

User Manual

Acuity F Series

User Manual Revision 1.0

FUJIFILM

Copyright

Copyright 2014, FUJIFILM Speciality Ink Systems Ltd.

All rights reserved. No part of this work may be reproduced, copied, adapted or transmitted in any form or by any means without written permission from Fujifilm.

Fujifilm makes no representation or warranties with respect to the contents hereof and specifically disclaims any implied warranties of merchantability or fitness for any particular purpose.

Furthermore, Fujifilm reserves the right to revise this publication and to make changes from time to time in the content hereof without obligation to notify any person of such revision or changes.

Contents

User Manual	1
Copyright.....	2
Contents	3
Chapter 1	6
Introduction	6
Preface	7
Product Compliance.....	11
Chapter 2	15
Product Overview	15
Printer Specifications	16
Chapter 3	18
Safety Information	18
Introduction.....	19
UV Ink and Flushing solution	19
UV Curing System.....	21
Acuity F Series Safety Labels	24
Safety Interlock System	28
Safety Awareness.....	30
Chapter 4	53
How to Navigate the User Interface	53
Operator Interface Hardware	54
Printer Interface Software.....	56
Print Job Control Module	58
Maintenance Tasks.....	68
Counters Module	70
Settings Module	71
Tools and Utilities Module.....	75
Software Update Module	78
Chapter 5	80
How to operate your Acuity F Series Printer	80

Training Requirements	81
How to Power the Printer ON.....	82
How to Power Off the Printer	84
How to Set Up a Print Job.....	86
How to Handle Media	89
Static Suppression System Reduces Static.....	92
Chapter 6	93
How to operate the Vacuum System	93
Table Vacuum Controls	94
Vacuum Zones	96
How to Use the Vacuum Zones	97
Chapter 7	99
How to Print in Batch and Dual Origin Modes.....	99
How to Print With Dual Origins	100
How to Print in Batch Mode.....	103
Chapter 8	105
How to work with White Ink.....	105
Operator Guidelines for White and Clear Ink	106
White Ink Workflow Overview	107
White Ink Quickstart	110
Example 1: Printing on glass, one sided, colored motif	113
Example 2: Printing on plastic board, coloured motif including white spot colour.....	114
Example 3: Printing on plastic board, colored motif in high intensity	116
Example 4: Printing on plastic board, white only, based on a colored motif	117
Example 5: Printing on glass, colored motif, visible from the reverse	118
Example 6: Printing on plastic board, colored motif containing single motifs	119
Example 7: Printing on glass, viewable from both sides.....	120
Example 8: Fast printing on glass, white on areas that do not contain a motif	121
Example 9: Fast printing on glass, white underprint.....	123
Chapter 9	124
Ink System Management.....	124
Acuity Printer Inks.....	125

Light Ink Overview	130
How to Change Ink Bags.....	132
White Ink Option.....	134
Chapter 10	136
Error Handling and Troubleshooting	136
Troubleshooting Overview	137
How To Improve Quality When Banding Occurs	140
Chapter 11	141
Printer Maintenance	141
Maintenance Guidelines	142
Checking Nozzle Performance.....	144
Recovering Nozzles by AMS	145
Recovering Nozzles by Swabbing	146
Daily Maintenance	148
Cleaning the Horizontal Surfaces	149
Cleaning the Ink Spit Tray.....	150
Cleaning the Automatic Maintenance System (AMS).....	151
Cleaning the Underside of the Carriage.....	153
Cleaning the Printheads.....	155
Agitate White Ink Bag	158
Periodic Maintenance Procedures	159
How to Change the UV Lamp Filters	159
How to Change a UV Lamp Bulb.....	161
How to Remove Ink from the Table	166
How to Empty the Ink Waste Tray	167
How to Fill the Coolant Bottle.....	168
Cleaning the Glass Rails.....	170
How to Clean the Gantry Rails	172
Clean the UV Lamp Quartz Window	174
How to Change an Ink Filter	175
How to Bleed an Ink Filter	178
Document History	181

Chapter 1

Introduction

Preface

Introduction

This manual provides the operator with information about the following Acuity F Series flatbed inkjet printers:

- Acuity F66
- Acuity F67

The operational features of these printer models are similar. The main functional differences between models is the number of printheads and therefore the available channels for ink. The table below shows the possible ink output that each model is capable of supporting.

Acuity F66	6 Channel	CMYKLcLm
Acuity F67	7 Channel	CMYKLcLmW

This manual uses the terms Acuity F Series or Acuity F66 / F67 to refer to these printers generally. This manual orients you to the many features and procedures that allow you to print professional quality images on various media with these printers.



1. Acuity F67 printer

Multi-Language Support

The printer's user interface software supports multiple languages. To select your preferred language and other setup information, refer to the Settings Module in Chapter 4.

This manual is also available in other languages. Please contact your local Fujifilm company for information on availability.

Safety Information

This manual has three sections that contain details on safety when handling ink and using the printer. Also, where applicable, cautions and warnings are used throughout this manual to draw your attention to safety precautions.

"Safety Guidelines for Ink Materials" offers advice in the proper handling of UV inks;

"Interlock Safety System" explains the safety features built in to the printer that prevent and minimize access to Mechanical, Electrical, Thermal and UV hazards; and

"UV Curing System Safety" presents warning about the dangers of exposure to UV light. Some of the material from that section is duplicated here.

Customer Service

If your printer malfunctions and you are unable to resolve the problem, field service technicians can be dispatched to your site to conduct repairs. Service visits are paid for by the customer, either under a maintenance agreement, by purchase order or prepayment. Time and material rates are charged for any service not covered under a maintenance agreement. Before calling to report a problem, gather as much information about the problem as possible and have it ready to provide to your customer care center. The more information you can provide initially, the more quickly the problem can be corrected.

Statement of Foreseen Use

The Acuity F Series flatbed inkjet printers are intended for use in a commercial printshop environment. Factory-authorized training is made available for operators at the time of installation. The printers use piezo printing technology and UV curable inks to produce outdoor-durable output. They can print directly onto rigid and flexible media of up to 50.8 mm (2.0 inch) thickness. The printer holds the media stationary while the printhead assembly moves across to create the print, eliminating image skew problems often associated with rigid stock feed systems.

Responsibilities of the Operator

The printer operator must be properly trained. Fujifilm provides training for the operator in the use of the printer hardware and software at the time of installation. It is the customer's responsibility to ensure that only properly trained personnel operate the printer. Operators must be fully versed in the operation of ColorGATE Productionserver. For any operator unfamiliar with these applications, ColorGATE training is required. Training courses are available; contact your local Fujifilm representative.

The operator or other trained personnel are expected to handle all user maintenance as detailed in the User Manual, and also replacement of consumable parts (except print heads). If your site has a technician in charge of printer maintenance, that person is the optimal candidate. While any trained operator may perform routine maintenance, the best maintenance results from familiarity with the printer's internal operation and history.

The printer requires daily printhead maintenance to ensure the highest print quality and longer life for the printheads. The printer design provides you easy access to perform this simple task and it is essential that printhead maintenance is performed at least once a day, and more frequently if needed. Periodic cleaning must be scheduled for some components on a regular basis. A few minutes spent cleaning also helps to ensure optimal printer function and the highest quality prints.

It is the responsibility of the operator to try to eliminate simple problems before calling a service representative. But knowing when to call for service is also important. An untrained operator must not attempt to service the printer as this may cause further damage. When you have determined that a service call is required, call as soon as possible. See the Troubleshooting and Maintenance sections for more details.

Responsibilities of the Service Technician

Field service technicians must have Fujifilm service training. The service technician is responsible for all repairs, upgrading and modification requested by the customer or mandated by Fujifilm. The service technician who installs the printer will also provide training for the operator that covers all of the basic skills required to operate the printer. Service personnel are furnished with proper tools for the installation and maintenance of the printer. In addition to the tools and custom kits, each engineer will have basic tools for proper maintenance and servicing.

Product Compliance

Introduction

This section provides important information about EMC and FCC compliance information for the Acuity F Series. It also provides printer manufacturing and contact information and a list of any toxic or hazardous material in the printer.

This product has been tested in accordance with the strictest international safety standards. Please read the following sections before you connect the machine to the power supply. These sections contain important information with regard to the user safety and the prevention of equipment problems. Make sure that you observe the safety rules hereinafter. This helps to assure that you can work with the product/system safely. Make sure that you observe all the precautions mentioned below.



Note:

Depending on the context, the terms "system, machine, and equipment" used in the user documentation means the Fujifilm product for which this user documentation is applicable.

Some parts of the content of this section may not be applicable to your product.

Electromagnetic Compliance (EMC)



Caution:

This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures

FCC Statement for Class A Device:

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 and, if not installed and used in accordance with the Operator's Manual, 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 own expense.

Do not make any changes or modifications to the equipment unless otherwise specified in the manual. If you make such changes or modifications, you could be required to stop operation of the equipment.

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.

This Fujifilm equipment complies with EN61000-3-12

Product Safety

The CE Declaration of Conformity document is provided for your convenience.

FUJIFILM

FUJIFILM Corporation
MIDTOWN WEST 7-3, AKASAKA
9-CHOME MINATO-KU, TOKYO
107-0061, JAPAN

EC Declaration of Conformity

2013-CE-009-G2

Manufacturer:	FUJIFILM Corporation
Address:	7-3, Akasaka 9-Chome Minato-Ku, Tokyo 107-0052, JAPAN
European Authorized Representative:	FUJIFILM Europe GmbH
Address:	Heesenstraße 31, 40549 Düsseldorf, Germany
Name of person authorized to compile the Technical File:	Havva Namaz
Address:	Heesenstraße 31, 40549 Düsseldorf, Germany
Trade Mark:	FUJIFILM
Product Name:	Wide Format UV Inkjet printer
Model Name:	Acuity F66 Acuity F67
Directive: 2006/42/EC (Machinery)	EN 1010-1:2004+A1:2010, EN 1010-2:2006+A1:2010 EN 60204-1:2006+A1:2009/AC:2010, EN ISO 12100:2010 EN ISO 13849-1:2015, EN ISO 13849-2:2012 EN ISO 13857:2008, EN 349:1993+A1:2008 EN ISO 14120:2015 EN 12198-1:2000+A1:2008, EN 12198-2:2002+A1:2008 EN 12198-3:2002+A1:2008
2014/30/EU (EMC)	EN 61000-6-2:2005 EN 61000-6-4:2007+A1:2011 EN 61000-3-11:2000, EN 61000-3-12:2011
2014/53/EU (RED)	EN 300 330 V2.1.1 EN 301 489-1 V1.9.2, EN 301 489-3 V1.6.1
2011/65/EU (RoHS)	EN 50581:2012

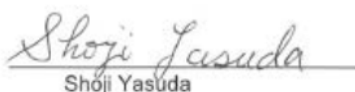
We hereby declare that the product(s) identified in this declaration conforms to the provisions of the following EC Council Directives and Standards.

This declaration of conformity is issued under the sole responsibility of the manufacturer mentioned.

Name of Notified Body:	DGUV Test
Address:	Rheinstraße 6-8 65185 WIESBADEN, Germany
Identification Number:	0739

Place Tokyo JAPAN

Date 23, March, 2018


Shoji Yasuda

Senior Manager
Graphic Systems Div.

This symbol indicates that this product is not to be disposed of with your household waste, according to the WEEE Directive (2012/19/EU) and your national law. This product should be handed over to a designated collection point, e.g., on an authorized one-for-one basis when you buy a new similar product or to an authorized collection site for recycling waste electrical and electronic equipment (EEE). Improper handling of this type of waste could have a possible negative impact on the environment and human health due to potentially hazardous substances that are generally associated with EEE. At the same time, your cooperation in the correct disposal of this product will contribute to the effective usage of natural resources. For more information about where you can drop off your waste equipment for recycling, please contact your local city office, waste authority, approved WEEE scheme or your household waste disposal service. For more information regarding return and recycling of WEEE products, please visit www.canon-europe.com/environment. Reference: Directive 2012/19/EU.



The Environmental Protection Use Period (EPUP) applicable for the printing system designated for deliveries to the Peoples Republic of China is 20 years. This EPUP, which does not include consumables or expendables, does not affect any warranty that is provided for the system and may not be construed or interpreted as a separate guarantee for the printing system.



Marking Declaration Table China Pollution Act

Part Name	Toxic and Hazardous substances or Elements in the Product					
	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent Chromium (CrVI)	Polybrominated biphenyls (PBBs)	Polybrominated diphenyl ethers (PBDEs)
UV Curing Lamps	O	X	O	O	O	O
Inkjet Print Heads	X	O	O	O	O	O

O: indicates that the content of the toxic and hazardous substances in all the homogenous materials of the part is below the concentration limit requirement as described in SJ/T11363-2006.

X indicates that the content of the toxic and hazardous substances in at least one homogenous material of the part exceeds the concentration limit requirement as described in SJ/T11363-2006.

Manufacturer

Océ Display Graphics Systems (ODGS)

13251 Delf Place – Building # 406

Richmond, British Columbia

Canada V6V 2A2

Telephone +1 (604) 273-7730 – Fax +1 (604) 273-2775

E-mail: dgsinfo@oce.com

Chapter 2

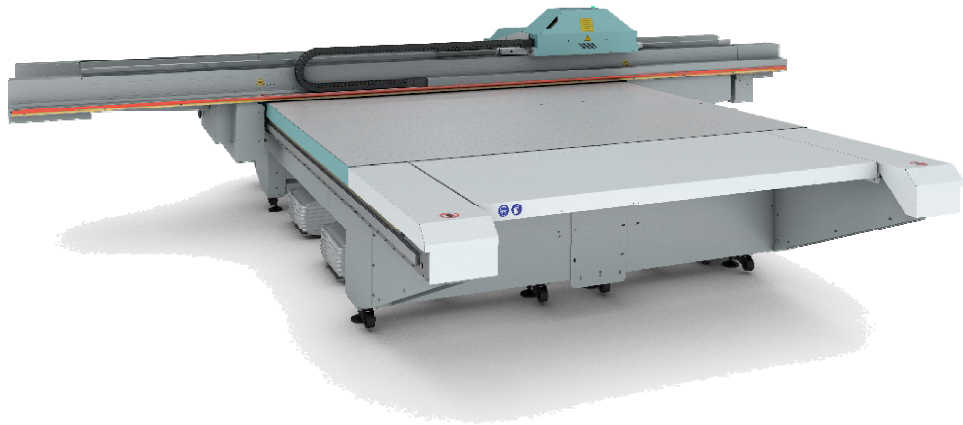
Product Overview

Printer Specifications

Introduction

The Acuity F Series printers capable of producing large format images on various rigid and flexible media. The printers consist of a flatbed vacuum table and moving gantry with a printhead carriage. Media is held flat and stationary on the vacuum table during printing. The gantry contains a carriage that sweeps across the table as the gantry moves in steps along the length of the table to print an image on the media.

Illustration



2. Acuity F Series Printer

Printer Specifications

The printer must be operated in accordance with the environmental conditions specified in the Acuity F Series Site Preparation Guide. Note that there are safety requirements and precautions indicated in this document. Be sure to read all of the safety sections before using the printer.



Note:

All specifications in this document are subject to change without notice. While due caution has been exercised in the production of this document, possible errors and omissions are unintentional.

Feature	Specification
Printing Technology	Piezoelectric drop on demand inkjet
Maximum Media Size	2.5m (98.4") x 3.05m (120.1")
Media Thickness	Maximum: 50.8mm (2.0")
Maximum Print Size	2.51m (98.8") x 3.06m (120.5")
Media Weight	Maximum: 34 kg / m ² (7 lbs / ft ²)
Nozzle Drop Volume	Variable droplet sizes: 6 to 42 picolitres
User Interface	LCD flat-panel monitor and mouse on a user-positioned podium.
Curing System	UV Curing lamps with variable power settings.
Power Requirements Voltage:	200 – 240 VAC 50/60Hz 30A (Delta) 347 – 415 VAC 50/60Hz 20A (Wye) Continuous Power consumption: 9.6kW 9max) Recommended circuit breaker: North America 20A, European Union 16A
Compressed Air	Pressure (max): 120 psi Peak flow: 12 cfm at 100 psi Continuous flow: 2cfm at 100 psi
BTU Output	10,000 BTU (2950 watts) under continuous operation.
Hardware Interface	USB, Ethernet TCP/IP, 100 base-T (or Gigabyte, if supported by the local network).
Image Processing Software	ColorGATE Productionserver version 8.1 and above (or higher) Caldera GrandRIP+ version 9.2 or higher

Chapter 3

Safety Information

Introduction

General Safety Information

You can find the power-marking label near the mains entrance. If connection to a different mains voltage is required, contact Customer Service.

Do not remove caution labels or caution notations. If a label or notation is soiled, please clean the label or notation. If you cannot make label or notation legible, or if the label or notation is damaged, please contact your service representative.

The required operating space of this product is located in the Site Preparation Guide.

Please refer to the corresponding Safety Data Sheets or the Site Preparation Guide for specific safety information, including the dimensions of the product, the recommended room volume and ventilation rate.

UV Ink and Flushing solution

Introduction

The safety concerns involved with the handling and use of the UV ink and Flushing solution are detailed in the Material Safety Data Sheet (MSDS) documents. Review them before handling any UV ink or flushing solution.



Note:

The MSDS for all UV inks and Flushing solution will be provided alongside the initial order and additional copies may be obtained from your local Fujifilm company on request.



Caution:

UV inks can be harmful if not properly handled. Follow the MSDS guidelines carefully in order to ensure maximum safety.

Personal safety

The operator must wear nitrile gloves, a protective apron, and safety glasses with side shields when handling inks. Read and practice safety guidelines as outlined in the MSDS for each ink. Post these documents in the work area as required by prevailing law. MSDS are provided with all inks and flushing solution when you purchase them.

Print Height Warning

Avoid printing at a height greater than recommended as this causes excessive emissions of UV light and ink mist. Always measure the thickness of the media in use and set the carriage height correctly for that media.

Disposal of UV Ink

All waste containing uncured or partly cured UV ink is hazardous and must be disposed of separately according to local regulations. Do not mix ink waste with non-hazardous waste (household, office, etc.). Do not allow it to reach sewage systems or drinking water supplies. Ink waste includes maintenance pads and cloths, gloves and any other material containing uncured or partly cured UV ink.

Disposal must be made according to official local regulations.

UV Curing System

Introduction

The UV Curing System on the Fujifilm Acuity printers generates hazardous levels of thermal, electrical and UV energies. UV-curable inks need a high energy level of UV light to cure. The UV curing system is made up of two mercury arc lamps attached to the carriage.

How to Handle UV Lamps: UV lamps operate at high temperatures. Never touch a lamp in operation. Let the lamps cool for a minimum of five minutes before attempting any maintenance. Use extreme care in handling the UV lamp bulbs. The UV bulbs contain a small amount of metallic mercury which is toxic when ingested, handled, or breathed. Therefore, if bulbs are broken, care should be taken to clean up the spill immediately, and then disposed of according to local regulations concerning Mercury disposal.

UV Lamp Hazards: Superficial eye damage and burning of the skin can occur with even brief exposure to UV light. Serious injuries can result from prolonged exposure, especially if unshielded. Special restrictions and protective measures are essential when the printers are used. Wear Industrial Protective Eyewear with lenses that block both UVA and UVB. Gloves and long-sleeved work clothes are essential to reduce the skin's exposure to UV emissions.

Bare skin contact with the UV lamp bulbs must be avoided. When heated, compounds from the skin can form permanent etching on the surface of the UV bulb. A contaminated bulb may fail prematurely.

Ozone: As a UV lamp warms up, it briefly passes through a section of the light spectrum which excites oxygen molecules enough to create ozone. Once a UV lamp has completely warmed up, only very minute amounts of ozone are present.



Note:

A high concentration of ozone can cause irritation, headaches and nausea. Provide adequate ventilation as indicated in the Site Preparation Guide.



Caution:

Warning for Seated Individuals: UV emissions are highest at a height of 90 cm (35 inches) above the floor. This can be an issue for individuals seated near the printer. Remove all chairs within 5 meters (16 feet) of the printer.



Attention:

One or more lamps contain Mercury. Dispose of these lamp(s) according to all federal, state and local regulations.

Mercury containing lamp(s) must be removed and treated separately according to Directive 2012/19/EU (Waste Electrical and Electronic Equipment). European Waste Catalogue (EWC) number of the mercury containing fluorescent lamp:20 01 12.

Personal Safety

UV Light Emissions can be harmful:

Protective measures are essential in the workplace. Use the UV safety glasses with side shields supplied with the printer. Wear appropriate clothing that protects the skin from UV light exposure. Keep a distance of at least 1 m (3 ft) from UV lamps while printing.



Note:

Wear Industrial Protective Eyewear with lenses that block both UVA and UVB. Gloves and long-sleeved work clothes are essential to reduce the skin's exposure to UV emissions.

Acuity F Series Safety Labels

Introduction




The safety labels are placed at strategic locations on the printer to warn the operator of possible dangers and hazards. It is important to be aware of the meaning of these labels to ensure safe operation of the printer.
















Caution:





Read and understand all of the safety label descriptions in the table below before operating the printer.

Safety Labels

Description	Label
<p>Warning: UV Light Hazard.</p> <p>Avoid looking directly at UV lamps. Located on the carriage cover to remind the operator that looking at the UV light source is dangerous. Wear protective eye-wear with side shields, gloves and long sleeves when using this printer. Ultraviolet Light Radiation Hazards Emission: Effective UV-irradiance Emission Category according to 7.1 of EN12198-1:2000 - - Special restrictions and protective measures are essential when the machine is used in the workplace.</p>	
<p>Wear Safety Gloves.</p> <p>Located on the maintenance station as a reminder to always wear gloves when handling ink.</p>	
<p>Risk of Eye Injury. Wear Eye Protection.</p> <p>Located on the maintenance station as a reminder that the UV-curable ink is harmful to the eyes and skin. Always wear glasses and gloves when handling ink.</p>	

Description	Label
<p>Machine lockout.</p> <p>A reminder to turn off and lock out the AC power switch before servicing any electrical components. Located on the mains power switch</p>	
<p>Warning: Electric Shock Hazard.</p> <p>Located on the door to the electronics enclosure, the UV lamp power supply cover, the carriage cover and the vacuum pump enclosure. This are can only be accessed by a trained service technician.</p>	
<p>General Warning.</p> <p>Located on the AC enclosure cover. This are can only be accessed by a trained service technician.</p>	
<p>Pinch Point</p> <p>A reminder that horizontal movement of the carriage can create a pinch hazard as it moves along the gantry. Located on both ends and the rear of the carriage.</p>	
<p>Crush Hazard: Keep hands clear while operating.</p> <p>A reminder that vertical movement of the carriage can be a crush hazard if hands or objects are placed in these locations. Located on the maintenance station and both ends of the gantry.</p>	
<p>Thermal Hazard</p> <p>Radiated heat from the UV lamps can cause burns. Located on the carriage near the two UV lamps.</p>	

Description	Label
<p>Caution: For Continued Protection Against Fire And Electric Shock</p> <p>Replace Only With Same Type and Ratings of Fuse</p>	
<p>Caution: Disconnect Power Before Changing Fuse.</p> <p>Refer to the section "How to Power the Printer On and Off"</p>	
<p>Electrical Shock Hazard Equipment</p> <p>Powered by two power cords.</p> <p>Turn off power switch or remove both power cords before servicing</p> <p>Refer to the section "How to Power the Printer On and Off"</p>	
<p>Warning: High Leakage Current Earth Connection Essential Before Connecting Supply</p> <p>Refer to the Acuity F Series Site Preparation Guide.</p>	
<p>Danger: High Voltage</p> <p>Warning that High Voltage is present behind the marked panel.</p>	
<p>Warning: Isolate Power Before Servicing.</p> <p>Refer to the section "How to Power the Printer On and Off" and sub-section "How to Lock Out the Power Switch".</p>	
<p>Warning: Line Voltage Always Present</p> <p>Warning that High Voltage is present behind marked panel at all times, even when machine is turned off</p>	

Description	Label
<p>Warning: Moving Gantry</p> <p>If the green beacon light on top of the carriage is on, the gantry may start moving at any time.</p>	 <p>Warning: Moving Gantry Avertissement: Portique mobile Advertencia: Pórtico móvil Achtung! Patronewagen bewegt sich Attenzione: Testata scorrevole in movimento Waarschuwing: beweegend onderstel 警告：可動式ガントリー</p>
<p>Warning: Stay Clear</p>	
<p>Notice: Indicates and operation that must not be performed.</p> <p>Read these items carefully, and make sure not to carry out described operations.</p>	
<p>PE-K</p> <p>GND Protective Earth Identification</p>	 <p>SLSOL.COM No. PE-K</p>

Safety Interlock System

Introduction

The Fujifilm Acuity F Series printers are equipped with a Category 3, performance level 'd' Interlock system to protect the operator and any other personnel when working with the machine. The printer is equipped with an Emergency-Stop button located at the Operator Podium and a Long Sense Edge on either side end of the Gantry. The Manual Maintenance Access Door is integrated as part of the interlock system. A green beacon located on the Carriage indicates the Active/Disabled status of the interlock system and the printer.

Components of the Interlock System

There are eight elements to the Interlock System:

- Emergency Stop Actuator
- Emergency Stop Strip (Front and Rear)
- Manual Maintenance Access Door
- Carriage Guards (Left and Right)
- UV Lamps (Hone and Away)

Emergency Stop Actuator:

The Emergency Stop Actuator is located on the User Podium. Activating the Emergency-Stop Actuator stops all printer motion and turns off the UV curing system.

On either side of the Gantry an Emergency Stop Strip is installed. Pressing the Long Sense Edge at any location along its length will trip the Interlock System in the same manner as the Emergency Stop.

To re-activate the printer after you press an Emergency Stop actuator, turn it counter-clockwise. Upon release of the actuator, no motion can be initiated without acknowledgment by the Operator from the user interface at the Podium.

The Emergency Stop Strip will act as described above, in the same manner as the Emergency Stop Actuator. After an Emergency Stop Strip actuation, no motion can be initiated without acknowledgment of the Operator from the user interface at the Podium.

Maintenance Station Interlock Function:

The Manual Maintenance Access Door is located at one end of the printer and allows access to the bottom of the carriage to perform Manual Printhead Maintenance and to swab printheads. Carriage and Gantry motion motors are disabled and UV lamps are turned off (if they were On), when the door is open.

Beacon Light Status

A green beacon light, located on the carriage, indicates to the Operator the Active/Disabled status of the interlock system and the printer.

Beacon off: indicates the printer can be approached without caution. The machine cannot initiate movement since the interlock Safety System has disabled all motion and hazardous hardware.

Beacon on: indicates the printer is powered up and ready to initiate motion. This tells an operator to approach the machine with caution, because it can initiate motion at any moment.

Safety Awareness

Introduction

This section contains two sets of principles that must be followed to assure maximum safety when operating your Acuity F Series printer. The first set uses negative examples to show you things to avoid in order to prevent injury to the operator. The second set of principles illustrates some of the residual risks that are inherent in the operation of the printer. These are situations or physical aspects of the printer that may present a potential danger to the operator, but would compromise the capabilities of the printer if changed. Therefore, they are pointed out as a precaution the operator must be aware of when using the printer.



Attention:

The photos in the following table illustrate situations that must be avoided when operating your printer.

Situations and Actions to Avoid.

How NOT to use your printer.

Avoid these situations for your Personal Safety	
	 <p>CAUTION Keep the Table Work Surface Clear. Media for printing only on the table.</p>

Avoid these situations for your Personal Safety



WARNING

Do Not push the Carriage

Do NOT push the Carriage at any time, either when stationary or when it is moving.



WARNING

Do Not push the Gantry

Do not push the Gantry at any time, either when stationary or when it is moving.

Avoid these situations for your Personal Safety



WARNING

Avoid Moving Carriage

Do NOT place any part of your person near the Carriage / Gantry openings.



WARNING

Hot UV Lamps

When the Manual Maintenance Door is open to perform Manual Maintenance, do NOT touch the UV Curing Lamp Assemblies. These can retain heat for a long period of time after turning off.

Avoid these situations for your Personal Safety



WARNING

Do Not Touch Lamp Assemblies

When the Manual Maintenance Door is open to perform Manual Maintenance, do NOT touch the UV Curing Lamp Assemblies. These can retain heat for a long period of time after turning off.



WARNING

Shear Hazard Closing Maintenance Door

Be careful not to catch your fingers in the shear when closing the Manual Maintenance Door

Avoid these situations for your Personal Safety



WARNING

UV and Ink Mist Hazard

Print Height Warning: Do NOT initiate a print with excessive Print Gap. This causes excessive UV and Ink Mist Emissions



WARNING

Keep Away from Cable Track

Do not place any part of your hand or arm in the Cable Track.

Avoid these situations for your Personal Safety



WARNING

Avoid Lamp and Carriage Bumper

Do NOT reach or place your hand or fingers between the UV Curing Lamp head and Carriage Collision Bumper.



WARNING

Keep Hands away When Printing

Do NOT reach under the machine when printing. Be careful to avoid the sharp edges of the Gantry Drive belts located at both sides of the machine.

Avoid these situations for your Personal Safety



WARNING

Avoid Gantry Drive Belts

Do NOT reach under the machine when printing. Be careful to avoid the sharp edges of the Gantry Drive belts located at both sides of the machine.



WARNING

Avoid Gantry Pinch Points

Do NOT reach under the machine when printing. Be careful to avoid the pinch points of the Gantry Drive and end plates located at all four corners of the machine.

Avoid these situations for your Personal Safety



WARNING

Avoid AMS Cover

Do NOT touch the Auto Maintenance Station cover.



WARNING

Avoid AMS Cover

Do NOT touch the Auto Maintenance Station cover at either end.

Avoid these situations for your Personal Safety



WARNING

Hands off Gantry End Plates

Do NOT place your hands near the gantry end plates



WARNING

Hands off Gantry End Plates

Do NOT place your hands near the gantry end plates at either end.

Avoid these situations for your Personal Safety



WARNING

Avoid Gantry Beam – Crush Hazard

Do NOT reach under the Gantry Beams for any reason.



WARNING

Pinch Hazard

Do NOT place your hands in the locations shown.

Pinch Hazard

Avoid these situations for your Personal Safety



WARNING

Pinch Hazard

Do NOT place your hands in the locations shown.

Pinch Hazard.



WARNING

Heat Hazard

Do NOT reach under the Table Vacuum Pumps.

Thermal Hazard present, hot surfaces can burn.

Avoid these situations for your Personal Safety



WARNING

High Risk Crush Hazard

Do NOT place your hands or fingers under the Gantry Rails anywhere around the machine.



WARNING

High Risk Crush Hazard

Do NOT place your hands or fingers under the Gantry Rails anywhere around the machine.

Avoid these situations for your Personal Safety



WARNING

High Risk Crush Hazard

Do NOT place your hands or fingers under the Gantry Rails anywhere around the machine.



WARNING

High Risk Crush Hazard

Do NOT place your hands or fingers under the Gantry Rails anywhere around the machine.

Avoid these situations for your Personal Safety



WARNING

Cable Track Entanglement Hazard

Do NOT place your hand on the Gantry Beam in this location.



WARNING

Avoid Sharp Edges

Do NOT reach over the Gantry Beams into the Print Head Area. Avoid contact with the steel drive belt. Edges are sharp.

Avoid these situations for your Personal Safety



WARNING

Crush Hazard

Do NOT reach over the Gantry Beams into the Print Head Area. Avoid reaching under the Gantry Beams for any reason.



WARNING

Crush Hazard

Do NOT reach over the Gantry Beams into the Print Head Area. Avoid reaching under the Carriage Collision Bumper.

Avoid these situations for your Personal Safety



WARNING

Shear Hazard

Do NOT reach over the Gantry Beams or into the Print Head Area.



WARNING

Pinch Hazard

Do NOT place your hands or any other body part on the Gantry Beams.

Avoid these situations for your Personal Safety



WARNING

Cable Track Entanglement Hazard

Do NOT place your hand on the E-Box at this location.



WARNING

Shock Hazard

Do NOT operate the machine without a second Bonding connection. Machine is a high leakage device. Shock Hazard may be generated if power connection is removed unexpectedly.

Avoid these situations for your Personal Safety



WARNING

Remove Obstacles

Do NOT operate the machine with any obstacles in the suggested working area.



WARNING

Avoid Obstacles

Do NOT operate the machine with any obstacles in the suggested working area.



Residual Safety Risks





Your Fujifilm Acuity F Series printer is engineered to minimize machine components and operating procedures that may compromise operator safety. However, in order to maintain some machine operations and functionality, certain compromises are required. The following table documents some of these residual hazards. By making the operator aware of the potential risks, we hope to ensure maximum safety in the operation of this printer.

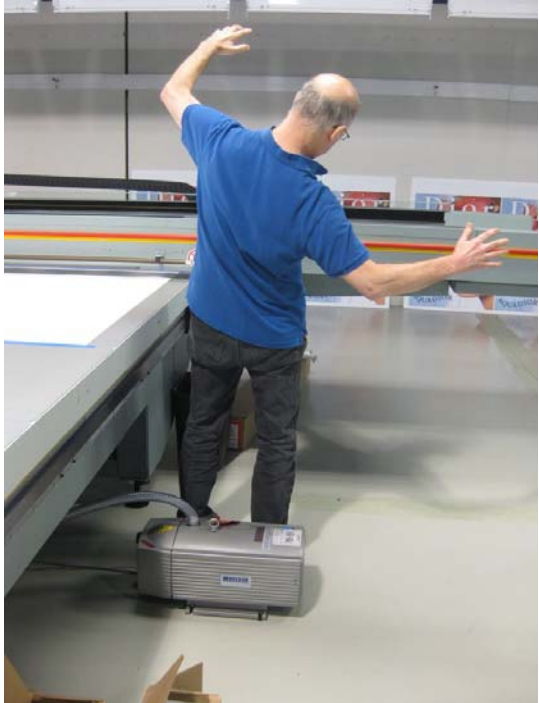

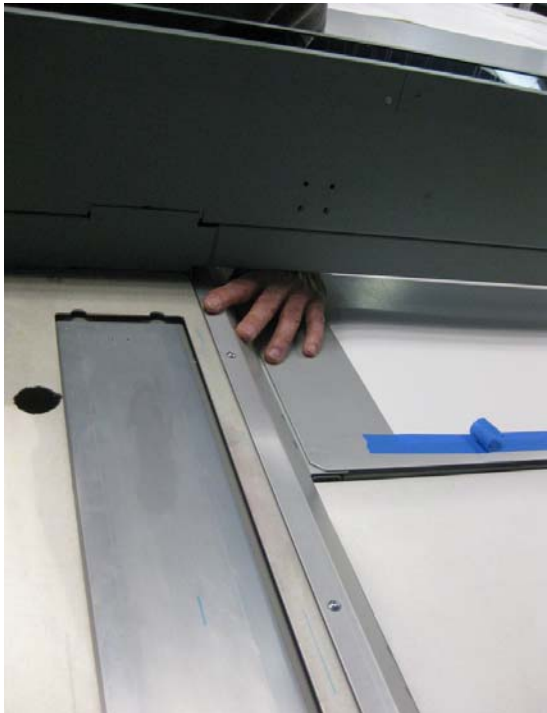



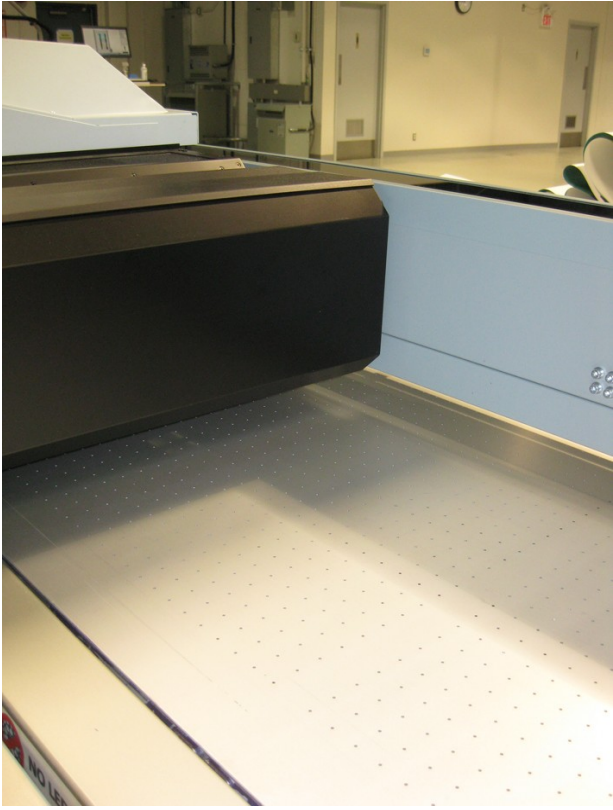

Caution:

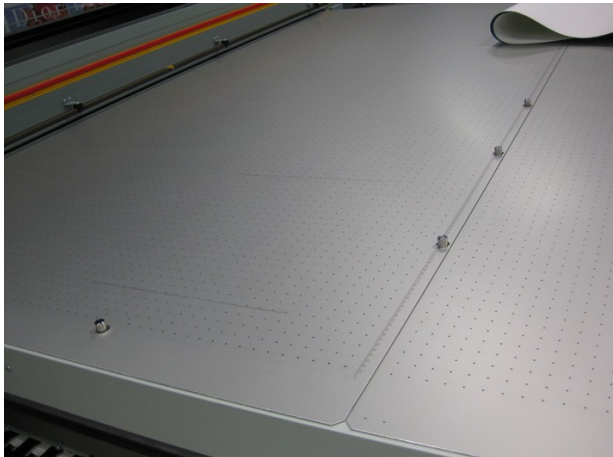
There may be a time lag between when a job is issued and when the gantry movement actually begins as the UV lamps must warm up first. Movement can start many minutes after a print job is sent.

Hazard	Residual Risk Area
	 <p>WARNING Ink Mist Hazard</p> <p>Carriage Height can be excessive. This causes excessive UV and Ink Mist Emissions.</p>

Hazard	Residual Risk Area
	<p data-bbox="1075 461 1150 528"></p> <p data-bbox="1075 539 1198 568">WARNING</p> <p data-bbox="1075 589 1246 647">Avoid Moving Carriage</p> <p data-bbox="1075 665 1337 725">Carriage moves rapidly and can cause injury.</p> <p data-bbox="1075 745 1337 925">The Emergency Stop at the User Podium and Red and Yellow Long Sense Edges on the Gantry Beams will arrest this motion.</p>
	<p data-bbox="1075 960 1150 1028"></p> <p data-bbox="1075 1039 1198 1068">WARNING</p> <p data-bbox="1075 1088 1286 1146">High Risk Crush / Pinch Hazard</p> <p data-bbox="1075 1164 1315 1283">A high risk crushing / pinching hazard is created by the table and the gantry.</p> <p data-bbox="1075 1303 1315 1422">Gantry Z-axis motion can cause injury if body parts become trapped.</p> <p data-bbox="1075 1442 1337 1621">The Emergency Stop at the User Podium and Red and Yellow Long Sense Edges on the Gantry Beams will arrest this motion.</p>

Hazard	Residual Risk Area
	 <p>WARNING</p> <p>Gantry Movement Hazard</p> <p>The Gantry moves slowly at most times, but can move quickly at unexpected times. This has a lot of mass and can knock a person over.</p> <p>The Emergency Stop at the User Podium and Red and Yellow Long Sense Edges on the Gantry Beams will arrest this motion.</p>
	 <p>WARNING</p> <p>Carriage Vertical Movement Pinch Hazard</p> <p>High risk crush hazards are created by allowing the operator direct access to the vertical downward forces of the carriage.</p> <p>The Emergency Stop at the User Podium and Red and Yellow Long Sense Edges on the Gantry Beams will arrest this motion.</p>

Hazard	Residual Risk Area
	<p data-bbox="1054 412 1134 479"></p> <p data-bbox="1054 495 1337 568">WARNING High Risk Crush Hazard</p> <p data-bbox="1054 584 1326 976">High Risk crush hazards are created by allowing the operator direct access to the vertical downward force of the carriage when it is at its highest position and printing. The Emergency Stop at the User Podium and Red and Yellow Long Sense</p> <p data-bbox="1054 999 1294 1088">Edges on the Gantry Beams will arrest this motion.</p>

Hazard	Residual Risk Area
	<p data-bbox="986 459 1061 526"></p> <p data-bbox="986 539 1107 566">WARNING</p> <p data-bbox="986 589 1225 645">High Risk Crush and Thermal Hazard</p> <p data-bbox="986 667 1262 992">High Risk Crush Hazards and Thermal Hazards are created by allowing operator direct access to the carriage when the center maintenance panel is lowered. Motion Motors are disconnected via hardware when this panel is lowered.</p>
	<p data-bbox="986 1025 1061 1093"></p> <p data-bbox="986 1106 1107 1133">WARNING</p> <p data-bbox="986 1155 1145 1182">Crush Hazard</p> <p data-bbox="986 1205 1246 1317">Medium risk crushing hazards are created by alignment pins and the gantry rails.</p>

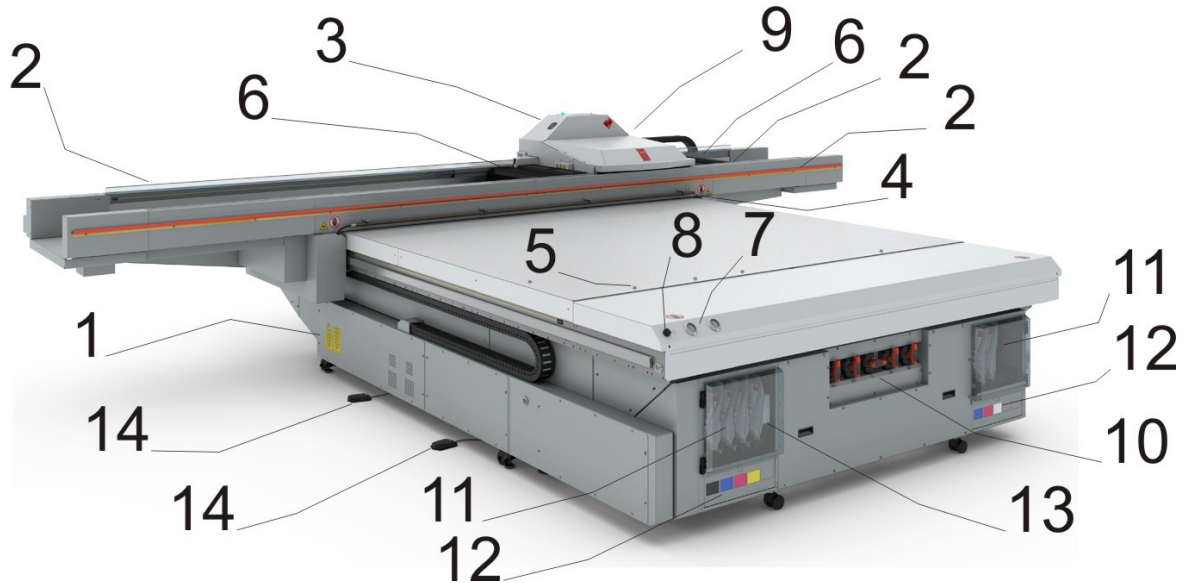
Chapter 4

How to Navigate the User Interface

Operator Interface Hardware

Introduction

The Operator interacts with printer components to print, maintain and monitor the state of the printer. This section identifies and explains the functions of the hardware.



3. Printer Hardware

Operator Interface Components

Component	Function
1) Main Power Switch	Turns the printer On and Off.
2) Emergency Stops	Emergency stop buttons can shut down all motion and hazardous systems. There are four E-stops, one on each end of the carriage, and one on each side of the gantry (long red strip).
3) Carriage	Contains the printheads and ink reservoirs and protects the Operator from exposure to UV light.
4) Static Suppression System	Reduces static charge on the media and results in less artefacts from dust and debris that affect print quality.
5) Registration Pins	The registration pins are activated manually by the operator and allow quick registration of the media.

Component	Function
6) UV Lamps	UV light is used to cure the ink.
7) Vacuum Gauges	Display the strength of the table vacuum system. If it reads less than 10"Hg, check for vacuum leaks
8) Print Button	Starts the current print job..
9) Automatic Maintenance Station	Automatically cleans the printheads and provides access to clean the underside of the carriage.
10) Vacuum Zone Control Handles	Five vacuum zone control handles determine if vacuum zones 2 to 6 on the printer table are active when the vacuum pump is switched on. Zone 1 is always on so it has no control handle.
11) Ink Bay	There are two ink bays: the Primary bay contains CMYK ink and the coolant bottle; the Secondary bay holds the Light Cyan or Light Magenta, and/or White ink.
12) Ink Filters	Ink filters are behind a door under the ink bags. The filters remove unwanted particulate matter from the ink.
13) Coolant Bottle	Provides coolant to maintain correct temperature of the ink in the printheads.
14) Vacuum Table Foot Switches	Protects the Operator from exposure to UV light and stops all motion if dislodged by an obstacle.

Printer Interface Software

Introduction

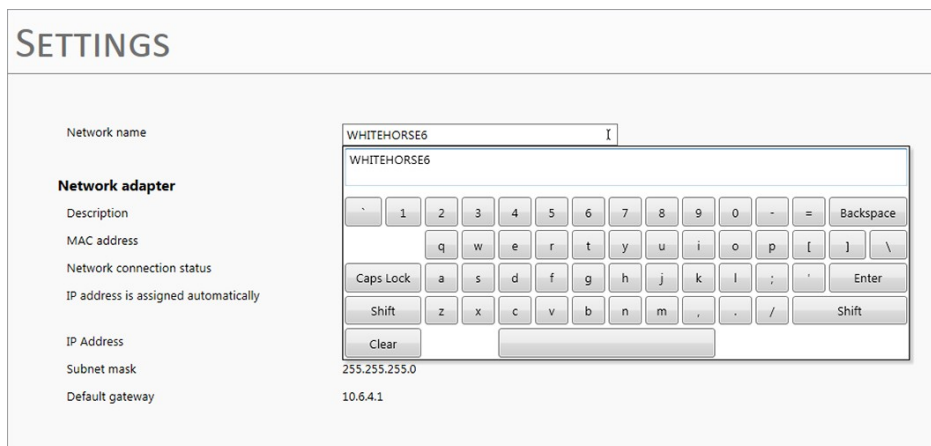
The printer software is displayed on the LCD monitor. The interface has six main modules that are accessed by tabs located at the bottom of the display. Click on these tabs to access the modules. Print Job Control is the default module displayed when the software has finished loading after the printer is switched on or reset.

The Print Job Control display is divided into functional and status areas. The functional areas support all operator input necessary to operate, maintain and service the printer. The status areas are used to report printer status.

Onscreen Keyboard & Numeric Keypad

A mouse is used as the input device to navigate the menu-based interface. For operations that require operator input, the mouse is used to select either numeric characters from a virtual keypad or alphanumeric characters from a virtual keyboard. These virtual input screens are displayed on the interface LCD monitor when data entry is required.

Virtual Keyboard



4. Virtual Keyboard

Operator Interface Module Tabs



5. Interface Tabs

Interface Modules

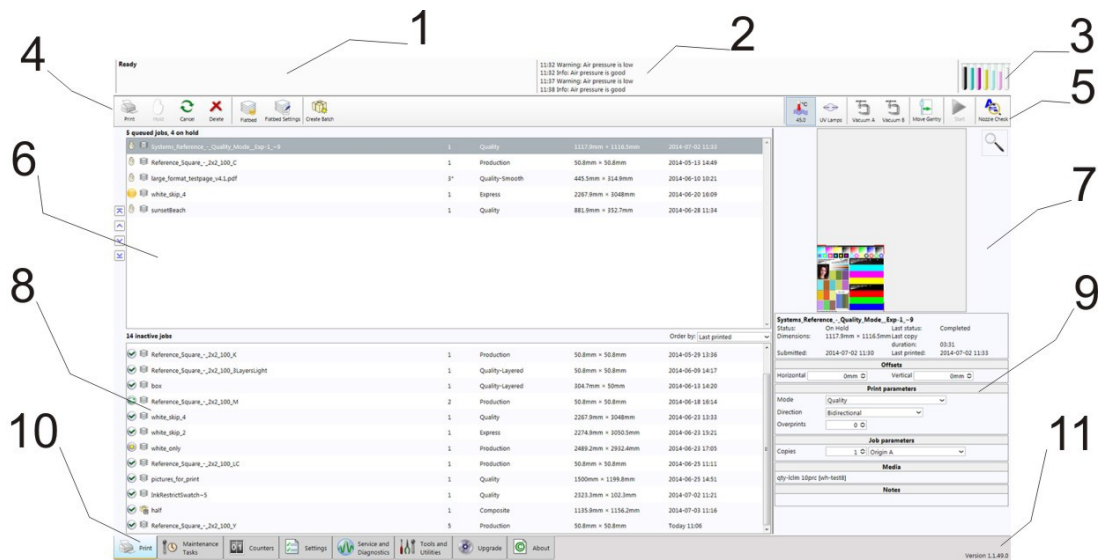
Component	Function
Print Job Control (Print tab)	Provides management of all aspects of working with print jobs. It also controls some features of the printer.
Automatic Maintenance (Maintenance Tasks tab)	Displays Automatic and Manual Maintenance tasks you must perform and indicates when to do them. After you perform each task, the printer will record that and then calculate when the task must be performed again. At that time you will be reminded that the particular maintenance task is due.
Printer Counters (Counters tab)	Provides information about the amount of ink consumed, the amount of media printed and the number of print jobs started. Also provides counters for the UV lamp bulbs use.
Printer Settings (Settings tab)	Displays information about, and also allows you to change various aspects of the printer: Date and Time, Network Connections, User Interface and Printer Settings.
Service and Diagnostics	This area is reserved for use by trained field service technicians.
Tools and Utilities	Provides access to Automatic Maintenance, Special prints, Shutdown, and Log files.
Software Upgrade (Upgrade tab)	Allows you to update the printer to the latest version of the printer software and firmware.

Print Job Control Module

Introduction

Print Job Control is the first module displayed when the printer software is loaded. From this module you can manage all aspects of working with print jobs and also control many features of the printer. The table "Job Control Panels" documents the numbered callouts and the rest of this section explains each of these areas in more detail.

The Print Job Control display is divided into functional and status areas. The functional areas support all operator input necessary to operate, maintain and service the printer. The status areas are used to report image and printer status.



6. Print Job Control

Components of the Print Job Control Module

Job Control Panels

Component	Function
1) Job and Printer Status	Displays the status and progress of print jobs.
2) Printer Messages Panel	Displays the last four lines of the log - click in this area to see more of the log.

Component	Function
3) Ink System Status	Ink System Status icon - click to view an ink status report.
4) Command Toolbar - Left	Displays icons for actions related to the print jobs and control of the printer.
5) Command Toolbar - Right	Displays icons for ink temperature, lamp control, vacuum pump A & B, move the gantry, start / pause print jobs, and print a nozzle check.
6) Active Jobs List	Displays a list of all Active print jobs.
7) Job Placement Preview	Displays the selected print job with a preview that shows the placement of that job on the printer.
8) Inactive Jobs	Displays a list of all Inactive print jobs.
9) Job Information and Parameters panel.	This panel shows the parameters of the currently selected print job and also allows changes to the parameters associated with that job.
10) Interface Tabs	Use these tabs to select the different modules of the printer user interface.
11) Software Version Number and Image Upload Progress	Displays the current installed version of the printer software. The image upload progress panel indicates the name of a print job that is currently uploading to the printer. This panel is not always visible and appears only when an image is loading to the printer. It is located below the software version number when it is active.

Job Control Components Explained

1) Job and Printer Status Panel

The job status panel is in the top left corner of the display screen. It shows information about the current state of the printer or job activities.

- Printer Status
- Job name currently printing
- Total copies, number of printed copies and copy progress
- Overprint progress and number of overprints if more than zero

All incoming jobs go directly into the job list or job queue.

Selecting a job in the list highlights the job and updates the job information area.

The job information area contains offsets, print quality mode information, number of copies and overprints; the name of the RIP profile used and the image to be printed is also displayed.

Jobs can be moved up or down in the list and can either be printed, held or cancelled.

2) Printer Messages (or Log) Panel

The printer status panel is in the top right corner of the display. It shows the last four lines of the printer log that contains printer errors, warnings, and information messages. To see more of the log, click on the panel to bring up a new window that allows you to scroll through the log.

3) Ink Status. Displays the current status of all ink bags.

Pause/Resume print button. This button can be used to pause or resume a print job. It is active only while a job is printing.



Note:

Use of the Pause / Resume button may cause artefacts in a print because of the uneven curing of the ink if the job is paused. Do not use this unless it is essential that the print job is paused.

Ink System Status. Click the icon to open an ink system status dialog that displays ink-related information. This includes, for each color of ink: an expiry date, ink type code, ink bag status, fill status (whether ink is being pumped into the reservoir), and whether the reservoir is full. The dialog also shows the current printhead temperature, the meniscus vacuum level, and the purge pressure.

4 & 5) Command Toolbar

The toolbar contains icons that allow you to interact with the printer (icons are listed in the table below in the order they are displayed on the command toolbar). Note that some of the icons have a checked and unchecked state with a different appearance of the icon image to reflect their state.




Command Toolbar Icons Explained



7. Command Toolbar

Component	Function
Print Job	<p>This command can do the following actions depending on context:</p> <ul style="list-style-type: none"> ▪ Activate a selected inactive job by moving it to the active list. ▪ Un-hold a held job. ▪ Un-hold a job that had an error.
Hold Job	<p>The command can do the following actions depending on context:</p> <ul style="list-style-type: none"> ▪ Put an active job on hold. ▪ Wait until the printer finishes a currently printing copy and puts the job on hold.
Cancel job	<p>The command can do the following actions depending on context:</p> <ul style="list-style-type: none"> ▪ Deactivate a selected active job by moving it to the inactive list. Note that Special Prints will not move to the inactive list. ▪ Cancel a currently printing job and moves it to the inactive list. Note that the first click cancels the print, but the carriage will continue to apply curing passes so that the ink cures properly. A second click terminates the print job immediately.
Delete job	<p>Deletes a job from the printer. However, you cannot delete a job that is currently printing.</p>
Flatbed icon	<p>Process flatbed jobs toggle command - Allows printer to process flatbed jobs. This must be selected to enable flatbed printing when the printer is booted or after re-setting the printer due to an error.</p>

Component	Function
<p>Flatbed settings</p>	<p>A dialog window automatically appears when confirmation is required. If it is closed before you select Confirm, it can be reopened by clicking on this button.</p> <p>Media Parameters Enter or confirm the thickness of the media. The printer will automatically adjust the carriage height to media thickness and also the print gap. Media thickness confirmation is required only for the first copy of a print job, unless it is changed during printing. If the media thickness value is changed while printing, confirmation is requested before printing the next copy.</p> <p>Lamp Power Control Allows the operator to control the power output of each UV lamp independently. To extend lamp life, use the lowest setting that provides adequate curing for a particular media. Leading and Trailing Edge are relative to the direction of carriage travel. To enable or disable this setting, see the User Interface section of the Settings page "Tie lamp controls together". When enabled, this feature automatically matches the power of the trailing UV lamp, when power of the leading UV lamp changes. It is still possible to adjust the power of the trailing UV lamp individually, when this setting is not enabled.</p>
<p>Create Batch Edit Batch (appears when a batch job is loaded)</p>	<p>In the Batch Mode Operation individual print jobs are sent from the RIP to the printer, and then combined on the printer to create a batch job for flat- bed printing. There are two types of batch mode jobs: Composite and Collation.</p> <p>In a Composite batch all images are printed on a single piece of media without interruption. Composite batch mode can be used to efficiently print more than three data layers and/or mix print modes for a batch job.</p> <p>A Collation batch prints a set of individual print jobs on individual pieces of media, and then repeats the number of copies of the set, as required. The gantry moves to the park position between each print job, the media is changed, and media thickness confirmation and pushing the start button is required to continue printing the next copy.</p> <p>Refer to the Chapter "How to Print in Batch Mode" for more details and examples.</p>

Component	Function
Ink Temperature Control	<p>This icon displays the current ink temperature. The ink heater must be on at all times.</p> <p>The print heads must be at operating temperature (47°C / 116°F) before a job will start printing.</p> <p> Note: If this button is flashing, it indicates an error. Click on the Ink Status button to check the ink system.</p>
UV Curing Lamp Control	<p>This icon controls the UV curing lamps. The state of the button reflects the state of the lamps. The UV lamps will timeout after 15 minutes of inactivity (time can be changed by a service technician). If the lamps are extinguished when the timeout expired, then the button changes its status to unchecked. If the lamps are off before the print starts, then the lamps are turned on automatically and the button will reflect the state accordingly.</p>
Table Vacuum	<p>These icons controls the table vacuum for Zones A & B. They duplicates the function of the table vacuum foot switches. The icon reflects the actual state of the table vacuums. There is an automatic timeout that will turn the table vacuum zones off. The actual time is set in the Settings module under Printer.</p> <p> Note: Once turned off, vacuum cannot be on again for approximately 5 seconds.</p>
Start	<p>This icon can be used to start a flatbed print job (same function as the physical button on the table).</p>
Nozzle check	<p>This icon populates the active job list with a job that prints a nozzle check pattern. The nozzle check print is used to identify nozzle dropouts that can cause banding and other print quality problems.</p> <p> Note: For information on how to use the nozzle check to troubleshoot nozzle dropouts, see the Printhead Maintenance section in the Maintenance chapter.</p>

6) Active print Job List

The active job list consists of a table, job count summary on top and job order control buttons on the left. A job count summary displays total number of active jobs and number of jobs put on hold. Job order control buttons can be used to change order of jobs queued for printing. The active job list has the following features:

- All incoming jobs received from the ColorGATE Productionserver workflow (or other supported RIPs) go directly into the active job list.
- After a job is printed it automatically moves from the active to the inactive job list.
- The operator can drag and drop jobs to move them between the active and inactive job lists (except for a job that is being prepared to print).
- All the jobs are stored locally on the printer hard drive.
- Selecting a job highlights the job and updates the job information area.
- Jobs can be moved up/down in the active list using the button on the left. Jobs can be printed, held, cancelled or deleted. Jobs cancelled from the active list are moved to the inactive list.
- Deleted jobs are removed from the hard drive and are no longer accessible (except for Special Prints, which cannot be deleted).
- The current job being printed can be paused or canceled. A cancelled job will move from the active to the inactive print job list.
- A job count summary displays the total number of active and inactive jobs and the number of active jobs on hold.

7) Job Placement Preview

The table placement preview shows the print location and a proportional representation of the image in relation to the table. The zoom button in the bottom right corner activates a popup preview window. If a preview image is not available, an approximately sized white box is used as a placeholder, and the zoom button is not displayed.

The preview image can be positioned by dragging it around the window (this will automatically update the offsets fields).

When an image is out of bounds in the actual table area, that area in the table preview is marked in red.

When an image is out of bounds in the bleed region, that area of the table preview is marked in yellow.

8) Inactive Print Job List

The inactive job list consists of a table and job count summary on top. A job count summary displays the total number of inactive jobs. The list can be sorted by clicking on the appropriate column header.

The icons in the first column reflect the job type and status and can be used to sort the list. The size column is sorted by image area. Date column is sorted by a compound value of date and time. The inactive job list has the following features:

- The operator can drag and drop jobs to move them between the active and inactive job lists.
- Jobs deleted from the inactive list are deleted from the hard drive.
- The operator can automatically set the status of a job to Hold when the job is put in this queue. This can be set separately for flatbed and roll media jobs.

9) Job information and parameters panel

The job information area displays only relevant job parameters of the current print job. Some of the parameters may be modified.

Offsets	A job's vertical and horizontal offset parameters can be changed with the mouse wheel when the mouse cursor is positioned over the field. Rotate the mouse wheel up or down increments or decrements offset at the rate of one unit per notch. Hold the right mouse button and rotate the wheel increments or decrements at the rate of 10 units per notch. An alternate method to change parameter values is to click on the field and this brings up an onscreen keyboard so you can click on the numbers required. You can also use Preview to drag an image to the desired position.
Print Parameters	<p>Displays information about the print job that is currently selected:</p> <ul style="list-style-type: none"> ▪ Print Mode - Print modes are selected in Productionserver: Express, Production, Production-Squared, Quality, Quality-Density, Quality-Layered or Quality-Smooth mode.. See "Print Modes Explained" below for details of each mode. ▪ Direction - Bidirectional and Forward or Reverse unidirectional printing. ▪ Overprints - If the Overprint count is set to greater than 0 (zero), the printer will re-print the image again on the same piece of media.
Job Parameters	<ul style="list-style-type: none"> ▪ Copies - use the mouse to increase or decrease. ▪ Origin – Allows selection of either Origin A, Origin B or Dual Origin. ▪ Media - Media profile selected in Productionserver. ▪ Notes - Appears only if a note was specified for the job.

Print Modes Available

- Express
- Production
- Quality
- Quality Density
- Quality Smooth
- Quality – Layered (2 layers)
- Quality – Layered (3 layers)

Print Modes Explained

- **Express** mode provides fast printing but image quality depends on all nozzles jetting ink. It is best with images that do not have large areas of solid color or high saturation.
- **Production** mode allows a wide variety of printing output. As with high-speed modes on any inkjet printer, there is insufficient nozzle redundancy to produce flawless images all the time on all media. As a result, it may be necessary to print some output in Quality Mode.
- **Quality** provides excellent image quality and is suitable for a wide range of image types and looks good with most media.
- **Quality-Density** doubles the density for backlit media. For flatbed media that may warp or move slightly from the heat of the lamps, this mode provides better image registration than Overprint because it is done in one gantry pass.
- **Quality-Smooth** mode is a slower version of Quality mode that features unusually high nozzle redundancy. Although not an excuse for poor maintenance practices, this print mode allows most technically difficult images to be printed successfully, even if the printer is in less than optimal printing condition.
- **Quality-Layered** allows you to place multiple layers in one print job. It is most useful when printing with White Ink (see “How to Work with White Ink”). You must configure any extra layers in the ColorGATE software.



Note:

When Quality Density or Layered mode is used, there is a pull-down menu in the Print Job module that allows you to select either Quality-Layered or Quality-Density (the menu allows you to change how it was configured in your ColorGATE software).

10) Printer Interface Module Tabs

These tabs allow you to switch between different functional modules of the printer. Click on a tab to display the screen associated with each of the modules available.

11) Software Version Number and Image Upload Progress

Displays the version of the currently installed printer software.

The image upload progress panel indicates the name of a job that is currently uploading to the printer. This panel only displays information while an image is transferred from the Productionserver computer.

Maintenance Tasks

Introduction

Regular maintenance is very important to ensure the best image quality from your printer. In order to help you remember and maintain the proper schedule, the Maintenance Tasks module provides a list of the important tasks you must perform and indicates when you must do them. After you perform each task, click the Done button and the printer will record that and then calculate when the task must be performed again. At that time you will be reminded that the particular maintenance task is due. It is possible to postpone the task for a short time but the printer will remind you with a message periodically until the task is completed. Although you can select Done or Postpone even if the task is not complete, it is in your best interest to follow the recommended schedule. If you do not follow the maintenance schedule, image quality will decrease and printhead replacement frequency and costs will increase.



Note:

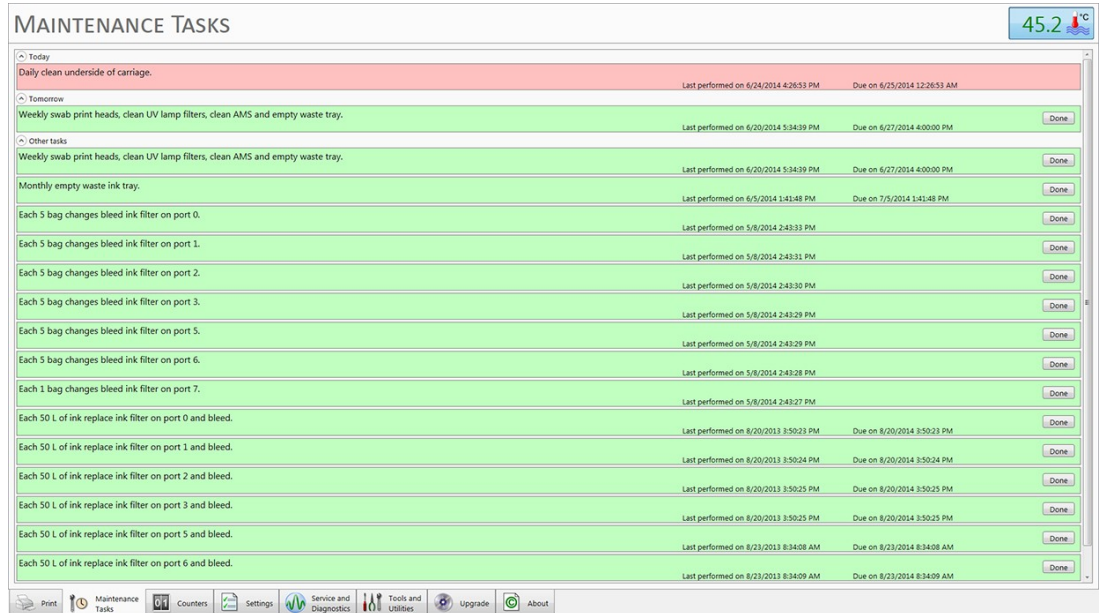
If you have not performed your daily Automatic Printhead Maintenance, a dialog box appears with a query to Perform or Postpone this task. If you choose to perform Automatic Printhead Maintenance the Periodic Maintenance screen will appear and the ink temperature is displayed. When you have selected the ink colours that need maintenance and either a Short or Long Purge, and if the ink is at jetting temperature, you can perform Automatic Printhead Maintenance.

The Importance of Printhead Maintenance

Daily printhead maintenance and ongoing care and cleaning of your printer are essential to good image quality.

- Improper or infrequent printhead maintenance is one of the main factors contributing to premature printhead failures.
- Improper printhead maintenance causes banding and reduces image quality.
- Pay attention to the conditions of the workplace environment as detailed in the Site Preparation Guide
- Use the cleaning methods and the maintenance schedule documented in this User manual.

Illustration



8. Periodic Maintenance

Component – function table

Maintenance tasks based on period.

Period	Task
Daily	Clean carriage underside, AMS, Ink Spit Tray, clean glass for air bearings rails, and perform Automatic and Manual printhead maintenance: (See the Maintenance section).
Weekly	Check UV lamp filters (change them every two weeks), and empty ink waste tray. You can change the day of the week and the time some reminders are displayed in the Settings Printer menu.
Monthly or as needed	Check coolant levels.
Every five ink bag changes (one for white ink)	Bleed the ink filters (See How to Change Ink Filters in the Maintenance section).
Yearly (or 50 liters of ink)	Replace and then bleed the ink filters for that color ink (see How to Change Ink Filters in the Maintenance section).

Counters Module

Introduction

The Counters module displays counters that are of interest to the operator. It shows counters for each color of ink and the total ink used. It also shows the number of hours a UV lamp was used since last changed. Some of the counters can be reset.

Illustration

COUNTERS

	Master Counters		Cumulative Counters		Resettable Counters	
	Total	Units	Total	Units	Total	Units
Prints Completed	892		886		25	
Printed Area	4969.104	m ²	5088.326	m ²	101.158	m ²
Printing Time			147.2	hours	3.5	hours
Cyan Ink Consumed			3.193	liters	65.0	milliliters
Magenta Ink Consumed			4.550	liters	84.2	milliliters
Yellow Ink Consumed			6.020	liters	242.7	milliliters
Black Ink Consumed			2.558	liters	41.9	milliliters
White Ink Consumed			2.823	liters	15.4	milliliters
Light Cyan Consumed			2.594	liters	355.0	milliliters
Light Magenta Consumed			3.091	liters	394.5	milliliters
Total Ink Consumed			24.829	liters	1198.8	milliliters

UV Bulb Life Counters		
Counter	Hours	
UV Bulb Life - Left Lamp	475.210	Reset
UV Bulb Life - Right Lamp	475.090	Reset

9. Counters Module Screen

Component – function table

Counters explained

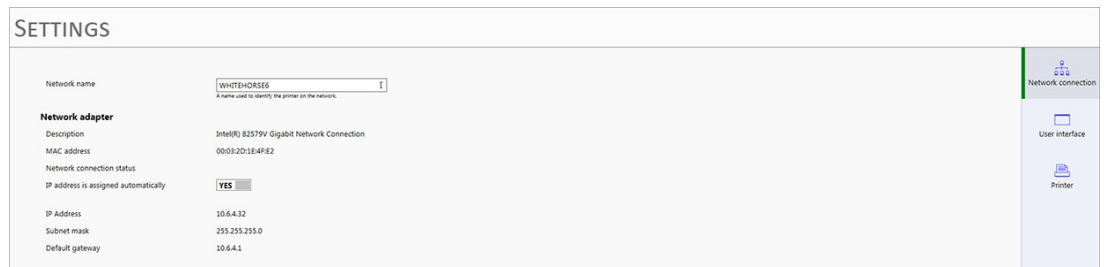
Component	Function
Non-resettable counters	These counters display a cumulative total of ink consumed or area printed over the whole life of the printer.
Resettable counters	These counters display a cumulative total of ink consumed or area printed since the Reset button was last pressed. Time and date of last reset is displayed, if available.
UV Bulb Life	Displays the hours of lamp use since the last reset. Always set the count when you change a bulb.

Settings Module

Introduction

The Settings Module allows you to review and change the date and time, network connection settings, user interface configurations, printer settings and, if installed, the Roll Media settings.

Network Connections



10. Network Connections

- Network Name
- Network Adapter Name
- MAC Address
- Network Status
- IP Address is assigned automatically (see DHCP note)
- IP Address
- Subnet Mask
- Default Gateway

**Note:**

A network name for the printer cannot consist of numeric characters only - it must be a mix of alpha-numeric characters.

If the Printer name is changed, the printer must be restarted for the change to take effect. If any settings require a printer restart, a reminder will be displayed when that settings is selected.

**Note:**

Typically, DHCP is used to automatically obtain network settings. If "Use DHCP" is selected, the only thing you might want to change is the network name of the printer. The settings are displayed to troubleshoot possible network connection problems. One situation that would require changes is if your network does not use DHCP to automatically obtain network settings. In this case network settings have to be entered manually. If you don't know how to do this, bring in a network consultant to determine what the setting must be for the network (alternately, you can purchase a DHCP router for your network that will automatically supply the network settings – most modern modems use DHCP).

User Interface Settings

SETTINGS

General

Language: English (US) Select user interface language

Measurement system: Metric Select measurement system to be used across user interface

Date format: YYYY-MM-DD

Time format: 24 hour format

Jobs

Display job timestamp: Last printed

Hold job on enqueue: Do not change Hold job or not automatically when job is added to the queue

Delete jobs without confirmation: YES

Tie lamp power controls together: NO Specifies whether to set trailing lamp power automatically

Network connection

User interface

Printer

11. User Interface Settings

Settings Available

The user interface allows you to change the following features:

- Language
- Measurement Units
- Date format
- Time format
- Display job/time
- Tie lamp controls together
- Hold on active
- Job delete confirmation
- Screen saver
- Screen saver timeout
- Monitor power off timeout

Printer Settings

The screenshot shows a 'SETTINGS' window with two main sections: 'General' and 'Printing'. On the right side, there is a vertical navigation menu with three items: 'Network connection', 'User interface', and 'Printer', with 'Printer' being the active selection.

Section	Setting Name	Value	Description
General	Underlay thickness	50	Specifies underlay thickness.
	Table vacuum timeout (min)	10	Specifies table vacuum timeout in minutes.
	Ionizer bar	YES	Controls whether the ionizer bar is on when printing.
	Beep on print	YES	When enabled, the printer beeps once at the beginning and twice at the end of printing cycle.
	Media registration pins behavior	Independent of vacuum	
Printing	End of swath delay (s)	0	Specifies end of swath delay in seconds.
	Full carriage travel	NO	Specifies that the carriage should travel the full table width.
	Blank space skipping	NO	When enabled, may increase throughput by skipping blank space in the gantry direction.

12. Printer Settings

Allows you to set the following:

- Underlay thickness
- Table vacuum timeout
- Beep on Print
- End of swath delay
- Full carriage travel
- Blank Space Skipping

Tools and Utilities Module

Introduction

The Tools and Utilities Module has four sub-modules: Maintenance, Special Prints, Shutdown, and System Logs. When you click on the Tools and Utilities tab, Automatic Maintenance always appears first. Click on the other icons to access the sub-modules.

- **Maintenance** allows you to perform Automatic or Manual maintenance.
- **Special Prints** provides special prints for various purposes, such as reference, adjustment and alignment. Some are for operator use and others are for service technician use only.
- **Shutdown** provides a way to properly power down the printer.
- **System Logs** allows the operator to generate log files for service diagnostics and troubleshooting purposes.

Maintenance

Refer to the sections “Automatic Printhead Maintenance” and “Manual Printhead Maintenance” in Chapter 11 for instructions.

13. Tools and Utilities - Maintenance

Special Prints

The Special Prints module displays two lists. The list on the left shows the available special prints. Some of these prints are used by service technicians to adjust and troubleshoot the printer. Some are of interest to the Operator: the Ship print, the table ruler prints and the Nozzle Check print.

Special Prints of Interest to the Operator

- The **Ship print** is used to determine that the printer output meets quality standards. A ship print that is printed at the factory is shipped with each printer. It can be used as a comparison with one printed at the customer site.

- The **Table Rulers** are meant to be printed on the table to assist you to place media. These images are set up to print on the horizontal and vertical axes of the table. They are available in either metric or imperial measurements.
- The **Nozzle Check** is used to determine if there are any clogged nozzles that can affect print quality (note that it is also available on the command toolbar in the Print Job Control module).

The list on the right shows all active jobs that are currently in the print queue. Add a special print from the left into the right list to make it active in the Print Job Control module. If you remove a job from this list, it is also removed from the Active job list and is not available to print. Special print instances that are removed from the Active list do not go to the Inactive list; they are simply removed.



14. Tools and Utilities - Special Prints

How to Load a Special Print

- 1) Click a special print to select it in the left window.
- 2) Click the Add button to place it in the print queue on the right.

That special print is now available in the Active job list of the Print Job Control module.

How to Print a Special Print

Go to the Print Job Control module to actually print the special print. It will appear in the active job list and is printed like any other print job.

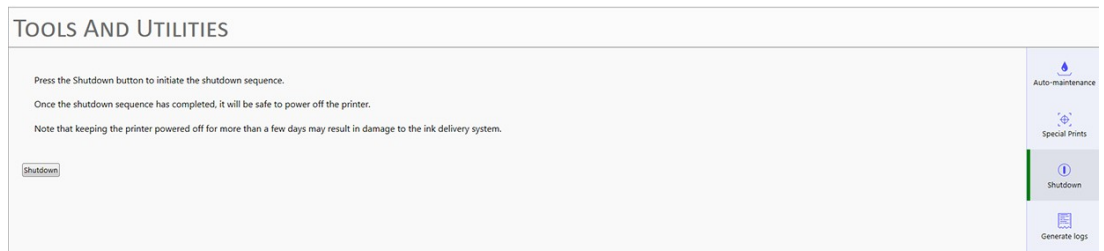


Note:

Refer to the sections that document the special prints for details on printing. For example, the Nozzle check print is documented in "Manual Printhead Maintenance" in Chapter 11. Note that some of the special prints are meant for service technicians only and are not for use by the printer operator.

Shutdown

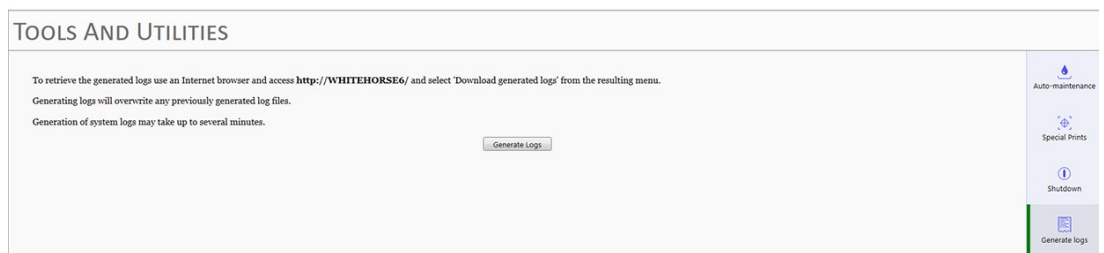
Use the Shutdown icon when you need to turn the printer power off. The printer should be left powered On at all times but there are some exceptions such as some service procedures, or if the printer requires a reboot. Refer to the section “How to Prepare the Printer for Idle Periods”.



15. Tools and Utilities - Shutdown

System Logs

The System Logs are raw data log files for service diagnostics and troubleshooting purposes. They are meant for service technicians only. Generate system logs only when requested to by a Fujifilm service technician and follow the instructions they provide for retrieval of the files.



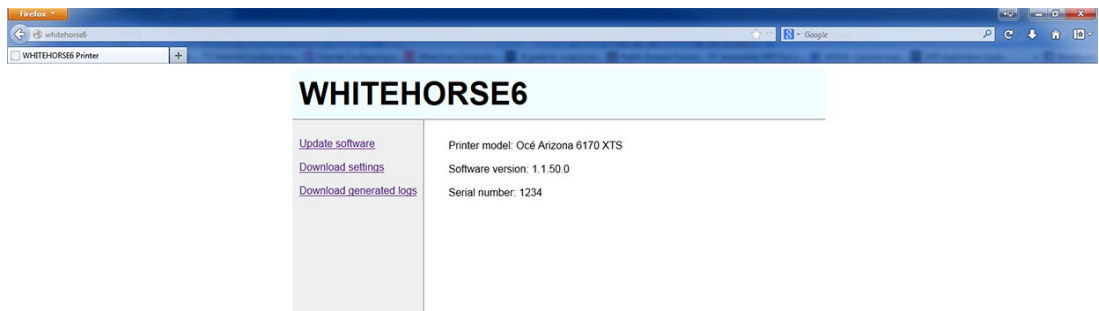
16. Tools and Utilities - System Logs



Note:

When System Logs are generated, any previously saved log files are deleted. Therefore, do not generate a second batch if you have just recently generated log files (unless requested to do so by a service technician).

Use your internet browser to access the log files. Enter the network name of your printer found in Settings / Network - e.g., if the network name is whitehorse6, then enter **http://whitehorse6** in the browser address field.



17. Log Files

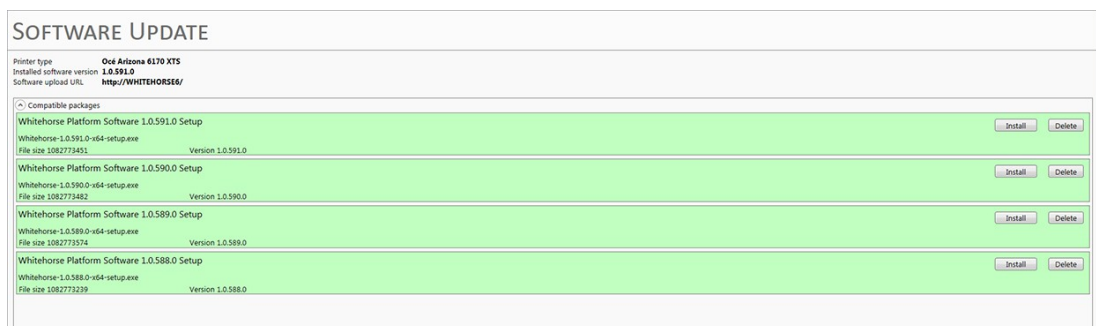
Click on **Download generated logs** and select the log file of interest. Save it to a location where you can find it to add to an email that you will send to the service representative who requested the log.

Software Update Module

Introduction

As we are committed to improve and refine the quality and functionality of the Acuity F series printers, there will be periodic upgrades to the underlying firmware and printer software. Software updates are available only to customers with a service contract. Your local service representative will either install the upgrade or provide you with the upgrade file in some circumstances. The Software Update screen will show you previous updates that were installed.

Software Update Module



18. Software Update Module

How to Upgrade the Firmware and Software

Your dealer or service representative will advise you when an upgrade of the printer software is necessary. If they request that you install the upgrade, instructions will be provided with the upgrade file.

Chapter 5

How to operate your Acuity F Series Printer

Training Requirements

Introduction

The operator must receive training for safety issues, printer operation, and the ColorGATE Productionserver software prior to operating the printer.

Safety Training

Before operating the Acuity F Series printer, make sure you have read and understood all of Chapter 3 "Safety Guidelines"

Fujifilm Operator Training

For optimal safety and print quality, all printer operators must have received training by qualified Fujifilm service personnel. Fujifilm training provides a general orientation to printer safety and operating procedures. This User Manual is not a substitute for official training.

ColorGATE Productionserver Training

Maximum performance from the printer requires a properly trained operator. Fujifilm trains the operator in the use of the printer hardware and software at installation. However, this is not a substitute for formal training.

Operators must be fully versed in the operation of ColorGATE Productionserver software. For any operator unfamiliar with their operation, Productionserver training is required. Training courses are available; contact your local representative for details of a ColorGATE-certified training program.

How to Power the Printer ON

Introduction

This section describes how to switch the printer On and Off. When the printer is switched On, the interface software is displayed on the LCD monitor that is located on the Operator Control Station. From there the operator can access and control the printer. We recommend that you leave the printer powered on at all times. However, if the printer is switched Off for extended periods, there are procedures to follow that are documented here.

Before you begin

Before you apply AC power to the printer, make sure that loose objects such as clothing, tools and cleaning materials are not interfering with the printer mechanisms. Position the power cord so that it does not pose a hazard when walking around or moving media or other objects near the printer. The printer has an AC power switch that turns the printer On or Off. The switch also functions as an AC power lock-out switch. It is located at the end of the printer, as seen below.



Caution:

THE SOCKET OUTLET MUST BE INSTALLED NEAR THE EQUIPMENT AND BE EASILY ACCESSIBLE. Ensure that you follow the guidelines in the Site Preparation Guide before plugging the printer AC power plug into the socket.



Attention:

Unplug the AC power cord from the printer to completely isolate the electronics of the printer, especially when you move or service the printer.

Procedure

1. Ensure that the AC power plug is properly seated.
2. Turn on the AC power On/Off switch.



3. If it is not already on, turn on the power of the Control Station LCD monitor.
4. During the boot-up procedure, the printer software is automatically started. The software displays a splash screen.
5. The splash screen will show initialization messages and then the Print Job Control screen appears. The initialization is complete when the top left panel of the display shows "Ready". Your printer is now ready for use.

How to Power Off the Printer



Attention:

After powering the printer On, leave it running continuously, even when at idle. Failure to leave the printer powered on may result in ink draining out of the ink reservoirs. It may also result in damage to the printheads. Leave the printer powered On at all times, unless service to electrical components is required.



Note:

The printer is designed to be left powered ON at all times as only minimal power is consumed when the printer is idle.



Attention:

To maintain optimal printer reliability, leave the power on at all times. However, there are exceptions such as service procedures, or if the printer requires a reboot.

If Power Off is required:

Procedure

1. Turn off the UV lamps.
2. Wait for the lamps to cool down (fans will stop).
3. Click on the Shutdown icon in the Tools and Utilities tab to exit the printer software.
4. Turn the AC power switch to the OFF position.
5. Turn the power back on when the service or procedure is complete.



Note:

Avoid Extended Power Off

If the power is switched off for only a short period (for example, when the printer is shut down and then immediately restarted to correct an electrical problem or other troubleshooting), no special action is required at start-up. However, if it is necessary to leave the printer idle for an extended period refer to the table below. Also, perform Automatic and Manual Maintenance when you start to use it again. We recommend that you leave the printer powered ON at all times except for service or repair.

How to Lock Out the Printer

Apply a lock and tag-out label to the Lock-out are of the AC power switch for the duration of any service or maintenance procedures.

How to Prepare the Printer for Idle Periods:



Attention:
Do not turn off the printer during these idle times.

15 to 30 minutes	<ul style="list-style-type: none">▪ Turn off lamps
30 minutes to 24 hours	<ul style="list-style-type: none">▪ Turn off lamps
24 to 72 hours	<ul style="list-style-type: none">▪ Turn off lamps▪ Perform Automatic Maintenance when the ink temperature is at least 40° Centigrade (104° Fahrenheit)▪ Print a Nozzle Check print▪ Agitate the white ink bag
3 to 14 days	<ul style="list-style-type: none">▪ Turn off lamps▪ Perform Automatic Maintenance when the ink temperature is at least 40° Centigrade (104° Fahrenheit)▪ Print a Nozzle Check print▪ Perform Daily Maintenance▪ Drain the white ink channel and replace with flushing solution
Longer than 14 days	<ul style="list-style-type: none">▪ Contact your local service representative if you need to prepare the printer for longer term storage

How to Set Up a Print Job

Introduction

This section explains how to select an image to print on your printer. The basic steps are outlined here and explained below. More detailed explanations for some of these steps are available in Chapter 4 “How to Navigate the User Interface”.

- Prepare a digital image using ColorGATE Productionserver (or other supported RIPs)
- Print the job from ColorGATE Productionserver (or other supported RIPs) to the printer
- Perform Printhead Maintenance (if this is the first print of the day)
- Select the job to be printed and check the Print Parameters
- Measure Media Thickness
- Select the Print Icon, select Print Mode, and Confirm Media Thickness
- Prepare the media for Printing
Place and register the media on the Printer Vacuum Table
Select Active Print Zones
Mask the remainder of the Active Vacuum Zone not covered with media
Turn On the Table Vacuum
Clean the media, if required
- Check the table to make sure that there are no obstacles that can interfere with the travel of the gantry or carriage
- Start the Print

Prepare a Digital Image with Productionserver

Operator must be trained to use Productionserver (or other supported RIPs). Training is provided by the RIP software supplier.

Print the Job from ColorGATE Productionserver

When the job is sent from Productionserver (or other supported RIPs), the job transmission progress is indicated in the lower right corner of the User Interface display. After the transmission has completed it will appear in the list of Active print jobs in the Job Control Module.

Perform Printhead Maintenance (if this is the first print of the day)

Refer to the Maintenance section in this manual for details. This must be done at the beginning of the work day or when image quality problems, such as banding, appear.

Measure Media Thickness

Use a digital slide caliper or micrometer to accurately measure the media thickness of the media. An error in measurement of media thickness will affect bi-directional alignment and can contribute to the amount of graininess in the printed image or cause a carriage/printhead crash with the media.

Set the Printer to Flatbed

Select the Flatbed button on the toolbar to prepare the printer. This is required only when the printer is initially started, or if it is reset due to an error condition.

Select Job to Be Printed, Check Print Parameters and Verify Media Thickness

Click on the job to be printed from the active job list to select it. After it is selected the parameters on the job information and parameters panel will be displayed and may be modified if desired. Refer to the section Graphical User Interface Display for details on what is displayed and how to modify the job information.

Select Print Icon, Print Mode, and Confirm Media Thickness

When you select the Print toolbar icon it will gray-out the icon and the hand icon to the left of the job to be printed will turn green.

When printing Flatbed mode and Flatbed icon on the command toolbar is not selected, select it. Similarly, if printing in roll mode and the Roll icon is not selected select it.

The print job's icon should change to red/orange, and also the Pause icon and Confirm thickness buttons should appear in the command toolbar right beside the Media thickness field.

Enter the measured media thickness value in indicated measurement units.

Select the 'Confirm thickness' button.

Prepare Media for Printing

Place and Register the Media on the Printer Vacuum Table

Place the media on the table in the orientation that matches the job to be printed and register the media to the print origin. In the next section there are more details on how to perform the following actions.

Select Active Vacuum Zones

Select the required vacuum zones to hold the media to the table using the table vacuum. The three vacuum zone control handles control which of the three zones on the printer table will have vacuum applied when the table vacuum pump is turned on. The vacuum zones are opened or closed using a quarter turn handle. Refer to the next section for details on the dimensions and placement of the vacuum zones.

Turn On Table Vacuum

Click on the Vacuum button in the top right corner of the printer software display to activate the table vacuum. Two vacuum foot pedal switches are also provided to help secure the media on the table vacuum. Step on the foot pedal to toggle the table vacuum on or off.

Mask Active Vacuum Zones

To hold the media to the table it is important to completely cover the selected active vacuum zones with either the media to be printed on or a masking material. The masking material should not be thicker than the media to be printed on. If a full bleed image is to be printed, the masking material should be the same thickness as the media to be printed on to prevent overspray from accumulating on the print head nozzle plates.

There is no need to mask the whole bed, simply the area of the active vacuum zone not covered by the media.



Note:

When the vacuum is switched off, wait a few seconds before you switch it on again.

Clean Media, if Required

If the media is dusty or dirty, clean it with an appropriate cleaner. If using a liquid like isopropyl alcohol, allow sufficient time to dry prior to imaging.

Start Print

The Print button is located at the corner of the table where media is loaded. Press the Print button to start the print job. If the job was selected, the media thickness confirmed and the vacuum is turned on, printing will start after the ink and lamps reach operating temperature.



Note:

When the ink is at a low room temperature it may take up to 20 minutes for it to warm up to operating temperature. The printer will not print until the ink warms up. When the printer is idle it will maintain the ink at operating temperature for two hours.



Note:

The image is printed towards the print origin instead of away from it (i.e., the last data line to be printed is the line at the print origin). The reason the image is printed in this direction is to allow the gantry to lead the image in the print direction so it does not block the image when it starts printing. Also it reduces the time it takes for the gantry to start the print.

How to Handle Media

Introduction

Fujifilm has conducted extensive testing of many media. Since your printer is capable of imaging on a wide range of material, we encourage you to explore various media so that you can establish your own criteria for achieving high quality images in your work environment.

Use ICC profiles to control ink density and to help achieve consistent color. If an ICC profile is not available for a particular media and it is not possible or convenient to create one specifically for that media, select an ICC profile for another media that is similar in composition and color and the results will very likely be acceptable. Profiles are much less media-dependant for UV ink printers than for solvent-based printers.

Definition

The term media covers a wide range of possible materials for your printer. Essentially, any material that is less than 50.8mm (2.0 inches) thick, and less than the maximum size of 1.25m wide x 2.5m long (49.2 in x 98.4 in), can be considered viable media. Some materials will hold the ink better than others, so we encourage you to experiment with media to determine what works best for your purpose.



Attention:

When printing on reflective media, we advise that you monitor the nozzle check and printhead nozzle plates. Perform additional printhead maintenance, if required, to prevent ink from partially curing/gelling on the printhead nozzle plates.

How to Handle, Store, and Clean Media

See material-specific documentation for recommended handling and storage requirements. General material storage and handling suggestions follow:

- Store media in a dry environment avoiding high temperature, high humidity, or direct sunlight. The size of the material can change according to the temperature and/or humidity changes of the working environment. Ideally, store media in the same environmental conditions as it will be used.
- Store media flat to reduce tendency to bow. Do not use creased, damaged, torn, curled, or warped material.
- Do not leave material loaded in the printer for an extended period of time. The material may curl resulting in misalignment, jams, or decreased printing quality.
- Some material has a printable side and a non-printable side. If you print on a non-printable side, adhesion and color may be affected.

- Handle media with lint-free gloves. Oil deposits from fingers will degrade print quality. Do not touch the printable side of material.
- Media must be free of lint, dust, oil or other debris. Use techniques and solutions that are appropriate to the manufacturer's recommendations.
- Use a tack cloth to clean media as it will reduce static buildup. Press lightly when you use a tack cloth to prevent residue deposit on the media.



Note:

Dirty media can affect image quality and reliability of printer output. If you wipe the media with a tack cloth before printing, it will reduce ink buildup on the underside of the carriage. The tack cloth removes static and also removes particles that tend to attract stray ink drops that result in ink buildup. Tack cloths are used by car body shops to clean cars prior to painting.

Carriage Collision Recovery

If something on the table is higher than the media (or if the media is thicker than what is actually set in the print job settings), a carriage collision may occur. If a collision occurs, the carriage will stop and display a message on the User Interface panel. After the operator clears the offending media from the table and before the next print is started, printhead maintenance must be performed (See Printer Maintenance section).

How to Handle Media with Uncured Ink

If the UV ink is not properly cured, wear nitrile gloves when you handle prints. To help ensure that the ink cures fully, set the UV lamp power as high as possible for the particular media you are using. This will minimize the risk of skin irritation and sensitization from possible exposure to uncured ink.

Media Adhesion

Some media have better adhesion quality than others. Factors such as the amount of ink used and the amount of curing energy from the UV lamps can affect adhesion.

For more information on media adhesion, see Application Bulletin 6 on the customer support web site.

Thermal Expansion of Media

When imaging on media that will expand when subjected to heat (e.g., styrene or Plexiglas, etc.), don't wedge the media by butting other material against it as this may cause the media to buckle. Also if multiple pieces of the media are used, allow enough space between the pieces to allow for thermal expansion. Placing tape on the table prior to laying down the media will prevent ink from being imaged onto the table.

Finally, if you overprint on media that expands when heat is applied, we recommend that you group the desired image with a preceding image so the printer is a consistent temperature when starting to print the desired image.

Thermal Deformation of Media

Some heat-sensitive media may deform when subjected to high heat. If this occurs you can reduce the lamp power from the default setting of 7 to find a compromise level that allows the ink to cure but does not warp the media. You can also try to print uni-directional using only the trailing lamp (to do this set the power of the leading lamp to 0).

Media Registration

Media can be registered on the table using either the built-in registration pins or the table rulers. The registration pins are activated manually by the operator and allow quick registration of the media to the printer origin. The rulers are printed on the table and provide a horizontal and vertical rule that originate from the 0,0 print origin point on the table. The rulers can also help to provide offset distances if you need to start a print away from the origin point.

Static Suppression System Reduces Static

Introduction

The Static Suppression System (sometimes referred to as an Anti-static or Ionizer Bar) is located on the gantry of your Fujifilm Acuity F Series printer. If you are experiencing static-related imaging problems this anti-static bar provides a solution to reduce static. Some rigid media can have a large static surface charge. If the charge is high enough, ink can be repelled from the media. This ink mist can show up as cloudy areas in white sections of the image. Static not only causes these printing artefacts, but can also result in excessive ink accumulation on the bottom of the carriage.

Why Static is a Problem

Many standard print materials such as PVC and acrylic are electrical insulators, and the static charge generated and held by these materials can provide some printing challenges.

Thermoplastic materials are the most common static-laden print media. Static-prone materials tend to attract dust and hair and release charges that can be felt and seen.

Purpose

Ionization is a solution to the problem of static. A common print industry method of controlling static electricity is the use of ionization. For the anti-static bar to be effective, it must be close to the media so it is mounted to the gantry at an optimal distance. The bar uses AC current to create positive and negative ions, which are attracted to the unbalanced surface of the material. This neutralizes the media and ink is more readily accepted. It is important to note that static electricity cannot be entirely eliminated; only reduced. To eliminate static electricity, something physically would have to be done to the conductivity of the material.

Humidity is also important to control static. Static-related print issues can be greatly reduced by an increase in print environment humidity. While most media will print without difficulty at humidity levels between 30 and 50%, thermoplastics will print more successfully when humidity is above 40%. Some locales, such as desert areas frequently deal with very low humidity, while other regions only experience this at certain times of the year. If a printer is installed in a low-humidity area and/or a large volume of printed work is on media that is prone to static, we recommend the installation of a humidity control system.

Chapter 6

How to operate the Vacuum System

Table Vacuum Controls

Introduction

Your printer uses a low-flow, high-pressure vacuum system to secure media for printing on the printer table. Two vacuum pumps are used to evacuate the air between the overlay and the table. Air-feed ports in the table surface connect to the vacuum pump through a series of manually operated flow valves that are operated by turning control handles. These handles are used to activate or shut down the vacuum zones. In order for the system to work effectively, during printing all the circular holes on the top surface of the overlay sheet connected to an active vacuum zone must be covered. This creates a closed vacuum system.

Illustration



19. Ink Bays and Vacuum Zone Control Handles

Vacuum Zone Control Handles

The control handles determine the state of the vacuum zones. When the handle is vertical, the zone is open and creates a vacuum in the related area. To close a zone, turn the control handle a quarter turn clockwise to the horizontal position.

Masking the Vacuum Table

If your media does not cover all of a vacuum zone you must mask the area around the media to create a closed vacuum system. Use scrap media or material that is equal to or less than the thickness of the media to mask the table. You can tell when the vacuum is sealed by the sound it makes and also by the vacuum gauge, which must read at least 20 "Hg.

Vacuum Table Foot Pedal

The vacuum foot pedal toggles the table vacuum on or off. It helps the operator to secure the media on the vacuum table since it allows hands-free operation. The vacuum must be turned on prior to starting a print, and the vacuum cannot be turned off until a print is completed.

Vacuum Gauges

The vacuum gauges are located on the table. It provides a visual representation of the actual pressure in the vacuum table system.



Note:

Use the vacuum gauges to determine if a zone is properly masked. When the active zone is properly masked the gauge will read at 20"Hg (68 kPa) or higher. Small leaks can reduce this number and therefore the efficiency of the vacuum. Porous media can also degrade the vacuum effect.

If the vacuum gauge for an active zone reads below 10"Hg (34 kPa) and you have ensured that the area is properly masked and taped off, you may have a leak in the vacuum system. Place a service call only if you determine that the zone is correctly masked and the gauge reads consistently low.

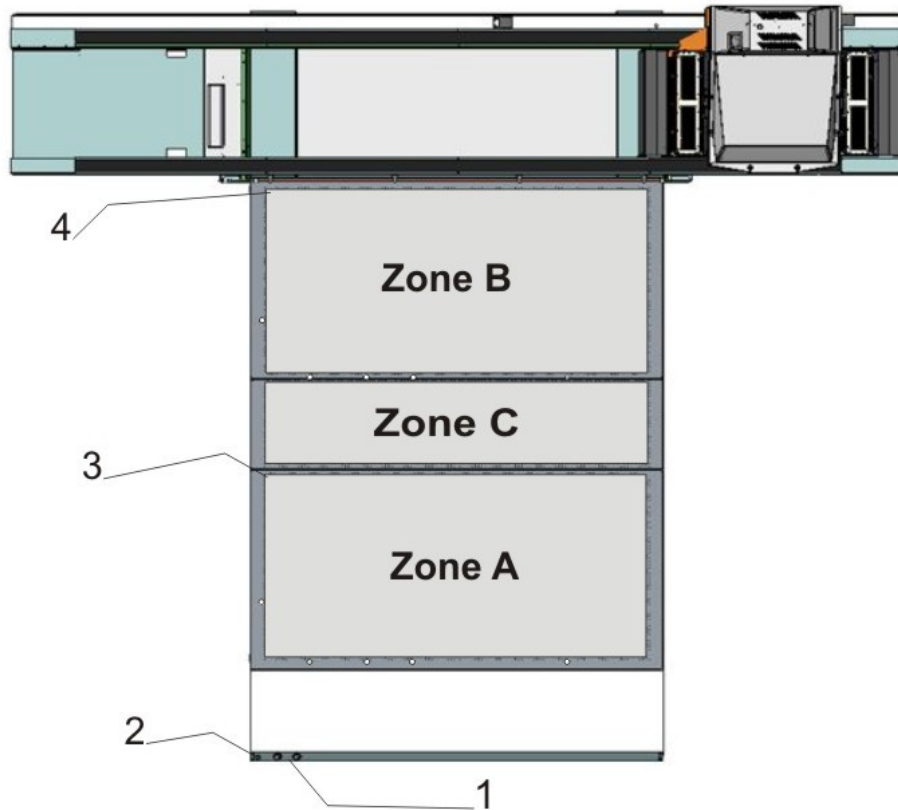
How to Maintain the Vacuum Overlay Sheet

If ink build-up occurs on the overlay sheet, remove the ink. If it is not removed, the print gap can be affected and this may affect the vacuum table's ability to secure the media properly. To remove ink we recommend that you use a paint scraper containing a straight edge razor blade (these can be found at a local hardware store). Refer to the Maintenance section for more detailed instructions.

Vacuum Zones

Introduction

The Fujifilm Acuity F series printers have two main vacuum zones that are each further divided into three secondary zones, plus a third smaller center zone.



20. Vacuum Zone Hardware

Vacuum Zone Legend

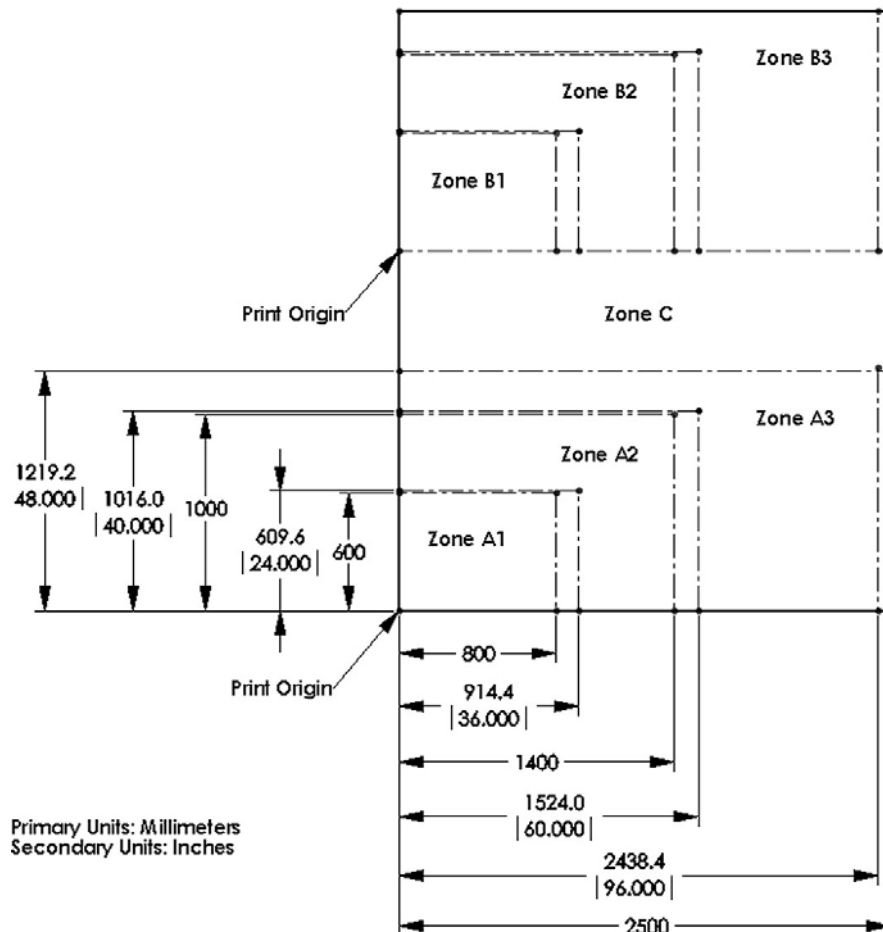
Label	Hardware Description
1	Vacuum Gauges for A and B Zones
2	Print Start Button
3	Print Origin for A Zones
4	Print Origin for B Zones

How to Use the Vacuum Zones

Introduction

The Fujifilm Acuity F Series printers use a vacuum system to secure rigid media for printing on the table. Two independent vacuum pumps provide vacuum to the table, which is divided into multiple vacuum zones. Pump 1 provides vacuum to Zone A and Zone C. The operator can control vacuum flow to Zone C with the center manual On/Off valve. Pump 2 provides vacuum to the Zone B. All printers are shipped with metric vacuum zones. It is possible to change the configuration from metric to imperial in the field by a qualified service technician (the technician who installs your printer can do this, if needed).

The independent control of the zones allows the operator to print in a 2-up configuration with minimal down time. For example the operator may remove a printed panel and register a new panel in zone A while printing continues in zone B. This is referred to as Dual Origin mode (Dual Origin printing is explained in the next section).



21. Vacuum Zone Configurations

There are three A zones and three B zones as indicated in the illustration. These zones are controlled by the vacuum handles. Zones B1 and A1 are always on when the vacuum is activated. Zones A2, A3 and B2, B3 are controlled by the position of the two left and two right vacuum handles. Zone C is controlled by the middle vacuum handle. It determines if the zone is On or Off when the vacuum is active.

Purpose

The vacuum system holds the media in place on the printer table. The zones are arranged to accommodate common media dimensions. If a zone is activated, you must mask off any part of it that is not covered by the media.



Note:

An active zone that is properly sealed will read 20" Hg or higher on the vacuum gauge. If the vacuum gauge for an active zone reads below 10"Hg (34 kPa) and you have ensured that the area is properly masked and taped off, you may have a leak in the vacuum system. However, keep in mind that lower vacuum levels will be seen when the media is porous. Place a service call only after you determine that the zone is correctly masked and the gauge reads consistently low.

How to Use the Zones

1. Place media on the table.



Note:

To place media at the Print Origin B (Origin A is the default) you need to set that up either in the RIP software or after the job is sent in the Print Job screen (this is explained in the section "How to Print with Dual Origin").

2. Mask off any areas of the active vacuum zone(s) that will not be occupied by the media.



Note:

The media can occupy more than one zone, but if a zone will be active, all of the area not covered by the media must be masked so that all vacuum holes are covered. If the Center Zone is not occupied by media it can be turned Off with the manual valve located at the Zone 1 end of the printer.

3. Activate the zones you wish to use either with the icon on the command bar of the Print Job module or with the matched foot switch (A or B) on the floor.
4. Start the print job either with the Start icon on the command bar or with the Print Start button located near the vacuum gauges.
5. De-activate the zones with either the icon or the foot switch once the image is printed.
6. Remove the media.

Chapter 7

How to Print in Batch and Dual Origin Modes

How to Print With Dual Origins

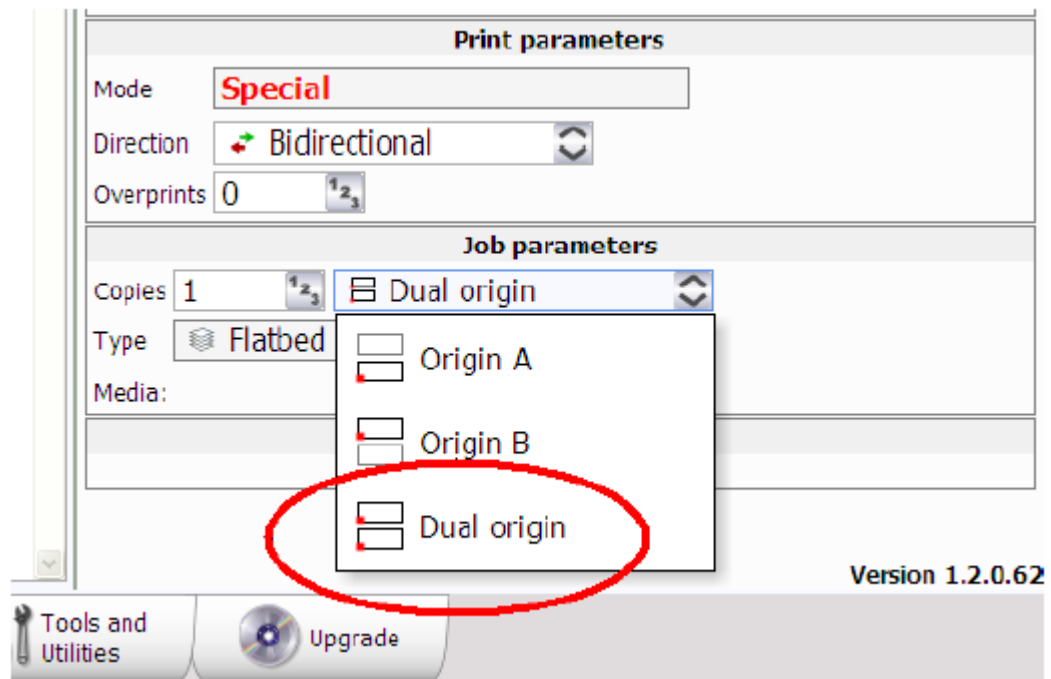
Introduction

Due to the large table size and the vacuum zone arrangement of the Acuity F Series printer, it is possible to print in an alternating 2-up arrangement using Origin A and Origin B for placement of the image.

Purpose

Dual Origin is used to print more than one copy of a specific print job on media not larger than 1.25 x 2.5 meters (4 x 8 feet). This allows greater productivity when printing multiple panels.

If the dimensions of your image are not greater than 1.25 x 2.5 metres (4 x 8 feet), the Dual Origin option is available from the Job parameter menu.



22. Dual Origin option

Procedure

1. Add your image to the active print job queue and then select it.
2. Enter 2 or more copies in the Job Parameters Copies field.
3. Click on the Enable Dual Origin box when it appears to make it active.



Note:

When Dual origins is enabled, a scaled view of the image appears on the screen preview in Zone A and a bounding box that represents the image appears in Zone B. Both images are displayed at their respective origin points. If you move the primary image in Zone A to a new origin (enter new offsets), both images will then print from that changed relative origin point. The red cross-hatched area is a reminder that it is not possible to print in the Centre zone when dual origin is selected.

4. Place media in Zone A, mask off any unused areas, and then turn On the vacuum.
5. Press the Start button to begin the print in Zone A.
6. Place media in Zone B, mask off any unused areas, and turn On the vacuum. The printer will pause over the Center Zone after the Zone A print is complete and then start to print in Zone B.



Note:

The printer will not print in Zone B if the vacuum is not On. It will display "Waiting for Table Vacuum" and wait in the Center Zone until the vacuum is On and then will also require that you press the Start button. The vacuum must be cycled Off and then On again in alternating zones before the next print will begin while Dual Origin is enabled.

7. If additional copies of the print were indicated in Step 2, then repeat Steps 5 to 7 (in alternate zones) for the total number of prints required.

Result

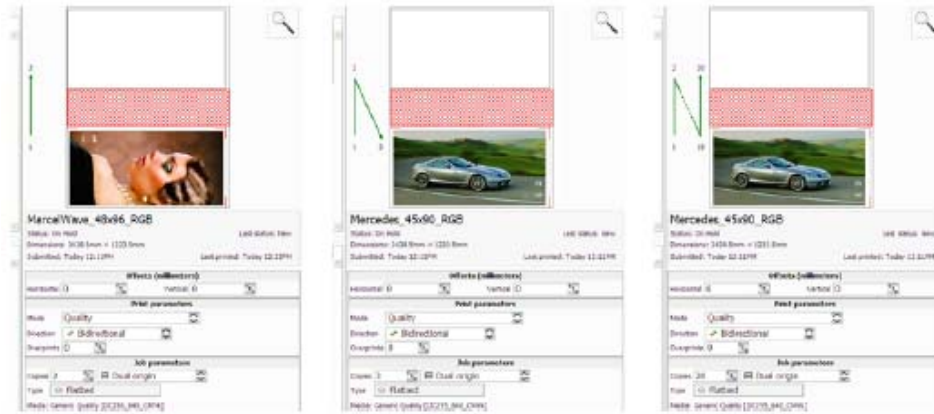


Figure 23. Dual Origin print example



Note:

The green arrows show the order in which images are printed in Zones A & B when Dual Origin is selected.

How to Print in Batch Mode

Introduction

In Batch Mode, individual print jobs are sent from the RIP to the printer, and then combined on the printer to create a batch job for flatbed printing. There are two types of batch mode jobs: Composite and Collation.

Composite

All images are printed on a single piece of media without interruption. Composite batch mode can be used to efficiently print more than three data layers and/or mix print modes for a batch job. The first print job is printed, and then the gantry moves to the start position for the second print job and prints the second print job, this continues until the last print job is printed and then the gantry moves to the home position to complete the batch job.

Collation

Collation batch mode prints a set of individual print jobs on individual pieces of media, and then repeats the number of copies of the set, as required. The gantry moves to the park position between each print job, the media is changed, and media thickness confirmation and pushing the start button is required to continue printing the next copy.

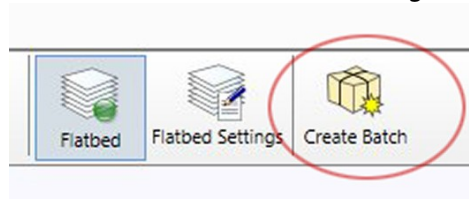
For example:

- If you want to collate 3 print jobs (J1,J2,J3) and print two 2 sets, the print order of the collated batch job would be J1,J2,J3,J1,J2,J3.
- If you want to print 3 copies of the same job double-sided with different images front (F) and back (B), the print order would be F,B,F,B,F,B.

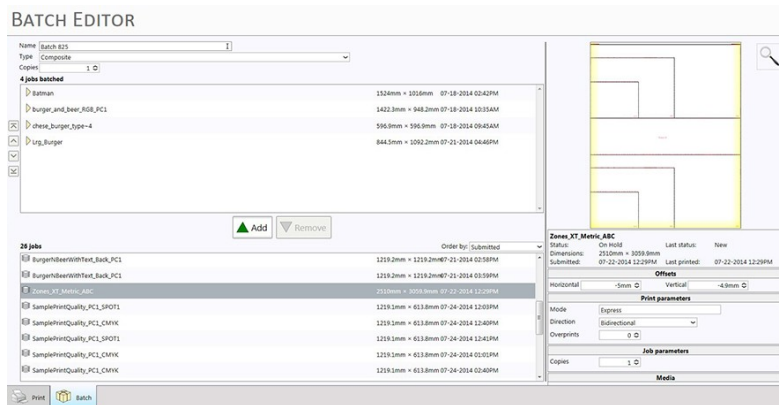
How the Create a Batch Job

Procedure

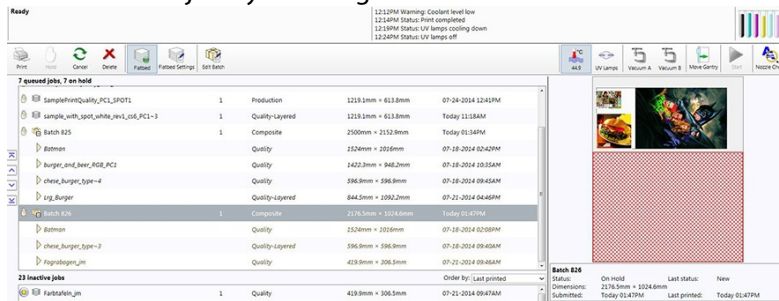
1. Send the individual jobs to batched together from the RIP to the printer
2. Select the Create Batch icon (see figure) to enter the Batch Editor



3. Select type of batch to create: Composition or Collation
4. Add jobs to the batch
Select a job in the lower list and click Add to include it in the batch job. Place each job by selecting it and then move it to the desired position.



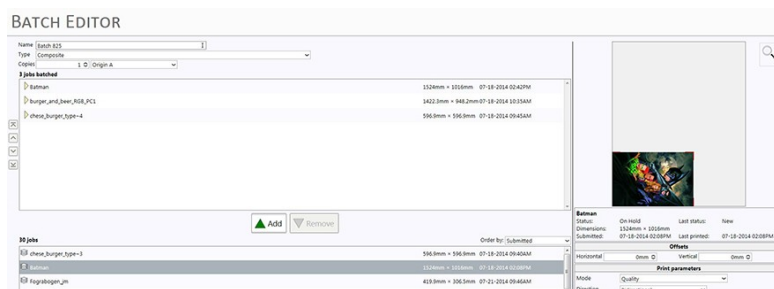
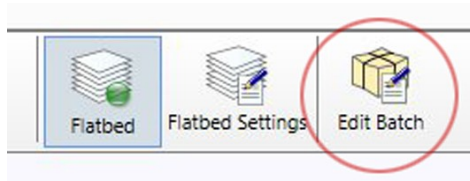
5. Print the batch job by selecting and then click on the Print icon.



Example

How to Edit a Batch Job.

A batch job can be edited by selecting it from the job queue then click the Edit Batch icon. You can add or delete jobs and change where they are placed on the table.



Chapter 8

How to work with White Ink

Operator Guidelines for White and Clear Ink

Introduction

This chapter is necessary only if you have an Acuity F Series printer with the white ink option.

Managing White Ink

White ink is re-circulated in the system to limit any settling of the ink. For this to take place, **the printer must be left powered on at all times**. Regular maintenance is required to keep the white printheads functioning properly.

Before you begin

If your printer includes the white option, all ink bags must be present and all must contain ink or clear in order for the printer to function properly.



Attention:

Clean the media if the printer is in a dusty environment, or when there are fibres protruding from the media. A dirty or dusty environment is harmful to the printheads because particles can plug the nozzles and result in poor image quality. Avoid close proximity to routers and other sources of dust and debris. Avoid placing your printer close to solvent printers as the fumes can have a negative effect on the printheads.

Procedure

1. Agitate the white ink bag gently as described on the bag labels at least once per week.
2. Perform Printhead Maintenance at least once every workday and more often, if required. Do this even if the printer is not used that day.



Note:

Refer to the Printhead Maintenance section of the Maintenance chapter for an explanation of how to perform daily maintenance.

White Ink Workflow Overview

Introduction

Fujifilm Acuity printers with the White Ink Option under-printing for non-white media or objects, over-printing for backlit applications on transparent media and / or printing white as a spot colour.

When working with white ink there are three data layers available that allow you to determine the area the white ink will cover and also how it will appear (or not appear) in relation to other colors, depending on the layer it is placed in. You can determine the density of the white ink by altering the drop size. The layer setup is defined in the media model but can be modified as a job printer

When the white ink information is properly prepared according to the methods described in this chapter and the print job is sent from ColorGATE Productionserver to the printer, you have an opportunity to verify that the layers are properly embedded in the job.

With the white ink print job selected in the Job Control module of the printer software, click the Layers button to activate a graphical representation of the Print Layers that allows you to verify the layer order.

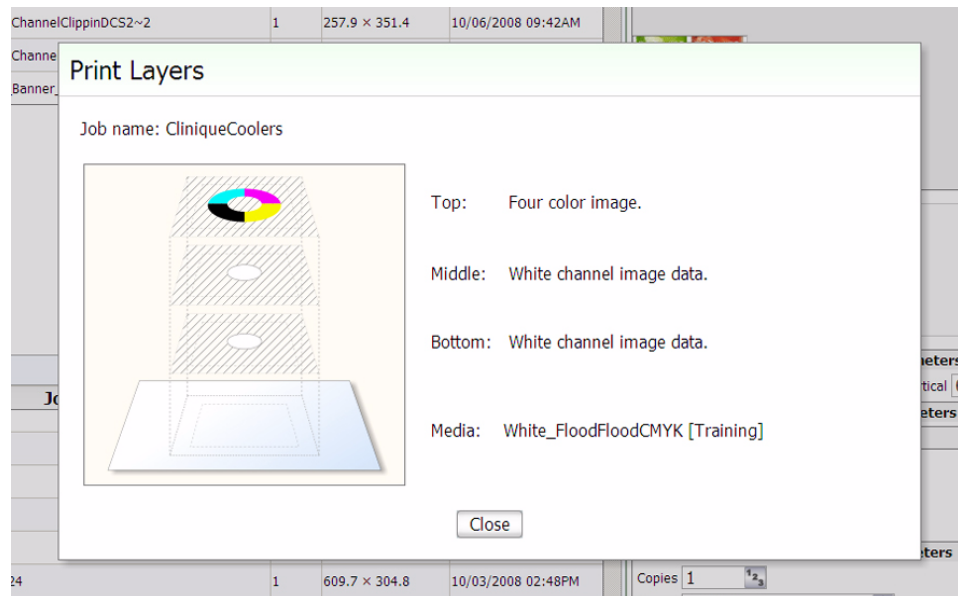


Figure 24. Preview Layer in Printer UI

Printer Flood Fill Versus Job Data.

White ink can be printed using flood fill data generated by the printer or job spot data. A printer flood fill covers the whole image area while spot data is assigned in specific areas. Job data is separated by the RIP software into six data planes: C, M, Y, K, Spot 1, and Spot 2. The white ink channels are usually configured to print using the Spot 1 or Spot 2 data plane or a printer flood fill, but can also be printed using the C,M,Y or K data plane.

White Ink Workflow Data Preparation

White ink print job output can be accomplished in a variety of ways depending on the desired results and preferred working process. There are three primary methods and they can be used either independently or all at the same time. The workflow options are:

Printer Flood Fill Layer Configuration,

RIP software spot layer tool, and

White Spot Data Image Preparation.

Printer Flood Fill Layer Configuration does not require any pre-rip file preparation and is the easiest method of achieving white ink output. All that is required is to set up the Layer Configuration to include a printer flood layer. The printer flood layer encompasses the bounding box (the outer border of the image) of the file being processed. There is also an option to control the amount of flood by choosing the drop level. The higher the drop level number the greater the amount of white ink.

A **RIP spot layer tool**, such as the Special Colors options offered by ColorGATE Productionserver (Job Settings > Settings...> Print Mode> Advanced Settings) offers many options to process an image, and thus allows various possible configuration choices. All work with the Special Colors options will require a suitable MIM with at least one spot color.

White Spot Data Image Preparation requires that the white data be prepared in image editing programs such as Adobe Illustrator®, InDesign®, or PhotoShop®. Normally specific naming conventions and image use protocols must be used in order for the RIP software to process the data as desired. This method may be the best choice if the desired white ink spot data includes complicated selections or if data is being created for outsourcing. A reasonable level of proficiency in these programs is recommended to use this technique, and a description of the techniques required is beyond the purview of this manual.

All of these methods can also be used either alone or in conjunction with each other to create the desired output results.

You are not required to use layers when you print white spot data. It can also be printed with print modes other than Quality-Layered.

White Ink Applications

The following are some specific examples of the ways that the white ink workflow can be applied.

White Ink Layer Options

Application	Bottom	Middle	Top	Notes
Backlit First Surface (printing on the front side of the media)	White	CMYK	CMYK	CMYK layers contain same data
Backlit Second Surface (printing on the back side of clear media)	Reverse printed CMYK	Reverse printed CMYK	White	
Day – Night (First or Second Surface)	CMYK	White	CMYK	CMYK data is reversed or right-reading
Opaque	White	White	CMYK	3 Layers
Opaque	<empty>	White	CMYK	2 Layers

Backlit Application

The backlit application involves printing onto a transparent or translucent material and mounting the finished piece onto a light box or location where illumination from behind is possible. In the backlit application, white ink is intended to provide a light diffusing layer. This application is possible using either 2 or 3 layers.

Day-Night Application

Similar to backlit, the day-night application also involves printing onto a transparent or translucent material. A day-night print can be viewed either front-lit or backlit. This is achieved by printing color data on two separate layers with a white diffusing layer in the middle.

Opaque Application

The opaque application involves printing CMYK data onto non-white media. For this application, white ink is required both to enable the printer to produce images where white forms part of the image content, as well as to act as a base for the CMYK color set.

White Ink Quickstart

Introduction

This section shows you how to print a variety of jobs using the White ink option. The Quality-Layered print mode is used to print white ink applications such as under-printing for non-white media, over-printing for backlit applications viewed 2nd surface or as middle layer for a day-night application. The following section provides more detail about the various options available when printing with white ink.

The ColorGATE Productionserver settings are explained in detail below. The following description also includes examples of practical applications.

Software settings

Software settings may be found in the job or hotfolder settings in the **Color Management** tab by double clicking the job.

1. Select the **Settings...** button to access the advanced job settings.
2. Select the **Print Mode** tab.
3. To make use of the white print options using layers, set the **Quality Layered** mode under **(1) Printer Settings**.

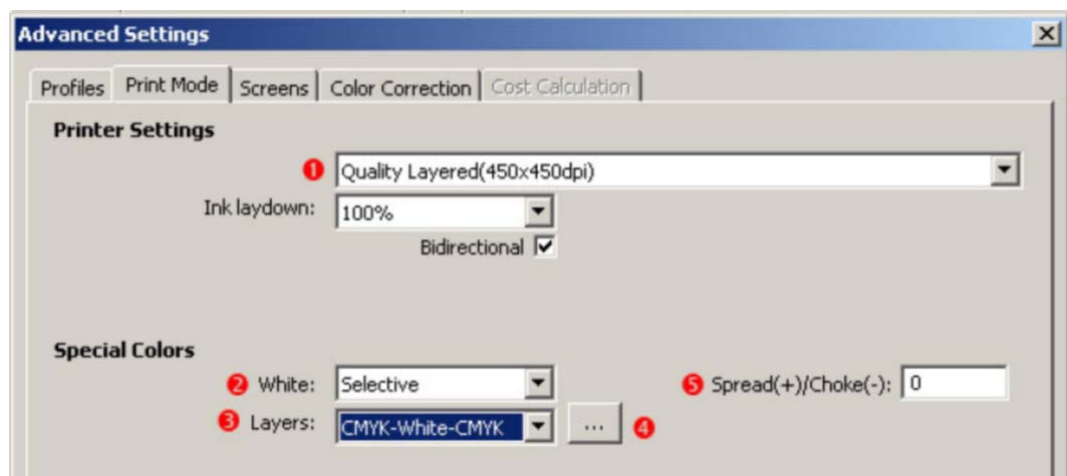


Figure 25. Advanced Settings dialog

4. Alternatively, to print either white or a combination of colour and white in just one print pass ('Non Layered'), select one of the **Express, Production, Quality** or **Fine Art** print modes.
5. Select the white print area behaviour under **(2) White. Filling** is useful for printing job areas in white that do not contain any colour information (see example 8).

6. Select the Channels under **(3) Layers** that will be printed together. The **White only** option will print the job file as a pure white print (based on the colour channels, see example 4).

Under **Special Colors**, the available white print options for the **Quality Layered** mode will be shown, and are described below.

The **White print behaviour** will be specified under **(2) White:**

Selective: for transparent and coloured backgrounds; prints white in areas that contain pixels, using 100% coverage of white.

Pixel: for coloured backgrounds; prints white in areas that contain pixels, but only using the highest pixel colour percentage value.

Pixel invert: almost identical to **Pixel**, with the exception that the highest pixel colour value is not used, but rather its difference from 100%.
e.g.: 100% - 42% (pixel value) = 58% (white)

Flood: for any background; white will be printed over the entire image area (no ripping is done as the printer does this job).

Filling: for any background; print white in 100% coverage on areas that do not contain any pixels.

Spot White: prints any spot colour in the job as white to the same percentage coverage.

For **Selective** and for **Spot White** a further value **(5) Spread / Choke** is required.

A positive value (**Spread**) will print white as a padding added to the image borders, or a negative value (**Choke**) will print a white area inset from the motif borders. The measuring unit is set in the program presettings (to be found in **Options > Program settings...**).

The order and number of layers will be specified under **(3) Layers**, for which the white depends on the settings below:

CMYK - White: colour print with white layer printed on top.

White - CMYK: white print with colour layer printed on top.

CMYK - White - White: colour print with two layers of white printed on top.

White - White - CMYK: two layers of white print with colour layer printed on top.

White only: White ink alone printed, based on the colour channels. Colour values must be inverted. This colour inversion is done in the optional colour correction functions and will be contained in the MIM.

White - White only: two layers of white printed based on the colour channels (see above).

User defined: uses the settings defined under the ... button.

A **Layer adjustment dialog** box will be opened by clicking on **(4) ...**

This may be used to adjust the output using the three available layers. If the number of layers is not sufficient when the image is initially printed, select in a second print any additional layers that need to be added to the first print.

Close any open dialog boxes with **OK**. The preview for the job will be recalculated.

Click on the hatching icon in the main program preview toolbar to highlight white printed areas with a red hatching.



Note:

a) If **Flood** is selected under **(2) White** in the print mode settings, no hatching will be displayed since any print data calculation is performed by the printer itself.

b) If **Spot White** is selected under **(2) White**, the preview will display the hatching by default in spot colour areas that are to be replaced with white.

Examples of practical use:

The applications described in the following pages refer to examples that may also be used in combination; the described media (materials) are simply examples and are not fixed.

You will find the settings in the advanced settings **Print Mode** tab (double click on Job > **Color Management** tab & click on **Settings...**).

Example 1: Printing on glass, one sided, colored motif

Material: transparent glass.

File: colored motif covering the entire media area.

Print result: viewed from the front -> shows the motif on a white background filling the entire media area OR viewed from the reverse -> shows a slightly transparent motif when lit, or a white area when unlit.

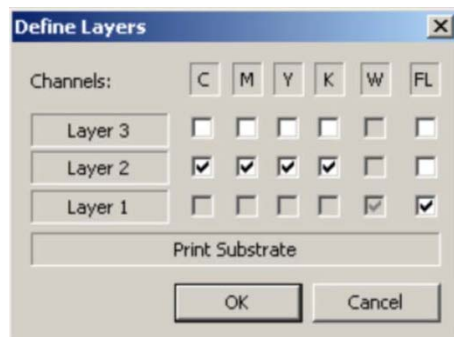
Order of layers: 1. White, 2. coloured motif.



Settings in print mode (under Printer Settings / White / Layer):

Quality Layered

Flood + White – CMYK



Example 2: Printing on plastic board, coloured motif including white spot colour.

Material: black flexible plastic board.

File: Shows colored elements, not covering the entire media area, plus a white spot color within the image.

Print result: shows coloured image containing white spot color on a white surface.

Order of layers: 1. White, 2. coloured motif, 3. White as spot color.



Settings for colour replacement:

1. Make sure one of the print options except **Flood** or **Off** is selected under **White** in the **Print Mode** tab.
2. Send the job to the printer, click Layers to verify the layer order and then print the job.
3. Select the **Color Management** tab.
4. Click on **Color Table...** to open the spot colour replacement for the job.



Note:

To recognize a spot colour in the RIP software it has to be applied in the file using a graphic editing software package. Name the spot colour as desired.

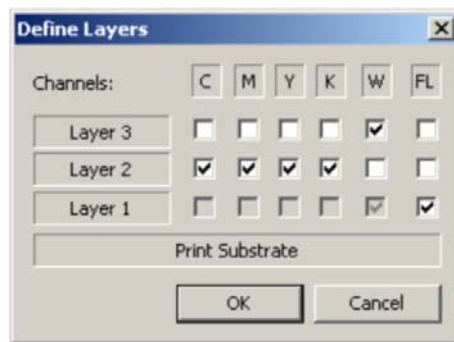
5. Double click in the spot color entry.
6. Select **DeviceSpot > DeviceWhite** under the **Replacement Color** area and confirm with **OK**.
7. Enable colour replacement by checking the appropriate box and confirm again.

Settings in print mode:

Select the option **Quality Layered** in the **Print Mode** tab.

Select the option **Spot White** under **White**.

Apply the correct settings to layers under ... as shown in the image below.



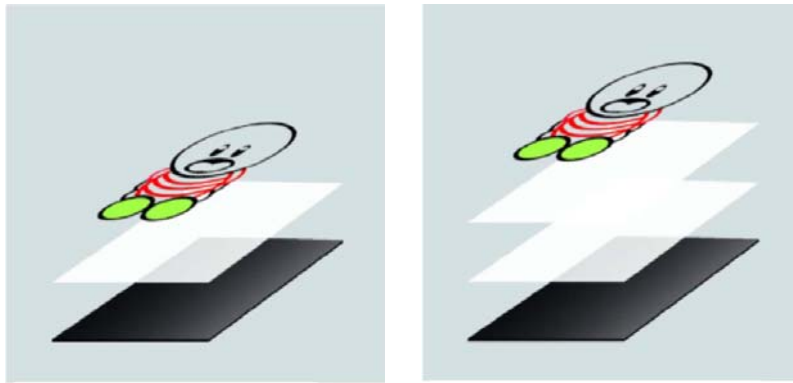
Example 3: Printing on plastic board, colored motif in high intensity

Material: black plastic flexible board.

File: coloured motif, smaller than the media area.

Print result: coloured image on a white surface (when applying multiple layers of white, the intensity of the colored motif will be enhanced).

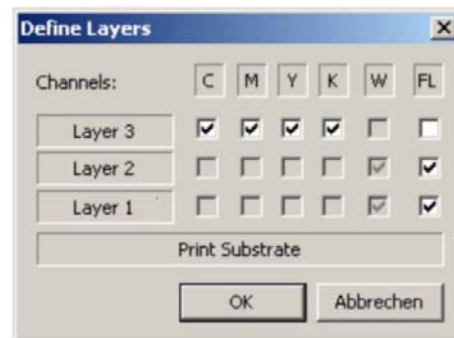
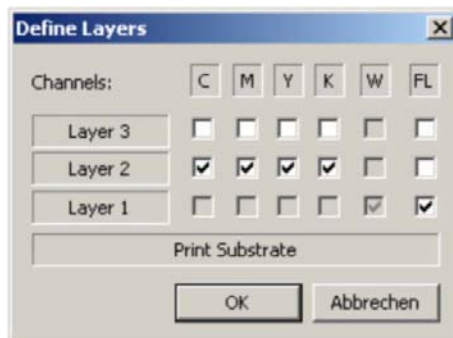
Order of layers: 1. White, 2. White, 3. Colored motif.



Settings in print mode:

Quality Layered

Flood + White - White - CMYK



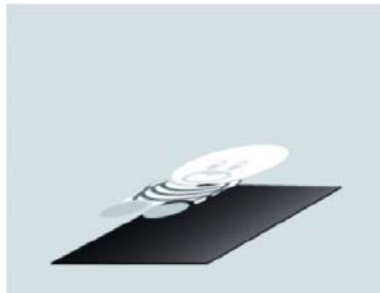
Example 4: Printing on plastic board, white only, based on a colored motif

Material: black flexible plastic board.

File: coloured motif.

Print result: white-shaded image based on the colored motif.

Order of layers: one layer of white.



Setting in Job Settings to achieve a colour value reversion for white printing:

1. Open the Job Settings by double clicking on the Job.
2. Select the Settings... button in the Color Management tab.
3. Select the Color Correction tab (optional function).
4. Select All channels above the graphic.
5. Invert the colour values manually (In 0% to Out 100%, or In 100% to Out 0%).



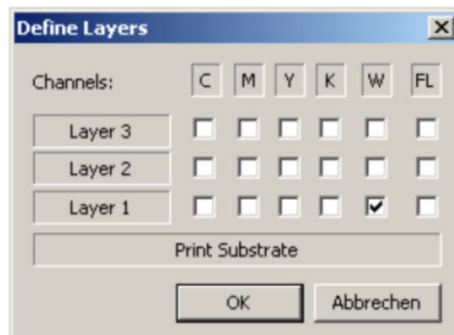
Note:

You can use a MIM containing this setting (can be saved by clicking **Store to MIM** in the **Color Management** tab) without the optional color correction.

Settings in print mode:

Quality Layered / Quality / Production / Fine Art

Pixel + White only



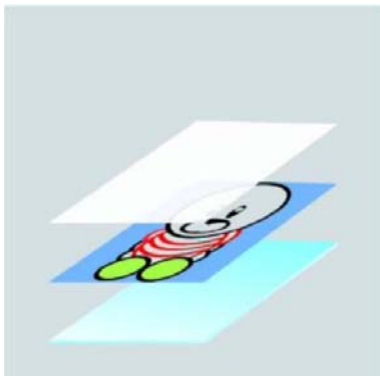
Example 5: Printing on glass, colored motif, visible from the reverse

Material: transparent glass.

File: coloured motif, covering the full media area.

Print result: viewed from the front -> shows the motif on a white surface (must be a mirror image as it is viewed through glass) OR from the reverse -> shows a white layer over a colored layer.

Order of layers: 1. mirror image colored motif, 2. white flood covering the entire media area.



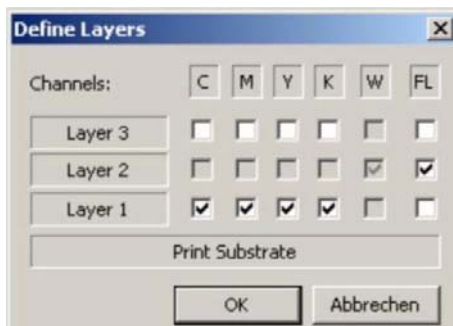
Setting in Job Settings to mirror-image the print-out:

1. Open the job settings by double clicking on the Job.
2. Select the Job tab.
3. Enable the mirror function by clicking on the mirror icon.

Settings in print mode:

Quality Layered / Quality / Production / Fine Art

Pixel + White only



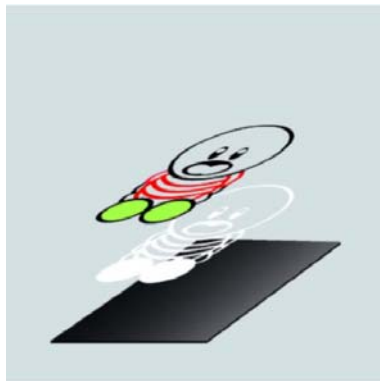
Example 6: Printing on plastic board, colored motif containing single motifs

Material: black flexible plastic board.

File: colored motifs within the image (job), smaller than the media area.

Print result: coloured motifs on a white surface (e.g. white letters visible as part of the white layer).

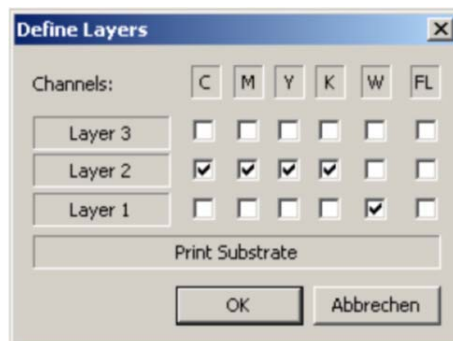
Order of layers: 1. White, 2. colored motifs.



Settings in print mode:

Quality Layered

Flood + White – CMYK



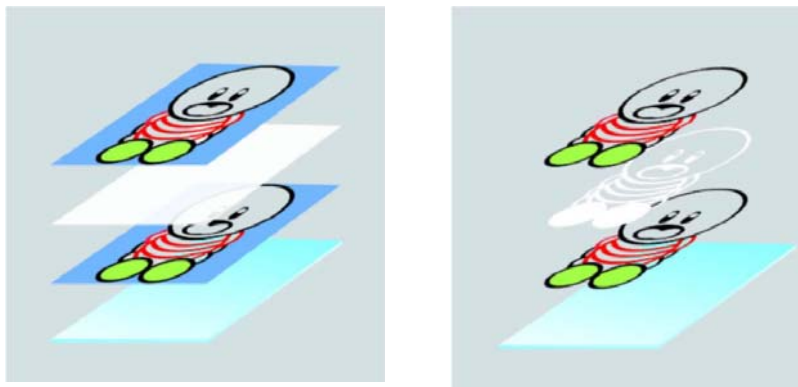
Example 7: Printing on glass, viewable from both sides

Material: transparent glass.

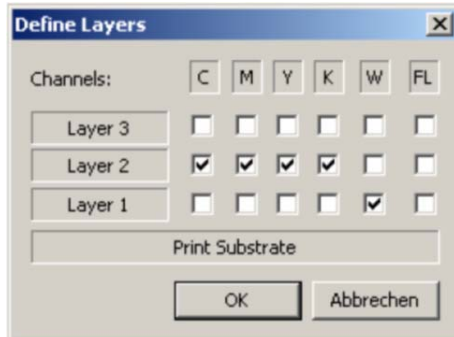
File: colored motif completely filling the media area (media filling) or partially covering the media area (partly media filling).

Print result: motif visible from both front and reverse of the glass.

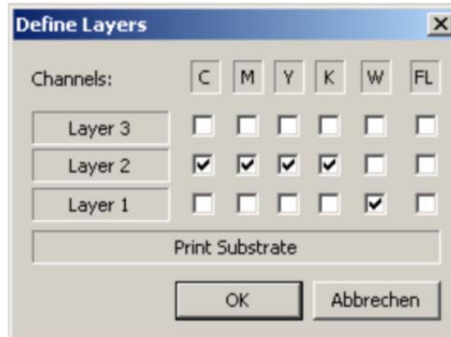
Order of layers: 1. colored motif, 2. white, 3. colored motif.



Settings in print mode:



Flood + CMYK - White - CMYK
(media filling motif)



Selective + CMYK - White - CMYK
(motif only covers some parts of the image, remaining parts have to be transparent)

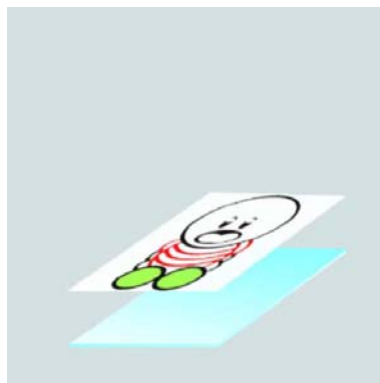
Example 8: Fast printing on glass, white on areas that do not contain a motif

Material: transparent glass.

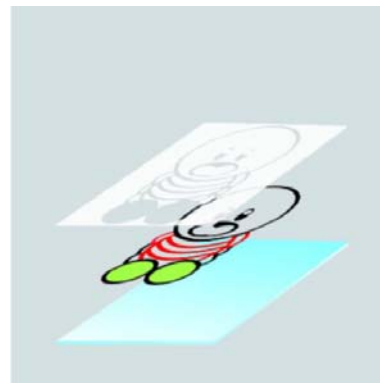
File: colored motif, not covering the entire media area.

Print result: shows an image containing a motif, surrounded by white (to cover a grey background or to simulate a special paper white).

Order of layers: single layer in Express / Production / Fine Art modes OR 1. motif, 2. white (Quality Layered) mode.



Single layer in Express,
Production or Fine Art Mode



Two layers in Quality Layered
mode

Settings in print mode:

Single layer

1. Open the job settings by double clicking on the job.
2. Select the Color Management tab.
3. Click on Settings... to open the advanced settings.
4. Select the Print Mode tab.
5. Select the Production option under Printer Settings for fast, low resolution printing.
6. Select the Filling option under White to print areas with white that do not contain any colour information.
7. Select the CMYKW option under Layer to print white together with the motif.

The option White only will reverse-out the motif.

OR

Two layers

1. White: Filling
2. Layer: CMYK - White

Example 9: Fast printing on glass, white underprint

Material: glass.

File: coloured motif.

Print result: image containing a motif, either covering the full media or only part of the motif.

Order of layers: single layer in Production mode AND the coloured layer in Fine Art mode. Since the Acuity does not print data directly, but rather saves job data as files, jobs may be output after each other.

Settings in print mode:

First print step:

1. Select the Print Mode tab (advanced settings).
2. Select the Production option under Printer Settings for fast, low resolution printing.
3. Select the Flood option under White to pre-print all job motif areas with white.
4. Select the White only option under Layer to produce a white print using any available colour information.

AND

Second print step:

1. Select the FineArt option under Printer Settings for high resolution printing.
2. Select Off under White to disable the white option - the colored motif will be printed directly onto the white background.

Chapter 9

Ink System Management

Acuity Printer Inks

Introduction

Fujifilm Acuity F Series printers use a uniquely formulated UV-curable ink, referred to as Uvijet WI. These inks are easy to maintain, with the use of the Automated Printhead Maintenance System and require only a weekly physical cleaning to ensure a long useful life. The Uvijet WI inks require small jetting actions ("spitting") between printing times to keep the printheads in a ready-to-print state. This spitting action amounts to very little ink usage but does require that the user clean the maintenance tray covers more frequently. The complete ink set consists of Cyan, Magenta, Yellow, Black, Light Cyan and Light Magenta; and for printers with the optional extra color channel installed, White ink. Due to the use of UV curing technology, the ink is effectively cured immediately after printing, but a small residual curing effect can continue for up to 24 hours. In most cases, the printed material can be handled or cut directly after printing.

Maintenance Considerations

The printer is optimized for the specific UV-curable ink supplied by Fujifilm. The ink is supplied to the printer in 2 liter collapsible bags that are loaded into the printer by means of quick-change connectors that are bonded into the top corner. To install on the printer, the bags are inverted and the quick connect couplers are pushed into their corresponding female coupling. This opens up the flow path for the ink. The bags contain tags that identifies them to the printer when they are loaded. This allows the printer to ensure that the correct ink is loaded.

This method of ink delivery has several benefits over bottles or cartridges:

The self-collapsing bags make it easy to see how much ink remains in each bag.

Virtually all the ink is successfully extracted from the bag by the printer, reducing the otherwise costly waste of usable ink.

Ink changes are performed without mess or spills, keeping the environment around the printer clean.

Ink changes can be performed during printing - this prevents wasted prints and lost time.

Only qualified inks can be used. If a bag of ink with an invalid serial number, expired use-by date, incorrect color placement in the ink bay, or if an expired tag is connected to the printer, then the operator is alerted and an error message is displayed.

The ink delivery system provides the printheads with ink at the appropriate temperature and pressure. Each printhead has a corresponding ink reservoir on the carriage. Pumps supply ink to the reservoirs on demand. Sensors in the reservoirs control the level of ink and initiate demand when required. Ink temperature control is achieved by pumping a coolant fluid through the

printheads. An internal thermostat on each printhead provides temperature feedback.

The condition of the printheads is maintained by automatic periodic cleaning. During this procedure the system suctions the printhead nozzle plates, removing ink and possible contaminants in the process (details of this procedure are available in the Maintenance section).



Note:

Read the section on ink safety called " Safety Information - UV Ink and Flushing solution" before you handle the ink.

The printer is optimized for the specific UV-curable ink supplied by Fujifilm. The ink is supplied to the printer in 2 liter collapsible bags that are loaded into the printer by means of quick-change connectors that are bonded into the top corner. To install on the printer, the bags are inverted and the quick connect couplers are pushed into their corresponding female coupling. This opens up the flow path for the ink. The bags contain tags that identify them to the printer when they are loaded. This allows the printer to ensure that the correct ink is loaded.

This method of ink delivery has several benefits over bottles or cartridges:

The self-collapsing bags make it easy to see how much ink remains in each bag.

- Virtually all the ink is successfully extracted from the bag by the printer, reducing the otherwise costly waste of usable ink.
- Ink changes are performed without mess or spills, keeping the environment around the printer clean.
- Ink changes can be performed during printing - this prevents wasted prints and lost time.

Only qualified inks can be used. If a bag of ink with an invalid serial number, expired use-by date, incorrect color placement in the ink bay, or if an expired tag is connected to the printer, then the operator is alerted and an error message is displayed.

The ink delivery system provides the printheads with ink at the appropriate temperature and pressure. Each printhead has a corresponding ink reservoir on the carriage. Pumps supply ink to the reservoirs on demand. Sensors in the reservoirs control the level of ink and initiate demand when required. Ink temperature control is achieved by pumping a coolant fluid through the printheads. An internal thermostat on each printhead provides temperature feedback.

The condition of the printheads is maintained by periodic cleaning at the maintenance station on the gantry. During this procedure the operator suctions the printhead nozzle plates, removing ink and possible contaminants in the process (details of this procedure are available in the Maintenance section).



Caution:

Uncured ink is a serious health and safety risk! Avoid skin contact with ink and wear safety glasses with side shields and Nitrile rubber gloves when handling ink.



Attention:

Do not install inks that are not certified by Fujifilm for use in this printer, as this may result in poor quality prints, uncured ink in the finished prints and permanent damage to the ink pumps, filters, ink lines or printheads.



Note:

The UV lamp power settings can be lowered to reduce warping of some media. However, set the lamp power as high as possible for each media to ensure that the ink cures properly. This will minimize the risk of skin irritation and sensitization from exposure to uncured ink. Wear nitrile gloves when you handle printed media if you suspect the ink is not properly cured.

Illustration



26. Ink Bags in the Ink Bays (Primary and Secondary)

Ink Filters

The UV ink in your printer is protected from contaminants in the ink by means of ink filters. These are easily accessed and can be replaced by the operator when they become blocked with debris (see the Maintenance section "How to Change Ink Filters"). The expected average lifetime for a filter is approximately 12 months or 50 liters of ink (approximately 25 bags). However, some filters can last longer and some will require more frequent replacements due to the ink color (pigment) and varying rates of use.



Note:

A loss of pigment when printing a nozzle check or long ink fill times indicates that a filter is clogged and must be replaced.

How to Store and Handle UV Ink

To ensure good quality images and to extend the life of printheads in your printer, it is important to have good UV ink management procedures. UV inks must be properly handled and stored correctly.

- Inks must be stored within a temperature range of 5 - 30°C (41 - 86°F). Exposure to extreme temperatures will reduce the expected life of the ink.
- Do not use ink that is past the expiry date displayed in the Ink System Status menu (click the Ink icon in the Print Job Control module to view the ink menu).
- Store in cool, dry place and keep away from heat and direct sunlight.
- Perform Printhead Maintenance every day before printing.
- Swab the printheads with UV Flushing solution at least once a week (and as needed) to dislodge any potential build-up of particles or ink.

Access to MSDS Ink Information

MSDS (Material Safety Data Sheets) for each color of ink and the UV Flushing solution are available on the Fujifilm Sericol website at: www.fujifilmsericol.co.uk Read and periodically review this safety information to ensure optimal safe handling procedures and proper emergency responses are followed when using UV inks and flushing solution. See also Chapter 3 "UV Ink and Flushing solution".

Light Ink Overview

Introduction

The Fujifilm Acuity F Series printers provide two light ink channels: Light Cyan (Lc) and Light Magenta (Lm). This section provides a brief overview of the Light inks and how they are used with the printer.

"6 color" Printing

With the Fujifilm Acuity F Series, the "6 color" digital color printing process uses CMYK inks plus a lighter shade of cyan (Lc) and magenta (Lm) to deliver a higher photographic-quality output.

Color Reproduction and Image Quality

Six-color inkjet printers produce more subtle flesh tones and finer color graduations than standard CMYK devices. The use of Light inks allows a wider range of tiny drops to combine to create a broader palette of solid colors and improve the smoothing in density transitions.

This is achieved with the use of these additional inks, which make up for the limitations of current inkjet technology by creating very tiny (and therefore lighter) dots while at the same time jetting the larger (and darker) drops with regular inks to build the image.

Imaging Performance

Nozzle Redundancy

With the need to increase speed and compensate for the possibilities of "Nozzle Outs" during a print, the additional Light Cyan and Light Magenta can "Fill in" where the darker inks fail to jet.

This results in higher productivity without losing a print. It is not that Light inks can completely "make up" for the loss of dark nozzles, the light ink that remains reduces the visual effect of the loss as your eye perceives it (lowering the visual contrast).

Ink Volume and Density

A heavier coverage of Light inks can be used to make up for low density due to speed and ink density limits.

Media

Use of light inks can also be media dependent. Image quality on some media will benefit from the use of light inks more than other media.

"6 Color" Profiling

A heavier coverage with the Light Cyan and Light Magenta inks can be color-managed in the same way as any printer with Lc and Lm with the addition of a few variables as referenced below.

Ink Curing and Adhesion

Within the inkjet printing process, there are variables that affect ink curing and adhesion: Ink Type, Ink Volume, Media, Media Thickness, Humidity, Speed, and Lamp age. They can affect the curing process and thus the image quality, color and physical performance as well as the overall flexibility and adhesion of the ink. These variables should be considered when incorporating light inks.

How to Change Ink Bags

Introduction

The CMYKLCm and White inks are supplied in 2 liter bags. The bags have a non-spill coupler bonded into the top corner. When installing onto the printer, the bags are inverted and the quick connect couplers are pushed into their corresponding female coupling - opening up the flow path for the ink. If a bag of ink with an invalid serial number, expired use-by date, incorrect color, or expired tag is connected to the printer, the operator is alerted.

When to do

An ink bag can be replaced at any time. Ink bags should be replaced if:

- The printer displays an "Error: ink fill timed out" message. This does not necessarily mean that the ink bag is empty, but if you see it, check the level of ink remaining and change the bag if needed. If you see the message and there is still ink in the bag, place a service call.
- The operator sees that the bag is empty.
- An ink bag is nearly empty and the operator wants to leave the printer unattended during a long print and does not want the ink to run out. The nearly empty bag can be reconnected and used up later when the operator is present.



Note:

An ink bag can be changed during a print job. It is not necessary to stop the printer.

Before you begin

Safety Information - Use appropriate safety equipment - nitrile gloves and eye protectors. Take precautions to avoid ink on your skin or in your eyes.



Caution:

Be sure to read the section on Safety Guidelines for Ink Materials before handling UV inks. Also, read the MSDS sheets available from the Fujifilm Sericol web site for more detailed information on ink safety and handling.

Illustration



27. Remove the Quick-Release Coupler

How To Change an Ink Bag



Attention:

For personal safety, we recommend that the operator always wear nitrile gloves, a protective apron, and safety glasses with side shields when handling inks.

1. Open the clear plastic door on the Ink Station.
2. Identify the ink bag to be replaced.
3. Press the quick-release coupler button at the bottom corner of the ink bag.
4. Unhook the bag from the top of the ink station.
5. Replace with a new ink bag of the same color.
6. Push the quick-release coupler at the bottom corner of the new bag into place.



Note:

If you place a bag in the wrong ink station (for example, yellow ink in the black ink station) the display will show an error message and the printer will not print until the correct bag is installed.

White Ink Option.

Introduction

If your printer has the white ink option and white is not printed on a regular basis, pigment settling can occur in the white ink printheads. During periods of white ink inactivity the printer will automatically try to maintain the white ink channel using the following methods:

- ink recirculation
- spitting
- AMS cycles

Additional efforts may be required to recover nozzle performance for the white ink printheads.



Caution:

Wear eye protection and nitrile gloves when handling or cleaning ink. Also, when working around in protect your clothing and any exposed areas of skin.

Recovering White Ink Nozzle Performance

Procedure

1. Open the clear plastic door of the Secondary Ink Bay.
2. Select the White Ink Nozzle Check Print icon from the user interface. Input the appropriate settings for printing (offsets, media thickness, lamp power, etc.).
3. Print and evaluate nozzle performance.
A general guideline is to do a standard AMS on the white ink channel if:
 - more than 2 nozzles outs exist in a single printhead
 - 2 or more adjacent nozzle outs exist in a single printhead
 - more than 4 nozzle outs exist in a single color
4. If necessary, perform a standard AMS on the white channel.
5. Reprint the White Ink Nozzle Check Print to evaluate results.
6. If white ink nozzle performance is still not at an acceptable level, perform a long AMS on the white channel.
7. Reprint the White Ink Nozzle Check Print to evaluate results.
8. If white ink nozzle performance is still not at an acceptable level, swabbing with flushing solution is required.

9. Dip the foam end of the swab in a small container of flushing solution. For best results the swab should be fully saturated with flushing solution.
10. Hold the flushing solution-soaked swab against the area of the printhead where the nozzles requires recovery for 10 seconds. See figure below.



11. Rotate the swab by 180 degrees and repeat step 10. Discard the swab.
12. Do a Standard AMS on White. This is important to clear the flushing solution from the printhead before another nozzle check is printed.
13. Print the White Ink Nozzle Check Print and evaluate. If performance is still not at an acceptable level, repeat steps 9 to 13.

Chapter 10

Error Handling and Troubleshooting

Troubleshooting Overview

Introduction

This section covers general problems that may occur with the printer. Malfunctions that trigger system error messages can be caused by human error, a system malfunction, an interface cable malfunction, mechanical printer malfunction and/or printer firmware failure.

Definition

Printer Errors

Some errors are problems that interfere with the print process but do not shut down the printer completely. Typically, these errors are problems that prevent starting a printing job or that interrupt the current print. You should be able to fix these errors without a service call. Other errors stop the printer and prevent operation until the error is resolved. The printer interface informs you as to what is wrong by displaying an error message on the LCD display. If the error message has an obvious solution, apply the appropriate remedy. Otherwise note the exact error message and associated error number and what the printer was doing before the error, then place a service call.

Basic Troubleshooting

Troubleshooting helps you locate the source of errors and fix common problems that can arise during printing.

Troubleshooting Areas:

- Printer behavior
- Print quality
- Data transfer

Example 1

If There is No Power

Is the printer connected to a working power source?
The service should be a dedicated supply that is not susceptible to voltage fluctuations. This service must be provided via an independent, double pole, fused circuit breaker and a circuit ground (computer grade) located near the machine. The service should meet all local and national standards for this type of installation. The circuit breaker should be clearly labelled, indicating the On and Off positions, such as '1' for On and '0' for Off. A suitable air gap should be maintained for safe electrical isolation when in the Off position. The printer relies on this service for primary branch protection. If the printer is without power, check the local supply voltage and verify that it is set correctly.

Example 2

Drops of Ink Appear on the Media

- Check that the ink valves on top of the carriage are all open. If an ink valve is closed, there is no vacuum pressure to hold the ink and it will drip out of the printhead.
- Check that there is no hair or other debris on the underside of the carriage. Objects can accumulate ink mist and result in small drops of ink.

If Problems Persist

If problems persist, perform the following actions as appropriate for the situation:

- Check for media that is buckling or sitting too high on the table.
- If you just changed ink in the printer, review the procedures in this manual and check for successful installation.
- Try printing a test print.
- If the printer is not receiving print jobs, check the network cable connection.



Note:

If you still have problems, contact your Fujifilm service representative.

Troubleshooting the Automatic Maintenance System

Your printer is equipped with two identical Automated Maintenance System (AMS) stations. The Primary station is located at the end of the gantry where the carriage parks. It is the default station that is used in the day-to-day operation of the printer. A backup AMS station is located at the opposite side of the gantry and is used only when there is an issue with the primary system. If the printer's sensors detect a problem with the right AMS it asks you to **Reset error** and if it is not resolved after several attempts, you can choose to switch maintenance functionality from the primary to the backup AMS by selecting **Disable AMS**.



Attention:

Before you select **Disable AMS** make sure that you look under the carriage from the end of the gantry and check that the AMS suction heads are not visible. If the suction heads of the primary (right) AMS are not retracted severe damage to the printheads can result if the backup AMS is used.

The AMS must be cleaned daily and with special attention to the minimal amount of pressure needed. This is documented in the section called Daily Maintenance. If the AMS is not cleaned daily, accumulated ink can eventually cure and render the AMS non-functional. This situation is not covered by service contracts. Also, If too much pressure is put on any of the suctionheads during cleaning, they can become stuck at a level below where they can perform their function of clearing blocked printhead nozzles. If this happens, a service call is necessary to make it functional. In this case you will see a repeated message suggesting that you call for service. However, you can continue to print since the backup AMS becomes the default one until the primary one is fixed. Don't wait too long as this is the kind of situation where ink may cure in the AMS, which means you will need to purchase a new one.

Call for Service

Try to eliminate simple problems before you call your service representative. However, it is important to know when to call for service. Without training, servicing the printer yourself may cause further damage. When you have determined that a service call is required, call as soon as possible. Have the following information ready:

- Printer serial number — located near the AC power plug.
- Error message displayed on the control panel, if any.
- The exact circumstances when the error occurred, such as during printing, or maintenance.
- Note any unusual phenomena, such as peculiar printing, noises, and smells associated with the failure.

How To Improve Quality When Banding Occurs

Introduction

Banding can occur in an image for a number of reasons. Typically it occurs due to neighboring nozzles that do not fire or multiple nozzles that fire with poor directionality. This can occur if the printer sits idle for an extended period of time, or if debris has been picked up from the media or table by a printhead. If banding is evident, print a nozzle check to identify which nozzles of a particular print head are not firing. Perform Automatic Printhead Maintenance to clear the affected printheads. Print another nozzle check to confirm whether the problem has been fixed.



Note:

Keep the table surface clean and ensure the media is clean and free of dust to help reduce banding. Use an anti-static brush, if necessary. Also use a micrometer to accurately measure the media thickness so the proper printhead gap between the printhead and the media is used. If the printhead gap is less than it should be, there is a greater probability of picking up debris on the printheads.

Recovering Clogged Nozzles

A clogged nozzle may not recover by performing Automatic printhead maintenance. In this case it is recommended to recover the nozzles by swabbing (see the section: Recovering Nozzles by Swabbing)

If a print still shows banding after the procedure for recovering nozzle outs documented in the Maintenance chapter, consider using a higher quality print mode to reduce banding. If banding continues you may need to place a service call as the cause may be mechanical.

Chapter 11

Printer Maintenance

Maintenance Guidelines

Introduction

This section describes what is required for proper printer maintenance. Fujifilm requires that the operator follows the cleaning and replacement guidelines as described in this Maintenance chapter.

Maintenance Equipment

- Foam Tipped Swab (3010118211)
- Flushing solution (QV017)
- Bottle-HDPE 125ml for flushing solution (3010105433)
- Isopropyl alcohol (IPA)
- Cloth-Poly Wipe 10cm x 10cm (lint-free)
- Dust cloths



Caution:

For cleaning areas of the printer that have uncured ink contamination use the following safety equipment – nitrile gloves, a lab coat and safety glasses with side shields to protect your eyes.

Automatic Maintenance System (AMS)

The Automatic Maintenance System (AMS) is designed to automatically recover the jetting performance of the printhead nozzles. The AMS can be configured at the user interface to do maintenance on selected or all color channels.

The printer is equipped with two identical Automatic Maintenance Systems (Primary & Back Up). The primary system is located near the carriage park position. The Back Up system is located at the opposite side of the gantry and is used only when there is an issue with the primary system. See the troubleshooting section for when to switch to the Back Up system.

Operator Maintenance Schedule

Your printer requires regular maintenance. Daily maintenance involves cleaning the printheads and areas where ink can accumulate. A few minutes spent cleaning ensures the highest quality prints.

The following table provides our recommended maintenance schedule. This is a minimum requirement and some procedures may need to be done with greater frequency. Each of the procedures is explained in detail in the following sections.

Maintenance Frequency

Procedure	Frequency
Clean all horizontal surfaces Clean Automatic Maintenance Station Clean Ink Spit Tray Carriage Underside	Daily
Clean Printheads	Daily and as needed
Agitate White Ink Bag	Daily
Replace UV Lamp Filters	Every two weeks
Remove Ink from Table	As needed
Empty the Waste Tray	Weekly or as needed
Clean UV Lamp Window	Monthly and as needed
Check Coolant level	Monthly (fill as needed)
Clean Linear Gantry Rails	As needed
Change Ink Filters	After 50 liters of ink, or if pigment looks weak.
Bleed ink filter (CMYKLcLm)	After 5 bags
Bleed ink filter (White)	After 1 bag
Change both UV lamps	After 1000 hours, or when curing is insufficient.

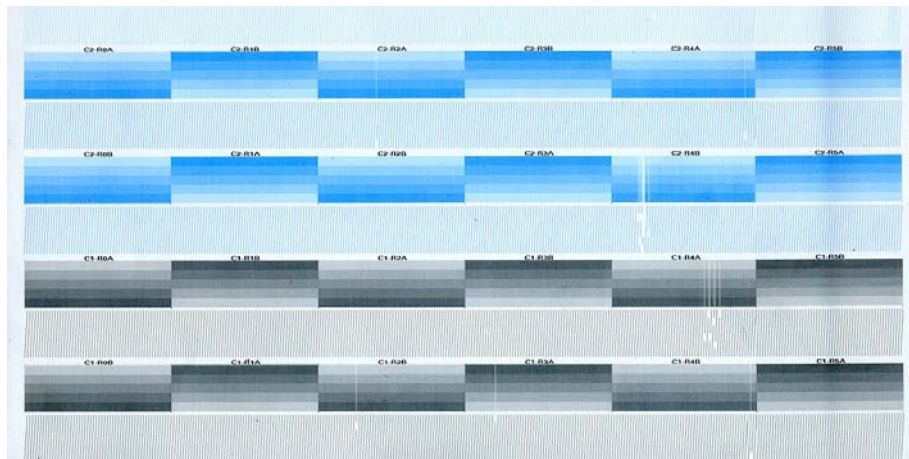
Printhead Nozzle Maintenance

Checking Nozzle Performance

Introduction

It is important that nozzle performance is evaluated to determine if the printer is ready for production. To evaluate the nozzle jetting performance of each printhead the nozzle check print must be printed.

The nozzle check print shows the performance of each individual nozzle in each color channel. This information is critical in determining how to proceed in recovering nozzles with the automatic maintenance system (AMS).



28. A Section of the Nozzle Check print that shows the condition of the Cyan and Black printheads

A single color channel is made up of 6 rows of separate printheads. Each printhead is divided into 2 jetting packages (A&B). Each jetting package has a total of 318 active nozzles. This is why in the nozzle check print there are 12 separately labeled jetting areas in each color channels.

Procedure

1. Place a piece of clean media on the vacuum table.
2. Select the Nozzle Check print icon from the user interface. Input the appropriate settings for printing (offsets, media thickness, lamp power, etc).
3. Print and evaluate the Nozzle Check Print.
The typical procedure for evaluating the nozzle check print is to closely examine the jetting performance in each jetting package.



Note:

Tip: Circle nozzle outs in each jetting package with a marker to better evaluate overall performance.

Each color channel is comprised of 3816 active nozzles. The printer has been designed to produce good quality prints even with a number of nozzle outs. To help determine when to do an AMS on a specific color channel the following guidelines are provided.

Do Automatic Maintenance on the required color channel if:

- more than 2 nozzles outs exist in a single printhead
- 2 or more adjacent nozzle outs exist in a single printhead
- more than 4 nozzle outs exist in a single color

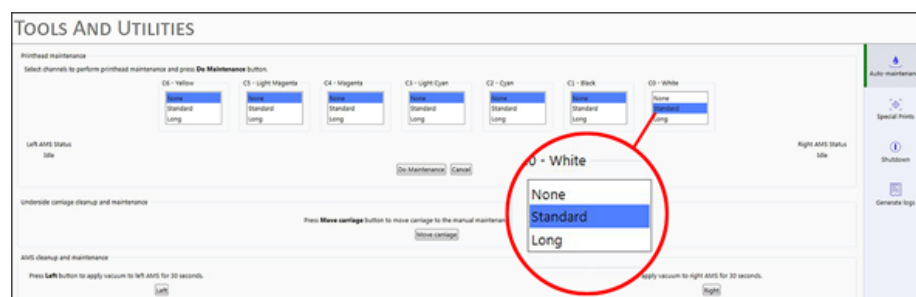
Recovering Nozzles by AMS

Introduction

After checking nozzle performance and determining that automatic printhead maintenance is necessary, perform the following procedure.

Procedure

1. Decide what color channels require automatic printhead maintenance (AMS).
2. From the Tools and Utilities tab, Select **Standard** AMS on the required color channels.



3. Reprint nozzle check and evaluate results. Repeat Nozzle Recovery with the AMS, if necessary.
4. Repeat steps 1 to 3 if necessary.



Note:

In most cases a non-working nozzle is temporary and should be resolved through the Standard AMS procedure. Many times a nozzle will recover on its own during printing. If a nozzle does not recover through standard AMS practices it may be necessary to recover the nozzle by swabbing.

Recovering Nozzles by Swabbing

Introduction

If a nozzle or group of nozzles do not recover from standard AMS practices swabbing with flushing solution may be required.

Maintenance Equipment

- Foam Tipped Swab (3010118211)
- Flushing solution (QV017)
Before you begin, click on Move carriage in the printer UI and then open the maintenance Access door.



Note:

Tip: To help locate nozzles that need recovering remove the nozzle check print from the vacuum table and place it on the floor under the carriage in the maintenance area. Make sure it is in the correct orientation so the colors are aligned. The print represents a projection of the jetting performance of each printhead. This makes it easier to trace a nozzle or group of nozzle outs back to the area on the actual printhead nozzle plate that requires swabbing.

Procedure

1. Dip the foam end of the swab in a small container of flushing solution. For best results the swab should be fully saturated with flushing solution.
2. Hold the flushing solution soaked swab against area of the printhead where the nozzles require recovering for 10 seconds. See figure below.



Attention:

Be careful the seam on the swab does not contact the printhead. This can damage the nozzles.

3. Rotate the swab by 180 degrees and repeat step 2. Discard swab.
4. Do an AMS on the color channel(s) that were swabbed. This is important to clear the flushing solution from the printhead before a nozzle check is printed.
5. Print the Nozzle Check Print and evaluate. Repeat swabbing process if necessary.

Daily Maintenance

Daily Maintenance Procedures

Introduction

The daily maintenance activities in this section should be performed at the beginning of each work day.

To maintain optimal printing performance it is important to remove dust and debris from the following surfaces:

- Vacuum table
- Maintenance door
- Gantry light shield



Caution:

For cleaning areas of the printer that have uncured ink contamination use the following safety equipment – nitrile gloves, a lab coat and safety glasses with side shields to protect your eyes.

To maintain optimal printing performance it is important to remove any excess ink build up from the following areas:

- Ink spit tray
- Bottom of the printheads
- Bottom of the carriage
- AMS suckers
- AMS self-cleaning plate

Excess ink can become tacky over time. This will make it easier for dust and fibers to attach to these surfaces. Dust and fibers that collect on the bottom of the printheads or carriage can collect ink during printing and eventually drip on to the media.

Cleaning the Horizontal Surfaces

Introduction

To maintain optimal printing performance it is important to remove dust and debris from the following horizontal surfaces:

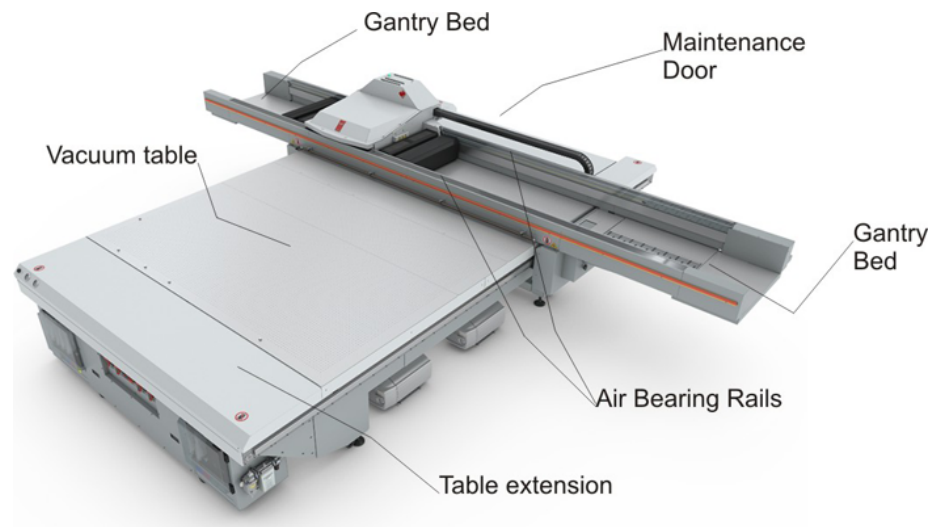
- Vacuum table
- Table extension
- Maintenance door
- Gantry bed

Equipment

- Standard dusting cloth

Keep the Horizontal Surfaces Clean

A buildup of dust and debris on these surfaces can transfer to the underside of the carriage and printheads during printing. This can lead to performance issues such as nozzle outs or ink drips on the media.



Procedure

1. Clean all horizontal surfaces with a clean dust cloth.

Cleaning the Ink Spit Tray

Introduction

The ink spit tray must be cleaned daily with a lint-free cloth and isopropyl alcohol.

Equipment

- Isopropyl alcohol (IPA)
- Cloth-Poly Wipe 10cm x 10cm (lint-free)

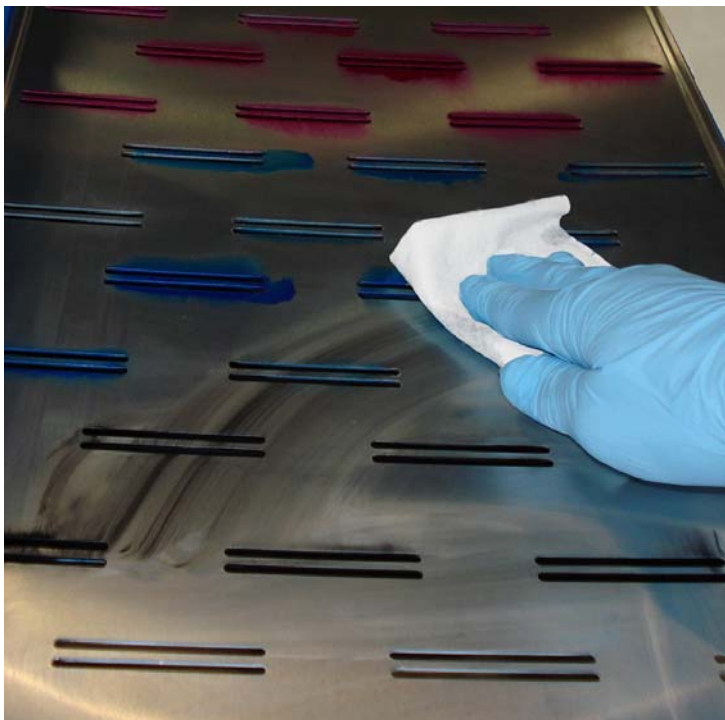
Procedure

1. Move the carriage to the maintenance position (See the Tools and Utilities tab in the user interface).
2. If there is excessive ink, first soak up some by blotting with an absorbent cloth (do not scrub). Then soak a lint-free cloth in isopropyl alcohol and scrub the surface where there is ink.



Attention:

It is important to use lint-free cloths as fibers from other types of cleaning materials can get caught in the slots of the spit tray..



3. If necessary, repeat with a clean cloth until all ink is removed.

Cleaning the Automatic Maintenance System (AMS)

Introduction

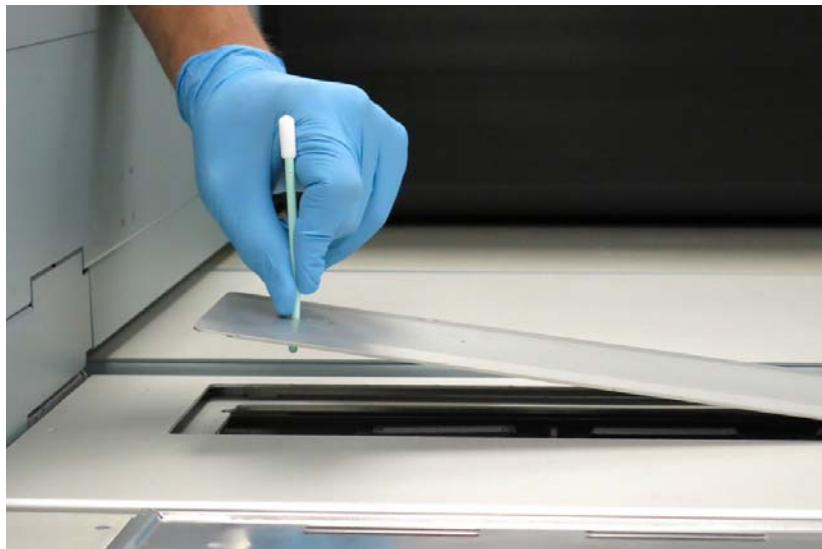
Clean the Automatic Maintenance System station daily.

Equipment

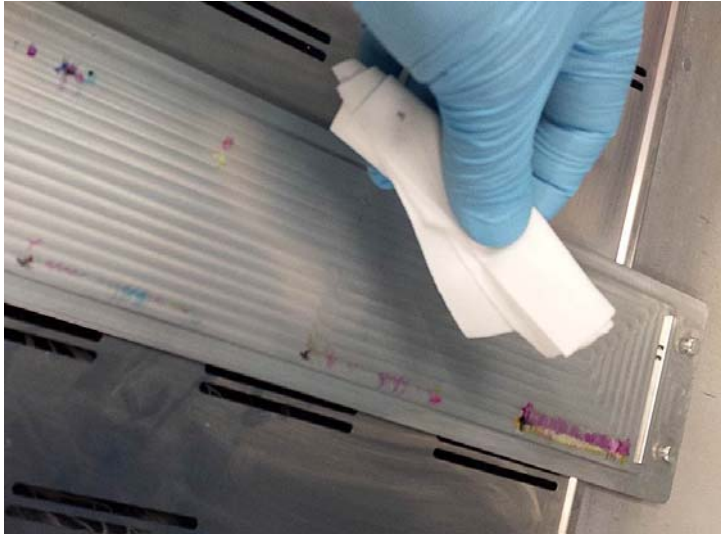
- Cloth-Poly Wipe 10cm x 10cm (lint-free)
- Isopropyl alcohol (IPA)
- Foam Tipped Swab (3010105434)
- Flushing solution (QV017)

Procedure

1. Remove the cover plate as shown below (Hint: you can insert the handle end of a swab and then slide in the direction of the arrow on the cover, and then start the lift).



2. Turn the cover plate over and clean the underside using a lint-free cloth and isopropyl alcohol.

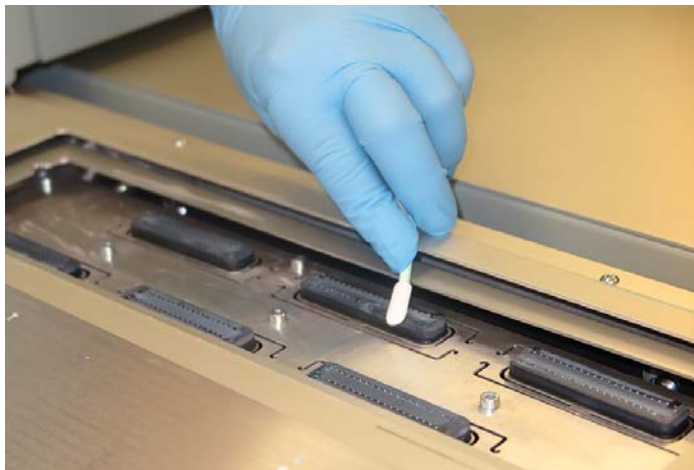


3. Dip the foam end of a swab in a small container of flushing solution.
4. From the Tools and Utility tab click on the **Right** button under "Press Right button to apply vacuum to the suctionheads for 30 seconds (Right is the primary AMS located near where the carriage is parked) and while the suction is active, gently draw the swab across the top of all the suctionheads to remove any ink deposits.



Note:

It is extremely important that you do NOT apply any downward pressure on the suctionhead. If a suctionhead is pressed down more than 2mm (0.078in) then it will no longer perform printhead maintenance properly. Also, if a suctionhead is pressed down too far you will need to place a service call to fix it.



5. Replace the AMS cover.

Cleaning the Underside of the Carriage

Introduction

The underside of the carriage must be cleaned daily. It may be necessary to clean the underside of the carriage more frequently if any of the following conditions exist:

- media has a high level of static charge
- full bleed printing
- media thickness value is incorrect



Caution:

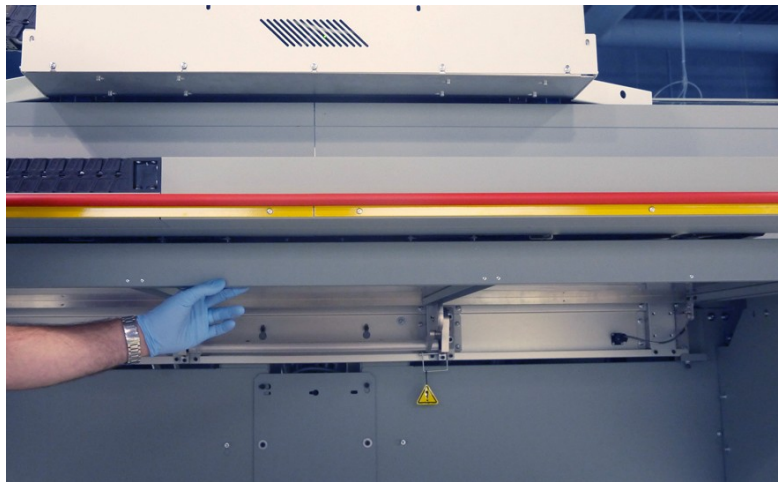
For cleaning areas of the printer that have uncured ink contamination use the following safety equipment – nitrile gloves, a lab coat and safety glasses with side shields to protect your eyes.

Equipment

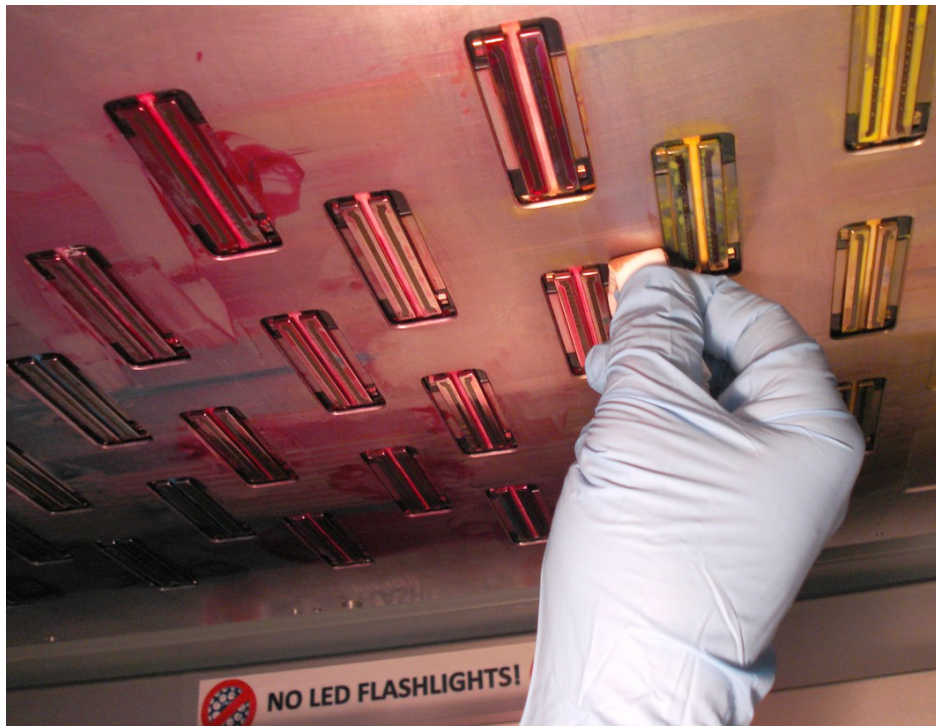
- Poly Wipe cloths
- Isopropyl alcohol

Procedure

1. Open the Manual Maintenance Access door.



2. Fold a lint free poly wipe cloth to a size that will fit between the printheads on the bottom of the carriage.
3. Dip the cloth in isopropyl alcohol.
4. Clean the ink from bottom of the carriage. Avoid touching the printheads (see figure below).



5. Close the access door.
Do NOT close if you are going to swab the printheads next.
6. Proceed to Cleaning the Printheads if you are doing Daily maintenance.

Cleaning the Printheads

Introduction

Ink tends to accumulate on the bottom of the printhead nozzles and must be cleaned off on a regular basis.

Equipment

- Foam tipped swabs
- Flushing solution (QV017)

This procedure assumes that the Maintenance Access door is still open from the previous procedure. If not click on Move Carriage and open the door.

Procedure

1. Dip the foam end of the swab in a small container of flushing solution. Use the lip of the container to wipe away any excess flushing solution from the swab.



Attention:

Keep swabs clean prior to use.

Do not dip a used swab in the flushing solution solution.

2. Position the foam end of the swab at one end of the printhead, as shown in the figure below.

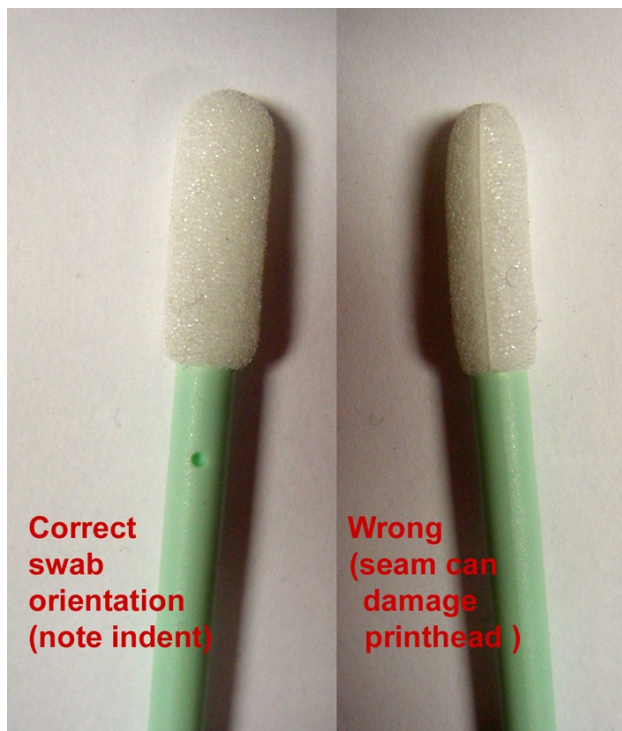


3. Slowly move the swab from one end of the printhead to the other. This should take approximately 2 seconds.

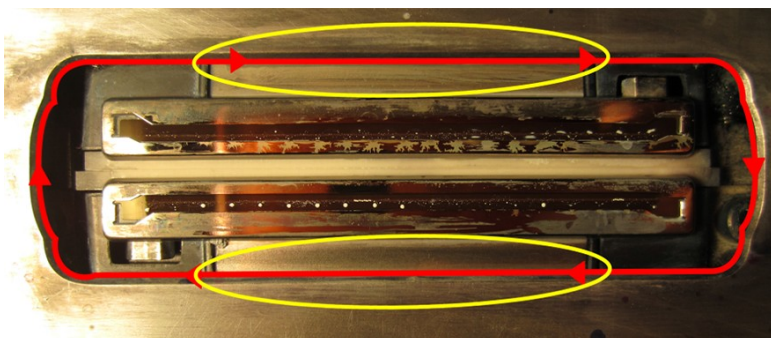


Attention:

Do not let the seam on the foam contact the bottom of the printhead. This can damage the printhead. See the figure below.



4. Rotate the swab by 180 degrees to its clean side and repeat step 3 for the next printhead.
5. Use the clean tip of the same swab to clean around the openings for the last 2 printheads. Run the swab around the perimeter of the opening. See path indicated in red in figure below. Take special care to remove ink from the gap between the metal plates of the printhead and carriage base plate. See area indicated in yellow in figure below.



6. Discard the swab. A new swab must now be used to clean the next two printheads



Note:
A single swab may be used to clean 2 printheads



Attention:

Never use the same swab on two different color channels.

Never "scrub" the printhead with a swab as this will drag debris into other nozzles.

7. Continue until all printheads are cleaned.
8. Inspect all printheads for any residual ink or flushing solution. Remove with a clean dry swab if necessary.
9. Close the Maintenance Access Door.

Agitate White Ink Bag

Introduction

White ink has heavier and larger pigment compared to standard ink colors. White ink pigment settling can occur in a relatively short period of time. This can create performance issues when printing with white ink. To guard against pigment settling it is recommended the white ink supply bag be gently agitated once a day.

Procedure

1. Open the clear plastic door to access the white ink bag
2. Press the quick-release coupler button to release the white ink bag.
3. Agitate the white ink bag for 10 seconds according to the illustration on the bag.
4. Reconnect the white ink bag to the printer & close the clear plastic door.

Periodic Maintenance Procedures

How to Change the UV Lamp Filters

Introduction

The top of the UV lamps contain two filters that keep dust and other airborne particles from entering the lamp. If the filter becomes clogged with dust and debris it can cause overheating and even failure of the lamps.

When to do

Check the condition of the filters weekly and replace them every two weeks.



Note:

If you receive a lamp overheat error, check for dust and debris. If you get a lamp overheat error and there is no dust on the filter, call for service immediately.



Caution:

The lamps may be hot so use caution when removing the filters.

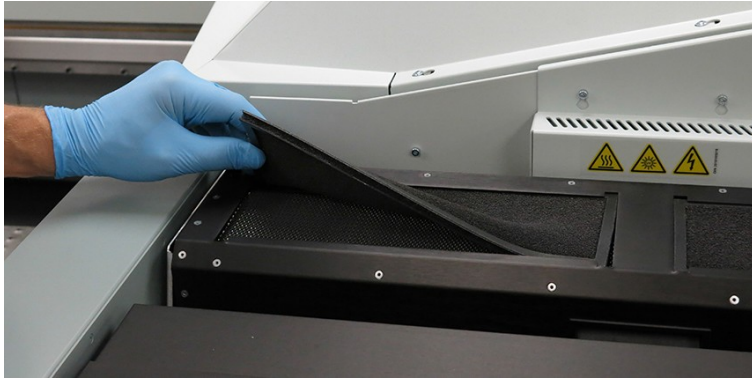


Attention:

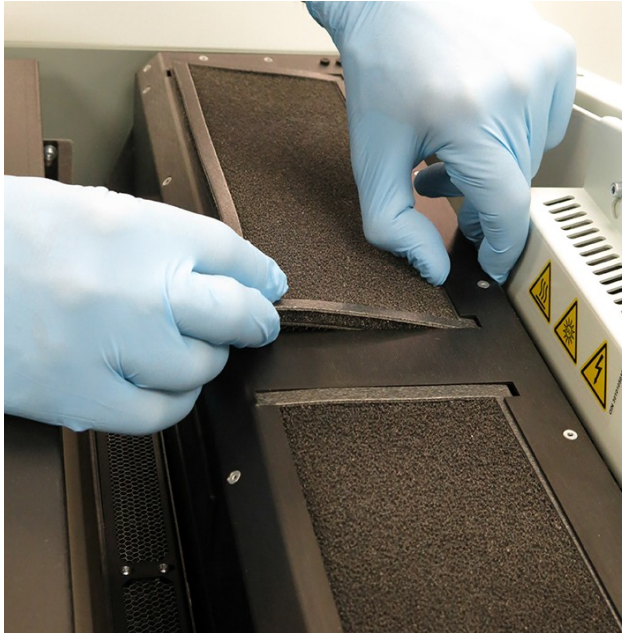
We do not recommend vacuuming or washing the filters as they are often contaminated with ink mist that cannot be easily removed.

Procedure

1. Turn off the UV lamps.
2. Wait for the lamp fans to stop to ensure the housing has cooled down.
3. Remove the two foam filters from the top of the housing by lifting an exposed corner as shown below. The filters are flexible and will bend as you remove them.



4. Place the new lamp filter by inserting one long edge into the channel on top of the lamps. Squeeze the filter so that the middle bulges and allow the other edge to slide into the other channel. Use your thumb to insert the filter under the edges of the lamp cover.



5. Repeat these steps for the other filters.

How to Change a UV Lamp Bulb

Introduction

The printer uses two UV lamps, one on each side of the carriage, to cure the UV ink during printing. The bulbs in these UV lamps have a limited lifetime and must be replaced by the operator if they fail or when they can no longer cure the ink at maximum available power.

When to do

Although the minimum functional life of the UV lamp bulbs is 1000 hours, there are factors that can reduce the expected lifetime. Operational practices, such as turning the lamps off and on frequently, using them at high intensity all of the time, or touching the bulbs with your fingers, can shorten their life. Fujifilm recommends that both UV Lamp bulbs be replaced at the same time to ensure that the curing effect is balanced when printing in both directions. In the case of a premature failure or accidental breakage of one lamp, the operator can decide to replace only one lamp but should confirm image consistency after the replacement. Uneven curing can cause gloss banding in the printed image.



Note:

The Flatbed Settings icon on the printer interface allows the operator to control the power output of each UV lamp independently. To extend lamp life, use the lowest setting that provides adequate curing for a particular media. However, avoid handling media with insufficient curing as partially cured UV ink on your skin can cause irritation and sensitization.



Caution:

The UV lamps and the carriage may be hot if the printer has been active. Avoid touching the lamp assembly until it is cool.



Caution:

These UV lamp bulbs contain mercury, and if they are broken the vapour is toxic if inhaled. The lamp bulbs must be disposed of according to local environmental regulations.

How to Access the Lamp Housings

The housings for the two UV lamps are located on each side of the carriage. When you view the printer from the end where the Start button is located, the Right lamp is located on the Home side where the carriage parks when it is not printing. The Left lamp is located on the other (Away) side of the carriage. To access the Right lamp, make sure the carriage is in its parked position and follow the instructions below to remove a bulb. To access the Left lamp, first use the printer interface to move the carriage to the Away end of the gantry (Note: this feature is not yet implemented so for now you can press a E-stop and then carefully move the carriage to the other end of the gantry by pushing gently on the top. After the bulb is changed you can reset the E-stop error).

How to Remove the Lamp Bulb

It is not necessary to shut the power off the while replacing bulbs on an Acuity F Series printer. However, make sure you turn them off by de-selecting the lamp icon in the user interface before you start and allow a few minutes for them to cool down

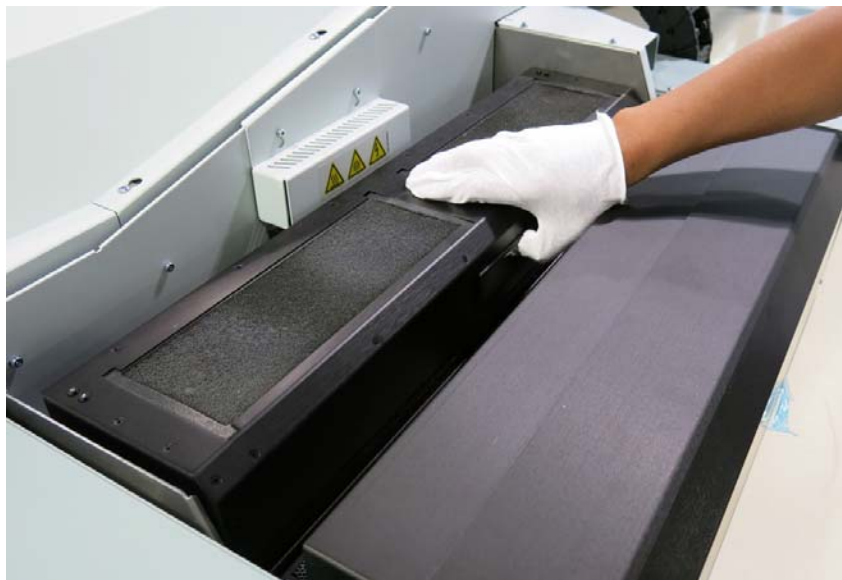


Note:

Wear cotton or nitrile gloves when handling UV lamp bulbs. Avoid bare skin contact with the UV lamp bulbs. When heated, compounds from the skin can form permanent etching on the surface of the UV bulb. A contaminated bulb may fail prematurely.

Procedure

1. Flip open the top cover of the Right UV lamp assembly until it rests against the carriage.



2. Disconnect the left UV lamp connector by pressing in the tabs on either side and pull it out. Disconnect the right connector in the same way.



3. Hold the wire attached to the left end of the lamp in one hand and use a finger of the other hand to reach under the ceramic end to ease the bulb out of the retainer clip. Perform the same action to release the other end of the bulb.
Note the orientation of the ceramic end in the retainer clip so that you can put the new lamp in the same spot. The clip clamps to the small diameter ceramic section at the end of the bulb.



4. Place the used bulb in a container for recycling as per your local regulations.
5. Clean the lamp shutter with a lint-free cloth (do not use water, although alcohol can be used if needed).



6. Prior to installing the new UV lamp bulb, use the cleaning wipes provided in the replacement kit to remove dust or debris from the glass bulb .
7. Pick up the new bulb by its ceramic ends and insert the bulb into the retainer clips one at a time, ensuring that the bulb is centered and seated firmly into the clips at both ends.

8. Reconnect the bulb power connectors at both ends.
9. Replace the top cover of the lamp assembly by hinging it forward to close it.
10. Remove the Left bulb in the same manner, if replacement is required.
11. Dispose of the old UV lamp bulbs according to local environmental regulations for products that contain mercury.

How to Remove Ink from the Table

Introduction

This section describes how to remove both cured and uncured ink from the printer vacuum table. It also describes how to unplug a vacuum hole on the table.

Required tools

- Lint-free absorbent clothes
- Nitrile Gloves and wrap-around safety glasses
- Isopropyl alcohol (95% pure)

How to remove Uncured Ink



Note:

Safety glasses with side shields, nitrile gloves and a protective apron must be worn when you handle ink.



Caution:

Avoid skin or eye contact with uncured ink as it will cause irritation and sensitization. If a nitrile glove is contaminated with ink, replace it within a few minutes.

1. Wipe up the majority of the ink by blotting with an absorbent cloth.
2. Wet a new absorbent cloth with alcohol and wipe up the remaining ink.
3. Continue to wet and wipe the surface until the cloth does not show any sign of ink color.

How to Remove Cured Ink

1. Scrape any cured ink from the surface of the table with a scraper (or a razor blade in a holder).
2. Use a vacuum cleaner to remove the scraped particles of ink and any other debris on the table surface.
3. Use a lint-free cloth soaked in isopropyl alcohol to ensure that the table surface is clear of any remaining particles.

How to Unplug Vacuum Holes

1. Identify any vacuum holes that are plugged with ink.
2. With an 1.5mm diameter rigid material (e.g., a paper clip), ream out any of the holes that have been plugged.
3. Clear any resulting debris with a vacuum cleaner or a wet lint-free cloth.

How to Empty the Ink Waste Tray

Introduction

The waste tray is located below the ink spit tray. It accumulates waste ink from printhead spitting, and from performing Automatic Maintenance.

When to do

Empty the waste tray weekly. The waste tray capacity is approximately 1.5 liters.

Required tools

Cloth or paper towel

An empty semi-transparent 1.5 liter plastic container

Nitrile Gloves

Procedure

1. Put a cloth or paper towel in place on the floor to catch any drips while the tray is emptied.
2. Place a suitable empty container that holds at least 1.5 liters under the waste tray drain.



3. Turn the valve on the waste tray until it starts to drain the waste ink.
4. Shut off the valve when ink no longer drains out (or if the container becomes full). Use a piece of cloth or paper towel to wipe it clean as some ink can remain inside and drip out later when the printer is in motion.



Note:

Tip: You can use a funnel or a long piece of tubing that allows you to place the container on the floor for convenience.

5. Dispose of the waste material in a suitable, environmentally-friendly manner.

How to Fill the Coolant Bottle

Introduction

The coolant is a thermal fluid used to maintain the temperature of the ink in the printheads.

It is important to check the coolant bottle, located in the Primary Ink Bay, to see if the level is low. Keep the coolant level up to ensure proper ink temperature.



Note:

The Accessory Pack that ships with a new printer contains a 2 liter bottle of coolant. During an install the coolant system requires 1.8 liters to fill the coolant bottle and lines. We suggest that you order more coolant from your sales representative so that you will have some when you need to top up the system.

Procedure

1. Unscrew the nipple from the coolant bottle lid to remove the coolant tube.



2. Remove the coolant bottle from the ink bay.

3. Unscrew the coolant bottle lid.
4. Get the coolant fluid container that shipped with the printer.
5. Fill the coolant bottle.
6. Attach the lid to coolant bottle and return it to the Primary ink bay.
7. Store the coolant fluid until it is needed again.

Cleaning the Glass Rails

Introduction

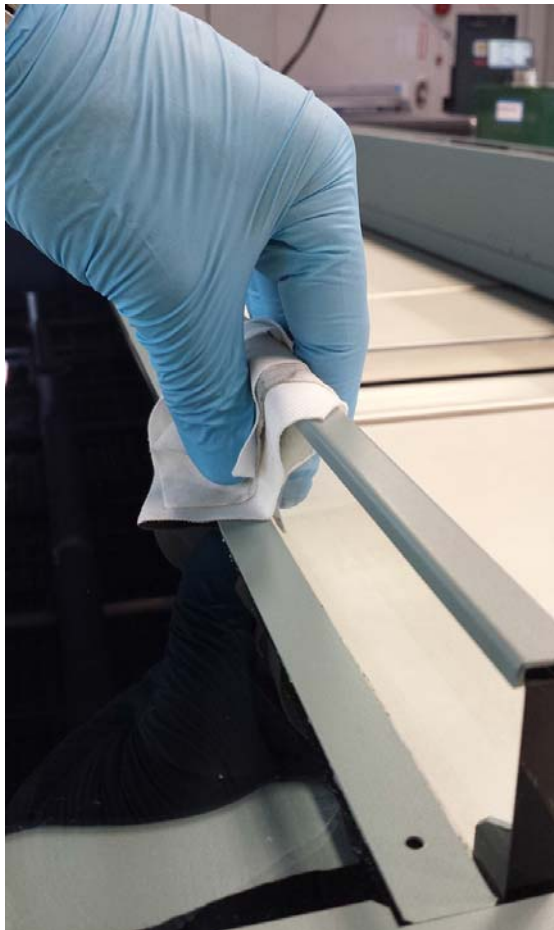
To maintain optimal printer performance it is important to remove dust or other contaminants that may collect on the glass surfaces.

Equipment

- Isopropyl alcohol (IPA)
- Cloth-Poly Wipe 10cm x 10cm (lint-free)

When to do

Clean the rails and bearings at least once a month, or as needed.



Procedure

1. Wet a clean lint-free cloth with isopropyl alcohol.
2. Clean all accessible glass surfaces. Wait for surfaces to dry (approximately 1 minute).
3. Go to the Tools and Utilities tab on the user interface. Select **Move Carriage**. This will move the carriage to the **Maintenance Position** and allow access to the section of glass rails that are covered by the carriage when it is in its park position.
4. Clean remaining surfaces of glass. Wait for surfaces to dry (approx. 1 minute).
5. Select **Move Carriage** again to return the carriage to its **Park** position.

How to Clean the Gantry Rails

Introduction

Dust and debris can accumulate on the gantry rails, which run along the length of the table. The bearings that run on the rails are equipped with shields that are designed to keep debris from entering the bearing housing. After a period of time and use, debris can accumulate on the outside of the bearing shields as the gantry travels along the table.

When to do

Inspect and clean the rails and bearings at least once a month. If you notice any dirt or ink on the gantry rails, or an accumulation of debris on the rails bearings, clean them immediately.

Required tools

Poly-Wipe lint-free Cloth (Hint: you can also use a swab to clear away the dust)



Attention:

In the event of an ink spill on the rail, it should be cleaned immediately. Slight ink stains that remain on the rail after cleaning are not a major problem.

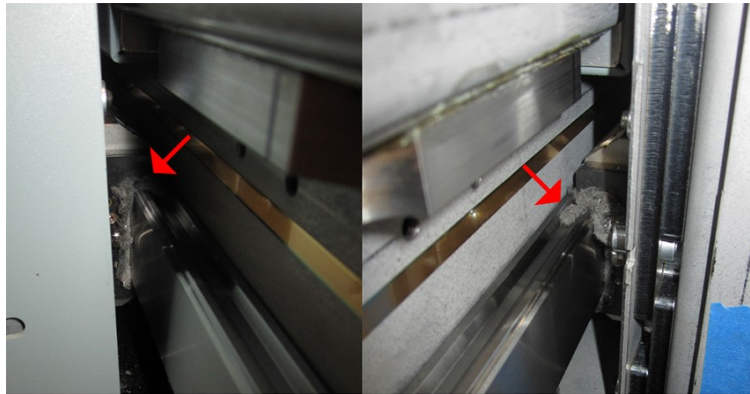


Caution:

Because of the possibility of gantry movement it is best to clean the rails with the power off.

Procedure

1. Power OFF the printer at the AC power On/Off switch.
2. Turn the switch to the horizontal Lockout position and apply a lock.
3. Use a dry lint-free cloth to remove all visible debris that has accumulated next to the bearing shields. It is only necessary to clean the outside bearing shields. When removing debris always wipe away from the shields.



Away Side

Home Side

4. Remove the lock from the Lockout switch.
5. Power ON the printer.

Clean the UV Lamp Quartz Window

Introduction

Dust and other debris as well as ink mist can accumulate on the UV lamp windows. There is a quartz window below each of the two sets of UV lamps.

When to do

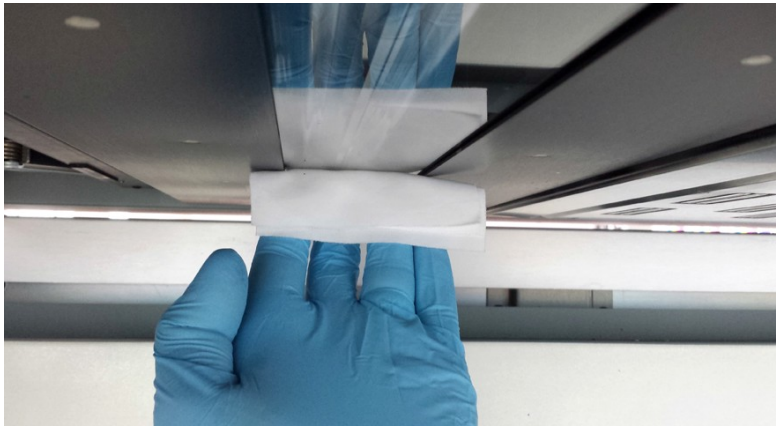
Inspect and clean the lamp windows once a month. Do this while you are performing Daily Maintenance as the access door will be open and the lamp windows visible and accessible.

Required tools

Poly-Wipe lint-free Cloth

Procedure

1. Wipe the bottom of the quartz window with a lint-free cloth soaked in isopropyl alcohol.



2. If you see any ink, it can be removed by scraping with a razor blade or similar tool held at a 45-degree angle.

How to Change an Ink Filter

Introduction

Each ink color has a filter that removes any particulate matter from the ink as it is pumped from the ink bag to the printheads. The ink filters are located in an enclosure below the ink bays with each filter positioned below its ink bag.

When to do

An ink filter must be replaced after 50 liters of ink have been consumed or if the ink color strength begins to look weak. If an ink filter becomes clogged, it will trap color pigment and affect the color strength of printed images. It can also cause damage to the ink system. It is important to change the filter before this occurs.

If the Nozzle Check print shows one color weaker than normal, this is an indication that the ink filter for the affected color is clogged and the filter must be replaced. Also, if you notice that an ink reservoir takes a long time to fill, check the Maintenance tab in the user interface for when the filter for that color of ink was last changed. Make sure that the ink tubing from that filter is not kinked.



Note:

New ink filters contain air that must be released. Air in the ink filter can affect the vacuum and result in dripping ink and deteriorated image quality as a result of nozzle dropout. Bleeding the ink filters is a strategy to avoid persistent nozzle dropout. You must bleed any trapped air out of the ink filters to prevent an overflow of ink that will result in ink dripping from the carriage. You will be notified by the printer when it is necessary to change or bleed a filter. Although, you can select Done or Postpone even if the task is not complete, it is in your best interest to follow the recommended schedule. If you don't change or bleed the filters you will see poor image quality and may need to place a service call to remove contamination from the system. However, the preferred preventative maintenance method is to change or bleed the ink filters when alerted by the printer.



Attention:

A clogged ink filter can result in damage to your printer's ink system. Particulate matter buildup in the ink can cause problems that will require a service call. Be sure to change all ink filters and to bleed the filters when the printer indicates that it is needed, to avoid such problems.

Procedure

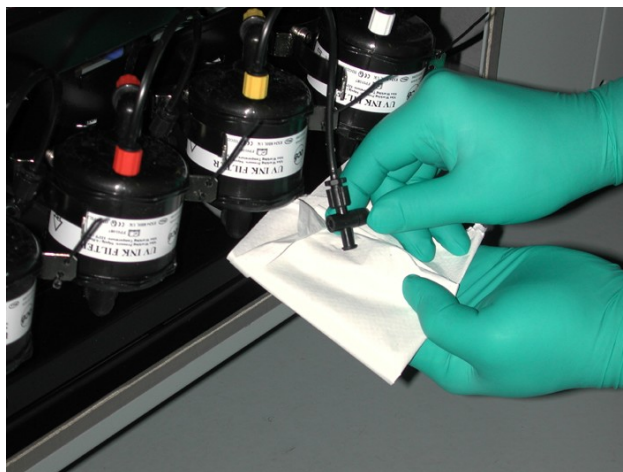
1. Disengage the ink bag for the ink color of filter you will replace. To do this press the release tab on the left side of the quick-release ink bag coupler and then pull it out to disconnect the ink bag. Use the color codes on the ink filter enclosure door to identify the correct ink bag and filter.



2. Push on the top the ink filter enclosure door and it will flip forward to open and provide access to the filters.



3. Locate the bleed tube valve on the top of the ink filter you are going to change (the cap that holds it in place indicates the color of the ink line into that filter).
4. Wrap a lint-free cloth around the end of the bleed tube of the ink filter to catch any ink that may spray out when you release the pressure in the next step.



5. Turn the bleed tube valve shutoff lever so that it is parallel to the bleed tube to open the valve and release any pressure, then flip the shutoff lever back to the perpendicular closed position after about 30 seconds.



Note:

The ink system is under pressure and so it is possible that some ink may spray out at first. Keep the cloth wrapped around the end of the bleed tube so that any ink spray is contained.

6. Pull the target ink filter out of its metal retainer clip.
7. Unscrew the bleed tube cap from the old filter and thread it into the top connector of the new filter. Place the cap that came with the new filter on the old filter to prevent ink from leaking out of the old filter.
8. Repeat the previous step for the top and bottom connections.



Note:

Wipe off any spilled ink.

9. Insert the new filter into the empty retainer clip and make sure the flow arrow on the filter points downward. Be careful not to pinch the ink lines.
10. Proceed to How to Bleed an Ink Filter (necessary to remove air from a new filter).

How to Bleed an Ink Filter

Introduction

Bleeding air trapped in the ink filters is a strategy to avoid persistent nozzle dropout. You will be notified by the printer when it is necessary to bleed a filter. Although, you can select Done or Postpone even if the task is not complete, it is in your best interest to follow the recommended schedule. If you don't bleed the filters you may need to place a service call to remove contamination from the system. However, the preferred preventative maintenance method is to bleed the ink filters when alerted by the printer.

When to do

New ink filters contain air that must be released. Also after a period of use all ink filters will contain air. Follow the schedule for bleeding ink filters indicated in the Maintenance Tasks tab.

Before you begin

The filters are bled using a 60 ml syringe. If bleeding after an ink bag change, let the ink fill finish before bleeding the filter. The filters should be bled while the printer is idle; that is, there should be no active printing and the ink pumps should not be running.

How to Bleed an Ink Filter

If you have just changed an ink filter, steps 1 to 3 are not necessary. They are needed only if you have come to this section just to bleed an ink filter.

Procedure

1. Disengage the ink bag from the coupler for the filter you will replace. To do this press the release tab on the left side of the quick-release ink bag coupler and then pull it out to disconnect the ink bag.
2. Push on the top of the ink filter enclosure door and it will flip forward to open and provide access to the filters.



3. Locate the bleed tube valve on the top of the ink filter you are going to bleed (the cap that holds it in place indicates the color of the ink line into that filter).
4. Attach the syringe to the bleed port and open the stopcock. If you want to reuse the syringe, start with the lighter ink colors first. Darker inks will stain the clear plastic wall of the syringe and make it difficult to see the ink as it comes in.



5. Pull the plunger out until ink is seen in the syringe. If there is excessive air, more than one syringe full of air may be extracted. In this case, close the stopcock before disconnecting the syringe and expelling the air.

6. After the air has been fully withdrawn from the filter there will be a noticeable increase in the force required to pull on the syringe, and ink will begin to flow into the syringe.
7. Once ink has been drawn into the syringe (it will want to spring back due to the vacuum in the syringe), release the plunger slowly, close the stopcock, disconnect the syringe, and carefully discard the ink into a waste bucket.



Note:

The same syringe can be used to bleed all the ink channels if they are done in succession. The syringe cannot be stored and reused as the ink chemistry will degrade the syringe. If only some of the ink channels require bleeding, discard the syringe immediately after finishing those channels. Do NOT reuse it on other ink channels at a later date..

Document History

Version	Date	Author	Notes
1.0	19/09/2014	FSIS	Original