

PERIODIC PREVENTIVE MAINTENANCE GUIDE

FOR OPERATORS





Kornit Digital
bonding matters

Kornit Avalanche & Avalanche DC Pro Series

Periodic Preventive Maintenance Guide

***Procedures to be performed by a
Kornit operator***

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The recycling of materials will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and environment.



Environmental Policy

Service personnel should dispose of replaced printer parts and waste liquids according to the laws and regulations of the local authority and recycled, where applicable.

For more detailed information regarding these recommended procedures, refer to your regional Kornit support office or distributor.



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About This Guide

This Preventive Maintenance Guide describes the procedures for performing periodic maintenance to Kornit Avalanche / Avalanche DC Pro printers. It is intended for Kornit operators.

Periodic maintenance must be carried out daily, weekly, monthly (on Avalanche DC Pro only) and quarterly. This guide is divided into four sections, each referring to a specific maintenance period.



NOTE:

- The printer is under constant development and Kornit Digital reserves the right to change or modify its product specifications at any time without prior notice.
- This guide refers to the latest version of the Avalanche / Avalanche DC Pro printer. Procedures described in this guide may require slight modification when performing maintenance procedures on other printers from the Avalanche series.
- The yearly preventive maintenance should be performed by a qualified technician and is described in document *62-PMNT-0006 Yearly Preventive Maintenance Guide Avalanche Series*.

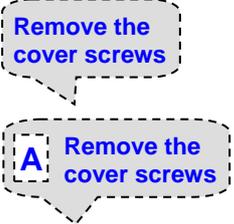
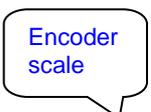
How to Use this Guide

The procedures included in this guide should be performed in the order that they are written.

Each procedure contains a list of the tools and supplies required for that procedure (if any). Kornit recommends that you prepare these items before starting the procedure. A summary of the tools and supplies required for performing each of the various maintenance procedures is provided at the beginning of each section.

For each procedure, a list of preliminary requirements is specified (if they exist). These requirements must be fulfilled before starting the maintenance procedure.

For most procedure steps, both written and graphical instructions are provided. A graphic instruction may contain two types of callouts:

Example callout	Description
	<p>Shaded callouts with a dotted border indicate actions to be performed.</p> <p>In some callouts the actions are labeled with letters (A, B, C, etc.), which indicate the order in which the actions should be performed.</p>
	<p>Un-shaded callouts with a solid border specify the name of a component in the diagram.</p>

Kornit recommends that you use both the graphical and the textual instructions when performing maintenance procedures. (Note that the textual instructions often contain additional information that is not depicted in the graphical instructions.)



Safety Instructions

This section provides important safety instructions that must be followed when operating the Kornit Avalanche / Avalanche DC Pro printer. Operators are expected to be familiar with **all** instructions contained in this section.



WARNING!

- Only trained and authorized personnel are allowed to perform service and repair work on the Kornit Avalanche / Avalanche DC Pro.
- Operators must not wear loose-fitting clothing.
- No smoking, pilot lights, or open flames are allowed anywhere near the printer.
- In the event of a fire, use CO₂, foam, dry powder, or vaporizing liquids.
- Immediately remove any oil, grease or water around the printer to prevent slipping.
- Do not put your hands into the printer or touch moving parts (such as printing pallets, print heads assembly, wiper assembly, maintenance tray, hood and service doors) during operation.
- Tools and loose parts must be removed from the printer before operation.
- Be aware of the weight of the printing pallets before mounting them on the printing pallet carriages (X1 and X2 axes) (risk of back strain injury).
- Ensure that nobody is near the hood while closing it.
- Ensure that the printing pallet covers are securely closed when you press the start buttons to send to print.
- Only qualified electricians are allowed to work on electrical devices.
- Before any electrical work is done, the master electrical switch must be set to the Off position.
- Do not service electrical components while the printer is in standby or printing modes.
- Only authorized personnel are allowed to handle inks and consumables (e.g. wiping, flushing, priming, and fixation fluids).
- The printing ink is not classified as flammable, but is combustible (flash point >100°C [212°F]).
- Do not expose inks to heat or sources of ignition.
- Avoid skin contact with ink, consumables, or waste fluid by wearing protective gloves (risk of skin irritation).
- Protective goggles must be worn if handling ink or waste fluid due to the danger of splashing (risk of serious eye damage).
- Store inks in cool conditions and keep in closed containers.



CAUTION!

Dispose of the following items in accordance with local authority regulations:

- Ink and consumable containers/liquids
- Waste containers/liquids
- Cleaning wipes/rags



Section 1 – Daily Maintenance

This section describes the daily preventive maintenance procedures for the Avalanche / Avalanche DC Pro series printers. It comprises the following tasks:

- [Beginning the Day/Shift](#), page 10: Perform this procedure at the beginning of the day, or at the beginning of a shift if you are working in 24-hour shifts.
- [During the Day/Shift](#), page 16: Perform this procedure during each shift in a working day.
- [Ending the Day/Shift](#), page 17: Perform this procedure at the end of the day.

Tools and Supplies - Summary

This list provides a summary of all the tools and supplies required for performing daily maintenance procedures. Prepare these items before starting the maintenance procedure.

PN	Description	Quantity	Page in this Guide
01-WIPR-0909	Lint-free wipes	as required	10, 16, 17
50-FIXA-0211	Fixation fluid agent	as required	10, 17
50-WBPP-0001	Priming fluid	as required	17
50-WIPG-0300	Wiping fluid	as required	10, 16, 17
62-PMNT-0007	Periodic Preventive Maintenance Guide for Avalanche series (this document)	1	-
83-LATX-0001	Gloves (latex, without talc)	as required	-
83-SLID-0003	Transparencies, A3	as required	10, 16, 17
-	Clean rags	as required	10, 17
-	IPA (Isopropyl Alcohol)	as required	10
-	Tap water	as required	10, 17

1.1 Beginning the Day/Shift

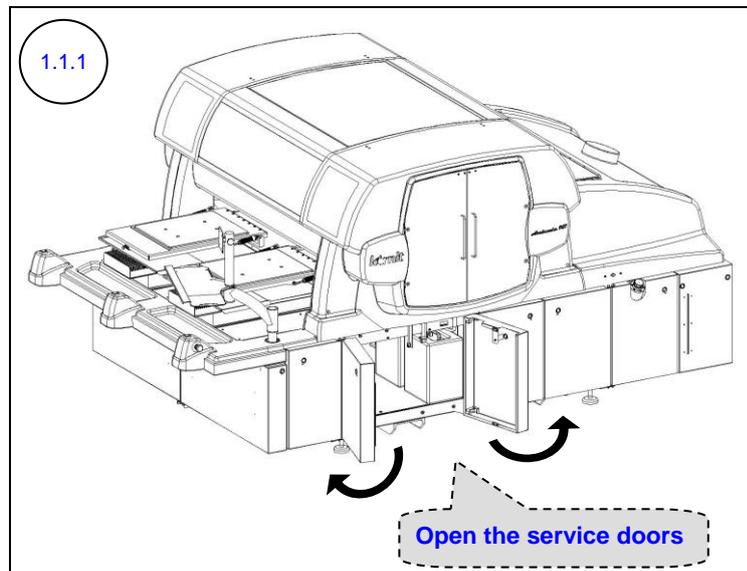
Tools and Supplies

PN	Description	Quantity
01-WIPR-0909	Lint-free wipes	as required
50-FIXA-0211	Fixation fluid agent	as required
50-WIPG-0300	Wiping fluid	as required
83-SLID-0003	Transparencies, A3	as required
-	Clean rags	as required
-	IPA (Isopropyl Alcohol)	as required
-	Tap water	as required

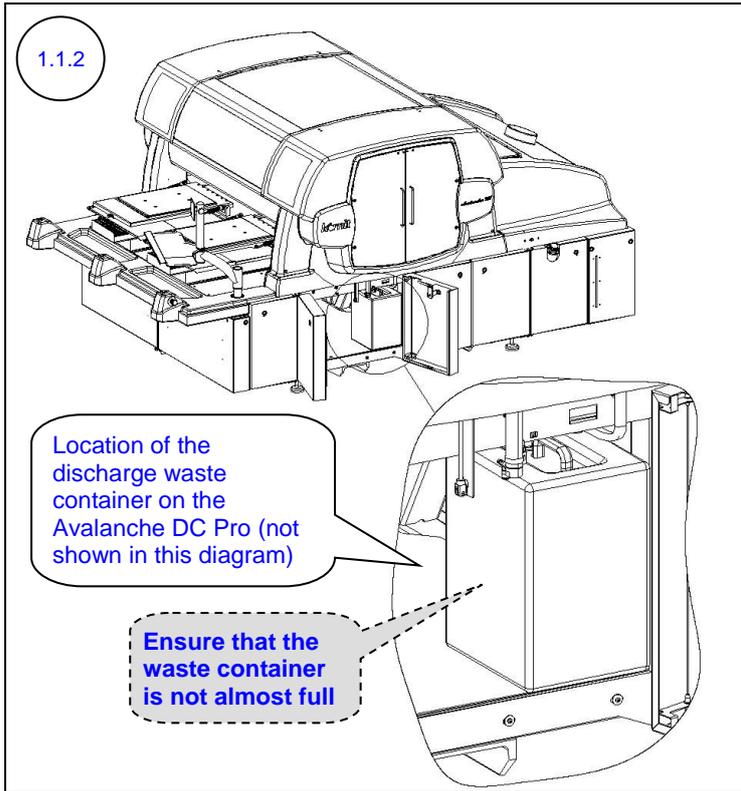
Preliminary Requirements

- The maintenance trays are in the capping position.

Procedure

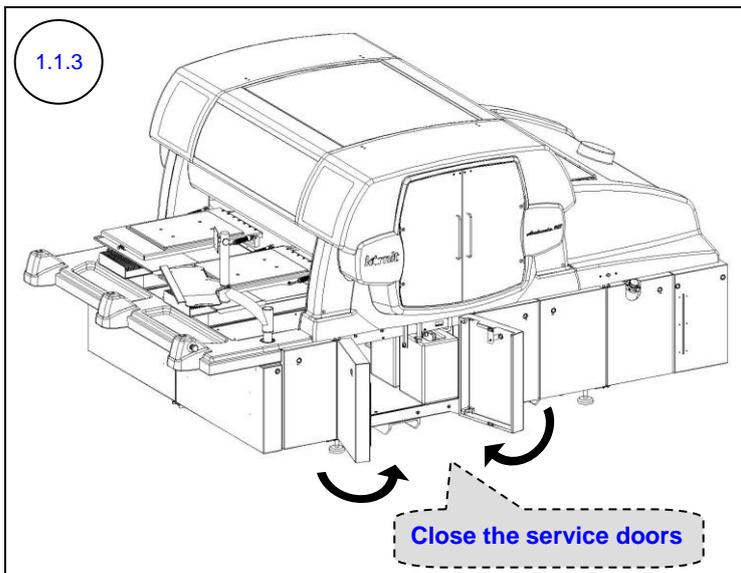


Open the waste container compartment doors (the second and third doors on the right side of the printer).



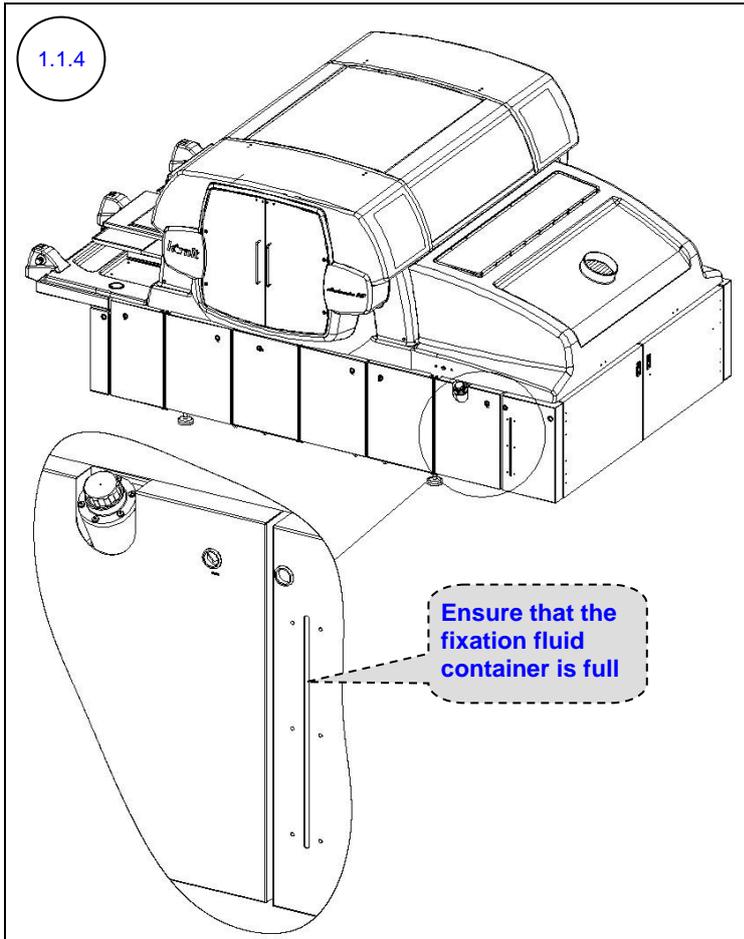
Examine the waste container(s).

If the waste container is full or nearly full, empty it according to Kornit's environmental policy (see [Environmental Policy](#) on page 2).



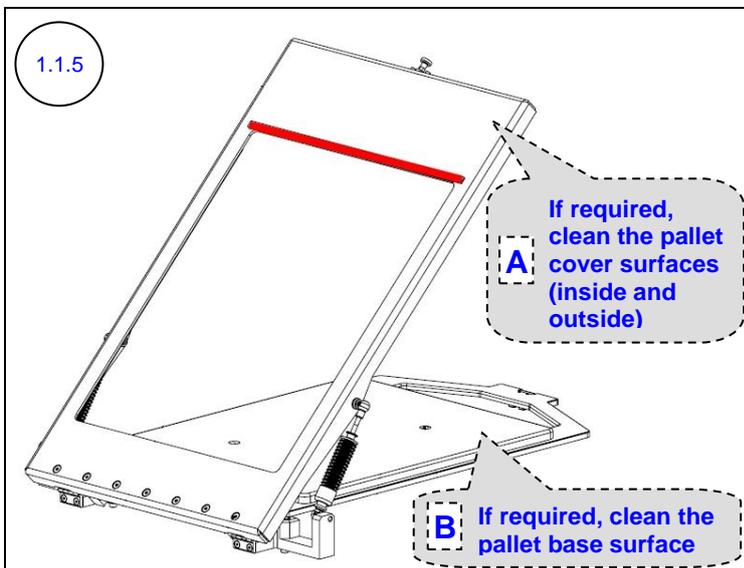
Close the waste container compartment doors (the second and third doors on the right side of the printer).

Section 1 – Daily Maintenance



Examine the fixation fluid container.

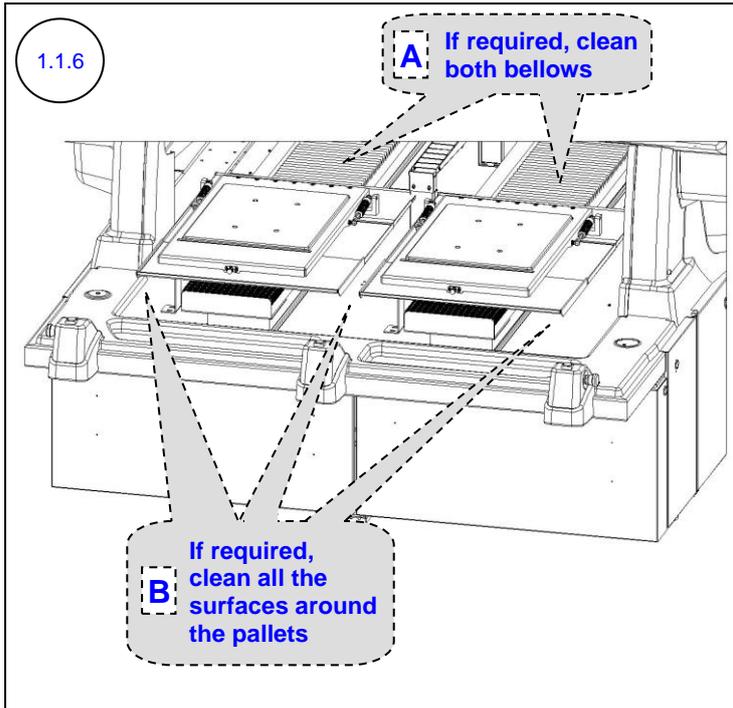
If not full, prepare the fixation fluid (mix the fixation fluid agent with water according to the instructions on the bottle), then fill the container.



Examine all the printing pallets and verify that they are clean.

If required, clean the printing pallets using clean rags and IPA, as follows:

- A. Pallet cover surfaces (inside and outside).
- B. Pallet base surface.



NOTE:

Before cleaning, ensure that the maintenance trays are in the capping position.

Examine the following areas and verify that they are clean:

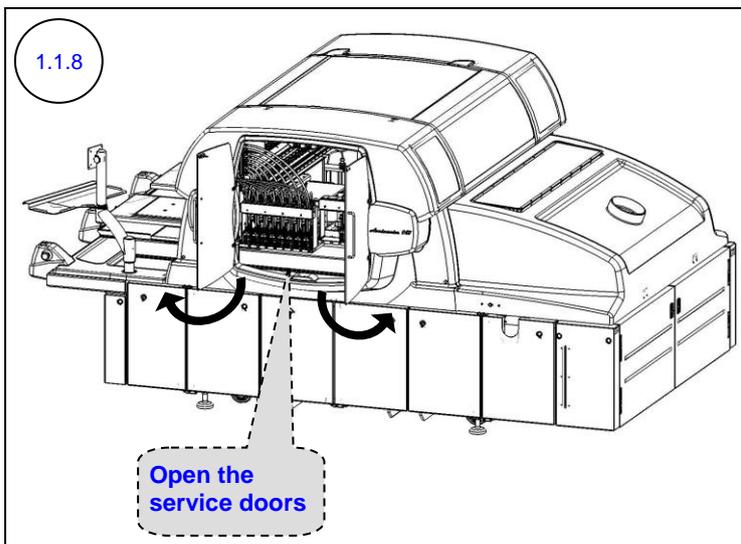
- A. Both bellows
- B. All the surfaces around the printing pallets

If required, clean all color drops, spray drops, dust, lint and fibers from these areas, using clean and moist rags.

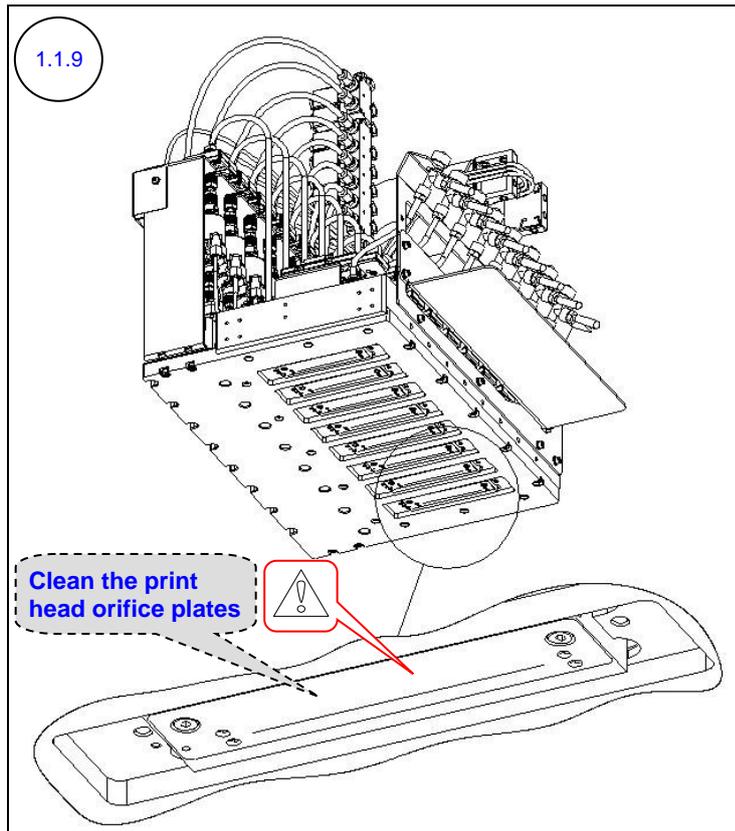
1.1.7

Follow the instructions that are relevant for the procedure you are performing (**beginning a day / beginning a shift**):

- **Beginning a Day:**
Switch on the printer's main power and start the QuickP Production software.
From the software main window, perform **Full Turn On**.
When the **Clean ink wipers...** message appears in the main window, proceed to step 1.1.8.
- **Beginning a Shift (For 24-hour Shifts):**
Purge all print heads in order to prevent drying and move the maintenance trays into the lower position.



Open the upper ink system service doors on the right side of the printer.

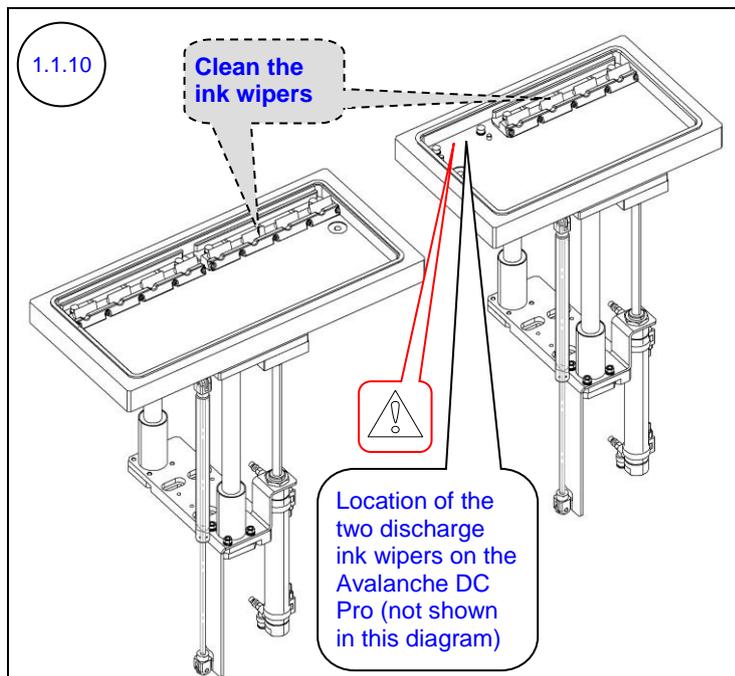


CAUTION!

- Clean the print head orifice plates in one direction only, making sure you use only clean parts of the wipe to prevent rubbing ink from one print head to another.
- On Avalanche DC Pro series printers, ensure to use separate new lint-free wipes for cleaning the discharge print head orifice plates.

Using wiping fluid and new lint-free wipes, clean the print head orifice plates (bottom of the print heads) on both print head carriages.

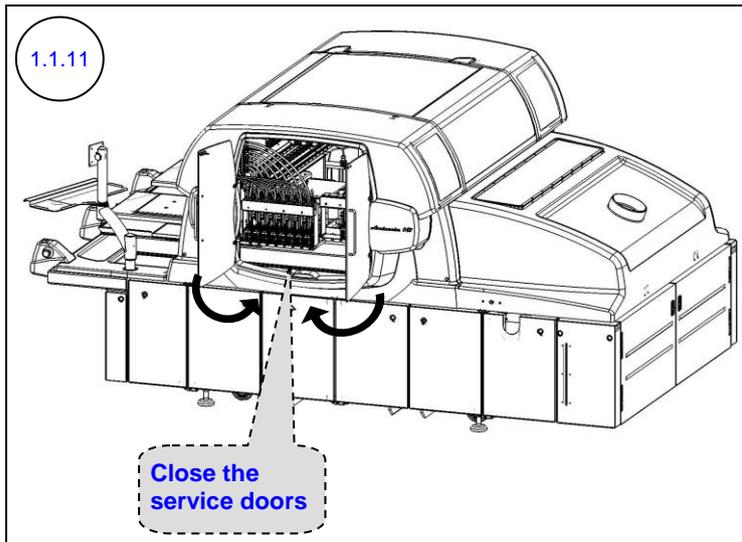
(Only the CMYK print head carriage appears in the diagram.)



CAUTION!

On Avalanche DC Pro series printers, ensure to use separate new lint-free wipes for cleaning the discharge ink wipers.

Using wiping fluid and new lint-free wipes, clean the ink wipers.



Close the upper ink system service doors on the right side of the printer.

Click **OK** in the messages that appear during the initialization process.

1.1.12

Follow the instructions that are relevant for the procedure you are performing (**beginning a day / beginning a shift**):

Beginning a Day:

A. On the **Clean ink wipers...** message, click **Continue**.

When the **Full Turn On Finished Successfully** message appears in the main window, continue to the next step.

B. Print two nozzle tests: one for CMYK ink and one for white and discharge inks.

C. Examine each nozzle test. If the test results indicate that there are missing nozzles, perform a few more purges and clean with wiping fluid and lint-free wipes. Repeat until a satisfactory nozzle test result is achieved (the result should be at least as good as the previous end-of-day's satisfactory result).

D. Write the date, time and your name on each nozzle test printout and save it in a folder near the printer for future reference.

The printer is now ready for operation.

Beginning a Shift (For 24-hour Shifts):

A. Perform **Purge and Wipe**.

B. Print two nozzle tests: one for CMYK ink and one for white and discharge inks.

C. Examine each nozzle test. If the test results indicate that there are missing nozzles, perform a few more purges and clean with wiping fluid and lint-free wipes. Repeat until a satisfactory nozzle test result is achieved (the result should be at least as good as the previous shift's satisfactory result).

D. Write the date, time and your name on each nozzle test printout and save it in a folder near the printer for future reference.

The printer is now ready for operation.

1.2 During the Day/Shift

Tools and Supplies

PN	Description	Quantity
01-WIPR-0909	Lint-free wipes	as required
50-WIPG-0300	Wiping fluid	as required
83-SLID-0003	Transparencies, A3	as required

Preliminary Requirements

- The maintenance trays are in the lower position.

Procedure

- 1.2.1 Perform steps [1.1.8](#) – [1.1.11](#) from the [Beginning the Day/Shift](#) section on page [10](#).

- 1.2.2
 - A. Print two nozzle tests: one for CMYK ink and one for white and discharge inks.
 - B. Examine each nozzle test. If the test results indicate that there are missing nozzles, perform a few more purges and clean with wiping fluid and lint-free wipes. Repeat until a satisfactory nozzle test result is achieved (the result should be at least as good as the previous shift's satisfactory result).
 - C. Write the date, time and your name on each nozzle test printout and save it in a folder near the printer for future reference.



1.3 Ending the Day/Shift

Tools and Supplies

PN	Description	Quantity
01-WIPR-0909	Lint-free wipes	as required
50-FIXA-0211	Fixation fluid agent	as required
50-WBPP-0001	Priming fluid	as required
50-WIPG-0300	Wiping fluid	as required
83-SLID-0003	Transparencies, A3	as required
-	Clean rags	as required
-	IPA (Isopropyl Alcohol)	as required
-	Tap water	as required

Preliminary Requirements

- The maintenance trays are in the lower position.

Procedure

1.3.1

- A. Perform **Purge and Wipe**.
- B. Print two nozzle tests: one for CMYK ink and one for white and discharge inks.
- C. Examine each nozzle test. If the test results indicate that there are missing nozzles, perform a few more purges and clean with wiping fluid and lint-free wipes. Repeat until a satisfactory nozzle test result is achieved (the result should be at least as good as the previous beginning-of-day's satisfactory result).
- D. Write the date, time and your name on each nozzle test printout and save it in a folder near the printer for future reference.

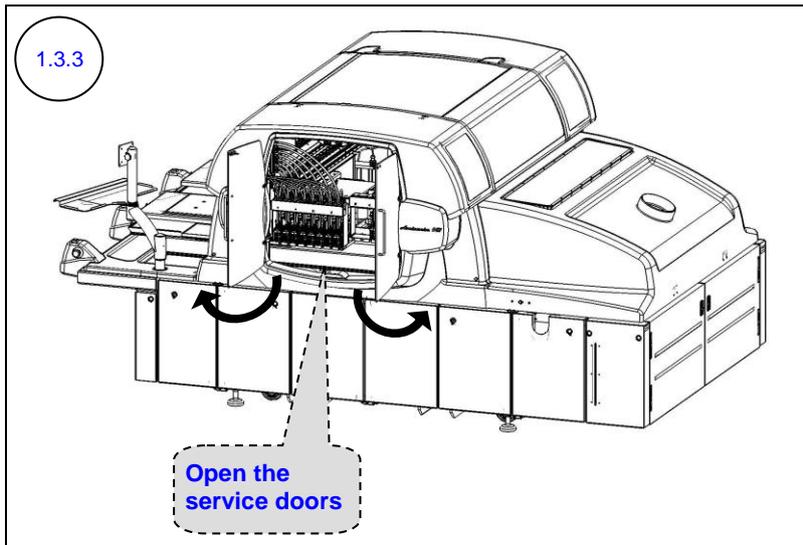
1.3.2



NOTE:

Perform this step only at the End of Day.

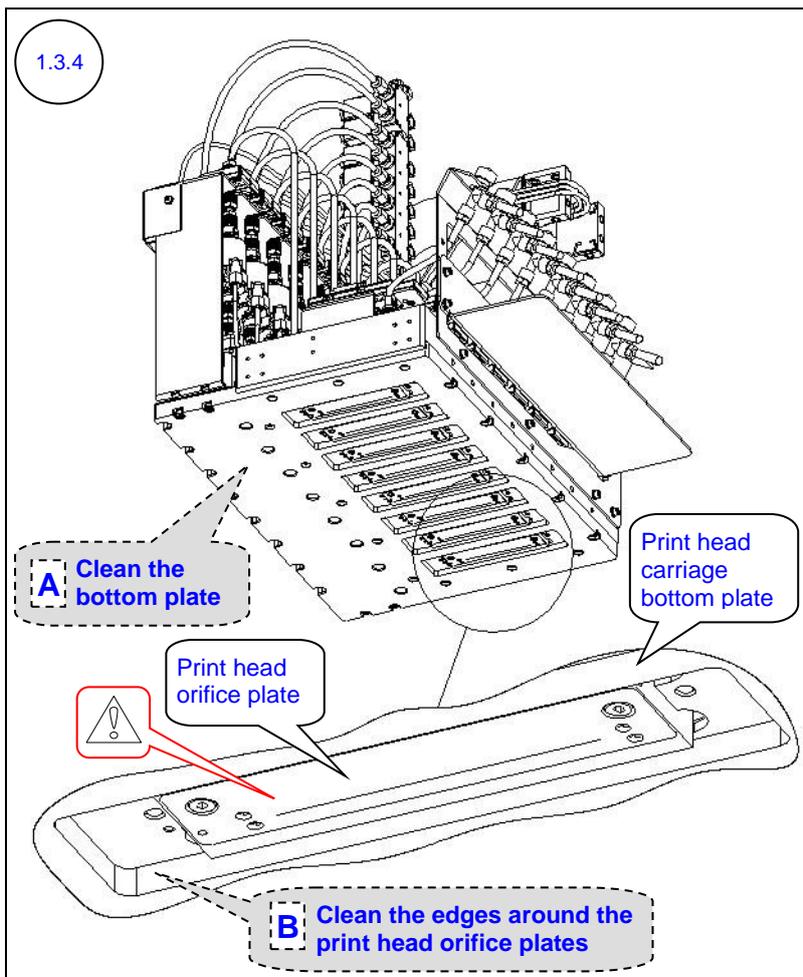
- A. From the main window, perform the **Turn Off** procedure.
- B. When the **Clean ink wipers...** message appears in the main window, proceed to the next step.



Open the upper ink system service doors on the right side of the printer.

Perform the following steps 1.3.4 – 1.3.6 on both print head carriages.

Note: The diagrams display only the CMYK print head carriage.

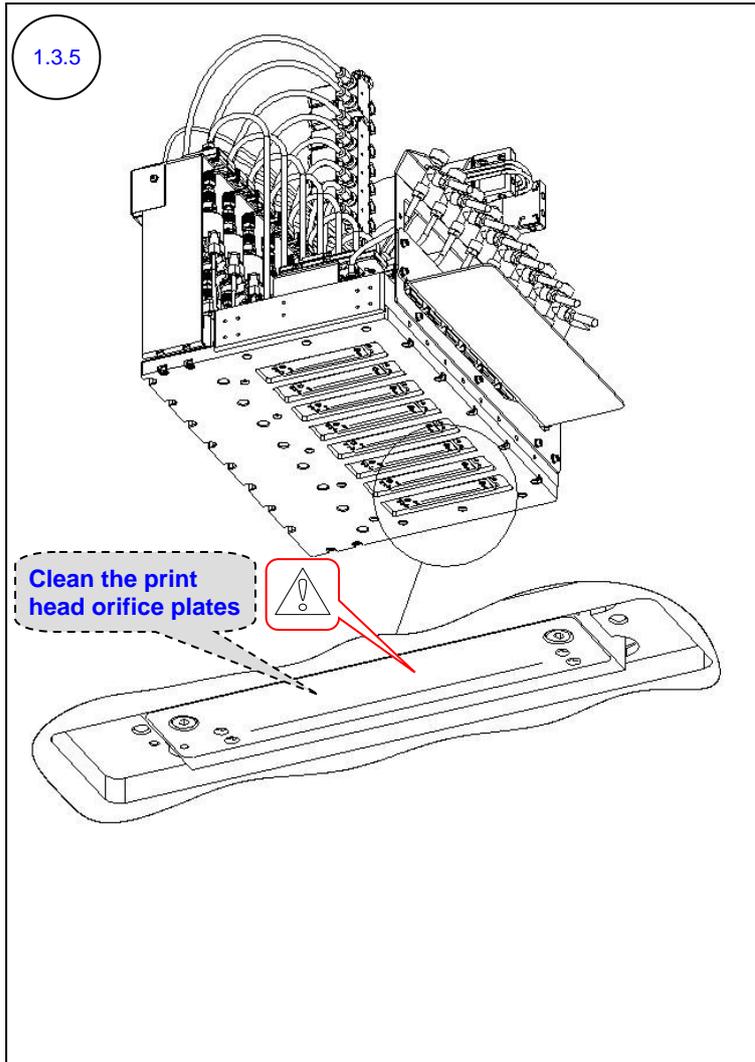


CAUTION!

Do **not** touch the print head orifice plates while cleaning the bottom plate or edges.

Using wiping fluid and lint-free wipes, clean:

- A. The bottom plate of the print head carriage.
- B. The edges of the slots on the print head carriage bottom plate (around the print heads), to remove the dried ink.



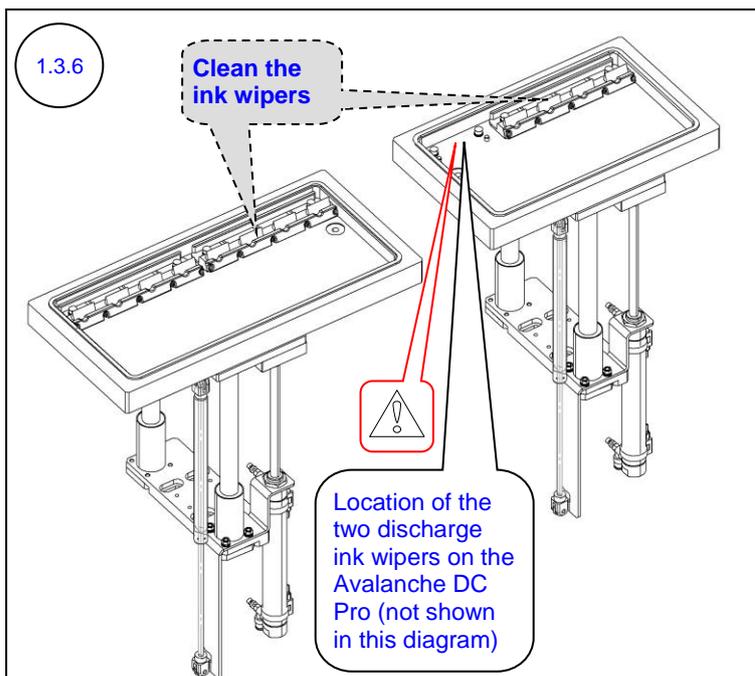
NOTE:

If you have already cleaned some of the print heads when trying to improve the nozzle test results, you can skip this step for these specific print heads.

CAUTION!

- Clean the print head orifice plates in one direction only, making sure you use only clean parts of the wipe to prevent rubbing ink from one print head to another.
- On Avalanche DC Pro series printers, ensure to use separate new lint-free wipes for cleaning the discharge print head orifice plates.

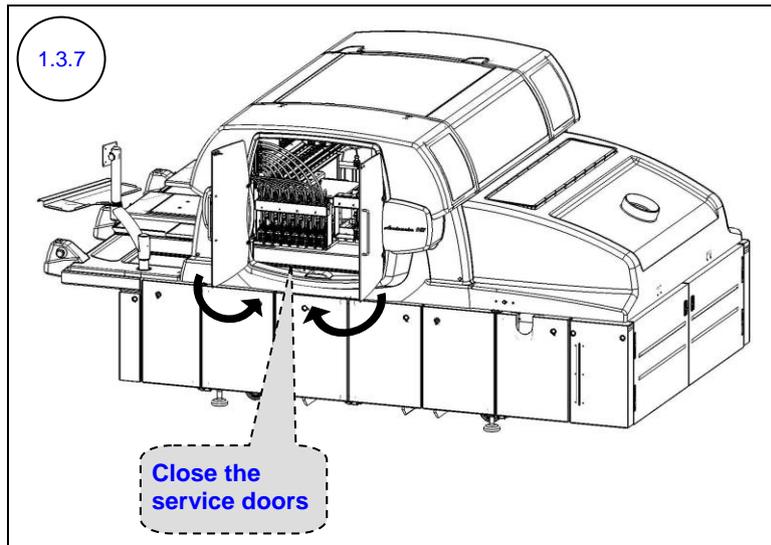
Using wiping fluid and new lint-free wipes, clean the print head orifice plates (bottom of the print heads).



CAUTION!

On Avalanche DC Pro series printers, ensure to use separate new lint-free wipes for cleaning the discharge ink wipers.

Using wiping fluid and new lint-free wipes, clean the ink wipers.



Close the upper ink system service doors on the right side of the printer.

Click **OK** in the messages that appear during the initialization process.

1.3.8

 **NOTE:**

Perform this step only at the End of Day.

In the **Clean ink wipers...** message (in the main window), click **Continue**.

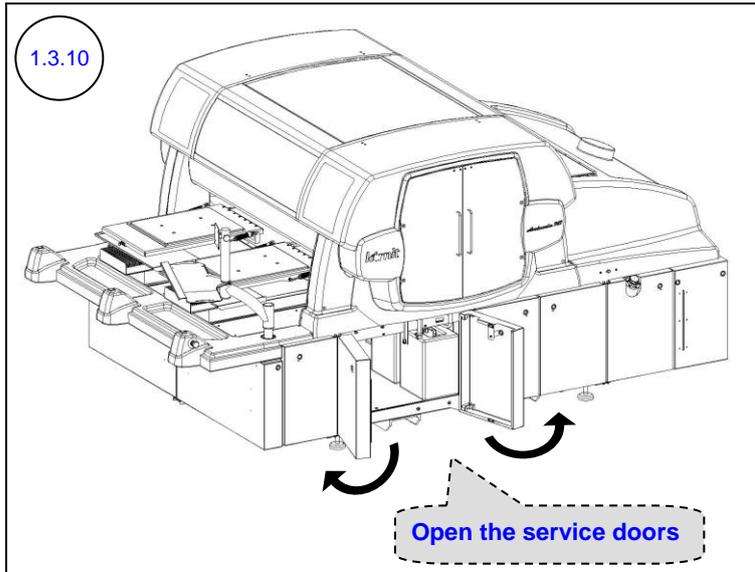
The **Turn Off Finished Successfully** message appears.

1.3.9

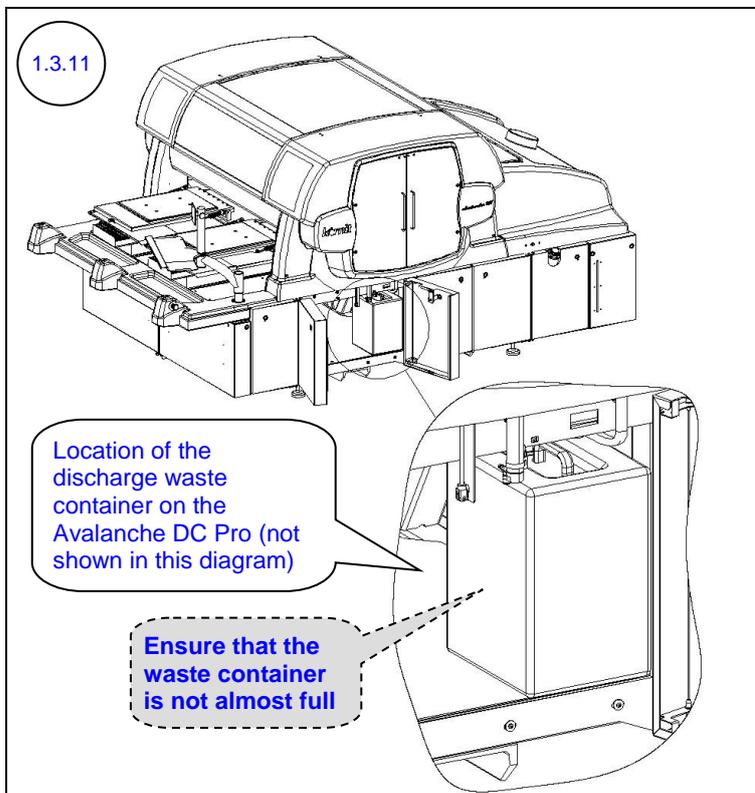
 **NOTE:**

Perform this step only at the End of Day, after completion of the turn off process.

- A. From the *Ink System* window, move both maintenance trays to the lower position.
- B. Using priming fluid and new lint-free wipes, wet all the print head orifice plates in both print head carriages (ensure to use a clean part of the wipe for each print head).
- C. Move both maintenance trays to the capping position, and close the *Ink System* window.



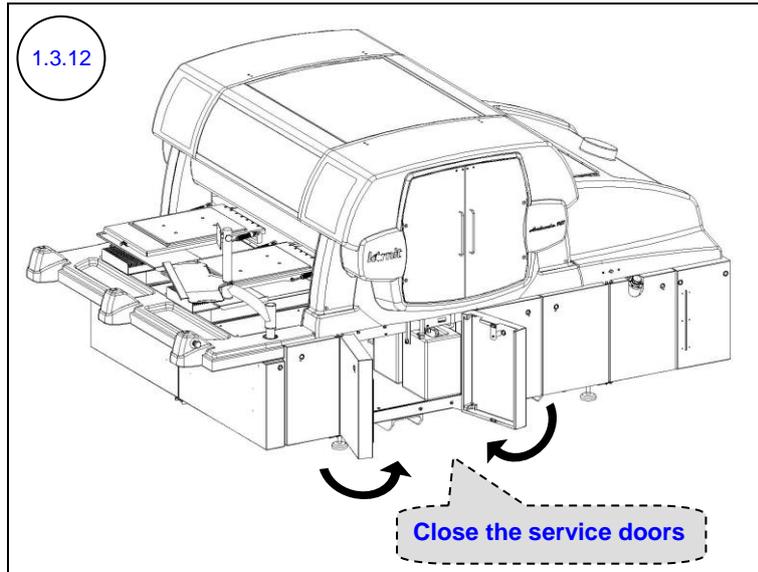
Open the waste container compartment doors (the second and third doors on the right side of the printer).



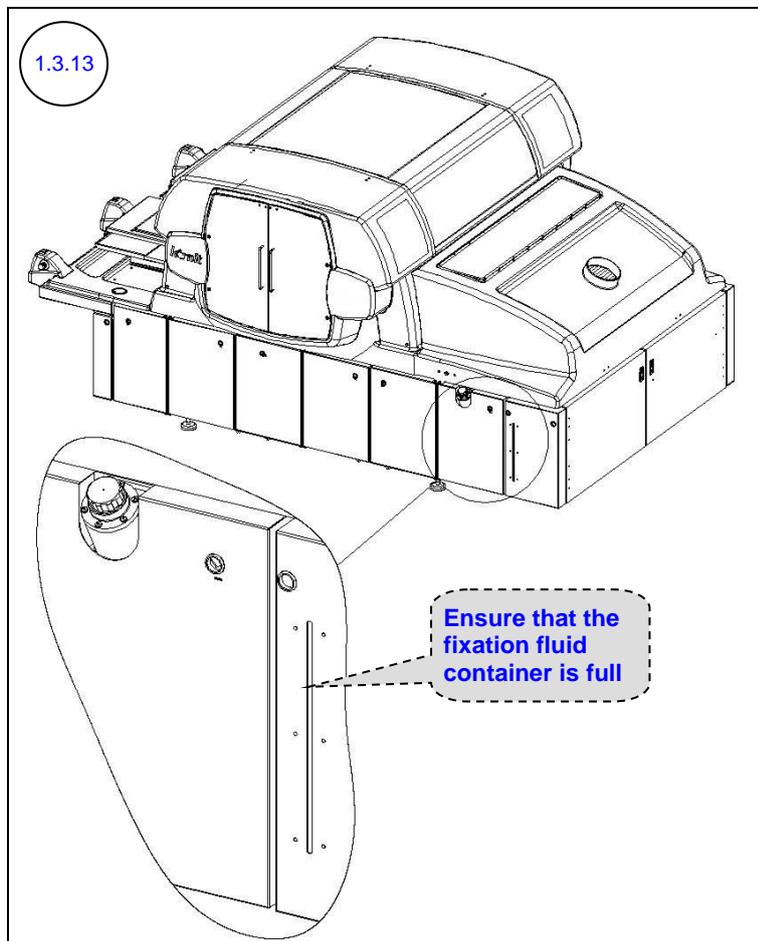
Examine the waste container(s).

If the waste container is full or nearly full, empty it according to Kornit's environmental policy (see [Environmental Policy](#) on page 2).

Section 1 – Daily Maintenance

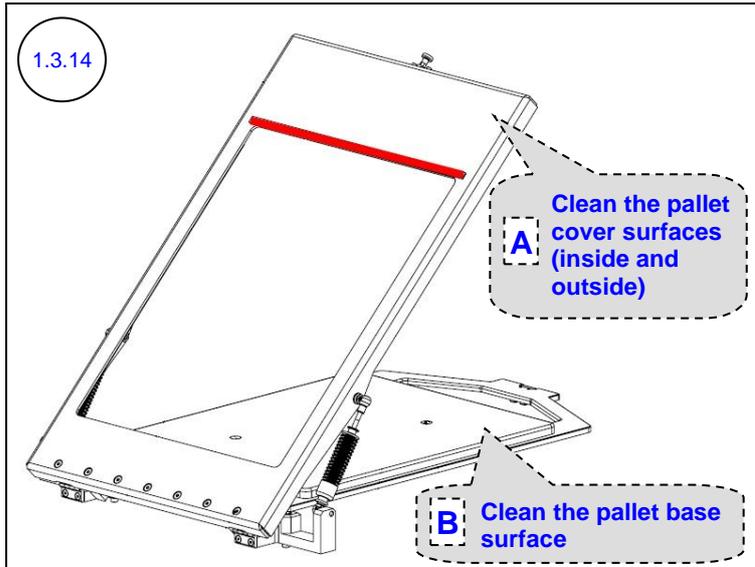


Close the waste container compartment doors (the second and third doors on the right side of the printer).



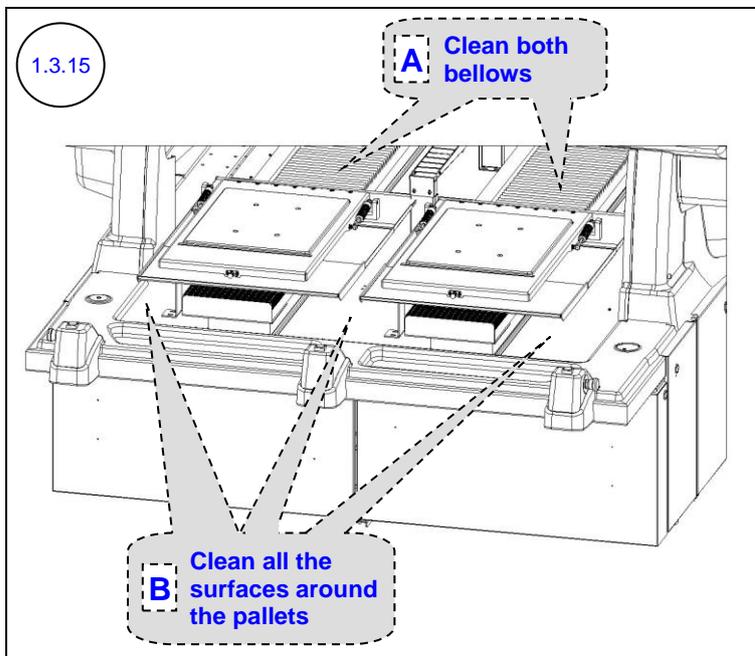
Examine the fixation fluid container.

If not full, prepare the fixation fluid (mix the fixation fluid agent with water according to the instructions on the bottle), then fill the container.



Clean the printing pallets using clean rags and IPA, as follows:

- A. Pallet cover surfaces (inside and outside).
- B. Pallet base surface.



NOTE:

Before cleaning, ensure that the maintenance trays are in the capping position.

Using clean and moist rags, clean all color drops, spray drops, dust, lint and fibers from the following areas:

- A. Both bellows
- B. All the surfaces around the printing pallets

1.3.16

**NOTE:**

Perform this step only at the End of Shift.

- A. Leave the QuickP Production software opened.
- B. Leave the main power switched on.

1.3.17

**NOTE:**

Perform this step only at the End of Day.

- A. Exit the QuickP Production software.
 - B. Switch off the main power.
- The printer shuts down.

Section 2 – Weekly Maintenance

This section describes the weekly preventive maintenance procedures for the Avalanche / Avalanche DC Pro series printers.

This procedure should be performed regularly, once a week.

The procedure comprises the following tasks:

- [Starting the Weekly Maintenance Procedure](#), page 27
- [Greasing the X1 and X2 Axes Rails](#), page 28
- [Cleaning the X1 and X2 Axes Encoder Scales](#), page 31
- [Cleaning the Y1 and Y2 Axes Encoder Scales](#), page 33
- [Cleaning the Maintenance Trays](#), page 35
- [Performing General Cleaning](#), page 39

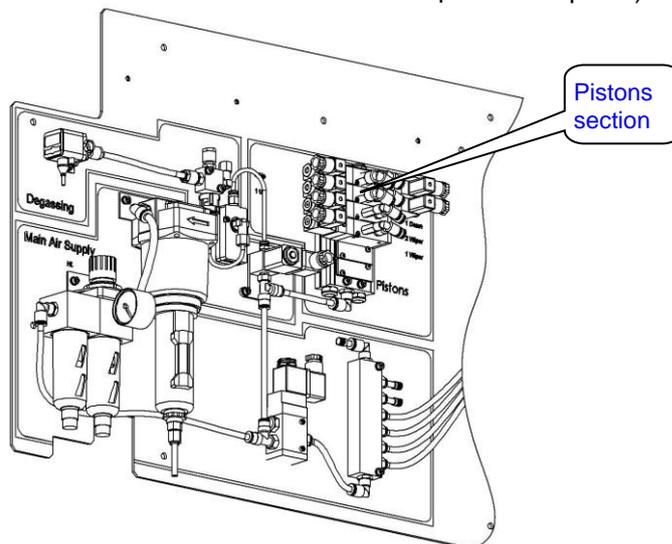


NOTE:

Complete this entire section without any significant breaks between the maintenance tasks.

If you must take a break (of up to four hours) between these tasks, perform the following before the break:

- Manually move the print head carriages towards the purge positions (above the maintenance trays).
- Perform a **Purge**.
- Move the maintenance trays into the capping position (using the two upper-left valves on the **Pistons** section of the pneumatic panel).



Tools and Supplies - Summary

This list provides a summary of all the tools and supplies required for performing weekly maintenance procedures. Prepare these items before starting the maintenance procedure.

PN	Description	Quantity	Page in this Guide
01-WIPR-0909	Lint-free wipes	as required	27 , 28 , 31 , 33
50-FIXA-0211	Fixation fluid agent	as required	27
50-WIPG-0300	Wiping fluid	as required	27
62-PMNT-0007	Periodic Preventive Maintenance Guide for Avalanche series (this document)	1	-
83-GRES-0070	THK grease	as required	28
83-LATX-0001	Gloves (latex, without talc)	as required	-
83-SLID-0003	Transparencies, A3	as required	27
-	Clean rags	as required	27 , 35 , 39
-	IPA (Isopropyl Alcohol)	as required	27
-	Standard tool box	-	28 , 31
-	Tap and hot water	as required	31 , 33 , 35 , 39



2.1 Starting the Weekly Maintenance Procedure

Procedure



Perform the following Daily Maintenance procedures:

- A. [Beginning the Day/Shift](#), page 10, excluding step 1.1.10

2.2 Greasing the X1 and X2 Axes Rails

Tools and Supplies

PN	Description	Quantity
01-WIPR-0909	Lint-free wipes	as required
83-GRES-0070	THK grease	as required
-	Standard tool box	-

Preliminary Requirements

- The main power is on.

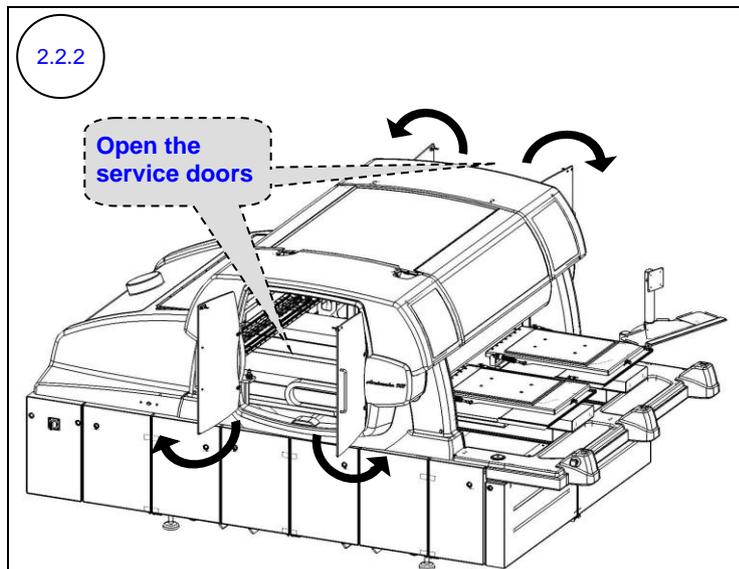
Procedure

2.2.1

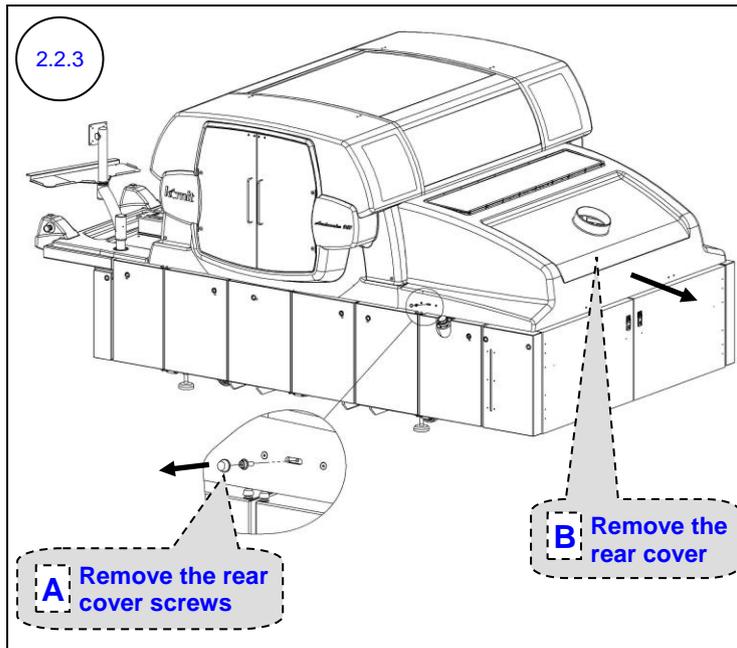
Perform the following steps:

- Perform a **Purge**.
- Move the maintenance trays into the lower position.
- Press one of the emergency stop buttons to turn off the motors.

2.2.2



Open the upper service doors on both sides of the printer.

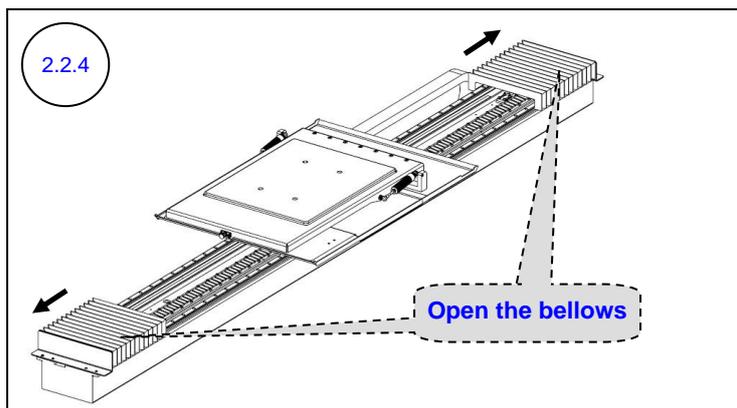


A. Remove the two screws and caps that attach the printer rear cover to the printer body (one screw from each side of the rear cover).

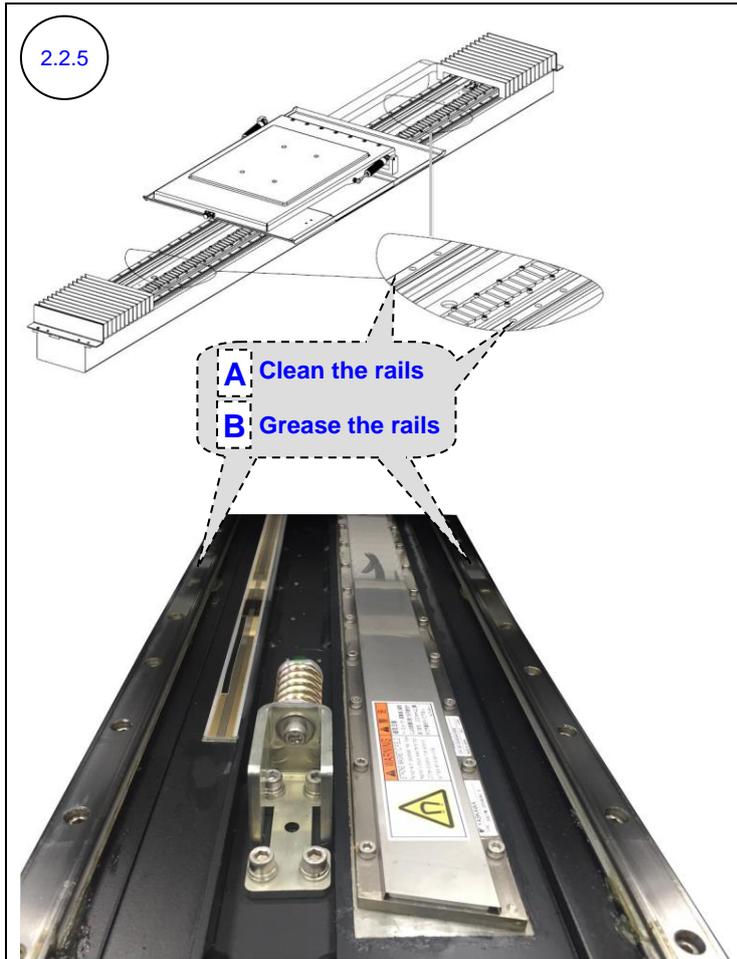
Keep the screws and caps for reuse.

B. Remove the printer rear cover.

Perform the following steps 2.2.4 – 2.2.5 on both the X1 and X2 axes.



Open the bellows on both sides of the printing pallet carriage.



While moving the printing pallet carriage along the axis:

- A. Using dry lint-free wipes, remove all the old grease from the rails.
- B. Apply a thin layer of grease (P/N 83-GRES-0070) all over the rails.



2.3 Cleaning the X1 and X2 Axes Encoder Scales

Tools and Supplies

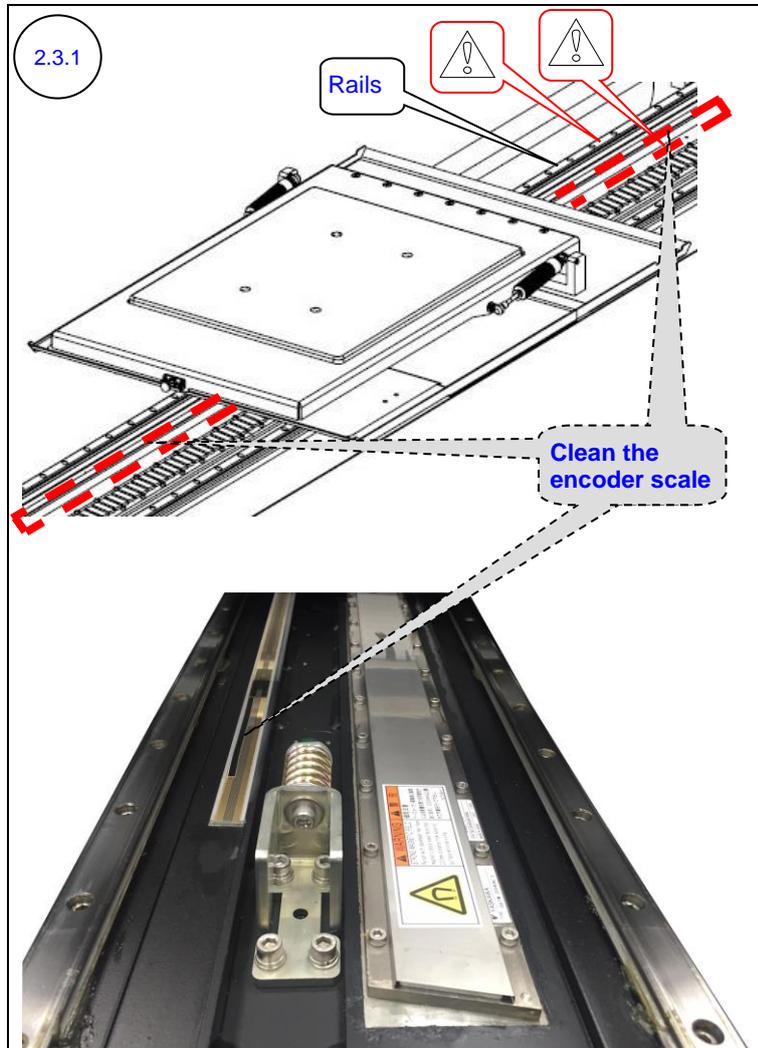
PN	Description	Quantity
01-WIPR-0909	Lint-free wipes	as required
-	Standard tool box	-
-	Tap water	as required

Preliminary Requirements

- The main power is on.
- The maintenance trays are in the lower position.
- The motors are off.
- The upper service doors are open (refer to diagram [2.2.2](#)).
- The printer rear cover is removed (refer to diagram [2.2.3](#)).
- The bellows are open on both sides of the printing pallet carriages (refer to diagram [2.2.4](#)).

Procedure

Perform the following steps 2.3.1 – 2.3.2 on both the X1 and X2 axes.



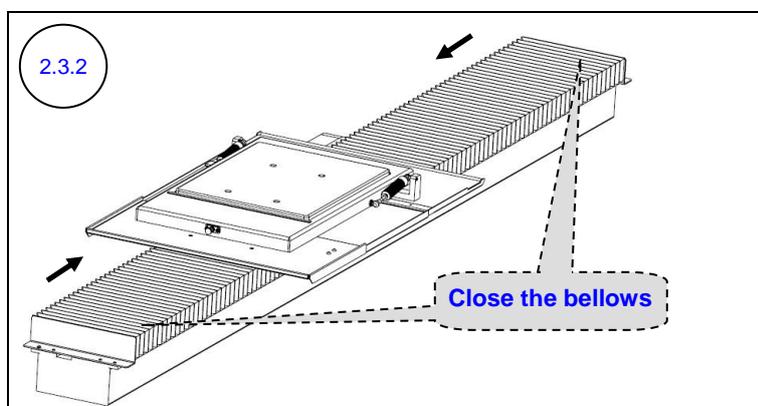
 **CAUTION!**

When cleaning the encoder scale:

- Make sure that you only wipe it gently, **without** chafing it, to prevent damaging the scale's marks.
- Do **not** touch the rails.

While moving the printing pallet carriage along the axis, clean the encoder scale using lint-free wipes and water.

Dry with dry lint-free wipes.



Close the bellows on both sides of the printing pallet carriage.

2.4 Cleaning the Y1 and Y2 Axes Encoder Scales

Tools and Supplies

PN	Description	Quantity
01-WIPR-0909	Lint-free wipes	as required
-	Tap water	as required

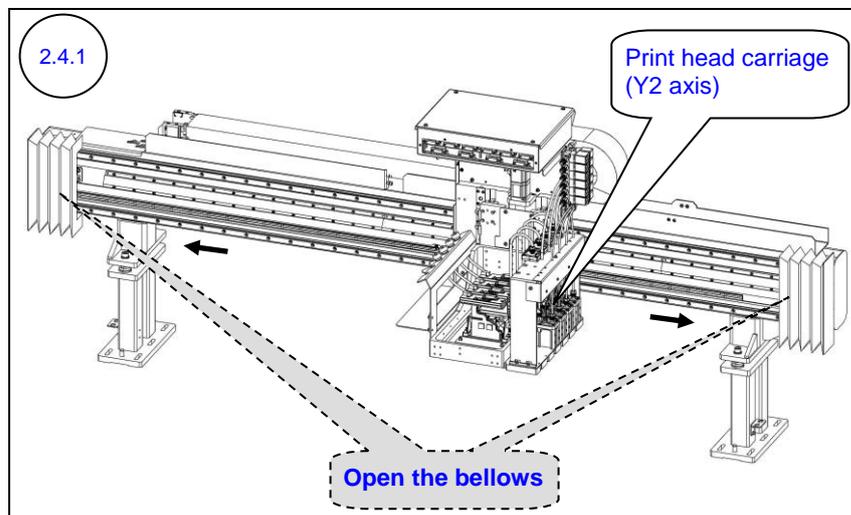
Preliminary Requirements

- The main power is on.
- The maintenance trays are in the lower position.
- The motors are off.
- The upper service doors are open (refer to diagram 2.2.2).
- The printer rear cover is removed (refer to diagram 2.2.3).

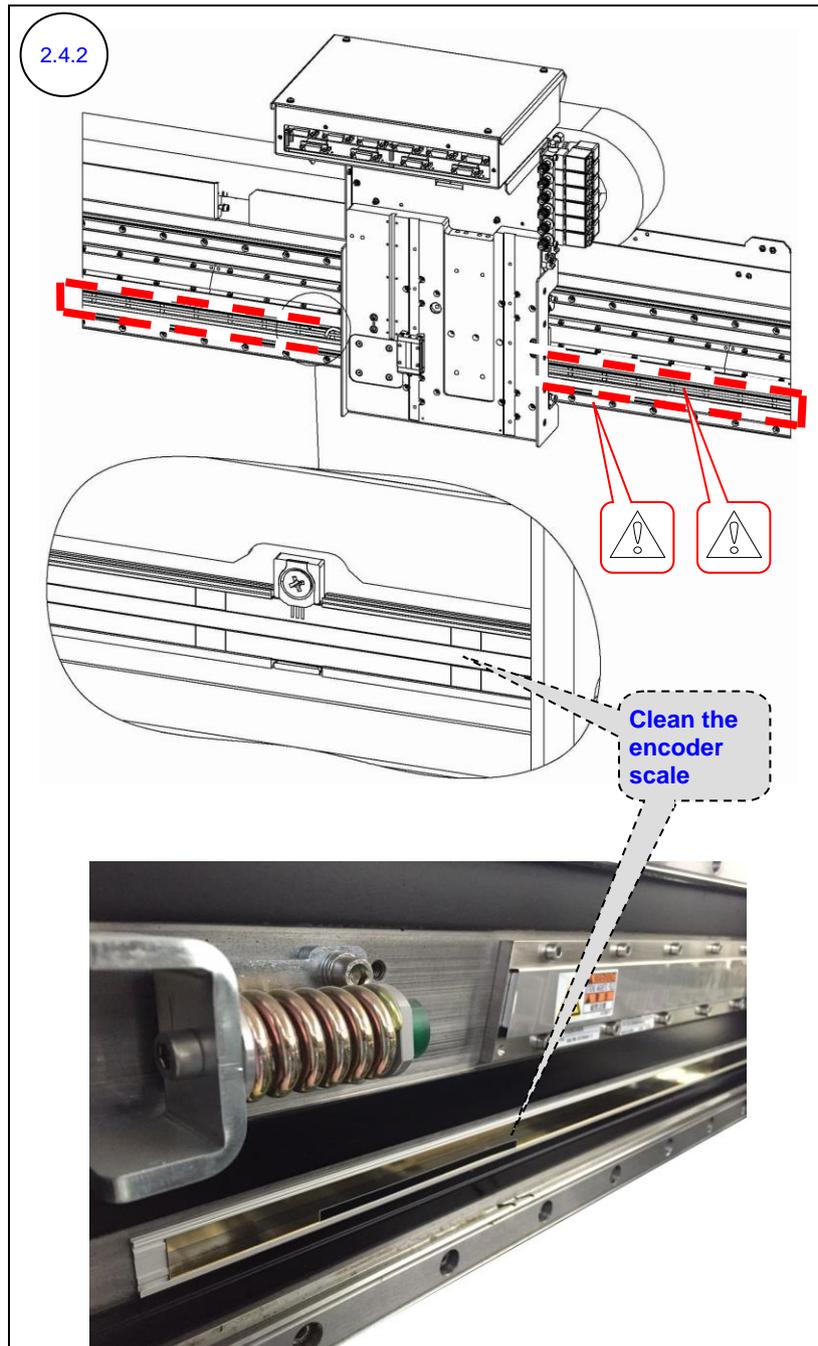
Procedure

Perform the following steps 2.4.1 – 2.4.3 on both the Y1 and Y2 axes.

Note: The diagrams display only the Y2 axis.



Open the bellows on both sides of the print head carriage.



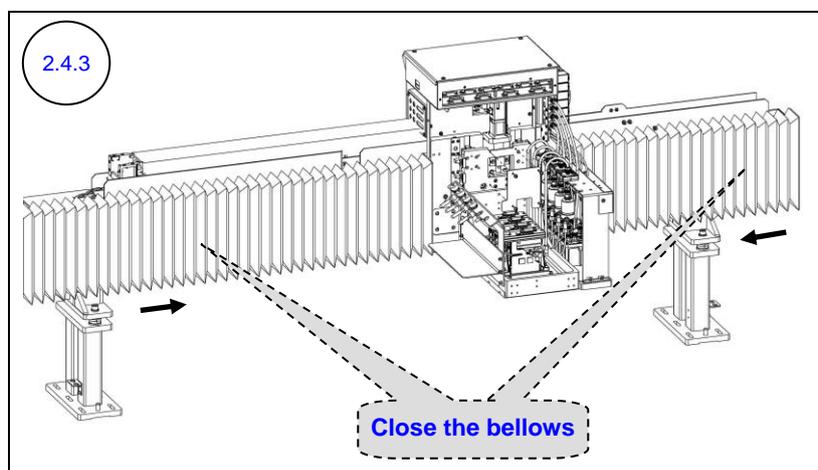
 **CAUTION!**

When cleaning the encoder scale:

- Make sure that you only wipe it gently, **without** chafing it, to prevent damaging the scale's marks.
- Do **not** touch the rails.

While moving the print head carriage along the axis, clean the encoder scale using lint-free wipes and water.

Dry with dry lint-free wipes.



Close the bellows on both sides of the print head carriage.

2.5 Cleaning the Maintenance Trays

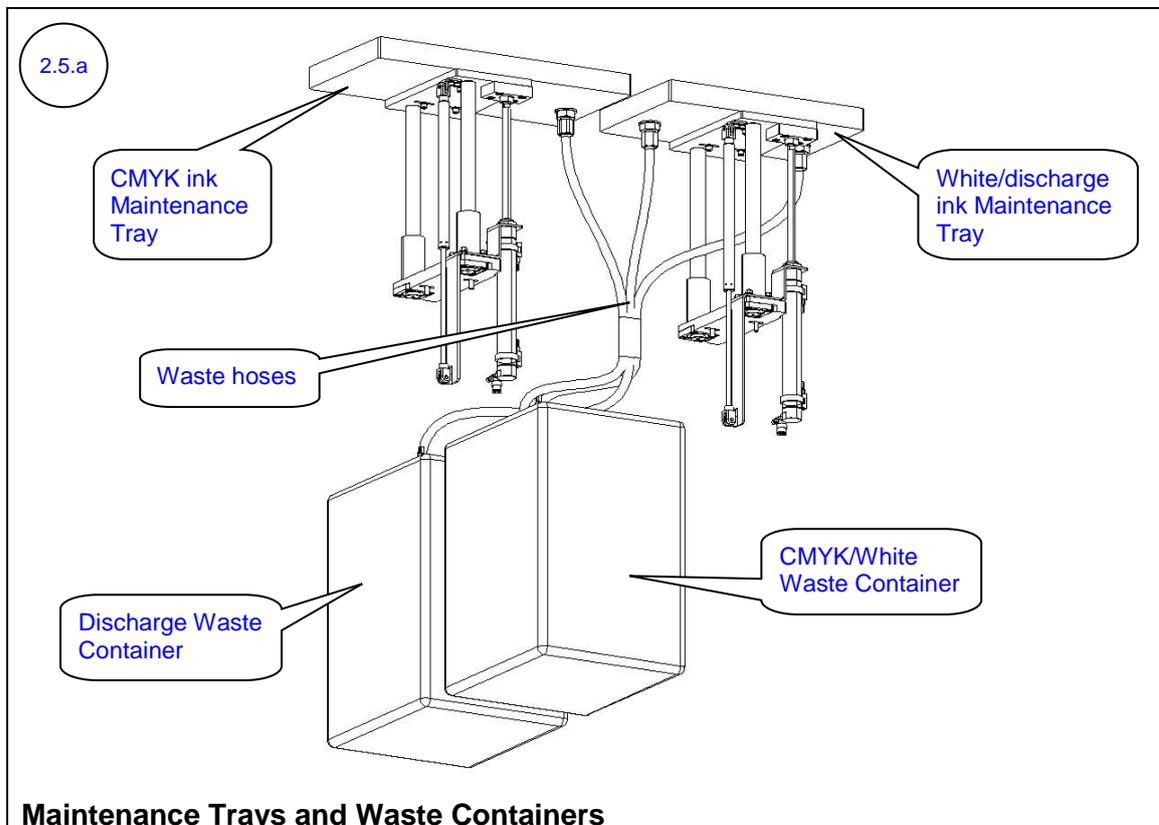
Tools and Supplies

PN	Description	Quantity
-	Clean rags	as required
-	Tap and hot water	as required

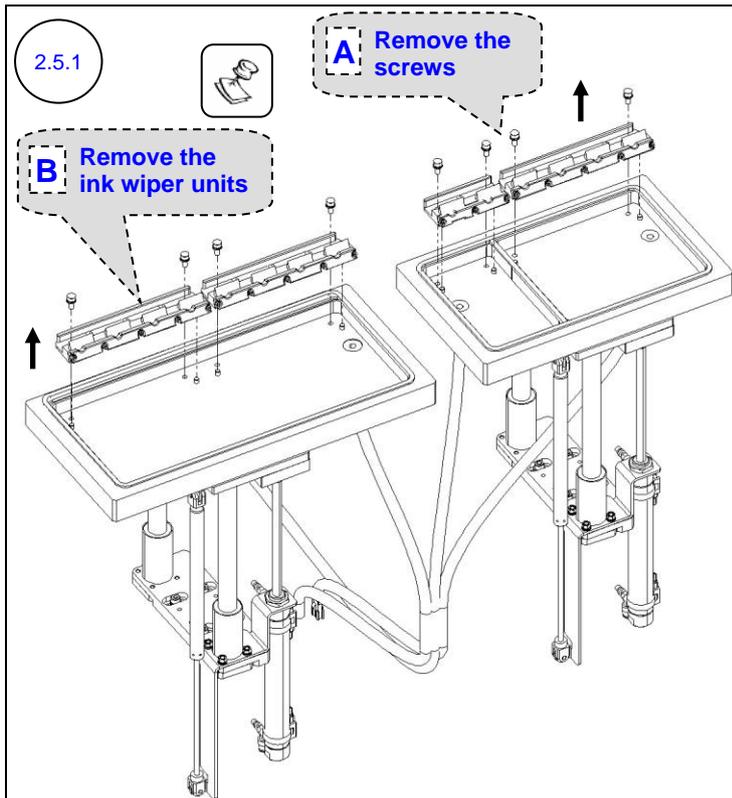
Preliminary Requirements

- The main power is on.
- The maintenance trays are in the lower position.
- The motors are off.
- The upper service doors are open (refer to diagram 2.2.2).
- The print head carriages are positioned on the left sides of the Y axes (to prevent any contact with the print head orifice plates during the cleaning process).
- The printer rear cover is removed (refer to diagram 2.2.3).

Procedure



Section 2 – Weekly Maintenance



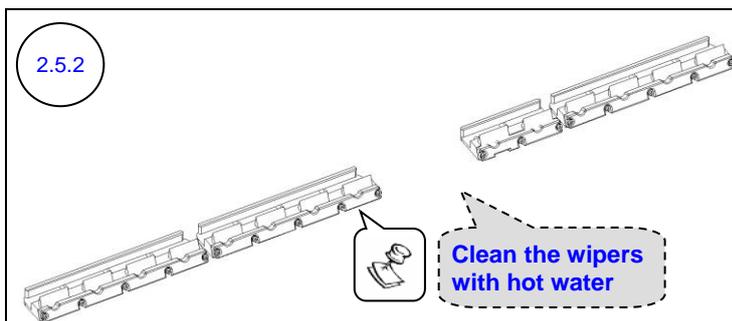
- A. Remove the ink wiper unit screws (six on Avalanche series printers; eight on Avalanche DC Pro series printers).

Keep the screws and washers for reuse.

 **NOTE:**

When removing the ink wiper units from both maintenance trays (and/or from several printers) at once, ensure to indicate on each wiper unit from which tray/printer it comes from.

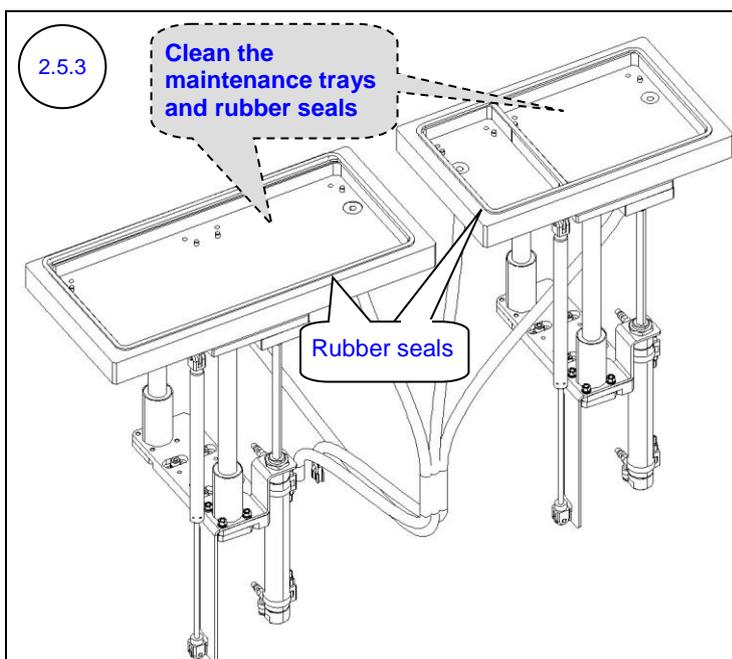
- B. Remove the ink wiper units (three on Avalanche series printers; four on Avalanche DC Pro series printers).



 **NOTE:**

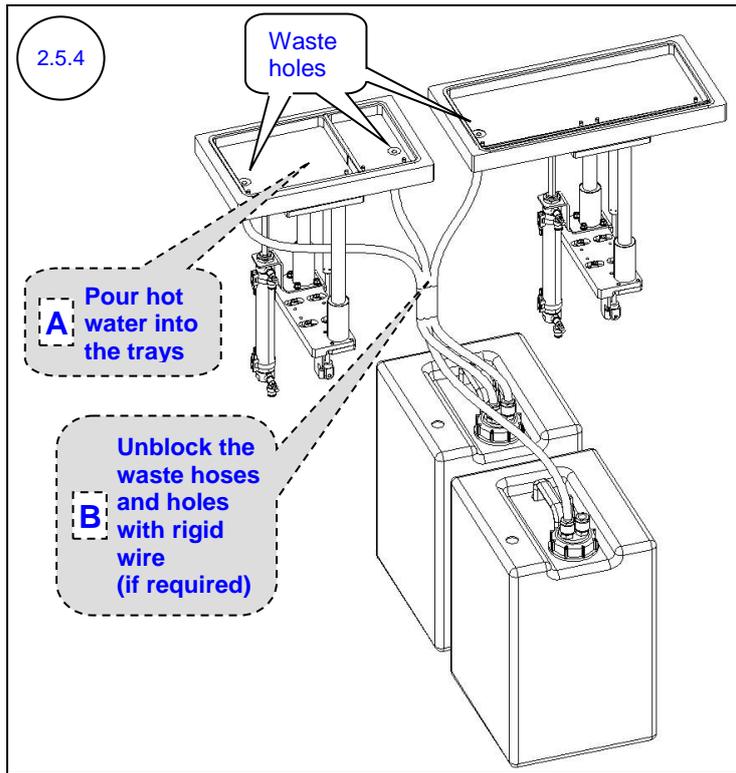
This action should be performed away from the printer.

Clean the ink wipers with hot water to remove dried ink.



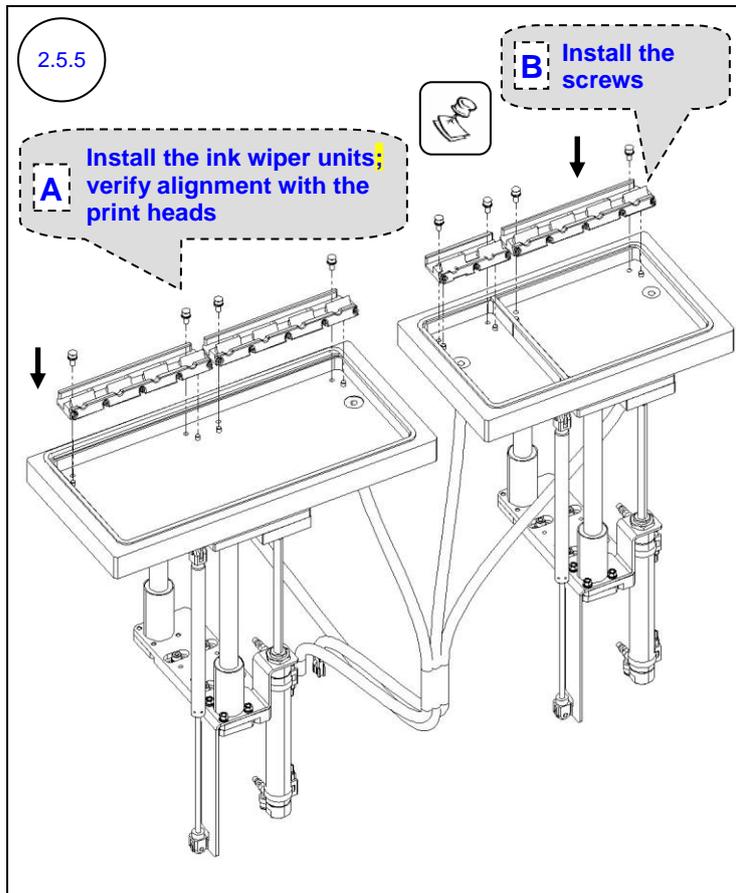
Using clean rags and water, clean the ink from:

- A. The maintenance trays.
B. The rubber seals and their surroundings.



A. Slowly pour hot water into the maintenance trays in order to remove all ink particles from the trays and to unblock the waste hoses.

B. If the waste hoses are blocked, unblock them by inserting a rigid wire through the waste holes, so that the waste can drain freely.



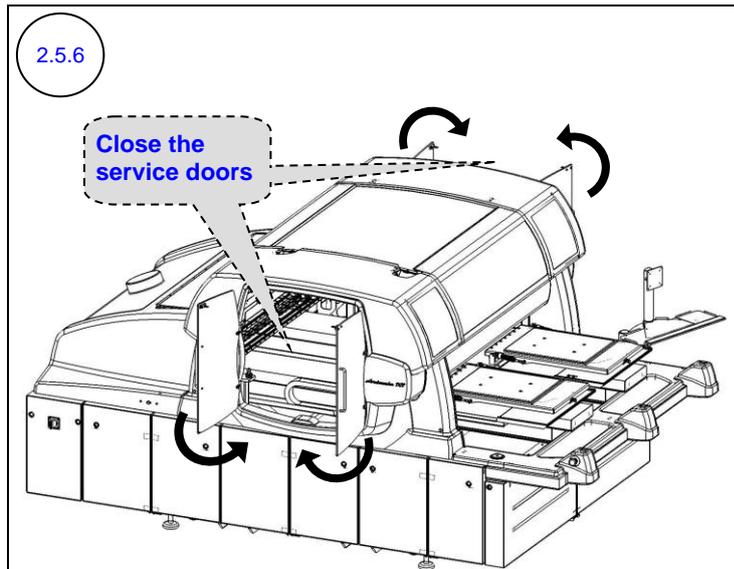
NOTE:

Make sure that you install each wiper unit in its original tray/printer and position (the one you removed it from).

A. Place the ink wiper units in position on the maintenance trays (three on Avalanche series printers; four on Avalanche DC Pro series printers).

Verify alignment of the ink wipers with the print heads.

B. Install the screws and washers of the ink wiper units (six on Avalanche series printers; eight on Avalanche DC Pro series printers).



Close the upper service doors on both sides of the printer.

Click **OK** in the messages that appear during the initialization process.

2.5.7 Perform **Capping and Weeping**.

2.6 Performing General Cleaning

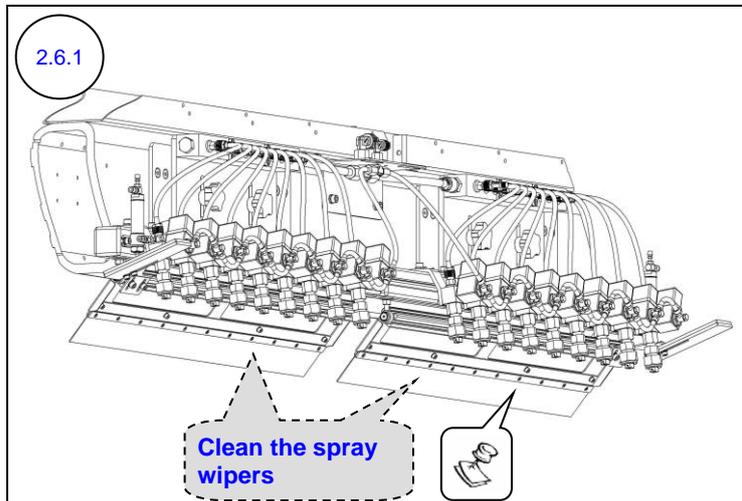
Tools and Supplies

PN	Description	Quantity
-	Clean rags	as required
-	Tap water	as required

Preliminary Requirements

- The main power is on.
- The maintenance trays are in the capping position.
- The printer rear cover is removed (refer to diagram [2.2.3](#)).

Procedure

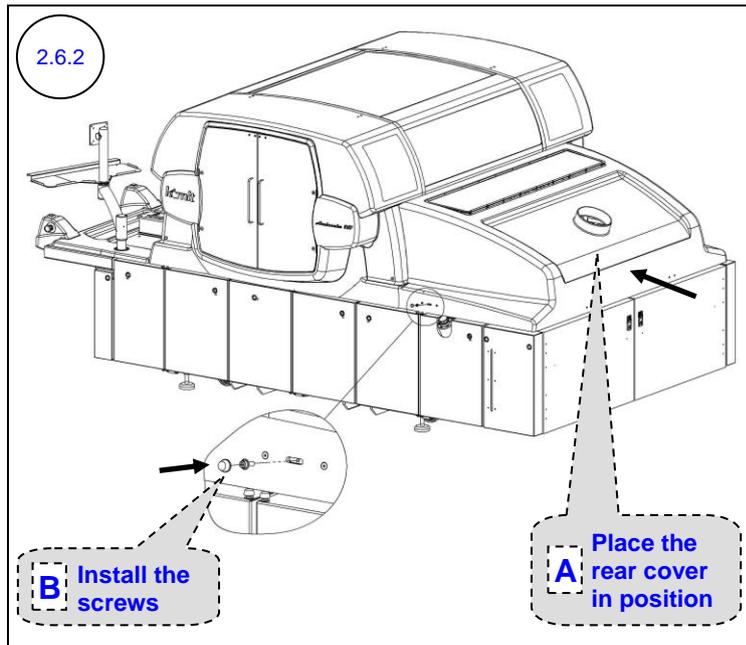


NOTE:

Ensure not to fold the spray wipers during cleaning.

Using clean rags and water clean both spray wipers.

Section 2 – Weekly Maintenance



- A. Place the printer rear cover in position on the printer.
- B. Install the two screws and caps that attach the printer rear cover to the printer body (one screw from each side of the rear cover).

- 2.6.3** Clean the floor under and around the printer to remove all lint and dust.



Section 3 – Quarterly Maintenance

This section describes the quarterly preventive maintenance procedures for the Avalanche /Avalanche DC Pro series printers.

This procedure should be performed regularly, once every quarter (three months).

The procedure comprises the following tasks:

- [Starting the Quarterly Maintenance Procedure](#), page 43
- [Cleaning the X1 and X2 Axes Encoder Scales](#), page 44
- [Greasing the Y1 and Y2 Axes Rails](#), page 48
- [Cleaning the Y1 and Y2 Axes Encoder Scales](#), page 50
- [Tightening the Printing Pallet Screws](#), page 53
- [Inspecting the Vacuum and Pressure Values](#), page 54
- [Draining the Oil Filter](#), page 57
- [Draining the Air Filters](#), page 58
- [Inspecting the Spray System Values](#), page 60
- [Inspecting the Operation of the Emergency Mechanisms](#), page 62
- [Inspecting the Print Head Temperatures](#), page 64
- [Backing Up the Application Folder](#), page 65
- [Deleting Unnecessary Files from the Computer](#), page 66
- [Cleaning the Printer's Interior Space](#), page 67



NOTE:

Complete this entire section without any significant breaks between the maintenance tasks.

If you must take a break (of up to four hours) between these tasks, perform the following before the break:

- Manually move the print head carriages towards the purge positions (above the maintenance trays).
 - Perform a **Purge**.
 - Move the maintenance trays into the capping position (when performing tasks [3.1 – 3.4](#), use the two upper-left valves on the **Pistons** section of the pneumatic panel, to move the maintenance trays up; refer to the diagram on the first note of Section 2).
-

Tools and Supplies - Summary

This list provides a summary of all the tools and supplies required for performing quarterly maintenance procedures. Prepare these items before starting the maintenance procedure.

PN	Description	Quantity	Page in this Guide
01-WIPR-0909	Lint-free wipes	as required	43 , 44 , 48 , 50
50-WIPG-0300	Wiping fluid	as required	43
62-PMNT-0007	Periodic Preventive Maintenance Guide for Avalanche series (this document)	1	-
83-GRES-0070	THK grease	as required	48
83-LATX-0001	Gloves (latex, without talc)	as required	-
83-SLID-0003	Transparencies, A3	as required	43
-	Clean rags	as required	43 , 57 , 58 , 67
-	Compressed air source	as required	43 , 67
-	IPA (Isopropyl Alcohol)	as required	43
-	Standard tool box	-	44 , 53
-	Tap and hot water	as required	43 , 44 , 50
-	Writeable CD (blank)	as required	66



3.1 Starting the Quarterly Maintenance Procedure

Procedure

- 3.1.1 Perform the following Daily Maintenance procedures:
 - A. [Beginning the Day/Shift](#), page 10, excluding step 1.1.10

- 3.1.2 Perform the following Weekly Maintenance procedures:
 - A. [Greasing the X1 and X2 Axes Rails](#), page 28
 - B. [Cleaning the Maintenance Trays](#), page 35
 - C. [Performing General Cleaning](#), page 39

3.2 Cleaning the X1 and X2 Axes Encoder Scales

Tools and Supplies

PN	Description	Quantity
01-WIPR-0909	Lint-free wipes	as required
-	Standard tool box	-
-	Tap water	as required

Preliminary Requirements

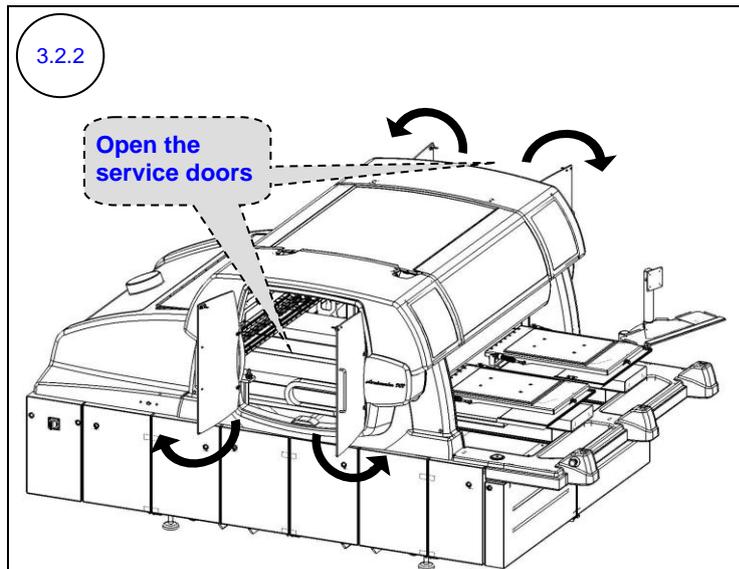
- The main power is on.
- The maintenance trays are in the capping position.

Procedure

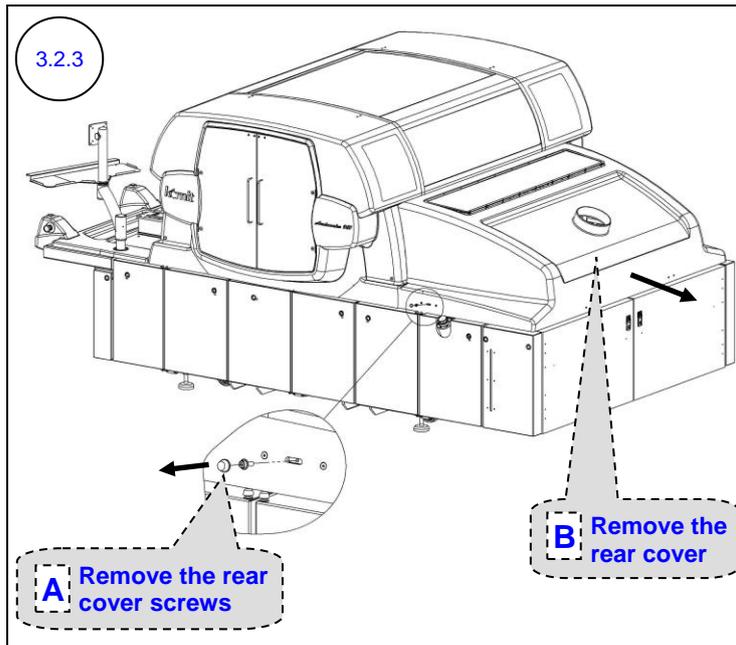
3.2.1

Press one of the emergency stop buttons to turn off the motors.

3.2.2



Open the upper service doors on both sides of the printer.

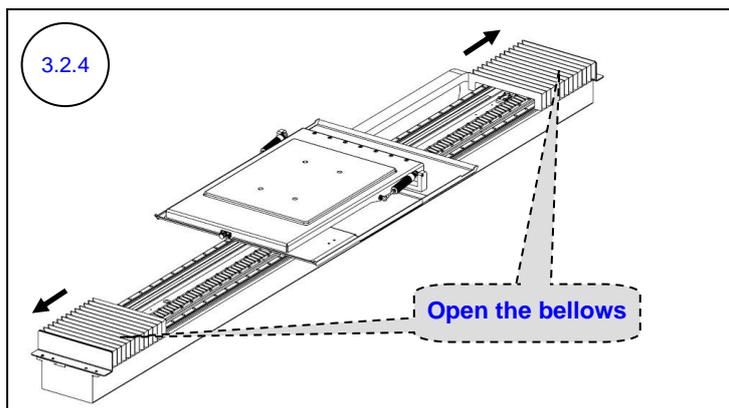


A. Remove the two screws and caps that attach the printer rear cover to the printer body (one screw from each side of the rear cover).

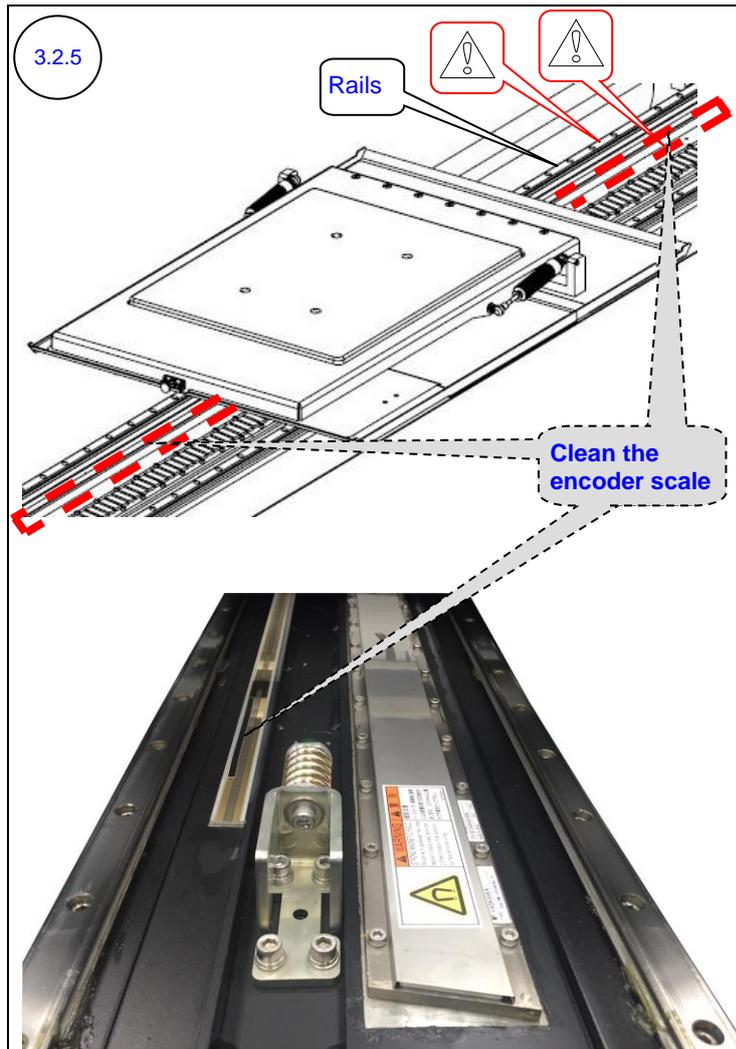
Keep the screws and caps for reuse.

B. Remove the printer rear cover.

Perform the following steps 3.2.4 – 3.2.6 on both the X1 and X2 axes.



Open the bellows on both sides of the printing pallet carriage.



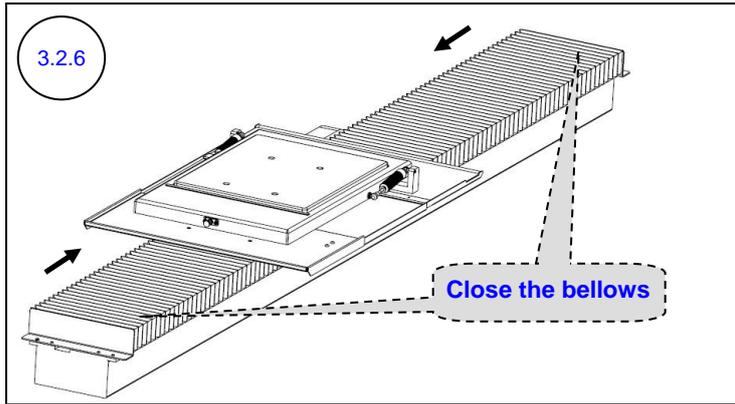
 **CAUTION!**

When cleaning the encoder scale:

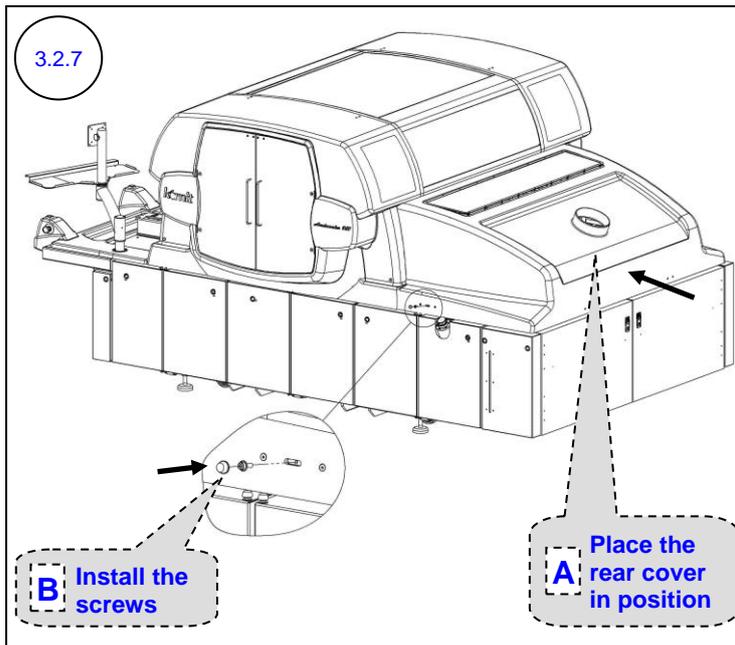
- Make sure that you only wipe it gently, **without** chafing it, to prevent damaging the scale's marks.
- Do **not** touch the rails.

While moving the printing pallet carriage along the axis, clean the encoder scale using lint-free wipes and water.

Dry with dry lint-free wipes.



Close the bellows on both sides of the printing pallet carriage.



- A. Place the printer rear cover in position on the printer.
- B. Install the two screws and caps that attach the printer rear cover to the printer body (one screw from each side of the rear cover).

3.3 Greasing the Y1 and Y2 Axes Rails

Tools and Supplies

PN	Description	Quantity
01-WIPR-0909	Lint-free wipes	as required
83-GRES-0070	THK grease	as required

Preliminary Requirements

- The main power is on.
- The maintenance trays are in the capping position.
- The motors are off.
- The upper service doors are open (refer to diagram 3.2.2).

Procedure

3.3.1

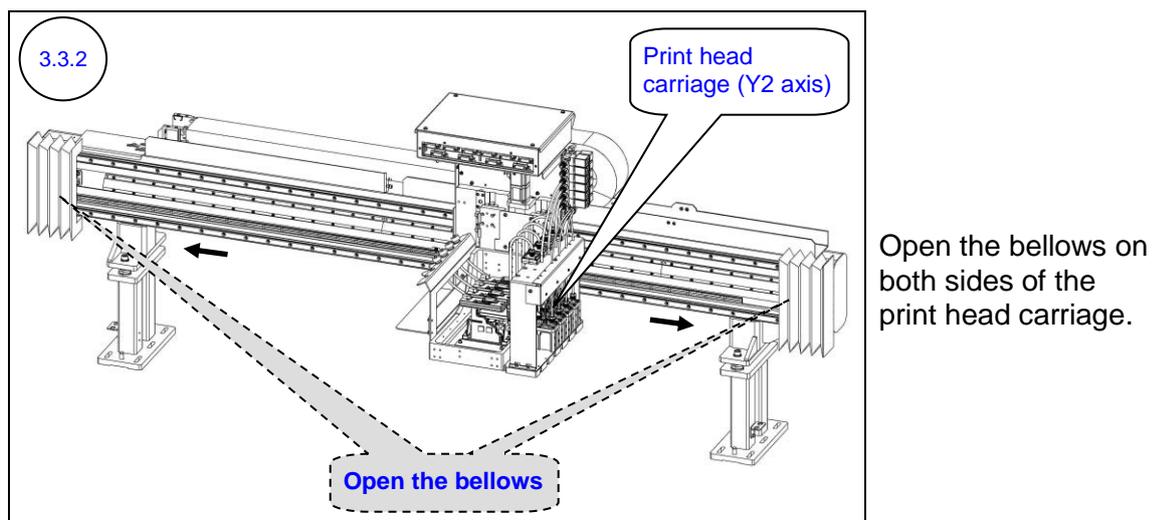
Perform the following steps:

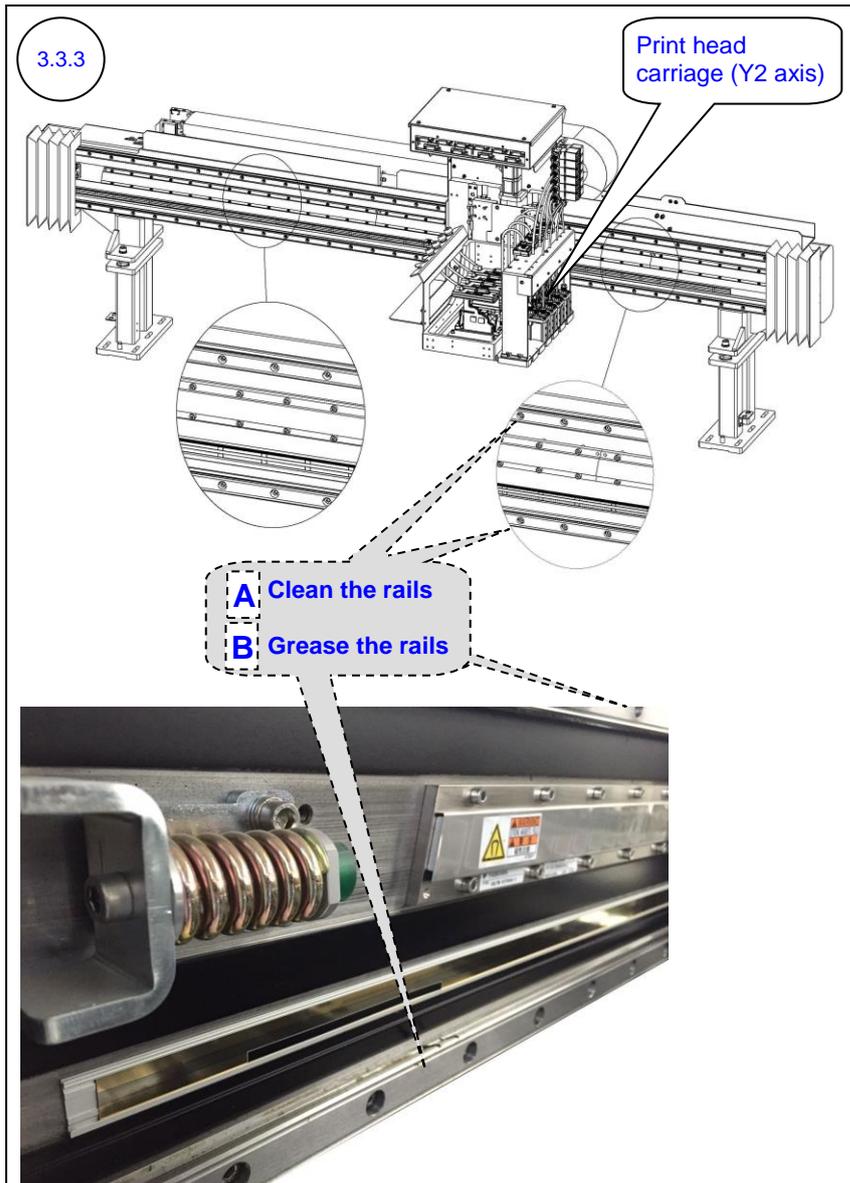
A. Perform a **Purge**.

B. Move the maintenance trays into the lower position (using the two upper-right valves on the **Pistons** section of the pneumatic panel; refer to the diagram on the first note of Section 2).

Perform the following steps 3.3.2 – 3.3.3 on both the Y1 and Y2 axes.

Note: The diagrams display only the Y2 axis.





While moving the print head carriage along the axis:

- A. Using dry lint-free wipes, remove all the old grease from the rails.
- B. Apply a thin layer of grease (P/N 83-GRES-0070) all over the rails.

3.4 Cleaning the Y1 and Y2 Axes Encoder Scales

Tools and Supplies

PN	Description	Quantity
01-WIPR-0909	Lint-free wipes	as required
-	Tap water	as required

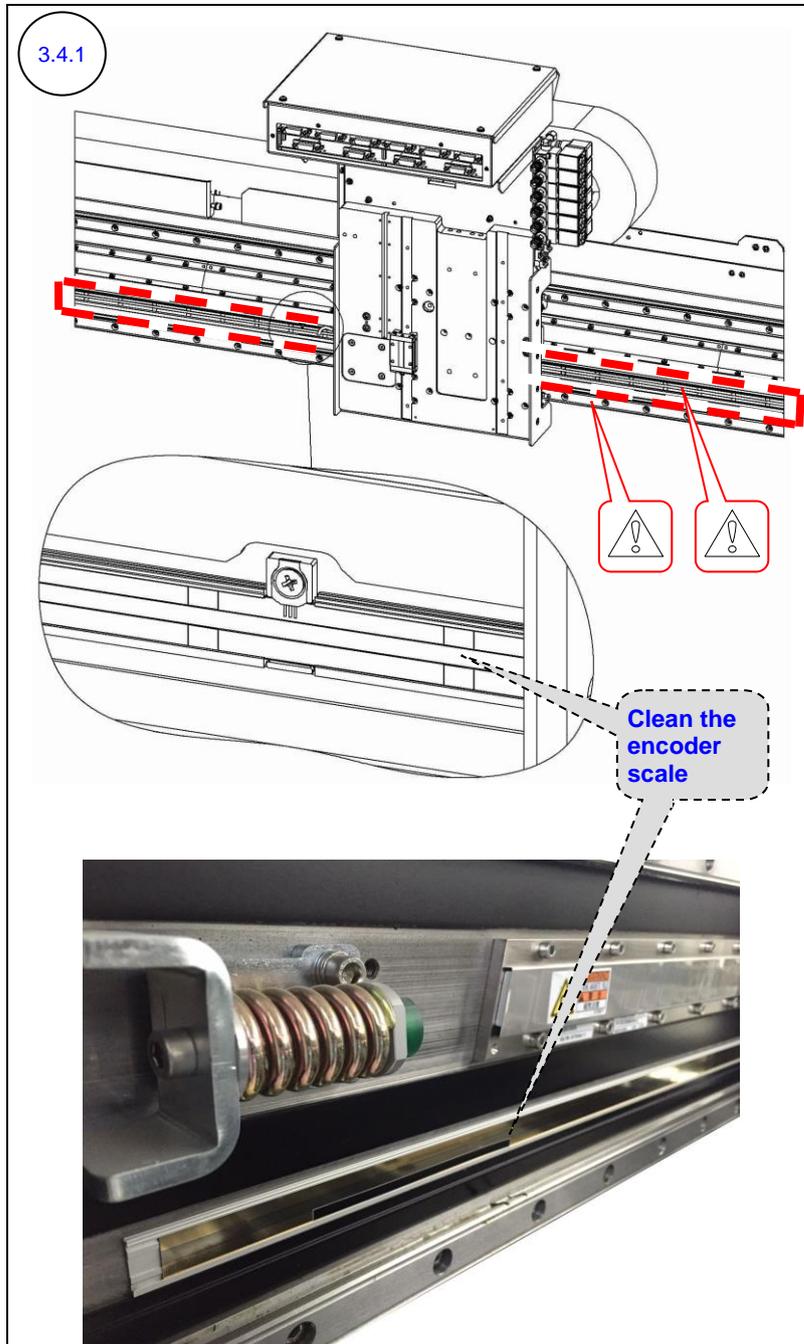
Preliminary Requirements

- The main power is on.
- The maintenance trays are in the lower position.
- The motors are off.
- The upper service doors are open (refer to diagram [3.2.2](#)).
- The bellows are open on both sides of the print head carriages (refer to diagram [3.3.2](#)).

Procedure

Perform the following steps 3.4.1 – 3.4.2 on both the Y1 and Y2 axes.

Note: The diagrams display only the Y2 axis.



CAUTION!

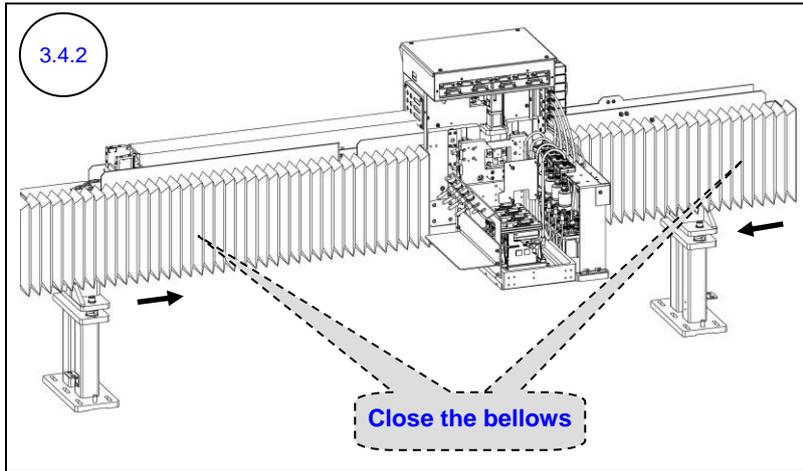
When cleaning the encoder scale:

- Make sure that you only wipe it gently, **without** chafing it, to prevent damaging the scale's marks.
- Do **not** touch the rails.

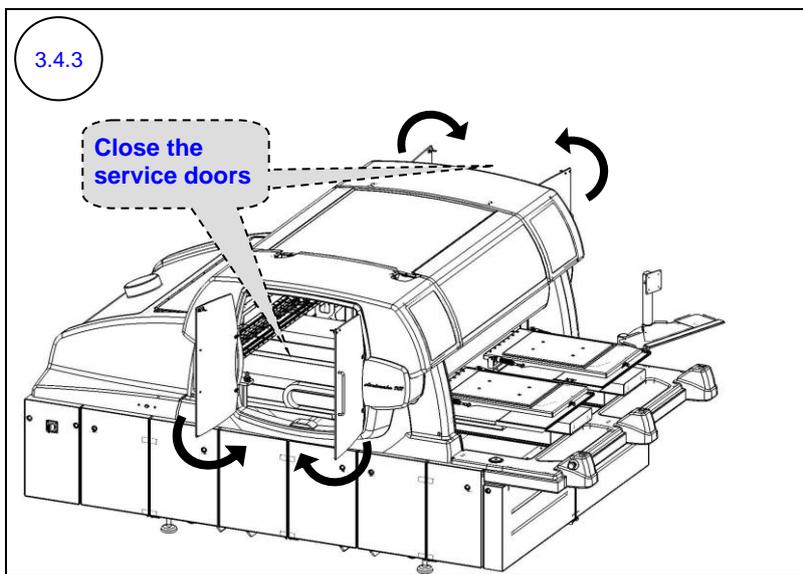
While moving the print head carriage along the axis, clean the encoder scale using lint-free wipes and water.

Dry with dry lint-free wipes.

Section 3 – Quarterly Maintenance



Close the bellows on both sides of the print head carriage.



Close the upper service doors on both sides of the printer.

Click **OK** in the messages that appear during the initialization process.

3.4.4 Move the maintenance trays into the capping position.

3.5 Tightening the Printing Pallet Screws

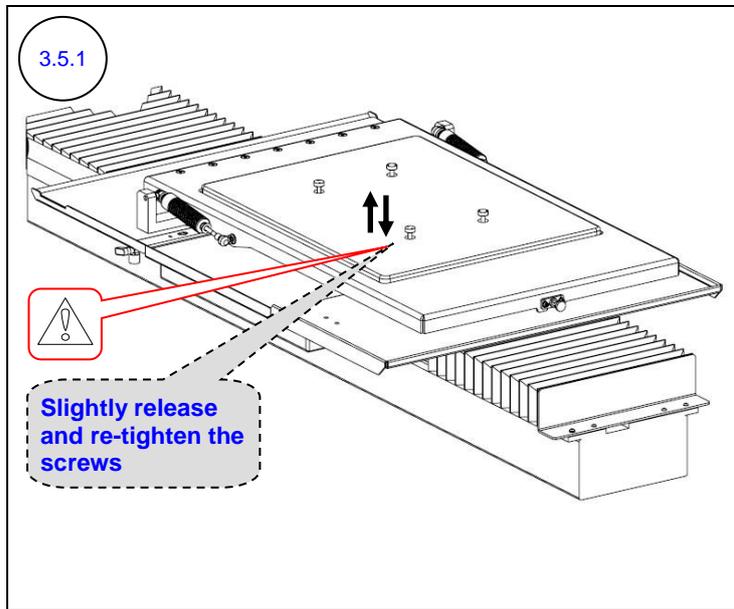
Tools and Supplies

PN	Description	Quantity
-	Standard tool box	-

Preliminary Requirements

- The main power is on.
- The maintenance trays are in the capping position.

Procedure



NOTE:

This procedure is not relevant for printing pallets that contain the quick release mechanism.



CAUTION!

Do **not** over-tighten the screws, as this may affect the level and height of the printing pallet.

Slightly release and then re-tighten the four screws of each printing pallet.

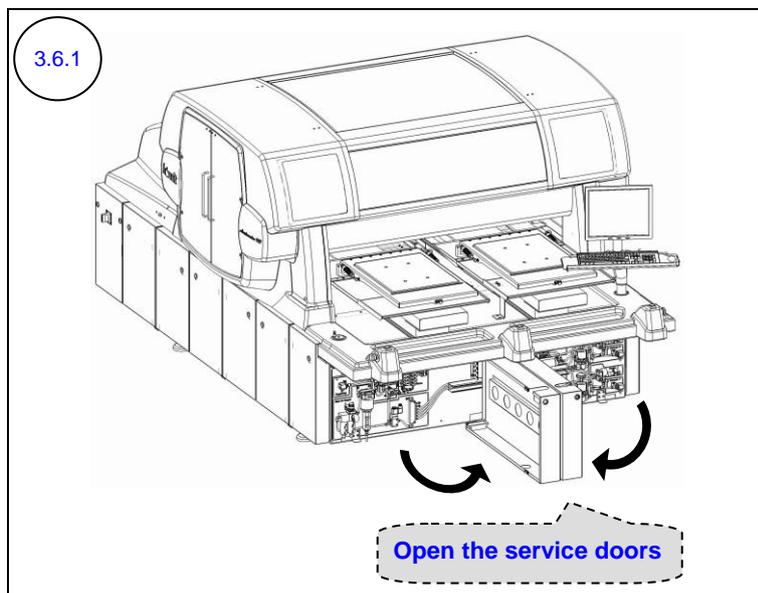
3.6 Inspecting the Vacuum and Pressure Values

Tools and Supplies: None

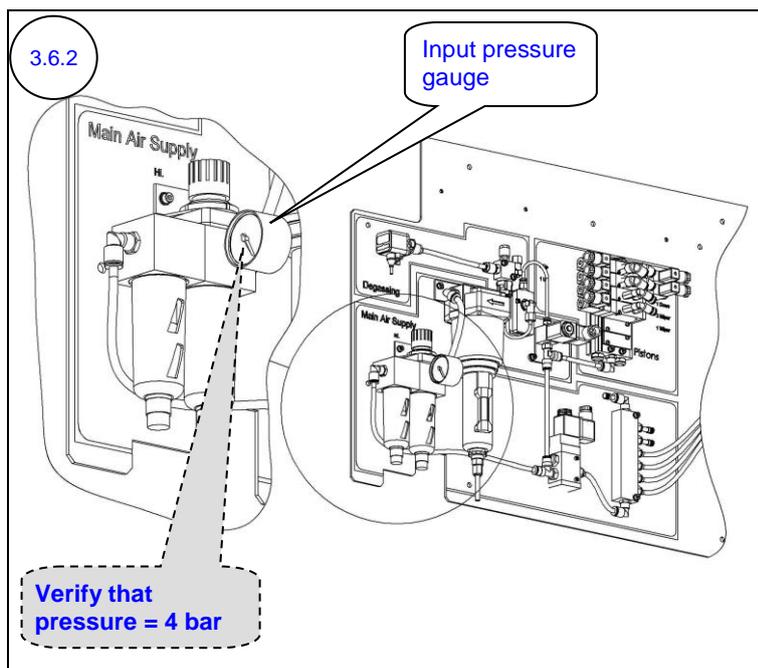
Preliminary Requirements

- The main power is on.
- The maintenance trays are in the capping position.
- The printer is connected to air pressure source.
- The vacuum system is on.

Procedure

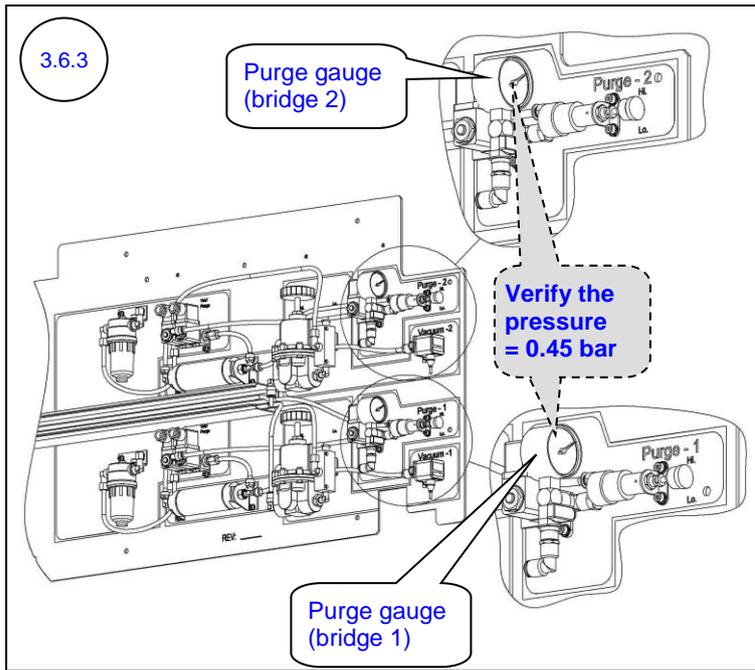


Open the pneumatic compartment doors (on the front side of the printer).



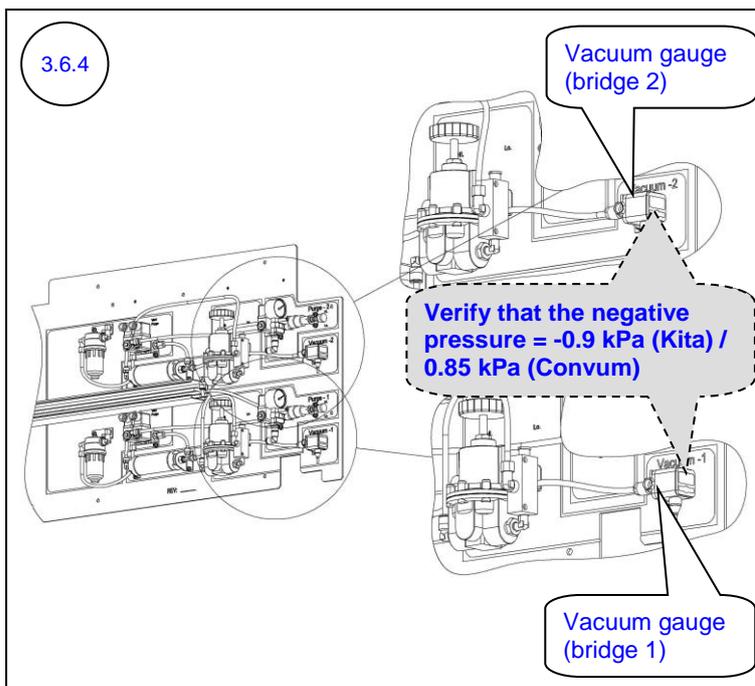
Verify that the value of the input pressure, as shown on the input pressure gauge, is 4 bar.

If an adjustment is required, contact a qualified Kornit technician.



Verify that the pressure value in both purge gauges is 0.45 bar.

If an adjustment is required, contact a qualified Kornit technician.

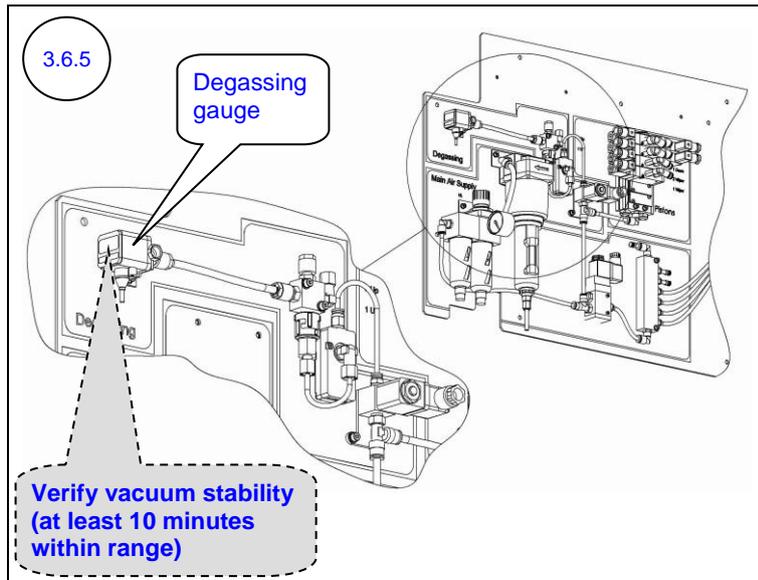


Verify that the value of the negative pressure, as shown on both vacuum gauges, is:

- -0.9 kPa (for Kita sensors)
- 0.85 kPa (for Convum sensors)

If an adjustment is required, contact a qualified Kornit technician.

Section 3 – Quarterly Maintenance



Verify that the degassing vacuum generator operates no more than once in 10 minutes.

If the value changes within less than 10 minutes, contact a qualified Kornit technician to check for a leak in the degassing system and repair it.

3.7 Draining the Oil Filter

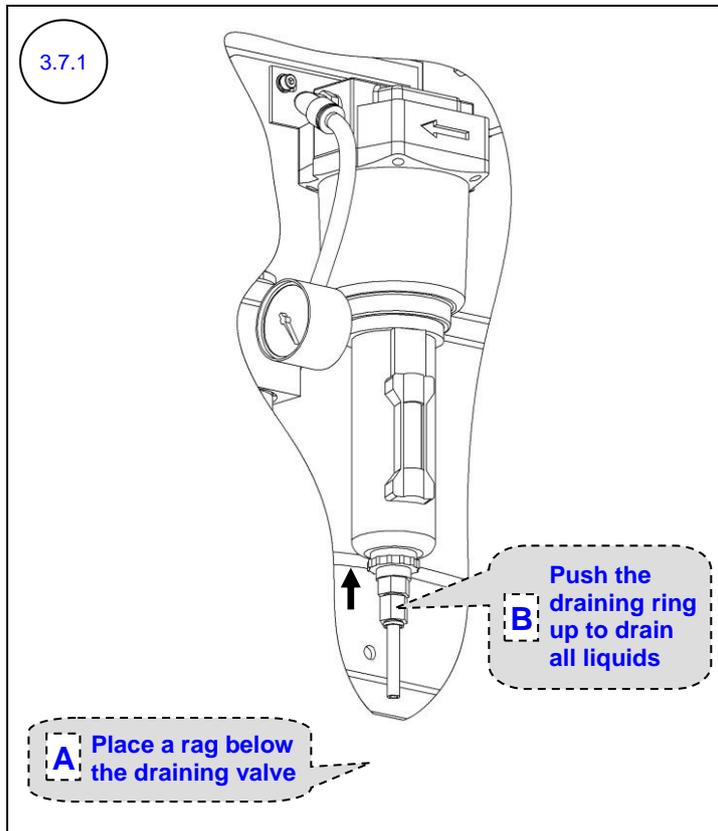
Tools and Supplies

PN	Description	Quantity
-	Clean rags	as required

Preliminary Requirements

- The main power is on.
- The maintenance trays are in the capping position.
- The printer is connected to air pressure source.
- The pneumatic compartment doors are open (refer to diagram 3.6.1).

Procedure



- A. Place a rag below the oil filter's draining valve.
- B. Push the draining ring up until all liquids are drained from the oil filter.

3.8 Draining the Air Filters

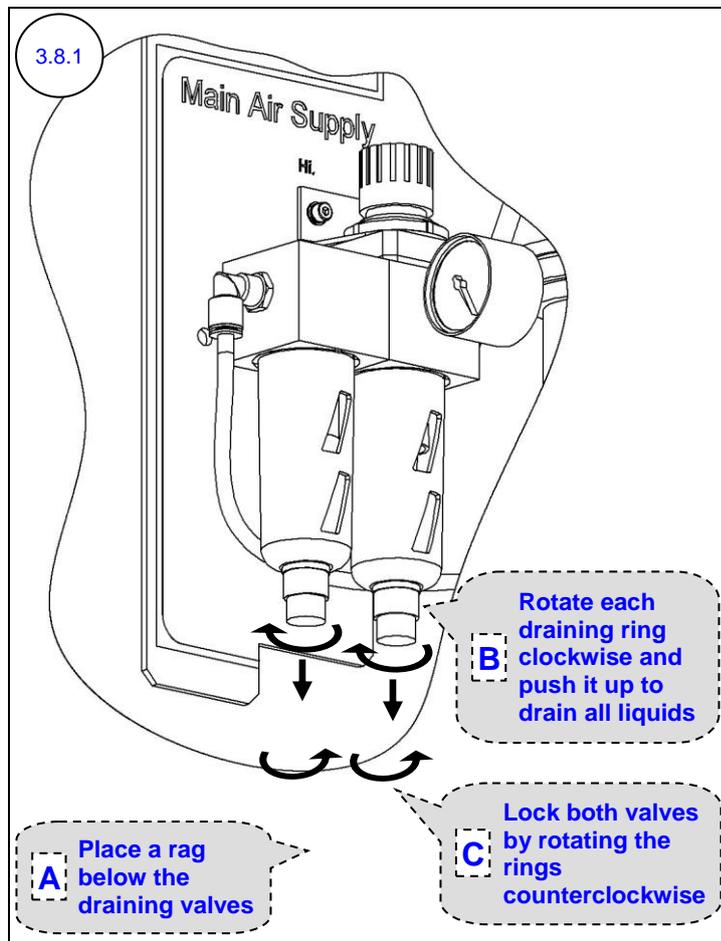
Tools and Supplies

PN	Description	Quantity
-	Clean rags	as required

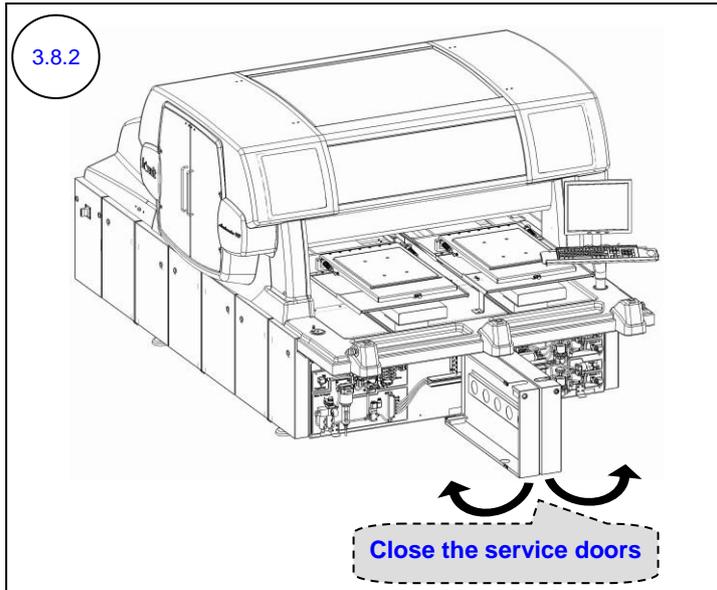
Preliminary Requirements

- The main power is on.
- The maintenance trays are in the capping position.
- The printer is connected to air pressure source.
- The pneumatic compartment doors are open (refer to diagram 3.6.1).

Procedure



- Place a rag below the air filter's draining valves.
- Rotate each draining ring clockwise and push it up until all liquids are drained from the air filter.
- Lock both draining valves by rotating the draining rings counterclockwise.



Close the pneumatic compartment doors (on the front side of the printer).

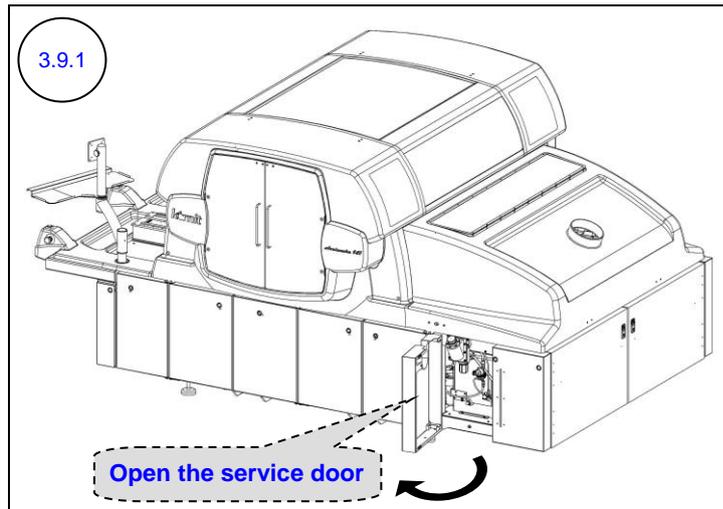
3.9 Inspecting the Spray System Values

Tools and Supplies: None

Preliminary Requirements

- The main power is on.
- The maintenance trays are in the capping position.

Procedure



Open the spray system compartment door (the sixth door on the right side of the printer).

Perform the following steps 3.9.2 – 3.9.3 on each printing pallet separately.

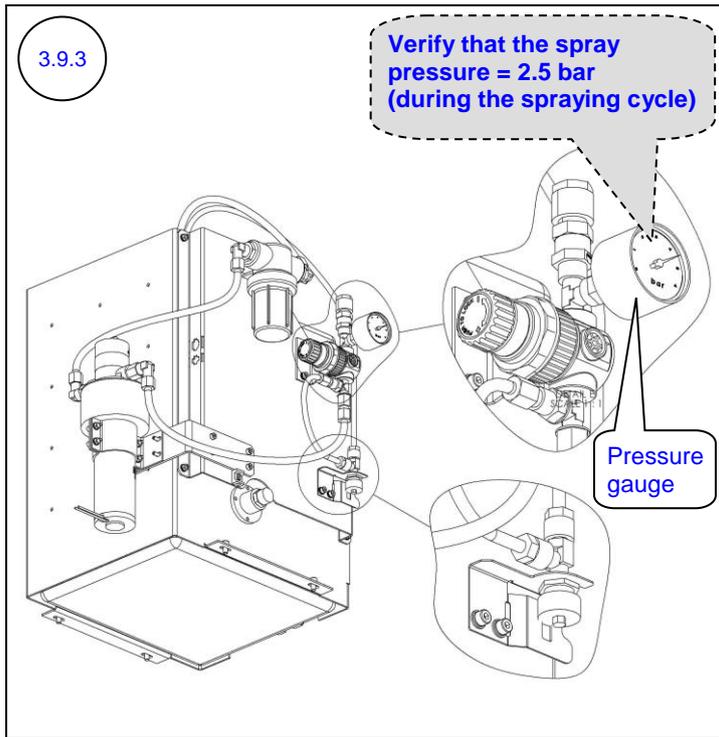


Perform a spraying cycle:

1. Place a used garment on the printing pallet.
2. From the main window, click the **Spray** arrow (located below the printing pallet image); the *Spray All* window opens.
3. Set the spraying level to 50% and verify that both check boxes are clear.
4. Click **Spray**.

NOTE:

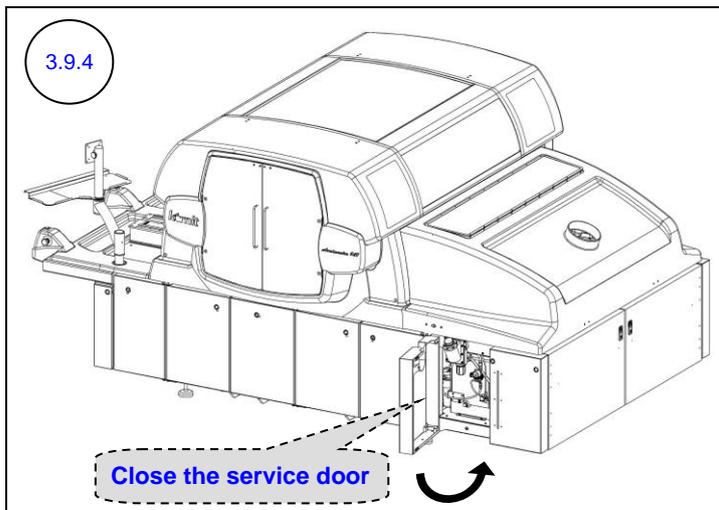
Perform step 3.9.3 immediately after clicking **Spray** (i.e. during the spraying cycle).



Perform this step during the spraying cycle:

Verify that the value of the spray pressure, as shown on the spray gauge, is 2.5 bar.

If an adjustment is required, contact a qualified Kornit technician.



Close the spray system compartment door (the sixth door on the right side of the printer).

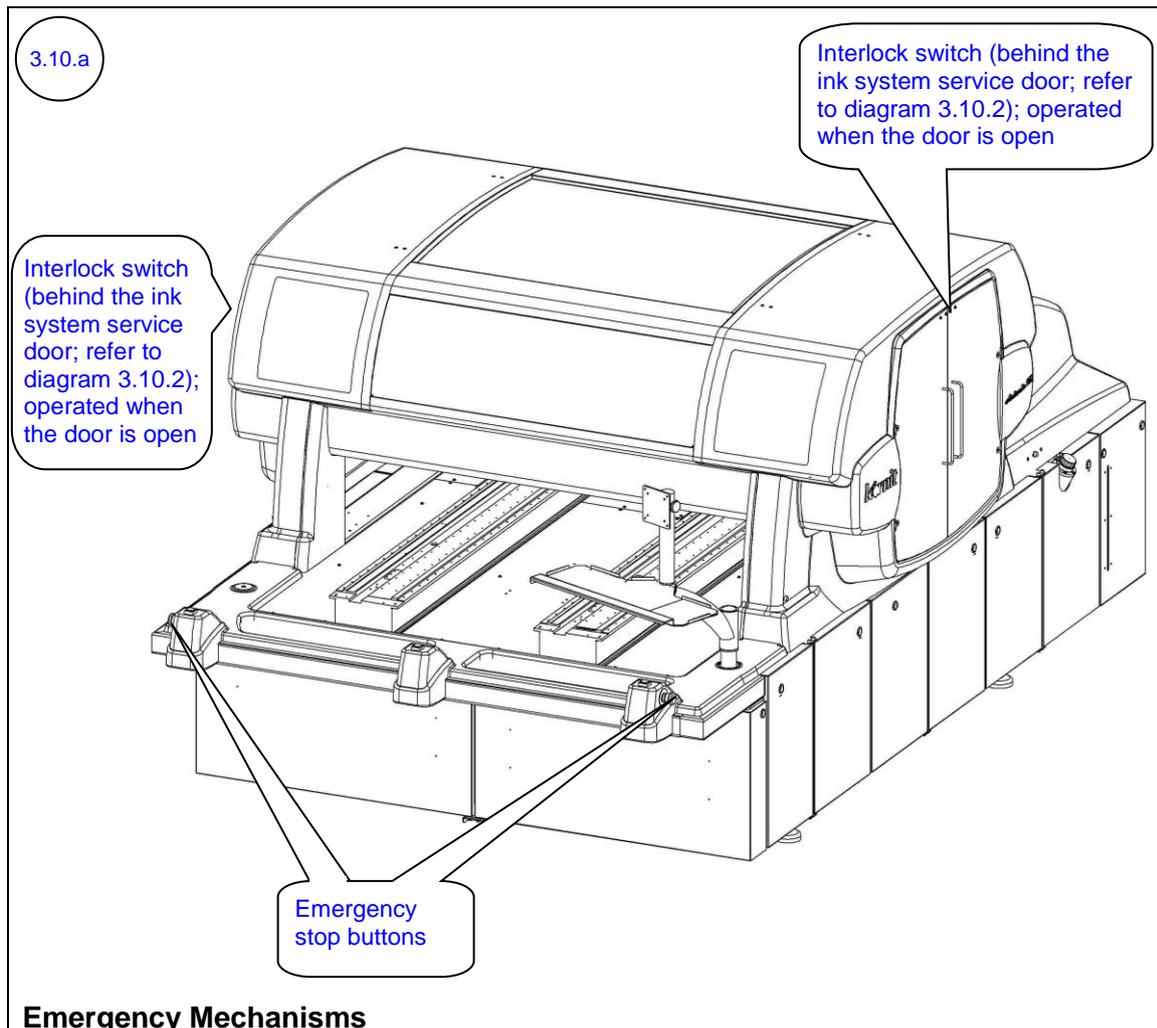
3.10 Inspecting the Operation of the Emergency Mechanisms

Tools and Supplies: None

Preliminary Requirements

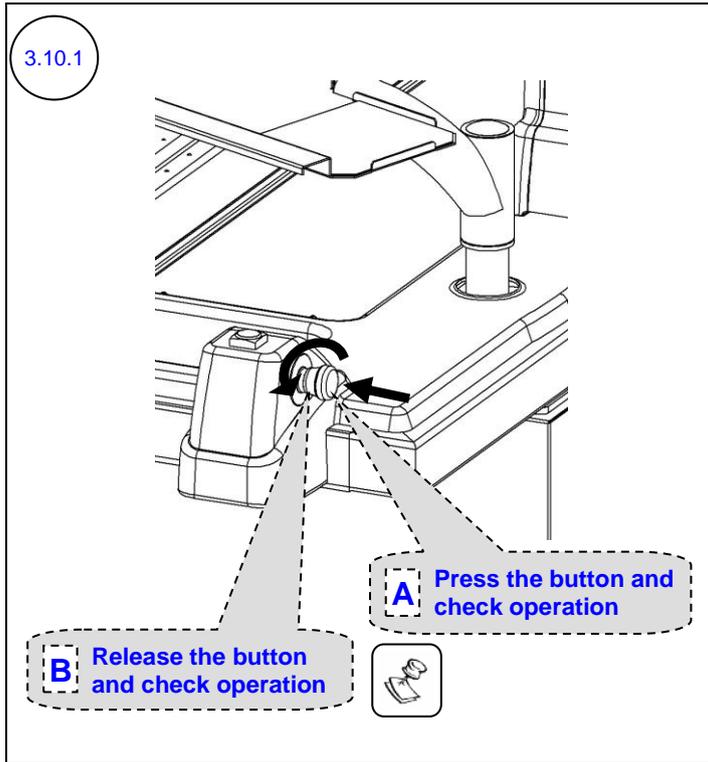
- The main power is on.
- The maintenance trays are in the capping position.

Procedure



NOTE:

When an emergency stop/interlock switch is triggered, the power to the motors turns off. When the emergency mechanism is released, the QuickP Production software runs a recovery sequence; at the end of this sequence, the power to the motors turns on again.

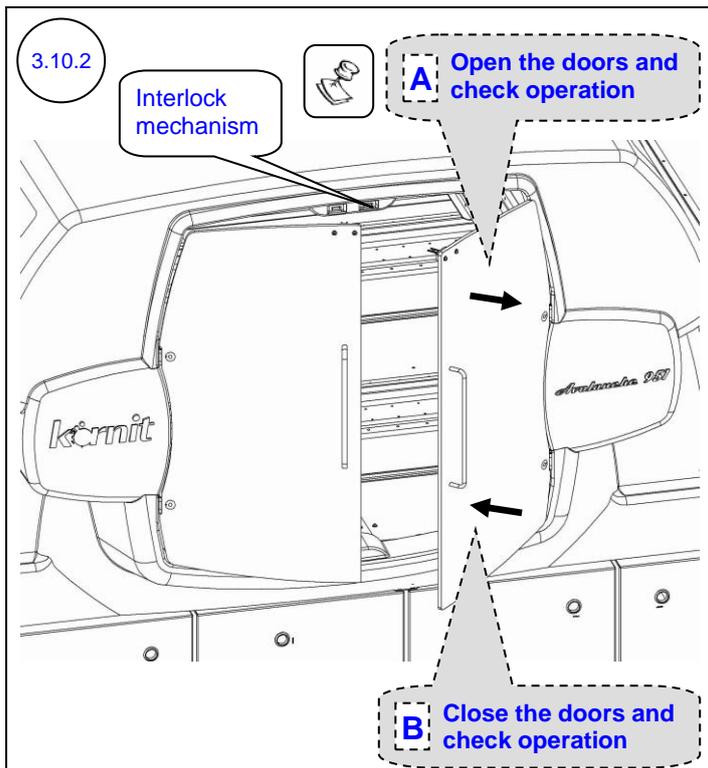


Test both emergency stop buttons (perform the following actions for each button separately):

- A. Press the emergency stop button. Verify that the power to the motors turns off.
- B. Release the button by rotating it counterclockwise. Verify that the power to the motors turns on.

NOTE:

When the power to the motors is off, you can manually move the X1, X2, Y1 and Y2 axes.



Test the interlock mechanism installed on the upper ink system service doors (on both sides of the printer):

- A. Open the service doors. Verify that the power to the motors turns off.
- B. Close the service doors. Verify that the power to the motors turns on.

NOTE:

When the power to the motors is off, you can manually move the X1, X2, Y1 and Y2 axes.

3.11 Inspecting the Print Head Temperatures

Tools and Supplies: None

Preliminary Requirements

- The main power is on.
- The maintenance trays are in the capping position.

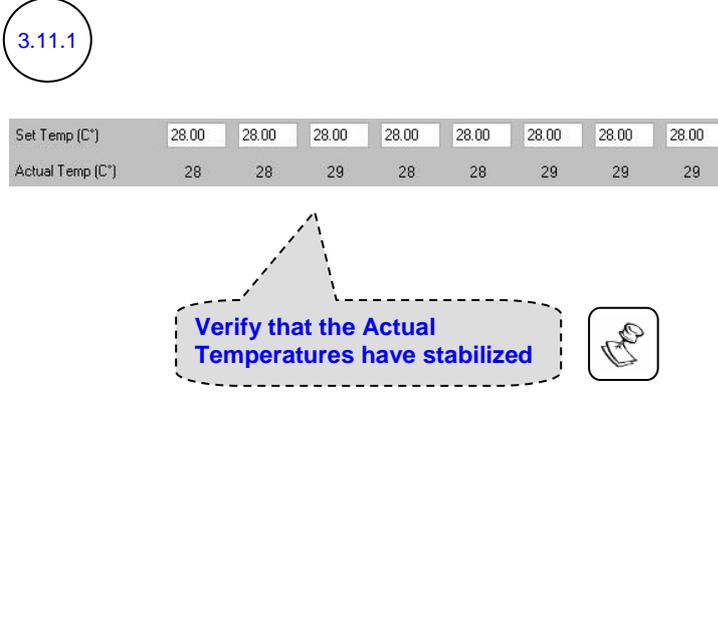
Procedure

3.11.a



Print Heads Window

3.11.1



Set Temp (C°)	28.00	28.00	28.00	28.00	28.00	28.00	28.00	28.00
Actual Temp (C°)	28	28	29	28	28	29	29	29

Verify that the Actual Temperatures have stabilized

- Open the *Print Heads* window (in **Technician** mode).
- On both bridges (Bridge 1 and Bridge 2):

Verify that the **Actual Temperatures** stabilize within the range of ± 2 degrees of the **Set Temperatures**.

 **NOTE:**

To switch between bridges, click the relevant bridge tab on the top-left corner.



NOTE:

If the temperatures are not identical/similar, contact a qualified Kornit technician to check the possible reason for the malfunction (including: electronic cards, data cables, dongles, heaters and sensors) and repair, as required.



3.12 Backing Up the Application Folder

Tools and Supplies

PN	Description	Quantity
-	Writeable CD (blank)	as required

Preliminary Requirements

- The main power is on.
- The maintenance trays are in the capping position.

Procedure



Backup the **QuickPProduction** folder on another computer, server or writeable CD.

Save the backup with the printer's number and the date.

3.13 Deleting Unnecessary Files from the Computer

Tools and Supplies: None

Preliminary Requirements

- The main power is on.
- The maintenance trays are in the capping position.

Procedure

3.13.1

Delete all files that are no longer required from the printer's computer.



NOTE:

- Only delete files for which you have permission to delete.
 - For printers that work in Hot Folder mode:
 - Delete all files from D:\KornitAvalancheApp\Common\HotFolder\Error excluding the Error.txt file.
 - Delete all files from D:\KornitAvalancheApp\Common\HotFolder\Archive.
-



3.14 Cleaning the Printer's Interior Space

Tools and Supplies

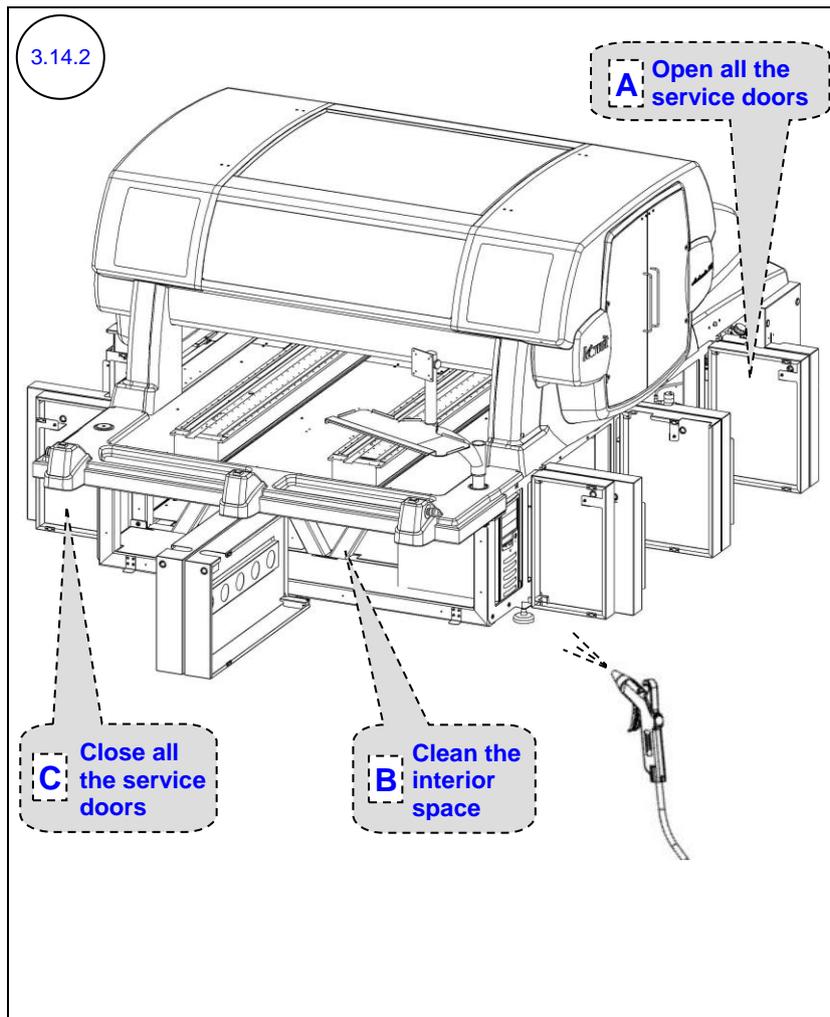
PN	Description	Quantity
-	Clean rags	as required
-	Compressed air source	-

Preliminary Requirements

- The main power is on.
- The maintenance tray is in the capping position.

Procedure

- 3.14.1 A. Exit the QuickP Production software.
- B. Shut down the computer.
- C. Switch off the main power.



CAUTION!

- Before using the compressed air, ensure that the air is free of water/oil particles. If required, drain the air and oil filters on the pneumatic panel, as described earlier in this section.
- Do not clean the electrical compartment.

- Open the service doors on the right, left and front sides of the printer (14 doors in total).
- Clean the printer's interior space using clean rags and compressed air.
- Close the service doors.

3.14.3

- Switch on the main power.
- Wait for the computer to restart and start the QuickP Production software.



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