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VUTEk 3r & 5r Series
Digital Inkjet Printer

Maintenance Guide

Revision History

Ver.	Date	Description	Request #
A	01/10/2018	First revision.	
B	01/11/2018	Added Grease Gun, PRESSOL part number to Printer Maintenance Log; changed wiping LED glass to every eight hours; added chiller fluid level check; updated air quality check and requirements.	
C	01/19/2018	Changed Nylon Brush and added part number; reformatted document for flow and usability.	
D	02/09/2018	Re-arranged Maintenance Task intervals; changed Semi-Annual filter maintenance to an Operator task; updated Common Maintenance Items in the Printer Maintenance Log; added additional procedures.	
E	07/23/2018	• Corrected section 2.1 and Maintenance Log to clean Print Head plate with Jet Surface Cleaner (part# 45119466) and not IPA. • Small text edits to pgs. 37 and 38.	• DR 5165 • DR 5119
F	08/13/2018	Changes to 4hr routines and Print Head Cleaning routine. Added additional Common Maintenance Items.	DR 5194
G	10/04/2018	Added printer model to top of Maintenance Log. Removed contact table and instruction text from Log.	DR 5304
H	02/14/2019	• Added "Apply print head cleaning solution to the wipe and then" at start of step 6 for 4.2 Clean print heads. in 4 Hour Maintenance. • Changed IPA to roll conditioner to step 2 for 2. Clean the T (Tension) rubber roller. in 40 Hour Maintenance	• DR 5517 • DR 5518
I	05/21/2019	Added section 10.3 Create a printer backup. to Quarterly Maintenance	DR 5687
J	10/03/2019	Updated style and added video links. Added/edited notes on pgs. 33 and 36.	DR 5849
K	05/26/2020	Added section 9.5 Clean the carriage home sensor.	DR 6296
L	06/25/2020	Updated Preferences window image in Figure 6-2	DR 6327
M	02/24/2022	Changed 7.1 Clean the free-fall rollers. to IPA.	FSE Call
N	09/12/2022	Updated video links	DR 6969

O	11/17/2022	Added 10.2 Clean power supply and motorized drivers. Changed 7.1 Clean the free-fall rollers. to roll conditioning fluid. Created new 8.0 Bi-weekly Maintenance section for 8.1 Replace UV power supply filter.	DR 7185
P	12/07/2022	Created new 3.0 Every Two Hours section for 3.1 Perform print head care - white/clear.	DR 7215
Q	02/08/2023	Removed extra tasks from Maintenance Log	DR 7293
R	04/03/2023	Updated 3.1 Perform print head care - white/clear.. Removed video link from 5.8 Perform print head care.	DR 7346
S	05/09/2023	Changed 7.1 Clean the free-fall rollers. back to IPA per Alexander Sheinzon, 05/04/2023 email.	DR 7390
T	06/05/2023	Added 12.0 Annual Maintenance	DR 7422
U	09/13/2023	• Added 6.2 Check/replace exhaust filter. • Updated P/Ns for INK JET UV MAINTENANCE FLUID and ROLL CONDITIONER	• DR 7512 • DR 7524

Table of Contents

Maintenance Guide

1.0 Introduction

1.0   Introduction

The guide provides instruction for certified operators to perform the required routine maintenance tasks. Download the latest version of this document at *https://inkjet.support.efi.com*.

1.1   Welcome

Welcome to the EFI Printer Maintenance Guide. Please take the time to get well acquainted with your printer by reading this document and the corresponding Operations Guide. The more you know and understand about your printer, the greater safety and production value you will derive from it.

Additional information is available in separate documents, which can be found here: https://inkjet.support.efi.com

For more information on EFI and it's products, visit: *www.efi.com*

1.2   Before You Begin

Before performing any scheduled maintenance procedure, operators are required to complete Operator Certification Training. For more information, visit: *https://inkjet.support.efi.com/training/*

Ensure all required items are on-hand before beginning any maintenance procedure. Required items can be found in the *Required Items List* section of this document.

> NOTE: You must read and understand the following documents prior to operating or servicing this printer.

- **Inkjet Solutions Printer Safety Guide -** http://inkjet.support.efi.com/doc.php?doc=683
- **VUTEk 3r & 5r Operations Guide -** http://inkjet.support.efi.com/doc.php?doc=3941
- **VUTEk 3r & 5r Maintenance Guide**

These documents are available at *http://inkjet.support.efi.com*.

1.3   Safety

Use caution when performing maintenance tasks on your printer. Adhere to all safety precautions described in the *Inkjet Printer Safety Guide*. Make sure nothing gets caught in moving parts. Do not perform maintenance procedures while the printer is in production. Keep all open flames and other burning materials (such as cigarettes) away from the printer. Safety comments and instructions should be read and observed to avoid personal injury and/or printer damage. These comments are highlighted as follows:

WARNING:
- Comments in a red highlighted box with triangle symbol
- Used when failure to follow will result in operator injury or printer damage

Example:

> ⚠ **Warning: Contact between the moving carriage and a foreign object can cause injury and damage.**

CAUTION:
- Comments in a yellow highlighted box
- Used when failure to follow could result in operator injury or printer damage

Example:

> ⚠ **Caution: Do not apply excessive pressure. Do not try to insert the corners of the wipes into the print head nozzles.**

NOTE:
- Comments in italics
- Used when failure to follow could result in printer errors
- Used when describing helpful tips

Example:

NOTE: The second wiping must be with a dry wipe to prevent print head cleaning fluid from potentially entering the print head.

1.4   Using Retaining Pins

Two retaining pins are provided with the printer kit. Operators must install the retaining pins when the printer hood is open and the operator is performing printer maintenance tasks. Pin installation locations are at the left (LH) and right (RH) sides of the printer and are installed to prevent the printer hood pistons from closing.

Warning: The Printer Hood represents a CRUSHING hazard when open. To prevent Operator injury, always install the Retaining Pins when the Printer Hood is open while performing printer maintenance tasks. The Retaining Pins are intended for the personal safety of the printer operator to prevent the Printer Hood from lowering due to operator error or system failure.

How-to Video: CLICK TO PLAY

1.   The LH pin installation location is shown in Figure 1-1.
2.   Open the printer hood and insert the retaining pins into the LH and RH pin sockets.
3.   Ensure the retaining pins are inserted fully into the sockets, and proceed with any required maintenance tasks.
4.   Remove the retaining pins after completing tasks.

Figure 1-1 Hood Open, (Left), Installing Pin, (Middle) and Pin Installed, (Right)

Figure 1-2 : Retaining Pin

1.5   Maintenance Videos

A series of Maintenance Videos is available for users to review prior to completing any maintenance procedure. Each procedure contains a link to review the related maintenance video.

 CLICK TO PLAY

Figure 1-3 Example video link

1.6 Customer Support

		North & South Americas		Europe, Middle East, Africa	Asian Pacific (APAC)
	Customer Care				
	U.S	855-EFI-4HLP (855-334-4457)		+31 20 658 8070	+1 650 357 4790
				EuroInk@efi.com	
	Canada Mexico South America	+1 650 357 4790			
	Technical Support https://inkjet.support.efi.com				
	US Canada	855-EFI-4HLP (855-334-4457)		+32 2 749 94 50	+65 6221 2765
	Mexico South America	+1 412 690 4321		DE +49 2102 745 4500 NL +31 20 658 8080/8069 UK +44 12462 98085	
	Order Parts				
	US	Inkjet.Orders@efi.com		EuroParts@efi.com	InternationalOrders@efi.com
	Canada Mexico South America	InternationalOrders@efi.com			

1.7 Performing Maintenance

Most efficient maintenance routine:
- Read each maintenance task fully before starting.
- Verify that you have all the materials required to complete each maintenance procedure.
- Perform all maintenance tasks as scheduled in the maintenance log.
- Perform maintenance activities either before or after printing production shifts.

1.8 Printer Maintenance Log

The *VUTEk 3r & 5r Series Maintenance Log* is at the end of this document.

The Printer Maintenance Log lists the maintenance tasks, as well as the means for tracking the completion of each item. Print the first side once per week for daily and weekly tasks, and print the second page once per year for less frequent maintenance. When filling out the Maintenance Log, record the current date and time (if applicable), and write your initials in the space provided. Please retain copies of the Maintenance Log. Field Engineers will often ask to review your maintenance records during service visits.

1.9 Safety Labels - Printer Beam

The Printer Beam contains powerful magnets that assist the carriage movement. Persons with implanted medical devices must take extreme caution to avoid being within or contacting these magnets. Operators and Technicians must take extreme caution when using tools or other metal objects within 24" (61 cm) of the Printer Beam Magnets.

1.10 Fluid Emergency

If an emergency situation involving inks or maintenance fluids arises, contact local emergency services, download any SDS (Safety Data Sheets) and make them available to emergency service personnel. SDS are available on the Inkjet Support Site, *https://inkjet.support.efi.com/main.php* under **Documents** > **SDS (Safety Data Sheets)**.

1.11   First Aid - Inks and Solvents

Follow first aid directions based on these situations.

Eye contact
- Immediately flush with cool water ($\geq$15 minutes)
- Seek medical attention

Ingestion
- Do not induce vomiting; drink two glasses of water
- Seek medical attention

Skin contact
- Remove contaminated clothing
- Flush with plenty of cool water and non-abrasive soap
- Seek medical attention if irritation develops

Inhalation
- Move person to fresh air
- Seek medical attention if symptoms develop

Maintenance Guide

2.0 Scheduled Maintenance

2.0   Scheduled Maintenance

Scheduled maintenance is essential to promoting greater printer reliability, increased print quality, and greater production results. Use only recommended fluids, lubricants and parts, as described in EFI documents.

2.1   Importance of Maintenance

Routine maintenance can help to:
- Maintain printer up time
- Maximize productivity
- Maintain peak image quality

To help you service your printer, we provide a Maintenance Log which makes tracking routine maintenance easy. The Maintenance Log provides you with a list of preventative maintenance tasks, as well as the means for tracking the completion of each task. Please keep your maintenance log up to date. Your EFI Service Engineer will review your maintenance log during scheduled visits.

2.2   8 Hour Daily Production

The maintenance guidelines are based on an eight hour print production schedule, five days per week. Adjust your maintenance intervals if your operating shifts are longer than eight hours, five days per week.

Maintenance Guide

3.0 Every Two Hours

3.0   Every Two Hours

If you print with white or clear ink, the following maintenance task must be performed every 2 hours of production.

3.1   Perform print head care - white/clear.

PPE Items: GLOVES NITRILE DISPOSABLE BOX LARGE
                        SAFETY GLASSES

Required Items: INK JET UV MAINTENANCE FLUID
                        WIPES 9X9 CLEAN ROOM

Directions:

⚠ **Caution: Always wear PPG (personal protective gear) when working with inks or fluids.**

1.   Open the printer hood and insert the retaining pins into the LH and RH pin sockets.

2.   Dampen a lint-free wipe with UV maintenance fluid.

3.   Hold the lint-free wipe against the print head face for 20 seconds, allowing the wipe to absorb excess ink from the print head.

4.   Repeat for all white/clear print heads and then discard the wipe.

5.   Repeat steps 2. through 4. for all channels.

6.   Click the **Purge** button to perform a three second ink purge and then repeat the 3 second purge.

7.   Perform Clean print heads. procedure.

8.   Remove the retaining pins after completing tasks.
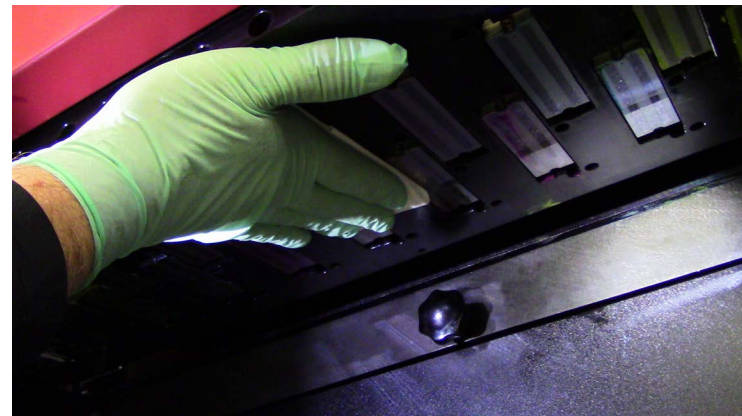
Figure 3-1 Holding wipe against print head face

NOTE: These activities are extremely useful in recovering poorly performing print heads.

Maintenance Guide

3.0 Every 4 Hours

4.0   Every Four Hours

The following maintenance tasks must be performed every 4 hours of production.

4.1   Clean around the print head area.

PPE Items: GLOVES NITRILE DISPOSABLE BOX LARGE
                        SAFETY GLASSES

Required Items: WIPES 9X9 CLEAN ROOM
                        INK JET UV MAINTENANCE FLUID

How-to Video: CLICK TO PLAY

Directions:

> *NOTE: Before wiping the print heads, clean any accumulated ink residue around the print head area and the bottom of the carriage (print head plate). This procedure should be carried out daily, at minimum, or if needed, every 4 hours of production.*

1.   Raise the carriage to its highest position.
2.   Open the printer hood and insert the retaining pins into the LH and RH pin sockets.
3.   Wipe the print head plate with UV maintenance fluid

4.2   Clean print heads.

PPE Items: GLOVES NITRILE DISPOSABLE BOX LARGE
                         SAFETY GLASSES

Required Items: WIPES 9X9 CLEAN ROOM
                         INK JET UV MAINTENANCE FLUID

How-to Video: [▶] CLICK TO PLAY

Directions:

1.   Ensure the printer is in the **Printer Ready** status.

      NOTE: Print head wiping should not proceed until ink system is completely warmed.

2.   From the printer Front End in **Print Heads Maintenance** pane, set the **Duration** to **3** seconds.
3.   Click the **Purge** button to perform a 3 second **Ink Purge,** Figure 4-1.
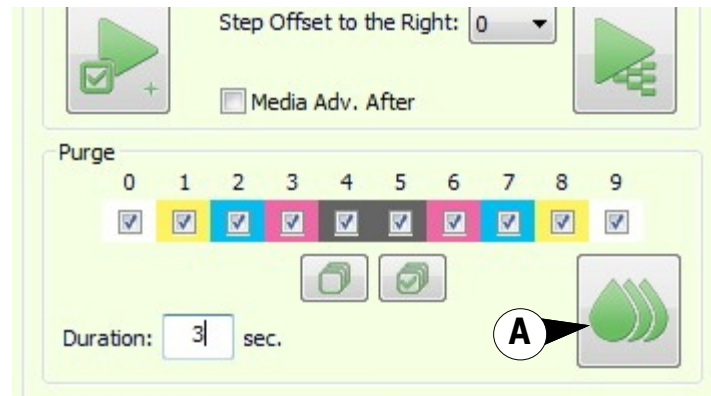
Figure 4-1 Print Heads Maintenance, Purge options, 3 second duration

A	Purge button

4. Open the printer hood and insert the retaining pins into the LH and RH pin sockets.

5. Fold a lint-free wipe in half, and in half again, Figure 4-2.
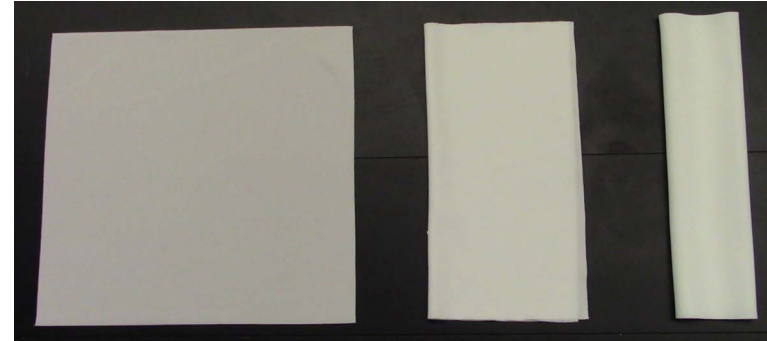
Figure 4-2 Three stages of folding wipes

6. Apply UV maintenance fluid to the wipe and then position the wipe between your fingers, Figure 4-3, and place wipe parallel to the print head plate at the carriage rear, Figure 4-4.

7. Wipe the print head faces of one color in one motion toward the carriage front. Take care to wipe only one color at a time; do not allow the wipe to contact the adjacent print heads or contamination may occur.
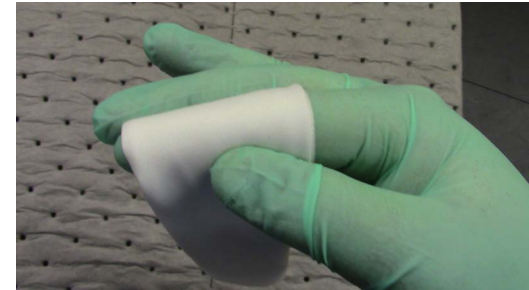
Figure 4-3 Holding wipe between fingers

⚠ **Caution: Do not apply excessive pressure. Do not try to insert the corners of the wipes into the print head nozzles.**
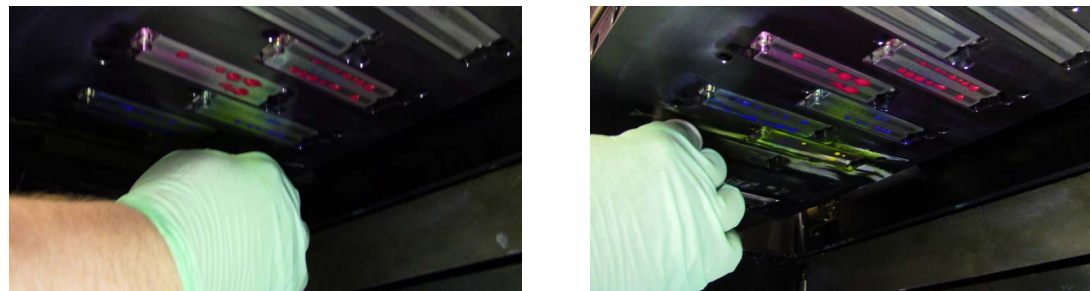
Figure 4-4 : Wiping print heads

8. Pull used portion of wipe through your fingers as ink accumulates on the wipe. When no clean portion remains, discard the wipe.
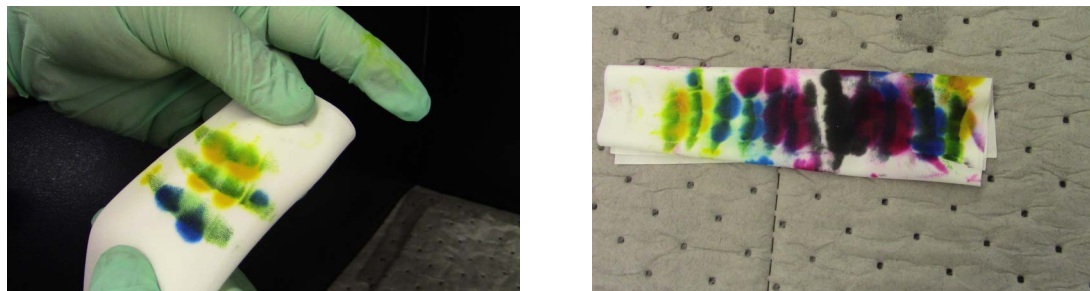
Figure 4-5 Advancing to clean portion of wipe, Left, and discarded wipe, Right

9. Repeat steps 5. through 8. for the remaining colors.
10. From the printer Front End in **Print Heads Maintenance** pane, set the **Duration** to **3** seconds.
11. Click the **Purge** button to perform a 3 second ink purge, Figure 4-1.
12. Fold a **DRY**, lint-free wipe in half, and half again as described earlier, Figure 4-2.
13. Dry-wipe the print head faces in the same way as described earlier.
14. From the printer front end, print a **Nozzle Test** and analyze, Figure 4-7.
    - If Nozzle Test is acceptable, the procedure is complete.
    - If Nozzle Test is **not acceptable**, proceed to Perform print head care., focusing on those color channels indicating nozzle out or nozzle misdirects, Figure 4-6.

    EXAMPLE: The magenta and cyan channels both displayed Nozzle Out conditions in Figure 4-7. The operator cleared the white, yellow, and black channels to purge only the magenta and cyan print heads, Figure 4-6, and used a wet wipe.

Figure 4-6 Purge section, only Magenta and Cyan channels selected
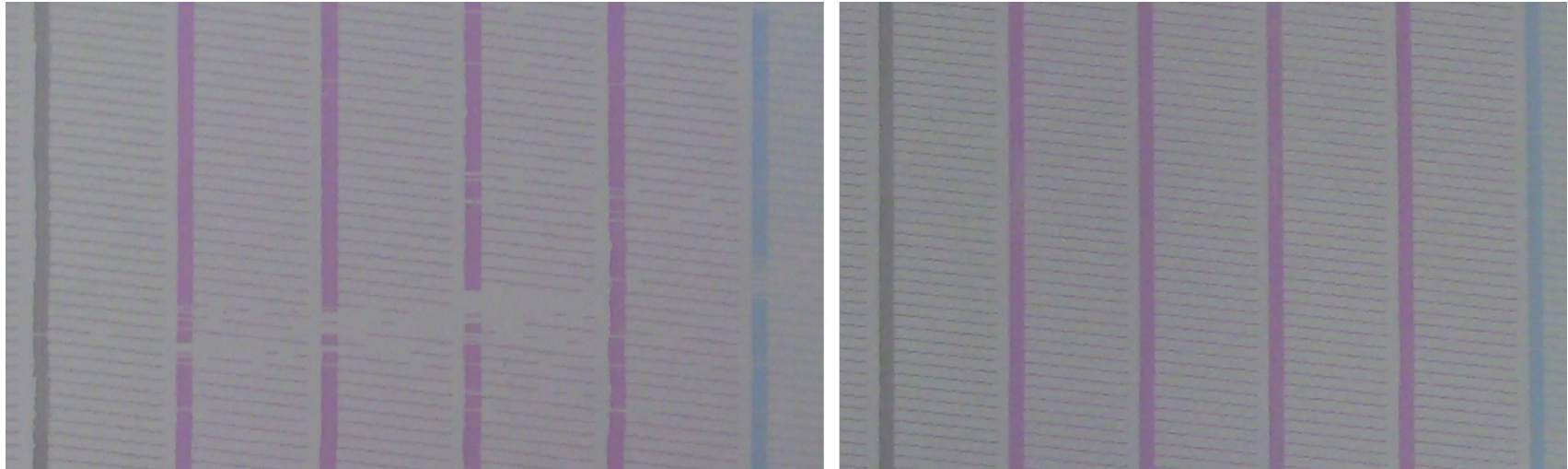
Figure 4-7 Nozzle Test - Nozzles Out, (Left) and Acceptable Nozzle Test after Wiping, (Right)

4.3   Clean printer carriage components.

PPE Items: GLOVES NITRILE DISPOSABLE BOX LARGE
SAFETY GLASSES

Required Items: WIPES 9X9 CLEAN ROOM
ISOPROPYL ALCOHOL

Directions:

> ⚠️ **Caution: Never wipe the print heads with IPA. Always wear latex gloves to prevent alcohol absorption through the skin.**

1. Using a lint free wipe dampened with IPA, wipe the underside of the following areas: (see Figure 4-8.)
    - The left and right light shields
    - The underside of the left and right ionizer bars
    - The underside of the carriage cover
    - The underside of the left and right crash protector
2. Remove the retaining pins after completing tasks.
3. Close the printer hood.
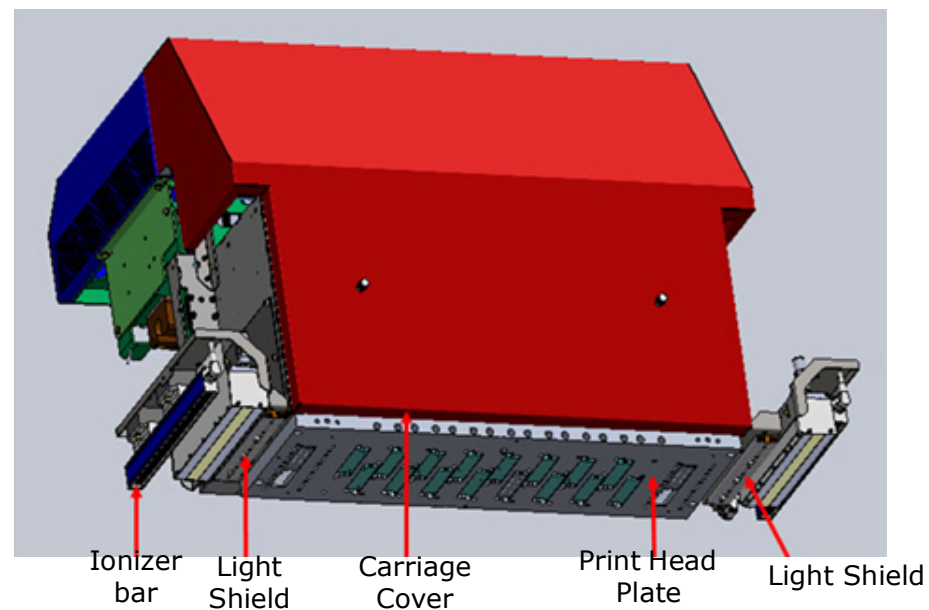
Figure 4-8 : Carriage Underside

Maintenance Guide

4.0 Every 8 Hours

5.0 Every Eight Hours

The following maintenance tasks must be performed every 8 hours of production.

5.1 Check facility air compressor and air filter systems.

Compressed Air Quality Specification document, *https://inkjet.support.efi.com/doc.php?doc=975*.

⚠ **Caution: Impurities in the air system are a major cause of print damage and printer defects!**

How-to Video: CLICK TO PLAY

Directions:

- Follow all manufacturer recommendations for maintenance and care of the facility compressed air system, point of use air filtration/drying systems, and any other third-party compressed air quality control equipment in order to maintain a constant, clean, and dry compressed air supply to the printer. Also see Check last chance air and water filters.

5.2   Clean the print platen.

PPE Items: GLOVES NITRILE DISPOSABLE BOX LARGE
                        SAFETY GLASSES

Required Items: METAL SCRAPER
                        ISOPROPYL ALCOHOL (IPA)
                        WIPES 9X9 CLEAN ROOM
                        TIP CLEANER TOOL

How-to Video: CLICK TO PLAY

Directions:

> ⚠️   **Caution: Always wear PPG (personal protective gear) when working with inks or fluids.**

1.   Open the printer hood and insert the retaining pins into the LH and RH pin sockets.
2.   Turn the **Vacuum control** knob to zero.

Figure 5-1 : Platen Vacuum control knob

3. Dampen a lint-free wipe with IPA and thoroughly wipe down the print platen surface.

Figure 5-2 Wiping the Print Platen

4. Using the scraper, carefully remove all ink deposits from the print platen surface, Figure 5-3.

5. Using a lint-free wipe and IPA, thoroughly wipe down the print platen surface again.

6. Using the tip cleaner tool or needle, make sure that each print platen hole is perfectly clean and free of ink, Figure 5-4.

Figure 5-3 Scraping print platen
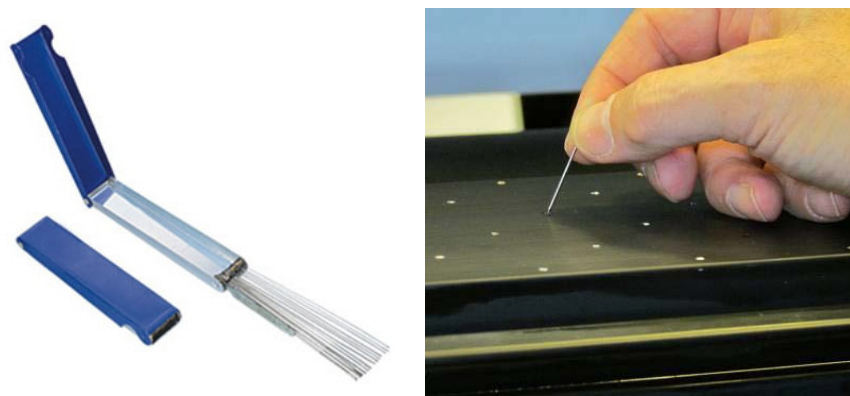
Figure 5-4 Tip Cleaner Tool, (Left) and Cleaning with a needle, (Right)

7. Dampen a lint-free wipe with IPA and thoroughly clean the surface of the print platen again.

8. Remove the retaining pins after completing tasks.

5.3   Clean the measure media sensor.

PPE Items: GLOVES NITRILE DISPOSABLE BOX LARGE
                        SAFETY GLASSES

Required Items: ISOPROPYL ALCOHOL (IPA)
                        WIPES 9X9 CLEAN ROOM

How-to Video: CLICK TO PLAY

Directions:

1.   Manually move the carriage so that the measure media sensor is exposed at the printer rear.
2.   Open the printer hood and insert the retaining pins into the LH and RH pin sockets.
3.   Using a lint-free wipe and IPA, thoroughly clean the underside of the sensor, Figure 5-5.

Figure 5-5 Measure Media Sensor, (Left), and Wiping, (Right)

4.   Remove the retaining pins after completing tasks.

5.4   Clean the ink sink.

PPE Items: GLOVES NITRILE DISPOSABLE BOX LARGE
                        SAFETY GLASSES

Required Items: ISOPROPYL ALCOHOL (IPA)
                        WIPES 9X9 CLEAN ROOM

How-to Video: CLICK TO PLAY

Directions:

1.   From the printer front end, click and hold the **Carriage Right** button, highlighted, Figure 5-6, so that the ink sink is completely exposed, Figure 5-7.

Figure 5-6 Front End Software Toolbar, Carriage Right button highlighted

Figure 5-7 Accessing the Ink Sink

2.   Open the printer hood and insert the retaining pins into the LH and RH pin sockets.

3.   Dampen a lint-free wipe with IPA and thoroughly wipe down the sink to remove the ink deposits, Figure 5-8.

NOTE: Do not force ink sludge into the drain hole.
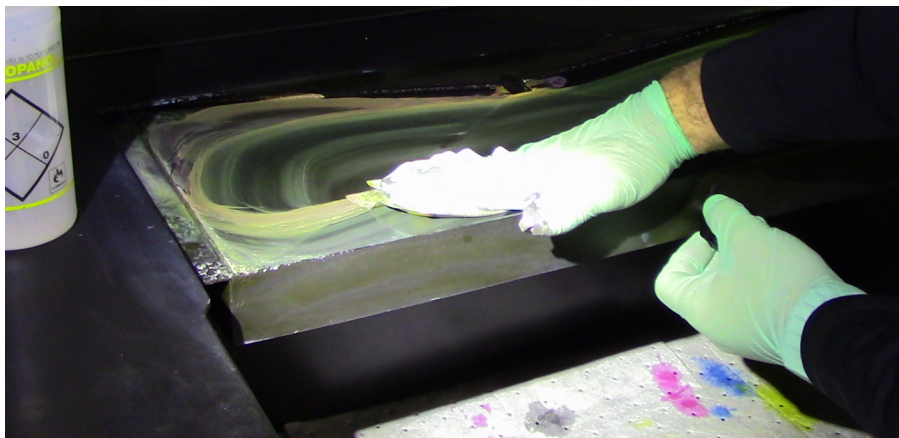
Figure 5-8 Wiping Ink Sink

4.   Remove the retaining pins after completing tasks.

5.5   Clean the LED lamp glass.

PPE Items: GLOVES NITRILE DISPOSABLE BOX LARGE
                        SAFETY GLASSES

Required Items: ISOPROPYL ALCOHOL (IPA)
                        WIPES 9X9 CLEAN ROOM
                        SCRAPER TOOL

How-to Video: [▶] CLICK TO PLAY

Directions:

1. From the printer front end, **Carriage H Motor** pane, Figure 5-9, set the **Move to Position** field to **35** and click the **Move to Position** button. This raises the carriage to the top position to expose the LED lamp glass.

2. Open the printer hood and insert the retaining pins into the LH and RH Pin sockets.

Figure 5-10 Exposing the LED Lamp glass
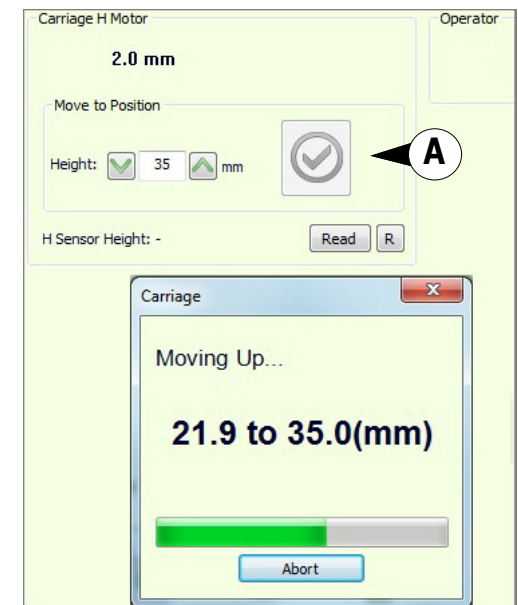
Figure 5-9 Carriage H Motor screen

A	Move To Position button

3. Wipe down lamp lenses with a lint-free wipe and isopropyl alcohol.

4. If there are particles stuck to the glass, carefully remove them using a scraper with blade, Figure 5-12, then wipe both surfaces again.
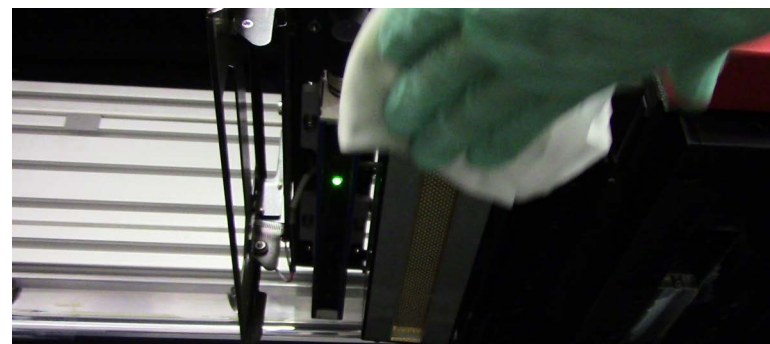
Figure 5-11 Wiping LED Lens surface

⚠️ **Caution: Avoid scratching lamp lens surfaces; do not touch the lens surface.**
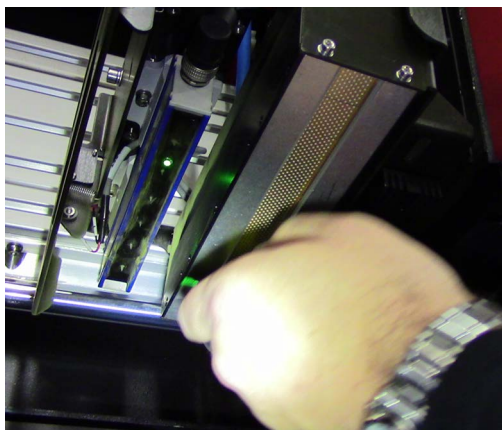
Figure 5-12 Scraping LED lens surface, (Left) and Scraper (Right)

NOTE: Scraper style may vary based on date of printer installation.

5. Remove the retaining pins after completing tasks.

5.6   Clean the ionizer bars.

PPE Items: GLOVES NITRILE DISPOSABLE BOX LARGE
                        SAFETY GLASSES

Required Items: ISOPROPYL ALCOHOL (IPA)
                        PLASTIC CLEANING BRUSH

How-to Video: ▶ CLICK TO PLAY

Directions:

1. Move the carriage to the top position (35mm).
2. Open the printer hood and insert the retaining pins into the LH and RH pin sockets.
3. Apply IPA to the brush bristles and brush the underside of each of the ionizer bars, Figure 5-13.
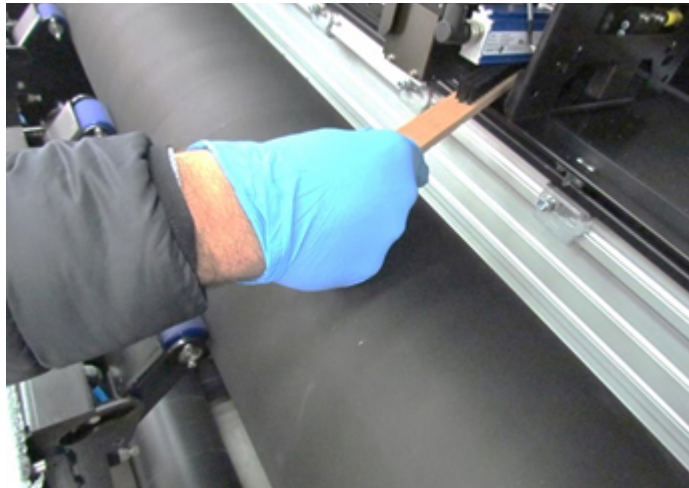
Figure 5-13 Brushing Ionizer Bars

4. Remove the retaining pins after completing tasks.

5.7   Clean the carriage crash sensors sides.

PPE Items: GLOVES NITRILE DISPOSABLE BOX LARGE
                      SAFETY GLASSES

Required Items: ISOPROPYL ALCOHOL (IPA)
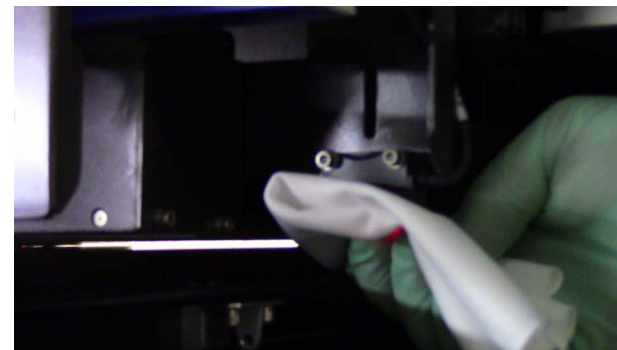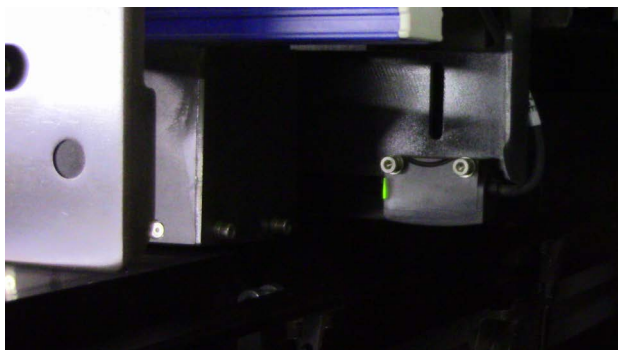   WIPES 9X9 CLEAN ROOM

How-to Video: CLICK TO PLAY

Directions:

1. Open the printer hood and insert the retaining pins into the LH and RH pin sockets.
2. Using a lint-free wipe and IPA, thoroughly clean the left and right carriage crash sensors, Figure 5-14.

   NOTE: There are two sensors.

3. Remove the retaining pins after completing tasks.

Figure 5-14 Wiping RIGHT Carriage Crash Sensors

5.8   Perform print head care.

PPE Items: GLOVES NITRILE DISPOSABLE BOX LARGE
                       SAFETY GLASSES

Required Items: INK JET UV MAINTENANCE FLUID
                       WIPES 9X9 CLEAN ROOM

Directions:

⚠ **Caution: Always wear PPG (personal protective gear) when working with inks or fluids.**
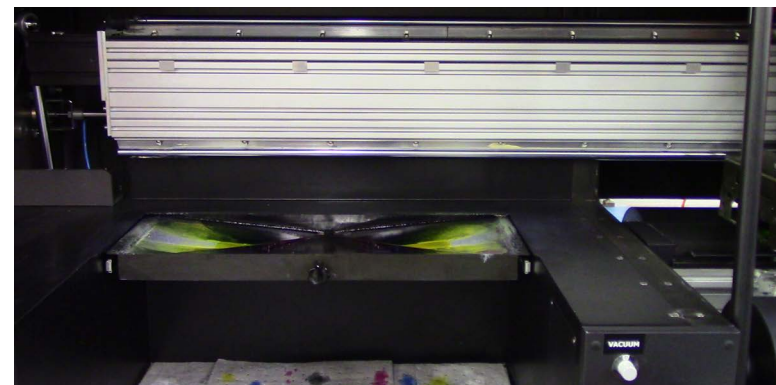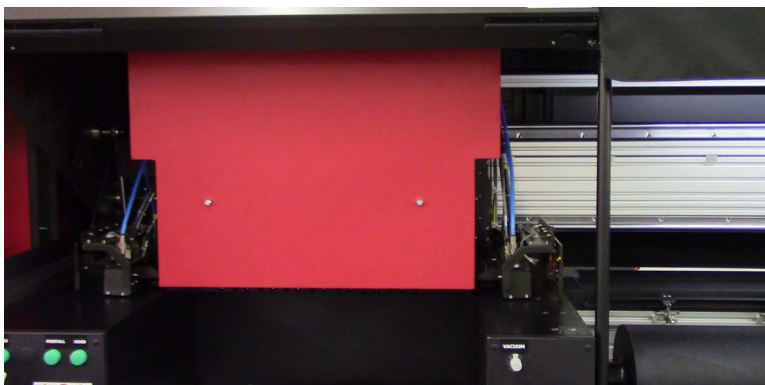
1. Open the printer hood and insert the retaining pins into the LH and RH pin sockets.

2. Dampen a lint-free wipe with UV maintenance fluid.

3. Hold the lint-free wipe against the print head face for 20 seconds, allowing the wipe to absorb excess ink from the print head.

4. Repeat for all print heads of the same color and then discard the wipe.

5. Repeat steps 2. through 4. for all channels.

6. Click the **Purge** button to perform a three second ink purge and then repeat the 3 second purge.

7. Perform Clean print heads. procedure.

8. Remove the retaining pins after completing tasks.

NOTE: These activities are extremely useful in recovering poorly performing print heads.
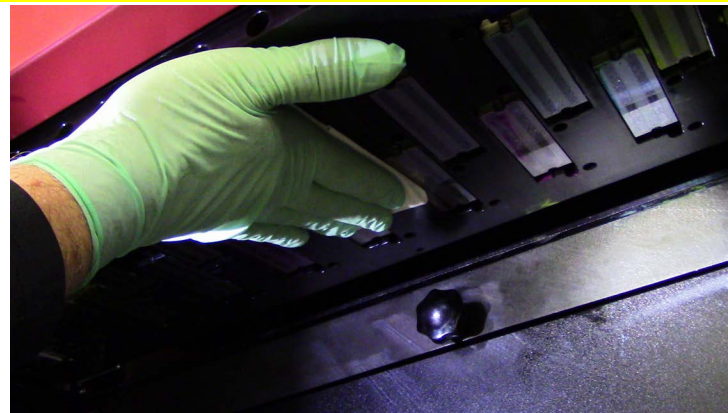
Figure 5-15 Holding wipe against print head face

Maintenance Guide

6.0 Once Daily Maintenance

6.0   Once Daily Maintenance

The following maintenance tasks must be performed once daily.

6.1   Perform white ink maintenance.

PPE Items: GLOVES NITRILE DISPOSABLE BOX LARGE
                        SAFETY GLASSES

Required Items: WIPES 9X9 CLEAN ROOM

How-to Video: [CLICK TO PLAY]

Directions:

> NOTE: Even if you are not using the white ink system, you must Purge the two white INK CHANNELS, stir the ink channels, operate the mixer in the white Main Ink Tank, and perform a 2 second purge on both white ink channels at least once a day.

> NOTE: Print a small WHITE print job at least once a day to maintain the print head quality.

1. Open the **Tools** tab and select the **White Stirring** option. The **White Stirring** dialog box opens, Figure 6-1.
2. Click the **Main Tank Mixer** and the **Ink System Stirring ON** radio buttons and click **Close**.
3. Wait for two minutes and re-open the **White Stirring Dialog** and click the **Main Tank Mixer** and the **Ink System Stirring OFF** radio buttons and click **Close**.
4. Perform a 2 second Purge on White Channels only.
5. Dry wipe the White print head faces, allowing the wipe to absorb excess ink from the print heads.
6. To make the White Stirring option automatic, open the **PRERENCES** dialog box.

Figure 6-1 White Stirring Dialog

7. Click the check box next to **Automatic White Stirring**, shown in Figure 6-2. When this option is activated, the **Stirring** system and the **Main Tank Mixer** will be automatically activated every half an hour.

> NOTE: Even if Automatic Ink Stirring is activated, purge the two white ink channels and perform a 2-second purge on both white ink channels at least once a day and print a quality control job with white ink.
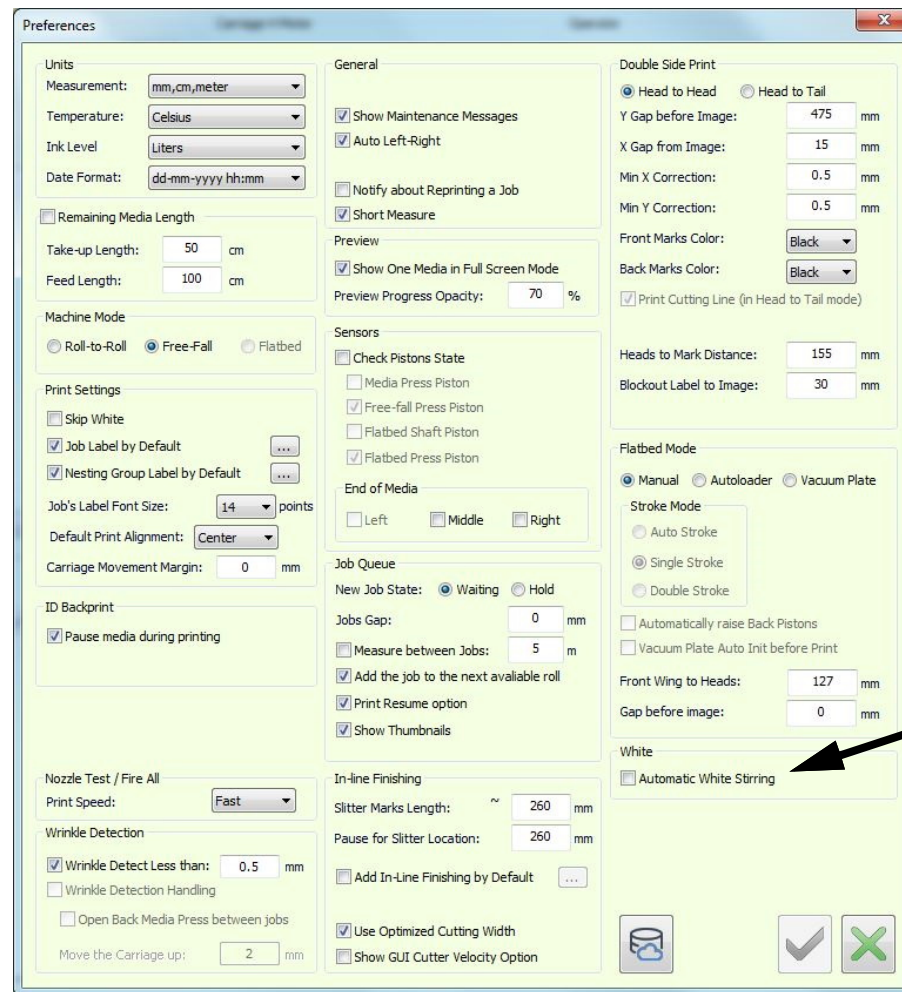
Figure 6-2 Preferences > White > Automatic White Stirring

6.2   Check/replace exhaust filter.

PPE Items: GLOVES NITRILE DISPOSABLE BOX LARGE
SAFETY GLASSES

Required Items: FILTER FOR OUTLET FAN CUTTED

Directions:

1.   Pull on the handle above the exhaust fan to check the filter (Figure 6-3).

2.   Change the filter if needed (Figure 6-4).

3.   Sandwich the filter with both sides of the metal housing (Figure 6-5).

4.   Reinsert the filter housing into the exhaust.

5.   Resume production.
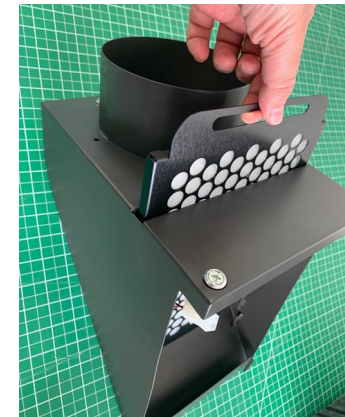
Figure 6-3 Pull Up Exhaust Filter Housing

Figure 6-4

Figure 6-5

Maintenance Guide

7.0 Every 40 Hours

7.0   Every 40 Hours

The following maintenance tasks must be performed every 40 hours of production.

7.1   Clean the free-fall rollers.

PPE Items: GLOVES NITRILE DISPOSABLE BOX LARGE
SAFETY GLASSES

Required Items: WIPES 9X9 CLEAN ROOM
ISOPROPYL ALCOHOL (IPA)

How-to Video: CLICK TO PLAY

Directions:

1.   Remove any media.
2.   Open the printer hood and insert the retaining pins into the LH and RH Pin sockets.
3.   Using a lint-free wipe dampened with IPA, thoroughly wipe down all free-fall rollers, Figure 7-1.
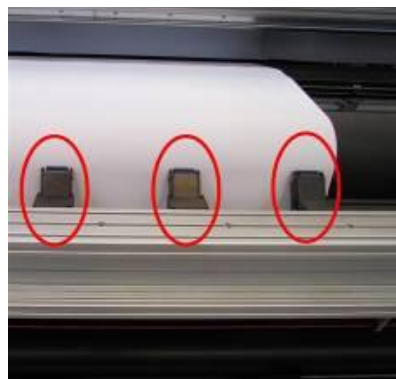
Figure 7-1 Free Fall Rollers

4.   Remove the retaining pins after completing task.

7.2   Clean the T (Tension) rubber roller.

PPE Items: GLOVES NITRILE DISPOSABLE BOX LARGE
                        SAFETY GLASSES

Required Items: WIPES 9X9 CLEAN ROOM
                        ROLL CONDITIONING FLUID

How-to Video: CLICK TO PLAY

Directions:

> *NOTE: Remove all media prior to this procedure.*

1. Open the printer hood and insert the retaining pins into the LH and RH pin sockets.

2. Dampen a lint-free wipe with roll conditioner and thoroughly wipe down the exposed portion of the rubber tension roller.

3. From the printer front end, click the **Tension (On/Off)** button in the tool bar until unexposed portion is visible.

Figure 7-2 Cleaning Tension roller

Figure 7-3 Tension button

4. Repeat the wiping and advancing until the entire roller has been wiped clean.
5. Remove the retaining pins after completing tasks.

7.3   Clean the Y (Shaft) rubber roller.

PPE Items: GLOVES NITRILE DISPOSABLE BOX LARGE
                          SAFETY GLASSES

Required Items: WIPES 9X9 CLEAN ROOM
                          ROLL CONDITIONING FLUID

How-to Video: CLICK TO PLAY

Directions:

NOTE: Remove all media prior to performing this procedure.

1. Open the printer hood and insert the retaining pins into the LH and RH pin sockets.
2. Dampen a lint-free wipe with roll conditioning fluid and fold in half.
3. At printer rear, lift the UV light shield to expose the Y rubber shaft and thoroughly wipe down the roller.

4. From the printer front end, enter **200 mm** into the **Media Forward** tool bar.

5. Click the **Advance** button.

6. Repeat the wiping and advancing procedure until the entire roll is wiped clean.
7. Remove the retaining pins after completing tasks.
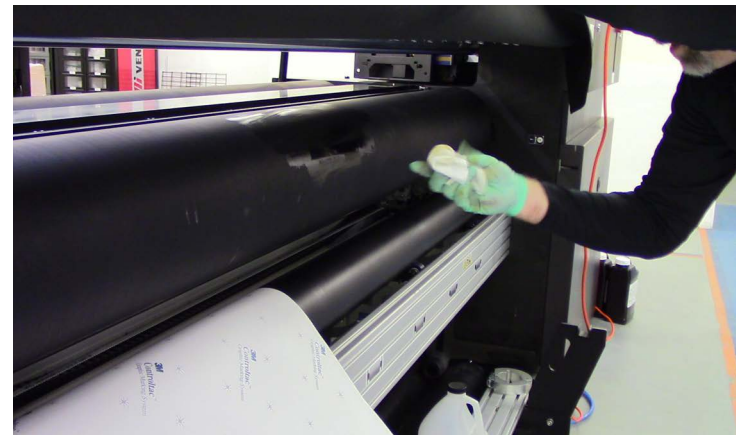
Figure 7-4 Cleaning Y Shaft roller

7.4   Clean metal input feed, press, and collector rollers.

PPE Items: GLOVES NITRILE DISPOSABLE BOX LARGE
                      SAFETY GLASSES

Required Items: WIPES 9X9 CLEAN ROOM
                      ISOPROPYL ALCOHOL (IPA)

How-to Video: CLICK TO PLAY

Directions:

1. Open the printer hood and insert the retaining pins into the LH and RH pin sockets.

2. Dampen a lint-free wipe with IPA.

3. Manually rotate and clean: the metal press roller; the outside input feed roller; and the outside collector roller, Figure 7-5.

4. Wipe down the exposed portion of the rear feed roller.

Figure 7-5 Rear Rollers

5. Press the **Feed** button (Figure 7-6) to advance the rear feed roller until the unexposed portion is visible.

6. Repeat the wiping and advancing procedure until the entire roller is wiped clean.

7. Wipe down the exposed portion of the front collector roller.
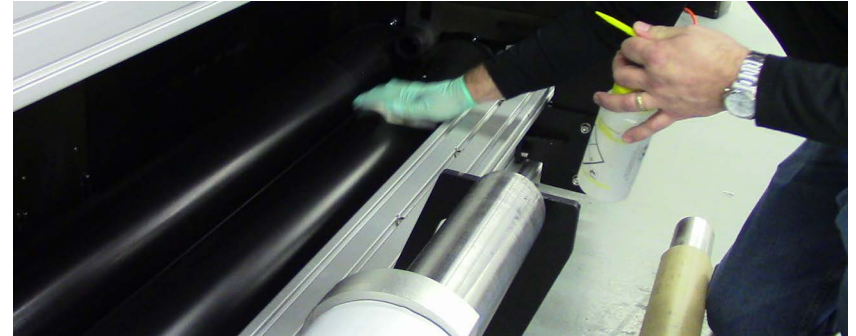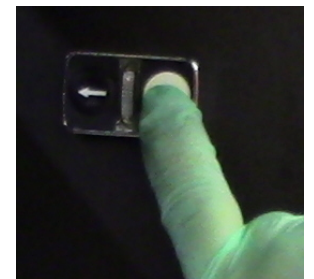
Figure 7-6 Feed button

8. At the printer front end, select the **Free-fall Continuous Collector** check box, Figure 7-7.

9. Repeat wiping and advancing until the entire roller is wiped clean.

10. Remove the retaining pins after completing tasks.
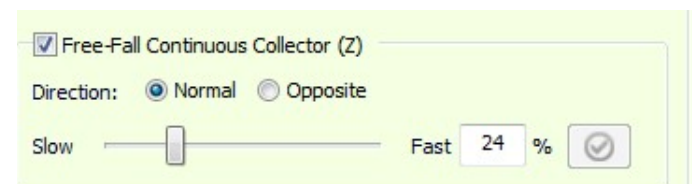
Figure 7-7 Free-Fall Continuous Collector checkbox

7.5   Lubricate the carriage bearings.

PPE Items: GLOVES NITRILE DISPOSABLE BOX LARGE
SAFETY GLASSES

Required Items: GREASE GUN
MOLYKOTE LONG-TERM W2 GREASE

How-to Video: CLICK TO PLAY

Directions:

1.   Unlock the right, rear, upper panel and remove.

Figure 7-8 Removing Rear Panel

2.   Locate the grease fittings, four total.
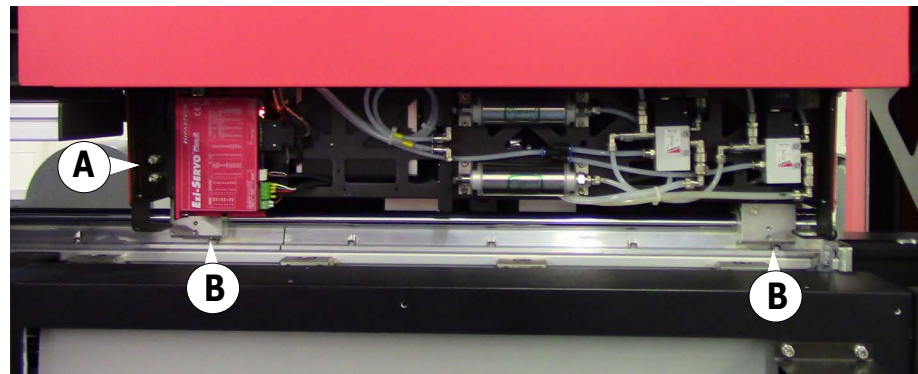
Figure 7-9 Grease fitting locations

A	Upper grease fittings (2)
B	Lower grease fitting

3. Turn grease gun nozzle 1/2 turn to open nozzle.

> ⚠ **Caution: Do not over-loosen or remove nozzle tip.**
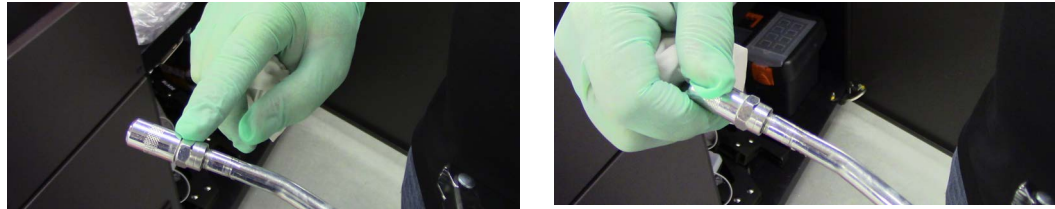
Figure 7-10 Preparing grease gun nozzle

4. Attach grease gun to grease fitting and turn grease gun nozzle 1/2 turn to tighten the grease gun nozzle; this closes the nozzle onto the fitting to reduce grease overflow.
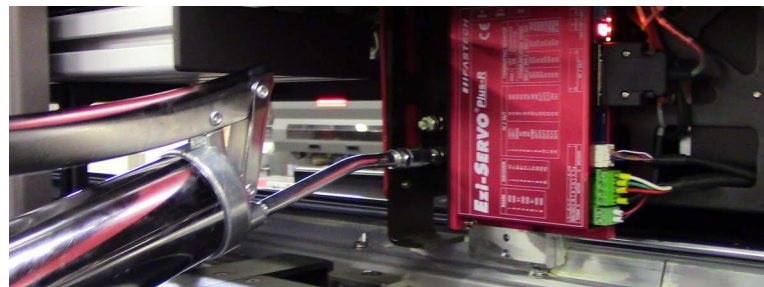
Figure 7-11 Applying grease

5. Apply 3 pumps of grease to each bearing, or fewer pumps if grease can be seen overflowing.
6. Loosen the grease gun nozzle 1/2 turn to remove the grease gun nozzle from the fitting and wipe up any grease overflow.

7.6   Check/empty waste container.

PPE Items: GLOVES NITRILE DISPOSABLE BOX LARGE
                        SAFETY GLASSES

Required Items: DRAIN HOSE WITH QUICK DISCONNECT
                        APPROVED WASTE CONTAINER

How-to Video: ▶ CLICK TO PLAY

Directions:

1.   Open waste container compartment doors.

> ⚠ **Caution: Check waste container level more frequently during periods of high production or when adding ink to the printer.**
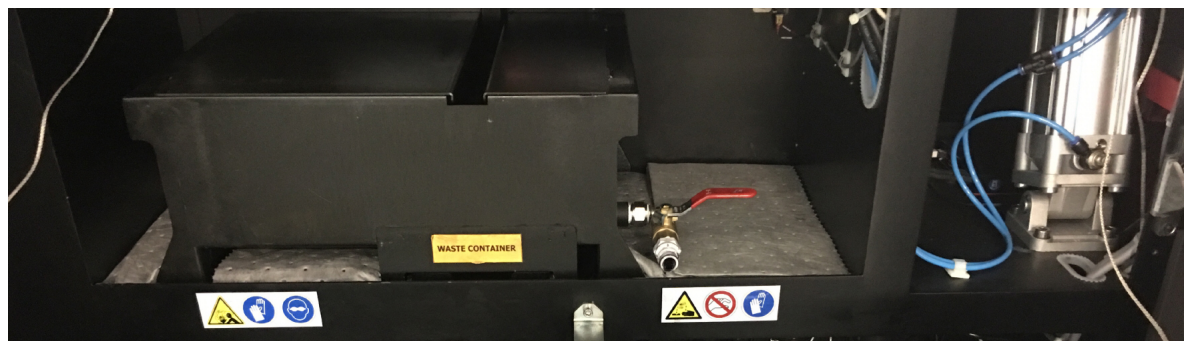
Figure 7-12 Waste container compartment

2.   Open top waste container door and check waste levels; empty if more than half full.
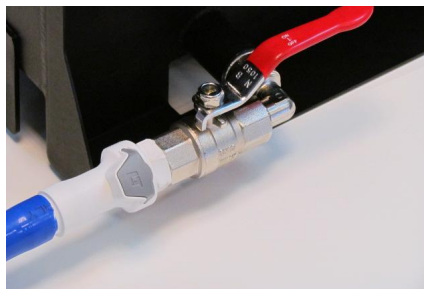
Figure 7-13 Waste container drain valve

3.   To empty, connect a drain hose with quick disconnect to drain, open drain valve and empty into an approved waste container.

7.7   Clean carriage rail ends.

PPE Items: GLOVES NITRILE DISPOSABLE BOX LARGE
SAFETY GLASSES

Required Items: WIPES 9X9 CLEAN ROOM

How-to Video: CLICK TO PLAY

Directions:

1. Manually move the carriage 24" from HOME position; this exposes the HOME carriage rail ends.
2. Open the printer hood and insert the retaining pins into the LH and RH pin sockets.
3. Wipe down both the LH and RH carriage rail ends with a lint-free wipe.

Figure 7-14 Grease at Carriage Rail End (Left) and Wiping grease (Right)

4. Remove the retaining pins after completing tasks.
5. Return carriage to HOME position.

7.8   Check the chiller fluid level.

PPE Items: GLOVES NITRILE DISPOSABLE BOX LARGE
SAFETY GLASSES

Required Items: DISTILLED WATER

How-to Video: CLICK TO PLAY

Directions:

1.   Check the chiller fluid level.
2.   Fill chiller with distilled water to the **Max** line, Figure 7-15.
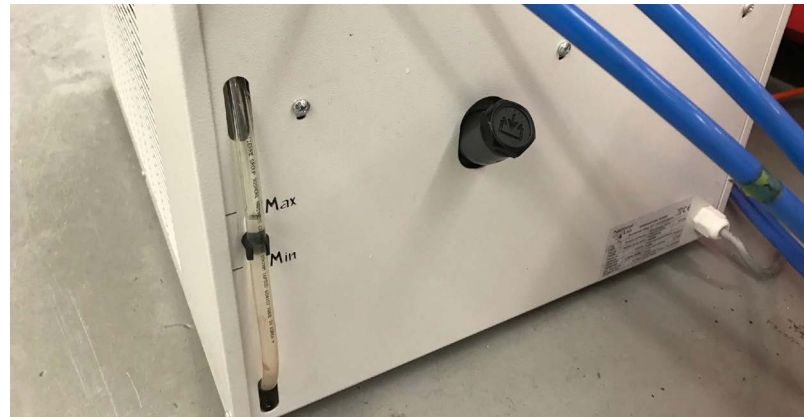
Figure 7-15 : Chiller Fluid Level Check window

A	Fluid Level Check Window

7.9   Check last chance air and water filters.

PPE Items: GLOVES NITRILE DISPOSABLE BOX LARGE
SAFETY GLASSES

Required Items: SHOP TOWEL OR RAG

How-to Video: CLICK TO PLAY

Directions:

1. Ensure printer power is ON and open the pneumatic panel doors.
2. Locate the water filter (left) and oil filter (right) drain valves.
3. At the filter bottoms, turn the drain valve, with rag in hand, and open the drain and empty any accumulated water or oil.

Figure 7-16 Pneumatic Panel

A	Water filter
B	Oil filter

Maintenance Guide

8.0 Bi-weekly Maintenance

8.0   Bi-weekly Maintenance

The following maintenance task must be performed every other week.

8.1   Replace UV power supply filter.

PPE Items: GLOVES NITRILE DISPOSABLE BOX LARGE
                        SAFETY GLASSES

Required Items: BAG OF 20 AIR FILTERS 85X45 VUTEK POWER SUPPLY

Directions:

1.   Access the power supply air filter holders from the back
      of the tray.

      *NOTE: The filter holders are magnetic, to allow
              quick filter replacement.*

2.   Detach filter holders from the air intake of each of the
      four (4) LED UV power supplies.

Figure 8-1 Access Power Supply Air Filters

3.   Remove used filters from filter holders and replace with new ones.

4.   Reattach the filter holders to the power supply air intakes.
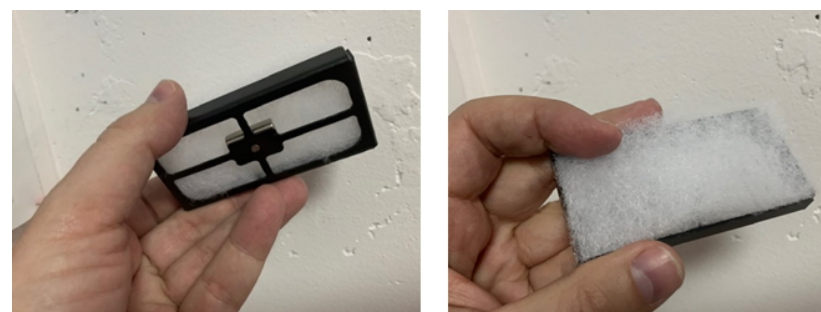
Figure 8-2 Replace Air Filters

Maintenance Guide

6.0 Monthly Maintenance

9.0 Monthly Maintenance

The following maintenance tasks must be performed once a month.

9.1 Clean the printer exterior covers.

PPE Items: GLOVES NITRILE DISPOSABLE BOX LARGE
SAFETY GLASSES

Required Items: WIPES 9X9 CLEAN ROOM
ISOPROPYL ALCOHOL (IPA)

How-to Video: CLICK TO PLAY

Directions:
- Dampen a lint-free wipe in isopropyl alcohol and wipe down all the printer's covers, especially the ventilation areas.

Figure 9-1 Printer Front Access Panels and Shields
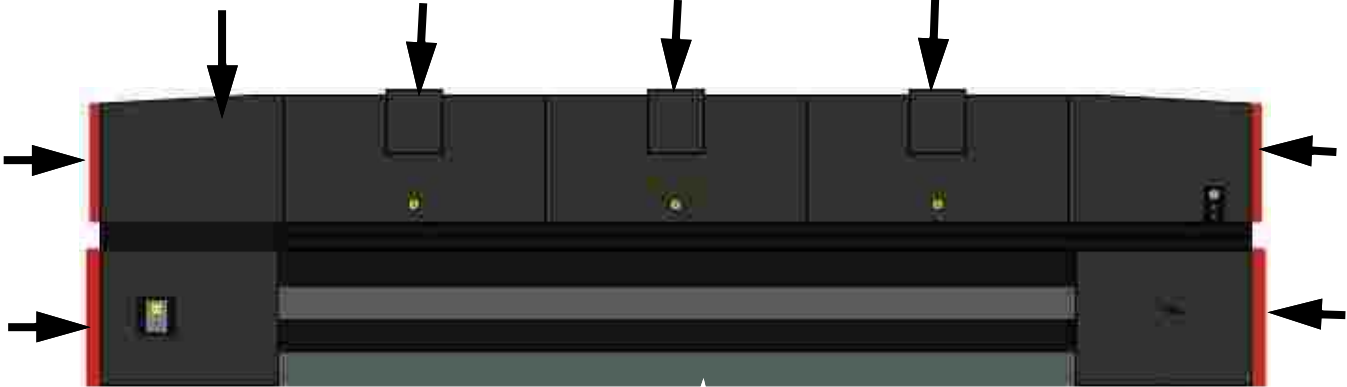
Figure 9-2 Printer Rear Access Panels and Shields

9.2   Clean cable carrier and shelf.

PPE Items: GLOVES NITRILE DISPOSABLE BOX LARGE
                        SAFETY GLASSES

Required Items: WIPES 9X9 CLEAN ROOM
                        ISOPROPYL ALCOHOL (IPA)
                        SHOP VACUUM AND ATTACHMENTS

How-to Video: [▶] CLICK TO PLAY

Directions:
1.   Open the printer hood and insert the retaining pins into the LH and RH pin sockets.
2.   Vacuum the LOWER cable carrier shelf using a bristle attachment.

Figure 9-3 Vacuuming Cable Carrier

3.   Power on printer and remove the retaining pins.
4.   Move carriage to the right-most position.
5.   Open the printer hood and insert the retaining pins into the LH and RH pin sockets.
6.   Vacuum the UPPER cable carrier shelf.
7.   Remove the retaining pins after completing tasks.

9.3 Clean three main exhaust vents.

PPE Items: GLOVES NITRILE DISPOSABLE BOX LARGE
SAFETY GLASSES

Required Items: WIPES 9X9 CLEAN ROOM
ISOPROPYL ALCOHOL (IPA)
SHOP VACUUM AND ATTACHMENTS
PHILLIPS SCREWDRIVER

How-to Video: [image] CLICK TO PLAY

Directions:
1. Power down the printer.
2. Loosen exhaust vent housing captive screws.
3. Remove metal exhaust housing.

Figure 9-4 Metal Exhaust Vent Housing (Left and Middle) and Vacuuming Exhaust Fan (Right)

4. Dampen a lint-free wipe with IPA and fold in half.
5. Wipe down inside of exhaust housing and wipe down the printer sheet metal around the fan.
6. Vacuum the exhaust fan.
7. Repeat cleaning steps for remaining two exhaust vents.

9.4   Wipe linear encoder strip.

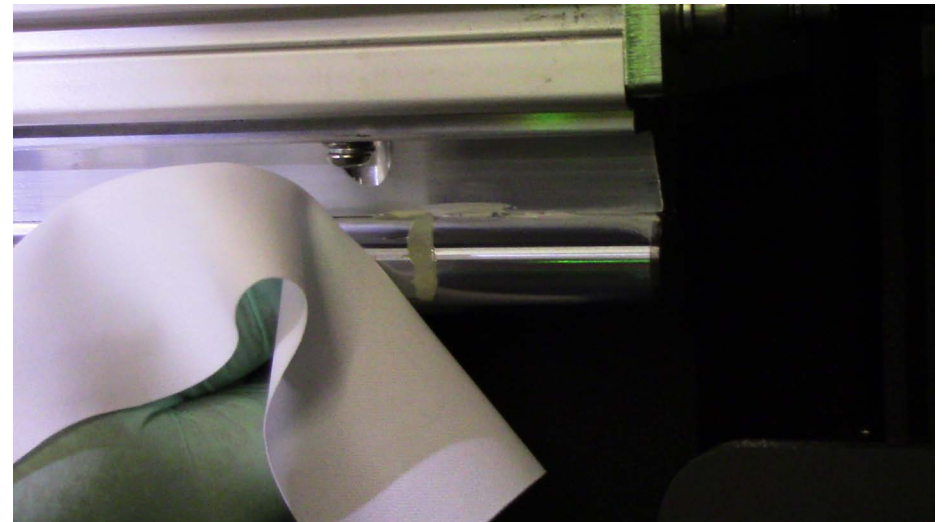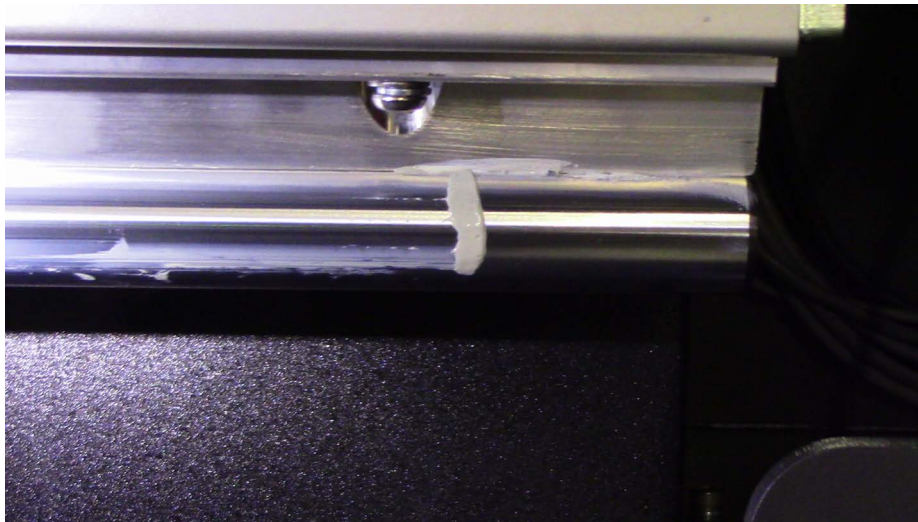**PPE Items:**   GLOVES NITRILE DISPOSABLE BOX LARGE
                         SAFETY GLASSES

Required Items: WIPES 9X9 CLEAN ROOM
                         ISOPROPYL ALCOHOL (IPA)

How-to Video: CLICK TO PLAY

Directions:

1.   Open the printer hood and insert the retaining pins into the LH and RH pin sockets.
2.   Dampen a lint-free wipe with IPA and fold in half.
3.   Wipe down entire length of the linear encoder strip located on the top of the printer beam.
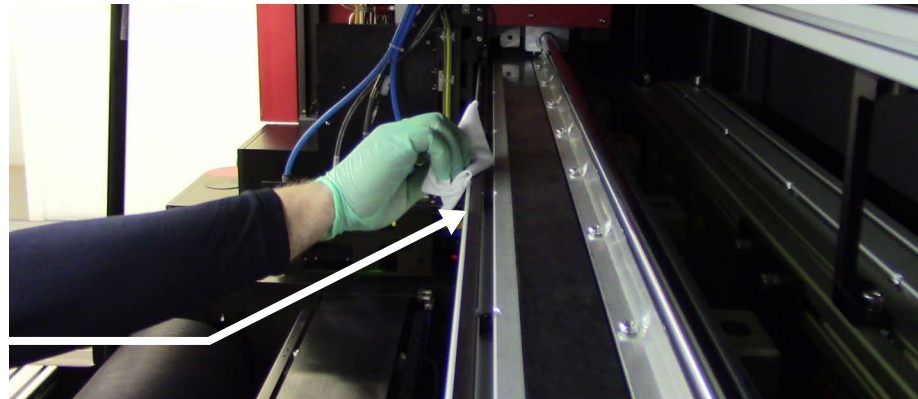
Figure 9-5   Wiping linear encoder strip

4.   Remove the retaining pin and close printer hood.
5.   Move carriage to center position to access portion of the encoder strip that was obstructed.
6.   Open the printer hood and insert the retaining pins into the LH and RH pin sockets.
7.   Complete the encoder strip wiping procedure.
8.   Remove the retaining pins after completing tasks.

9.5   Clean the carriage home sensor.

PPE Items: GLOVES NITRILE DISPOSABLE BOX LARGE
                        SAFETY GLASSES

Required Items: WIPES 9X9 CLEAN ROOM
                        ISOPROPYL ALCOHOL (IPA)
                        SWAB, POLYURETHANE FOAM

How-to Video: CLICK TO PLAY

Directions:
The carriage home sensor is an optical flag sensor that denotes the carriage location to the printer's FE software.

1.   To access the carriage home sensor, begin by removing the carriage cover.
2.   With the cover removed, locate the sensor in the middle of the carriage, directly above and behind the print head driver boards. (See Figure 9-6.)

   NOTE: The carriage home sensor has a red LED light facing forward on the sensor.

3.   Once the sensor has been located, gently clean the sensor free of dust and debris using a foam swab dampened with IPA.

Figure 9-7 Foam Swab

Figure 9-6 Sensor Location

4.   Gently rub the cleaning instrument up and down between the sensor's optical receiver and reflector, making sure to remove any dust and debris.

   NOTE: The red LED light on the front of the sensor will go off and on during the cleaning process.

Figure 9-8 Carriage Home Sensor

Maintenance Guide

10.0 Quarterly Maintenance

10.0   Quarterly Maintenance

The following maintenance tasks must be performed quarterly.

10.1   Inspect/replace white ink degasser tubes.

PPE Items: GLOVES NITRILE DISPOSABLE BOX LARGE
                          SAFETY GLASSES

Required Items: INK DEGASSER TUBING
                          ABSORBENT WIPES

Directions:

1.   Open the printer hood and insert the retaining pins into the LH and RH pin sockets.

2.   Power down the printer.

3.   Remove the carriage cover and identify the degasser locations.

4.   Inspect the degasser tubes; look for areas of wear or loose connections.
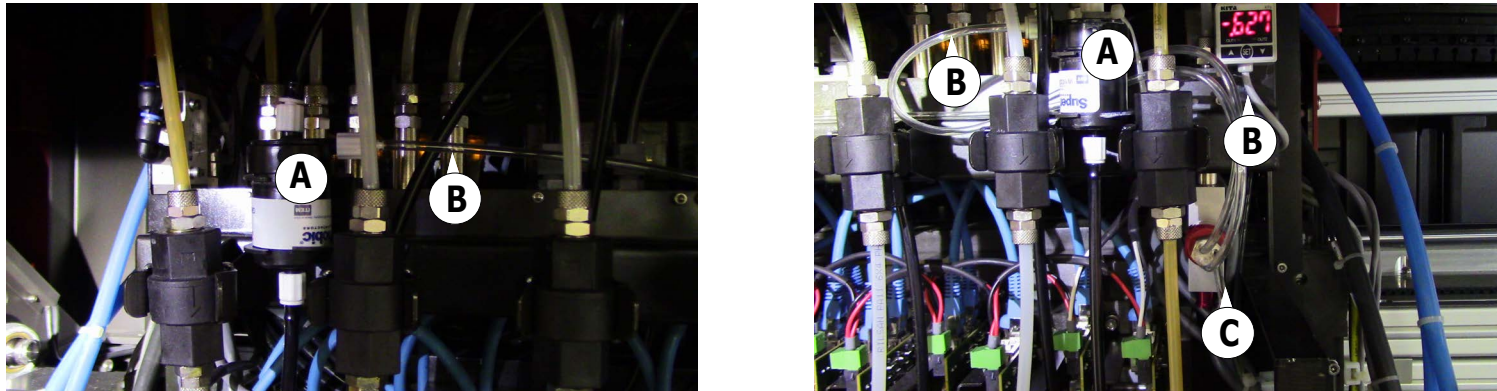
Figure 10-1 Left and Right Degassers, and Discharge valve

A	Degasser	B	Clear Degasser Air Tubes	C	Discharge valve

5. If a tube requires replacement, hold an absorbent wipe underneath the degassers and tubes to capture ink.

6. Carefully detach the (CLEAR) left air tube from the degasser and discharge valve.

7. Cut a new left degasser air tube to 76 cm, and reconnect new left degasser air tube.

8. Cut a new left degasser air tube to 42 cm.

9. Repeat right degasser air tube.

10. Inspect (CLEAR) manometer air tube. Unless damaged, do not replace the manometer tube.

11. Remove the retaining pins after completing tasks.

10.2   Clean power supply and motorized drivers.

PPE Items: GLOVES NITRILE DISPOSABLE BOX LARGE
                        SAFETY GLASSES

Required Items: PRESSURIZED AIR DISPENSER

Directions:

1.   Power down the printer.

2.   Open the printer power supply and driver covers.

3.   Using pressured air, clean the power supplies both from above and below.

> ⚠ **Caution: With sensitive electronic equipment, this action should be performed carefully and gently.**

4.   Continue cleaning until no dust comes out of the power supplies.

Figure 10-2 Clean Power Supply

5.   Using pressured air, clean the drivers from above and below, giving special attention to the cooling fan underneath.

6.   Continue cleaning until no dust comes out of the drivers.
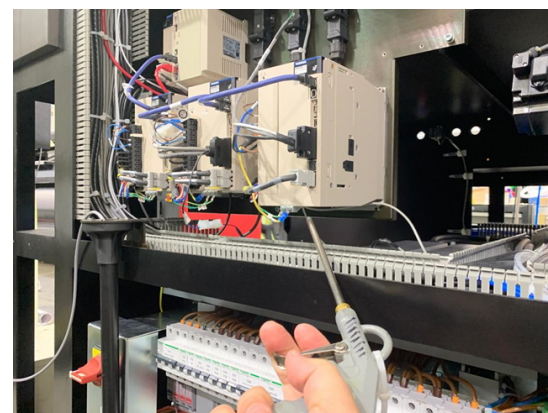
Figure 10-3 Clean Drivers

10.3   Create a printer backup.

1.   From the File menu, select **Export** > **Printer Settings and Status**.
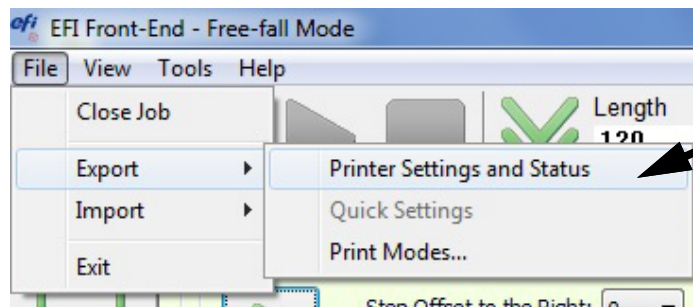
Figure 10-4 Export Printer Settings and Status

2.   Choose a directory to write the backup file to. The default directory will be: **c:\Users\EFIUser\Documents**, but you can place the file in any directory.

NOTE: The default file name includes the printer serial number and the date that the backup was created, but this too can be changed.

3.   From this directory, you can copy this file to an external file server, memory stick, or it can be emailed.
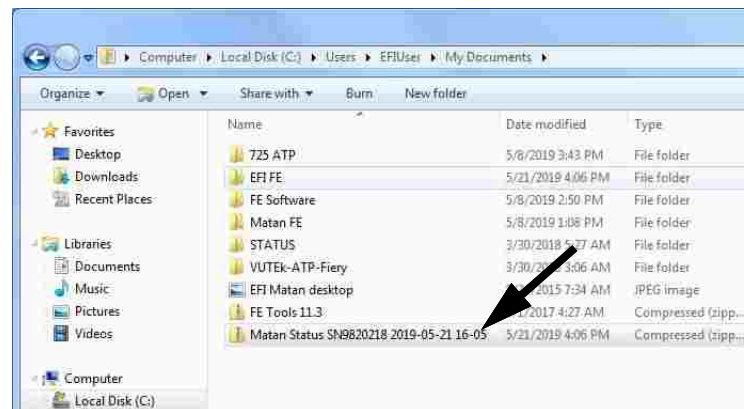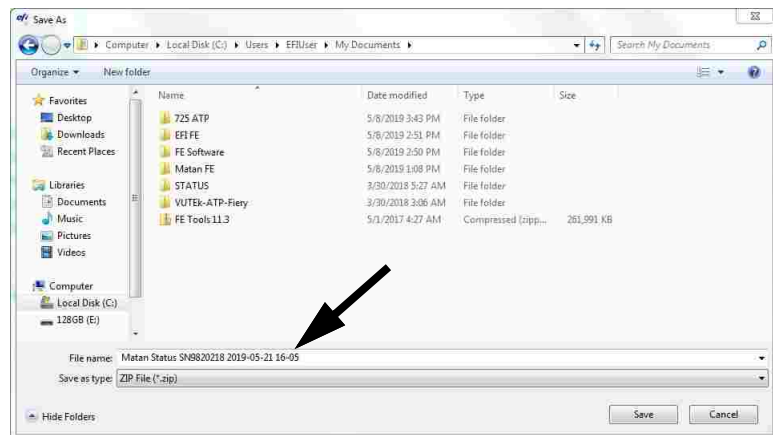
Figure 10-5 Save As & Location

Maintenance Guide

8.0 Semi-Annual Maintenance

11.0   Semi-Annual Maintenance

The following maintenance tasks must be performed every 6 months.

11.1   Replace primary ink filters.

PPE Items: GLOVES NITRILE DISPOSABLE BOX LARGE
                          SAFETY GLASSES

Required Items: ABSORBENT PADS
                          NEW INK FILTERS
                          INK LINE CAP

How-to Video: CLICK TO PLAY

Directions:

> *NOTE: As part of regular maintenance, all the Primary Ink Filters should be replaced regularly.*

1.   Power OFF the printer.
2.   Open the ink cabinet doors and place absorbent mats in the area underneath the ink filters.
3.   Begin at one side of the ink cabinet and replace one filter/channel at a time. Do not attempt to replace all channels at once.

Figure 11-1 Ink cabinet and absorbent pad

4. REMOVE the ink filter from the protective bag and retain the bag. Verify the bleeder cap is tight.

Figure 11-2 Ink filter

5. Carefully disconnect the upper ink tube from the filter by unscrewing the white plastic fitting and quickly insert a plastic cover over the ink line to prevent leakage.

Figure 11-3 Plastic cap, Left, and Plastic cap on Ink Line, Right

Figure 11-4 Unscrewing LOWER Ink Line with filter in bag to collect waste ink

6. Place the empty ink filter bag over the old Ink filter and gently invert filter into bag to capture ink spills.

7. Carefully disconnect the lower left ink tube from the ink pump and filter and retain tube.

⚠ **Caution: Take caution when removing these ink lines to reduce ink splatter.**

8. Discard bag and old filter in accordance with your local environmental regulations.

9. Connect retained tube to new filter and Ink Pump and tighten fittings.

10. Carefully remove the caps from both the upper and lower ink tubes and reconnect them to the filters, one at a time, and hand-tighten ink line to new primary ink filter.

11. Place primary filter compression fitting gauge between filter and ink line.

12. Hold tube while tightening fitting to prevent tube from twisting.

⚠ **Caution: Do not over-tighten fitting as tube could compress and restrict ink flow to carriage.**

13. Repeat procedure from step 4. for the remaining channels/filters.
14. Prior to and after powering on printer, look for leaks and tighten fittings.
15. After replacing the filters, perform ten (10) purges, each three (3) seconds in duration, on any affected channels.

Figure 11-5 Proper positioning of gauge on filter

Maintenance Guide

12.0 Annual Maintenance

12.0   Annual Maintenance

The following maintenance task must be performed every 12 months.

12.1   Replace chiller filter.

PPE Items: GLOVES NITRILE DISPOSABLE BOX LARGE
                        SAFETY GLASSES

Required Items: FILTER CARTRIDGE 25 MICRON L=10" D=2"

Directions:

1.   Turn off the printer and ensure that the chiller is not running.

2.   Press the red button to release the pressure built up inside the filter.

Figure 12-1 Press Read Button

3.   Hold the top of the filter with one hand to stabilize it and use the key to turn the bottom part of the filter counterclockwise to open it.

Figure 12-2 Use Key to Turn Filter Bottom

4. Replace the inside filter cartridge 25 microns L10" D2" with an identical filter.

5. When replacing the filter, match the dimples inside the container so as not to damage the filter

6. Close the filter.

    NOTE: EFI recommends closing the filter by hand, not using the key.

7. Turn on the printer, start production, and ensure there are no leaks in the system.

Figure 12-3

Maintenance Guide

13.0 Required Items List

13.0   Required Items List

This section lists all items required to perform scheduled maintenance.

DESCRIPTION	PART #	DESCRIPTION	PART #
Bag Of 20 Air Filters 85x45 VUTEk Power Supply	77700824	**CLEANING AND MAINTENANCE FLUIDS**	
Filter Cartridge 25 Micron L=10" D=2"	66600501	Ink Jet UV Maintenance Fluid TF 5L	45225794
Filter for Outlet Fan Cutted	22201882	Ink UV 3 Roll Conditioner CC10220 3.25L	45224848
Grease gun, PRESSOL	77700198	INK UV 3 ROLL CONDITIONER NON-DG 5L (China Only)	45246356
Grease, MOLYKOTE	77700199		
Metal Scraper	10100017	**ADDITIONAL ITEMS**	**NO PART #**
Nitrile Gloves	P3777-A	Isopropyl alcohol (IPA)	
Primary Ink filters	77700214/ P0029-A	Pressurized air dispenser	
Replacement Degasser tubing, clear	66600054	Safety Glasses	
Silicone Rubber Cap	77700253	Shop vacuum, with bristle attachment	
Swab, Polyurethane Foam,1 Swab,100 PPI Open-cell, SK, Cleanfoam	P0013938	Tools, screwdrivers, and Allen keys	
Tip Cleaner tool	10100018		
Wipes 9x9 Clean Room	45077321		
Wood Handle Cleaning Brush	77700689		

Maintenance Log

VUTEk 3r & 5r Series Maintenance

VUTEk 3r & 5r Series Maintenance Log

The maintenance guidelines are based on a production schedule of eight hours of printing, five days/week.
Adjust your maintenance intervals if your operating shifts are longer than eight hours of printing.

Week: _____/_____/_____

Serial #: _____

Every 2 Hours	Day 1						Day 2						Day 3						Day 4						Day 5						Day 6						Day 7					
	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
1. Perform print head care - white/clear.																																										

Every 4 Hours	Day 1			Day 2			Day 3			Day 4			Day 5			Day 6			Day 7		
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
1. Clean around the print head area.																					
2. Clean print heads.																					
3. Clean printer carriage components.																					

Every 8 Hours	Day 1			Day 2			Day 3			Day 4			Day 5			Day 6			Day 7		
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
1. Check facility air compressor and air filter systems.																					
2. Clean the print platen.																					
3. Clean the measure media sensor.																					
4. Clean the ink sink.																					
5. Clean the LED lamp glass.																					
6. Clean the ionizer bars.																					
7. Clean the carriage crash sensors sides.																					
8. Perform print head care.																					

Once Daily	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
1. Perform white ink maintenance.							
2. Check/replace exhaust filter.							

VUTEk 3r & 5r Series Maintenance Log

Year: _____

Serial #: _____

The maintenance guidelines are based on a production schedule of eight hours of printing, five days/week.
Adjust your maintenance intervals if your operating shifts are longer than eight hours of printing.

Every 40 Hours	Date	Initials
1. Clean the free-fall rollers.		
2. Clean the T (Tension) rubber roller.		
3. Clean the Y (Shaft) rubber roller.		
4. Clean metal input feed, press, and collector rollers.		
5. Lubricate the carriage bearings.		
6. Check/empty waste container.		
7. Clean carriage rail ends.		
8. Check the chiller fluid level.		
9. Check last chance air and water filters.		

Bi-Weekly	Date	Initials
1. Replace UV power supply filter.		

Monthly	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
1. Clean the printer exterior covers.												
2. Clean cable carrier and shelf.												
3. Clean three main exhaust vents.												
4. Wipe linear encoder strip.												
5. Clean the carriage home sensor.												

Quarterly	Quarter 1	Quarter 2	Quarter 3	Quarter 4
1. Inspect/replace white ink degasser tubes.				
2. Clean power supply and motorized drivers.				
3. Create a printer backup.				

Semi-Annually	Jan-June	July-December
1. Replace primary ink filters.		

Annually	Year	
1. Replace chiller filter.		