Right Printhead Restraints.
- Rotate the Drum Maintenance Camshaft 360° clockwise using a flat blade screwdriver as 3. shown in Figure 1. If the Head Tilt Gear is engaged, manually assist the movement of the Printhead. There is an audible click when the Head Tilt Gear disengages from its drive train.



Figure 1 Rotating the Drum Maintenance Shaft

Disengagement of the Head Tilt Gear is shown in Figure 2. 4.

NOTE: If the latch is accidentally engaged (upward), rotate the gear CCW to disengage it.



Figure 2 Head Tilt Gear Indicator

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Repairs and Adjustments ADJ 1.2

Printhead Not Installed Adjustment

1. Disengage the Headtilt Gear as shown in Figure 3.



Figure 3 Head Tilt Gear Indicator

ADJ 1.3 Process Drive Alignment

Purpose

To correctly orient the Process Drive's Gears to their home positions.

NOTE: Usually, manually tilting the head back and forth using Drum Maintenance Shaft should leave the Process Drive aligned.

CAUTION

Place the Printhead, Head Tilt Gear, Printhead Wiper Blade, and Process Drive in their home positions before restoring printer power. Improper alignment could result in damage or errors.

Adjustment

NOTE: For additional information, refer to Process Drive Alignment video (also available in the ColorQube 8570/8870 Training materials).

- 1. Remove the Control Panel Cover (REP 1.5).
- 2. Remove the Right Side Cover (REP 1.11).
- 3. Remove the Lower Inner Duplex Guide (REP 3.2).
- 4. Remove the Inner Simplex Guide (REP 3.1).
- 5. Remove the Process Drive Assembly (REP 4.13).
- 6. Rotate the Process Drive Gears to align positions as shown in Figure 1. Pin the Gears if pins are available.
- 7. Verify the Transfix Gear at 11:00 and 6:00 positions as shown in Figure 1.
- 8. Re-install the Process Drive Assembly.

Examine the Process Drive alignment points to verify proper gear alignment.

• The holes in the Process Drive and gears must align as indicated in Figure 1.



Figure 1 Process Drive Gear Alignment

- The hole in the Camshaft gear must align with the arrow on the chassis.
- The hole in the Transfix Camshaft Gear must align with the hole in the chassis.

ADJ 1.4 Manual Printhead Parking

Purpose

To place the Printhead in a parked position, away from the Drum, during service procedures or when the Control Panel parking routine is unavailable.

CAUTION

After servicing the printer, place the Printhead, Head Tilt Gear, Printhead Wiper Blade, and Process Drive in their home positions before turning the printer power On. Damage to the Process Drive or printer errors can result during printer initialization.

Adjustment

Use this procedure to move the Printhead to its parked position.

NOTE: For additional information, refer to Adjusting the Printhead to Park Position video (also available in the ColorQube 8570/8870 Training materials).

- 1. Remove the Control Panel Cover (REP 1.5).
- 2. Remove the Left Side Cover (REP 1.10).
- 3. Remove the Right Side Cover (REP 1.11).
- 4. Remove the Ink Loader (REP 1.8) (optional).
- 5. Center the Printhead to the Drum using a small flat blade screwdriver to rotate the X-Axis Motor Shaft. When centered the Printhead can be tilted back and forward.



Figure 1 Aligning the X-Axis Motor

6. Engage the Head Tilt Gear as shown in Figure 2. The tilt gear is spring loaded and should engage its gear train.



7. Rotate the Drum Maintenance Camshaft until the Printhead has tilted back to its parked position, which is the furthest point from the Drum.

- 8. Lower the tilt latch to lock the tilt gear (and the Printhead) in the tilted back position.
- 9. Use a small flat blade screwdriver to rotate the X-Axis Motor to move the Printhead all the way to the right as shown in Figure 3.



Figure 3 Rotating the Drum Maintenance Camshaft

ADJ 1.5 Center the Printhead

Purpose

To center the Printhead to allow tilting the Printhead backwards into the Parked position.

Adjustment

NOTE: For additional information, refer to Center the Printhead video (also available in the ColorQube 8570/8870 Training materials).

- 1. Use a small flat tip screwdriver to adjust the X-Axis Motor to center the Printhead and allow removing the Printhead Restraints.
 - Adjust counter-clockwise to remove the Printhead pin from the right Restraint (adjusting the Head to X-Axis Tilt position).
 - Turn the Motor counter-clockwise until resistance, then 1 rotation clockwise to set to tilt position.



Figure 1 Adjusting the X-Axis Motor

- 2. To verify that the Printhead is centered, install the Funnel Cap.
- 3. Check that the four notches on the Funnel Cap are aligned in the middle of the Printhead Reservoirs.



Figure 2 Installing the Funnel Cap

5 Parts List

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Parts List Overview

The Parts List section identifies all part numbers and the corresponding location of all spared subsystem components.

Use of the Term "Assembly"

The term "assembly" is used for items in the parts listing that may include other itemized parts. When the word "assembly" is found in the part number listing, there will be a corresponding item number on the illustrations followed by a bracket and a listing of the contents of the assembly.

Using the Parts Lists

Only those parts listed with part numbers are available for order. Parts listed without part numbers are only available as part of a parent assembly or Service Kit.

- Item.: The callout number from the exploded part diagram.
- Part Number: The material part number used to order specific parts
- Description: Name of the part and number supplied per order.
- Parts throughout this manual are referenced PL#.#; For example, PL 3.0.10 means the part is item 10 of Parts List 3.0.
- A black triangle preceding a number followed by a parenthetical statement indicates the item is a parent assembly, made up of the parts listed in parentheses and enclosed by a dashed line.
- The notation (P/O PL X.X Item X) following the part description indicates the part is included with the item identified in the referenced Parts List.
- The notation "(with X~Y)" following a part name indicates an assembly includes components X through Y. For example, "1 (with 2~4)" means part 1 consists of parts 2, 3, and 4.
- The notation "J1<>J2 and P2" is attached to a wire harness. It indicates that connector Jack 1 is attached to one end of the wire harness and connector J2 is attached to the other end that is plugged into P2.

Serial Number Format

Changes to Xerox products are made to accommodate improved components. As improvements are made, part numbers may change from those appearing in this section. To get the latest part, provide the following information when ordering:

- Component's part number
- Product type or configuration number
- Serial number of the printer

The serial number is coded as follows:

- The text "S/N" followed by the serial number in the barcode.
- The barcode does not include a field identifier.
- The nine digit serial number format PPPRSSSSS where:
 - PPP Is the alphanumeric Product Code

 ${\bf R}$ - Is the numeric revision digit. Changes at major product updates or when the serial number is reset to a starting value.

SSSSS - Is the five digit numeric serial number.

Table 1 8570/8870 Product Code

Product	Product Code	Starting Serial Number	Ending Serial Number
8570 N/ DN/ DT	XFN	000501	500500
8870 EE	XFL	000501	500500
8570 DN F	AN1	000001	

Serial Number Example: S/N XFN453072

- XFN = Product code for the 8570
- 4 = Revision Level
- 53072 = Serial Number



Figure 1 Serial Number Location

PL 1.1Covers

Item	Part	Description
1	848K48710	Front Door/ Tray 1 (MPT) Assembly
2	120E29140	Front Door Stay Retainer
3	009K02390	Front Door Stay with Spring
4	029E49330	Hinge Pins, Front Door
5	101E29410	Control Panel Cover
6	101K64840	Control Panel with Bezel
7	848E62810	Exit Cover
8	815K13120	Ink Loader & Bezel (8570)
-	815K13130	Ink Loader & Bezel (8870)
9	056E05490	Ink Loader Bezel
10	848E62700	Left Side Cover
11	848E62690	Right Side Cover with Doors
12	848E68810	Drum Maintenance Door (Side) (P/
		O PL 1.1 Item 11)
13	101E29420	I/O Access Door (P/O PL 1.1 Item
		11)
14	-	Waste Tray Cover
15	109R00754	Waste Tray
16	109R00784	Drum Maintenance Unit, Standard
-	109R00783	Drum Maintenance Unit, Extended
17	050K68070	MPT Tray Arm (P/O PL 1.1 Item 1)
18	059K63590	MPT Pick Roller (P/O PL 1.1 Item 1)



PL 2.1 Imaging

ltem	Part	Description
1	093K24020	Funnel Cap
2	021E17590	Jetstack Cap
3	604K61960	Printhead Assembly
4	020K20790	Drum Assembly
5	023E32000	Y-Axis Belt
6	033K04890	Printhead Wiper
7	023E31250	Belt, Wiper Drive
8	094E02790	Purge Pressure Pump Kit
9	120E36720	Left Printhead Restraint
10	120E36710	Right Printhead Restraint
11	008K02370	Drum Maintenance Camshaft
12	008K02360	Transfix Camshaft
13	041K06650	Stripper Carriage Assembly
14	059K76540	Roller, Transfix
15	809E69920	Spring, Y-Axis Tension
16	103K01680	Transfix Load Module
17	020K20800	Drum Maintenance Pivot Plate
		Assembly
18	033K04980	Drum Wiper Blade Assembly
19	-	Pivot Plate Shaft
20	126E02850	Preheater and Deskew Assembly
21	059K77530	Transfix Arm Kit (with pins)
22	019E75180	Hook, X-Axis Bias Spring
23	809E69940	Spring, X-Axis Roll Adjuster
24	809E69930	Spring, X-Axis Bias
25	-	X-Axis Bias Spring Retainer (Not
		Spared)
26	-	Transfix Roller Shaft (Not Spared)
27	-	Drum Ground Plate (Not Spared)
28	-	Roll Block (Not Spared)
29	-	Transfix Roller Shaft Restraint (Not
30	-	Transfix Load Module Ground Strap (Not Spared)



PL 3.1 Paper Path

Item	Part	Description
1	032E40680	Inner Simplex Guide with Pre-
		deskew Sensor and Harness
2	032K09880	Lower Inner Duplex Guide
3	032K09890	Lower Exit Guide Assembly w/ Strip Flag
4	032K04640	Outer Duplex Paper Guide with Sensors
5	032K04630	Upper Duplex Guide with Solenoid Assembly
6	059E05611	Exit Roller
7	022E32420	Takeaway Roller
8	022E32410	Duplex Roller
9	604K31140	Separator Pad Kit
10	604K42200	Pick Assembly and Retard Roller
		Kit
11	050E29040	525-Sheet Tray (adjustable to legal)
12	059K76570	525-Sheet Feeder (HCF) with Tray
13	038K23440	Exit Module Assembly
14	032K09900	Assembly, Guide, Out Takeaway



PL 4.1 Drive

ltem	Part	Description
1	121K44430	Preheater Lift Solenoid Assembly
2	127K68130	Y-Axis Motor Assembly
3	121E20120	Tray 1 Pick Solenoid
4	121K44480	Head Tilt Solenoid Assembly
5	007K20040	Media Drive with 2 Clutches
6	127E17160	Tray 2 Lift Motor
7	133K25010	Electronics Module Fan
8	807E39790	Compound Head Tilt Gear, Missing
		Tooth
9	-	Lift Motor Gear (P/O PL 4.1 Item 6)
10	033E05190	Head Maintenance Clutch (Electric
		Clutch, Wiper)
11	127K68450	X-Axis Motor Assembly w/Bracket
12	127E16890	Drum Cooling Fan
13	007K20021	Process Drive with Gear Box and
		Motor
14	004K07630	Damper, CAM, Head Tilt
15	807E16060	Head Tilt Missing Tooth Gear



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PL 5.1 Electrical

Item	Part	Description
1	084K37201	Electronics Module (w/o RAM, Configuration Card, NVRAM)
2	121K50970	Hard Disk Drive
3	237E23660	8-pin NVRAM
4	237E24920	512 MB SDRAM, SO-DIMM, 200- PIN DDR2
-	237E25600	1 GB SDRAM, SO-DIMM, 200-PIN DDR2
5	069E00650	Configuration Card (8570DN)
-	069E00660	Configuration Card (8570N)
-	069E00670	Configuration Card (8870)
6	112E01180	Power Supply Board (P/O PL 5.1 Item 1)
7	160E02810	Main Controller Board (Image
		Processor Main Board) (P/O PL 5.1
0	160502800	Rewar Control Board (P/O PL 5.1
0	100E02000	Item 1)
9	960K59601	Wave Amp Board
10	960K59610	I/O Board
11	117E36470	Cable, Ink Loader Data
12	117E36480	Cable, AC Heater, Drum, Preheater
13	117E36390	Harness, Right Side Power Control/ Drum Preheater AC Heater
14	117E29830	Cable, I/O Board Data
15	117E28780	Cable, Front Door
16	117E34880	Cable, Y-Axis Motor Ground Strap
17	117E36810	Harness, Left Side Power Control
18	117E36760	Cable, Wave Amp Signal
19	117E36970	Cable, ZIF, Wave Amp Drive
20	117E29840	Cable, Printhead Interface
21	952K00190	ASM, Jetstack Fuse
22	117E36740	Cable, Right Umbilical



PL 6.1 Sensors and Actuators

ltem	Part	Description
1	130K75230	Sensor, Paper Size Switch (Paper Tray, Sensor Assembly)
2	130E11530	Optical Sensor Generic (Snap In) (No Paper Sensor/ Paper Present Sensor)
3	130E11530	Optical Sensor Generic (Snap In) (Tray Lift/Paper Height Sensor)
4	130E11550	Paper Present Flag
5	930K01380	Sensor, Drum Temperature
6	110E20390	(Safety) Front Door/Exit Door Interlock Switch
7	130E12620	Sensor, Waste Tray Opto
8	386732680	Engine Exit Flag
9	930K01500	Exit Module Sensor Assembly



Xerox Supplies and Accessories

Table 1 Consumables and Routine Maintenance Items

Description	Part Number
Xerox ColorQube Ink (C), ColorQube 8570 (2 Sticks), North America	108R00926
Xerox ColorQube Ink (M), ColorQube 8570 (2 Sticks), North America	108R00927
Xerox ColorQube Ink (Y), ColorQube 8570 (2 Sticks), North America	108R00928
Xerox ColorQube Ink (K), ColorQube 8570 (2 Sticks), North America	108R00929
Xerox ColorQube Ink (K), ColorQube 8570 (4 Sticks), North America	108R00930
Xerox ColorQube Ink (C), ColorQube 8570 (2 Sticks), Europe	108R00931
Xerox ColorQube Ink (M), ColorQube 8570 (2 Sticks), Europe	108R00932
Xerox ColorQube Ink (Y), ColorQube 8570 (2 Sticks), Europe	108R00933
Xerox ColorQube Ink (K), ColorQube 8570 (2 Sticks), Europe	108R00934
Xerox ColorQube Ink (K), ColorQube 8570 (4 Sticks), Europe	108R00935
Xerox ColorQube Ink (C), ColorQube 8570 (2 Sticks), DMO	108R00936
Xerox ColorQube Ink (M), ColorQube 8570 (2 Sticks), DMO	108R00937
Xerox ColorQube Ink (Y), ColorQube 8570 (2 Sticks), DMO	108R00938
Xerox ColorQube Ink (K), ColorQube 8570 (2 Sticks), DMO	108R00939
Xerox ColorQube Ink (K), ColorQube 8570 (4 Sticks), DMO	108R00940
Xerox ColorQube Ink (C), ColorQube 8570 (2 Sticks), Asia Pacific	108R00941
Xerox ColorQube Ink (M), ColorQube 8570 (2 Sticks), Asia Pacific	108R00942
Xerox ColorQube Ink (Y), ColorQube 8570 (2 Sticks), Asia Pacific	108R00943
Xerox ColorQube Ink (K), ColorQube 8570 (2 Sticks), Asia Pacific	108R00944
Xerox ColorQube Ink (K), ColorQube 8570 (4 Sticks), Asia Pacific	108R00945
Xerox ColorQube Ink Metered (C), ColorQube 8570 (4 Sticks), Metered	108R00946
Xerox ColorQube Ink Metered (M), ColorQube 8570 (4 Sticks), Metered	108R00947
Xerox ColorQube Ink Metered (Y), ColorQube 8570 (4 Sticks), Metered	108R00948
Xerox ColorQube Ink Metered (K), ColorQube 8570 (4 Sticks), Metered	108R00949
Xerox ColorQube Ink (C), ColorQube 8870 (6 Sticks), North America	108R00950
Xerox ColorQube Ink (M), ColorQube 8870 (6 Sticks), North America	108R00951
Xerox ColorQube Ink (Y), ColorQube 8870 (6 Sticks), North America	108R00952
Xerox ColorQube Ink (K), ColorQube 8870 (6 Sticks), North America	108R00953
Xerox ColorQube Ink (C), ColorQube 8870 (6 Sticks), Europe	108R00954
Xerox ColorQube Ink (M), ColorQube 8870 (6 Sticks), Europe	108R00955
Xerox ColorQube Ink (Y), ColorQube 8870 (6 Sticks), Europe	108R00956
Xerox ColorQube Ink (K), ColorQube 8870 (6 Sticks), Europe	108R00957
Xerox ColorQube Ink (C), ColorQube 8870 (6 Sticks), DMO	108R00958
Xerox ColorQube Ink (M), ColorQube 8870 (6 Sticks), DMO	108R00959
Xerox ColorQube Ink (Y), ColorQube 8870 (6 Sticks), DMO	108R00960
Xerox ColorQube Ink (K), ColorQube 8870 (6 Sticks), DMO	108R00961
Xerox ColorQube Ink Metered (C), ColorQube 8870 (6 Sticks), Metered	108R00962
Xerox ColorQube Ink Metered (M), ColorQube 8870 (6 Sticks), Metered	108R00963
Xerox ColorQube Ink Metered (Y), ColorQube 8870 (6 Sticks), Metered	108R00964

Table 1 Consumables and Routine Maintenance Items

Description	Part Number
Xerox ColorQube Ink Metered (K), ColorQube 8870 (6 Sticks), Metered	108R00965
Maintenance Kit, Standard Capacity, ColorQube 8570/8870	109R00784
Maintenance Kit, Extended Capacity, ColorQube 8570/8870	109R00783
Waste Tray	109R00754
Rainbow Pack	058K00250

Table 2 Options

Description	Part Number
525-Sheet Feeder	059K76570
Printer Cart	137E11900
Wireless Network Adapter with NA power converter 110V	097S03740
Wireless Network Adapter with Euro power converter 220V	097S03741
Wireless Network Adapter with UK power converter 220V	097S03742

Table 3 Power Cords

Description	Part Number
Power Cord, North America (NEMA 5-15), 115V, 13A	117E35170
Power Cord, Euro, 230V	117E29500
Power Cord, UK, 240V	117E29510
Power Cord, Australia, 230V	117E29490
Power Cord, Switzerland, 230V	117E35050
Power Cord, Denmark, 230V	117E29460
Power Cord, China, 220V	117E35030
Power Cord, Argentina, 220V	117E35040
Power Cord, Italy, 230V	117E29450
Power Cord, Israel, 230V	117E29480
Power Cord, India/ South Africa, 230V	117E29470

Table 4 Kits and Other Items

Description	Part Number
Mechanical Hardware Kit	604K42210
Repackaging Kit	695K22810
Grease, Nye Rheolube 368F	070E00890
Tool, Screwdriver, Torque, Adjust	003082700
Bit, Screwdriver, 0.25 Hexdrive, T20	003086600
CA ASSY,SP; Discrete, Serial Adapter; Crimp 5,26 AWG,(1 X 5, JACK TIP) X (DSUB, Female, STR, 25 POS, AMP 147913-7); High Reliability	600T80374
Cable, Serial, DB9F-DB25M, PC Null-Modem Type; Belkin #F2L044-10	600T80375
Printhead ZIF Connector Unlock/Lock Tool	650K32910

Table 4 Kits and Other Items

Description	Part Number
Inbox Kit, 8570/8870 (110V)	650K32340
Inbox Kit, 8570/8870(220V)	650K32510

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Printer Power On Process

Use Table 1 and the Mechanical Engine Initialization diagram (Figure 1), to troubleshoot failures that occur during the power-on sequence. Table 1 provides typical timing of mechanical events that occur in the ColorQube 8570/8870 relative to power-on, assuming the printer is cold and was shutdown properly. Timing may also vary dependent on the Printhead position and environmental conditions.

NOTE: Warm printers reach "Ready To Print" in about 2 minutes while cold printers require up to 12 minutes. Only cold printers require Steps 18-21 below for cleaning the Printhead. A cold printer is defined by the Printhead temperature being below 95 - 100°C.

Printer Power On Sequence

The following lists the chain of events that occur when you turn on the printer. You can follow this list as one means of determining if the printer is operating correctly. The exact chain of events depends upon the last power down condition and where the Printhead is positioned, this is stored in non-volatile RAM.

- 1. Power supply senses AC line voltage conditions (110 VAC or 220 VAC) and enables DC voltages. If an overload occurs, the printer turns off the high voltage DC supplies, causing a "blink" effect on the Control Panel LEDs.
- 2. The Boot loader performs CPU initialization and RAM test. It then sends the boot loader version to the serial port.
- Power-On Self Test (POST) initializes the Control Panel. The Control Panel LED turns red, green, orange, and then off. The Control Panel LCD then goes black and then clear. The POST version displays on the LCD and waits two seconds. During this time the operator can press the **Back** button to bypass the remaining POST test.
- 4. Low level Power-On Self Test (POST) diagnostics are performed. The Control Panel displays status messages as each sub-test is performed. This test takes about 8 seconds. All LEDs are off during the test.

If POST diagnostics pass, the green LED turns on.

If the test detects an error, the fault message displays on the LCD and the printer flashes the LEDs with a repeating fault code pattern.

- 5. The VxWorks operating system is initialized and engine code is started. This takes about 15 seconds. The Xerox logo is displayed.
- 6. Print Engine Self Test (PEST) diagnostics are then performed. These test the heaters, clutches, motors and solenoids. As each clutch is tested, you hear clicking with four high tones as each motor is tested. This test takes about 30 seconds.
- 7. Energy Star is displayed on the Control Panel.
- 8. The printer now runs the mechanical initialization. The exact sequence depends on the initial position of the Printhead and Wiper Assembly.

The System Power On Sequence (Table 1) is the primary reference for troubleshooting powerup problems.

Table 1 Printer Power On Sequence

ltem	Power On Event	Elapsed Time (mm:ss)
1.	Set power switch to On.	00:00
2.	Control Panel LED flashes red-green-yellow-orange-off.	00:03

Table 1 Printer Power On Sequence

ltem	Power On Event	Elapsed Time (mm:ss)
3.	Control Panel displays "ColorQube 8570_8870 Power on Self Test Complete."	00:04
4.	Control Panel displays "Initializing."	00:11
5.	Power supply fan starts turning.	00:20
7.	Control Panel displays XEROX logo & LED turns green.	00:24
8.	Print Engine Self Tests (PEST) begin with solenoids and clutches.	00:26
9.	Four high tones from motor testing.	00:49
10.	Print Engine Self Test complete.	00:48
11.	Control Panel displays Energy Star logo.	00:58
12.	Mechanical initialization begins.	01:08
13.	Back light on Control Panel display turns On.	01:15
14.	Control Panel displays "Warming Up."	01:24
15.	Control Panel displays "Warming Up 5%."	01:51
16.	Mechanical initialization ends.	02:04
17.	Control Panel displays "Warming Up xx%" (increasing toward 100%).	02:16
18.	When the Control Panel displays "Warming Up 21%", cleaning starts Cold systems only.	07:34
19.	Cleaning ends Cold systems only.	10:16
20.	Control Panel displays "Printing page 1 of 4" Cold systems only.	11:12
21.	Cleaning page exits Cold systems only.	11:48
22.	Startup page exits (if enabled)	11:58
23.	Control Panel displays "Ready To Print."	11:59

Mechanical Engine Initialization Diagram



Figure 1 Mechanical Engine Initialization

Unplanned Shutdown

If the printer was not shutdown by the power switch the last time it was turned off or it was shutdown with ink on the Drum.

As soon as the printer has warmed up, the Media Path Motor moves the Wiper to the bottom of its travel and the Process Motor moves the Printhead to the print position as the chase page is sent through the paper path to clean ink from the Drum.

Temperature Below Purge Threshold

If the Printhead, ink Reservoirs, or Jetstack temperature are below purge threshold, the printer performs a Printhead cleaning cycle.

- 1. The printer waits for the Printhead to reach its purge temperature.
- 2. The printer moves the Wiper to the bottom of its travel and tilts the Printhead forward to its Print position to check the ink levels. If the ink level is low, ink is melted into the appropriate reservoirs.
- 3. The Printhead tilts to the Park position and moves the Wiper Assembly to the Purge position in front of the Printhead Faceplate.
- 4. The Purge Pump begins the pressure purge after about 3 seconds the Purge Pump Solenoid opens.
- 5. The Printhead tilts forward against the Wiper Assembly (Wipe position) and the purge and wipe cycle begins.
- 6. The Control Panel indicates the printer is performing the cleaning process.
- 7. The Printhead is moved left to the tilt zone, where the Printhead can tilt back without interference, and the Media Path Motor moves the Wiper to the bottom of its travel to engage the Printhead Tilt Cam. The Process Motor rotates the Printhead Tilt Gears, which tilt in order to move the Printhead to the forward Print position.
- 8. After the print engine is in a known, valid state, the Control Panel display shows the warm-up progress (the Ready LED flashes). When warm-up completes, the Ready LED displays solid.
- 9. The temperature of the Printhead, Drum, and Paper Preheater are allowed to stabilize at their operating temperatures and ink is melted if needed.
- 10. The Printhead is homed to the Print position for printing.
- 11. A cleaning page is printed at this time, if a purge was performed.
- 12. A Startup page is printed (if enabled).
- 13. The Control Panel displays a message that the printer is initializing and then ready.
- 14. The print engine is initialized and is ready to print.

Hidden Service Menu

The Hidden Service menu provides access to information pages and tests for diagnosing and correcting printer malfunctions and accessing special features. Access the Hidden Service menu as follows:

- 1. From the Control Panel menu, select **Troubleshooting** --> **Service Tools**.
- 2. With the cursor at the top of the **Service Tools** menu (**Printer Status Page**), press both the **Up** and **Down Arrow** buttons to display the Hidden Service menu.

NOTE: The Hidden Service menu varies by model.

Menu Item	Description	
Manufacturing	Contains various tests including Jet Check, Eliminate Light Stripes, Solid Fills, Manufacturing Skew Margin, Check Ink Levels for Shipping, Adjust Ink Levels for Shipping.	
	NOTE: The Manufacturing menu is available in Service mode only.	
Test Prints	See Test Prints in Chapter 3 for description of each test print available.	
Startup Page	Prints basic printer configuration and networking information.	
Eliminate Light Stripes	Performs a cleaning procedure to remove light stripes in prints; this process will take about 5 minutes.	
Fault History	Displays available information regarding the last 15 faults reported by a test and/or the print engine.	
Jam History	Displays available information regarding the last 20 jams reported by a test and/or the print engine.	
Diagnostics History	Displays the results of the diagnostic tests.	
Enter Diagnostic Mode	See Entering Service Diagnostics for how to access Service Diagnostics menu.	
Reset NVRAM	Resets the printer back to default settings and clears all network settings. If possible, print the Configuration page before resetting NVRAM.	
Reset Printer	Resets all items in the System Controls menu to default values.	
Head Adjust	Allows setting of the printhead voltage scale factor value. Default value of 128. A higher value increases the voltage used to drive the jets. This is for manufacturing or engineering use only.	
Adjust X-Axis Scale	Opens a menu that allows a service technician to make adjust- ments to the X-axis velocity scale factor by evaluating a printed pattern. This is for manufacturing or engineering use only.	
Y-Axis Thermal Calibration	Calibrates the Y-Axis Motor. This is for manufacturing or engi- neering use only.	
Drift Compensation	Turns On and Off the feature to automatically adjust the Print- head waveform for Drift. This is for manufacturing or engineering use only.	

Table 1 Hidden Service Menu Selections

Menu Item	Description
Head to Drum Adjust	Stops Drum rotation, shuts off the Drum Heater and moves the Printhead to the home position so that head-to-drum measure- ments and adjustments may be performed. This is for manufacturing or engineering use only.
Wipe Adjust	Sets the Wipe adjust value.
Purge Adjust	Sets the Purge adjust value.
Service Usage Profile	Prints pages with detailed system-usage information.
OCR Usage Profile	Prints pages with system-usage information in an OCR friendly format.
Center Image	Adjusts the margin to center an image.
Engine Copy Count	Displays engine copy count.
Head Serial Number	Displays the Printhead serial number.
Head Cal Date	Displays the date the Printhead was calibrated.
Head Version	Displays the Printhead version.
Engine Firmware Version	Displays the engine firmware version.

Service Diagnostics

The printer has built-in diagnostics to aid in troubleshooting problems with the printer components. The Service Diagnostics menu provides a means to test Sensors, Motors, Switches, Clutches, Solenoids, Fans, and Power Supplies. Diagnostics also contain functions to report printer status and some NVRAM access. Service Diagnostics are to be executed by a certified service technician only.

The Control Panel and Exit Module are discreet subsystems with their own diagnostic specialized diagnostic firmware. Typically, the printer's Service Diagnostics firmware simply commands the subsystem to perform the built in test, and reports the results.

Test results appear on the Control Panel display in this format: RX: YYYYYY, where X is the result identifier (starting with 0), and YYYYYY is the result. Labels (meaning), and units are not presented. If the results exceed the display, the last line is replaced by Display full - press key to page. Pressing any Control Panel key, except the Back (small round) key, scrolls the display to additional results. When the **Down(v)**, **Up(^**), or **Enter** (large round) buttons are pressed after the last results group have been presented, the first group will be presented again (i.e. with wraparound). If the **Cancel** or **Back** button is pressed after the last result group has been displayed, the results are erased and the menu is refreshed.

Control Panel Button Functions

When the printer is powered up (or reset) directly into Diagnostic mode, or **Enter Diagnostics** is selected from the Hidden Service menu, the initial Control Panel displays the Service Diagnostics menu. The display reverts back to this menu whenever a test terminates. On return, the highlighted menu item is the previously selected test. Use the Control Panel buttons as described in Table 1 to navigate the menu, select tests and respond to prompts.

Table 1 Control Panel Button Functions in Service Diagnostics

Button	Function	
BACK	Returns to the prior higher level menu structure, if available. Cancels the display of test results on the Control Panel and allows the current test to complete. If help text is displayed on the Control Panel, pressing BACK restores the current menu item and removes the help text.	
CANCEL	Cancels certain functions of the printer.	
?	Provides help information about the current menu selection, if avail- able. Press any key to advance through the help text.	
UP	Scrolls up one menu item within a menu list. This control does not 'wrap'. Used to increment data in tests requiring user input.	
DOWN	Scrolls down one menu item within test results. This control does not 'wrap'. Used to decrement data in tests requiring user input.	
ОК	Enters the highlighted menu. Executes the current test item.	
NOTE: Pressing any key may cause an abort if allowed by the test being performed. A power cycle is used to arbitrarily stop a test.		

Test Selection Diagnostics Mode

The Test Selection mode provides limited access to Diagnostic tests, and is typically used during remote customer support activity where the customer is being directed to run the test and report results by a support representative.

NOTE: Before running any diagnostic test, prepare the printer according to test requirements.

To enter Test Selection mode from Customer mode and display the Test Selection screen:

- 1. From the Control Panel Menu, scroll down to select **Troubleshooting** and press the **OK** button.
- 2. Scroll down to **Service Tools** and press the **OK** button.
- 3. Scroll down to Enter Diagnostic Mode and press the OK button.
- 4. The printer reboots.
- 5. After initialization, a **Caution** screen is displayed on the Control Panel. Press any key to continue.

When the printer transitions from Customer mode into Test Selection mode, the initial Control Panel display is the Test Selection screen as follows:

Diagnostics 23.P1.2.32.0.1

Test: 00 No Test Selected

The Diagnostics Menu revision number identifies the printer and diagnostics firmware versions. The first two identify the printer firmware version. The last digit identifies the Diagnostics Firmware version. The Test number (00) is entered using the **Up** or **Down** buttons. The currently selected Test appears next to the number. Run the test by pressing the **OK** button. At that point, the display changes to the name of the test, followed by a series of status messages providing a general idea of the current test activity. When the test completes, the display changes to display the results. Test 00 is inoperative and causes no response if the **OK** button is pressed. To return to Customer mode, run test **01**. Table 2 lists the available tests.

Table 2 Test Selection Numbers

No.	Test Name	Description	Control Panel Display/ Note
00	No test selected	This menu allows the selection of diagnostic test by entering a test number and pressing the OK button. Pressing the Up or Down button will increment or decrement the blinking digit of the test number. The digit to be modified can be changed by pressing the Back button. Pressing the Cancel button will reset the test number to 00. The test name corre- sponding to the test number is also displayed. Pressing the OK button will cause the currently indicated test to be executed. Most tests perform the indicated action and terminate with a display of measured results (if any). The remainder runs until any button is pressed.	
01	Exit Diagnostics	This function exists Diagnostics, runs through POST to Ready, and returns the printer to normal operation.	
02	Clear Fault History	This function clears the Fault History and Extended Fault History NVRAM storage areas.	initializing Confirm Fault History reset! press (i) Info for discus- sion press OK to Continue press any other key to Abort Abort - press any key to exit
03	Clear PS NVRAM	This function clears the non-reserved data in the PostScript portion of NVRAM. When the printer next initial- izes in Customer mode, PostScript will restore all factory defaults value. Refer to PS NVRAM Reset.	initializing Confirm PS NVRAM Clear! press (i) Info for discus- sion press OK to Continue press any other key to Abort Abort - press any key to exit

Table 2 Test Selection Numbers

No.	Test Name	Description	Control Panel Display/ Note
04	Clear PE NVRAM	This function clears all data in the print engine portion of NVRAM. When the printer next initializes in Customer mode, the print engine will restore all factory default values. This function clears page counts on Start/ Config pages; does not change billing meters or total impressions.	initializing Confirm PE NVRAM Clear! press (i) Info for discus- sion press OK to Continue press any other key to Abort
			Abort - press any key to exit
05	Set PE NVRAM to Defaults	This function sets all data in the print engine portion of NVRAM to factory default values. If the NVRAM format is not the expected format, the format is updated before the default values are restored.	Confirm PE NVRAM Reset! press (i) Info for discus- sion press OK to Continue press any other key to Abort
			resetting

Table 2 Test Selection Numbers

			Control Panel Display/
No.	Test Name	Description	Note
06	DMU Oil Blot	This test checks if the DMU nips blot are OK.	initializing opening host connec- tion initializing test Home the DM Home the Y-Axis run a chase page gathering data picking media lifting main tray gathering data exit run DM cycle gathering data moving tf axis to home step the DM (14x) id_stepPrintDM:DM is in oil position position Y-axis to xxx.xx id_stepPrintDM:DM is in Home position run a chase page begin stage gathering data saving data COMPLETE no results available resetting
77	Display Fault History	This function displays all current Fault History from NVRAM including fault code, the corresponding print count, and the date/time of occurrence. The fault code display starts with the old- est fault code. Fault information from Extended Fault History is displayed first and is tagged with the Character E. Jam Codes are never stored in the Extended Fault History. NOTE: Jam History can only be accessed from Customer mode. There is no way to access the infor- mation from Service Diagnostics mode.	initializing accessing system Fault Code Print Count/ Time xx:xx,xxx.xxx xxxxxx xx:xx,xxx.xxx xxxxxx xx:xx,xxx.xxx xxxxxx xx:xx,xxx.xxx xxxxxx

Entering Service Diagnostics

Print Engine Tests: In general, Diagnostic testing is assumed to be done with the printer in a "diagnostic configuration." This means the following applies:

- Doors are closed unless instructed otherwise.
- The print engine is thermally warm (at nominal printing temperatures).
- All axis's are or have been moved to their HOME position (run MECH INIT function).
- Trays are inserted and contain A/A4 media, unless instructed otherwise.

The tests may also be performed with the system operating at less than normal printing temperatures, but may produce slightly less typical results.

NOTE: While the heaters are on, the Y-Axis is turning (to keep the Drum heating even), and the Drum Fan may be active. The **Exercise Menu** -> **Heaters** -> **All Heaters Off** function disables thermal regulation if access to these areas is necessary. The background thermal regulation is reactivated by the **Exercise Menu** -> **Heaters** -> **All Heaters On** function if the printer is still warm enough. Turning off a single heater does NOT disable this function and the heater may be turned back on following the next check test or reboot. The Electronics Module Fan is always active.

Two options are available for entering Service Diagnostics.

- Entering Service Diagnostics by Rebooting the Printer: This method performs a complete check on the printer prior to entering Service Diagnostics.
- Entering Service Diagnostics without Rebooting the Printer: This method does not provide access to all test functions. Tests are listed numerically.

NOTE: Enter Service Diagnostics by rebooting the printer is recommended when troubleshooting the printer.

Entering Service Diagnostics by Rebooting the Printer

When the printer powers up in Diagnostic mode, the current Printhead temperature is measured. If Printhead reservoir temperature is greater than 110 degrees, thermal regulation is restarted to keep the printer warm while Diagnostic tests are being run. This thermal regulation is in addition to any test-specific initialization requirements. If possible, each test attempts to leave the printer warm. If a failure is encountered, the heaters may be turned off. If the initial temperature is cold, thermal regulation is not started.

- 1. Turn the printer power off.
- 2. Turn the printer power on.
- 3. Press and hold the **Back** and **Help** (?) buttons simultaneously.
- 4. Hold the buttons until the display reads **Beginning Service Mode Initialization**. Release the buttons and the printer reboots into service mode with the Service Diagnostics menu displayed.

Entering Service Diagnostics without Rebooting the Printer

- 1. From the Control Panel menu, scroll down to Troubleshooting and press the OK button.
- 2. Scroll down to Service Tools and press the OK button.
- 3. With the cursor highlighted **Printer Status Page**, press both the **Up** and **Down Arrow** buttons to display the Hidden Service Menu.
- 4. Scroll down to Enter Diagnostic Mode and press the OK button.
- 5. The printer reboots and enters Service Diagnostic mode.

The ColorQube 8570/8870 Service Diagnostics Menu Maps are not available from the Control Panel. Figure 1 and Figure 2 contain the list of functions available in the Service Diagnostics Menu.



Figure 1 Service Diagnostics Menu Map (1 of 2)


Figure 2 Service Diagnostics Menu Map (2 of 2)

Service Diagnostics Tests

Service Diagnostics Test Functions

The printer reboots while entering or exiting all Diagnostic modes. The printer keeps the thermals hot during Diagnostics to avoid unnecessary cleaning cycles. If a Diagnostic test runs into a problem while initializing the heaters, a message displays, "Test Fault, can't warm up - press any button", you can still continue to run Diagnostics under this condition.

Table 1 Functional Organization of Service Diagnostic Tests

Menu Function	Description
(*) For Manufacturing	/Development use only
Monitor	These functions provide passive continuous reporting of parameters or state information without changing the current state (i.e. temperatures, mechanism positions, etc.). Most monitor functions run until cancelled.
Exercise	These functions provide the ability to change the printer's state in defined ways (turn on the heaters, activate a solenoid, or rotate a shaft. The change of state is usually as small as possible to show a visible change. If possible, the function attempts to put the state back to where it was initially. Most exercise functions run until cancelled. The technician is expected to directly observe the resulting state changes to verify results.
Function	These functions contain a set of functions for commanding more com- plex actions by portions of the printer.
Check (*)	These functions exercise subsystems and printer components individu- ally outside of normal Customer mode operation. Used primarily by Engineering/Development to test printer operation, these tests collect data, process the data to extract specific parameters, and report the parameters to the Control Panel. These parametric values are com- pared with defined limits.

Service Diagnostics Menu Definitions

Table 2 provides a description, behavior, and preconditions for Service Diagnostic tests.

Table 2 Service Diagnostics Menu Definitions

	0						
Menu Item	Description	Control Panel Display	Note				
(*) For Manufacturing/Development use only							
Main Menu	This menu contains sub menu	I for the printer subsystems.					
Menu Help	The Menu Help displays infor	mation on how to use the me	enus.				
Exit Diagnos- tics	Diagnos- Exit Service Diagnostics exits and runs through POST to Ready.						
Monitor Menu	onitor Menu The Monitor Menu contains a set of functions for passively viewing or mor toring printer mechanical parameters. See the Monitor Menu for a descri- tion of the individual test functions and results.						
Exercise Menu	The Exercise Menu contains a cal actions which may then be description of the individual te	a set of functions for actively observed. See the Exercise st functions and results.	causing mechani- e menu table for a				

Menu Item	Description		Control Panel Display	Note
Function Menu	The Function Menu con plex actions by portions description of the individ	tains a of the lual te	a set of functions for comma printer. See the Function m st functions and results.	nding more com- enu table for a
Check Menu (*)	Contains a set of extens eters for comparison ag	ive ma ainst l	anufacturing tests that return nown limits.	measured param-
Monitor Menu				
	The Monitor Menu tests tures, positions, etc.), ar the values without chang printer. Some monitor te ing of the values as a sta erwise.	repor nd der ging th ests, si ate cha	t current values (tempera- nonstrate the ability to read ne current state of the uch as sensors, allow track- ange, either manually or oth-	State changes are reported as: H = Open or de-actu- ated L = Closed/ Present/ Actuated
Sensors	This function monitors the changes from manual and Panel buttons. When a state change is change reports scroll up several times very fast (to bounce. The monitored PreDeskew Deskew Deskew Preheat Strip Exit Tray Full Waste Tray Present Ink Load Cover Op Top Door Open Front Door Open Front Door Open Tray 1 Out of Media Tray 2 Open Tray 2 Lifted Tray 3 Pick Tray 3 Open Tray 3 Lifted Tray 3 Open Tray 3 Lifted Tray 3 Out of Media Tray 4 Open Tray 4 Lifted	e sta ctivati detec o as ne too fas Sensc Sensc a a a	te of each discrete Sensor a con of the Sensor Flags, exce ted, it is reported on the disp ew ones are added. If the Se st to do by hand), the transition ors include:	nd reports any ept the Control blay. The state ensor transitions on is reported as a

Menu Item	Description	Control Panel Display	Note
Sensors (cont.)	Tray 5 Pick		
	Tray 5 Open		
	 Tray 5 Lifted 		
	Tray 5 Out of Media	à	
		initializing	
		operator abort	
		press any key to exit	
Ink SKU Sen-	This function monitors th	e state of SKU Sensors and repo	orts any changes
sor	from manual activation o played in a column.	n any ink slot. SKU Sensors for	each color are dis-
		initializing	
		A B C D	
		Y 1 0 1 0	
		K 1 0 1 0	
		press any key to exit	
Encodore	This function reports rea	dings from each of the continuou	is Sonsors Tho
Elicouels	ungs nom each or the continuou	is Selisois. The	
	Sensors include:		
	 Sensors include: MPT Media Width 		
	Sensors include: • MPT Media Width • V-Avis Position		
	Sensors include: • MPT Media Width • Y-Axis Position		
	Sensors include: MPT Media Width Y-Axis Position PM Motor Position		
	 Sensors include: MPT Media Width Y-Axis Position PM Motor Position MP Motor Position 		
	Sensors include: MPT Media Width Y-Axis Position PM Motor Position MP Motor Position	initializing	
	Sensors include: MPT Media Width Y-Axis Position PM Motor Position MP Motor Position	initializing MPT Media Width: xxxx	
	Sensors include: MPT Media Width Y-Axis Position PM Motor Position MP Motor Position	initializing MPT Media Width: xxxx Y Axis Position: xxxxxx	
	Sensors include: MPT Media Width Y-Axis Position PM Motor Position MP Motor Position	initializing MPT Media Width: xxxx Y Axis Position: xxxxxxx PM Motor Position: x	
	Sensors include: MPT Media Width Y-Axis Position PM Motor Position MP Motor Position	initializing MPT Media Width: xxxx Y Axis Position: xxxxxxx PM Motor Position: x MP Motor Position: x	
	Sensors include: MPT Media Width Y-Axis Position PM Motor Position MP Motor Position	initializing MPT Media Width: xxxx Y Axis Position: xxxxxxx PM Motor Position: x MP Motor Position: x	
	Sensors include: MPT Media Width Y-Axis Position PM Motor Position MP Motor Position	initializing MPT Media Width: xxxx Y Axis Position: xxxxxxx PM Motor Position: x MP Motor Position: x operator abort press any key to exit	
Ink Melt Status	Sensors include: MPT Media Width Y-Axis Position PM Motor Position MP Motor Position	initializing MPT Media Width: xxxx Y Axis Position: xxxxxxx PM Motor Position: x MP Motor Position: x operator abort press any key to exit	It heater setpoint
Ink Melt Status	Sensors include: MPT Media Width Y-Axis Position PM Motor Position MP Motor Position This function reports the and temperature, and the	initializing MPT Media Width: xxxx Y Axis Position: xxxxxxx PM Motor Position: x MP Motor Position: x operator abort press any key to exit current ink supply status, ink me e Printhead ink level for each col	It heater setpoint, or. The colors are
Ink Melt Status	Sensors include: MPT Media Width Y-Axis Position PM Motor Position MP Motor Position This function reports the and temperature, and the reported as M (magenta)	initializing MPT Media Width: xxxx Y Axis Position: xxxxxxx PM Motor Position: x MP Motor Position: x operator abort press any key to exit current ink supply status, ink me e Printhead ink level for each col), C (cyan). Y (yellow), B (black)	elt heater setpoint, or. The colors are corresponding to
Ink Melt Status	Sensors include: MPT Media Width Y-Axis Position PM Motor Position MP Motor Position This function reports the and temperature, and the reported as M (magenta) the labels in the Ink Load	initializing MPT Media Width: xxxx Y Axis Position: xxxxxxx PM Motor Position: x MP Motor Position: x operator abort press any key to exit current ink supply status, ink me e Printhead ink level for each col), C (cyan). Y (yellow), B (black) der Chutes.	elt heater setpoint, or. The colors are corresponding to
Ink Melt Status	Sensors include: MPT Media Width Y-Axis Position PM Motor Position MP Motor Position This function reports the and temperature, and the reported as M (magenta) the labels in the Ink Load	initializing MPT Media Width: xxxx Y Axis Position: xxxxxxx PM Motor Position: x MP Motor Position: x operator abort press any key to exit current ink supply status, ink me e Printhead ink level for each col), C (cyan). Y (yellow), B (black) der Chutes.	elt heater setpoint, or. The colors are corresponding to
Ink Melt Status	Sensors include: MPT Media Width Y-Axis Position PM Motor Position MP Motor Position This function reports the and temperature, and the reported as M (magenta) the labels in the Ink Load	initializing MPT Media Width: xxxx Y Axis Position: xxxxxxx PM Motor Position: x MP Motor Position: x operator abort press any key to exit current ink supply status, ink me e Printhead ink level for each col), C (cyan). Y (yellow), B (black) der Chutes.	elt heater setpoint, or. The colors are corresponding to
Ink Melt Status	Sensors include: MPT Media Width Y-Axis Position PM Motor Position MP Motor Position This function reports the and temperature, and the reported as M (magenta) the labels in the Ink Load	initializing MPT Media Width: xxxx Y Axis Position: xxxxxxx PM Motor Position: x MP Motor Position: x operator abort press any key to exit current ink supply status, ink me e Printhead ink level for each col), C (cyan). Y (yellow), B (black) der Chutes. supply/ph level/setpoint/ new Y: xx xxxxx - x.x -xx.x	elt heater setpoint, or. The colors are corresponding to
Ink Melt Status	Sensors include: MPT Media Width Y-Axis Position PM Motor Position MP Motor Position This function reports the and temperature, and the reported as M (magenta) the labels in the Ink Load	initializing MPT Media Width: xxxx Y Axis Position: xxxxxxx PM Motor Position: x MP Motor Position: x operator abort press any key to exit current ink supply status, ink me e Printhead ink level for each col), C (cyan). Y (yellow), B (black) der Chutes. supply/ph level/setpoint/ new Y: xx xxxxx - x.x - xx.x C: xx xxxxx - x.x - xx.x	elt heater setpoint, or. The colors are corresponding to
Ink Melt Status	Sensors include: MPT Media Width Y-Axis Position PM Motor Position MP Motor Position This function reports the and temperature, and the reported as M (magenta) the labels in the Ink Load	initializing MPT Media Width: xxxx Y Axis Position: xxxxxxx PM Motor Position: x MP Motor Position: x operator abort press any key to exit current ink supply status, ink me e Printhead ink level for each col), C (cyan). Y (yellow), B (black) der Chutes. supply/ph level/setpoint/ new Y: xx xxxxx - x.x - xx.x C: xx xxxxx - x.x - xx.x	elt heater setpoint, or. The colors are corresponding to
Ink Melt Status	Sensors include: MPT Media Width Y-Axis Position PM Motor Position MP Motor Position This function reports the and temperature, and the reported as M (magenta) the labels in the Ink Load	initializing MPT Media Width: xxxx Y Axis Position: xxxxxxx PM Motor Position: x MP Motor Position: x operator abort press any key to exit current ink supply status, ink me e Printhead ink level for each col), C (cyan). Y (yellow), B (black) der Chutes. supply/ph level/setpoint/ new Y: xx xxxxxx - x.x - xx.x C: xx xxxxxx - x.x - xx.x M: xx xxxxxx - x.x - xx.x B: xx xxxxx - x.x - xx.x	elt heater setpoint, or. The colors are corresponding to
Ink Melt Status	Sensors include: MPT Media Width Y-Axis Position PM Motor Position MP Motor Position This function reports the and temperature, and the reported as M (magenta) the labels in the Ink Load	initializing MPT Media Width: xxxx Y Axis Position: xxxxxxx PM Motor Position: x MP Motor Position: x operator abort press any key to exit current ink supply status, ink me e Printhead ink level for each col), C (cyan). Y (yellow), B (black) der Chutes. supply/ph level/setpoint/ new Y: xx xxxxxx - x.x - xx.x C: xx xxxxxx - x.x - xx.x M: xx xxxxxx - x.x - xx.x B: xx xxxxx - x.x - xx.x operator abort	elt heater setpoint, or. The colors are corresponding to

Menu Item	Description	Control Panel Display	Note
Temperatures	This function reports the curre cated Heaters.	nt setpoint and temperature	alues for the indi-
		Monitor Temp (Setpoint/	Abbreviations
		now)	used:
		LJ:xxx.x-xx.x Y:xxx.x-xx.x	LJ = Leftstack
		RJ:xxx.x-xx.x C:xxx.x-xx.x	RJ = Right Jet-
		RE:xxx.x-xx.x M:xxx.x-xx.x	stack
		DR:xx.x-xx.x B:xxx.x-xx.x	RE = Reservoir
		PH:xx.x-xx.x	DR = Drum
		an anatan ah ant	PH = Preneater
		operator abort	IVI = INK IVIEITER
	This for the second state	press any key to exit	1, 2, 3, 01 4
Heaters	This function reports the curre	ent enable status of the indica	ited Heaters as
	either off or on, and the power	r being currently allocated to	each Heater
	(reported as a percentage of t	ne max rated power for that	Heater).
			Abbreviations
		LJ:Off-000.0 Y:Off-000.0	used:
		RJ:Off-000.0 C:Off-000.0	LJ = Lett Jet-
		RE:OII-000.0 M:OII-000.0	Slack P I - Pight lot
		PH·Off_000.0	KJ = Klyni Jel-
		111.01-000.0	RE - Reservoir
		operator abort	DR = Drum
		press any key to exit	PH = Preheater
		proce any key to okit	IM = Ink Melter
			1. 2. 3. or 4
Line Voltage	This function monitors the cur	rent average line voltage and	reports the cur-
J	rent value as well as the maxi	mum and minimum values re	ad while the func-
	tion during the monitoring peri	od. This also monitors the lin	e voltage seen by
	the power supply. AC voltage i	s sampled at twice the line fre	equency. Fast line
	voltage spikes are not reporte	d. This function helps to eval	uate the AC sup-
	ply, such as line voltage sags	do to the start up of adjacent	equipment. You
	can run this test overnight to r	ecord supply voltage settings	3.
	Pressing any buttons on the C	Control Panel will terminate th	e monitoring.
		initializing	Tests results are
		min: now: max: (volts)	reported as:
		xxx xxx xxx	 Minimum
			Now
		operator abort	 Maximum
		press any key to exit	
Front Panel	This function monitors the sta	te of the Front Panel buttons	and reports any
Buttons	changes. The function exits if	there has been no changes f	or 10 seconds.
		initializing	There is no dis-
		Auto exit if no input for 10s.	play result for the
			Power Saver but-
		<button> pressed</button>	ton.
		<button> released</button>	

Menu Item	Description	Control Panel Display	Note			
Exercise Menu						
	The Exercise Menu contains a group of functions intended to stimulate a specific portion of the print engine printer in such a way that the test can be observed. Listening observations may be required for certain tests and will prompt you on the control panel if covers, doors, or trays need to be removed.					
50 Volts Con- trol	The function of this group allows the control of the 50 volts. The test process includes 1-turn Off 50 volts, measure the voltage, 2 turn on the 50 volt, measure the voltage.	initializing opening host connection initializing test turning off 50V initializing test turning 50V back on measuring power gauge loaded measuring power gauge unloaded saving data COMPLETE R0: 0 or 1 R1: 0 or 1 R2: xxxx.xxxx R3: xxxx.xxxx Display full-press key to page	 R1=0, 50V is functional R1=1, 50V is functional The 50V LED illumination should corre- spond with this. 			
Activators	The tests pulse the specified target causing it to generate a sound or motion. The Exer- cise All function cycles each of the listed components below 4 times, in sequence, until interrupted by pressing the Cancel button. The other functions continue cycling repeatedly until inter- rupted by a control panel key press. The Cancel button should be pressed only when the state is off.	initializing				

Menu Item	Description	Control Panel Display	Note
Activators (cont.)	Tray 1 Pick Solenoid This test briefly energizes the Tray 1 Pick Solenoid and measures parameters. Peak power is expected to be very close to the average power level. A change in heating behavior could indicate a problem with cooling or the thermal conductivity through the mounting.	Tray 1 Pick Solenoid On/Off operator abort	The MPT Door should be closed to avoid trigger- ing an MPT pick cycle. Press any key to terminate.
	Tray 2 Pick Clutch This test briefly energizes the Tray 2 Pick Clutch and mea- sures parameters. Peak power is expected to be very close to the average power level. A change in heating behavior could indicate a problem with cooling or the thermal conductivity through the mounting.	Tray 2 Pick Clutch On/Off operator abort	Press any key to terminate.
	Tray 3 Pick Clutch This test briefly energizes the Tray 3 Pick Clutch and mea- sures parameters. Peak power is expected to be very close to the average power level. A change in heating behavior could indicate a problem with cooling or the thermal conductivity through the mounting.	tray 3 option not detected press any key to continue Tray 3 Pick Clutch On/Off operator abort	Press any key to terminate.
	Tray 4 Pick Clutch This test briefly energizes the Tray 4 Pick Clutch and mea- sures parameters. Peak power is expected to be very close to the average power level. A change in heating behavior could indicate a problem with cooling or the thermal conductivity through the mounting.	tray 4 option not detected press any key to continue Tray 4 Pick Clutch On/Off operator abort	Press any key to terminate.

Table	2	Service	Diagnostics	Menu	Definitions
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Menu Item	Description	Control Panel Display	Note	Menu Item	Descrip
Activators	Tray 5 Pick Clutch	tray 5 option not detected	Press any key to	Activators	Purge V
(cont.)	This test briefly energizes the	press any key to continue	terminate.	(cont.)	This test
	Tray 5 Pick Clutch and mea-				Vent So
	sures parameters. Peak	Tray 5 Pick Clutch On/Off			paramet
	power is expected to be very				expected
	close to the average power	operator abort			the aver
	level. A change in heating				change
	behavior could indicate a				could inc
	problem with cooling or the				cooling
	thermal conductivity through				ductivity
	the mounting.				ing.
	Deskew Clutch	Deskew Clutch On/Off	Press any key to		Preheat
	This test briefly energizes the		terminate.		This test
	Deskew Clutch coil and mea-	operator abort			energize
	sures parameters. Peak				Preheat
	power is expected to be very				bly and
	close to the average power				ters. Ead
	level. A change in heating				activated
	behavior could indicate a				both hig
	problem with cooling or the				els while
	thermal conductivity through				sured to
	the mounting.		_		Solenoid
	Strip Solenoid	Strip Solenoid On/Off	Press any key to		dently co
	This test briefly energizes the		terminate.		the expe
	Stripper Solenoid and mea-	operator abort			power.
	sures parameters. Peak				Tilt Sole
	power is expected to be very				This test
	close to the average power				Tilt Sole
	hehewier eeuld indicate e				sules pa
	penavior could indicate a				noid is e
	thermal conductivity through				power a
	the mounting				times los
			Deces and the factor		activator
	Head Maintenance Clutch	HM Clutch On/Off	Press any key to		half of th
	Maintenance Clutch soil and	on orotor ob ort	terminate.		nower is
	maintenance Clutch coll and	operator abort			is dropp
	neasures parameters. Peak				second
	close to the average power				The Sole
	level A change in heating				release
	behavior could indicate a				on perio
	problem with cooling or the			L	
	thermal conductivity through				

əm	Description	Control Panel Display	Note
ors	Purge Valve Solenoid This test energizes the Purge Vent Solenoid and measures parameters. Peak power is expected to be very close to the average power level. A change in heating behavior could indicate a problem with cooling or the thermal con- ductivity through the mount- ing.	Purge Valve Solenoid On/ Off operator abort	Press any key to terminate.
	Preheater Solenoid This test briefly separately energizes both coils of the Preheater Solenoid Assem- bly and measures parame- ters. Each Solenoid Coil is activated for a short time a both high and low power lev- els while the power is mea- sured to show that the Solenoid Coils are indepen- dently controllable and draws the expected amount of power.	Preheater Solenoid On/Off operator abort	Press any key to terminate.
	Tilt Solenoid This test energizes the Head Tilt Solenoid Coil and mea- sures parameters. The Sole- noid is engaged at high power and held at a lower power. The on cycle is four times longer than the other activators. During the first half of the on period, high power is applied. The power is dropped to low during the second half of the period. The Solenoid should not release until the end of the on period.	Head Tilt Solenoid On/Off operator abort	Press any key to terminate.

Menu Item	Description	Control Panel Display	Note	Menu Item	Description	Control Panel Display	Note
Motors/Shafts	The Motor and Shaft func- tions drive the specified Motor or Shaft enough to generate enough motion to be easily observed (usually 1 revolution), without making a substantial change to the state of the printer. The functions continue to cycle the Motor/Shaft repeat- edly until interrupted by a Control Panel key press. The permanently connected Shafts are verified with the driving Motor. The other Shafts are verified via a Clutch activation. Process Motor The Process Drive motor is	initializing CW Pause	To terminate the operation, press	Motors/Shaft (cont.)	 Y-Axis Motor (cont.) The Y-Axis motor is moved to the Home position, then turned on and run slowly for one revolution. The slow motion removes the effect of inertia from the test, and the one revolution avoids a large system status change via any permanently connected loads. With the slow operat- ing speed used by the test, the motor may stall at a bad commutator segment. X-Axis Motor This function drives the X- Axis Motor CW 1/8 rev. then CCW 1/8 rev, and repeated so that operation may be 	CW Pause CCW Pause	To terminate the operation, press any key when Pause is dis- played.
	moved to the Home position, then the motor is jogged CW until it begins to engage the Drum Maintenance Unit. Next, the motor is run slowly CCW for one revolution. The slow motion removes the effect of inertia from the test, and the one revolution avoids a large system status change via any permanently con- nected loads. With the slow operating speed used by the	CCW Pause operator abort	any key when Paused is dis- played.		visually verified. With the Right Cover off, look at the back of the X-Axis Motor and observe that the Shaft rotates 1/8 revolution CW and CCW. The cone-nut will move later- ally a small distance while the cone-nut guide notch engaged with the chassis anti-rotation rib prevents rota- tion,	operator abort	To terminate the
	test, the motor may stall at a bad commutator segment. Unusual average values might indicate a weak motor.				This function cycles the Purge Pump Motor on/off repeatedly to demonstrate controllability.	ON Pause operator abort	operation, press any key when Pause is dis- played.
	Y-Axis Motor This function jogs the selected Motor briefly CW then CCW (except for the Lift Motors which only jog CCW), and the Tray 3 & 4 Motors which only jog CW), so that its operation may be visually verified. The permanently connected Shafts will jog also.	CW Pause CCW Pause operator abort	To terminate the operation, press any key when Paused is dis- played.		Drum Fan Motor This function cycles the spec- ified Fan. The off period is longer than the on period to allow the Fan to slow down enough to be easily observ- able.	ON Pause operator abort	To terminate the operation, press any key when Pause is dis- played.

Menu Item	Description	Control Panel Display	Note	Menu I
Motors/Shafts (cont.)	Electronics Fan Motor This function cycles the spec-	ON Pause	To terminate the operation, press	Motors (cont.)
	ified Fan. The off period is longer than the on period to allow the Fan to slow down	operator abort	any key when Pause is dis- played.	
	enough to be easily observ- able.			
	Media Path Motor & Shaft This function drives the selected Motor briefly CW then CCW (except for the Lift	CW Pause CCW Pause	To terminate, press any key when Pause is displayed.	
	Motors which only drive CCW), and the Tray 3 & 4 Motors which only drive CW), so that its operation may be visually verified. The perma- nently connected Shafts will jog also. The Media Drive Motor is run slowly CCW for one revolu- tion. The slow motion removes the effect of inertia from the test, and the one revolution avoids a large sys- tem status change via any	operator abort		
	permanently connected loads. With the slow operat- ing speed used by the test, the Motor may stall at a bad commutator segment. The connected gear train affects the drive average and ripple values due to the load varia- tion with gear train position. This test will not run if media is detected in the paper path.			
	Transfix Cam Shaft This function drives the Shaft to generate enough motion to be easily observed without making substantial change to the printer's state. The func- tion cycles the Shaft repeat- edly until interrupted by a Control Panel button press.	CW Pause operator abort	To terminate, press any key when Pause is displayed.	

Table 2 Service Diagnostics Menu Definitions

Item	Description	Control Panel Display	Note
rs/Shafts)	Drum Maintenance Cam Shaft This function drives the Shaft to generate enough motion to be easily observed without making substantial change to the printer's state. The func- tion cycles the Shaft repeat- edly until interrupted by a Control Panel button press.	CW Pause CCW Pause operator abort	To terminate, press any key when Pause is displayed.
	Deskew Shaft This test attempts to deter- mine if the Deskew Shaft is controllable and is operating normally. The Deskew Shaft is first driven for a short time to loosen up the gears/bear- ings and run any flat spots out of the rollers. Then the Media Drive Assembly is started and run for a short time without the Deskew Shaft. Next, the Deskew Clutch is engaged "on the fly." After a short time, the clutch is released and the Media Drive Assembly is stopped. This process repeats for the opposite direction of Deskew Shaft rotation. The response of the system to the clutch engagement/disengagement should show the clutch char- acteristics. The steady state drive requirements indicate bearing status and the driver, flat/dirty, heat shafts etc	CW Pause CCW Pause operator abort	To terminate, press any key when Pause is displayed.
	Wiper Shaft This function drives the spec- ified Shaft by engaging the appropriate Clutch and drives the related Motor.	CW Pause CCW Pause operator abort	To terminate, press any key when Pause is displayed.

Menu Item	Description	Control Panel Display	Note	Menu Item	Description	Control Panel Display	Note
Motors/Shafts (cont.)	Tray 1 Pick Shaft This test exercises the Trav 1	open tray 1 with no media press any key to continue	Open Tray 1, remove anv	Motors/Shafts (cont.)	Tray 2 Pick Shaft (cont.) At the start of the test. a		
	pick mechanism to determine		media, and fold	· · · /	prompt requests removal of		
	if the shaft can be engaged/	CW	out the media		any media, if present, in the		
	disengaged and to measure	Pause	extension before		tray (if initially empty, cycle		
	the friction between the Pick		running this test.		the tray to leave the Lift Plate		
	Roller and the Separator	operator abort	To terminate,		in the down position).		
	Pad. The Media Drive		press any key		Acknowledge the prompt by		
	Assembly is started and run		when Pause is		pressing a Control Panel but-		
	for a short time without the		displayed.		ton. After acknowledgement,		
	Tray 1 pick shaft to loosen up				the Pick Shaft is driven for a		
	the gears/bearings. Next, the				short time to loosen up the		
	Tray 1 Pick Solenoid is				gears and bearings. Next, the		
	engaged through one revolu-				Tray Motor is run for a short		
	tion of the Pick Shaft and				time with the Pick Shaft dis-		
	released right after the next				engaged. The Pick Clutch is		
	trip point so that two full revo-				momentarily engaged and		
	lutions are obtained.				the Tray Motor stopped.		
	During the two revolutions,				The test continues by running		
	the drive requirements are				the Pick Shaft at a slow pick		
	recorded to test the Interac-				speed. At the same time, the		
	Shoft Dick Pollor Lift Plate				raised. The raising operation		
	and Separator Pad				terminates when the Paper		
	Open Tray 1 remove any				Height Sensor goes High		
	media and fold out the media				The Pick Shaft continues to		
	extension before running this				run for a short time to deter-		
	test.				mine the amount of friction		
	Tray 2 Pick Shaft	remove Tray 2	To terminate		between the Nudger Roller		
	This test determines if the	press any key to continue	press any key		and the Separator Pad. The		
	specified trav Pick Shaft is		when Pause is		printer response to the Pick		
	operating normally. The test	Exercise Tray 2 Pick Shaft	displayed.		Clutch activity demonstrates		
	is the same for each Pick	CCW			the clutch characteristics.		
	Shaft, although for Tray 2, the	Pause			The steady state drive		
	Media Drive Assembly is				requirements should show		
	used instead of the optional	operator abort			bearing status and the char-		
	Tray Motor. Requesting a test				acteristics of the roller mate-		
	for a missing tray generates				rials, flat/dirty rollers, bent		
	an "option not detected" mes-				shatts, etc. Nudger Roller		
	sage and the test does not				and Separator Pad friction		
	run.				naicates condition of these		
	This test checks the Pick				parts (glazed, dirty).		
	Clutch, Nudger Roller, and						
	Separator Pad performance,						
	although information is						
	and shaft condition.						

Table 2	Service	Diagnostics	Menu	Definitions
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Note

Test will not run if

Menu Item	Description	Control Panel Display	Note	Menu Item	Description	Control Panel Display
Motors/Shafts (cont.)	Tray 2 Lift Motor The specified Lift Motor is turned on and run for a period of time sufficient to advance the lift plate drive gear one tooth (about 20 rev- olutions). Next, the Motor is turned Off and the brake momentarily applied. Select- ing a test for an undetected optional feeder generates an Option Not Detected mes- sage and the test aborts.	remove tray 2 press any key to continue Exercise Tray 2 Lift Motor ON Pause operator abort	To terminate, press any key when Pause is displayed.	Motors/Shafts (cont.)	Tray 3 Motor & Shafts This function drives the Motor/Shaft to generate enough motion to be easily observed without making substantial change to the printer's state. The function cycles the Motor/Shaft repeatedly until interrupted by a Control Panel button press. Tray 4 Pick Shaft See Tray 2 Pick Shaft	CW Pause tray 3 option not detecte press any key to contine remove tray 4 press any key to contine
	selected trav is installed.				description.	Exercise Tray 4 Pick Sh
	Tray 3 Pick Shaft See Tray 2 Pick Shaft description.	remove tray 3 press any key to continue Exercise Tray 3 Pick Shaft CW	To terminate, press any key when Pause is displayed			Pause tray 4 option not detecte
		Pause	Test will not be		Tray 4 Lift Motor	remove tray 4
		operator abort tray 3 option not detected	run if Tray 3 is not installed.		The specified Lift Motor is turned on and run for a period of time sufficient to advance the lift plate drive	press any key to continu Exercise Tray 4 Lift Mot ON Pause
	Tray 3 Lift Motor The specified Lift Motor is turned on and run for a period of time sufficient to advance the lift plate drive gear one tooth (about 20 rev- olutions). Next, the Motor is turned Off and the brake momentarily applied. Select-	press any key to continue remove tray 3 press any key to continue Exercise Tray 3 Lift Motor ON Pause tray 3 option not detected press any key to continue	To terminate, press any key when Pause is displayed. Test will not run if Tray 3 is not installed.		gear one tooth (about 20 rev- olutions). Next, the Motor is turned Off and the brake momentarily applied. Select- ing a test for an undetected optional feeder generates an Option Not Detected mes- sage and the test aborts. Also, the test aborts if the selected tray is installed.	tray 4 option not detector
	ing a test for an undetected optional feeder generates an Option Not Detected mes- sage and the test aborts. Also, the test aborts if the selected tray is installed.				Tray 4 Motor & Shafts This function drives the Motor/Shaft to generate enough motion to be easily observed without making substantial change to the printer's state. The function	CW Pause tray 4 option not detect press any key to contin

This function drives the Motor/Shaft to generate enough motion to be easily observed without making substantial change to the printer's state. The function cycles the Motor/Shaft repeatedly until interrupted by a Control Panel button press.	Pause tray 3 option not detected press any key to continue	Tray 3 is not installed.
Tray 4 Pick Shaft See Tray 2 Pick Shaft description.	remove tray 4 press any key to continue Exercise Tray 4 Pick Shaft CW Pause tray 4 option not detected press any key to continue	To terminate, press any key when Pause is displayed. Test will not run if Tray 4 is not installed.
Tray 4 Lift Motor The specified Lift Motor is turned on and run for a period of time sufficient to advance the lift plate drive gear one tooth (about 20 rev olutions). Next, the Motor is turned Off and the brake momentarily applied. Select ing a test for an undetected optional feeder generates an Option Not Detected mes- sage and the test aborts. Also, the test aborts if the selected tray is installed.	remove tray 4 press any key to continue Exercise Tray 4 Lift Motor ON Pause /- tray 4 option not detected press any key to continue	To terminate, press any key when Pause is displayed. Test will not run if Tray 4 is not installed.
Tray 4 Motor & Shafts This function drives the Motor/Shaft to generate enough motion to be easily observed without making substantial change to the printer's state. The function cycles the Motor/Shaft repeatedly until interrupted by a Control Panel button press.	CW Pause tray 4 option not detected press any key to continue	Test will not run if Tray 4 is not installed.

Menu Item	Description	Control Panel Display	Note
Motors/Shafts (cont.)	Tray 5 Pick Shaft See Tray 2 Pick Shaft description.	remove tray 5 press any key to continue Exercise Tray 5 Pick Shaft CW Pause tray 5 option not detected press any key to continue	To terminate, press any key when Pause is displayed. Test will not run if Tray 5 is not installed.
	Tray 5 Lift Motor The specified Lift Motor is turned on and run for a period of time sufficient to advance the lift plate drive gear one tooth (about 20 rev- olutions).	remove tray 5 press any key to continue Exercise Tray 5 Lift Motor ON Pause tray 5 option not detected press any key to continue	To terminate, press any key when Pause is displayed. Test will not run if Tray 5 is not installed.
	Tray 5 Lift Motor (cont.) Next, the Motor is turned Off and the brake momentarily applied. Selecting a test for an undetected optional feeder generates an Option Not Detected message and the test aborts. Also, the test aborts if the selected tray is installed.		
	Tray 5 Motor & Shafts This function drives the Motor/Shaft to generate enough motion to be easily observed without making substantial change to the printer's state. The function cycles the Motor/Shaft repeatedly until interrupted by a Control Panel button press.	CW Pause tray 5 option not detected press any key to continue	Test will not run if Tray 5 is not installed.

Menu Item	Description	Control Panel Display	Note
Heaters	This function allows each Heater to be turned on or of. The Printhead Heaters and the Ink Melt Heaters are each treated as a group. Auxiliary function in this menu enable the On/Off state and allo- cated power for each Heater to be viewed, and also the current temperature and set- point of the corresponding thermal control loop. Exiting the function leaves the Heat- ers in the final state selected. Pressing any buttons on the Control Panel will terminated the monitoring. The test tilts the Printhead back to isolate the Drum from the Jetstack Heaters. The Drum is rotated at idle veloc- ity to keep the Drum temper- ature uniform. The test then sequentially applies power to each Heater (while monitor- ing all of the temperature response. The test deter- mines the relationship between heating power applied, the resulting temper- ature response profile, and the current drawn by each other.	initializing	
	Monitor Heaters This function reports the cur- rent enable status of the indi- cator Heaters as either off on, and the power being cur- rently allocated to each Heater (reported as a per- centage of the maximum reted power for thet Heater)	LJ:Off-000.0 Y:Off-000.0 RJ:Off-000.0 C:Off-000.0 RE:Off-000.0 M:Off-000.0 DR:Off-000.0 B:Off-000.0 PH:Off-000.0 operator abort	

Menu Item	Description	Control Panel Display	Note	Menu Item	Description	Control Panel Display	Note
leaters (cont.)	Monitor Temperatures This function reports the cur- rent setpoint and tempera- ture values for the indicated Heaters. All Heaters On This function turn on all Heat- ers including the Ink Melt Heaters. The Printhead Heat- ers are always turned on or off as a group, although the Jetstack Heaters are held off until the reservoir reaches ink melt temperature, to avoid extruding ink out of the face- plate during warm-up. The Ink Melt Heaters are always turned on or off as a group. If the Ink Melt Heaters are tog- died on they will be automat-	Monitor Temp (Setpoint/ now) LJ:xxx.x-xx.x Y:xxx.x-xx.x RJ:xxx.x-xx.x C:xxx.x-xx.x DR:xx.x-xx.x M:xxx.x-xx.x DR:xx.x-xx.x B:xxx.x-xx.x PH:xx.x-xx.x operator abort press any key to exit turning heaters On		Heaters (cont.)	Toggle Preheat Heater This function toggles the state of the specified Heat- ers. The Printhead Heaters are toggled as a group. If the Ink Melt Heaters are toggle on, they will automatically turned off after a short period. The Y-Axis idle rota- tion tracks the state of the Drum Heater to keep the Drum evenly heated. Toggle Drum Heater Toggles drum heater. Toggles ink melt heaters to opposite state. Toggle Ink Melt Heater 2 Toggles ink melt heaters to opposite state. Toggle Ink Melt Heater 3 Toggles ink melt heaters to opposite state. Toggles ink melt heaters to opposite state.	toggling heater toggling heater ink melt auto disable at 4 sec. ink melt auto disable at 4 sec. ink melt auto disable at 4 sec. ink melt auto disable at 4 sec.	
glec icall peri the The whe to n ture	gled on, they will be automat- ically turned off after a short period to avoid overflowing the Printhead ink reservoirs. The Y-Axis is always started when the Drum Heater is on to maintain Drum tempera- ture uniformity. All Heaters Off	turning heaters Off	Ē	Front Panel Display	Toggles ink melt reater 4 Toggles ink melt heaters to opposite state. This function continuously cycles the Front Panel LED through a Red/Yellow/Green sequence, sets the display to dark, sets the backlight to off, then to max, then sets the	initializing Exercise Front Panel Dis- play operator abort press any key to exit	Press any key t terminate.
	This function turns off all Heaters. The Y-Axis is stopped if it is turning. Toggle Printhead Heaters This function toggles the state of the specified Heater(s). The Printhead Heaters are toggled as a group. If the Ink Melt Heaters are toggled on, they will be automatically turned off after a short period. The Y-Axis idle rotation tracks the state of the Drum Heater to keep the Drum evenly heated	toggling heaters		Blank Print Menu	display to light. When any test in this group in selected, a sheet of paper of the selected tray is moved through the printer (Simplex Only). Tray 1 Fast Print This function moves one sheet of paper from Tray 1 through the simplex paper path of Fast printing speed.		

Menu Item	Description	Control Panel Display	Note	Menu l
Blank Print Menu (cont.)	Tray 1 Standard Print This function moves one sheet of paper from Tray 1 through the simplex paper path of Standard printing speed.			Blank I Menu (
	Tray 1 Enhanced Print This function moves one sheet of paper from Tray 1 through the simplex paper path of Enhanced printing speed.			
	Tray 1 Photo Print This function moves one sheet of paper from Tray 1 through the simplex paper path of Photo printing speed.			
	Tray 2 Fast Print This function moves one sheet of paper from Tray 2 through the simplex paper path of Fast printing speed.			
	Tray 2 Standard Print This function moves one sheet of paper from Tray 2 through the simplex paper path of Standard printing speed.			
	Tray 2 Enhanced Print This function moves one sheet of paper from Tray 2 through the simplex paper path of Enhanced printing speed.			
	Tray 2 Photo Print This function moves one sheet of paper from Tray 2 through the simplex paper path of Photo printing speed.			
	Tray 3 Fast Print This function moves one sheet of paper from Tray 3 through the simplex paper path of Fast printing speed.			

tem	Description	Control Panel Display	Note
Print cont.)	Tray 3 Standard Print This function moves one sheet of paper from Tray 3 through the simplex paper path of Standard printing speed.		
	Tray 3 Enhanced Print This function moves one sheet of paper from Tray 3 through the simplex paper path of Enhanced printing speed.		
	Tray 3 Photo Print This function moves one sheet of paper from Tray 3 through the simplex paper path of Photo printing speed.		
	Tray 4 Fast Print This function moves one sheet of paper from Tray 4 through the simplex paper path of Fast printing speed.		
	Tray 4 Standard Print This function moves one sheet of paper from Tray 4 through the simplex paper path of Standard printing speed.		
	Tray 4 Enhanced Print This function moves one sheet of paper from Tray 4 through the simplex paper path of Enhanced printing speed.		
	Tray 4 Photo Print This function moves one sheet of paper from Tray 4 through the simplex paper path of Photo printing speed.		
	Tray 5 Fast Print This function moves one sheet of paper from Tray 5 through the simplex paper path of Fast printing speed.		

Menu Item	Description	Control Panel Display	Note
Blank Print Menu (cont.)	Tray 5 Standard Print This function moves one sheet of paper from Tray 5 through the simplex paper path of Standard printing speed. Tray 5 Enhanced Print This function moves one sheet of paper from Tray 5 through the simplex paper path of Enhanced printing speed. Tray 5 Photo Print This function moves one	Control Panel Display	Note
	sheet of paper from Tray 5 through the simplex paper path of Photo printing speed.		
System Tests NOTE: For Manufacturing/ Development use only.	The functions in this group perform a specific task on the mechanism, measure the response, then compute and report a few key parameters summarizing the mechanism behavior. Cycle the printer powers. Refer to Figure 2 for list of det	ail tests.	
Function Menu			
	Functions for commanding momenta momenta for commanding momenta and the second	ore complex actions by portic	ons of the printer
	Initialize Mechanism This function performs a sim- plified version of the power up mech init sequence. The sequence is not guaranteed to handle all initial mechani- cal conditions.	initializing Abort, press any key to exit	

Menu Item	Description	Control Panel Display	Note
	DMU Oil Blot	initializing	
	This function raises the Drum	opening host connection	
	Maintenance Unit up against	initializing test	
	the Drum and then lowers	Home the DM	
	again. A Chase sequence is	Home the Y-Axis	
	then performs, which picks a	run a chase page	
	sheet of media from Tray 2	gathering data	
	and moves it through the	picking media	
	paper path without printing.	lifting main tray	
	The result is an oil print of the	gathering data	
	contact of the DM Unit with	begin stage	
	the Drum (appears about 2/3	gathering data	
	of the way down the page).	exit	
	This image should be viewed	run a DM cycle	
	in a timely fashion, as it will	gathering data	
	tend to fade with time.	moving tf axis to home	
		step the DM (14x)	
		id_stepPrintDM:DM is in oil	
		position	
		position Y-axis to xxx.xx	
		id_stepPrintDM:DM is in	
		Home position	
		run a chase page	
		begin stage	
		gathering data	
		exit	
		processing data	
		saving data	
		COMPLETE	
		no results available	
		resetting	

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lenu Item	Description	Control Panel Display	Note
	Display Fault History This function displays all cur- rent Fault History from NVRAM including fault code, corresponding print count, and the date/time of occur- rence. The fault code infor- mation display starts with the oldest fault code. Fault infor- mation from Extended Fault History is displayed first and is tagged with the Character E. Jam Codes are never stored in the Extended Fault History.	initializing accessing system NVRAM Fault Code Print Count/ Time xx: xx,xxx.xxx xxxxxxx xx: xx,xxx.xxx xxxxxx xx: xx,xxx.xxx xxxxxx xx: xx,xxx.xxx xxxxxxx	Press the Back button to return to previous menu.
	NOTE: Jam History can only be accessed from Customer mode. There is no way to access the information from the Service Diagnostics mode.		
	Clear Fault History This function clears the Fault History and Extended Fault History NVRAM storage areas.	Initializing Confirm Fault History reset! press (i) Info for discussion press OK to Continue press any other key to Abort Abort Abort - press any key to exit	
	Clear PS NVRAM This function clears the non- reserved data in the Post- Script portion of NVRAM. When the printer next initial- izes in Customer mode, Post- Script will restore all factory defaults value.	initializing Confirm PS NVRAM Clear! press (i) Info for discussion press OK to Continue press any other key to Abort resetting	
	Clear PE NVRAM This function clears all data in the print engine portion of NVRAM. When the printer next initializes in Customer mode, the print engine will restore all factory default val- ues.	initializing Confirm PE NVRAM Clear! press (i) Info for discussion press OK to Continue press any other key to Abort Abort - press any key to exit	

Menu Item	Description	Control Panel Display	Note
	Set PE NVRAM to Defaults	Confirm PE NVRAM	
	This function sets all data in	Reset!	
	the print engine portion of	press (i) Info for discussion	
	NVRAM to factory default val-	press OK to Continue	
	ues. If the NVRAM format is	press any other key to	
	not the expected format, the	Abort	
	format is updated before the	resetting	
	default values are restored.	Abort - press any other key	
		to exit	
	Reset Network Values	Confirm Reset Network	
	This function sets all data in	NVRAM!	
	the Network portion of	press (i) Info for discussion	
	NVRAM to factory default val-	press OK to Continue	
	ues. If the NVRAM format is	press any other key to	
	not the expected format, the	Abort	
	format is updated before the	resetting	
	default values are restored.		
Check Menu (for Manufacturing/Development use only)			
Refer to Figure 2 for list of detail tests.			

General Troubleshooting

This section provides troubleshooting procedures for printer problems not associated with a fault message or code. For troubleshooting problems associated with a fault code or message, and information on how to use the troubleshooting procedure tables, see Chapter 2, Fault Messages and Codes.

Troubleshooting procedures attempt to isolate a problem to a specific component or subassembly, in some cases including the wiring harness. If you go through a troubleshooting procedure and still are unable to solve the problem, re-read the Theory of Operations for the problem area and ensure that you understand how that section of the printer is supposed to function.

Service Diagnostics provides several tools useful for troubleshooting non-specific problems. Three of these are especially useful:

- Sub-system Status Reports
- Component Checks
- Diagnostic Fault History

The following overview describes the function and proper application of the each tool.

Sub-system Status

The Report Status reports on the condition of each sub-system. Report Status lists the current sub-system status as reported by that sub-system's firmware. Status listings are not stored. If the printer reaches Ready, the list is cleared.

Some applications of status are:

- Provides an initial condition from boot to begin troubleshooting.
- Captures static or dynamic events.
- Confirms diagnostic test results and subsequent repairs.

Component Checks

The Exercise Menu, can be accessed from the Service Diagnostics Menu (Service Diagnostics Menu -> Exercise Menu) is an extensive suite of component-level tests that exercise individual electromechanical, thermal, and optical components. Use these tests as the primary tool for testing printer components.

Diagnostic Fault History

The Diagnostic Fault History utility records a list of engine-generated error events, warnings are not captured, that occur during diagnostic testing. Use this utility to record error events that occur while executing tests in Diagnostic Mode. The Diagnostic Fault History utility captures asynchronous (transient) events only. For static (continuous) or pre-existing events, rely on the Status utility.

When executed from the Function menu, the Diagnostic Fault History displays on the Control Panel and updates as each error event is detected. Fault History events are recorded only when no pre-existing errors are present. The second and subsequent occurrences of the same event are not recorded. The maximum number of events recorded is 25. Once the list is full, additional new events are lost until the log is cleared by either a system reboot or by selecting Fault History Master Clear from the Fault History menu. New events occurring after the list is cleared are recorded.

For display, the list combines a line number, a code, and potentially a test precondition indicated by the letter **P** (for events requiring a power cycle), a **U** for unknown event sequence, an **M** for more entries, or a string of asterisks ***** to indicate the last error recorded.

Example:

Fault History Display

- 1 [150]
- 2 [42]P
- 3 [198]P
- 4 T2]M
- Press CANCEL to exit

The example shows a single screen displaying four events. Lines 2 and 3 include the precondition indicator **P** directing a reboot before component testing continues. Line 4 includes an abbreviated Misfeed at Tray 2 code, and the continuation notation **M** indicating more events appear on subsequent pages. Pressing **OK** calls up the next page. Pressing **Cancel** exits the utility and displays the Fault History menu.

Events typically appear in the order detected. However, occasionally the event's sequence is indeterminate. As is the case with simultaneous events. In these cases, a U is appended to the event to indicate an unknown sequence. While event sequence can be important in determining cause, the event itself provides a starting point for investigation.

For those events listed with a **P**, testing of a specific component may not require the indicated power cycle. For example, if the log lists a motor failure, it's reasonable to go directly to the appropriate motor test to confirm the failure without first power cycling the system. For events involving components, such as the Drum, Transfix Roller, or Ink Sticks, power cycling is recommended before additional testing is performed.

Using Diagnostic Fault History

The general approach to using the Diagnostic Fault History utility is as follows:

- 1. Determine the diagnostic test necessary to reproduce a suspected transient event.
- 2. Determine if the current logged events are important to understanding the problem. If so, examine or record the events currently in the log, perform whatever analysis is appropriate, and then clear the log.
- 3. Perform the selected test.
- 4. Re-examine the event list.
- 5. Identify an abnormal or suspicious event based on the test performed. For example, a door open event while printing a test print when the door remained closed.

As an example, assume the Interlock Switch is suspect. The process to gain access to the Switch will produce a number of events unrelated to switch function.

Therefore, you would:

- 1. Override the interlock function to provide power.
- 2. Access the Interlock Switch Actuator.
- 3. Clear the list with Clear Fault History.
- 4. Display Fault History and manipulate the component or connecting wires as required to reveal the switch's condition.

Electrical Troubleshooting

The Electronics Module contains the Power Supply, Main Controller Board, and the Power Control Board. If a component of the Electronics Module fails, and service is necessary, the Electronics Module is replaced as a unit - no individual board troubleshooting is needed. The printer contains many self test routines to aid in diagnosing problems.

NOTE: If the printer encounters certain fault conditions, the printer may reboot up to three times before displaying a fault code - this is an attempt to correct the problem and reduce the number of unnecessary service calls.

Following the suggested debug procedures in the specified sequence generally provides better test coverage than performing tests in a different order.

Electronics Module Service Hints

The Electronics Module Service Hints contains instructions to check various components prior to replacing the Electronics Module.

1. Check for known problems listed in Eureka and GSN web site.

Service technicians are always looking for ways to help with printer problems. Refer to the experts; Eureka and GSN may already provide a solution.

2. Print an engine Test Page (if available).

If the printer has the capability to print an engine Test Print, use this test page to determine if the print engine (vs. the Image Processor) is working.

3. Never use an Uninterruptible Power Supplies (UPS).

UPS devices may not have the capacity to power the printer. A quality, high-capacity surge protector may be OK for the printer, but only if it is not also supporting other high-current devices. For testing purposes, use a dedicated circuit to verify operation.

Any loose cable connection can cause the printer to fail.

- 5. Disconnect the printer from the network and connect with cross-over cable. Some networks interfere with the printer's ability to boot up and can hang the printer connect with a cross-over cable and verify the network port. Verify the USB port with another USB cable.
- 6. Disconnect all 3rd party devices and cables, then reboot the printer.

Xerox printers are tested without 3rd party devices and cables; these may cause the printer to fail. Always remove these devices and test the printer.

7. Simplify the printer.

Disconnect or remove the hard drive (if printer can operate without one), Lower Tray assemblies, and other optional equipment. Verify if the option is causing the printer to fail.

8. Verify dedicated AC connection to the printer.

Test the printer on a dedicated AC circuit. Verify the AC voltage is correct. If there is a significant AC voltage drop (6 volts or more on a 120V circuit) when the printer is turned on, the circuit is too heavily loaded and will cause problems for the printer.

9. **Reseat all memory modules and verify if the memory is supported.** Refer to Printer Configurations in Introduction chapter for memory configurations.

Corrupted RAM modules have caused printer failures and should be tested. Some 3rd party RAM modules will not work in the printer. Was 3rd party RAM recently installed?

10. Replace the NVRAM Chip (if present).

Some printers contain an NVRAM (Non-Volatile RAM) chip that may cause printer problems. If the NVRAM chip is a replaceable part, try installing a new one.

11. **Perform a Factory Reset:** access the Hidden Service Menu to Reset Printer.

Unknown errors may be cleared by resetting the printer back to factory defaults. If possible, copy down customer settings before performing a reset.

12. Check for available firmware upgrades and update as appropriate.

If the problem is re-occurring, a firmware upgrade may be available to resolve the problem.

Printer Ground Integrity

Intermittent or missing ground connections can result in printer interference. As examples:

- Blank or intermittent Control Panel display
- I/O Board errors
- False jam reporting
- Erroneous thermistor readings
- Damage to the electrical boards

Key Ground Connections

Figure 1 shows the grounding points in the Print Engine. There is also a ground point on the back frame. Check that these grounding points are in contact with the frame.



Figure 1 Printer Grounds

Testing Motor and Solenoid Resistances

- 1. Turn off the printer and disconnect the power cord.
- 2. With a DMM set for measuring resistance, test each motor's windings for correct resistance (disconnected from the printer). Rotate the motor's drive shaft slightly while taking the measurement.

Motor or Solenoid	Resistance (approximate)
Process Drive Motor Media Path Drive Motor	2.85~3.85 ohms (Difficult to measure due to variability at the brush/commutator interface.)
Y-Axis Motor	1.05~1.43 ohms (Difficult to measure due to variability at the brush/commutator interface.)
X-Axis Motor	5.9 ohms/phase +/- 10% (pins 2 to 4 and pins 3 to 5)
Tray Lift Motor	50~500 ohms
Head Maintenance Clutch	186 ohms +/- 15%
Paper-Pick Clutch Deskew Clutch	186 ohms +/- 15%
MPT Pick Solenoid	124 ohms +/- 5%
Preheater Lift Solenoid	~18 ohms blue-red, ~18 ohms yellow-red, ~36 ohms blue-yellow
Ink Loader Solenoid	~10 ohms blue-red, ~10 ohms yellow-red, ~20 ohms blue-yellow

Verifying Power Supply Operation

The power supply is divided into three sections: an AC section used for heaters, a DC section used to power the control logic, and Electronics Module Fan (powered in Sleep and Ready states, as indicated by the +3.3V Sleep and +3.3V LEDs) and a DC section for motors, solenoids, and printhead driver (powered in Ready states, as indicated by the +50V LED). Verifying the Power Supply involves four steps:

- 1. Checking for proper AC voltage.
- 2. Testing for a short on the +3.3V SLEEP, +3.3V, or Electronics Module Fan power supplies.
- 3. Inspecting the Power Supply fuses (skip this step unless a heater failure is present).
- 4. Testing for a shorted Motor or Solenoid, which shuts down the +50V supply.

To troubleshoot the first 2 items, go to Printer Fails Power-Up: 3.3 V Sleep LED Does Not Illuminate in Chapter 6, General Troubleshooting.

To troubleshoot step 3, go to Measuring AC Voltages in Chapter 6, General Troubleshooting.

To troubleshoot step 4, go to Printer Fails Power-up: +50V LED Does Not Illuminate in Chapter 6, General Troubleshooting.

LED Information

Electronics Module DC Power LEDs

The Electronics Module has 3 Power LEDs to indicate power.

- +3.3V Sleep LED (green)
- +3.3V LED (green)
- +50V LED (red)

The +50V LED goes off when the printer is turned off, a short circuit or overload is present on the +50V or -50V supplies, or when the printer goes into a deep Standby mode (15-20 seconds). The +3.3V LED goes off when the printer is turned off or enters Sleep Mode (time according to user preference).

The +50 V is on at the following stages:

- During mechanical initialization bringing up the printer
- The printer is printing.
- The printer is recovering from jam.
- Drum slew managing Drum Thermals
- Drum Maintenance
- Any Tray is open.
- Any Door is open.
- The printer is melting ink.
- The printer is performing a head maintenance cycle.
- The Printhead is tilting.

The 50 volts will be off when the printer is idle and not performing any of the listed tasks. The +50V LED may be dim or extinguished when 50V is off.

The +50V will not be on at all time. The +50V can be Off when the printer is at Ready mode.







Figure 3 Power Control Board LEDs (right side view)

Electronics Module Diagnostic LEDs

The Electronics Module has 2 LEDs for diagnostic and troubleshooting purposes: Power-On Self Test PS LED and Print Engine Self Test also known as PEST, its status is indicated with the PE LED. These LEDs display self-diagnostic fault codes. Go to Power On Self Tests in Chapter 2 (Fault Messages and Codes) for troubleshooting fault codes on these LEDs.

I/O Board LED

The I/O Board has one LED. The green LED indicates +3.3V is provided. This LED acts in a similar manner to the +3.3V power LED in the Electronics Module.



Figure 4 Main Controller Board LEDs (right side view)



Figure 6 I/O Board LED



Figure 5 Main Controller Board LEDs

Ink Loader Board LEDs

The Ink Loader Board has two LEDs:

- +3.3V (green)
- +50V (red)

These LEDs indicate the same status as the +3.3V and +50V on the Electronics Module.

The +50V will not be on at all time. The +50V can be Off when the printer is at Ready mode.



Figure 7 Ink Loader Board LEDs

Checking Fuses

Fuses can be damaged for various reasons. The following Fuses are included in the ColorQube 8570/ 8870 printer. See Figure 8 for location of the Fuses on the Power Control Board.

Table 2 ColorQube 8570/ 8870 Fuses

Fuses	Description
F301	+3.3V, logic
F302	+50V pwm'ed, to High Capacity Feeder
F303	+50V pwm'ed, to Preheat Solenoid, Head Maintenance Clutch, Head Tilt Solenoid, Strip Solenoid
F304	+50V pwm'ed, to Deskew Clutch, Pick Clutch, Pick Solenoid
F401	+50V
F402	+50V pwm'ed, to Ink Loader Solenoids
F501	+3.3V Sleep





Fuse F501 Failure

F501 Fuse could be blown from the short of the Ground Plane to a +3.3V on the I/O Board. A machine with a blown F501 Fuse will appear non-functional. Perform the following procedures to determine if F501 Fuse is blown.

NOTE: Other components that carry +3.3V are the Ink Loader, Control Panel, Paper Path Motor Encoder, and the Lower Tray.

Make sure to find the short before replacing the Power Control Board.

1. Turn On the power switch.

2. The Electronics Module Fan should come On and stay On.

- 3. The Control Panel will be blank and remain blank.
- 4. The PE and PS lights on the side of the printer (Figure 4) will be blinking together. The blinking sequence is fluttering blinks: 2 blinks space 2 blinks space 6 blinks --- blink code 226.
- 5. The power switch when turned Off will not work and the Fan will remain On. The plug will have to be removed to shut off the power.

Checking F501 Fuse

- 1. Pull the power plug to turn Off the machine.
- 2. Open the Electronics Module Rear Cover.
- 3. With an ohmmeter, measure the surface-mount Fuse F501 (labeled F501). The Fuse is located on the Power Control Board, immediately to the right of the large Main Board interconnect connector (which is just underneath the Main Board's RAM DIMMs). A bad Fuse will measure greater than 1 ohm.



Figure 9 Measuring the F501 Fuse

- 4. Check for a short on the 3.3V bus or the 3.3V SLEEP bus. Locate the voltage test points on the Power Control Board, near the rear cover opening. They are just to the right of a pair of electrolytic capacitors.
 - Look for TP820 3.3V. Measure that point to the ground. Good should measure 500 600 ohms; bad measurement should be less than 2 ohms.
 - Look for TP822 3.3V SLEEP (Figure 2). Measure that point to ground. Good should measure 250 450 ohms; bad measurement should be less than 2 ohms.
- 5. If a short is present, then you must systematically look for the short.
 - a. Remove the Left Side Cover (REP 1.10) and re-measure the test point.
 - b. Remove the Right Side Cover (REP 1.11) and re-measure the test point.
 - c. Remove the Ink Loader (REP 1.8) and check the test point.
 - d. Look for pinched wires and bent pins on the I/O Board. 3.3 volts and 3.3 volts sleep are carried on the printer's gray ribbon cables. Disconnect the harnesses to isolate, if necessary.

Measuring AC Voltages

AC line voltages are present on the Power Supply and in the printer, via the heaters, while the printer is plugged into an AC outlet. The power switch position is detected by software and proper shut down is followed by a power off signal to the Power Supply. The printer may be operating for a considerable time after the switch is turned off.

- AC Input: With a DMM set to measure AC voltages, measure the power being supplied to the printer; it should measure between 90 to 134 VAC (115 VAC nominal) or 180 to 254 VAC (220 VAC nominal). The service diagnostic function may also be used to measure the input voltage. Refer to the Service Diagnostics Tests in Chapter 6 (General Troubleshooting) for more details.
- 2. If a heater shorts fuse, F2 or F3 opens. The Power Supply may not shut down; however, a fault code is displayed on the Control Panel.

Testing F2 and F3

The Printhead and Ink Loader connect to F2. The Drum and Preheater connect to F3.

- 1. Turn the power switch off and wait for the printer to shut down.
- 2. Disconnect the power cord from the Electronics Module.
- 3. Remove the Ink Loader Assembly (REP 1.8).
- 4. From the back of the printer, there is one heater cable connector (P/JAC3) on the left above the power switch and two (P/JAC2 and P/JAC1) connectors under the Ink Loader.
- 5. Place the Power Switch in the On position. If the power switch is in the Off position, false readings may result.
- 6. Measure the resistance between P/JAC3 Pins 3, 4, or 5 (toward the bottom rear of the printer on P/JAC3), and the lowest pin on the AC input connector (AC Inlet) (Figure 10). If the meter measures 0 ohms, F3 has not been damaged.



Figure 10 Wiring Harness Connectors

7. Measure between P/JAC1 Pin 9 (the pin closest to the power inlet) under the Ink Loader and (again) the lowest pin on the AC input connector (AC Inlet). If the meter measures 0 ohms, F2 has not been damaged.



8. The fuses are not serviceable. Check the affected heaters for short circuits across the heater and to ground. Replace the Electronics Module (REP 5.1) to replace the fuses.

Checking for Shorted and Leaky Triacs

- Turn the power switch off. 1.
- **IMPORTANT**: Disconnect the power cord from the Electronics Module. 2.
- 3. Remove the Ink Loader Assembly (REP 1.8).
- From the back of the printer, there is one heater cable connector (P/JAC3) on the left 4. above the power switch and two (P/JAC2 and P/JAC1) under the Ink Loader.
- 5. Place the Power Switch in the On position. If the power switch is left in the Off position, false readings may result.
- 6. Measure the resistance between the highest pin on the AC Input Connector (AC Inlet) (Figure 12) and the triac channels (listed in Table 3). If the meter reads greater than 50k ohms, the triac has not been damaged.



7. If any triac is found damaged, replace the Electronics Module (REP 5.1).

Connector	Pin	Channel Function
JAC1	1	Ink Melt Yellow
JAC1	2	Ink Melt Cyan
JAC1	3	Ink Melt Magenta
JAC1	4	Ink Melt Black
JAC2	2	Printhead Reservoir #2
JAC2	3	Printhead Reservoir #1
JAC2	4	Printhead Jetstack Right
JAC2	5	Printhead Jetstack Left
JAC3	7	Paper Preheater
JAC3	8	Drum Heater #2
JAC3	9	Drum Heater #1

Table 3 Triac Channels

Measuring DC Voltages

1. Check the Power Supply Status LEDs (Figure 13); they all should be bright. If the LEDs are not all brightly light, false readings will result.

Open a door to make sure 50 voltage is activated, if necessary (red LED lit).



Figure 13 Power Control Board LEDs

Open the rear door of the Electronics Module and test for voltage at the test points on the 2. bottom Board (Figure 14). Table 4 lists the test points and voltage ranges to be expected:



Figure 14 50V Test Point

Table 4 Test Points and Voltage Ranges

Test Point/ Description	Min	Nom	Мах
J802: +50V Service Pin	47	49	52
TP830: -50V	-47	-49	-52
TP828: +12V	11	12	13
TP831: -15V	-13	-15	-17
TP823: +12V_SLEEP	11	12	13
TP820: +3.3V	3.0	3.3	3.6

Fault Message Displayed on the Control Panel

The printer has detected a fault condition. See Fault Messages and Codes Troubleshooting in Chapter 2 (Fault Messages and Codes) for definitions and solutions.

Blank Display and the PS and PE LEDs are Flashing a Fault Code

Printer has detected a fault condition but cannot display a message on the LCD. Some portion of the chain of devices used to drive the LCD may be defective since an fault message is not displayed. See Fault Messages and Codes Troubleshooting in Chapter 2 (Fault Messages and Codes) for definitions and solutions.

Printer Fails Power-Up: 3.3 V Sleep LED Does Not Illuminate

The printer is not receiving proper AC or a short circuit is present on the +3.3V, +3.3V_SLEEP, or +12V_SLEEP supply.

CAUTION

Use caution with hazardous voltages when diagnosing AC problems. The 3.3 V LED is located inside the Electronics Module and must be observed through the vent holes close to the AC power switch, see Figure 15.



Figure 15 Electronics Module Power LEDs

- 1. Inspect the power cord.
 - a. Verify AC outlet voltage and current capacities are within specifications.
 - b. If necessary, move the printer to a different outlet and retest.
- 2. Transient on AC line tripped protective circuitry in printer power supply. Cycle power switch to the printer to reset protective circuits in the Power Supply.
- 3. An open F2 can result in a dead Power Supply if it is restarted. Verify that F2 is good. Refer to Testing F2 and F3 in the Electrical Troubleshooting. If F2 is open, verify there are no short circuits in the Inkloader. Reservoir, or Jetstack Heaters (line to neutral or line to Earth).
- Short Circuit on 3.3V or +12V SLEEP Supply. ESD damage to the printer may occur if 4. static electricity is discharged to printer electronics.
 - a. With the power cord connected, touch the metal Electronics Module to discharge any static electricity.
 - b. Turn off the printer.

- c. Unplug power cord and remove printer's covers.
- d. Unplug the following Electronics Module connections. This step removes all other circuits so the Electronics Module can be tested alone.
 - Power Control to I/O Board (P/J402)
 - Power Control Right (P/J701)
 - Power Control to Ink Loader Board (P/J401)
 - Printhead Data (P/J201)
 - Wave Amp signal (P/J901)
 - Power Control Left (P/J302)
 - Y-Axis Motor (P/J301)
- e. Plug in the power cord and turn on the printer.
- f. If the +3.3V SLEEP LED does not illuminate when the power is turned on and AC is present, the Electronics Module is defective. Replace the Electronics Module (REP 5.1) and proceed to Step 4g.

If the +3.3V SLEEP LED illuminates the Electronics Module is functional. Skip the rest of this section and proceed to Step 5.

Plug in all the cables removed during service.

- g. Trace through all service steps performed to reattach any cables that were unplugged during debugging.
- h. Attach the printer covers.
- i. Perform full test of printer.
- 5. Short circuit on 3.3V power supply within the I/O Board.
 - a. Verify ground plane on the upper left corner of the board is properly seated on top of the board rather than underneath. If this is incorrectly installed, Fuse F501 on the Power Control Board can short.

Verify the ground plane is properly seated, then install a new Electronics Module or Power Control Board.

- b. **Required**: Follow all procedures from step 4.f before proceeding with the following steps. The I/O board needs to be isolated from other components in the printer to be effectively tested.
- c. Turn off the printer and wait 30 seconds for the Power Supply capacitors to discharge. Damage to circuits within the Electronics Module may occur if the Power Supply capacitors are not allowed to fully discharge.
- d. Plug in the Power Control to I/O Board connector (P/J701). This step adds the I/O Board back to the working Electronics Module nothing else is connected.
- e. Turn on the printer.
- f. If the +3.3V SLEEP LED does not illuminate, there is a short on the I/O Board or related harnesses. Proceed to Step 6.

If the +3.3V SLEEP LED does illuminate, the I/O Board and related harnesses are functional. Skip Step 5 and proceed to Step 7.

- 6. If the +3.3V SLEEP LED does not illuminate when the I/O Board is connected by itself to the Electronics Module:
 - a. Verify short is on the I/O Board by using an ohmmeter to check the resistance on P/ J301, pins 4 and 8 to ground. Resistance of less than 50 ohms indicates a problem. Verify the harness is OK by disconnecting P/J801 on the I/O Board and retesting with the ohmmeter at P/J301.

- b. To isolate problem to the I/O Board or related cabling, unplug the I/O Board connectors:
 - Control Panel (P/J403)
 - Tray 1 (MPT) (P/J402)
- c. Retest the resistance of the I/O Board. If the resistance is still less than 50 ohms, replace the I/O Board (REP 5.10), reinstall all cables and retest printer.
- d. If the I/O Board resistance is OK, plug in the I/O Board connectors one at a time and retest the resistance until the faulty subsystem is discovered. Repair as needed.
- e. Plug in all the cables removed during service.
- f. Trace through all service steps performed to reattach any cables that were unplugged during debugging.
- g. Attach the printer covers.
- h. Perform full test of printer.
- 7. Procedure to check for a Short circuit on 3.3 V power supply within the Printhead.
 - a. **Required**: Follow all procedures from Step 5.e before proceeding. The following procedure relies on a working Electronics Module to determine if the Printhead is causing a short circuit.
 - b. With power cord connected, touch the metal Electronics Module to discharge any static electricity. ESD damage to the printer may occur if static electricity is discharged to printer electronics.
 - c. Turn off the printer and wait 30 seconds for the Power Supply capacitors to discharge. Damage to circuits within the Electronics Module may occur if the power supply capacitors are not allowed to fully discharge.
 - d. Plug in the Printhead interface connector P/J201 to the Electronics Module. This adds the Printhead back to a working Electronics Module and I /O Board in order to see if the short circuit is also removed.
 - e. Turn on the printer.
 - f. If the +3.3V SLEEP LED illuminates, the Printhead is functional. Skip to Step 8 if the LED illuminates.

If the +3.3V SLEEP LED does not illuminate when the Printhead is connected to the Electronics Module, proceed to Step 8.

If the +3.3V SLEEP LED did not illuminate, verify the short is on the Printhead by using an ohmmeter to check the resistance on P/J180 pin 21 to ground. A resistance of less than 50 ohms indicates the Printhead is faulty.

Replace the Printhead (REP 2.3) and retest the printer. Skip the rest of this step cf the +3.3V SLEEP LED is lit because the problem is elsewhere in the printer.

- a. Carefully test the printer to ensure damage to the Electronics Module did not occur due to the shorted Printhead.
- b. Plug in all cables removed during service.
- c. Trace through all service steps performed to reattach any cables that were unplugged during debugging.
- d. Attach the printer covers.
- e. Perform full test of printer.
- 9. Procedure to check for a short circuit on the 3.3V power supply within the lnk Loader.

- a. **Required**: Follow all procedures from Step 7.f before proceeding. The following procedure relies on a working Electronics Module to determine if the Ink Loader is causing a short circuit.
- b. With the power cord connected, touch the metal Electronics Module to discharge any static electricity. ESD damage to the printer may occur if static electricity is discharged to printer electronics.
- c. Turn off the printer and wait 30 seconds for power supply capacitors to discharge. Damage to circuits within the Electronics Module may occur if the power supply capacitors are not allowed to fully discharge.
- d. Plug in the Power Control to Ink Loader Board connector (P/J401) to the Electronics Module. This step adds the Ink loader back to a working Electronics Module, I/O Board, and Printhead in order to see if the short circuit is also removed.
- e. Turn on power to the printer.
- f. If the +3.3V SLEEP LED illuminates, the Ink Loader is functional. Skip to Step 10 if the LED illuminates.
- g. If the +3.3V SLEEP LED does not illuminate when the Ink Loader is connected to the Electronics Module, verify the short is on the Printhead by using an ohmmeter to check the resistance on P/J401 Pins 1 and 2 to ground. A resistance of less than 50 ohms indicates the Ink Loader or harness is faulty. Replace the Ink Loader (REP 1.8) and retest the printer.
- h. Plug in all the cables removed during service.
- i. Trace through all service steps performed to reattach any cables that were unplugged during debugging.
- j. Attach the printer covers.
- k. Perform full test of printer.
- 10. The short is on the Power Control Right or Power Control Left harness. Reconnect these harnesses one at a time to determine which harness and/or subsystem is faulty. Repair as necessary.

Right side harness feeds:

- Drum Encoder
- Process Motor Encoder

Left side harness feeds:

- Electronics Module Fan
- MP Motor Encoder
- HCF option

Printer Fails Power-up: +50V LED Does Not Illuminate

1. Verify that **no PEST/POST** faults exist, and that the 3.3V LEDs are both illuminated. Pull out a tray or open a door, verify the +50V LED is not illuminated, and proceed to the next step.

There are 2 ways to test for +50V functionality.

+50V Diagnostic Method A

- a. Entering Service Diagnostics Mode.
- Perform the 50 Volts Control test: Service Diagnostics Menu -> Exercise Menu -> 50 Volts Control.

If R1 = 0, then 50V is functional. If R1=1, then 50V is not functional. The 50V LED illumination should correspond with this.

+50V Diagnostic Method B

CAUTION

ESD damage to the printer may occur if static electricity is discharged to printer electronics.

- a. With the power cord connected, touch the metal Electronics Module to discharge any static electricity.
- b. Turn off the printer and wait 30 seconds for power supply capacitors to discharge. Damage to circuits within the Electronics Module may occur if the Power Supply capacitors are not allowed to fully discharge.
- c. Turn on the printer.
- d. If the +50V LED does not illuminate when the power is turned on and AC is present, then 50V is not functional.
- 2. Test the Electronics Module by isolating it from rest of the printer.
 - a. Unplug power cord and remove printer's covers.
 - b. Unplug the following Electronics Module connections. This step removes all other circuits so the Electronics Module can be tested alone.
 - Power Control to I/O Board (P/J402)
 - Power Control Right (P/J701)
 - Power Control to Ink Loader Board (P/J401)
 - Printhead Data (P/J201)
 - Wave Amp signal (P/J901)
 - Power Control Left (P/J302)
 - Y-Axis Motor (P/J301)
 - c. Tun on printer in idiags mode. Use +50V Control Diagnostic Method A to determine if 50V is functional.

If it is not functional, the Electronics Module is defective. Replace the Electronics Module (REP 5.1) and proceed to Step 4.b.

If it is functional, the Electronics Module is good. Proceed to the next step.

- 3. Test the Ink Loader Board.
 - a. Turn off the printer and wait 30 seconds.
 - b. Touch the Metal Electronics module to discharge any static electricity.
 - c. Connect this cable to the Electronics Module.
 - Power Control to Ink Loader Board (P/J401)

- Test using +50V Diagnostic Method A or B. If a malfunction is indicated, go to the d. wiring diagram and test to determine where the overload or short circuit is located. A resistance of less than 50 ohms between a voltage and the chassis indicates a defect. Note that the short could be on +50V, -50V, or +12V. Repair or replace the harness and/or ink Loader Board as necessary.
- 4. Test the other components.
 - a. If the Power Control to Ink Loader Board test shows that 50V is functional, reconnect the other disconnected cables one at a time and retest (repeat Step 3), in the following order:
 - Wave Amp signal (P/J901)
 - Power Control to I/O Board (P/J402)
 - Printhead Data (P/J201) ٠
 - Power Control Left (P/J302)
 - Power Control Right (P/J701) ٠
 - Y-Axis Motor (P/J301)

When a malfunction is indicated, go to the wiring diagram and test to determine where the overload or short circuit is located. A resistance of less than 50 ohms between a voltage and the chassis indicates a defect. Note that the short could be on +50V, -50V, or +12V. Repair or replace the harness and/or circuit board as necessary.

Associated wiring diagrams:

- Wave Amp signal (P/J901)
- Power Control to I/O Board (P/J402)
- Printhead Data (P/J201)
- Power Control Left (P/J302) •
- Power Control Right (P/J701) ٠
- Y-Axis Motor (P/J301) •
- Plug in all the cables removed during service. b.
- Trace through all service steps performed to reattach any cables that were c. unplugged during debugging.
- Attach the printer covers. d.
- Perform full test of printer. e.

Printer Prints and the Display is Frozen with No Errors

CAUTION

Opening and closing the Front Door resets the Control Panel.

1. Electrostatic Discharge

- a. If the printer is currently powered on and frozen, open then close the Front Door of the printer and see if the LCD responds.
- b. If printer appears functional after operating the door, advise customer that failure may have been due to an ESD event. Thoroughly test the printer for any other problems.
- Skip the rest of this section if the printer appears functional, otherwise continue c. debugging.
- With the power cord connected, touch the metal Electronics Module to discharge d. any static electricity. ESD damage to the printer may occur if static electricity is discharged to printer electronics.
- Turn off the printer and wait 30 seconds for the Power Supply capacitors to discharge. Damage to circuits within the Electronics Module may occur if the Power Supply capacitors are not allowed to fully discharge.
- Unplug the power cord and remove the printer's covers. Use caution around motors. f. pulleys and live AC connections when working with the printer covers off.
- Examine the printer for loose grounding connections, especially the ground strap on g. the Y-Axis Motor. Eliminate the possibility of internally generated ESD from affecting the printer.
- Plug in all cables removed during service. Trace through all service steps performed h. to reattach any cables that were unplugged during debugging.
- Attach the printer covers. i.
- Perform full test of printer. i.

2. Control Panel Failure

- Unplug the original Control Panel at connector P/J403 and plug in a known working a. Control Panel. This checks for a keypad or LCD failure in the Control Panel.
- b. Plug in all cables removed during service. Trace through all service steps performed to reattach any cables that were unplugged during debugging.
- c. Attach the printer covers.
- Perform full test of the printer. d.

Display Functions, but Sent Jobs Do Not Print

- 1. Computer driver incorrect or improperly installed.
 - a. Verify printer hardware is functional by sending a test print via the printer Control Panel.
 - b. If a test print is properly produced, continue to next steps, focusing on problems outside the printer (network, Ethernet, or computer driver configuration issues).
 - c. If a test print is not properly produced, the focus of problems within the printer suggests that the internal settings are corrupt.
 - d. Use a known functional computer to test printer using the printer's USB port. If test computer successfully prints pages, review the version of driver, the installation and the settings of the customer's computer.
 - e. If test computer is unsuccessful, continue with debug.
- 2. Customer network or printer's Ethernet port not properly configured.
 - a. Refer to Network Problems for procedures related to communication problems.
 - b. Disconnect the printer from its network to see if the behavior continues.
- 3. Printer internal settings corrupted.
 - a. From the Control Panel, access the Hidden Service Menu to reset NVRAM.
 - b. Perform full test of printer.

Printer Hangs or Resets Unexpectedly

- 1. Transient on AC line tripped reset circuitry in the printer.
 - a. Cycle power to ensure printer initializes during stable AC power.
- 2. Check if non-Xerox, third-party RAM DIMM is installed. Non-compliant RAM can cause erratic printer behavior.
- 3. Internal fault
 - a. Record any fault codes and report to Xerox Technical Support. If the printer detects an error, the printer will attempt to reboot and reinitialize (up to three times) to correct the problem. After the third cycle of rebooting, a fault code displays on the LCD and flashes on the PS and PE indicators.
- 4. Disconnect the printer from its network, for a few hours if necessary, to see if the behavior continues.

Printer Fails to Enter Energy Star Mode

By default, the printer is configured to be Energy Star Tier II compliant. There are a number of controls available to the customer for customizing the Sleep/Wake/Power consumption of the printer. The controls are located in the printer's Printer Setup: Printer Controls and in the printer's web page CentreWare IS. The printer's Wake/Sleep behavior, expected or not, is likely due to how the customer has programmed these settings. It is very unlikely the printer hard-ware/firmware is at fault. If there is a problem, perform an NVRAM reset to return the printer to its default state.

In its default configuration (lowest energy consumption):

- Fast Resume: Off
- Wake when: Job activated
- Enters Standby mode following 2 minutes of inactivity.
- Enters Power Saver mode after 30 minutes of inactivity.

When Fast Resume is turned on:

- Fast Resume: On
- Enters Standby mode following 1 hour of inactivity.
- Enters Power Saver mode after 2 hours of inactivity.

The printer can be awoken automatically in three ways:

- Job Activated receiving a print job wakes the printer up. The printer goes into Standby and Power Saver based on the Fast Resume On/Off setting.
- Scheduled the printer can be woke up (Warmup Settings) and placed into Standby (Standby Settings), once a day, at pre-determined times. Use CentreWare IS to program the times. When Scheduled is selected, the printer will go to Standby after 2 minutes of inactivity and remains at **Ready** for the entire time between the programmed Wake-up and Standby settings. When the Standby Setting time is reached the printer will then proceed to the Power Saver state. When Scheduled is active it ignores the Fast Resume setting.
- Intelligent Ready the printer wakes up and goes into Standby mode based on learned customer printing history. The printer adapts to the patterns of customer printing to be at a Ready state when it expects the customer will print. Likewise, to conserve power the printer will go to Standby mode at times when it expects the customer not to print.

Maintenance Kit Missing

- 1. Drum Maintenance Unit missing or not fully seated.
 - a. Fully install Drum Maintenance Unit.
- 2. Connector not fully seated.
 - a. Check I/O Board connector P/J901 for proper mating.
- 3. Replace the Drum Maintenance Unit (REP 1.16). If that does not fix the problem, then replace the Drum Maintenance Pivot Plate (REP 2.17).

Waste Tray Missing

- 1. Waste Tray missing or not fully seated.
 - a. Fully install the Waste Tray.
- 2. Connector not fully seated.
 - a. Check the I/O Board connector P/J102 for proper mating.
- 3. Check that the Waste Tray Sensor is correctly installed at the end of the Waste Tray Cover.

Optional Features Not Available

- 1. Printer configuration incorrect.
 - a. Verify proper configuration of printer using the Control Panel.
- 2. Computer print driver configured incorrectly.
 - a. Examine print driver setup to ensure printer driver setup does not override desired features set via the Control Panel.
 - b. Verify that the driver correctly indicates the options installed on the printer. Correct the driver if necessary. When options are added to the printer, such as a Lower Tray Assembly, the print driver may need to be updated.
- 3. Configuration Card failure.
 - a. Verify the Configuration Card is properly oriented and fully inserted.
 - b. Verify printer model purchased corresponds to features expected.
 - c. Clean the Configuration Card contacts with isopropyl alcohol, reinstall, and retest.
 - d. Swap the Configuration Card with a known working card. If the printer works, replace the card with one containing identical features as originally purchase.
 - e. The Configuration Card enables certain optional features in the printer. Care must be taken to duplicate the features of the original printer when replacing the card.

525-Sheet Feeder Does Not Function

- 1. Thermal safety fuse blown.
 - a. Power cycle the printer.
 - b. The safety fuse is a self resetting device. Power cycling ensures the fuse cools enough to reset itself.
- 2. 525-Sheet Feeder faulty.
 - a. Turn off the printer and wait 30 seconds for power supply capacitors to discharge.
 - b. Replace 525-Sheet Feeder (REP 3.12).
 - c. Perform full test of the printer.

Printer Does Not Print, LEDs are On and the Display is Frozen with No Errors

- 1. Non-specific electronics failure.
 - a. Double check PS and PE indicators for any fault code information. The printer self test is usually able to detect a failure that would cause this symptom. Check for the fault code may save debugging time.
 - b. If the PS and PE indicators are steady and dimly-on, replace the Electronics Module (REP 5.1) and retest printer.
 - c. If the PS and PE indicators are blinking, brightly-on, or totally off, continue debugging. A dim but steady on condition indicates some firmware was not properly loaded into a logic circuit.
 - d. With the power cord connected, touch the metal Electronics Module to discharge any static electricity.
 - e. Turn off printer and wait 30 seconds for the Power Supply capacitors to discharge.
 - f. Unplug the power cord and remove the printer's covers.
 - g. Unplug the following Electronics Module connectors:
 - Power Control to I/O Board (P/J701)
 - Power Control Right (P/J402)
 - Printhead Data (P/J201)
 - Wave Amp Signal (P/J901)
 - Power Control Left (P/J302)
 - Y-Axis Motor (P/J301)

This step removes all other circuits so the Electronics Module can be tested alone.

- h. Plug in the power cord and turn on the printer.
- i. The PE and PS indicators should flash a fault code reporting that the Control Panel is missing. If the proper fault message is not flashed, replace the Electronics Module (REP 5.1) and retest the printer. If PE and PS indicators flash, continue with debug.
- j. Turn off the printer and wait 30 seconds for the Power Supply capacitors to discharge.
- k. Unplug the following Electronics Module connectors:
 - Power Control to I/O Board (P/J701)
 - Power Control Right (P/J402)
 - Printhead Data (P/J201)
 - Wave Amp Signal (P/J901)
 - Power Control Left (P/J302)
 - Y-Axis Motor (P/J301)

This step prevents any faults from the Motors, Clutches and Sensors from preventing the I/O Board and Control Panel from functioning.

- I. Plug in the I/O Board connector (P/J701) to the Electronics Module. This step adds the I/O Board and Control Panel to the Electronics Module.
- m. Turn on the printer.
- n. If the Electronics Module, I/O Board and Control Panel are working, fault code 91,900 should appear on the display to indicate the Printhead is disconnected. If the correct fault code is displayed, continue with the next steps of the procedure.

If the correct fault code is not displayed, replace the Control Panel (REP 1.6) and I/O Board (REP 5.10) and verify the correct fault code appears. Retest Electronics Module, I/O Board, Control Panel combination.

If no fault code displays, return the original Control Panel and I/O Board to the printer. Replace the Electronics Module (REP 5.1) and then continue with the next steps of the procedure.

- o. If a different fault code is displayed, see Fault Messages and Codes Troubleshooting in Chapter 2 (Fault Messages and Codes) for a definition of the problem and the procedures needed to solve the problem.
- 2. Repeat these procedures to check all circuits connected to the I/O Board:
 - a. Turn off the printer and wait 30 seconds for the Power Supply capacitors to discharge.
 - b. Plug in the I/O Board connectors, one at a time, and perform steps 2.c and 2.d for each connector.
 - c. Turn on the printer and wait for fault code 91,900 to display. Check that the three voltage indication LEDs inside the Electronics Module (visible through the vent holes of the Electronics Module near the AC power switch) are lit as shown in Figure 16.



Figure 16 Electronics Module LEDs

- d. If the proper fault code and LED does not appear after each I/O Board connector is reconnected, repair or replace the faulty circuit.
- e. If the proper code appears, repeat the procedures until all I/O Board connectors are plugged back in.

f. If repairs are made during this step, plug in all connectors to the printer and retest. If the printer is fixed, reattach the covers to the printer and perform a full test. If no defects are found in this step, replace Electronics Module (REP 5.1), test the printer, reattach covers to printer, and perform a full test.

Verifying Print Engine Operation by Printing Stored Pages

- 1. Turn on the printer. If the printer does not begin initializing, go to Measuring AC Voltages procedure in Chapter 6 (General Troubleshooting).
- 2. Once the power light is on (not blinking) and the Control Panel displays Ready to Print, it is now possible to print a stored page.
- 3. If a page prints, the print engine is working correctly. If not, a problem exists with the print engine.

Control Panel Malfunction

Control Panel Not Responding

- 1. If the printer is powered on and frozen, open then close the Front Door to see if the Control Panel responds.
- 2. If the printer appears functional after operating the door, advise customer that failure may have been due to an ESD event. Thoroughly test the printer for any other problems.
- 3. Skip the rest of this section if the printer is functional, otherwise continue troubleshooting.
- 4. With the power cord connected, touch the Electronics Module to discharge any static. ESD damage may occur if static electricity is discharged to the printer electronics.
- 5. Turn off the printer and wait 30 seconds for the power Supply Capacitors to discharge. Damage to circuits within the Electronics Module may occur if the Power Supply capacitors are not allowed to fully discharge.
- 6. Unplug the power cord and remove printer's covers. Use caution around motors, pulleys and live AC connections when working with the printer covers off.
- 7. Examine the printer for loose grounding connections, especially the ground strap on the Y-Axis Motor. Eliminate the possibility of internally generated ESD from affecting the printer.
- 8. Plug in all the cables removed during service. Trace through all service steps performed to reattach any cables that were unplugged during troubleshooting.
- 9. Reassemble and retest the printer.

Control Panel is Blank

A blank Control Panel indicates some portion of the chain of devices used to drive the LCD may be defective. If the PS and PE LEDs are flashing a code, see Power On Self Tests in Chapter 2 (Fault Messages and Codes). If no error indication is available, use the following procedure to check the Control Panel.

- 1. If the printer is powered on, open then close the Front Door to see if the Control Panel responds.
- 2. If the printer is functional after operating the door, advise customer that failure may have been due to an ESD event. Thoroughly test the printer for any other problems.
- 3. Skip the rest of this section if the printer now appears functional, otherwise continue troubleshooting.
- 4. With the power cord connected, touch the Electronics Module to discharge any static electricity to prevent ESD damage to the printer may occur if static electricity is discharged to printer electronics.

- Turn off the printer and wait 30 seconds for the Power Supply capacitors to discharge. Damage to circuits within the Electronics Module may occur if the Power Supply capacitors are not allowed to fully discharge.
- 6. Unplug the power cord and remove the Control Panel (REP 1.6).
- 7. Examine the printer for loose grounding connections, especially the ground strap on the Y-Axis Motor. Eliminate the possibility of internally generated ESD from affecting the printer.
- 8. Reassemble and retest the printer.
- 9. Replace the Control Panel (REP 1.6).

Media Path and Transport Problems

For paper path and media-based problems, first check for displayed fault codes. If a code is displayed, refer to Fault Messages and Codes Troubleshooting in Chapter 2 (Fault Messages and Codes) for the appropriate troubleshooting procedure. If no code is displayed, use the following procedures to isolate the problem.

Initial Actions

- Check that the correct type of media is being used, for information on the correct media type and sizes refer to the Paper Tips page.
- Ensure the printer is operating under the right environmental conditions.
- Ensure the correct weight of paper is being used.
- Ensure that envelopes are of an acceptable size and oriented with the flap up for Tray 1 and the flap down for Trays 2, 3, 4, and 5.
- Ensure that the correct media is in the correct media tray. The paper guides indicate to the printer the size of media being used. Ensure the media guides are set correctly.
- Inspect the paper for bent, torn or folded corners.
- Check to ensure no small pieces of paper are in the paper path.
- Run the Service Diagnostics Blank Print Menu (Service Diagnostics Menu -> Exercise Menu -> Blank Print Menu) test to test all path sensors.
- Try printing from a fresh, unopened ream of paper.

Pick Errors Tray 1

- 1. Inspect the paper path for obstructions.
- 2. Ensure that the side guides are set correctly by sliding the guide gently against the media.
- 3. Try printing from a fresh, unopened ream of paper.
- 4. Fan the edge of the media stack to separate sheets.
- 5. Flip over the media in the tray.
- 6. Ensure the Pick Roller and Separator Pad are installed correctly.
- 7. Clean the Pick Roller using the cleaning procedures. Paper dust can coat the roller and affect its ability to grip the paper. Also clean the transport rollers if they are visibly dirty.
- 8. Check that the Pick Roller rotates. Replace the Pick Roller (REP 3.10) if necessary.
- 9. Run the Paper Path test: Service Diagnostics Menu -> Exercise Menu -> Blank Print Menu.
- 10. Inspect the Rollers, Bushings and Gears of the paper path.

Pick Errors Trays 2, 3, 4, and 5

- 1. Inspect the paper path for obstructions.
- 2. Ensure that the side guides are set correctly by sliding the guide gently against the media.
- 3. Try printing from a fresh, unopened ream of paper.
- 4. Flip over the media in the tray.
- 5. Ensure the Pick Rollers for Trays 2, 3 and 4 are installed correctly.
- 6. Clean the Pick Roller using the cleaning procedures. Paper dust can coat the pick roller and affect its ability to grip the paper and pull it out of the tray. Also clean the transport rollers if they are visibly dirty.
- 7. Check that the pick roller is being rotated.
- 8. Run the Paper Path test: Service Diagnostics Menu -> Exercise Menu -> Blank Print Menu.
- 9. Replace the Pick Roller if damaged.
- 10. Inspect the rollers, bushings and gears of the paper path.

Preheater and Transfix Jams

- 1. Remove the Preheater and Deskew Assembly (REP 2.20) and check for damage, debris or obstructions.
- 2. Replace the Preheater and Deskew Assembly (REP 2.20) and check for excessive media skews.
- 3. Check for ink shards on top of the Preheater next to the flag.
- Run the Paper Path Drive test: Service Diagnostics Menu -> Exercise Menu -> Motors/Shafts -> Media Path Motor and Shaft. If the test fails, replace the Preheater and Deskew Assembly (REP 2.20).
- 5. Check the exit path for obstructions. Look for debris around the stripper blade.
- 6. Ensure that the Transfix Roller is rotating freely. Replace the Transfix Roller (REP 2.13) if necessary.
- 7. Test the sensors in the paper path. Look for damaged or non-operating sensor flags.
- Check the Stripper Solenoid by running the Strip Solenoid test: Service Diagnostics Menu -> Exercise Menu -> Activators -> Strip Solenoid. Replace the Stripper Solenoid (REP 3.5) if necessary.
- 9. Check for stripper blade damage. Replace the Stripper Carriage Assembly (REP 2.13) if necessary.
- 10. Inspect the rollers, bushings and gears of the paper path.

Process and Media Drive Jams

- 1. Determine if the Process Motor runs: Service Diagnostics Menu -> Exercise Menu -> Motors/Shafts -> Process Motor. If it does not, go to step 2. If it does, go to step 4.
- 2. Measure to determine if +50 VDC is being supplied to the motor. If 50V is applied, go to step 3. If not, inspect the wiring harness. If the wiring harness is functional, troubleshoot the Electronics Module.
- 3. Disconnect the Process Motor's wiring harness. Measure the resistance of the motor's windings. If the windings are opened, shorted or far out of tolerance, replace the Process Drive.
- Ensure the Process Drive gearbox is in it's proper home position (Process Drive Alignment ADJ 1.3).
- 5. Run the Paper Path Drive test: Service Diagnostics Menu -> Exercise Menu -> Motors/Shafts -> Media Path Motor and Shaft.
- 6. Run the Drum Maintenance Drive test: Service Diagnostics Menu -> Exercise Menu -> Motors/Shafts -> Drum Maintenance Cam Shaft.
- 7. Run the Transfix Drive and Transfix Gap tests: Service Diagnostics Menu -> Exercise Menu -> Motors/Shafts -> Transfix Cam Shaft.
- 8. Run the Process Motor and Media Path Motor and Shafts tests: Service Diagnostics Menu -> Exercise Menu -> Motors/Shafts -> Process Motor/ Media Path Motor and Shafts.
- 9. Inspect the gears and mating cam gears for stripped or damaged gear teeth.
- 10. Replace the Process Drive (REP 4.13).
- 11. Replace the Media Drive Assembly (REP 4.5).

Media Skews Passing Through the Paper Path

- 1. Ensure the media is supported.
- 2. Ensure that the side guides are set correctly by sliding the guide gently against the media.
- 3. Do not overfill the tray, especially with envelopes.
- 4. Check to see if the media is excessively curled. Curled media can track incorrectly in the paper path.
- 5. Examine the paper path; ensure it is clear of obstructions.
- 6. Ensure that the Pick Roller is not visibly dirty so that it picks up a sheet of media smoothly and evenly.
- 7. Check and clean or replace, as required, the Preheater and/or Takeaway Rollers. Also make sure that the Front Door is properly closed.
- 8. The printer should be installed on a flat, level surface.
- 9. Ensure the Preheater is clean and properly seated into the printer frame.

Noise Troubleshooting

Various noises could occur while the printer is in operation at different stage (refer to Printing Process (Stages)) which consist of different clicking, beeping, and whirring noises. These should be considered normal operation if they happen only during power up and not during printing.

Noises during printing should be slight and should include a whirring noise as well as paper movement noises. A metallic clicking sound can be heard when the printer prints the second side of a two-sided print.

Printing Process (Stages)

- Drum Preparation A thin coating of silicone oil is applied to the surface of the Drum.
- Printing The Drum starts rotating at a speed dependent upon print resolution. As the Drum reaches the correct speed, the jets begin to fire to deposit the image on the oiled portion of the Drum. As the jets fire, the Printhead moves from right to left to complete the image on the Drum.
- Transfix and Exiting -
 - Stages the paper for rendezvous with the image on the Drum and Transfix Roller nip.
 - Loads the Transfix Roller and engages the Stripper Blade.
 - Strips the paper from the Drum.
 - Exits the paper from the printer, or exits the paper for 2-sided printing.

Sound Reduction Mode

When enabled, lowers Fast Color, Standard, and Enhanced PostScript print mode speeds to reduce overall sound levels. Table 1 contains the print speed changed for simplex and duplex printing when Sound Reduction is activated.

Pages per Minute	Fast Color	Standard	Enhanced	Photo
Default	40/30	30/25	19/18	6/4
Sound Reduction	25/22	22/20	16/15	6/4

Normal Noises

These noises are considered normal but may sound strange to those unfamiliar with a Solid Ink printer.

Table 2 Normal Noises

Defect	Description	Noise Sample		
NOTE: Click on each noise sample link under the Noise Sample column to hear the sound sample.				
Printing				
NOTE: Four pages are printed for simplex and duplex sound samples.				
Simplex, A-size, 20lb, Tray 2, Enhanced ModeThe printer makes whirling and paper move- ment noises while is printing A-size paper Simplex in Enhanced mode.		A-Size Simplex, Enhanced		

Defect	Description	Noise Sample		
NOTE: Click on each noise sample link under the Noise Sample column to hear the sound sample.				
Duplex, A-size, 20lb, Tray 2, Enhanced Mode	The printer makes whirling and paper move- ment noises while is printing A-size paper Duplex in Enhanced mode.	A-Size Duplex, Enhanced		
Simplex, A-size, 20lb, Tray 2, Fast Mode	The printer makes whirling and paper move- ment noises while is printing A-size paper Simplex in Fast mode.	A-Size Simplex, Fast		
Duplex, A-size, 20lb, Tray 2, Fast Mode	The printer makes whirling and paper move- ment noises while is printing A-size paper Duplex in Fast mode.	A-Size Duplex, Fast		
Non-Printing				
Ink Loading	The Ink Loader makes clicking sound while loading ink sticks.	Ink Loading		
Enter Power Saver Mode	If the printer sits idle for two hours, it goes into an Energy-saving Standby mode. Two hours after that, the printer goes into a Power Saver (ENERGY STAR) mode. When the printer does this, it tilts the Printhead back into a parked position. This accounts for some of the noises the printer makes after it has been idle for four hours. (The ENERGY STAR time delay may be as long as 4 hours or as short as 30 minutes, depending on what Power Saver Timeout has been set to.)	Enter Power Saver		
Exit Power Saver Mode	The printer makes various noises when exit- ing Power Saver mode.	Exit Power Saver		

Abnormal Noises Due to Failures (No Service Faults)

The following noises can occur during printing or non-printing operations. Though they do not result in an obvious loss of functionality or a service fault, they are hardware failures and should be considered abnormal.

Table 3 Abnormal Noises Due to Failures

Defect	Description	Procedure	Noise Sample		
NOTE : Click on each noise sample link under the Noise Sample column to hear the sound sample.					
Printing					
Drum Ground Plane Rubbing	The Drum ground plane on the left side of the Exit Module is held in place by a post feature of the Exit Module. If the post breaks, the ground plane can come into contact with the Drum Pulley resulting a metallic rubbing noise.	OF1	Drum Ground Plane Rubbing		

Table 3 Abnormal Noises Due to Failures

Defect	Description	Procedure	Noise Sample
Drum Knocking (Drum Belt)	A defect in the Drum Belt can cause a low pitch knocking sound to occur dur- ing the imaging stage of printing.	OF2	Drum Knocking (Drum Belt)
Y-Axis Motor Bearing	A defective Y-Axis Motor bearing can cause a metallic brushing or scraping sound during imaging.	OF3	Y-Axis Motor Bear- ing
Tray 1 - Squeak- ing	Tray 1 may make a squeaking noise when it picks the last sheet from a stack of paper.	OF4	Tray 1 - Squeaking
Tray 1 - Buzzing	The printer makes a buzzing, grinding sound during the print process when Tray 1 Roller is out of position.	OF5	Tray 1 - Buzzing
Non-Printing			
Process Motor Gear Box (Trans- fix Output Gear)	A stripped transfix output gear in the Process Motor Gear Box can cause a tooth skipping noise during startup.	OF6	Process Motor Gear Box (Trans- fix Output Gear)
Process Motor Gear Box (Com- pound/Helical Gear)	A stripped compound or helical gear in the Process Motor Drive can cause a tooth skipping noise during startup and printing.	OF7	Process Motor Gear Box (Com- pound/Helical Gear)
Gear Skipping (HM Gear Train / MP Gear Box)	It could be due to a loose Head Mainte- nance Gear Train on the left side of the Exit Module, or a problem within the Media Path Gear Box (007K20040, Media Drive with 2 Clutches).	OF8	Gear Skipping
Power Down	The printer is in progress of powering off.	N/A	Power Down

OF1 Drum Ground Plane Rubbing

The Drum ground plane on the left side of the Exit Module is held in place by a post feature of the Exit Module. If the post breaks, the ground plane can come into contact with the Drum Pulley resulting a metallic rubbing noise.

Troubleshooting Reference

Applicable Part (Chapter 5 - Parts List)

• Exit Module Assembly, PL 3.1 Item 13

Procedure

Remove the Left Side Cover (REP 1.10) to inspect the Exit Module. Check that the post of the Exit Module is not broken. Is the post broken (see Figure 1)?

Y N

Troubleshooting complete.

Replace the Exit Module (REP 3.13).


OF2 Drum Knocking (Drum Belt)

A defect in the Drum Belt can cause a low pitch knocking sound to occur during the imaging stage of printing.

Troubleshooting Reference

Applicable Part (Chapter 5 - Parts List)

• Y-Axis Belt, PL 2.1 Item 5

Procedure

Remove the Y-Axis Belt (REP 2.5) to inspect the Belt for damage. Is the Belt damaged (see Figure 1)?

Y N Troubleshooting complete.

Replace the Y-Axis Belt (REP 2.5).



Figure 1 Checking the Y-Axis Belt

OF3 Y-Axis Motor Bearing

A defective Y-Axis Motor bearing can cause a metallic brushing or scraping sound during the imaging stage of printing.

Troubleshooting Reference

Applicable Part (Chapter 5 - Parts List)

• Y-Axis Motor Assembly, PL 4.1 Item 2

Procedure

Check that there is no metallic brushing or scrapping sound during imaging. Is there a metallic brushing or scrapping sound during imaging?

Y N

Troubleshooting complete.

Replace the Y-Axis Motor Assembly (REP 4.2).

OF4 Tray 1 - Squeaking

Tray 1 may make a squeaking noise when it picks the last sheet from a stack of paper. In some cases, depending on the type of paper being used, the squeaking sound may be noticed during the picking of any sheet of the stack.

Troubleshooting Reference

Applicable Part (Chapter 5 - Parts List)

• Separator Pad Kit, PL 3.1 Item 9

Procedure

Υ

Check that the squeaking is not too loud. Is the squeaking sound loud?

N Troubleshooting complete.

Replace the Separator Pad Kit (REP 3.9).

OF5 Tray 1 - Buzzing, Grinding

The printer makes a buzzing, grinding sound during the print process when Tray 1 Roller is out of position.

Procedure

Check for a buzzing, grinding sound during the print process. Is there a buzzing, grinding sound?

Y N

Troubleshooting complete.

Open and close Tray 1. This will reset the Pick Roller position and should eliminate the noise.

OF6 Process Motor Gear Box (Transfix Output Gear)

A stripped Transfix Output Gear in the Process Motor Gear Box can cause a tooth skipping noise during startup.

Troubleshooting Reference

Applicable Part (Chapter 5 - Parts List)

Process Drive with Gear Box and Motor, PL 4.1 Item 13

Procedure

Check for tooth skipping noise during printer startup. Is there a tooth skipping sound?

Y N

Check and tighten loose fasteners to *12 in-lbs to* secure the Process Drive. **Does** the error persist? Y N

N Troubleshooting complete.

Replace the Process Drive Assembly (REP 4.13).

Remove the Right Side Cover (REP 1.11) and the Process Drive Assembly (REP 4.13) to check the Process Drive for stripped gear (see Figure 1.) Is the Transfix Output Gear on the Process Drive stripped?

Y N

Troubleshooting complete.

Replace the Process Drive Assembly (REP 4.13).



Figure 1 Checking the Transfix Output Gear

OF7 Process Drive Gear Box (Compound/ Helical Gear)

A stripped compound or helical gear in the Process Motor Drive can cause a tooth skipping noise during startup and printing.

Troubleshooting Reference

Applicable Part (Chapter 5 - Parts List)

Process Drive with Gear Box and Motor, PL 4.1 Item 13

Procedure

Check for tooth skipping noise during printer startup and while printing. Is there a tooth skipping sound?

N

Υ

Check and tighten loose fasteners to 12 *in-lbs to* secure the Process Drive. **Does** the error persist?

Y N

Troubleshooting complete.

Replace the Process Drive Assembly (REP 4.13).

Remove the Rights Side Cover (REP 1.11) and the Process Drive Assembly (REP 4.13) to check the Process Drive for stripped gear (see Figure 1). Is the Compound/Helical Gear on the Process Drive stripped?

Y N

Troubleshooting complete.

Replace the Process Drive Assembly (REP 4.13).



Figure 1 Checking the Compound/ Helical Gear

OF8 Gear Skipping (Head Maintenance Train/ Media Path Gear Box)

There is a gear skipping noise coming from the left side of the printer. It could be due to a loose Head Maintenance Gear Train on the left side of the Exit Module or a problem within the Media Path Gear Box (Media Drive with 2 Clutches).

Troubleshooting Reference

Applicable Part (Chapter 5 - Parts List)

• Media Drive with 2 Clutches, PL 4.1 Item 5

Procedure

Ν

Check for gear skipping noise on the left side of the printer. Is there a gear skipping sound?

Y

Troubleshooting complete.

Remove the Left Side Cover (REP 1.10) to check the Head Maintenance Gear Train on the left side of the Exit Module (see Figure 1). Is the Head Maintenance Gear Train loose?

Y N

Check the Media Drive Assembly for damage. Is the Media Drive Assembly damaged?

Y N

Troubleshooting complete.

Replace the Media Drive Assembly (REP 4.5).

Tighten the Head Maintenance Gear.



Figure 1 Checking the Head Maintenance Gear and Media Drive Assembly

OF9 Other

Procedure

Ensure the tilt gear noise damper is correctly installed on the tilt gear shaft and secured in place with its KL-clip.

Operating Systems and Application Problems

Print an internal test print from the Control Panel to ensure the problem is not system related. There is additional help available at www.xerox.com/office/support. You can access PhaserS-MART Technical Support, Technical Support via email, driver downloads, and much more.

PhaserSMART Technical Support is an automated, Internet-based support system. Use your default web browser to send diagnostic information from the printer to the Xerox web site for analysis. PhaserSMART Technical Support examines the information, diagnoses the problem, and proposes a solution.

To access PhaserSMART Technical Support:

- 1. Go to www.phaserSMART.com.
- 2. In the browser address window, enter the printer's IP address.

Macintosh Printing Problems

NOTE: The following steps are for diagnosing a networked printer running Mac OS X, version 10.2.6 or later, and assume that CentreWare access is enabled. If you are using Mac OS X, but an earlier version than 10.2.6, upgrade first.

- 1. Cycle power the printer Off and On, and then try printing again.
- 2. Determine the printer's IP address from the Control Panel or Startup page. Return the Control Panel to the initial menu, and then check to make sure it indicates Ready to Print. If it does not indicate Ready to Print, correct printer's IP address.
- Make sure you can connect to the printer via network from the host: Open a Safari or Internet Explorer window to the printer's IP address. Once you have established basic network connectivity, proceed to Step 4.
 - a. If you cannot see the CentreWare IS page from the printer CentreWare IS web server, the printer may be Off, on a different network, or the host is not networked correctly. Try Steps b through f to correct the problem. If you make any changes to the network, try printing the job again.
 - b. Open **System Preferences**, select **Network**, and select the **TCP/IP** tab. Make sure you have a valid IP address. Correct the settings and retry if needed.
 - c. If you are on a network with a proxy server, ensure the local connections are excluded from the proxy. Check **System Preferences**, **Proxies** tab in the **Bypass** proxy settings for these Hosts and Domains, to ensure the local network devices are excluded from proxy redirection.

For example: If you open Safari to the printer IP and get an error message similar to Error – the request item could not be loaded by the proxy, you are probably accessing the proxy server for a local address. This is incorrect.

d. Open the **Terminal** tool located at **Applications** -> **Utilities** at the root of the Mac OS X boot disk, and select **New Window**. Once you have a prompt, try network connectivity using the Ping command.

For example: ping 13.62.70.112 checks for echo replies from the printer with that IP address.

e. In the **Terminal** tool, try using Traceroute to determine if you are on the same subnet as your system.

For example: traceroute 13.62.70.112 should produce exactly one hop before completing the trace. Correct as needed, and retry your print job.

- f. If you still cannot connect to the printer via network, try another computer.
- 4. In Mac OS X, open Printer Setup Utility, located at Applications --> Utilities at the root of the Mac OS X boot disk. Check to make sure the system status does not indicate Stopped. If it does, check your network and insure the host system is on the same subnet as the system. Correct if needed. Delete all jobs in the queue for the printer by double-clicking the printer name, selecting each job, and clicking Delete. Restart the print queue by clicking Start Jobs. Try your print job again.
- 5. In the **Printer Setup Utility**, select your printer. In the **Printers** menu, select **Show Info**. From the pull-down menu in **Printer Info**, make sure the configuration shown for the printer is correct. If the configuration is wrong, click the **Configuration** in the pull-down menu, and re-install. Check the **Installable Options** and make sure they match the system's configuration. If any changes are made, retry your print job.
- 6. If there is still no output, try printing from a simple application. Open **TextEdit** located at the **Applications** folder, select **New File**, and create a small test document. From the **File** menu, select **Print**.
- 7. If an error message displays or there is no output, try turning on the PostScript error status from CentreWare IS or the printer's Control Panel. PostScript will now output an error page if an error occurred during the print job, assuming the printer received it.
- 8. Locate the **TextEdit** tool in the **Applications** folder and try print the document again.
 - a. Once you have opened a document or created a new document, from the **File** menu, select **Print**.
 - b. Click on the Printer pull-down menu, and then select Edit Printer List.
 - c. From the **Printers** menu, click the **Add** button, or pick **Add Printer** (the **Add** button is configurable, so it may not be there).
 - d. From the pull-down menu, select **IP Printing**. Put the printer's **IP** address in the **Printer's Address** text area.
 - e. From the pull-down menu, click **Printer Configuration**, and then select **XEROX**. A scrolling list should display.
 - f. Pick the correct **Xerox Phaser 8570/8870** configuration. You can check the exact configuration on the printer's **Startup** page in the upper right corner.
 - g. The newly added printer displays in bold on the printer list, indicating it is the default printer. When you are done adding the new printer, close the **Printer List** dialog.
 - h. From the Printer pull-down menu, select your printer. In the dialog box, click Print.
- 9. If you can print from the **TextEdit** tool, but cannot print from your application, the problem is likely in your application. Check for upgrade availability or contact the application vendor for further diagnosis.

Windows Printing Problems

- 1. Try printing a test page from the printer driver's **Properties** dialog box.
- 2. Try printing from another application.
- 3. Try printing to another network/PostScript printer.
- 4. Try printing from another computer.
- 5. If the error returns, turn on the PostScript error handler through the **Control Panel Post-Script Error Info** in the **Support** menu, or CentreWare IS and print the document again. Take note of the information on the error page that just printed.

UNIX/Linux

This section includes:

- Quick Install Steps
- Additional resources

Your printer supports connection to a variety of UNIX platforms. The workstations currently supported by CentreWare for UNIX/Linux to a network connected printer are:

- Sun Solaris
- IBM AIX
- Hewlett-Packard HP-UX
- Linux (i386) tested on SUSE 10.0, RedHat 9, Fedora Core1

The following procedures enable you to connect your printer using any of the supported versions of UNIX or Linux listed above.

Quick Install Steps

Perform the following procedures to set up the printer and install the appropriate drivers.

From the Printer

To set up the printer:

- 1. Verify that both TCP/IP protocol and the proper connector are enabled.
- 2. On the Control Panel, select one of these IP address options:
 - Allow the printer to set up a DHCP address
 - Enter the IP address manually
- 3. Print the Configuration page and keep it for reference.

From Your Computer

To install the CentreWare for Unix driver:

- 1. Go to www.support.xerox.com
- 2. Select your printer, the platform your are running (UNIX), and Language.
- 3. Click Go to access the Unix download location.
- 4. From the list of provided files, download the **PrinterPackageXPXX** and the appropriate CentreWare printer driver for your platform <OS>XPXX 4.xx.x.tar.
 - a. As root untar the Driver and Printer package, this will create two subdirectories. Cd to <O/S>InstallPackage and type ./setup to install the driver.
 - b. CD to the PrinterPackagexpxx and type ./setup to install the printer specific data files.
 - c. Type xpadmin to open the admin tool for creating print queues. Select the printer from the list of discovered printers you want to print to. Click on the printer icon at the top left of the screen to add a print queue.
- 5. Print a test page and verify the print quality of the printed page.

NOTE: If print-quality problem exists, or your job did not print, refer to the User Guide at www.xerox.com/office/CQ8570support or www.xerox.com/office/CQ8870support.

Additional Resources

For users that want to use the CUPS driver instead of CentreWare for Unix, access the Xerox web site for the latest CUPS ppd package at www.support.xerox.com. To download printer drivers:

- 1. Find your printer. Click the **Drivers & Downloads** link. Select the platform you are running (UNIX), and the language.
- 2. Click the Go button.
- 3. Click the CUPSPrinterPackage.
- 4. Untar the printer package and select the ppd for the printer you want to install.
- 5. Copy the file to /usr/share/cups/model/Xerox. (This is the directory for SUSE10.1. The directory may not be in the same location on other Linux versions).
- 6. Open the printer manager supplied for the Linux release and follow the instructions for adding a print queue.

NOTE: The print daemon may need restarting for the print manager to see the new PPD added to the CUPS ppd directory

Network Problems

Perform Network Diagnostics to run a test on the TCP/IP connection (Ethernet Port).

- 1. From the Control Panel menu, select **Troubleshooting** -> **Network Problems** -> **Network Diagnostics**.
- 2. A "Running network diagnostics please wait" message is displayed.
- 3. If no errors are detected, the message Network diagnostics completed, No problem detected is displayed, along with options for Help or printing either the **Connection Setup** or **Configuration** page.

NOTE: The Connection Setup and Configuration pages list current network parameters stored in the printer's NVRAM.

If Network Diagnostics detects an error, the fault message displays with menu options to assist in correcting the error.

4. For help, press Help (?) to access the text listing steps to help diagnose and clear the error.

In situations where Network Diagnostics completes without an error, but printing continues to fail, test the printer's Ethernet Port directly using a cross-over cable and a second, known good, Ethernet Port. A successful test using this procedure eliminates the printer's networking hardware as the root cause.

NOTE: The Ethernet Port verification procedures were developed for Windows XP or Mac OS X. If a different operating system is in use, adapt the steps as necessary.

Windows Ethernet Port Verification

- 1. Connect a crossover cable between the printer and computer's Ethernet Ports.
- 2. Verify that the printer is Ready.
- 3. From the computer menu, click Start -> Run at the computer to access the Run dialog.
- 4. In the Run
- 5. Type in **cmd** and click **OK** to launch the MS-DOS command window.
- 6. At the MS_DOS command prompt, type **ipconfig** and press **Enter** to display the computer's **IP Address**, **Subnet Mask**, and **Default Gateway**.
- 7. Print the **Configuration** page to verify that TCP/IP is enabled and obtain the current TCP/ IP values stored in the printer's NVRAM.

NOTE: Configure the printer's TCP/IP network parameters to enable direct communication with the computer.

- 8. Disable **DHCP/BOOTP** and **AutoIP** on the printer.
- 9. Select an IP address for the printer that matches the computer, except for the last field, which must be unique.
- 10. Edit the printer's Gateway and Subnet Mask to match the computer.
- 11. At the MS_DOS command prompt, type **ping** followed by a **space** and the printer's **IP address**, and then press **Enter**. If the number of packets sent and received match, the Ethernet Port is functional. If the request times out and fails to reply, either the cable or the port is defective.

Ethernet Port Verification for LOCAL LINK Default IP Addresses

An alternate method is required to test the Ethernet port when the PC's IP address falls within the range 169.254.xxx.xxx. PCs that have not been configured for a specific network default to a "LOCAL LINK" value within the 169.254.xxx.xxx range.

NOTE: To comply with industry standards, ColorQube products cannot be manually configured for IP addresses within the LOCAL LINK range.

NOTE: Always print the Configuration page to obtain a record of the printer settings before changing the IP address. After testing the printer, be sure to restore the printer's original network settings.

- 1. Connect a crossover cable between the PC and printer.
- 2. Verify the printer is Ready.
- 3. Use the printer's control panel to enable AutoIP:
 - From the Control Panel menu, select Printer Setup -> Connection Setup -> Network Setup -> TCP/IPv4.
 - b. Select and set AutoIP to on.
 - c. Exit the menu so the printer is Ready.
- 4. Reset the printer to cause AutoIP to assign a new IP address (cycle power or from the **Shut Down** menu, select **Restart Printer**).
- 5. After the printer's IP address is set, test communication by sending the "PING" command.
- 6. If the test fails, install a different cable and retest.

Mac OS X Ethernet Port Verification

- 1. Turn the printer on and wait until it is Ready.
- 2. To check the computer's TCP/IP settings, use the Apple menu to select **System Preferences**.
- 3. Select Network.
- 4. Select Show Built-in Ethernet.
- 5. Click the TCP/IP tab and record the computer's IP Address, Subnet Mask, and Gateway.
- 6. Print the **Configuration** page and verify that TCP/IP is enabled on the printer.
- 7. Select an IP address for the printer that matches the computer, except for the last field, which must be unique.
- 8. Edit the printer's Gateway and Subnet Mask to exactly match the computer's.
- 9. Connect a crossover cable between the Ethernet Ports on the printer and the Mac.
- 10. Test the application using Network Utility by double-clicking the hard drive icon.
- 11. Select Applications -> Utilities -> Network Utility.
- 12. Click the PING tab.
- 13. Enter the printer's IP address.
- 14. Configure the utility to ping the printer four times. The test will end after four attempts.
- 15. Click the **PING** button to complete the test.
- 16. If the number of packets sent and received match, the test was successful and the Ethernet port is functioning. If the request times out and fails, the cable or the port are malfunctioning.

Network Logging

The printer maintains 4 logs in memory detailing network functions. The logs contain TCP/IP and AppleTalk initialization events. The logs can also be accessed remotely via CentreWare. The logs list events chronologically. The log is limited in length; when the log is full, the printer stops recording data to the log. The logs are stored on the Hard Drive so only new data is stored each time the printer's power is cycled.

There is a **Connection Setup** page, **Configuration** page, and a network available for troubleshooting network problems.

To print an Event Log or Runtime Log:

- 1. Place the printer in **Customer Mode**.
- 2. From the Control Panel menu, select **Troubleshooting** -> **Network Problems** -> **Network Log Pages**.
- 3. Select the appropriate log from the list and press Enter to print the log.
 - TCP/IP Start Log
 - TCP/IP Runtime Log
 - AppleTalk Start Log
 - AppleTalk Runtime Log

NOTE: To print the Connection Setup or Configuration page, from the main menu, select **Information** -> **Information Pages**.

Obtaining Serial Back Channel Trace

In rare cases the printer may exit unusual behavior that is difficult to troubleshoot. In such cases, if feasible, it can be useful to obtain a Back Channel Trace from the printer's on-board serial port. The Back Channel Trace, lists step-by-step what the printer is doing up to the point that an error occurs. The trace may offer clues to help troubleshoot the problem.

NOTE: For Windows 7, down load a third party software such as Tera Term or PuTTY in place of HyperTerminal.

Required Tools

- Computer with a serial port or a USB to Serial DB9 adaptor
- Serial Null Modem Cable P/N 600T80375
- Serial Adapter Cable P/N 600T80374

Procedure (for Windows XP)

- 1. Connect the serial cable to the computer. Serial port settings are **19.2 kbaud**, **8 bits**, **None Parity**, **1 Stop bit**, and **Hardware control** or **Xon**/ **Xoff** for bidirect communication.
- 2. Turn Off the printer.
- 3. Connect the serial cable with adapter to the 5-pin connector (J14). The label **THIS SIDE UP** of the serial port adapter should face towards the back of the printer.
- Start up a terminal program such as in MS Window's HyperTerminal (usually located in Programs -> Accessories -> Communications -> HyperTerminal). Ensure the serial port settings, usually COM1: is correct.
- 5. Turn on the printer.

The trace should appear in the terminal dialog window. Examine the trace to troubleshoot the problem. Save the trace as a file, if necessary.

USB Port Testing

In situations where USB communications fail, test the printer's USB Port directly using a USB cable and a second, known good, USB Port. A successful test using this procedure eliminates the printer's USB Port as the root cause.

Initial Actions

- Check that the driver software is properly installed on the host.
- Make sure the USB cable is connected at both ends and is serviceable.
- Print a **Configuration** page and verify that USB 2.0 is enabled in the printer's NVRAM.

NOTE: The testing procedure was developed for Windows XP. If a different operating system is in use, adapt the steps as necessary.

USB Port Verification

- 1. Verify that the printer is Ready.
- 2. Insert the "Software and Product Documentation" CD-ROM into the computer.
- 3. If the installer autoruns, exit the installer window.
- 4. Connect a USB cable between the printer and computer's USB Ports. The computer automatically detects the new hardware and creates a driver.

NOTE: If the driver is not installed on the computer, locate the driver files on the CD-ROM. Once the files are located, the computer installs the driver and automatically configures it to match the printer's feature set.

- 5. On the computer, click Start -> Settings -> Printers and Faxes.
- 6. Locate the printer being tested, right-click and from the pull-down menu, select **Proper**ties.
- 7. Open the **General** tab and click the **Print Test Page** button to generate the test print. If the test page is printed, the USB port is functioning normally.

Firmware Upgrade

The printer can be upgraded by downloading a special firmware update PostScript .ps file. Download applicable upgrade files from the Xerox support web site.

Procedure

- 1. Make sure the printer has a working, stable network, or USB connection.
- 2. Ensure the printer is in the **Ready** state.
- 3. Send the file to the printer. Various methods are available to download the file to the printer.
 - File Downloader (recommended) a file download tool
 - CentreWare IS use printer's IP's address via a web page
 - An FTP session
- 4. Generally, a firmware upgrade file will printout a **Firmware Upgrade Print Do Not Disturb** warning page prior to actual upgrade process.
- 5. Allow the printer to reboot following the upgrade.
- 6. Verify the printer boots normally.

Troubleshooting

If the printer is in a faulted state, perform the following procedure:

- 1. Reboot the printer.
- 2. Hold down the **Cancel** and **Up** buttons simultaneously while the XEROX logo is displayed on the Control Panel.
- 3. Verify the Control Panel appears in B/W reverse.
- 4. Send a non-printing firmware upgrade file -- a special upgrade file that DOES NOT print a **Warning Page** prior to the upgrade. (In this current mode, the printer cannot print. It will fault if a print is attempted.)
- 5. Allow the printer to reboot following the upgrade.
- 6. Verify the printer boots normally.

Printhead Cleaning Cycle

NOTE: If the cleaning process is interrupted (i.e., open any door), the entire cycle will restart. This may increase the amount of ink in the Waste Tray if more than one pressure purge (step 4) occurs.

If the Printhead, Ink Reservoirs, or Jetstack temperature are below purge threshold, the printer performs a head clean cycle.

- 1. The printer waits for the Printhead to reach its purge temperature.
- 2. The printer moves the Wiper Blade to the bottom of its travel and tilts the Printhead forward to its print position to check the ink levels. If the ink level is low, ink is melted into the appropriated reservoirs.
- 3. The Printhead tilts to the Standby position and moves the Wiper Blade to the purge position in front of the Printhead faceplate.
- 4. The Purge Pump begins the pressure purge. After about 3 seconds, the Purge Pump Solenoid opens.
- 5. The Printhead tilts forward against the Wiper Blade and the purge and wipe cycle begins.
- 6. The Control Panel indicates the printer is performing the cleaning process.
- 7. The Printhead is moved left to the tilt zone, where the Printhead can tilt back without interference, and the Media Drive motor moves the Wiper Blade to the bottom of its travel to engage the PrintHead Tilt Cam. The Process Drive motor rotates the Printhead tilt gears, which move the Printhead to the forward print position.
- 8. After the print engine is in a known valid state, the Control Panel display shows the warmup progress. The Ready LED first flashes. When warm-up completes, the Ready LED lights solid.
- 9. The temperature of the Printhead, Drum and Preheater are allowed to stabilize at their operating temperatures and ink is melted if needed.
- 10. The Printhead is homed to the Print position for printing.
- 11. A Cleaning page is printed at this time, if a purge was performed.
- 12. A Startup page is printed (if enabled).
- 13. The Control Panel displays a message that the printer is initializing and then Ready.
- 14. The print engine is initialized and is ready to print.

Printhead Troubleshooting Checklist

The Printhead Troubleshooting Checklist provides the procedure for troubleshooting Printhead problems. Complete this checklist as part of the Printhead replacement process.

NOTE: The Printhead Troubleshooting Checklist is available on the ColorQube 8570/8870 EDOC CD-ROM and ColorQube 8570/8870 Service Manual (PDF format).

7 Wiring Data

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Wiring Diagrams	7-15

How to Use the Plug/ Jack Location List

The P/J Locator diagrams show the location of primary connections within the printer. Use these illustrations to locate connections called out in the procedures presented in Sections 2, 4, and 6. Connectors designated "CN" are listed at the end of the P/J connectors.

To find the location of a Plug or Jack:

- 1. Locate the P/J connector designator in the first column of the table.
- 2. With this information, go to the second column (Map Figure Number).
- 3. Use the coordinates to locate the connection indicated on the map with its P/J designation number. If coordinates are not given, go to the referenced Wire Routing Diagrams.

Table 1 Plug/ Jack Location

P/J	Мар	Coordinates	Remarks
P/J1	Figure 12	F-108	Connects the Ink Loader Thermistor to the Ink Loader Board.
P/J101	Figure 2	E-105	Printer Serial Debug Port
P/J101	Figure 5	B-107	Connects the I/O Board to the Outer Duplex Guide.
P/J101	Figure 11	G-108	Connects the Ink Loader Board to the Ink Loader Sensor.
P/J102	Figure 5	B-107	Connects the I/O Board to the Waste Tray Detect Sensor.
P/J110	Figure 6	G-108	Test connection (not used in printer).
P/J115	Figure 1	D107	Connects the Paper Preheater to the Front Side Har- ness.
P/J125	Figure 1	D-107	Connects the Preheater Temperature Thermistor, Pre- heat Sensor, and Deskew Entry Sensor to the I/O Board.
P/J126	Figure 1	D-107	Connects the Tray 2 Paper Height Sensor to the Right Side Harness.
P/J127	Figure 1	C-107	Connects the No Paper Sensor to the Right Side Har- ness.
P/J129	Figure 1	F-108	Connects the Tray 1 Width Sensor/ No Paper Sensor to the I/O Board.
P/J130	Figure 6	F-107	Connects the Printhead Board to the Level Sense.
P/J130	Figure 13	H-107	Connects the Drum Temperature Sensor to the Right Side Harness.
P/J131	Figure 14	F-108	Connects the Paper Size Sensor to the Right Side Harness.
P/J180	Figure 6	C-107	Connects the Printhead to the Main Controller Board (Electronics Module).
P/J190	Figure 6	B-105	Connects the Printhead Board to the Printhead Reservoir Thermal.
P/J201	Figure 4	G-105	Connects the Power Supply (Electronics Module) to the Printhead.
P/J201	Figure 8	D-103	Connects the Main Controller Board to the Printhead Board.
P/J240	Figure 6	E-106	Connects the Printhead Heater to the Wave Amp.

Table 1 Plug/ Jack Location

P/J	Мар	Coordinates	Remarks
P/J301	Figure 3	H-110	Connects the Power Control Board (Electronics Module)
P/J301	Figure 9	I-135	to the Y-Axis Motor.
P/J301	Figure 5	G-104	No connection on the I/O Board.
P/J301	Figure 11	A-137	Connects the Ink Loader Board to the Ink Loader Sensor.
P/J302	Figure 3	F-109	Connects the Power Control Board (Electronics Module)
P/J302	Figure 9	I-135	to the Left Side Harness.
P/J401	Figure 2	D-109	Connects the Power Control Board (Electronics Module)
P/J401	Figure 9	A-136	to the Ink Loader Board.
P/J401	Figure 8	A-106	USB Connection.
P/J401	Figure 5	C-107	Connects the I/O Board to the Preheater and Tray 2 Sensors.
P/J402	Figure 2	C-109	Connects the Power Control Board (Electronics Module)
P/J402	Figure 9	A-135	to the I/O Board.
P/J402	Figure 5	B-108	Connects the I/O Board to the Tray 1 (MPT).
P/J403	Figure 5	E-104	Connects the I/O Board to the Control Panel.
P/J403	Figure 9	C-136	Connects the Power Control Board (Electronics Module) to the Main Controller Board.
P/J505	Figure 8	G-106	Connects the Main Controller Board to the Hard Disk Drive.
P/J601	Figure 5	H-105	Connects the I/O Board to the Exit Module.
P/J601	Figure 9	G-135	Connects the Power Control Board to the Power Supply (Electronics Module).
P/J640	Figure 7	E-106	Connects the Wave Amplifier to the Printhead Heater.
P/J701	Figure 2	F-109	Connects the Power Control Board (Electronics Module)
P/J701	Figure 9	A-136	to the I/O Board.
P/J701	Figure 5	C-108	Connects the I/O Board to the Paper Size Sensor.
P/J701	Figure 11	J-136	Connects the Ink Loader Board to the Solenoid.
P/J702	Figure 5	D-108	Connects the I/O Board to the Predeskew Sensor.
P/J702	Figure 11	I-136	Connects the Ink Loader Board to the Power Control Board (Electronics Module).
P/J703	Figure 11	H-105	Connects the Ink Loader Board to the Thermistor.
P/J800	Figure 7	A-107	Connects the Wave Amplifier to the Power Control Board (Electronics Module).
P/J801	Figure 5	F-107	Connects the I/O Board to the Power Control Board (Electronics Module).
P/J801	Figure 11	G-105	Connects the Ink Loader Board to the Solenoid.
P/J802	Figure 11	C-105	Connects the Ink Loader Board to the Solenoid.
P/J803	Figure 8	F-109	Connects the Main Controller Board to the Hard Drive.
P/J901	Figure 3	D-109	Connects the Power Control Board (Electronics Module)
P/J901	Figure 9	I-137	to the Wave Amplifier.
P/J901	Figure 5	G-106	Connects the I/O Board to the Drum Maintenance Pivot Plate.

Table 1 Plug/ Jack Location

P/J	Мар	Coordinates	Remarks
P/J901	Figure 11	A-135	Connects the Ink Loader Board to the Solenoid.
P/J902	Figure 5	H-107	Connects the I/O Board to the Drum Temperature Sensor.
P/J903	Figure 5	H-106	Connects the I/O Board to the Drum Fan.
P/JAC1	Figure 4	E-106	Connects the printer Power Supply (Electronics Module)
P/JAC1	Figure 10	E-104	to the Ink Melt Heaters.
P/JAC2	Figure 4	H-106	Connects the printer Power Supply (Electronics Module)
P/JAC2	Figure 10	H-104	to the Printhead Heaters.
P/JAC3	Figure 2	D-104	Connects the printer Power Supply (Electronics Module)
P/JAC3	Figure 10	J-103	to the Preheater.
AC Inlet	Figure 2	D-107	Connects the AC Line to the printer Power Supply (Elec-
AC Inlet	Figure 10	I-107	tronics Module).
Ether- net	Figure 2	E-108	Printer Ethernet LAN Port
JDC1	Figure 10	C-110	Connects the Power Supply Board to the Power Control Board.
USB	Figure 2	E-107	Printer USB Port

Plug/Jack Locations Front Side



Figure 1 Front Side P/J Locations

Right Side Electronics Module



Left Side Electronics Module

Figure 3 Left Side Electronics Module P/J Locations



I/O Board

Figure 4 Top Side Electronics Module P/J Locations

Figure 5 I/O Board P/J Locations

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Wave Amplifier

Figure 7 Wave Amp P/J Locations

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Figure 8 Main Controller Board P/J Locations

Power Control Board



Figure 9 Power Control Board P/J Locations

Power Supply



Ink Loader Board

Figure 11 Ink Loader Board P/J Locations



Drum Temperature Sensor

Figure 13 Drum Temperature Sensor P/J Location

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J

Paper Size Sensor



Figure 14 Paper Size Sensor P/J Location

Wire Routing Diagrams

Table 1 Wire Routing Location

P/J	Мар	Remarks
P/J101	Figure 1	Connects the I/O Board to the Outer Duplex Guide.
P/J101	Figure 5	Connects the Outer Duplex Guide to the I/O Board.
P/J102	Figure 1	Connects the I/O Board to the Waste Tray Detect Sensor.
P/J103	Figure 2	Connects the Purge Pump to the Power Control Board (Electronics Module).
P/J105	Figure 2	Connects the Electronics Module Fan to the Left Side Harness.
P/J106	Figure 2	Connects the Media Path Motor to the Left Side Harness.
P/J107	Figure 2	Connects the Head Tilt Solenoid to the Left Side Harness.
P/J108	Figure 2	Connects the Tray 2 Lift Motor to the Left Side Harness.
P/J109	Figure 2	Connects the Tray 2 Pick Clutch to the Left Side Harness.
P/J110	Figure 2	Connects the Tray 1 Pick Solenoid to the Left Side Harness.
P/J110	Figure 6	Test points - No connection.
P/J111	Figure 2	Connects the Deskew Clutch to the Left Side Harness.
P/J112	Figure 2	Connects the Preheater Lift Solenoid to the Left Side Harness.
P/J113	Figure 2	Connects the Optional Feed Tray to the Left Side Harness.
P/J114	Figure 1	Connects the Drum Heater to the Front Side Harness.
P/J115	Figure 3	Connects the Paper Preheater to the Front Side Harness.
P/J115	Figure 3	
P/J116	Figure 5	Connects the Exit Door Sense Switch to the Top Front Harness.
P/J117	Figure 1	Connects the Front Door Sensor to the Top Front Harness.
P/J117	Figure 5	
P/J118	Figure 3	Connects the Process Motor/ Encoder to the Right Side Harness.
P/J119	Figure 1	Connects the Head Maintenance Clutch to the Right Side Harness.
P/J120	Figure 1	Connects the Drum Heater Dump Load to the Right Side Harness.
P/J121	Figure 1	Connects the Strip Solenoid to the Right Side Harness.
P/J122	Figure 1	Connects the Drum Encoder to the Right Side Harness.
P/J123	Figure 1	Connects the X-Axis Motor to the Right Side Harness.
P/J125	Figure 3	Connects the Preheater Temperature Thermistor, Preheat Sensor, and
P/J125	Figure 4	Deskew Entry Sensor to the I/O Board.
P/J126	Figure 3	Connects the Tray 2 Paper Height Sensor to the Right Side Harness.
P/J127	Figure 3	Connects the No Paper Sensor to the Right Side Harness.
P/J128	Figure 3	Connects the Preheat Deskew Sensor to the Right Side Harness.
P/J130	Figure 6	Connects the Ink Level Sense probes to the Printhead
P/J132	Figure 6	Connects the Printhead and Electronics Module to the Jetstack Fuse.
P/J180	Figure 6	Connects the Printhead to the Main Controller Board (Electronics Mod- ule).
P/J190	Figure 6	Connects the Printhead Thermistor to the Printhead.
P/J201	Figure 6	Connects the Power Supply (Electronics Module) to the Printhead.
P/J240	Figure 6	Connects the Printhead Heater to the Wave Amplifier.

Table 1 Wire Routing Location

P/J	Мар	Remarks
P/J301	Figure 2	Connects the Power Control Board (Electronics Module) to the Y-Axis Motor.
P/J302	Figure 2	Connects the Power Control Board (Electronics Module) to the Left Side Harness.
P/J401	Figure 1	Connects the I/O Board to the Preheater and Tray 2 Sensors.
P/J402	Figure 1	Connects the I/O Board to the Paper Size Switch.
P/J403	Figure 1	Connects the I/O Board to the Control Panel.
P/J601	Figure 1	Connects the I/O Board to the Exit Module.
P/J701	Figure 1	Connects the I/O Board to the Paper Size Sensor.
P/J702	Figure 1	Connects the I/O Board to the Ink Loader Board.
P/J801	Figure 1	Connects the I/O Board to the Power Control Board (Electronics Module).
P/J901	Figure 1	Connects the I/O Board to the Drum Maintenance Pivot Plate.
P/J901	Figure 2	Connects the Power Control Board (Electronics Module) to the Wave Amplifier.
P/J902	Figure 1	Connects the I/O Board to the Drum Temperature Sensor.
P/J903	Figure 1	Connects the I/O Board to the Drum Fan.
P/JAC2	Figure 6	Connects the printer Power Supply (Electronics Module) to the Printhead Heaters.

Right Side Wiring



Figure 1 Right Side Wire Routing

Front Side Wiring



Figure 2 Left Side Wire Routing



Figure 3 Front Side Wire Routing



Figure 4 Bottom Front Wire Routing

Top Front Wiring







Figure 6 Top Side Wire Routing

Wiring Diagrams System Block



Wave Amplifier, Print Head, Print Head Heaters



Figure 2 Wave Amplifier, Printhead, Print Head Heaters

Figure 1 System Block Diagram

Purge Pump, Media Path Motor, Fans, Printhead Tilt Solenoid



Figure 3 Purge Pump, Media Path Motor, Fans, Printhead Tilt Solenoid

Optional Tray, Clutches, Solenoids, Tray 2 Lift Motor



Figure 4 Optional Tray, Clutches, Solenoids, Tray 2 Lift Motor

Ink Level Sensors, Gate Solenoids, Ink Loader Board



Figure 5 Ink Level Sensors, Gate Solenoids, Ink Loader Board

Hard Drive, Drum Heater, Paper Preheater



Figure 6 Hard Drive, Drum Heater, Paper Preheater



Figure 7 Drum Heater Load Dump, Motors, Head Maintenance Clutch, Strip Solenoid





Front Door

Interlock Switch

P/J117

Figure 8 I/O Board, Sensors (1 of 2)

I/O Board

P/J101

Drum Heater Load Dump, Motors, Head Maintenance Clutch, Strip Solenoid

I/O Board, Sensors (1 of 2)

P/J402

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12 5

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P/J801

R

2

1

3

4

5

6

7

8

9

10

11

12

+12V

GND

10_TX

+3.3V_SLEEP

IO_CLK

GND

IO_RD

+3.3V

IO_MRSA*

GND

FP SLEEP INT

LED_SLEEP

Power

Control

+12VDC

+3.3VDC



Figure 9 I/O Board, Sensors (2 of 2)

8 Theory of Operation

Operational Overview	8-3
Paper Path of the Printer	8-5
Sensors	8-8
Printer Electronics	8-9
System Drive	8-17
Print Process	8-20
Purge System	8-32

Operational Overview

The ColorQube 8570/8870 uses a Printhead and new ink formulation to produce color or black and white output.





System Overview

The ColorQube 8570/8870 consists of the Control Panel, Print Engine, and Optional Sheet Feeder.



s8570-187

Figure 2 ColorQube 8570/8870 Subassemblies

The printer is made up of ten major subsystems.

- The Process Drive
- The Media Path Drive
- The Ink Loader
- The Printhead
- The Drum Maintenance System
- The Preheat and Deskew System
- The Drum Assembly and Transfix System
- The Exit Module
- The Purge System
- The Electronics Module

Process Drive

The Process Drive is an open loop system that transmits torque to two main Camshaft assemblies, One Camshaft assembly controls the Transfix Roller loading, and the other controls the Drum Maintenance System and Printhead Tilt System.

Media Drive

The Media Drive Assembly controls each Roller in the media transport system. The Media Drive Assembly includes a Drive Motor, Gearbox, Solenoid, and two Clutches. The Media Drive Motor also drives the Wiper Assembly through a gear train and Clutch on the Exit Module.

Ink Loader

The Ink Loader melts the ink as required by the Printhead. The melted ink drops into the Ink Reservoirs of the Printhead underneath the Ink Loader.

Printhead

The Printhead interfaces with the electronics of the printer to jet ink onto the Drum surface to create an image. The Printhead includes 1236 interleaved jets (309 of each primary color) to provide the ability to electronically turn Off a weak or missing jet to restore image quality.

Drum Maintenance System

The Drum Maintenance System creates a thin intermediate liquid surface, a layer of silicone oil, on the surface of the Drum prior to printing. The oil keeps the ink from sticking to the Drum's surface and facilitates its transfer to the sheet of paper or transparency film.

Preheat and Deskew

The Preheat and Deskew serves to ensure that the print media (paper, envelope, or transparency film) aligns properly to the Drum and that the media is sufficiently warms to facilitate transfer of the image from the Drum to the media.

Drum and Transfix System

The image is first printed as a "mirror" image on the rotating Drum. A sheet of warmed media feeds from the Preheater and passes between the Drum and the Transfix Roller. The process gear train then loads the Transfix System and presses the paper to the Drum to adhere the image.

Exit Module

The Exit Module is controlled by the Electronics Module. Media is output directly to the Output Tray on the Ink Loader.

Purge System

The Purge System uses an air hose and Purge Pump to pressurize the Printhead to purge debris or air bubbles that may be obstructing the Printhead jets.

Electronics Module

The Electronics Module includes the Main Controller Board, Power Control Board, and the Power Supply.



Black: Signal lines Green: Pass thru

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Paper Path of the Printer

The paper is supplied from Tray 1, Tray 2, or optional Tray 3/4/5 and is transported upward through the Preheater towards the Drum. After passing through the Preheating and image transferring processes, the paper is lifted off the Drum and fed to the Exit Rollers and the Output Tray.

In Duplex Mode, the Exit Roller reverses direction before the paper exits the printer. The paper is routed back to the Preheater, where it waits until the image for side two has been jetted onto the Drum. Then, the paper is routed through the Preheater, between the Transfix Roller and Drum, to the Output Tray.

Paper Pick from Tray 1

For Tray 1, the pick process is different than the pick process used by the other trays. To pick a sheet of paper, the Tray 1 Pick Solenoid actuates, and the Drive Gear rotates slightly to engage with the drive train. A bias force provided by the Lift Plate force against a Cam causes the Roller to rotate enough so the missing tooth gear engages the drive train. The Pick Roller rotates to engage with the Retard Pad to pick the paper, and the Separator Pad Assembly prevents multiple sheets from being picked by the Pick Roller.







Figure 2 Tray 1 Pick Diagram

Key differences in the Tray 1 pick process include:

- Lift Plate force is optimized to support heavier paper
- 100-sheet capacity
- Pick Roller creates the buckle for the deskew process
- Pick Roller drive disengages when the door is opened and closed
- Pivoting Separator Pad to prevent it from binding



Figure 3 Tray 1 Pick Mechanism

Paper Pick for Trays 2 ~ 5

NOTE: Trays 3, 4, and 5 are optional 525-Sheet Feeders.

To pick a sheet of paper, the media path drive starts the process. The Pick Clutch engages to turn the Pick Roller and the Nudger Roller. The Nudger Roller advances one sheet of paper forward into the pick nip. The Retard Roller prevents two sheets from advancing. The sheet of paper continues past the Takeaway Rollers until the sheet completes the deskew process. When using the optional 525-Sheet Feeder, paper is pre-picked from the tray and staged in the paper path while the printer is printing previous pages.

The deskew process uses a buckle deskew for all three paper paths. The paper is first driven against the Deskew Gate, causing a buckle in the paper. This ensures that the leading edge is straight to prevent skewing. Only the Exit Roller reverses during duplex printing.



Figure 4 Paper Path Sensors


Figure 5 Tray 2/ 3/ 4/ 5 Pick Diagram

2-Sided (Duplex) Printing

When duplex printing, the Exit Rollers pull the paper to a predetermined location. In this position, the trailing edge of the paper is adjacent to the Exit Rollers. The Exit Rollers then pull the paper back into the duplex path. From a non-rotating deskew nip, the print continues through the paper Preheater and transfix system to the Exit Tray in the same manner as a single-sided print.



Figure 6 Duplex Drive Components

The Preheater Lift Solenoid, mounted to the Transfix Load Module, increases the physical spacing between the Preheater Plates when printing the second side of duplex prints. The increased spacing prevents the paper from rubbing as hard against the Plates, which can potential cause smearing to occur.

Preheater Plates Transfix Load Module Preheater Solenoid

Figure 7 Preheater Components

Sensors

The printer contains Sensors of various types that perform a variety of functions. One group of Sensors track the progress of the paper along the paper path, and detects if a paper jam occurs. Other Sensors detect the presence of the Ink Sticks, stop printer activity if a door is open (interlock), detect the presence and size of media, and monitor printer temperatures.



Figure 1 Sensor Locations

Sensor Types

The type of Sensors used vary with function. In general, there are three types in use:

- Photo Sensors
- Microswitches
- Temperature Sensors

Two types of Photo Sensors are used, Photo-reflective and Photo-receptive.

Photo Sensors

Photo-reflective - Photo-reflective Sensors use light reflected back from an object to detect its presence. Photo-reflective Sensors have the light emitter and light receiver aligned on a single surface. Output of the Photo-receptor is High when light is being reflected back and Low when it is not.

Photo-receptive - Photo-receptive Sensor uses an Actuator or the object itself to block the light path to detect an object or condition. Photo-receptive Sensors consist of a LED in one arm of a U-shaped holder, and a photo-transistor in the other arm.

When the sensing area is vacant, nothing is between the arms of the sensor, light falls on the photo-receptor sending the signal High. If the light is interrupted, the photo-transistor goes Low.

Microswitches

Microswitches are used primarily as Paper Size Sensors and Cover Interlocks. They are in a normally Open state, and Close when actuated. A bank of microswitches is used to detect paper size in the universal trays. Microswitches also employ hooks or catches for retention in the bracket or frame.

Temperature Sensors

The Temperature Sensors (Thermistors) have a known value of resistance whose value varies with temperature. The Temperature Sensors are used primarily in the Drum, Preheater, and Printhead for temperature sensing.

Printer Electronics



Figure 1 Electronics Module

The Electronics Module includes the Main Controller Board, Power Control Board, and the Power Supply.



Figure 2 Electronics Components

Imaging data is received from the print function and is processed through the imaging path portion of the Main Controller Board. This data then is split into two paths. One of these paths is through the Power Control Board to the Wave Amplifier. This data controls the operation of the Wave Amplifier with regard to the drive algorithm to use for driving the jet stacks (discussed later in the Printhead section). The second path is through a ribbon cable from the Main Controller Board to the Printhead Control Board (located on the underside of the Printhead). These two signals are interpreted by the Printhead to produce the image on the Drum.

Electronics Module Components

NVRAM

The NVRAM memory device, located on the Main Controller Board, stores Control Panel defaults, network settings, usage profile data, and the printer serial number, which is also referred to as the Engine Tracking Number (ETN). When the Electronics Module is replaced, the NVRAM must be transferred to the Main Controller Board in the replacement Electronics Module.

Memory

The ColorQube 8570/8870 supports up to two 512 MB of DDR2 DIMMs for a maximum of 1 GB total.

NOTE: Memory should be installed in the primary socket before installing in the secondary socket. The primary memory socket resides on the left side (away from the processor). Upgrade memory should be added to the secondary memory slot residing on the right side (close to the processor).



Figure 3 Memory and NVRAM Chip

Configuration Card

The Configuration Card is a thumbnail-sized device that plugs into the side of the Electronics Module. This device stores printer information and interacts with NVRAM. When replacing the Electronics Module, the Configuration Card must be transferred to the replacement Electronics Module.





Main Controller Board

The Main Controller Board controls the operation of all the mechanical and electrical systems in the print engine. Through the Power Control and I/O Boards, signals are passed to the different gear trains, heater controls, and drive motors and signals are received from the Sensors for proper operation of the print engine. The Main Controller Board provides support for Ethernet and USB 2.0 external I/O interfaces.

Power Control Board

The Power Control Board acts as a interconnect board between the Main Controller Board, Power Supply, HCF, and the I/O Board. The Power Control Board distributes drive voltages to operate the printer's various Motors, Solenoids, and Clutches. The Power Control Board provides the interface that returns information from the printer's Sensors to the Main Controller Board. The Sensors are used to track mechanical and thermal functions, such as the position and temperature of the Printhead. The Power Control Board also generates regulated 1.8V and 12V.



Figure 5 Main Controller Board



Figure 6 Power Control Board

Power Supply

There are no field adjustments on the Power Supply. In general, the Power Supply has two main, yet interrelated sections: the AC section and the DC section. In the AC section, power is routed to 11 triacs. Under the Main Board Logic Control, the triacs supply AC power to the 11 heaters in the system.

Two fuses provide current protection to the triacs. Fuses F2 and F3 protect the power supply from, most often, a shorted triac caused by a defective heater. If the F2 or F3 fuses blow, the Electronics Module (and, of course, the defective heater must be replaced). Otherwise uncontrolled, with the heater replaced but the triac shorted, AC power may be applied to the heater. Each time the Main Controller Board turns on a triac to activate a heater, it is turned on for only a fraction of a second. The Main Controller Board must constantly readdress each heater it wants to remain on. This means if the print engine firmware should fail, the heaters automatically shut off.

The printer is also protected by thermal fuses. A thermal fuse opens in the unlikely event of a "runaway" heater following a hardware failure. The Drum Fuse is located in the Drum and the Preheater thermal fuses are located on the Preheater. Additional thermal fuses are located on the Printhead, on the chassis outside the Printhead and on the ink melting elements. An open thermal fuse is a likely indication of a leaky or shorted triac in the power supply. It is best to verify that the triacs are functional when replacing a heater with an open thermal fuse.

The DC Power Supply generates + 12V_SLEEP, -15V, and +/- 50V. These voltages are used directly or regulated to other voltage values as needed by various circuits in the printer. The Power Control Board regulates +50V to +12V and 3.3V to a local 1.8V. The Main Controller Board also has regulators providing +3.3V, +2.5V, +1.8V, +1.2V, and +1.0V. The HDD Option Board has a regulator converting +12V_SLEEP to +5V for use by the HDD. The Power Supply outputs just +12V_SLEEP in Power Saver modes. Fuse F1 provides protection for the switching Power Supply in the DC section.



Figure 7 Power Supply

Wiring Diagram



WARNING Do not touch the Power Supply; AC voltages and DC voltages up to 400V are present. The power switch does not disconnect power from the printer. The

present. The power switch does not disconnect power from the printer. The power switch signals the supply and the printer logic to begin a shutdown sequence.



Figure 8 Power Supply Wiring Diagram

FPGA

The FPGA is the Printhead interface and motor controller for the ColorQube 8570/8870 printer. Figure 9 illustrates the Block Diagram for FPGA.



Figure 9 FPGA Block Diagram

Motors

Y-Axis Motor

The Y-Axis Motor is a DC Motor with an encoder that is used to turn the Drum. The Power Control Board drives the Y-Axis Motor with an H-bridge transistor configuration. An H-bridge configuration is used so the Motor can turn in both directions.

Process Motor

The Process motor is a DC Motor with an encoder that is used to turn the Drum. The Power Control Board drives the Process Motor with an H-bridge transistor configuration. An H-bridge configuration is used so the Motor can turn in both directions.

Media Path Motor

The Media Path Motor is a DC Motor with an encoder that is used to turn the paper feed mechanism. The Media Path Motor also move the head wipe when the Head Maintenance Clutch is engaged. The Power Control Board drives the Media Path Motor with an H-bridge transistor configuration. An H-bridge configuration is used so the Motor can turn in both directions.

X-Axis Motor

The X-Axis Motor is a current controlled stepper motor. The Power Control Board drives the X-Axis Motor with two H-bridge transistor configurations one for each phase.

Elevator Motor

The Elevator Motor is a DC motor used to raise the paper to the pick. The Power Control Board drives the Elevator Motor with the +12V coming from the power supply. The Elevator Motor is current limited to 112mA. It has a brake that shorts both motor leads. This prevents the motor from coasting and brings the motor to a more precise stop. The Elevator motor and the Brake have a lock out in the PLD to prevent both from being activated at the same time, which would cause a shoot through condition that would damage the drivers.

Fans

Electronics Fan

The Power Control Board drives the Electronics Fan by providing 12V, ground and sending a 3.3V pulse to the Fan to turn the Fan on. This allows the Fan to be pulse width modulated to reduce the speed of the Fan, by reducing the effective voltage.

Drum Fan

The Power Control Board drives the Drum Fan by providing 12V to one side of the Fan and switching the ground on the other side. This allows the Fan to be pulse width modulated to reduce the speed of the Fan, by reducing the effective voltage.

Voltage Supplies

The following diagram illustrates voltage generation for the boards in the Electronics Module.



Figure 10 Voltage Supplies

+3.3V Distribution

+3.3V_SLEEP DC is regulated on the Main Board. The power supply inputs +12V_SLEEP to the Main Board. It is then passed through a switching regulator. The Power Control Board connects 3.3V to 3.3V_SLEEP with a switch when not in power saving modes.

+12V

The Power Supply delivers +50V to the Power Control Board. The Power Control Board utilizes a switching regulator to generate +12V for the system.

I/O Board

All sensor and switch readings are input into the I/O Board. The I/O Board translates these states into encoded information that it sends over a serial data bus (I/O Board Data Cable) to the Electronics Module. The Electronics Module has no direct connection to the Sensors, Switches, or Solenoids. In order to activate a Clutch or Solenoid, the Electronics Module sends a command to the I/O Board, which processes the command and activates the appropriate device.



Figure 11 I/O Board

Wave Amplifier

The Wave Amplifier serves as a high-voltage linear power amplifier for the VPP/ VSS generated waveform transducer to drive the Printhead load requirements. The Wave Amp also drives all active piezo-electric transduces (PZT) elements.



The pulse sequences for the different polarity drivers are asymmetrical and result in non-uniform power dissipation distribution between the similar linear power amplifiers. Thus, the VSS driver power dissipation is primary limiting factor for thermal performance. The four VPP/VSS MOSET devices are mounted on a large common heat sink with the VSS MOSFET drains contacting the heat sink and the VPP MOSFETs drains electrically insulated from the common heat sink.

Although this approach would allow simultaneous opposite polarity pulses, the differential input voltage limitations for the ASIC and the desire for maximum drive result in using only one polarity pulse at a time, appropriately selected by the print head ASIC.





Figure 12 Wave Amplifier

The Wave Amp includes two independent discrete high-voltage linear power amplifiers, one for generating the positive polarity VPP pulses and another for generating the negative polarity VSS pulses.

The high-voltage linear power amplifier design features an AC-coupled driver topology with DC feedback. The AC coupled drive is good for the pulsed application and provides high current drive for fast slew rates while maintaining good recovery and transient performance. The design also has a "near zero" control switch that provides DC restoration for the drive coupling capacitors and activates a secondary feedback control loop to drive and hold the output at ground potential that otherwise would result in "open loop" operation when not pulsing. The Wave Amp also has an enable control as well as over-current fault detection. Each polarity driver has a Temperature Sensor.

Both polarity driver designs utilize power MOSFETs as the principle driving devices. These devices are capable of supplying the large currents required for driving several PZT elements at the required bandwidths with relatively simple drive circuitry. The MOSFET devices are utilized in a feedback amplifier circuit to provide controlled, linear waveform amplification and to buffer the drive for the control waveforms derived from system memory.



Figure 14 Wave Amplifier Signal Diagram

Solid ink printers currently use Printheads that utilize tiny Piezo-electric Tranducers (PZTs) as the mechanical driving element to precisely transfer minuscule molten ink droplets from the Printhead to the Drum. The PZT elements are relatively simple and reliable components for use in these high dot resolution Printhead Assemblies and can supply the required mechanical force. The PZT element assembly is central to the printing process and precise control of the PZT element is critical to achieving the optimal print quality.

Ink droplet drive is achieved by applying a controlled electrical voltage to the PZT element that changes the physical displacement of the crystal structure. This physical movement of the PZT element provides the force necessary to push the ink through a tiny print head orifice and produces the ink droplet. The pulse shapes of the drive waveform for the PZT elements helps define the characteristics for the ink droplet, although many mechanical and fluid dynamic principles also come into play.

Generally, every droplet from each PZT element should look the same, whether all PZT elements are active or only a single PZT element is active. In addition, droplets from separate PZT elements that are intended to be emitted at the same time do indeed leave the print head synchronously and with the same force. This requires that every PZT receive a normalized drive for uniform ink droplets deposition.

Determining PZT final drive characteristics is an optimization process where drive parameters require adjustments for the normalization of every ink droplet and are subject to change. Therefore, the PZT drive parameters require flexibility of adjustment and a simple means for normalization of the resultant ink droplet pixel transferred to the print media. Drive waveforms are stored in memory and the PZT drivers provide the high-voltage linear power amplification necessary for driving the large PZT capacitive loads for entire print heads.

The Printhead ASIC has drive voltage limitations relative to the drive voltage requirements for the PZT elements. To reduce the voltage amplitude necessary for causing enough physical displacement and pressure, two polarities of pulses are used. The leading edge of the positive polarity pulse causes the PZT to deform away from the orifice to help draw ink into the reservoir and create additional PZT displacement. The trailing edge starts the driving motion back to the rest position for forcing ink out the orifice. The leading edge of an immediately following negative polarity pulse continues to drive the ink forward. The trailing edge brings the PZT back to its rest position. The final result is asymmetrical polarity pulse sequences for the Wave Amp driver. The pulse sequence is common to all active PZT elements when the head is fired. The repetition rate is optimized for the specific print head design.

Ink Droplet Normalization Process

The desired ink droplet normalization process would typically equalize the drop mass emitted from each PZT, synchronize their emergence times, and equalize the velocity of travel to the Drum. Individually controlled drop mass may be desirable for some printing applications but more difficult to implement. Current normalization implementations use the finite rise time of the leading edge of a common piezo-electric transducer (PZT) Wave Amp driver pulse to time discriminate various voltage levels. The ASIC uses synchronous time counters to discriminate individual discrete voltage levels from a known voltage slew rate. The ASIC terminates PZT capacitance charging by opening MOSFET switches. To improve the time discrimination limitations, the drive voltage rising edge has a breakpoint to a reduced slew rate near the top of the drive pulse where DAC-controlled discrete time increments in the ASIC resolve various voltage levels. The time resolution limitations in the ASIC and the subsequent slew rate limitations for the PZT driver provide limitations to the eventual resolution and firing frequency.



Figure 15 Time Discrimination for Voltage Level Adjustments

Hard Disk Drive

A Hard Disk Drive data cable is plugged into the Main Controller Board from the Hard Disk Drive Board. A separate power cable must be plugged into the Power Control Board from the Hard Disk Drive Board to provide signals and power for the Hard Disk Drive Board.

System Drive

The System Drive includes the Process Drive Assembly and Media Drive Assembly.



Figure 16 Hard Disk Drive





Process Drive Assembly

The Process Drive is an open loop system that transmits torque to two Camshaft assemblies. One Camshaft assembly, Transfix Camshaft, controls Transfix Roller loading. The second Camshaft, Drum Maintenance Camshaft, controls the Drum Maintenance and Printhead Tilt Systems. The Printhead is tilted during power down and warm-up to perform maintenance on it and to put it in a position to save power in Power Saver mode.

A DC Servo Motor powers the Process Drive to rotate the gears to specific positions during the printing process. The Process Drive is able to actuate each Camshaft system independently or concurrently through the use of the Swing Arm in the gear train. Operation of the Transfix and Drum Maintenance System is controlled by the rotational direction of the Motor.

When the process Motor rotates in one direction, the Swing Arm engages the lower gears. When the Motor rotates in the opposite direction, the upper gears are engaged.

Since the system is open loop, special attention to the home position of the Process Drive gears and the mating Camshaft gears is critical. The Process Drive gearbox is mechanically keyed upon installation via gear orientations. These gear orientations allow the subsystems to self home during operation. If either the gearbox or cam gears is out of home during installation, the system does not function properly. Figure 3, Figure 4, and Figure 5 illustrate the rotation direction of the gears.

The Process Drive activates the Transfix Camshaft as the Transfix Camshaft continues to turn after it is fully loaded.



Figure 3 Transfix Roller is loaded



Figure 2 Process Drive Assembly

The Transfer Roller is still loaded as the Process Drive activates the Drum Maintenance. The Process Drive engages the Transfix Roller and the Drum Maintenance system simultaneously with high speed and duty cycle.



Figure 4 Transfix and Drum Maintenance are loaded

The Drum Maintenance stays loaded as the Transfix unloads.



Figure 5 Drum Maintenance is loaded

Media Drive Assembly

The Media Drive assembly controls each Roller in the paper transport system. A gear train located behind the Motor connects it to the Exit Rollers, which are built into the Exit Module. Gear trains located within the Media Drive Assembly, along with two Clutches and a Solenoid, allow the Motor to control the Pick, Takeaway, Duplex, and Deskew Rollers. A unique Swing Arm allows the Pick, Takeaway, Deskew, and Duplex Rollers to rotate in the same direction regardless of the direction the Motor is rotating.



Figure 6 Media Drive Assembly

Print Process

Once an image has been processed and a printing bitmap created, the print cycle begins. The Printhead and Drum are brought up to their operating temperatures and the ink levels in the ink reservoirs are checked. Ink is added from the Ink Loader, if necessary.

In the Ready state, the print process consists of the following steps:

- Drum Preparation
- Printing
 - Ink Loader
 - Printhead
 - Drum Assembly
 - Transfix System
- Transfix and Exiting

WARNING

Keep your fingers away from the Y-Axis drum rotation drive system; it uses a closedloop servo drive system and is inherently dangerous. The Motor speeds up if it senses the drive system slowing down, and fingers caught in the Belts and gears can be severely injured.

Drum Preparation

To prepare the Drum, a thin coating of silicone oil is applied to the surface of the Drum. First the Drum is rotated. Next, the Oil Roller and Blade of the Drum Maintenance Unit are raised into contact with the Drum. To accomplish this, the Process Drive rotates the Drum Maintenance Camshaft lifting the Oil and Wiper Blade to the Drum. The Drum is rotated against the oil saturated Roller. There are separate cams for the blade and the roller.



Figure 1 Drum Oiling

Printing

To print, the Drum starts rotating at a speed dependent upon print resolution. As the Drum reaches the correct speed, the jets begin to fire to deposit the image on the oiled portion of the Drum. As the jets fire, the Printhead moves from right to left to complete the image on the Drum.

When printing, the printer performs a "six-jet interlace," in which each jet lays down a particular number of pixel columns, depending on the print resolution. Each jet lays down one pixel column for each Drum rotation, which varies from 6 to 16 rotations, depending on the print resolution. Interlacing "averages out" the variability between jets by interlacing each jet with other jets. In some test prints, the Printhead moves to the right and lays down 309 parallel bands of ink. Each band is composed of 15 pixel columns of dots from an individual jet.

Jet substitution allows a better performing jet to be used in place of a missing or poorly performing neighboring jet. When jet substitution is used, the Printhead makes a second right-toleft movement to deposit the pixel columns of the substituted jets. See Jet Substitution Mode in Chapter 3 - Image Quality.

Ink Loader

The Ink Loader consists of four parallel channels with an ink melting element at the end of each channel. Ink sticks, one color loaded in each channel, are pressed by coil spring pressure into the melting elements. As ink is required by the Printhead, the appropriate color's melting element is activated and the end of the ink stick is melted. The melted ink drips into the ink reservoirs of the Printhead underneath.



Figure 2 Ink Loading

The Ink Stick Gate Solenoid (one for each color) prevents movement of the ink stick until it is sensed. When the correct ink stick is inserted, the Solenoid is activated to lower the gate. The Configuration Sensor is activated to determine when the ink stick has traveled past the gate. When the ink stick has moved sufficiently forward, the gate is returned to the Locked position.

The gate will also lower when an ink stick is moved back up to the gate to allow removal. When you move an ink stick back, an ink stick back up the ink channel and contact the raised gate, the SKU notch A (or notch E on Enterprise ink sticks) will be presented to the lower-most SKU sensor. Notch A and E are always have material present (logical 1). The transition of the sensor from no material to material present signals the printer to lower the gate.

The Chute Level Sense detects the Ink Stick when the Ink Loader Door is closed and alert the user to install more ink sticks before the current sticks are completely consumed. The Stock Keeping Unit (SKU) Configuration Sensor detects the presence or absence of ink thereby determining the ink SKU.

The Ink Level Sensors inside the Printhead detect that the Printhead has run out of ink.



Figure 3 Ink Stick Gate



Figure 4 Chute Level Sense and SKU Configuration Sensors

Printhead

The Printhead is the heart of the printer, spanning nearly the length of the Drum. Using its 1236 jet nozzles (309 jets for each primary color), with a horizontal motion of slightly less than 5 mm (0.2 inches), the Printhead can print the entire image on the rotating Drum. The Printhead provides one size ink drop that it uses for all print-quality modes.

The Printhead jets receive drive signals from the Wave Amp. The internal Jet Stack Heaters receive control signals as well as AC power from the Electronics Module. Additional features of the Printhead include the Lift Handles, Purge Tube, and head-to-drum contacts.

The Printhead's Jet Stack is fabricated from a stack of chemically etched steel plates which are brazed together to form the jet array. Channels formed by the stacked plates route ink past the 1236 individual, piezo-electric crystal-driven diaphragms, which force the ink in droplets out the 1236 corresponding nozzles. Looking at the Printhead face, the nozzles are arranged in 12 rows, in color order KYKYKYCMCMCM, where K = black, Y = yellow, C = cyan, and M = magenta. During the printing process, the Printhead would only have to travel approximately 14 pixels horizontally to provide complete coverage. However, the Printhead travels much further, depending on print resolution, to interlace each jet with the output of neighboring jets.

The jet array is bonded to a cast aluminum ink reservoir. The reservoir supplies the molten ink to the jet array. Heaters in the reservoir and the jet array keep the ink in a liquid state.



X-Axis or lateral movement of the Printhead is accomplished by means of a stepper motor driving a fine-thread screw and conical nut. The Printhead is supported by two short X-Axis Shafts and correct spacing to the Drum is maintained by sliding contact with two plastic buttons on either end of the Drum Assembly. A tension spring linked to the Printhead's left shaft provides a preloaded force so the Printhead's right shaft is held against the cone-nut eliminating all play in the system.

The X-Axis system has no encoder to provide position feedback. To find the Printhead Home position, the X-Axis system drives the Printhead against the left frame, stalls, then reverses and moves a set distance.

X-Axis Shaft X-Axis Shaft X-Axis Shaft X-Axis Shaft X-Axis Shaft X-Axis Motor X-Axis Shaft X-Axis Motor V-Axis Shaft X-Axis Motor V-Axis Shaft X-Axis Motor V-Axis Shaft X-Axis Shaft X-Axi

Figure 7 Printhead X-Axis Drive

Printhead Tilt

The Printhead is able to rotate into four basic positions.

- Print/ Ready Position (0 degree)
- Park/ Sleep Position (22.3 degrees)
- Wipe Position (12 degrees)
- Wiper Bypass Position (19 degrees)
- 1. **Print/ Ready Position (0 degree)**: The Printhead is forward and resting against the right and left head-to-drum buttons. The head-to-drum buttons define the space between the Jet Stack and the Drum.



Figure 8 Print/ Ready Position

- 2. **Park/ Sleep Position (22.3 degrees)**: Allows the wiper to clear the Printhead in order to be in the Wipe Printhead position, and also allow the Printhead be parked for shipping. In this position, the Printhead tilt arm/ follower is engaged at the Park position of the Tilt Cam.
 - s8570-392 Figure 9 Park/ Sleep Position
- 3. **Wipe Position (12 degrees)**: The Printhead tilt arm/ follower is engaged with the tilt cam, and the head overload spring contact is engaged with the overload spring-plate to provide the correct force for the wiper.



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4. Wiper Bypass Position (19 degrees): The Printhead restraint pins are resting against the right and left locks. In this position, the Printhead tilt arm/ follower is free of the tilt cam, and the head is secured for shipping.

4.

Figure 11 Wiper Bypass Position

The head Tilt Cam tilts the head into the basic four positions: Print, Park, Wipe, and Wiper Bypass positions. The Cam has five special features and associated functions:

- 1. The Cam is combined with a missing tooth gear (Head Tilt Gear) that allows the Cam to be inactive in the Print position. This frees the Process Drive to perform other printer operations.
- 2. The Cam has a latching feature to unlatch and latch the missing tooth gear to engage the Printhead tilt drive train.
- 3. The Cam profile has a standby dwell (the portion of the Cam that has a constant radius). This holds the Printhead back in the Park position.
- 4. The Cam profile has a wipe dwell that holds the Printhead back in the Wipe position.
- 5. The Cam profile increases the power consumption at a specific phase of rotation. This allows the software to identify a power consumption footprint to alert the printer when the head is locked in error.

The Printhead is tilted away from the Drum and locked for shipping. When the Printhead is locked in the shipping position, there are three key restraining elements:

- 1. When parked, the Printhead is restrained from rotating about the X-Axis by a pin on the right side of the Printhead, extracting into the right restraint when the X-Axis Motor is fully retracted.
- 2. The Printhead is restrained at the X-Axis shafts by the right and left Printhead Restraints that limit motion at both ends of the Printhead.
- 3. The Printhead is limited to the nominal motion of 4.6 mm in the X-Axis (left/ right side motion when the Printhead is back and locked) by the right restraint and the left home stop on the left side frame.



In the Print position (0 degree), the Printhead is forward and resting against the right and left head-to-drum buttons. The head-to-drum buttons define the space between the jet stack and the Drum. When the Process Drive is activated, it drives the Drum Maintenance Camshaft to engage the tilt gear train. The Tilt Cam tilts the Printhead into the Print position. The Cam is combined with a missing tooth gear that allows the Cam to be inactive in the Print position, freeing the Process Drive to perform other printer operations.

The Cam has a latching mechanism to unlatch and latch the Head Tilt Gear to engage the Printhead tilt drive train. The Cam's latching mechanism also holds the gear in place. A leaf spring applies constant pressure to engage the gear when the latching mechanism is released. The arm of the latching mechanism is inside the frame; the rest is visible, outside the frame. The Head Tilt Solenoid is actuated and deactuated when the Head Tilt Gear rotates to the respective engaged and disengaged positions.

The action of the Solenoid ensures that the Head-Tilt Gear engages the Tilt Drive Gear. Through a follower gear, the compound gear drives the Tilt Cam Gear clockwise when viewed from the Waste Tray slot. A cam follower, mounted on the lower end of the Tilt Arm, follows the rotating Tilt Cam Gear and tilts the Printhead. After one revolution of the Tilt Gear, the latching mechanism is pulled back into position by the Head Tilt Solenoid.

Drum Assembly

The Drum Assembly and Transfix System form the key portion of the printer where imaging takes place. The Drum Assembly and Transfix System are separate, but interrelated. This section discusses the Drum Assembly. The next section goes into more detail on the transfix system.

The Y-Axis Motor rotates the Drum Assembly. The Drum only rotates forward. A drive belt connects between the Y-Axis Motor and Drum pulley. A closed-loop servo drive system is used to maintain a constant rate of Drum rotation. This system increases the Y-Axis Motor drive current to compensate for conditions that could slow down the Drum, such as thicker media.

In operation, the image to be printed is formed on the rotating Drum. The Preheater heats the media to prepare it for image transfer. The heated media is then passed between the Drum (now rotating much more slowly) and the Transfix Roller. Under the pressure between the Drum and the Transfix Roller, the image is transferred. An encoder disk and Sensor on the left end of the Drum monitors the Drum's speed and position.



Figure 13 Head Tilt Gear Detail



Figure 14 Drum Assembly

The Drum Heater heats the surface of the Drum for imaging. The Drum Heater does not rotate. The heater is inside the Drum, and is controlled by the Main Controller Board. The Drum Heater consists of two resistive heater coils that operate at line voltage. A Temperature Sensor in contact with the Drum surface monitors the Drum temperature. The Main Controller Board interprets the sensor's signal and turns On the Drum Heater and Drum Fan to heat the Drum, or turns On the Drum Fan alone to cool the Drum.

The Drum is driven by the Y-Axis Motor through a single reduction belt drive, the Motor rotates the Drum at a high speed for imaging and a constant low speed for image transfer. The Y-Axis assembly uses an active tension system to allow the pulley to float while the spring adjusts the tension.



Figure 15 Drum Assembly Components

WARNING

Keep your fingers away from the Drum drive; it uses a closed-loop servo drive system. Since the motor speeds up if it senses the Drum slowing down, fingers caught in the Belts and gears can be severely injured.

Transfix System

The Transfix Roller, applies pressure to the back side of the media as it moves between the Transfix Roller and Drum. This pressure transfers the image from the Drum to the media. A set of springs in the Transfix Load Module, acting through the Transfix Load Arms, evenly apply pressure across the Transfix Roller as it rests against the Drum. The pressure must be uniform across the length of the Transfix Roller to avoid paper wrinkles and light spots on the prints.

After the Transfix Roller is engaged, the Drum rotates to advance the media during the transfix process. The Drum continues to advance the media until the Transfix Roller is disengaged. The Transfix Roller is lifted and lowered by the action of the Process Drive. All gears move to rotate the Transfix Camshaft to bring the Transfix Roller into contact with the Drum. The gears reverse to rotate the Transfix Roller back to its original position. The Transfix Load Springs and double lever arms increase the force when the Camshaft is engaged.

CAUTION

Never attempt to adjust or increase the transfix pressure of the springs.



Figure 16 Transfix System

Drum Maintenance System

The Drum Maintenance System creates a thin layer of silicone oil on the surface of the Drum prior to printing. The oil keeps the ink from sticking to the Drum's surface and facilitates image transfer to the media. The oil is contained in a porous foam Roller in the Drum Maintenance Unit.

Prior to each print, the Process Drive rotates the Drum Maintenance Camshaft to move the Drum Maintenance Pivot Plate, forcing the oil Roller and Wiper Blade against the Drum. The Wiper Blade produces a smooth and even oil film across the Drum's surface. The excess oil drains back into the Drum Maintenance Unit through a felt filter for reuse. As the Drum completes one rotation, the Process Drive rotates the Cam lowering the oil Roller and Wiper Blade away from the Drum.

The Drum has a floating deadband area. The deadband is a narrow section of the Drum's surface containing excess oil and other debris cleared by the Drum Maintenance Wiper Blade. An oil bar is left on the Drum surface in this deadband area as the Blade is lowered from the Drum. The deadband area's location is controlled to keep it outside of the Drum's image area.

An EEPROM, built-in to the Drum Maintenance Unit, stores the number of oiling cycles performed by the Drum Maintenance System to track consumable life. At startup, four oiling cycles are performed to condition the Drum.



To perform a Printhead maintenance cycle, the Printhead is first tilted away from the Drum to allow the Wiper Blade to pass by. The Wiper Blade is then raised in front of the Printhead. The media path drive governs wiper movement when it engages the Head Maintenance Clutch on the exit shaft of the system. The Purge Pump applies pressure to the ink reservoir for approximately 2.5 seconds. Valves in the reservoir seal when pressure is applied. The pressurization ejects a small amount of ink from the jets. Following the pressure purge, the Printhead tilts into the Wiper Blade and the wipe cycle begins. The pump runs again with the Solenoid for approximately 30 seconds, creating a neutral balance between pressure and ink. The Wiper Blade lowers and wipes excess ink from the jets into the Waste Tray. A proper purge covers the length of the Waste Tray with a single layer of ink about 20 mm wide.

The level of the ink in the reservoir is kept constant. If the purge tubing is pinched, the Printhead may not purge properly. In addition, because the purge tubing also acts as a vent to atmosphere when not purging, a more serious failure can occur if the ink overfills and the reservoir cannot vent properly.



Figure 17 Drum Maintenance

WARNING

When servicing the printer be careful of the Wiper Blade as it passes the Printhead. If a damaged Wiper Blade catches on the Printhead, it could propel hot liquid ink upward into your face.





Figure 18 Printhead Wiper Blade

Transfix and Exiting

Transfixing and Exiting consist of four major functions:

- 1. Stage the paper for rendezvous with the image on the Drum and Transfix Roller nip.
- 2. Load the Transfix Roller and engage the Stripper Blade.
- 3. Strip the paper from the Drum.
- 4. Exit the paper from the printer, or exit the paper for 2-sided printing.

Tripping the Preheater Exit Sensor sets up a series of events that occur on a predetermined schedule. Media is transported through the Preheater to thermally prepare it for transfixing. The Preheat Sensor detects the media's presence and registers the leading edge with the image on the Drum. Based on the timing information from the Preheater Exit Sensor, the Transfix Roller lowers onto the leading edge in the nip. Timing is based on the Sensor ensuring the image is perfectly aligned for transfix to the paper. The Process Drive lifts and lowers the Transfix Roller.

At the point which the Transfix Roller is loaded, but before the Drum begins to rotate, the Stripper Solenoid is engaged. The Stripper Blade is actuated by energizing the Stripper Solenoid. The Solenoid mounts on the Upper Inner Duplex Guide and activates the strip solenoid lever. The lever rotates the Stripper Carriage until it hits the transfix ground pins, causing the paper Stripper Blade to momentarily drop onto the deadband of the Drum. This action catches the leading edge and guides the media to the rotating Exit Rollers.

After the Transfix Roller is engaged, the Drum rotates to advance the media and transfix the image. All gears move to rotate the Transfix Camshaft to bring the Transfix Roller into contact with the Drum. The Transfix Roller nip applies the load necessary to transfer the image. Once the image is transferred, the Drum stops rotating and the Transfix Roller is lifted by the Process Drive.



Figure 19 Transfix Components

After the leading edge of the media is beyond the Stripper Blade, the Stripper Solenoid is deenergized. Once the Solenoid is de-energized, the Solenoid Return Spring provides force to move the Solenoid Plunger out of the Solenoid Coil which rotates the Stripper Carriage back to its Ready position.

The Deskew Rollers are not driven during transfixing. The Media Drive rotates the Exit Rollers in the correct direction to pull the paper out with the Deskew Clutch deenergized.

As the Process Drive lifts the Transfix Roller, the Exit Rollers transport the media into the Exit Module. The media is then fed out over the Ink Loader until the trailing edge is at the nip of the Exit Module Roller.



Figure 20 Exit Path

Purge System

Proper Printhead operation is dependant on the purge system shown in Figure 1. The purge pump pushes air into the Printhead to purge any debris or air bubbles that may be obstructing the Printhead jets.

Waste ink expelled during a purge cycle is removed from the Printhead Faceplate by the Wiper Blade and collected in the Waste Tray. Following the purge, a cleaning page is printed.

Auto Purge is an automatic cleaning cycle, which is performed when the printer is powered and the Printhead temperature is below 90 degree C. Manual Purge and Advanced Purge are cleaning cycles that can be performed from the Control Panel. Advanced Purge focuses on the selected problematic jet.

Purge Mass is the amount of ink collected in the Waste Tray following the purge.

Purge Efficiency is the success rate of a cleaning cycle, measured as the percentage of times a single printer performs a cleaning cycle with no missing jets following that cycle. Purge failures are only counted for weak or missing jets that can be cleared by cleaning cycle.



Figure 1 Purge System

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PART#: 705P01286





ColorQube 8570/8870/8700/8900 Version 3.0

IMPORTANT! This checklist outlines proper Printhead troubleshooting procedures. All Xerox service employees and any other service personnel on any job involving a Printhead replacement should perform the procedures.

Service Person Name	
Service Company	
Phone Number	
Date of Printhead Replacement	
Printer Serial Number	
Defective Printhead Serial Number	
OUT Request ID Number	

Troubleshooting Summary – Follow the checklist below and fill in appropriate spaces as you complete the troubleshooting procedures.

Incorrect Colors – Incorrect colors, such as reds printing orange, **IS NOT A VALID REASON** for replacing the Printhead. Color issues are correctable by either purging old ink from the Printhead or using alternate Color Corrections in the print driver.

Step	Check List Items to Complete	Value or Result	What to look for
1	Do you suspect or have evidence of use of generic ink (non- Xerox ink)? The following page illustrates Genuine Xerox Ink Sticks to help you tell the difference from non- Xerox ink.	YES NO Circle one	1a. Did the customer state that they have used generic ink in this Printhead? YES NO 1b. Did you observe generic sticks or related packaging at the site? YES NO 1c. Are there generic ink sticks in the Ink Loader? YES NO 1d. Does the service history indicate previous use of generic ink? YES NO 1d. Does the service history indicate previous use of generic ink? YES NO Indicate brands and lot codes of generic ink if used:

Step	Check List Items to Complete	Value or Result	What to look for
How to 8700, o	o identify ColorQube 85 and 8900 Xerox Ink Sti	70, 8870, cks	 Note: Verify that the molded Xerox is shown on top of the ink stick. ColorQube 8570/8870 ColorQube 8570 N/ DN/ DT ColorQube 8870 DN
			2 s8570-260
			ColorQube 8700 S/ X/ XF ColorOube 8900 X

Step	Check List Items to Complete	Value or Result	What to look for					
			SKU's can be determined by bottom of the ink stick. Com regions.	looking pare the	at size o e letter po	f the ink attern for	stick and the diffe	the erent
			There are different ink SKU': 8700/ 8900 printer.	s availal	ole for the	e ColorQı	ube 8570)/ 8870/
			ColorQube 8570/ 8700 Ink	SKU				
			Region		A	В	С	D
			North America (NA)		Α		С	
			Xerox Europe (XE)		A	В	С	
			Developing Markets Organization (DMO)		Α	В		
			Metered		Α	В		D
			Factory		Α			D
			Note: Metered ink stick shown in	the illustro	ation.			
			ColorQube 8570 Ink Stick	lam	C	ColorQube 8	700 Ink Sti	ck
			Feed Keying	:8570-261	Feed Keyin	SKU F	lags	s#700-231
			ColorQube 8870/ 8900 Ink	SKU	1			
			Region	Е	F	G	н	К
			North America (NA)	E	F	G	Н	
			Xerox Europe (XE)	E	F		Н	
			Developing Markets Organization (DMO)	E	F	G		
			Metered	E	F	G		К
			Note: Metered ink stick shown in	the illustro	ation.			
			ColorQube 8870 Ink Stick		C	ColorQube 8	900 Ink Sti	ck
			Top Ba	19570-474	Feed Keying	Top	J Flags	Bottom

Step	Check List Items to Complete	Value or Result	What to look for
2	Does the printer display any of the following fault codes indicating a possible problem with the Printhead? 091.850 091.850 091.862 091.854 091.866 091.858 091.870 093.583 - Cyan 093.582 - Magenta 093.584 - Yellow 093.581 - Black 099.002 099.003 099.004 099.005	YES NO Circle one	 Note: For ColorQube 8700 and 8900, the error code prefix number begins with a 3. (i.e., 391.523). If YES please write down the fault code 2a. If "too hot" fault code 091.523, 091.547, or 091.535 is present in the Fault History, replace the Power Supply Unit (continue to step 2b). 2b. If a Printhead Thermistor open or shorted fault code 091.850, 091.862, 091.854, 091.866, 091.858, 091.870 is displayed, reseat the Printhead's gray ribbon cable. Power cycle the printer and look for error on the Control Panel. 2c. If a Printhead Ink Level Sense open fault code 093.583, 093.582, 093.584, or 093.581 is displayed, reseat the Printhead's 6-wire connector (next to its white data ribbon cable). Power cycle the printer and look for error on the Control Panel. 2d. Replace the Printhead. <u>The repair is complete</u>! AC Heater PEST fault code 099.002, 099.003, 099.004 or 099.005 can be caused by low or irregular AC voltage. Power On the printer on a different AC circuit on a different breaker. Turn Off other devices, such as laser printers and coffee makers on the same circuit.
3	Does the printer display any of the following fault codes indicating ink contamination? 093.599 - Cyan 093.598 - Magenta 093.800 - Yellow 093.597 - Black	YES NO Circle one	 If YES, please write down the error code

Step	Check List Items to Complete	Value or Result	What to look for
4	When any of the following fault codes is displayed: 093.982 - Black 093.983 - Magenta 093.984 - Cyan 093.985 - Yellow		Replace the Printhead. Replace the Ink stick.
5	Has the printer had a Printhead replaced before for a weak or missing jet problem?	YES NO Circle one	If YES , replace the Wiper Assembly. Proceed to Step 8 . The new Wiper Assembly may take 6 purges to achieve optimal performance. Ensure the Wiper Assembly is correctly aligned with the Printhead. <u>If the missing jet(s) recovers, the repair is complete.</u>
6	Is the Wiper Assembly correctly aligned?	YES NO Circle one	Is the Wiper Assembly out of alignment (not parallel with the Printhead Faceplate)? If YES , perform the Wiper Alignment procedure as described in the <i>ColorQube 8570/8870 or 8700/8900 Service Manual</i> .
7	Print Service Test Print 2: Weak and Missing Jets. Is <i>severe</i> color mixing apparent?	YES NO Circle one	Is there color mixing from one row to the next row for the same jet? Note : Some color mixing is normal following a purge cycle. It usually clears after one or two prints. If YES , replace the Wiper Assembly. Repeat Step 5 . If you see severe color mixing on a Wiper that has over 40,000 prints, replace the Wiper Assembly.
8	Visually check the Printhead Faceplate. Is the Faceplate contaminated?	YES NO Circle one	Are there streaks, smudges, or a scum of wax in the jet area of the Printhead (outlined in red in the illustration)? Example of Bad Wipe Action

Step	Check List Items to Complete	Value or Result	What to look for
9	Visually check the Wiper Assembly blade. Is it OK?	YES NO Circle one	Is there any damage or separation on the Wiper Blade? If YES , replace the Wiper Assembly.
10	Check the purge performance of the Purge System.		 Check the Purge Pump performance. 9a. Empty the Waste Tray. 9b. From the printer Control Panel, select: ColorQube 8570/8870: Eliminate Light Stripes - Basic and run one cleaning cycle. ColorQube 8700/8900: Machine Status button > Tools > Troubleshooting > Fix Image Quality > Light Lines > Fix. 9c. Remove the Waste Tray and examine how much ink was purged. A single purge should resemble the illustration. Is the purge mass noticeably less than what is pictured? If YES, inspect the purge hoses for pinches, splits, tears, or disconnect.
11	Print the Light Stripes Test page. Are there weak or missing jet(s)?	YES NO Circle one	 If NO go to Step 12. If YES, do the following: Check the exit area of the paper path for debris that could be scraping ink off the Drum and may mimic a weak or missing jet. From the Control Panel, select: ColorQube 8570/ 8870: Troubleshooting > Print Quality Problems > Eliminate Light Stripes > Start Basic Clean Cycle. ColorQube 8700/ 8900: Machine Status button > Tools > Troubleshooting > Fix Image Quality > Light Lines > Fix. Perform the procedure up to 3 times as needed to recover a weak or missing jet. From the Control Panel, select: ColorQube 8570/ 8870: Troubleshooting > Print Quality Problems > Eliminate Light Stripes > Advanced. ColorQube 8570/ 8900: Machine Status button > Tools > Troubleshooting > Eliminate Light Stripes > Advanced. ColorQube 8700/ 8900: Machine Status button > Tools > Troubleshooting > Fix Image Quality > Advanced > Jet Purge. Perform the procedure up to 2 times as needed to recover a weak or missing iet

Step	Check List Items to Complete	Value or Result	What to look for
			 To substitute a working jet for the missing jet, perform the following procedure. From the Control Panel, select: ColorQube 8570/ 8870: Troubleshooting > Print Quality Problems > Eliminate Light Stripes > Jet Substitution Mode. ColorQube 8700/ 8900: Machine Status button > Tools > Troubleshooting > Fix Image Quality > Advanced > Jet Substitution. Select the Jet Color and enter the Jet Column number. Click OK to perform the procedure. However, if any of the following criteria is met, you should replace the Printhead instead. If the customer uses the billing meters features. If three missing jets of the same color are adjacent (for example cyan jets 79, 80, and 81). If the customer runs mainly in Fast Color or Standard mode (as
			revealed on the Usage Profile page). The repair is complete!
12	Is the customer experiencing vertical bands (not light stripes) in solid color areas?	YES NO Circle one	If YES , print 10 solid fill pages of cyan. If the bands vary in intensity and/or location over the 10 prints, the customer is experiencing stagnant ink discoloration. Continue to print solid fills of the offending color until the output is uniform. It may take as many as 60 solid fill pages to refresh all of the ink in the Printhead reservoir. <u>The repair is now complete!</u> If No , the repair is complete!

Ink Reservoir Overflow - Ink Buildup under the Printhead

Evidence that the printer was tipped or moved while the Printhead was hot is shown in the illustrations.

An abnormally raised level of ink in a reservoir (shown in the Magenta reservoir)

Ink overflow can also indicate the use of poor-quality, non-Xerox ink that has clogged the Printhead's Filter. Check for the use of non-Xerox ink.

Ordinarily, the ink level is maintained above level of the filters in the reservoir for all four colors. Successive ink melt cycles and overflows cause ink to accumulate under the Printhead.



Ink build-up under the Printhead

Ink accumulations often lead to Printhead movement faults such as 091.722 and 091.723.

Replace the Printhead. Explain to the customer that the printer must be turned Off and allow to cool for 20 minutes before moving the printer.


Comments:	(Xerox U.S.	personnel -	please add all	l comments into	FIST)
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PLEASE NOTE ADDITIONAL GENERIC, NON-XEROX INK INFORMATION

- Was generic ink or related packaging observed? YES NO
- Was generic ink present in the Ink Loader? YES NO

<u>IMPORTANT</u> – Note the brand and lot code of the generic ink, if available.

A completed checklist <u>and</u> sample prints must be returned with each Printhead. <u>Xerox reserves the right to refuse reimbursement</u> to service personnel who do not enclose a completed the Troubleshooting Checklist and a sample print from the malfunctioning Printhead with each returned Printhead.

RETURN THE FOLLOWING ITEMS WITH THE DEFECTIVE PRINTHEAD:

- Two prints of **Light Stripes Test** showing the *observed printing defect*. (This is not necessary for Printhead replacement because of an error code.)
- This Printhead Troubleshooting Checklist (filled out)
- Inventory control "White Tag" (filled out)
- Additional **Sample prints** that clearly show the observed print quality defect (not necessary for Printhead replacement because of a fault code)

