varioPRINT 6000 series

Maintenance guide

Extended key operator maintenance; varioPRINT 6180, 6220, 6270, 6330

Copyright and Trademarks

Copyright

Language

Translation of the original instructions that are in British English.

Trademarks

Edition 2020-08

Software version 8.4

US

Contents

Chapter 1
Introduction

Notes for the reader

Typography

This manual uses the following typography to indicate elements that are part of the user interface.

Typography	Indicates
[Text between square brackets]	Name of a button, tile, setting, value, or other option of the user interface
<Text between angle brackets>	• Name of a key on a keyboard • Name of a variable: item that varies according to the context
`Text displayed in courier font`	• File path • Command Prompt comment
[Text] →[displayed in] →[menucascade]	Names of options to be used in a fixed order

Safety symbols

Before you use this product, make sure you read and understand the safety information that belongs to the product. Find the safety information on *"http://downloads.cpp.canon"*. Also be sure to follow all warnings and instructions marked on the product.

This manual uses the following safety symbols to indicate hazards and precautions.

Symbol	Type of symbol	Indicates
	**WARNING**	Indicates a warning concerning operations that may lead to death or injury to persons if not performed correctly. To use the machine safely, always pay attention to these warnings.
	**CAUTION**	Indicates a caution concerning operations that may lead to injury to persons if not performed correctly. To use the machine safely, always pay attention to these cautions. This indication can concern hazards that have a specific CAUTION symbol. The 'hot surface', 'electric shock', 'moving parts' and 'laser beam' cautions are listed below.
	**CAUTION** **Hot surface**	Indicates a caution concerning operations that may lead to injury to persons if not performed correctly. To use the machine safely, always pay attention to these cautions.
	**CAUTION** **Electric shock**	Indicates a caution concerning operations that may lead to injury to persons if not performed correctly. To use the machine safely, always pay attention to these cautions.
	**CAUTION** **Moving parts**	Indicates a caution concerning operations that may lead to injury to persons if not performed correctly. To use the machine safely, always pay attention to these cautions.

Symbol	Type of symbol	Indicates
	**CAUTION**	**Laser beam** Indicates a caution concerning operations that may lead to injury to persons if not performed correctly. To use the machine safely, always pay attention to these cautions.
	**IMPORTANT**	Indicates an operational requirement or restriction. Read these items carefully in order to prevent damage to equipment, software, data, media, or property.
	**NOTE**	Indicates a clarification of an operation or contains additional explanations for a procedure. Reading these notes is highly recommended.

Body protection symbols

This manual uses the following body protection symbols to indicate that it is important to protect yourself before performing a specific task or action.

Symbol	Type of symbol	Indicates
	**IMPORTANT**	**Hand protection** Wear the mentioned type of gloves when you perform this task or action.
	**IMPORTANT**	**Eye protection** Use the mentioned type of eye protection when you perform this task or action.
	**IMPORTANT**	**Body protection** Wear the mentioned type of body protection when you perform this task or action.
	**IMPORTANT**	**Foot protection** Wear the mentioned type of safety footwear when you perform this task or action.

Introduction

Introduction

This manual is intended for trained and certified operators who received the special maintenance training for the printer. Therefore, this manual is only intended as a reference guide for the described maintenance procedures.

On the control panel, you must always press [Next] to continue with the next step, or [Finish] to complete a maintenance task. After you finished a maintenance task, the control panel will also ask you to restart the system. The procedures in this manual only describe the physical maintenance actions.

NOTE
In this manual and on the control panel, the trained and certified operator is referred to as the **key operator**.

Access the maintenance tasks

NOTE
Only a key operator is allowed to perform the maintenance tasks that are described in this manual. You need to have access rights to perform maintenance tasks. A maintenance session can involve more than 1 maintenance task. A maintenance session ends when you leave the maintenance screen that displays the maintenance tasks.

Extended key operator maintenance is part of a license.

Safety information

Before you use this Canon product, make sure that you read and understand the safety information. The safety information is part of the user documentation. You can download the safety information via the support website. Or you can obtain the safety information from your local representative.

CAUTION
To avoid potential hazards, it is only allowed for properly qualified and trained service technicians and key operators to perform maintenance.
The key operator executes the maintenance tasks inside the machine. The key operator must be aware of the risks of working inside the machine.

CAUTION
When you do not follow the procedures as described, there is a risk of electrical shock.

CAUTION
When you do not follow the procedures as described, there is a risk of injury because of moving parts.

Check your prints

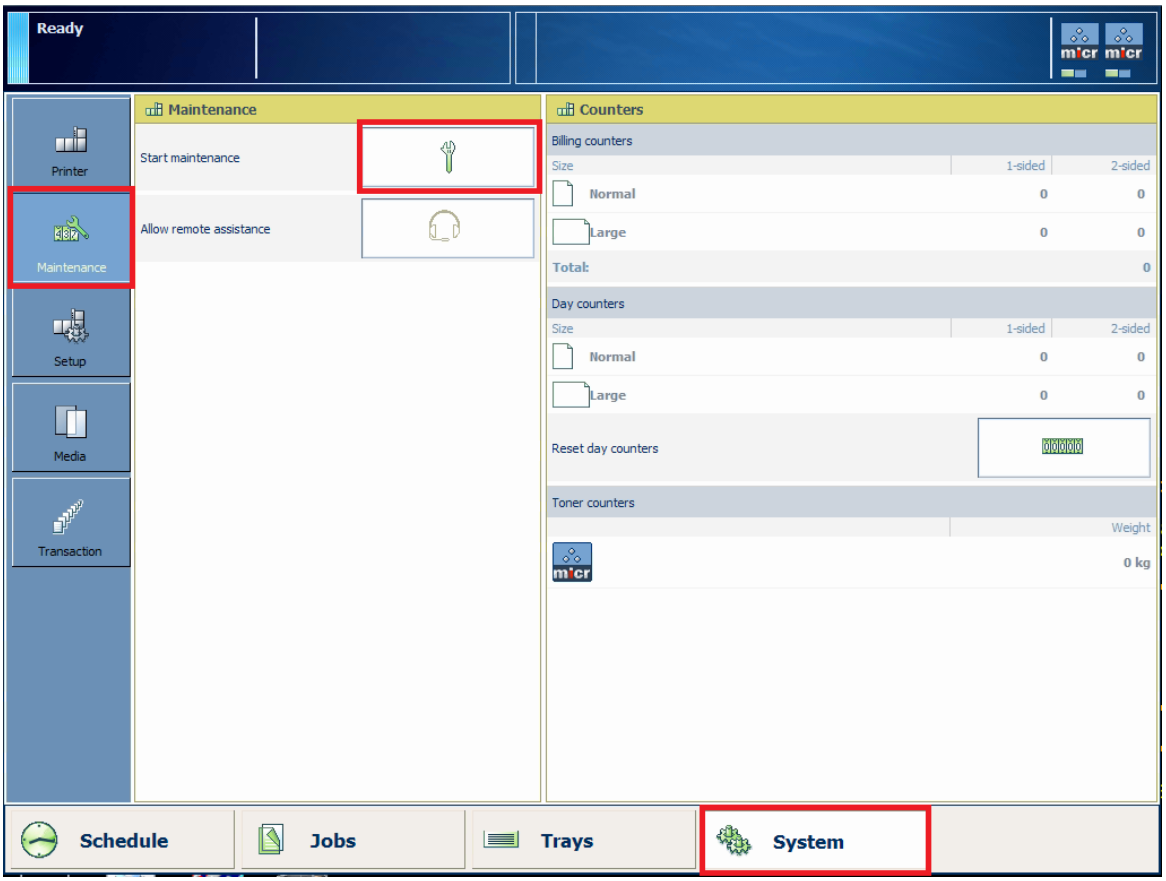
NOTE
Always make test prints after you performed extended key operator maintenance. Check the image on both sides of the sheets before you start printing your jobs.

Safety check (modification 40)

CAUTION
Check with your service representative if modification 40 is performed in the Print Engine Module, before you perform extend key operator maintenance.

Chapter 2

Start extended key operator maintenance



Procedure

1. On the operator panel, touch [System].
2. Touch [Maintenance].
3. Touch [Go to maintenance tasks].
4. Select one of the three categories.
   - [TTF maintenance]
   - [OPC maintenance]
   - [Registration adjustments]

   NOTE
   If the three categories are not displayed, you do not have the license for extended key operator maintenance.

5. The corresponding submenu opens. Touch the task you want to perform.
   The tasks are described in the next sections.

Chapter 3
TTF maintenance

IMPORTANT
You must handle the TTF belt carefully. The TTF belt can easily be damaged.

Diagnose the TTF belt

Introduction

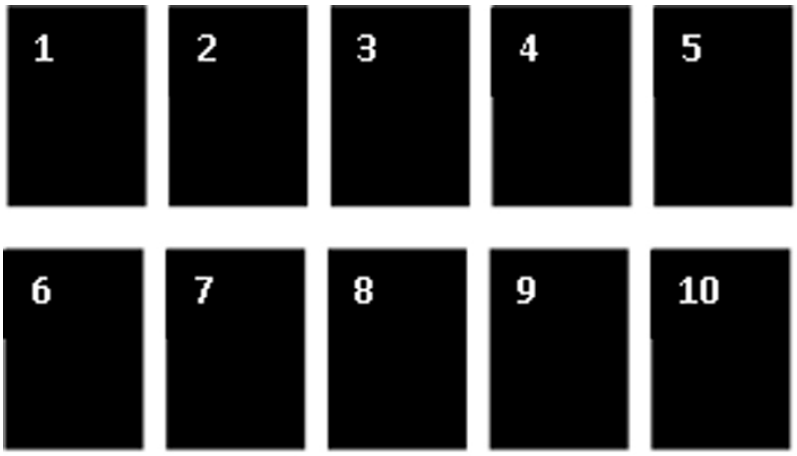
When you perform the diagnosis the system prints test prints. Use the test prints to check if the TTF belt is the cause of some specific print quality problems.

To determine if the print quality problem is caused by the left-hand TTF belt or the right-hand TTF belt you must check the prints in the delivery tray of the printer.

- The image on the face up side of the sheet is printed with the right-hand TTF belt (primary side).
- The image on the face down side of the sheet is printed with the left-hand TTF belt (secondary side).

Procedure

1. On the operator panel touch [Diagnose the left-hand TTF belt] or [Diagnose the right-hand TTF belt].
2. Select the paper tray
   For a reliable diagnosis select a tray with A4 or Letter. If A4 or Letter is not available in the trays, assign A4 or Letter to one of the trays. Load this media in the selected tray.
3. Touch [OK].
   The system prints 10 black prints. Two identical cycles of 5 black prints.
4. Put the prints in the order as shown in the figure below.

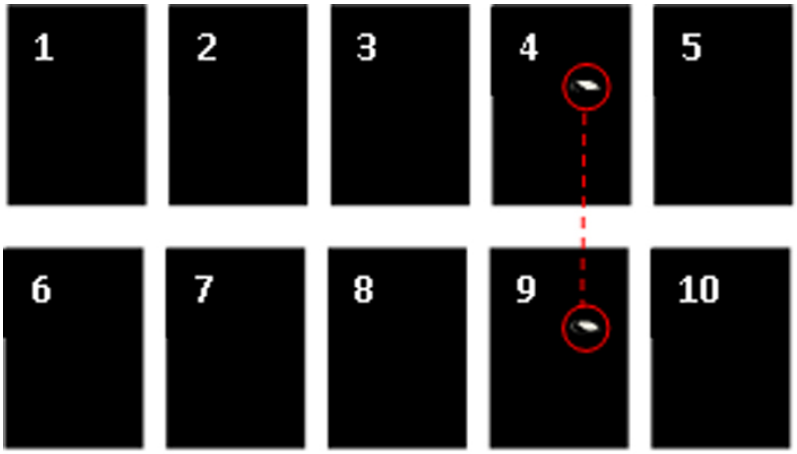


5. Check if the print quality problem appears on every 5th print.
   - If the print quality problem appears at approximately the same location on every 5th print, the TTF belt causes the print quality problem.
     If the print quality problem appears only once on the 10 black prints and the print quality problem is close to the edge of the sheet, perform the diagnosis again. It can happen that the other print quality problem is between two prints.
     [Replace the left-hand TTF belt.] or [Replace the right-hand TTF belt.] (see *Replace the TTF belt* on page 16).
   - If the print quality problem appears on multiple pages but not on the same location, probably the OPC belt causes the problem.
     [Diagnose the left-hand OPC belt] or [Diagnose the right-hand OPC belt] (see *Diagnose the OPC belt* on page 52).

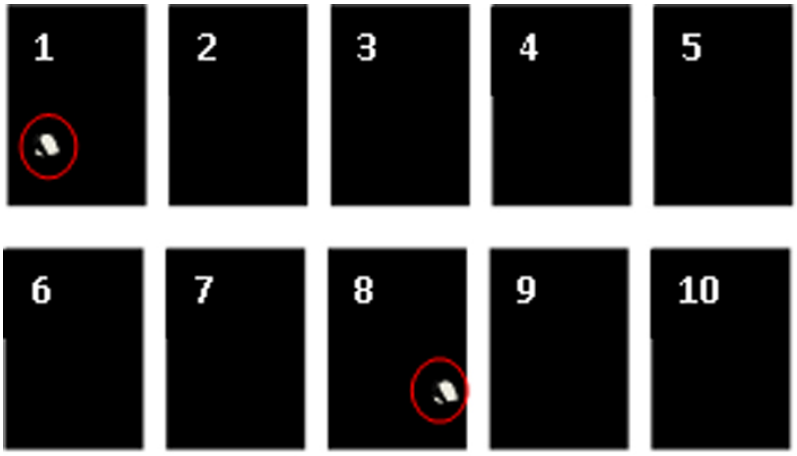
- If the print quality problem does not appear every 5th page, the OPC belt is probably causing the problem.
  [Diagnose the left-hand OPC belt] or [Diagnose the right-hand OPC belt] (see *Diagnose the OPC belt* on page 52).

Example

The print quality problem is a light spot on the print.



Check the light spot on page 4 and 9. The print quality problem reappears after 5 prints on the same location. This means that the TTF belt causes the print quality problem.



Check the light spot on page 1 and 8. The print quality problem is visible on multiple pages, but not on every 5th print. The print quality problem is not on the same location. In this case the TTF belt does not cause the problem, probably the OPC belt causes the problem.

Replace the TTF belt

If the diagnosis of the TTF belt indicates that the TTF belt shows a print quality problem (see *Diagnose the TTF belt* on page 14) then you must replace the TTF belt.

NOTE
After you replaced the TTF belt you must make test prints. Check the image on both sides of the sheets before you start printing your jobs.

CAUTION
The TTF area can be hot. Therefore, always use the special heat resistant gloves.

Required tools

- [Socket wrench]10 (supplied with the machine)
- Service key (supplied with the machine)
- Heat-resistant gloves (supplied with the machine)
- Nitrile gloves
- [Cleaner K]
- Cleaner P
- Cleaner T
- [Cleaning pad]

Open the doors and covers

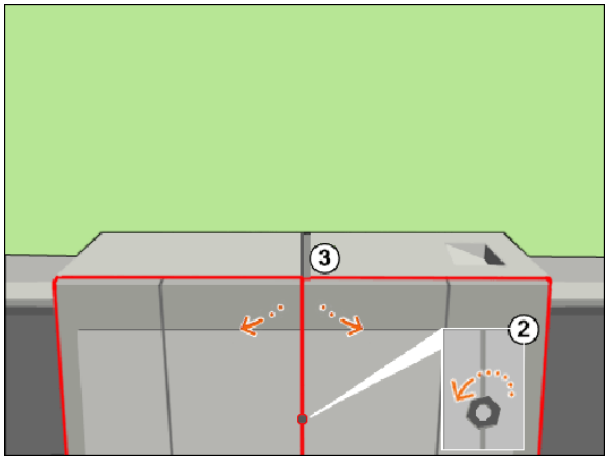
Procedure

1. On the operator panel, touch [System].
2. Touch [Maintenance].
3. Touch [Go to maintenance tasks].
4. On the operator panel, touch [TTF maintenance].
5. Select [Replace the left-hand TTF belt.] or [Replace the right-hand TTF belt.].
   At the start of the procedure, the machine is turned off.

CAUTION
Wait until the machine is turned off. Opening the doors too soon can possibly cause injury.

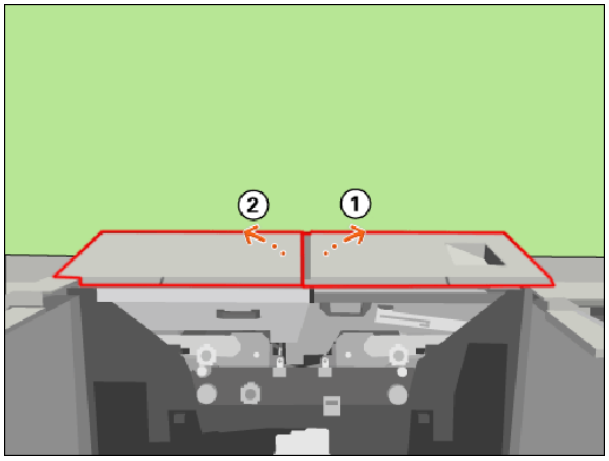
6. Use socket wrench 10 to loosen the bolt of the front doors (2).

7. Open the lower door. Open the front doors (3).



[1] Open the front doors

8. Lift the right-hand top cover (1) to the upper position.
9. Lift the left-hand top cover (2) to the upper position.



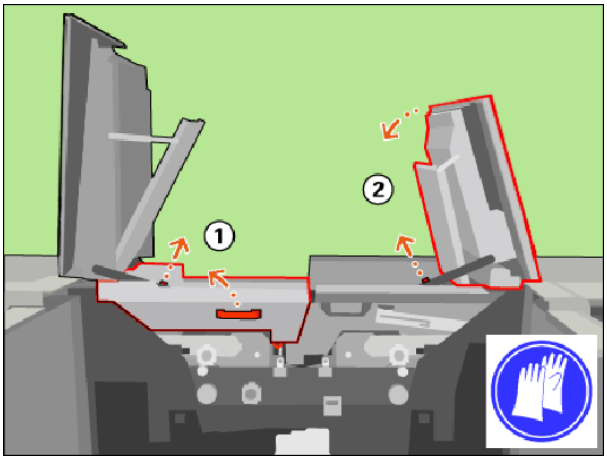
[2] Lift the top covers

CAUTION
Hot area. Use heat-resistant gloves.

CAUTION
Make sure that the left-hand inner cover is locked in the upper position.

10. Unlock the left-hand upper cover and lift the left-hand inner cover (1) to the upper position.

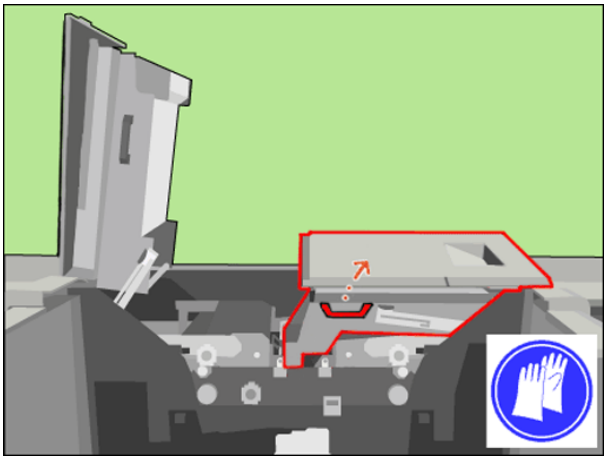
11. Unlock and **lower** the right-hand top cover (2).



[3] Lift the left-hand inner cover

CAUTION
Make sure that the right-hand inner cover is locked in the upper position.

12. Lift the right-hand inner cover to the upper position.



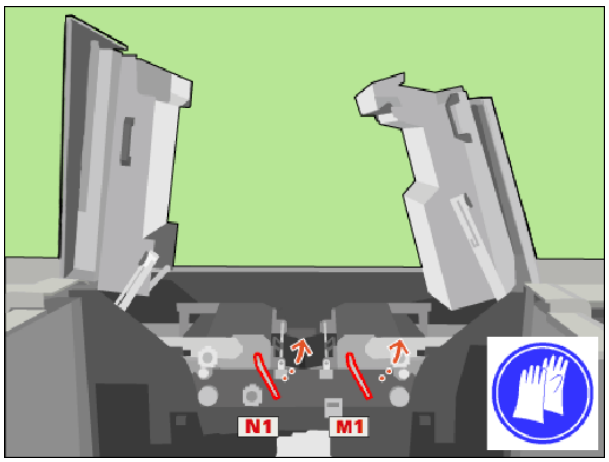
[4] Lift the right-hand inner cover

Unlock the clean units

Procedure

CAUTION
Hot area. Use heat-resistant gloves.

1. Use the service key to turn N1 counter-clockwise.
2. Use the service key to turn M1 counter-clockwise.



[5] Unlock the clean units

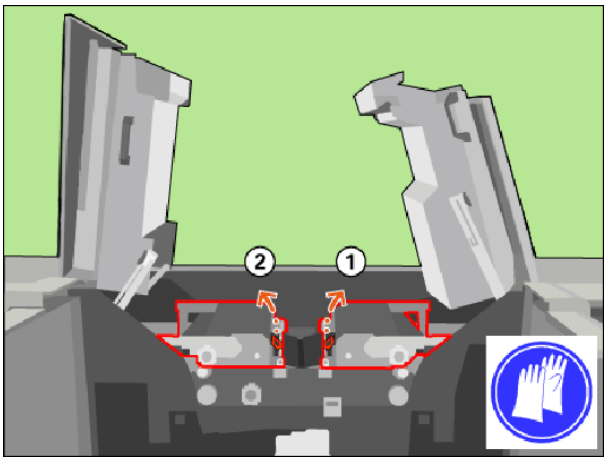
Lift the clean units

Procedure

CAUTION
Hot area. Use heat-resistant gloves.

CAUTION
Make sure that both clean units are locked in the upper position.

1. Use the red handle to lift the right-hand clean unit (1) to the upper position.
2. Use the red handle to lift the left-hand clean unit (2) to the upper position.



[6] Lift the clean units

Lift the TTF units

Introduction

NOTE
You must perform the steps of this procedure in the indicated order. Even if you have to replace only the left-hand TTF belt, you must lift the right-hand TTF unit before you lift the left-hand TTF belt. If you do not follow the indicated order, you get problems when you reinstall the TTF unit in the operating position.

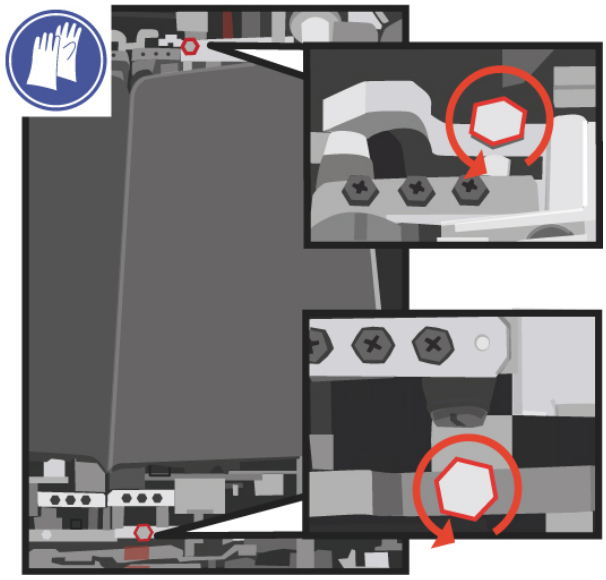
Procedure

CAUTION
Hot area. Use heat-resistant gloves.

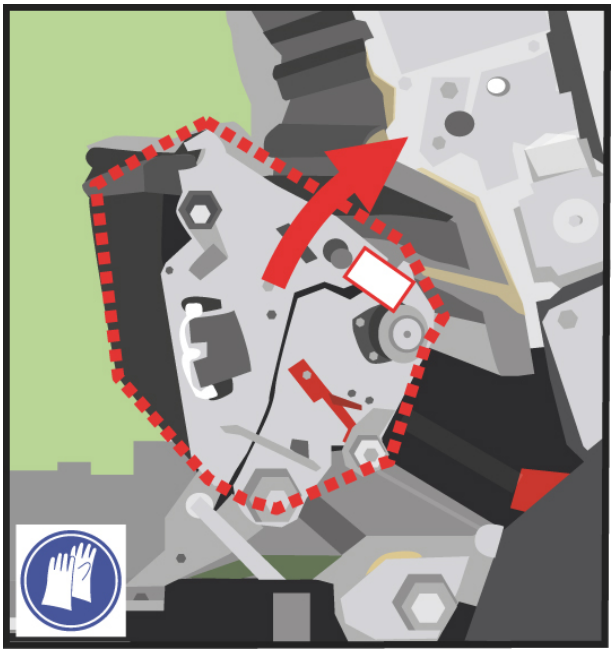
1. When the optional light-weight media module is installed, you have to remove the air guidance unit before you can lift the TTF units.
Remove the air guidance unit on page 110.

CAUTION
Hot area. Use heat-resistant gloves.

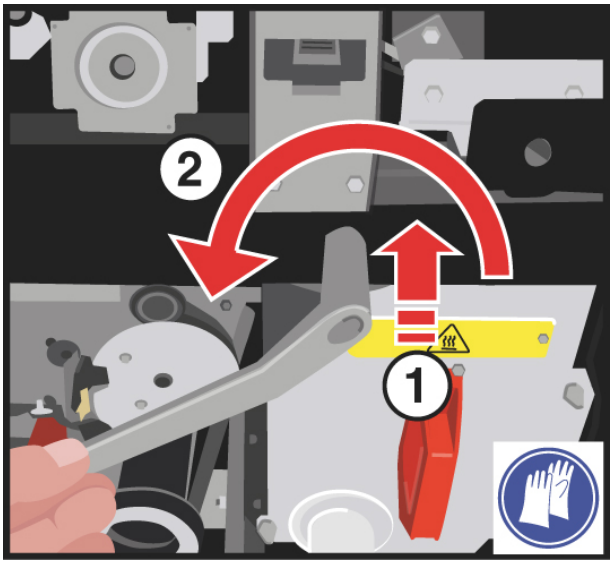
2. Use socket wrench 10 to loosen the two bolts of the right-hand TTF Unit.



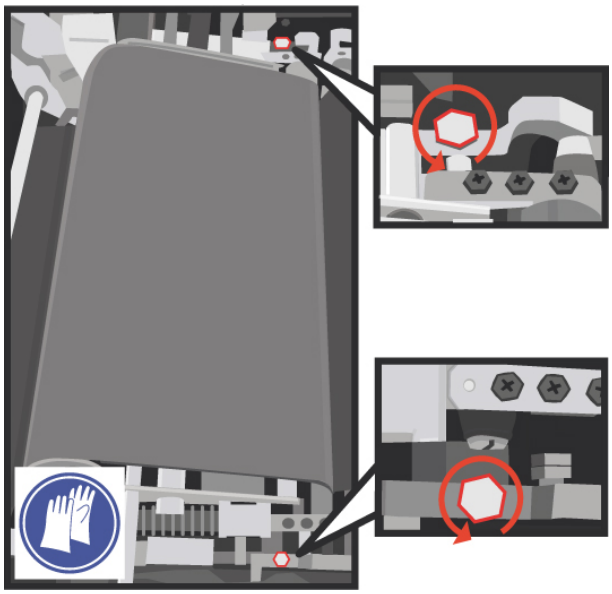
3. Lift the right-hand TTF unit, using the metal bar at the front side.



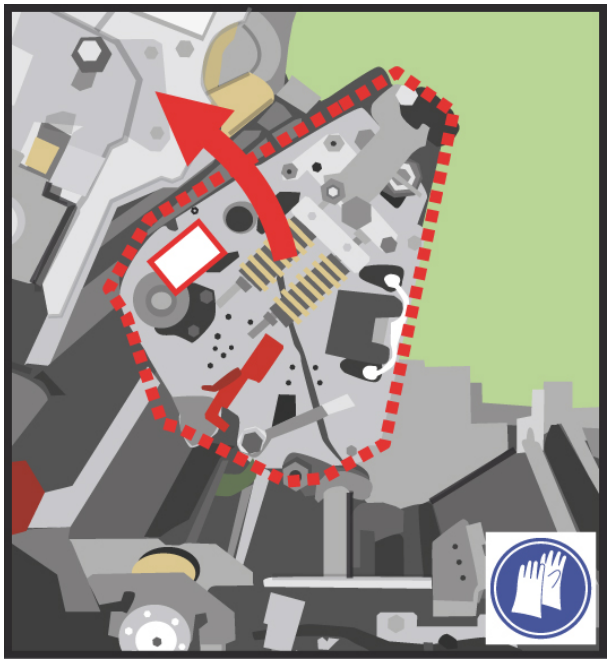
4. Push the service key at the indicated location inside and turn it counter-clockwise to release the tension of the TTF belt.



5. Use socket wrench 10 to loosen the two bolts of the left-hand TTF Unit.



6. Lift the left-hand TTF unit, using the metal bar at the front side.

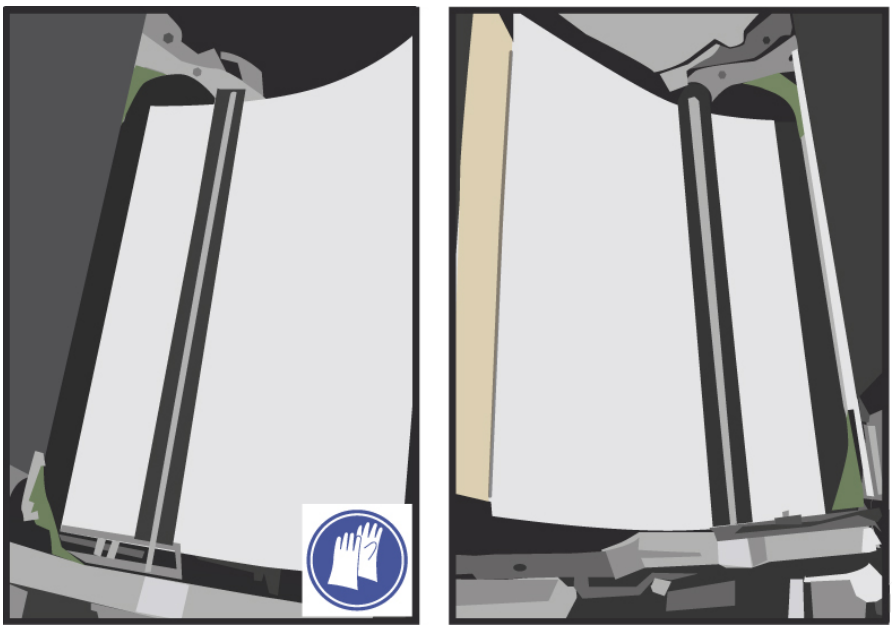


Prepare for cleaning

Procedure

CAUTION
Hot area. Use heat-resistant gloves.

1. Put a minimum of 4 layers of paper under the left-hand and the right-hand glue cleaning roller to protect the OPC.



Remove the TTF belt (right)

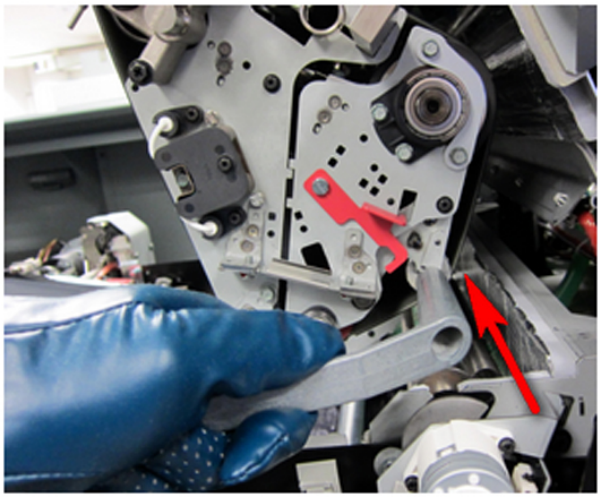
Introduction

NOTE
Make sure that the TTF unit is completely open. If the TTF belt touches the frame, you can damage the TTF belt.

NOTE
In *Diagnose the TTF belt* on page 14 you determined whether you should replace the TTF belt (right) or the TTF belt (left). In case of the TTF belt (right) use this procedure. In case of the TTF belt (left) use the procedure *Remove the TTF belt (left)* on page 28.

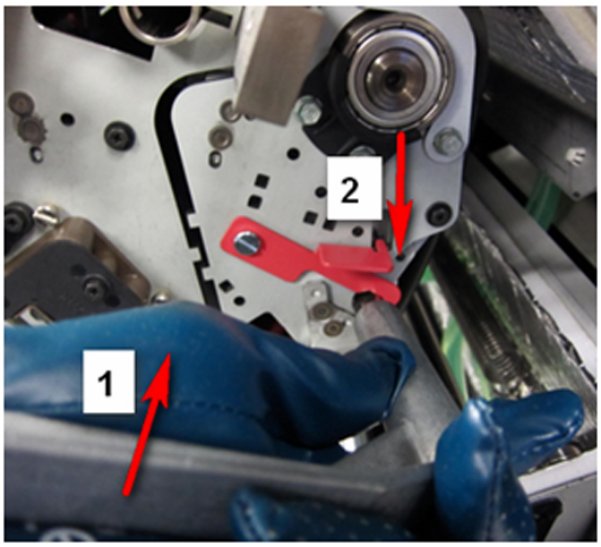
Procedure

1. Insert the service key onto the shaft as displayed.

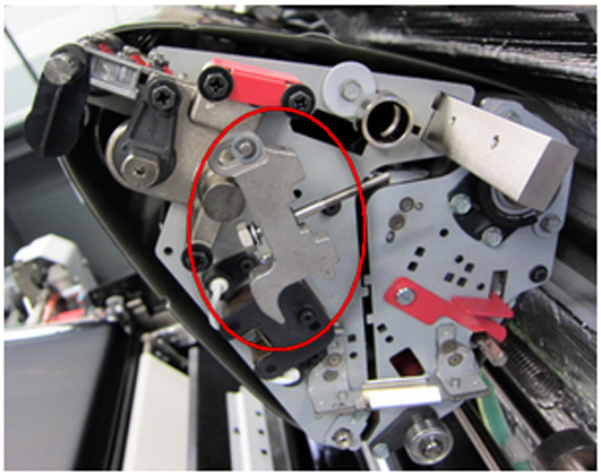


2. Turn the service key clockwise to release the tension of the TTF belt (1). While you hold the service key completely upwards, lock the shaft with the red locking bracket (2).

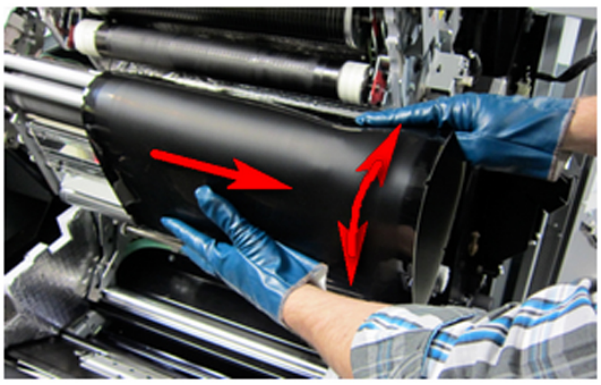
   NOTE
   Make sure the red locking bracket (2) is completely downwards, so the shaft is locked safely.



3. Remove the service key.
4. Move the locking bracket at the front side downwards to the displayed position.



5. Remove the TTF belt from the TTF unit.
   Hold the TTF belt. Pull the TTF belt towards you slowly, while you slowly rotate the TTF belt a slightly back and forth.



6. If you are reusing the TTF belt, store the TTF belt upright. See picture.
   You must instal the TTF belt in the same position. Pay attention to the front side and the back side.

Remove the TTF belt (left)

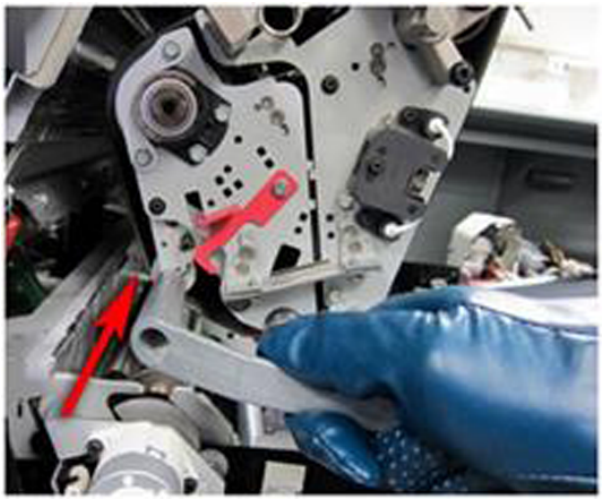
Introduction

NOTE
Make sure that the TTF unit is completely open. If the TTF belt touches the frame, you can damage the TTF belt.

NOTE
In *Diagnose the TTF belt* on page 14 you determined whether you should replace the TTF belt (right) or the TTF belt (left). In case of the TTF belt (left) use this procedure. In case of the TTF belt (right) use the procedure *Remove the TTF belt (right)* on page 25.

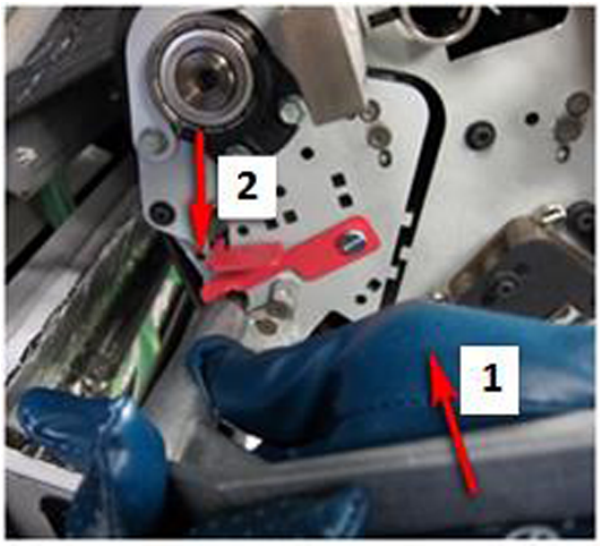
Procedure

1. Insert the service key onto the shaft as displayed.

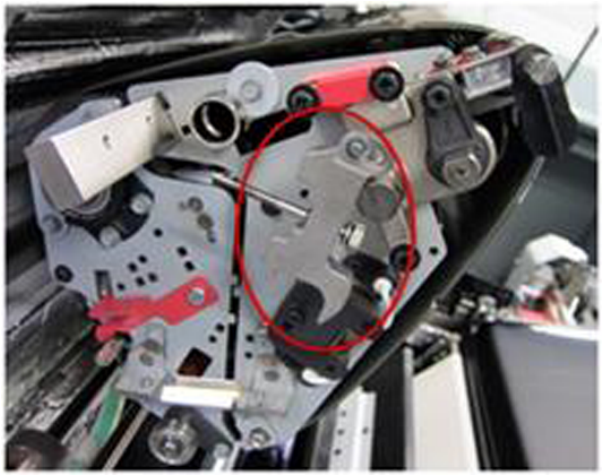


2. Turn the service key counter-clockwise to release the tension of the TTF belt (1). While you hold the service key completely upwards, lock the shaft with the red locking bracket (2).

   NOTE
   Make sure the red locking bracket (2) is completely downwards, so the shaft is locked safely.



3. Remove the service key.
4. Move the locking bracket at the front side downwards to the displayed position.



5. Remove the TTF belt from the TTF unit.
   Hold the TTF belt. Pull the TTF belt towards you slowly, while you slowly rotate the TTF belt a bit back and forth.

6. If you reuse the TTF belt, store the TTF belt upright. See picture.
   You must instal the TTF belt in the same position. Pay attention to the front side and the back side.

Clean the TTF unit

CAUTION
Cleaner fluids can cause irritation. Read the Material Safety Data Sheets of the cleaner fluids before use.

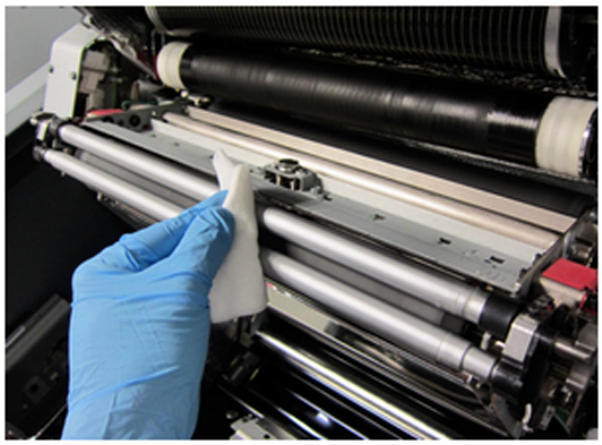
IMPORTANT
For all cleaning actions, apply a small amount of cleaner fluid on an cleaning pad.
Depending on the kind of pollution, you may require different cleaner solutions.

IMPORTANT
To prevent damage never use Cleaner T for rubber rollers
Cleaner K can be used for all rollers.

Procedure

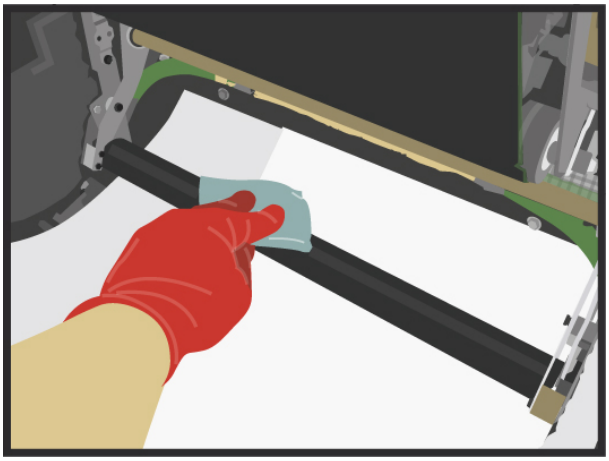
1. Clean all rollers of the TTF unit with Cleaner K.

   CAUTION
   Use nitrile gloves.



Let the rollers of the TTF unit dry for a few minutes.

2. Clean the glue cleaning rollers with Cleaner K.



3. When the rollers contain white pollution (probably PE-wax), clean the rollers with Cleaner T.
4. If the rollers show extreme pollution,
   - clean the rollers with Cleaner P first and then,
   - clean the rollers with Cleaner T.
5. Clean the rollers again with cleaner K to finish the cleaning procedure.
6. Carefully remove all the protective paper.

Install the TTF belt (right)

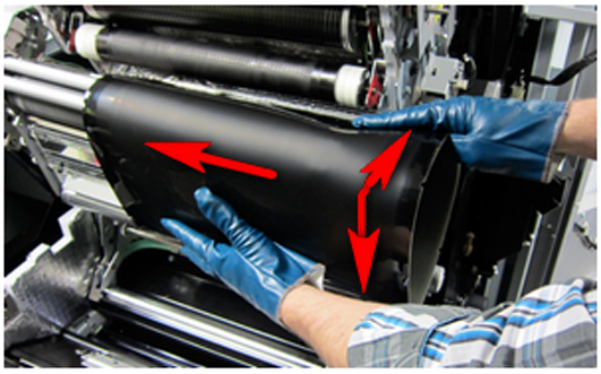
Introduction

NOTE
When you use a new TTF belt, it does not matter which side of the TTF belt is on the front side.
When you install a new TTF belt, you should replace both left-hand belt and right-hand belt.
When you reuse the TTF belt, you must install the TTF belt in the same position, front side - back side.

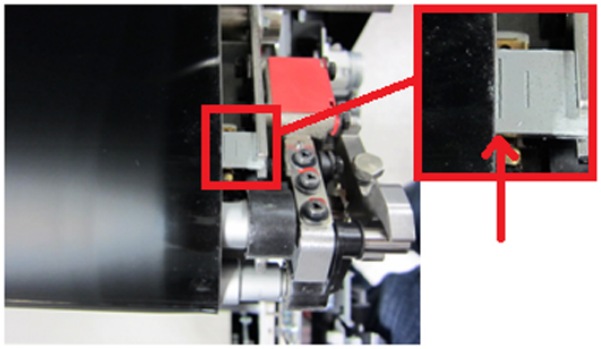
Procedure

1. Push the TTF belt carefully over the rollers of the TTF unit.
   Push the TTF belt towards the back side of the machine, while you slowly rotate the TTF belt a bit back and forth.

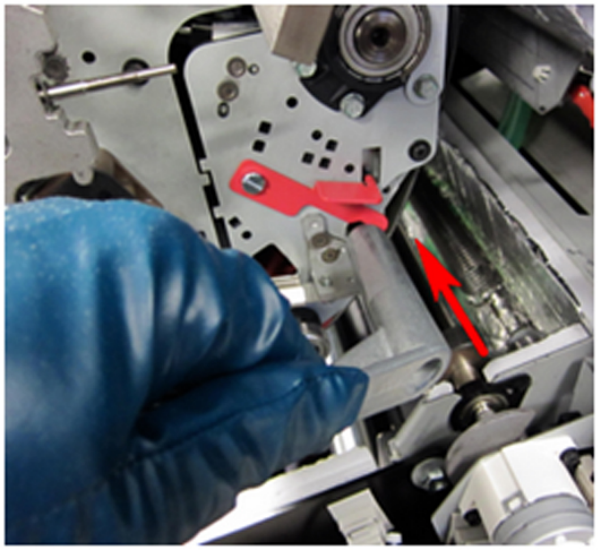
   NOTE
   Make sure that you do not damage the heating elements of the TTF unit. Take care that you do not touch the glass lamps.



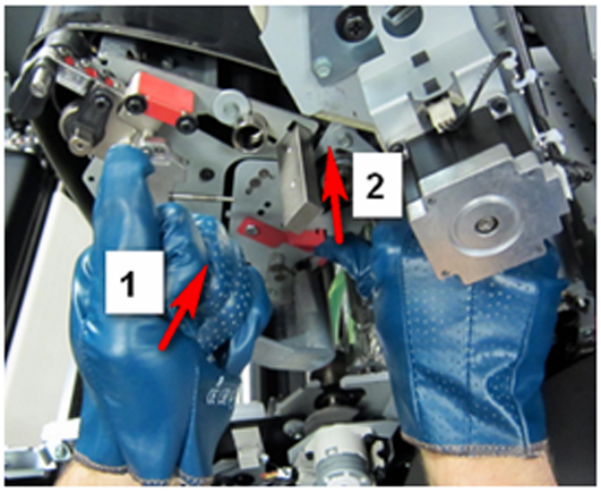
2. Position the TTF belt in the middle of the TTF unit.
   The edge of the TTF belt must be aligned with the larger line on the indicator bracket. Indicator brackets are at the front and back side. The larger line on the indicator bracket is the line between the two shorter lines on the indicator bracket. The distances at the front and back side must be equal.



3. Insert the service key onto the shaft as displayed.

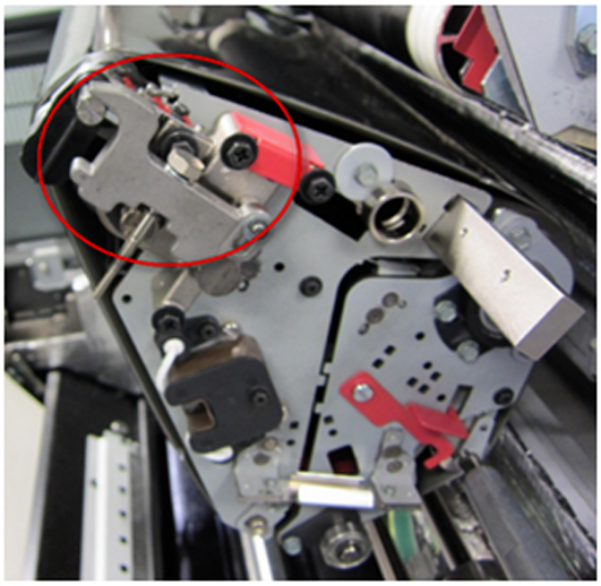


4. Turn the service key clockwise to release the tension of the TTF belt (1). While you hold the service key completely upwards, unlock the shaft with the red locking bracket (2). Slowly loosen the pressure on the service key to tension the TTF belt.



5. Remove the service key.

6. Move the locking bracket at the front side upwards to the displayed position.



7. If you must also replace the second TTF belt, perform the described actions for the second TTF belt. Start with the *Remove the TTF belt (left)* on page 28 section.

Install the TTF belt (left)

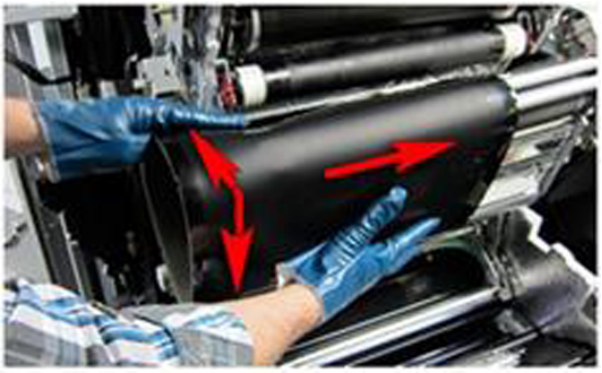
Introduction

NOTE
When you use a new TTF belt, it does not matter which side of the TTF belt is on the front side.
When you install a new TTF belt, you should replace both left-hand belt and right-hand belt.
When you reuse the TTF belt, you must install the TTF belt in the same position, front side - back side.

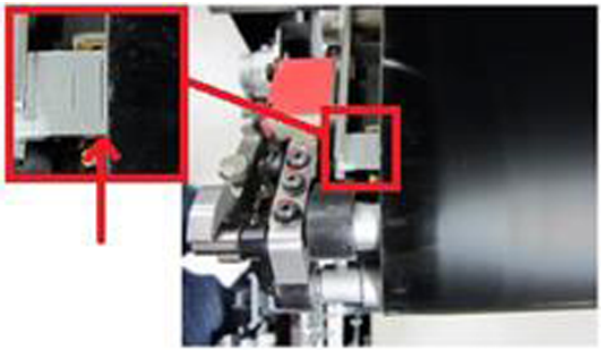
Procedure

1. Push the TTF belt carefully over the rollers of the TTF unit.
   Push the TTF belt towards the back side of the machine, while you slowly rotate the TTF belt a bit back and forth.

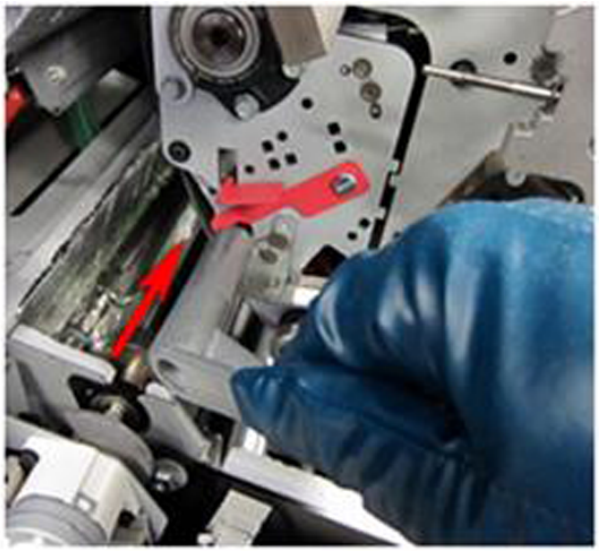
   NOTE
   Make sure that you do not damage the heating elements of the TTF unit. Take care that you do not touch the glass lamps.



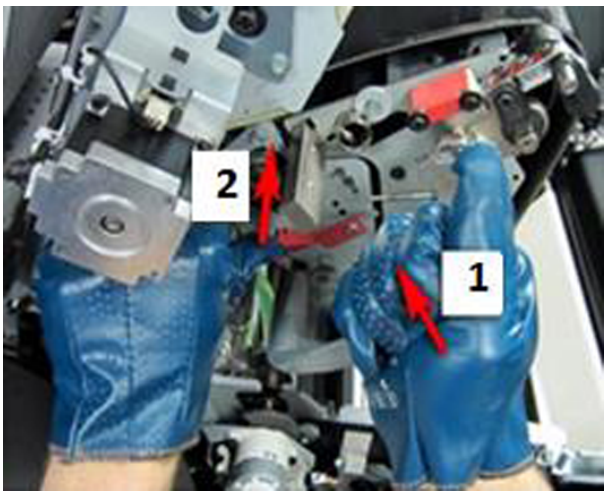
2. Position the TTF belt in the middle of the TTF unit.
   The edge of the TTF belt must be aligned with the larger line on the indicator bracket. Indicator brackets are at the front and back side. The larger line on the indicator bracket is the line between the two shorter lines on the indicator bracket. The distances at the front and back side must be equal.



3. Insert the service key onto the shaft as displayed.

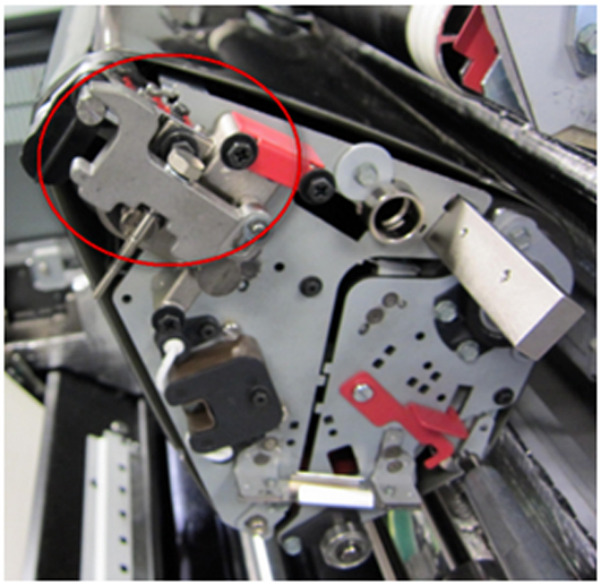


4. Turn the service key counterclockwise to release the tension of the TTF belt (1). While you hold the service key completely upwards, unlock the shaft with the red locking bracket (2). Slowly loosen the pressure on the service key to tension the TTF belt.



5. Remove the service key.

6. Move the locking bracket at the front side upwards.

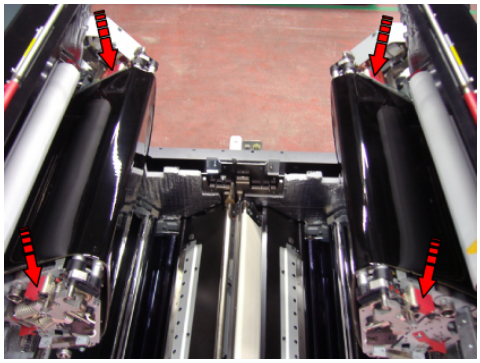


Close the TTF units

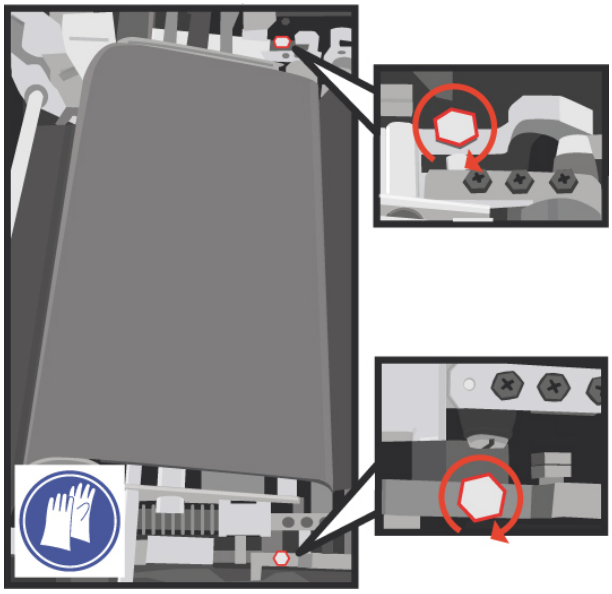
Procedure

CAUTION
Hot area. Use heat-resistant gloves.

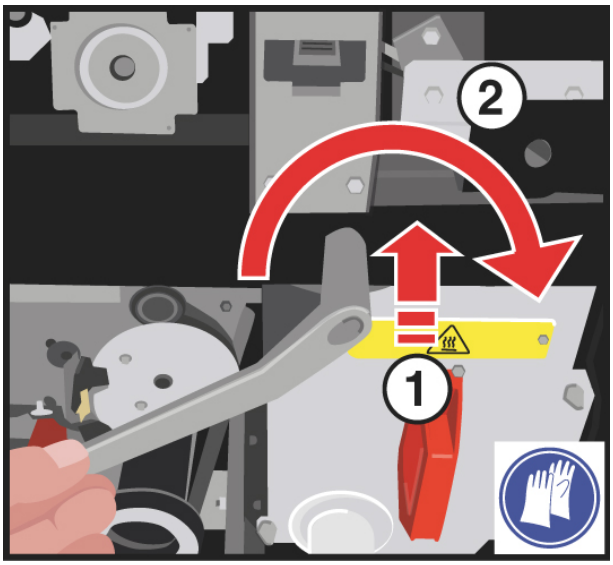
1. Carefully push the left-hand TTF unit down, using the red press plates.
   When the red press plates are not present, carefully push on the indicated area to close the left-hand TTF unit.



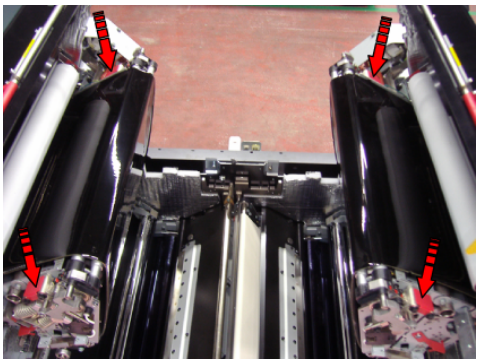
2. Use socket wrench 10 to tighten the two bolts of the left-hand TTF Unit.



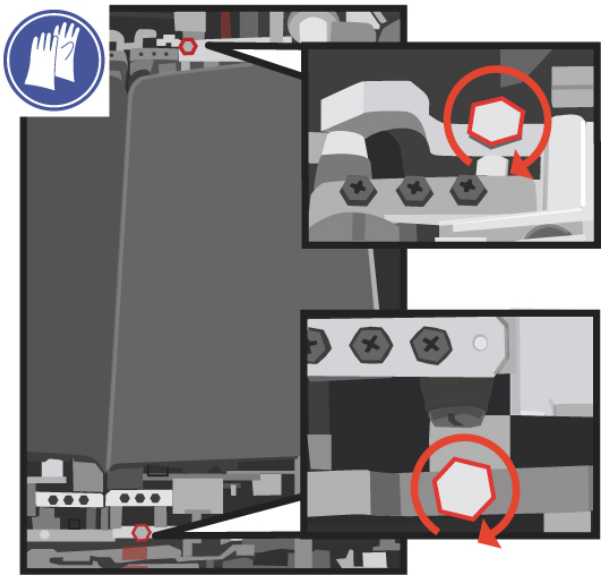
3. Push the service key at the indicated location inside and turn it clockwise to put the tension on the TTF belt.



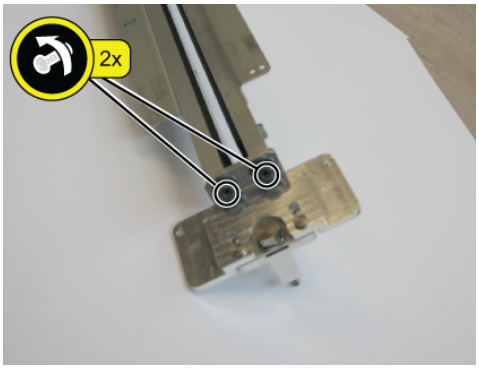
4. Carefully push the right-hand TTF unit down, using the red press plates.
When the red press plates are not present, carefully push on the indicated area to close the right-hand TTF unit.



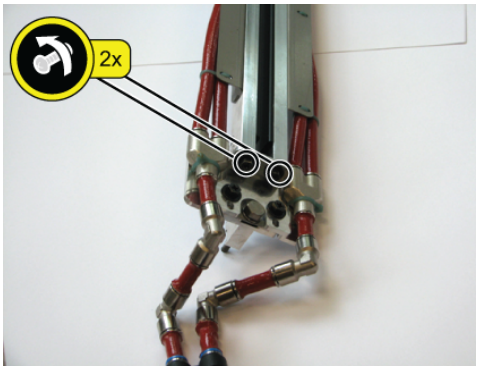
5. Use socket wrench 10 to tighten the two bolts of the right-hand TTF Unit.



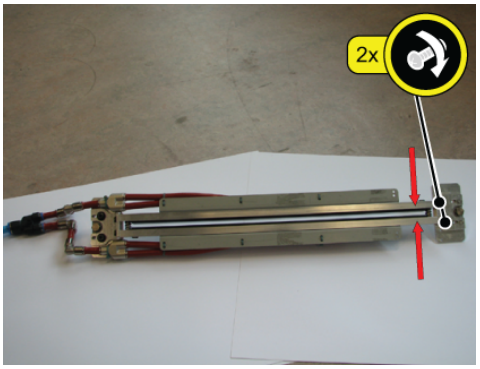
6. When the optional light-weight media module has been installed before, you have to prepare the air guidance unit for installation first so that it will not damage the TTF belt.
   1. Loosen the 2 screws at the front side.



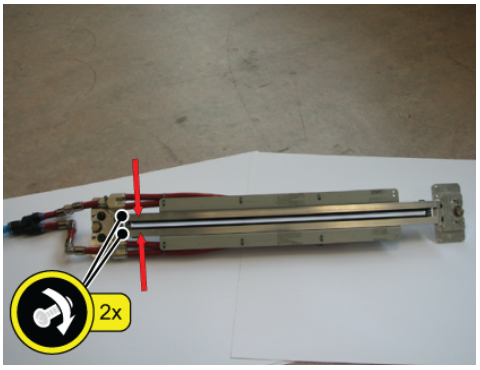
   2. Loosen the 2 screws at the rear side.



3. At the front side, push the air guides together and fasten the 2 screws at the front side.



4. At the rear side, push the air guides together and fasten the 2 screws at the rear side.



CAUTION
Hot area. Use heat-resistant gloves.

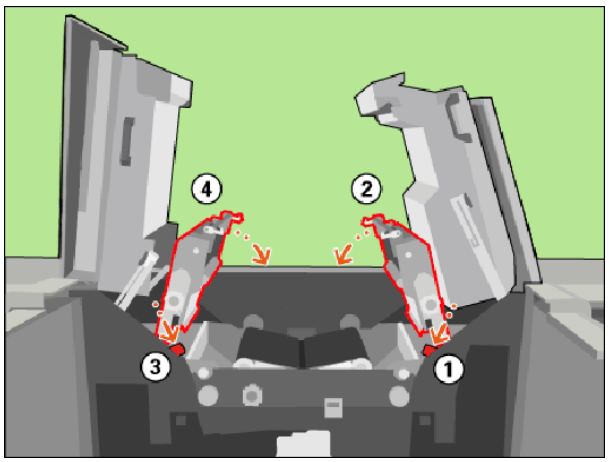
7. When the optional light-weight media module was installed, install the air guidance unit again.
Install the air guidance unit on page 112.
8. Adjust the air guidance unit with respect to the TTF belts.
Adjust the LWM air guidance unit with respect to the TTF belts on page 114.

Lower the clean units

Procedure

IMPORTANT
Make sure that the clean units are in the lowest position.

1. Lift the right-hand clean unit and push the red handle to unlock the locking mechanism (1).
2. Lower the right-hand clean unit into the locked position (2).
3. Lift the left-hand clean unit and push the red handle to unlock the locking mechanism (3).
4. Lower the left-hand clean unit into the locked position (4).

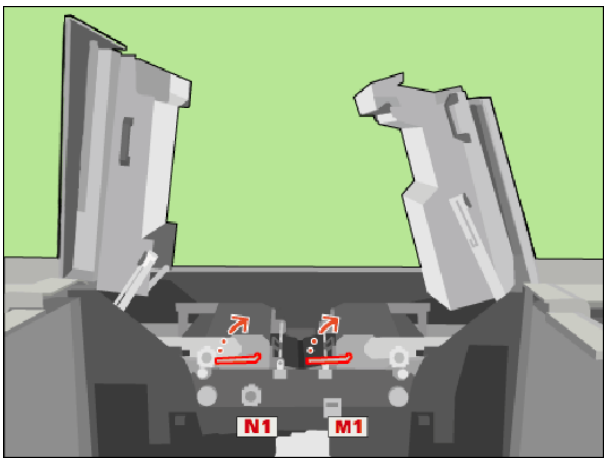


[7] Lower the clean units

Lock the clean units

Procedure

1. Use the service key to turn N1 clockwise.
2. Use the service key to turn M1 clockwise.

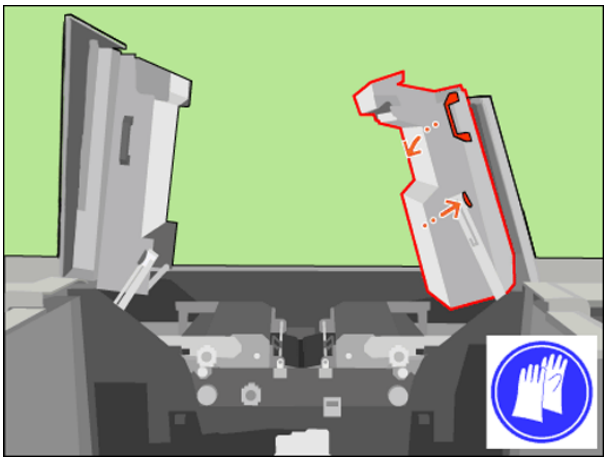


[8] Lock the clean units

Close the covers

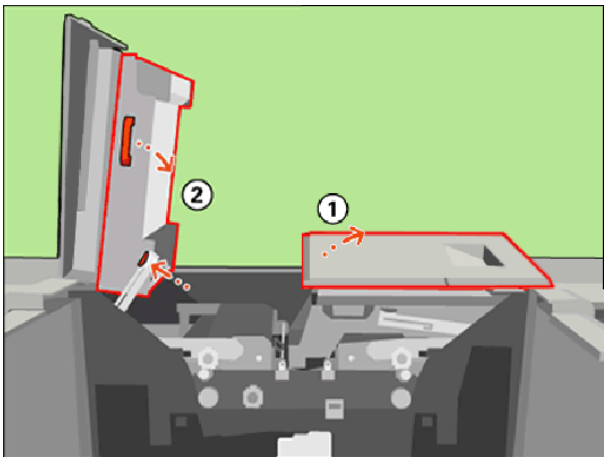
Procedure

1. Unlock and lower the right-hand inner cover.



[9] Close the right-hand inner cover

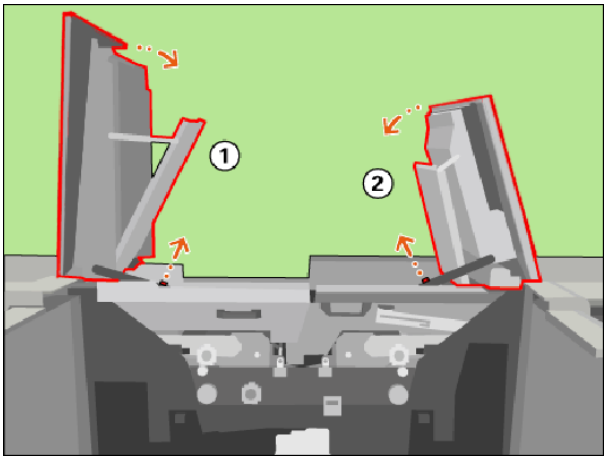
2. Lift the right-hand top cover to the upper position (1).
3. Unlock and lower the left-hand inner cover (2).



[10] Close the left-hand inner cover

4. Close the left-hand top cover (1).

5. Close the right-hand top cover (2).

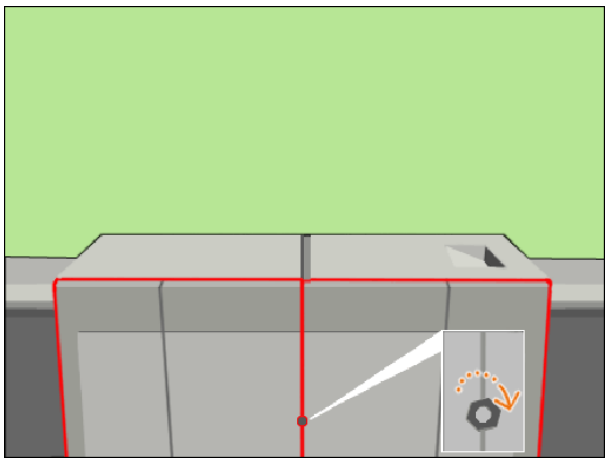


[11] Close the top covers

Finish the maintenance task

Procedure

1. Close the front doors.
2. Use socket wrench 10 to tighten the bolt of the front doors.



[12] Close the front doors

3. Press [Stop] to close the maintenance screen. The machine is turned on.

Finish the procedure on the Operator panel

Procedure

1. Press [Finish].
2. Select [Yes] to confirm that you have installed a new TTF belt.
   You reset the lifetime counter of the TTF belt to 0.

   NOTE
   If you replaced both TTF belts, also reset the lifetime counter for the second TTF belt.

3. After you replaced the TTF belts, you must adjust the image registration. You must at least perform the x-length adjustment and the x-position adjustment.
   See the *Registration adjustment* on page 87 section.

   NOTE
   Always make test prints after you performed extended key operator maintenance. Check the image on both sides of the sheets before you start printing your jobs.

Troubleshooting

Introduction

When you perform one of the actions of the TTF maintenance, in some cases the system can generate an error code. This section gives an overview of known error codes and what to do.

Error code	Error description	Action
6537	TTF belt (right) out of position	Switch the system on. If the error remains, reposition the TTF belt (right) (see section *Install the TTF belt (right)* on page 33).
6577	TTF belt (left) out of position	Switch the system on. If the error remains, reposition the TTF belt (left) (see section *Install the TTF belt (left)* on page 36).
6541	TTF motor (right) control maximum	If this error occurs after you replaced one TTF belt, replace also the other TTF belt. Check also if you can rotate the TTF belt (right) manually. **CAUTION** **TTF belts can be hot. Use heat-resistant gloves.**
6581	TTF motor (left) control maximum	If this error occurs after you replaced one TTF belt, replace also the other TTF belt. Check also if you can rotate the TTF belt (left) manually. **CAUTION** **TTF belts can be hot. Use heat-resistant gloves.**

If the error remains after you performed the indicated actions, contact your service representative.

Chapter 4
OPC maintenance

IMPORTANT
You must handle the OPC belt carefully. The OPC belt is very sensitive to
Mechanical damage
Light and sunlight

Diagnose the OPC belt

Introduction

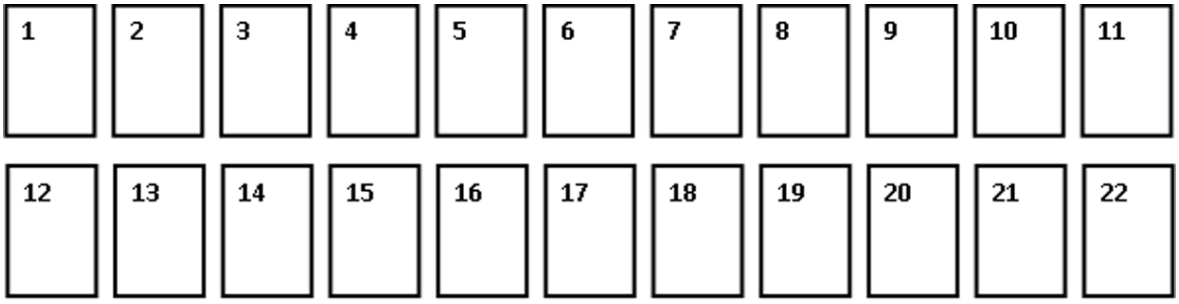
When you perform the diagnosis the system prints test prints. Use the test prints to check if the OPC belt is the cause of some specific print quality problems.

To determine if the print quality problem is caused by the left-hand OPC belt or the right-hand OPC belt, you must check the prints in the delivery tray of the stacker.

- The image on the face-up side of the sheet is printed with the right-hand OPC belt (primary side).
- The image on the face-down side of the sheet is printed with the left-hand OPC belt (secondary side).

Procedure

1. On the operator panel touch [Diagnose the left-hand OPC belt] or [Diagnose the right-hand OPC belt].
2. Select the paper tray
   For a reliable diagnosis select a tray with A4 or Letter. If A4 or Letter is not available in the trays, assign A4 or Letter to one of the trays. Load this media in the selected tray.
3. Touch [OK].
   The system prints 22 white prints. Two identical cycles of 11 white prints.
4. Put the prints in the order as shown in the figure below.

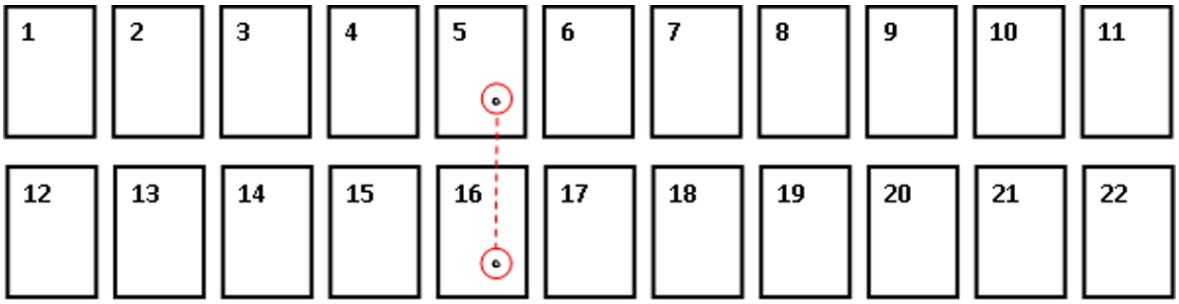


5. Check if the print quality problem appears on every 11th print.
   - If the print quality problem appears at the same location on every 11th print, the OPC belt causes the print quality problem.
     [Clean the left-hand OPC belt] or [Clean the right-hand OPC belt]. Clean the OPC belt is part of the key operator maintenance tasks, not part of the extended key operator maintenance tasks.
     If the print quality problem still appears after you cleaned the OPC belt then[Replace the left-hand OPC belt] (see *Replace the OPC belt (left)* on page 54) or [Replace the right-hand OPC belt] (see *Replace the OPC belt (right)* on page 68).
   - If the print quality problem appears on multiple pages but not on the same location, probably the TTF belt causes the problem.
     [Diagnose the left-hand TTF belt] or [Diagnose the right-hand TTF belt] (see *Diagnose the TTF belt* on page 14).
   - If the print quality problem does not appear every 11th page, the TTF belt is probably causing the problem.

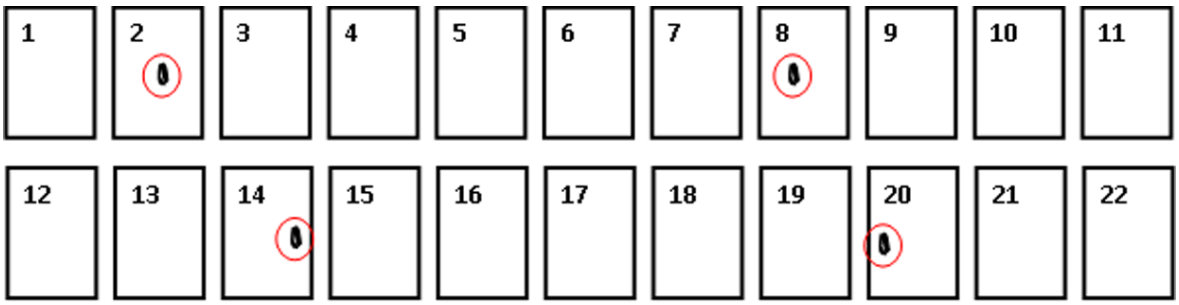
[Diagnose the left-hand TTF belt] or [Diagnose the right-hand TTF belt] (see *Diagnose the TTF belt* on page 14).

Example

The print quality problem is a dark spot on the print.



Check the dark spot on page 5 and 16. The print quality problem reappears after 11 prints on the exact same location. This means that the OPC belt causes the print quality problem.



Check the dark spot on pages 2, 8, 14 and 20. The print quality problem is visible on multiple pages, but not on every 11th print. The print quality problem is not on the same location. In this case the OPC belt does not cause the problem, probably the TTF belt causes the problem.

Replace the OPC belt (left)

If the diagnosis of the OPC belt (see *Diagnose the OPC belt* on page 52) indicates that the OPC belt (left) shows a print quality problem and you have cleaned the OPC belt, then you must replace the OPC belt (left).

NOTE
After you replaced the OPC belt you must make test prints. Check the image on both sides of the sheets before you start printing your jobs.

IMPORTANT
You must wear cotton gloves when you replace the OPC belt.

Required tools

- [Socket wrench]10 (supplied with the machine)
- Service key (supplied with the machine)
- Cotton gloves
- [Cleaner K]
- Lens cleaning tool
- [Cleaning pad]
- Vacuum cleaner (supplied by your local service representative)

Open the doors

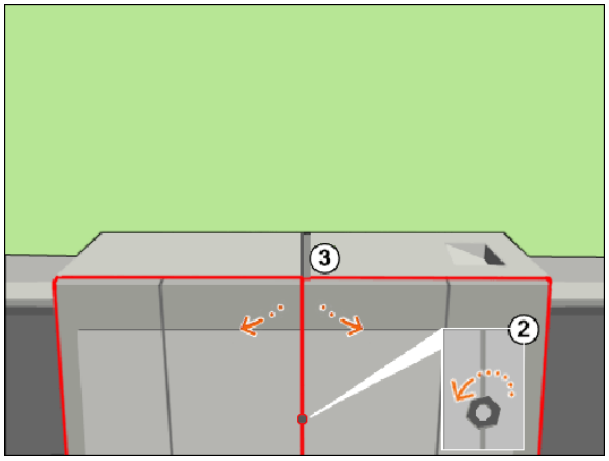
Procedure

1. On the operator panel, touch [System].
2. Touch [Maintenance].
3. Touch [Go to maintenance tasks].
4. On the operator panel, touch [OPC maintenance].
5. Select [Replace the left-hand OPC belt] or [Replace the right-hand OPC belt].
   At the start of the procedure, the machine is turned off.

CAUTION
Wait until the machine is turned off. Opening the doors too soon can possibly cause injury.

6. Use socket wrench 10 to loosen the bolt of the front doors (2).

7. Open the lower door. Open the front doors (3).

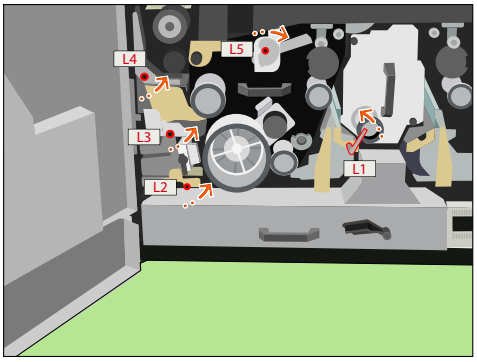


[13] Open the front doors

Unlock the OPC unit (left)

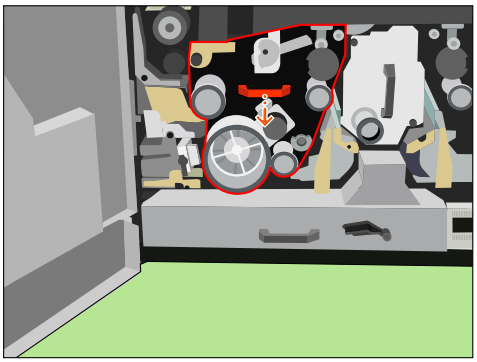
Procedure

1. Use the service key to push and turn L1 counter-clockwise.
2. Use the service key to turn L2 counter-clockwise.
3. Use the service key to push and turn L3 counter-clockwise.
4. Use the service key to push and turn L4 counter-clockwise.
5. Use the service key to turn L5 clockwise.



[14] Unlock the OPC unit

6. Use the red handle to move the OPC unit as far outward as possible.



[15] Move the OPC unit out

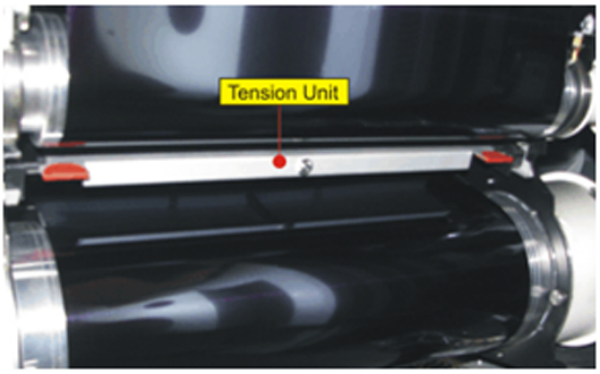
Remove the OPC belt

NOTE
Do not remove the OPC belt from the storage box until you removed the OPC belt and cleaned the units.

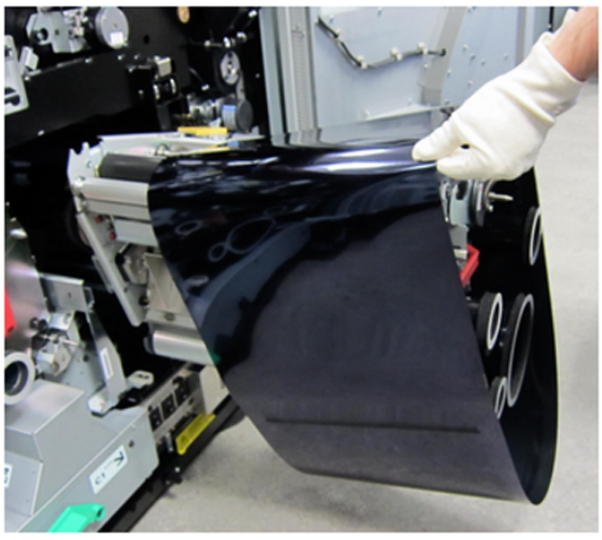
Procedure

1. Lift the 2 red handles of the tension unit.
2. Remove the tension unit from the OPC unit.

IMPORTANT
Put the tension unit on a clean surface to prevent that the wheels become polluted. The pollution of the wheels can damage the OPC belt.



3. Lift the OPC belt carefully at the front side. Remove the OPC belt.

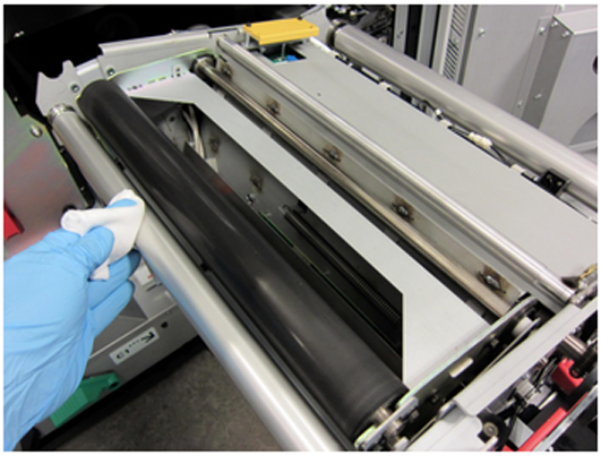


4. Dispose of the waste according to local regulations.

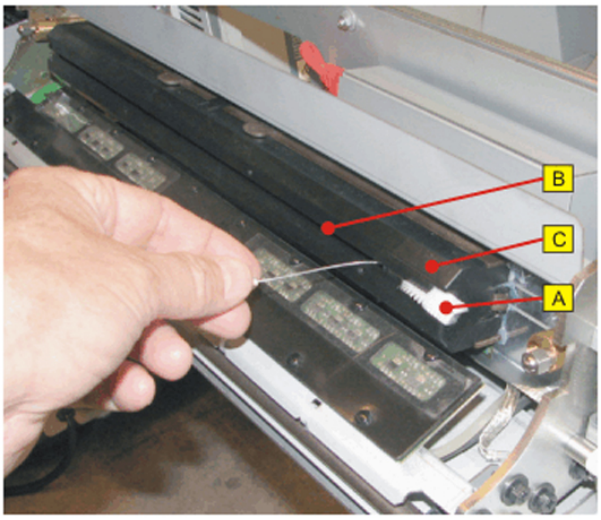
Clean the units (left)

Procedure

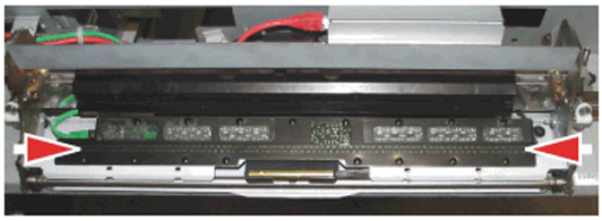
1. Clean the OPC unit.



   1. Clean all the rollers in the OPC unit with a cleaning pad and Cleaner K.
   2. Clean the OPC unit with the vacuum cleaner.
   3. Check the rollers in the OPC unit for loose particles. Remove the loose particles.
   4. Slide the OPC unit back into the print engine module.
2. Slide out the Exposure unit (L3).
3. Clean the lens of the LED Print Head.
   1. Install the lens cleaning tool A in the LED Print Head. See picture.



   2. Move the lens cleaning tool from the front side to the back side and vice versa.
4. Clean the framing unit.
   1. Apply Cleaner K on a cleaning pad.
   2. Wipe off the framing LED area. See picture.
      Move the cleaning pad completely to the end of the framing unit.



3. Wipe off the framing unit with a new dry cleaning pad.
4. Verify that there are no fibers on the framing unit, especially at the edges of the transparent plastic strips.

5. Slide the Exposure unit (L3) back into the print engine module.

Take the OPC belt out of the box

IMPORTANT
- Do not expose the OPC belt to direct sunlight.
- Do not expose the OPC belt to normal ambient light for more than 5 minutes.
- Do not touch the outer functional surface of the OPC belt.
- Do not blow onto the OPC belt. Small cardboard particles from the box on the OPC belt will drop off the OPC belt when you installed the OPC belt.

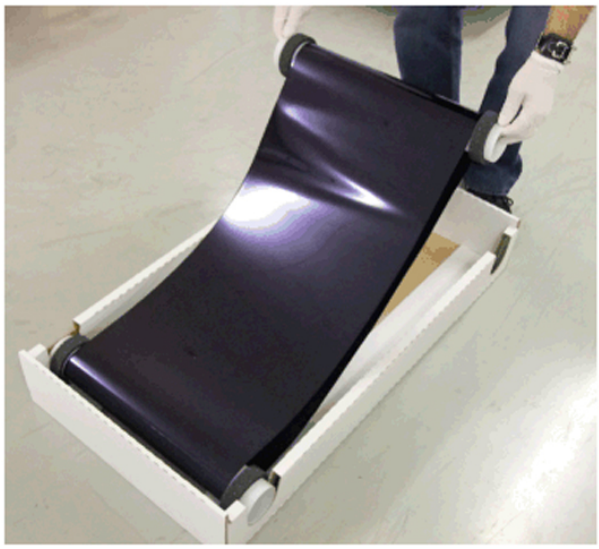
Procedure

1. Slide out the OPC unit.
2. Put paper on the floor under the OPC unit to protect the OPC belt.
   At least 2 sheets of A3 / Ledger.
3. Put the storage box on the floor.
4. Remove the plastic bands.
5. Open the box.

   NOTE
   The OPC weld is always on top.

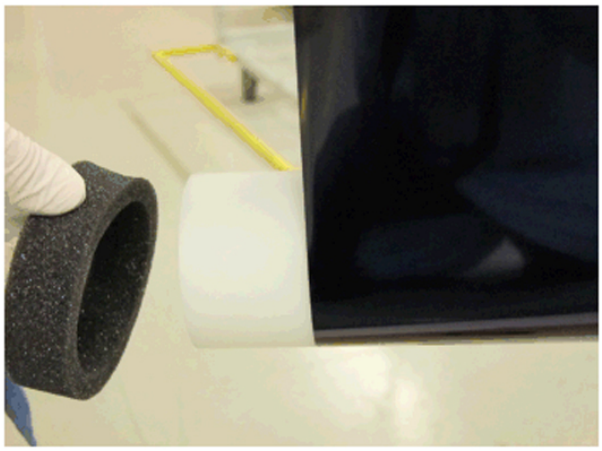
6. Put on the cotton gloves.
7. Hold the plastic tubes. Carefully lift the OPC belt from the box.

   NOTE
   Hold the plastic tube straight to prevent kinking (folding) of the OPC belt.



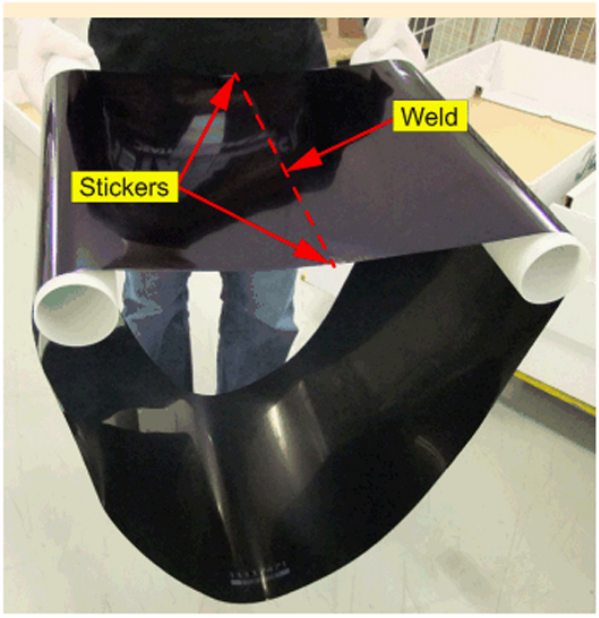
8. Remove the foam rings from the plastic tubes.

IMPORTANT
Do not touch the outer functional surface of the OPC belt.



9. Rotate the OPC belt until the weld of the OPC belt is at the upper side.
The weld of the OPC belt is the part with the transparent stickers.

IMPORTANT
Do not touch the outer functional surface of the OPC belt.


Weld
Stickers

Install the OPC belt in the OPC unit (left)

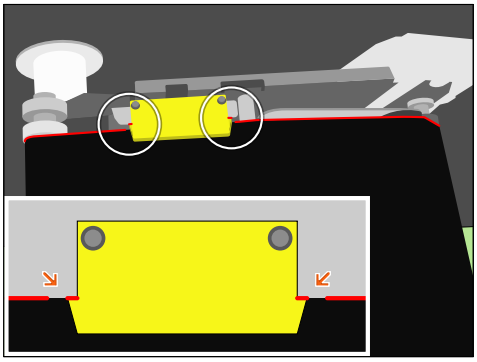
IMPORTANT
Do not scratch the surface of the OPC belt against sharp parts of the OPC unit.

Procedure

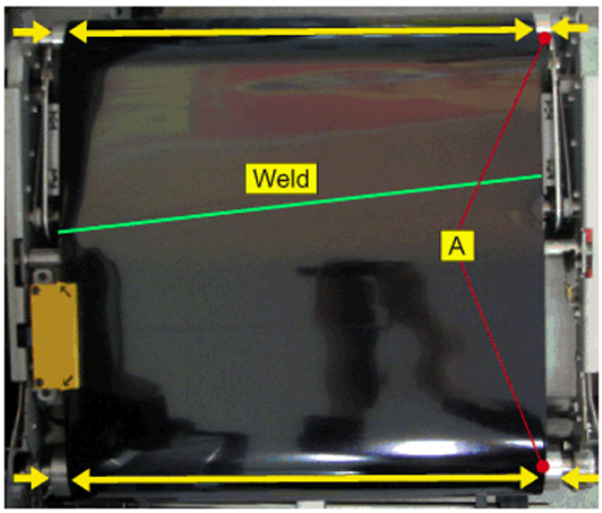
1. Fit the OPC belt over the OPC unit.

   NOTE
   It does not matter which side of the OPC belt goes to the front or the back side.

2. Put the back side of the OPC belt between the Z-position sensor and receiver. And put the back side of the OPC belt on the marked position.
   Make sure that the OPC belt is also exactly in the middle of the two upper rollers (A).

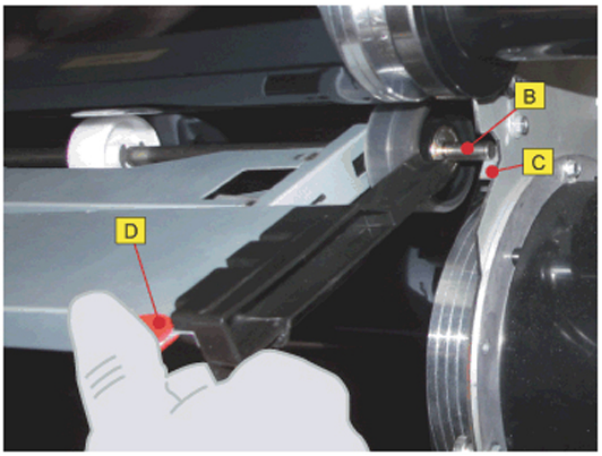


   IMPORTANT
   To prevent breaking of the weld when you install the tension unit, make sure that the weld of the OPC belt is still at the top.



[16] Top view of the OPC unit

3. Install the tension unit.

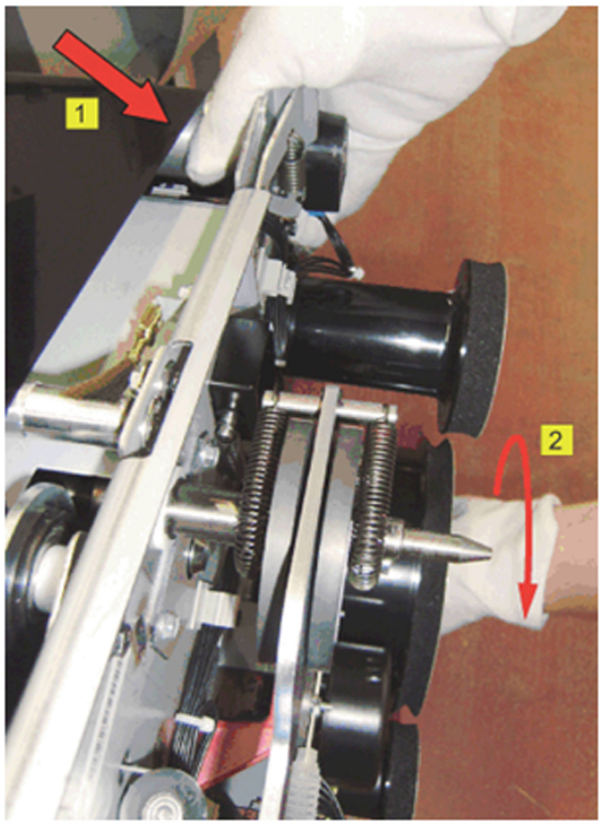


1. Clean the rollers of the tension unit with Cleaner K.
2. Hold the tension unit by both red handles to prevent the risk of damaging the OPC belt by finger nails.

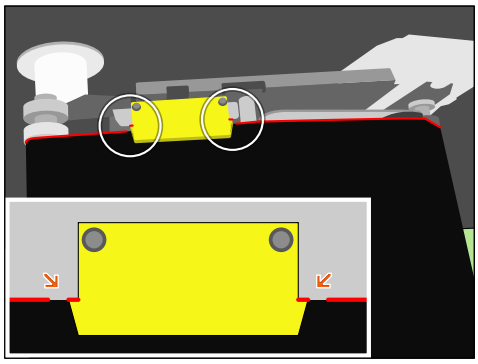
   IMPORTANT
   Do not hold the tension unit in the middle with one hand.

3. Put the Shuttle Roller (B) on the guiding plates (C), front and back side.
4. Slide the tension unit carefully into the master unit frame until you feel the tension of the belt.
5. Move the tension unit slightly a bit back and forth to equalize the tension at the front and back side.
6. Push the red grips (D) slightly down. Slide the tension unit into the frame until the tension unit locks into the end position.

4. Rotate the OPC belt to eliminate any tension on the OPC belt.



1. To make sure that the roller cannot rotate, block the counter developing roller firmly with one hand (1).
2. While you hold the counter developing roller in the fixed position, slowly rotate the OPC belt clockwise at least once. Use the large OPC cooling roller (2).
3. Align the OPC belt to the centre of the OPC unit.
   Rotate the OPC cooling roller clockwise or counterclockwise to move the OPC belt to the back side or the front side. Make sure that the rear side of the OPC belt is on the marked position of the yellow registration board (working area +/- 2 mm).



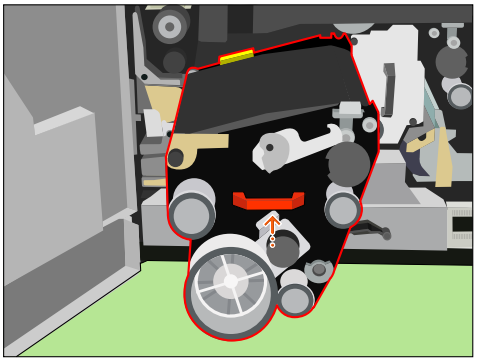
Lock the OPC unit (left)

Introduction

Follow the steps displayed on the operator panel.

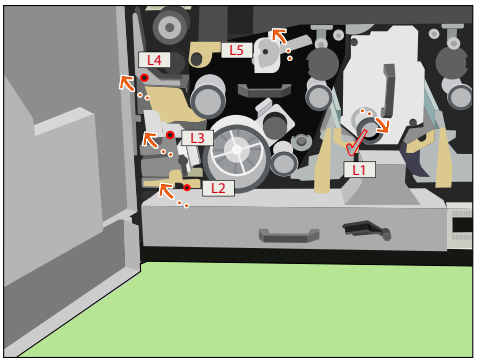
Procedure

1. Use the red handle to push the OPC unit inwards as far as possible.



[17] Move the OPC unit in

2. Use the service key to turn L5 counter-clockwise into the locked position.
3. Use the service key to turn L4 clockwise into the locked position.
4. Use the service key to turn L3 clockwise into the locked position.
5. Use the service key to turn L2 clockwise into the locked position.
6. Use the service key to turn L1 clockwise into the locked position.

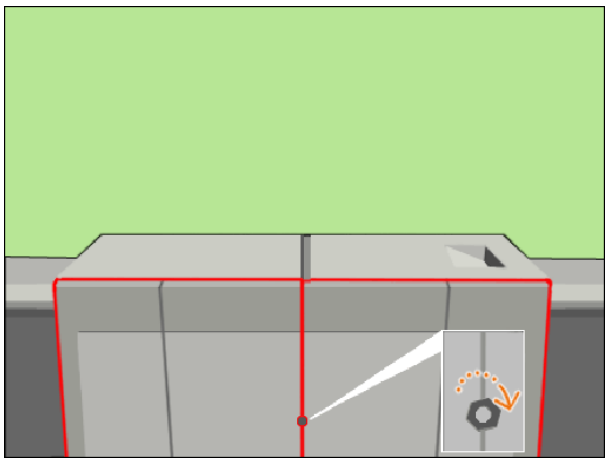


[18] Lock the OPC unit

Finish the procedure on the Operator panel

Procedure

1. Close the front doors.
2. Use socket wrench 10 to tighten the bolt of the front doors.



[19] Close the front doors

3. Close the lower door.
4. Touch [Finish].
5. Select [Yes] to confirm that you have installed a new OPC belt.
   You reset the lifetime counter of the OPC belt to 0.
6. After you replaced the OPC belt, you must adjust the OPC belt to optimize the print quality.
   See the *Adjust the OPC belt* on page 82 section.

NOTE
Always make test prints after you performed extended key operator maintenance. Check the image on both sides of the sheets before you start printing your jobs.

Replace the OPC belt (right)

If the diagnosis of the OPC belt (see *Diagnose the OPC belt* on page 52) indicates that the OPC belt (right) shows a print quality problem and you have cleaned the OPC belt, then you must replace the OPC belt (right).

NOTE
After you replaced the OPC belt you must make test prints. Check the image on both sides of the sheets before you start printing your jobs.

IMPORTANT
You must wear cotton gloves when you replace the OPC belt.

Required tools

- [Socket wrench]10 (supplied with the machine)
- Service key (supplied with the machine)
- Cotton gloves
- [Cleaner K]
- Lens cleaning tool
- [Cleaning pad]
- Vacuum cleaner (supplied by your local service representative)

Open the doors

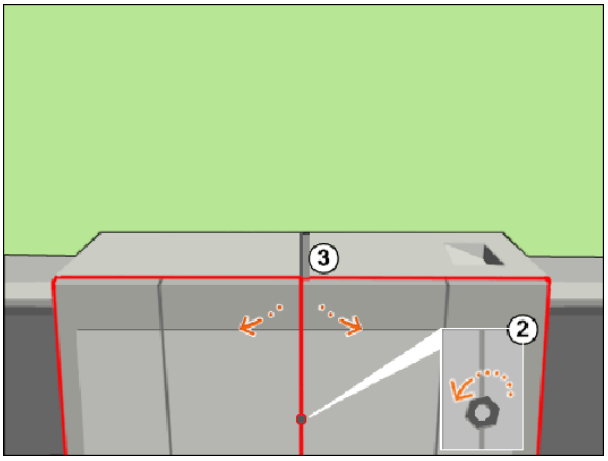
Procedure

1. On the operator panel, touch [System].
2. Touch [Maintenance].
3. Touch [Go to maintenance tasks].
4. On the operator panel, touch [OPC maintenance].
5. Select [Replace the left-hand OPC belt] or [Replace the right-hand OPC belt].
   At the start of the procedure, the machine is turned off.

CAUTION
Wait until the machine is turned off. Opening the doors too soon can possibly cause injury.

6. Use socket wrench 10 to loosen the bolt of the front doors (2).

7. Open the lower door. Open the front doors (3).

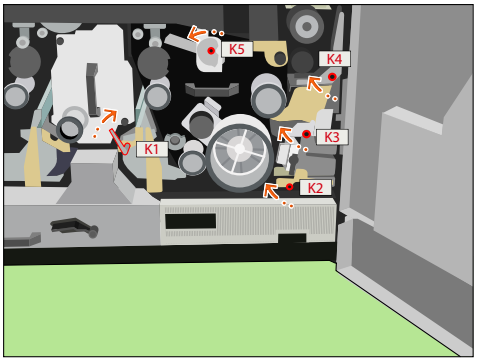


[20] Open the front doors

Unlock the OPC unit (right)

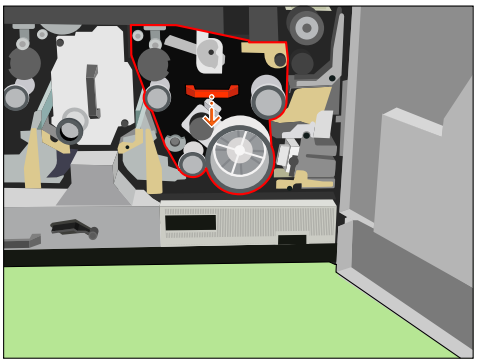
Procedure

1. Use the service key to push and turn K1 clockwise.
2. Use the service key to turn K2 clockwise.
3. Use the service key to push and turn K3 clockwise.
4. Use the service key to push and turn K4 clockwise.
5. Use the service key to turn K5 counter-clockwise.



[21] Unlock the OPC unit

6. Use the red handle to move the OPC unit as far outward as possible.



[22] Move the OPC unit out

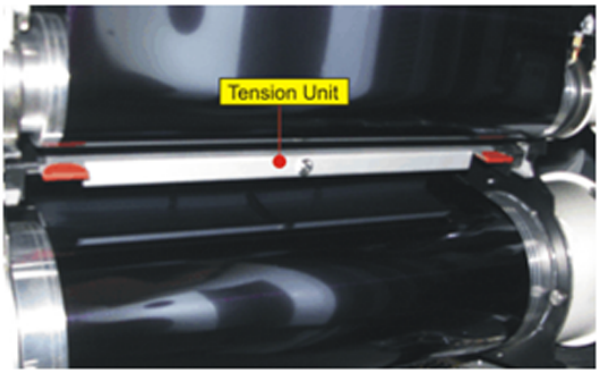
Remove the OPC belt

NOTE
Do not remove the OPC belt from the storage box until you removed the OPC belt and cleaned the units.

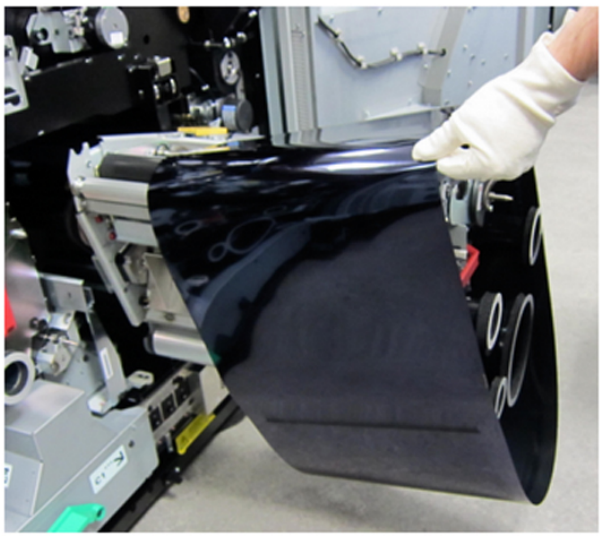
Procedure

1. Lift the 2 red handles of the tension unit.
2. Remove the tension unit from the OPC unit.

IMPORTANT
Put the tension unit on a clean surface to prevent that the wheels become polluted. The pollution of the wheels can damage the OPC belt.



3. Lift the OPC belt carefully at the front side. Remove the OPC belt.

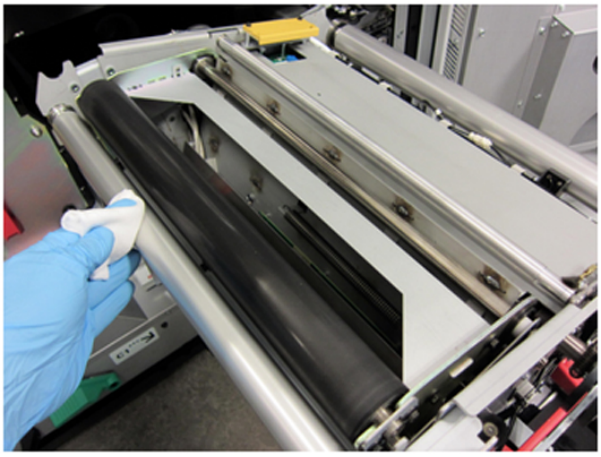


4. Dispose of the waste according to local regulations.

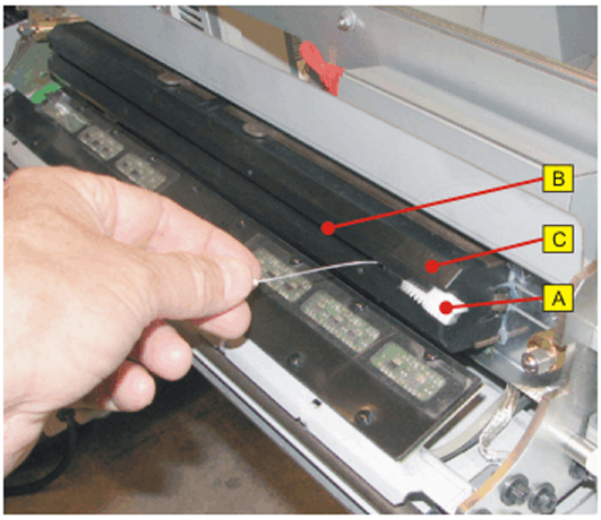
Clean the units (right)

Procedure

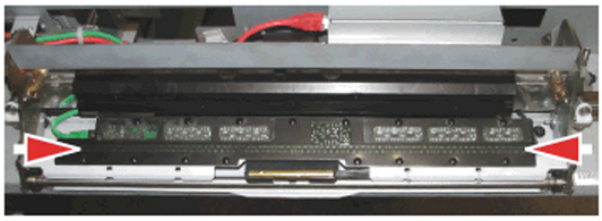
1. Clean the OPC unit.



   1. Clean all the rollers in the OPC unit with a cleaning pad and Cleaner K.
   2. Clean the OPC unit with the vacuum cleaner.
   3. Check the rollers in the OPC unit for loose particles. Remove the loose particles.
   4. Slide the OPC unit back into the print engine module.
2. Slide out the Exposure unit (K3).
3. Clean the lens of the LED Print Head.
   1. Install the lens cleaning tool A in the LED Print Head. See picture.



   2. Move the lens cleaning tool from the front side to the back side and vice versa.
4. Clean the framing unit.
   1. Apply Cleaner K on a cleaning pad.
   2. Wipe off the framing LED area. See picture.
      Move the cleaning pad completely to the end of the framing unit.



3. Wipe off the framing unit with a new dry cleaning pad.
4. Verify that there are no fibres on the framing unit, especially at the edges of the transparent plastic strips.

5. Slide the Exposure unit (K3) back into the print engine module.

Take the OPC belt out of the box

IMPORTANT
- Do not expose the OPC belt to direct sunlight.
- Do not expose the OPC belt to normal ambient light for more than 5 minutes.
- Do not touch the outer functional surface of the OPC belt.
- Do not blow onto the OPC belt. Small cardboard particles from the box on the OPC belt will drop off the OPC belt when you installed the OPC belt.

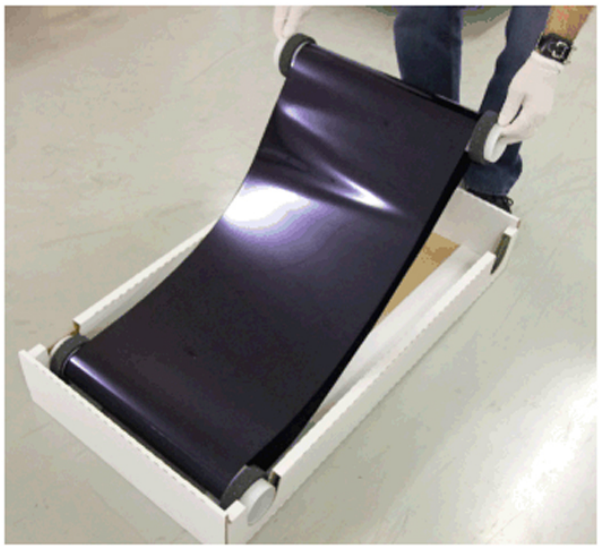
Procedure

1. Slide out the OPC unit.
2. Put paper on the floor under the OPC unit to protect the OPC belt.
   At least 2 sheets of A3 / Ledger.
3. Put the storage box on the floor.
4. Remove the plastic bands.
5. Open the box.

   NOTE
   The OPC weld is always on top.

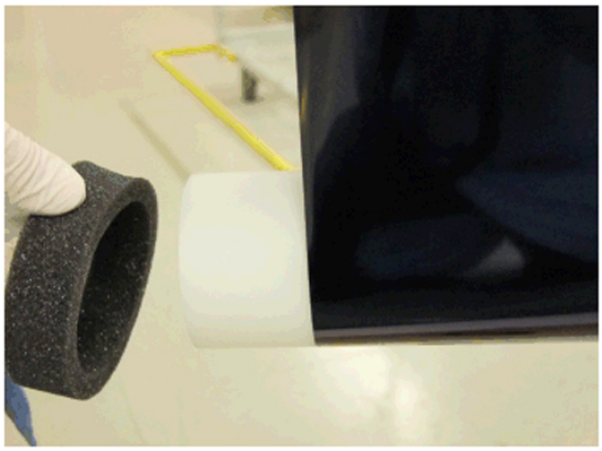
6. Put on the cotton gloves.
7. Hold the plastic tubes. Carefully lift the OPC belt from the box.

   NOTE
   Hold the plastic tube straight to prevent kinking (folding) of the OPC belt.



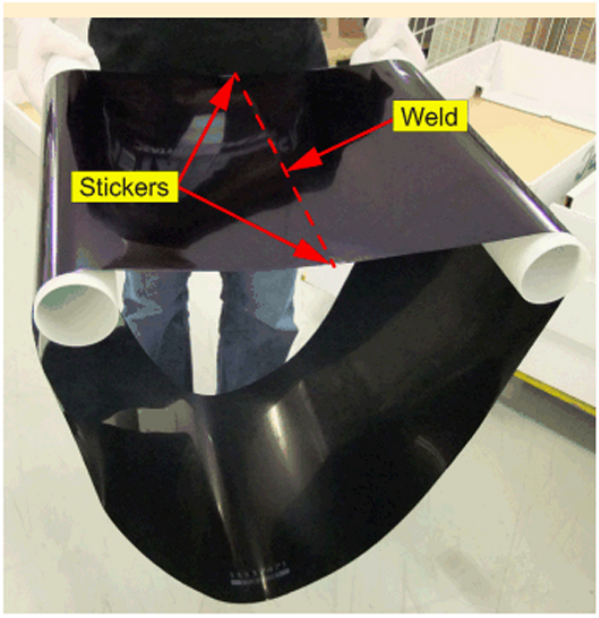
8. Remove the foam rings from the plastic tubes.

IMPORTANT
Do not touch the outer functional surface of the OPC belt.



9. Rotate the OPC belt until the weld of the OPC belt is at the upper side.
The weld of the OPC belt is the part with the transparent stickers.

IMPORTANT
Do not touch the outer functional surface of the OPC belt.


Weld
Stickers

Install the OPC belt in the OPC unit (right)

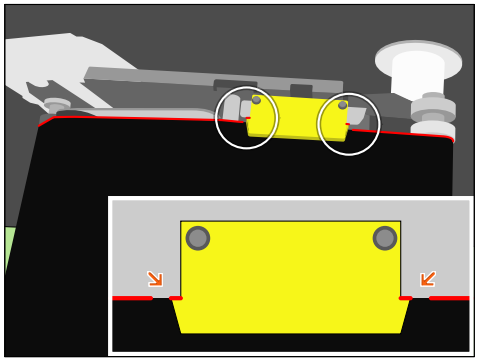
IMPORTANT
Do not scratch the surface of the OPC belt against sharp parts of the OPC unit.

Procedure

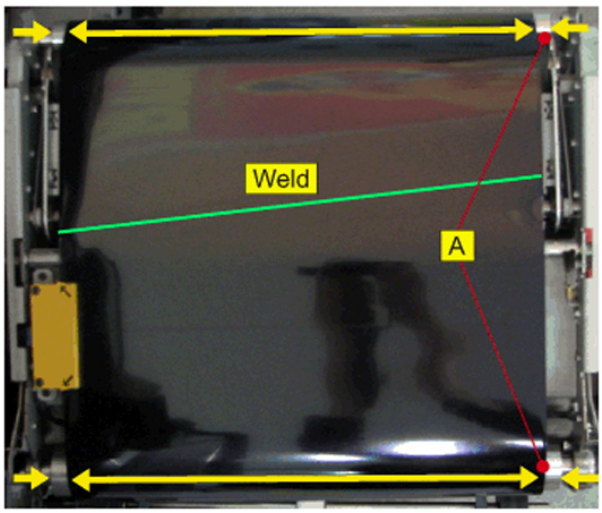
1. Fit the OPC belt over the OPC unit.

   NOTE
   It does not matter which side of the OPC belt goes to the front or the back side.

2. Put the back side of the OPC belt between the Z-position sensor and receiver. And put the back side of the OPC belt on the marked position.
   Make sure that the OPC belt is also exactly in the middle of the two upper rollers (A).

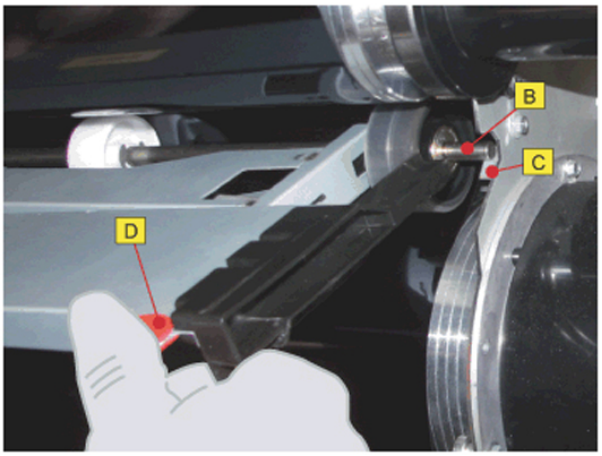


   IMPORTANT
   To prevent breaking of the weld when you install the tension unit, make sure that the weld of the OPC belt is still at the top.



[23] Top view of the OPC unit

3. Install the tension unit.

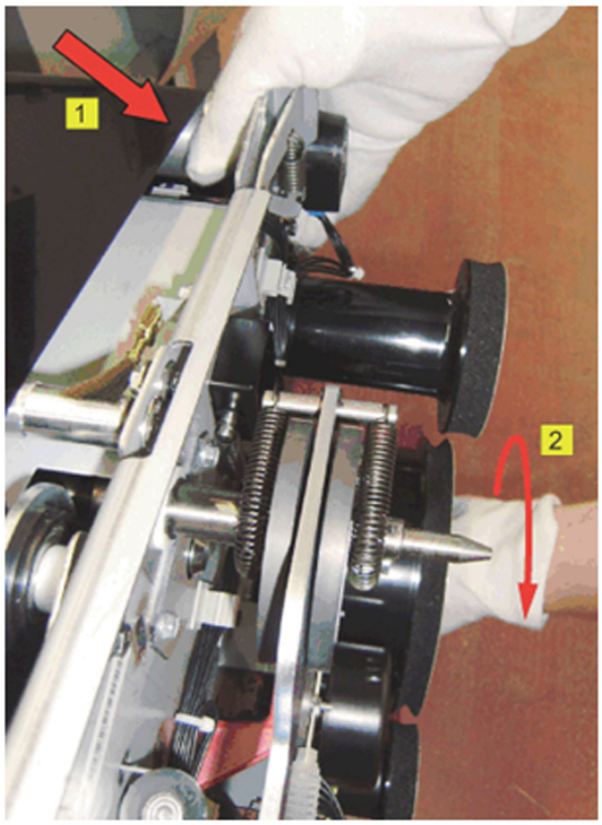


1. Clean the rollers of the tension unit with Cleaner K.
2. Hold the tension unit by both red handles to prevent the risk of damaging the OPC belt by finger nails.

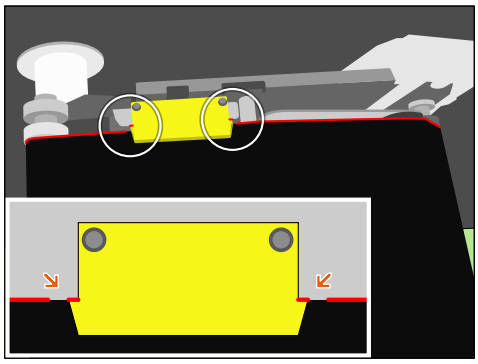
   IMPORTANT
   Do not hold the tension unit in the middle with one hand.

3. Put the Shuttle Roller (B) on the guiding plates (C), front and back side.
4. Slide the tension unit carefully into the master unit frame until you feel the tension of the belt.
5. Move the tension unit back and forth slightly to equalize the tension at the front and back side.
6. Push the red grips (D) down slightly. Slide the tension unit into the frame until the tension unit locks into the end position.

4. Rotate the OPC belt to eliminate any tension on the OPC belt.



1. To make sure that the roller cannot rotate, block the counter developing roller firmly with one hand (1).
2. While you hold the counter developing roller in the fixed position, slowly rotate the OPC belt counter-clockwise at least once. Use the large OPC cooling roller (2).
3. Align the OPC belt to the centre of the OPC unit.
   Rotate the OPC cooling roller clockwise or counter-clockwise to move the OPC belt to the back side or the front side. Make sure that the back side of the OPC belt is on the marked position of the yellow registration board (working area +/- 2 mm).



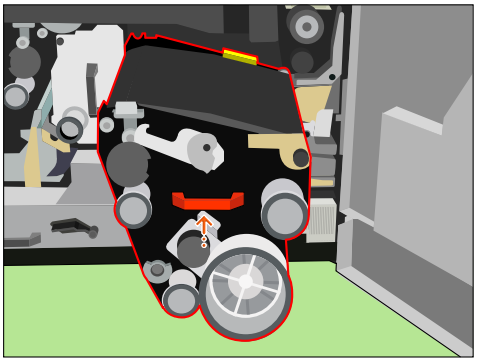
Lock the OPC unit (left)

Introduction

Follow the steps displayed on the operator panel.

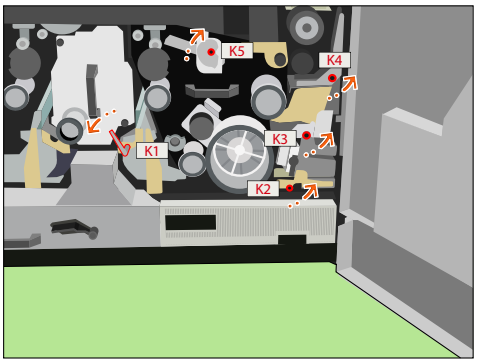
Procedure

1. Use the red handle to push the OPC unit inwards as far as possible.



[24] Move the OPC unit in

2. Use the service key to turn K5 clockwise into the locked position.
3. Use the service key to turn K4 counter-clockwise into the locked position.
4. Use the service key to turn K3 counter-clockwise into the locked position.
5. Use the service key to turn K2 counter-clockwise into the locked position.
6. Use the service key to turn K1 counter-clockwise into the locked position.

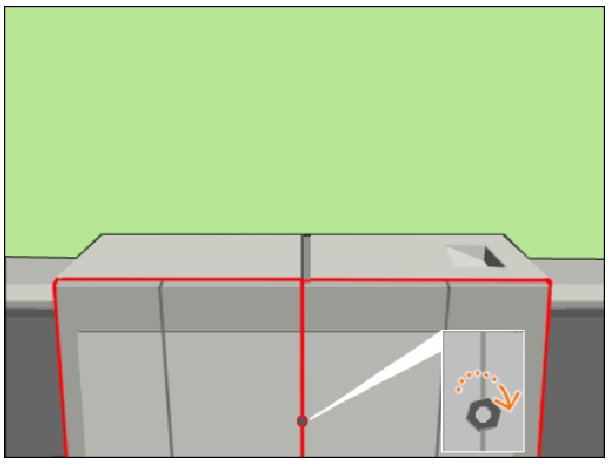


[25] Lock the OPC unit

Finish the procedure on the Operator panel

Procedure

1. Close the front doors.
2. Use socket wrench 10 to tighten the bolt of the front doors.



[26] Close the front doors

3. Close the lower door.
4. Touch [Finish].
5. Select [Yes] to confirm that you have installed a new OPC belt.
   You reset the lifetime counter of the OPC belt to 0.
6. After you replaced the OPC belt, you must adjust the OPC belt to optimize the print quality.
   See the *Adjust the OPC belt* on page 82 section.

NOTE
Always make test prints after you performed extended key operator maintenance. Check the image on both sides of the sheets before you start printing your jobs.

Adjust the OPC belt

Introduction

When you perform this adjustment, you calibrate a set of parameters in order to optimize the print quality.

When to do

Most important is that prints are free of background. Background is defined as unwanted dark stripes or dotted lines. The light output (exposure level) of the LED Printhead mainly determines the background. The light output must match the light sensitivity of the OPC belt.

Examples of background

[27] Extreme background

[28] Little or local background

[29] No background

When do you adjust the OPC belt?

- You must adjust the OPC belt after you replaced the OPC belt.
- You are advised to adjust the OPC belt after you cleaned the OPC belt.
- You are advised to adjust the OPC belt when you see background on prints.

Procedure

1. On the operator panel touch [Adjust the left-hand OPC belt] or [Adjust the right-hand OPC belt].

2. The system initializes and performs automatically several internal calibrations.
   These actions are displayed on the operator panel. The actions can take a couple of minutes, with a maximum of 12 minutes.
3. Select the paper tray.
   Preferably, select a tray with A4 or Letter.
4. Enter the light output.
   The entered value is a light output value (exposure level) for the test. The default value is 100. We advise to use the following values:
   - VarioPrint 6320 configuration: 160
   - All other VarioPrint 6000 configurations: 120

   NOTE
   You can touch the - and + buttons to change the values.
5. Touch [OK].
   The system prints 12 test prints.
6. The operator panel displays the question: [First background-free print available?]. Select [Yes] or [No].
   Look for the level of background on the prints. Look at the examples A, B and C to determine your answer.

Example	1 ----------> 12	Action
A	 All 12 prints show background.	1. Select [No], [OK] 2. Enter a new light output. The value must be higher. We advise to use the value of print 12. This is the 12th print. 3. The system prints 12 test prints again. 4. Look at the print again.
B	 No prints show background.	1. Select [No], [OK] 2. Enter a new light output. The value must be lower. We advise to use the value of print 1. This is the first print. 3. The system prints 12 test prints again. 4. Look at the print again.
C	 Only the first prints show background.	1. Select [Yes], [OK]. 2. Continue with the next step.

7. The operator panel displays the question: [Enter the number of the first background-free print].
   Enter the number of the first page which is completely free of background.
   Verify the whole print.

   NOTE
   You can touch the - and + buttons to change the values.
8. Touch [OK] and [Finish].
9. Touch [Stop] to leave the Extended Key operator maintenance menu.
   The system will turn on automatically.

NOTE
Always make test prints after you performed extended key operator maintenance. Check the image on both sides of the sheets before you start printing your jobs.

Troubleshooting

Introduction

When you perform one of the actions of the OPC maintenance, in some cases the system can generate an error code. This section gives an overview of known error codes and what to do.

Error code	Error description	Action
1514	OPC belt (right) not correctly positioned	Check the position of the OPC tension unit (right). Reposition of the OPC belt (right).
1515	OPC belt (right) out of position	Reposition of the OPC belt (right).
1554	OPC belt (left) not correctly positioned	Check the position of the OPC tension unit (left). Reposition of the OPC belt (left).
1555	OPC belt (left) out of position	Reposition of the OPC belt (left).

If the error remains after you performed the indicated actions, contact your service representative.

Chapter 5
Registration adjustment

Introduction

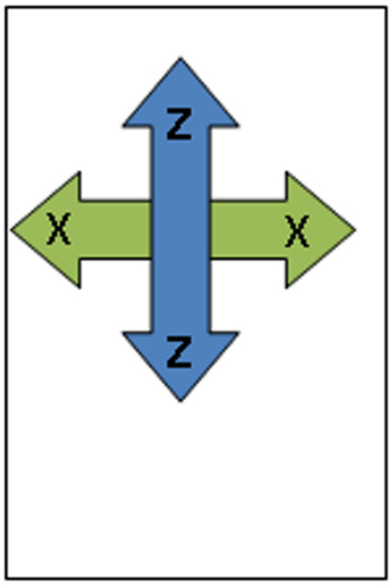
You adjust the image on the sheet with the [Registration adjustments]. You can also print a job to check the total image registration.

NOTE

- Perform the registration adjustments when
  - you replaced the TTF belt
  - you replaced the OPC belt
- You must perform the registration adjustments on standard media:
  - Size: A4 or Letter 8.5x11, A3 or Tabloid 11x17
  - Weight: 80 g/m², 20 lbs
  - Type: plain paper, white
- When you perform the registration adjustments of the Extended Key operator maintenance, the result of the adjustments is applicable to all prints on all media.
- You can also perform media registration per media. Operator panel / [Media catalog] / [Registration].
  The result of this media registration is applicable to the selected media.
  This media registration is not part of the Extended Key operator maintenance.
- The media specific registration adjustments do not influence the registration adjustments of the Extended key operator maintenance.

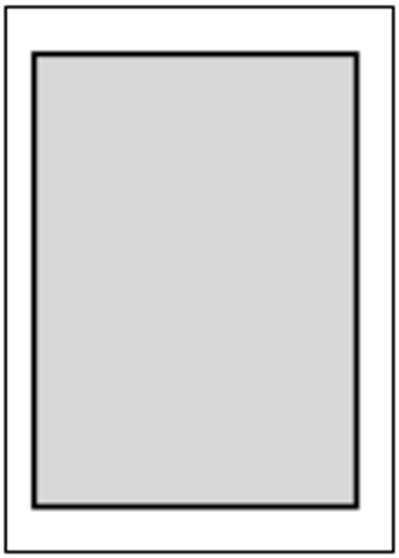
Definitions

- Primary and secondary image side
  - The primary image side is printed with the right-hand side process (OPC, TTF) of the Print Engine Module.
  - The secondary image side is printed with the left-hand side process (OPC, TTF) of the Print Engine Module.
- X-direction and Z-direction
  - X-direction is the transport direction of the paper (feed direction).
  - Z-direction is direction perpendicular to the transport direction of the paper (perpendicular to the feed direction).

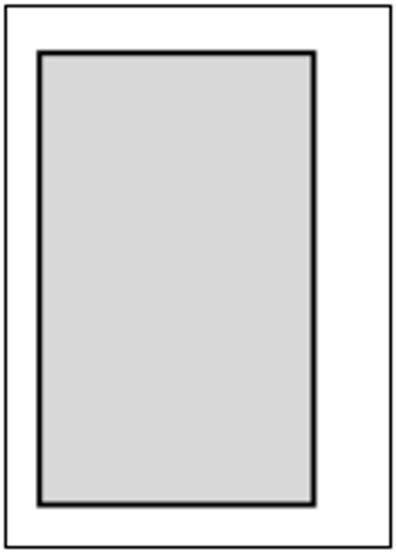


[30] A4 / Letter

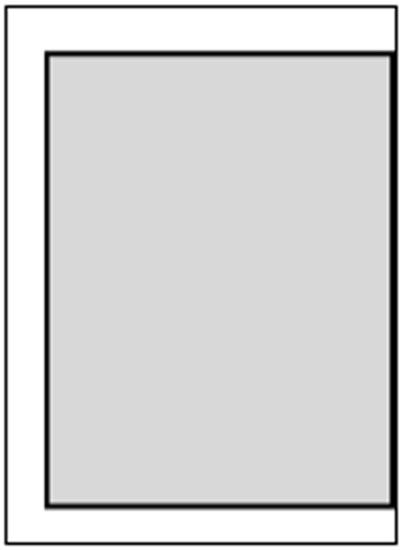
- Leading edge of the paper
  - The leading edge of the paper is indicated by an arrow on the registration test prints.
  - When sheets are delivered in the delivery tray of the stacker, the leading edge is the right-hand side of the stack.
  - When sheets are delivered in the upper output, the leading edge is the left-hand side of the stack. The upper output is the tray on the top cover of the Print Engine Module.
- X-length
  X-length is the length of the image in the transport direction of the paper (feed direction).



[31] X-length OK

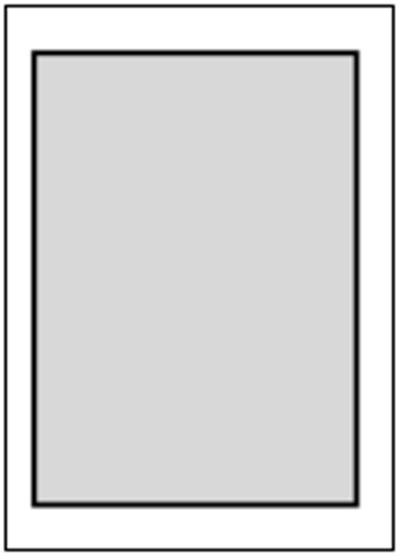


[32] X-length too small

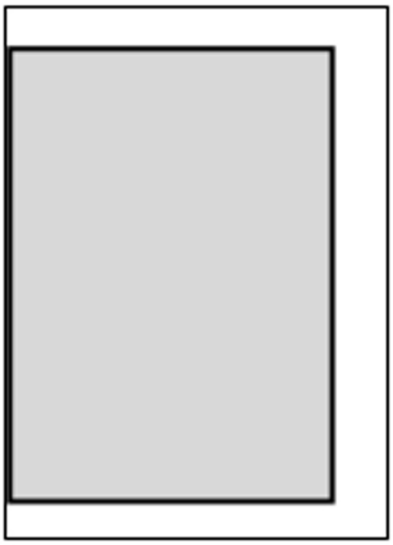


[33] X-length too large

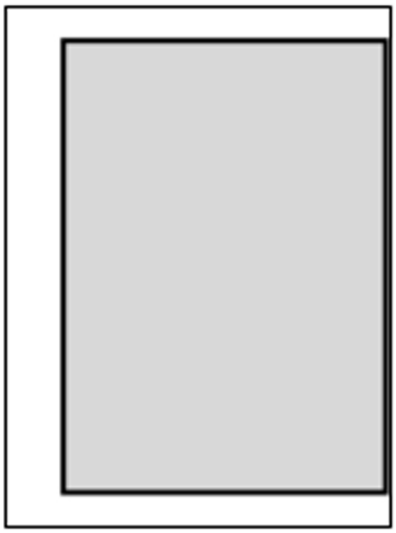
- X-position
  X-position is the position of the left upper corner of the image with respect to the leading edge of the paper.



[34] X-position OK

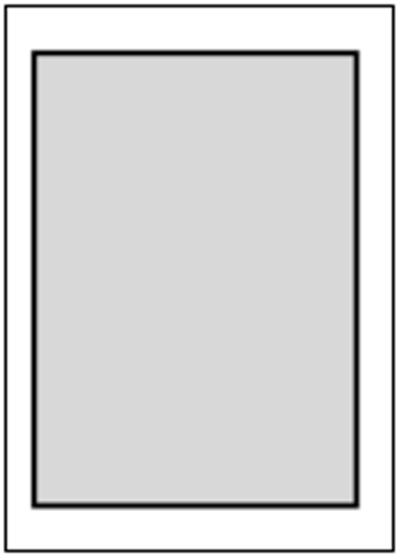


[35] X-position too small

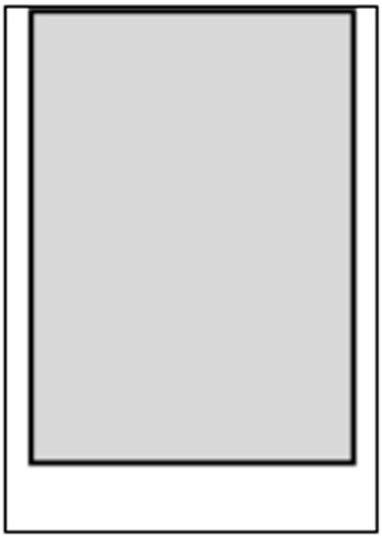


[36] X-position too large

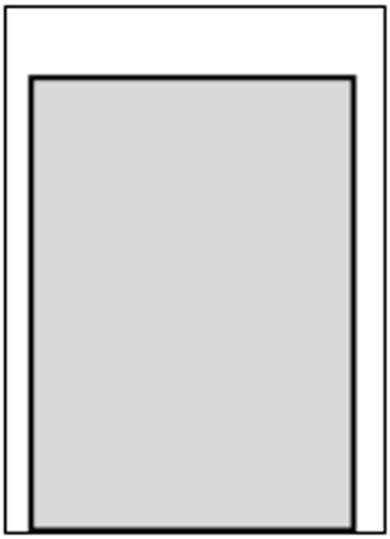
- Z-position
  Z-position is position of the left upper corner of the image with respect to the top edge of the paper.



[37] Z-position OK

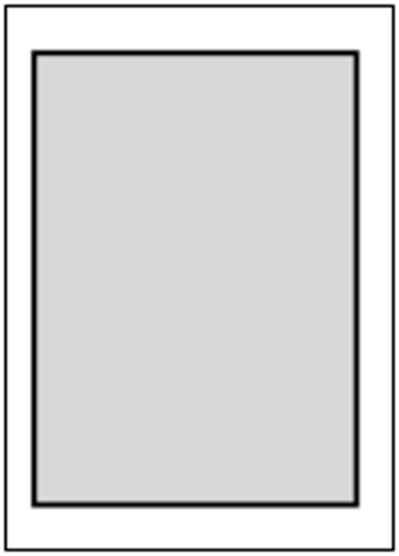


[38] Z-position too small

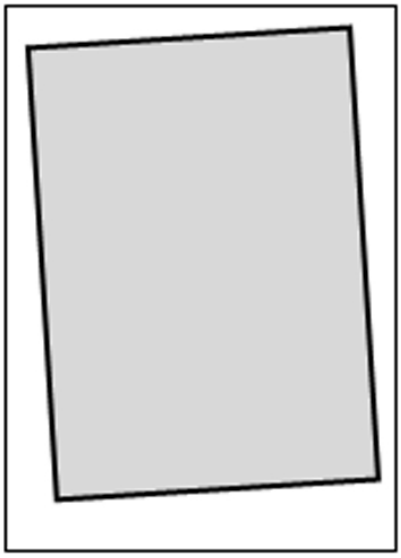


[39] Z-position too large

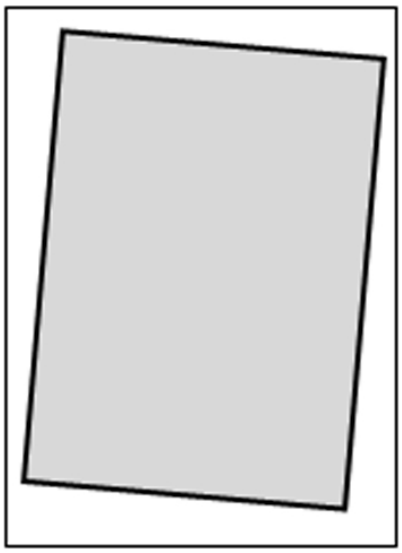
- Skew
  Skew means that the image is rotated to the leading edge of the paper.



[40] Skew OK



[41] Skew not OK



[42] Skew not OK

Check the image registration

Introduction

When you perform the check of the image registration, the system prints 2-sided test prints with a special image. These images enable you to check the image registration on both sides.

NOTE
Make sure the front door is closed.

Procedure

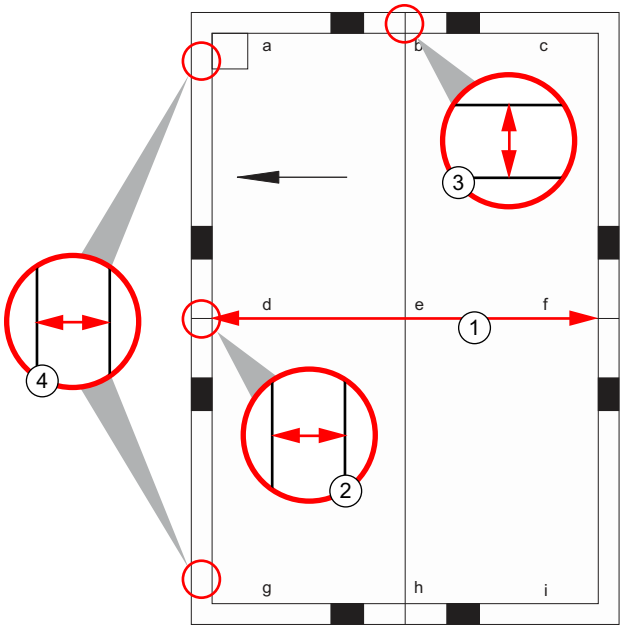
1. On the operator panel touch [0. Check the image registration].
2. Enter the number of prints.
   Enter 8 if you want four 2-sided sheets. If you enter 7, you get four sheets: three 2-sided sheets and one 1-sided sheet.

   NOTE
   You can touch the - and + buttons to change the values.
3. Select the paper: A4, Letter 8.5x11, A3 or Tabloid 11x17.

   NOTE
   You must use standard media for this test. The test does not start if you use other media.
   - Weight: 80 g/m², 20 lbs
   - Type: plain paper, white
4. Touch [OK].
   The system prints the entered number of test prints.
5. Check the image registration prints according to the table below to determine what you must adjust.
   Use the printed ruler (see *Print the ruler* on page 99) to measure the prints.

	Paper size	Image side	Measurement	Target (mm)
X-length (1)	A4 / Letter	Primary	d - f	190 for A4 196 for Letter
		Secondary	d - f	190 for A4 196 for Letter
	A3 / Tabloid	Primary	D - E	190 for A3 196 for Tabloid
			E - F	210 for A3 216 for Tabloid
		Secondary	L - M	190 for A3 196 for Tabloid
			M - N	210 for A3 216 for Tabloid
X-position (2)	A4 / Letter	Primary	d to leading edge	10
		Secondary	f to leading edge	10
	A3 / Tabloid	Primary	D to leading edge	10
		Secondary	N to leading edge	10

	Paper size	Image side	Measurement	Target (mm)
Z-position (3)	A4 / Letter	Primary	b to top edge	10
		Secondary	b to top edge	10
	A3 / Tabloid	Primary	B to top edge	10
		Secondary	K to top edge	10
Skew (4)	All	All	First vertical line parallel to the leading edge	0



The numbers correspond with the table above.

Adjust the X and Z-position of the framing unit

Introduction

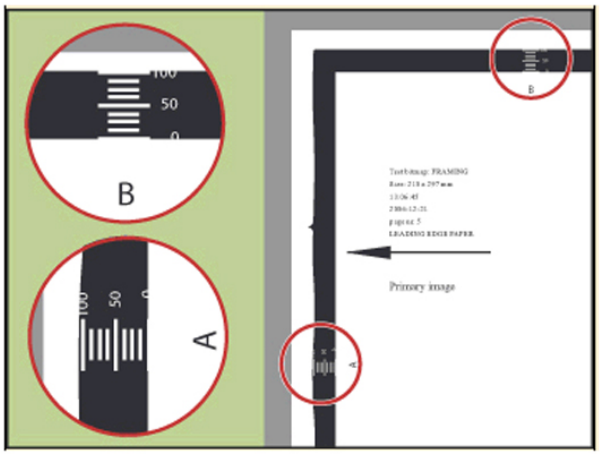
When you perform this adjustment, you adjust the framing unit with respect to the paper in X and Z direction.

Procedure

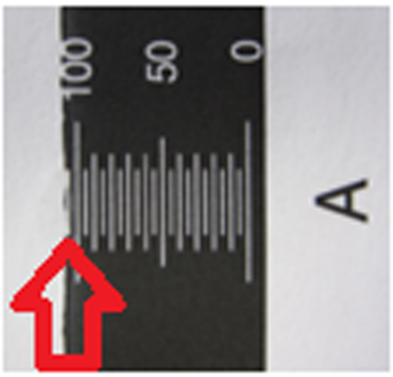
1. On the operator panel touch [1. Adjust X- and Z-position of the framing unit].
2. Select the paper: A4, Letter 8.5x11, A3 or Tabloid 11x17.

   NOTE
   You must use standard media for this test. The test does not start if you use other media.
   - Weight: 80 g/m², 20 lbs
   - Type: plain paper, white

3. Touch [OK].
   The system prints three 2-sided prints.
4. Primary side of the framing unit.



1. Enter value A (X-position) of the first sheet.
   See the example below.



[43] Value is 105

NOTE
You can touch the - and + buttons to change the values.

2. Touch [OK].
3. Enter value B (Z-position) of the first sheet.
   See the example below.

[44] Value is 100

NOTE
You can touch the - and + buttons to change the values.

4. Repeat steps 1.- 3. for sheet 2 and sheet 3.

5. Secondary side of the framing unit.
Perform the actions of step 4 for the secondary side.

Print the ruler

Introduction

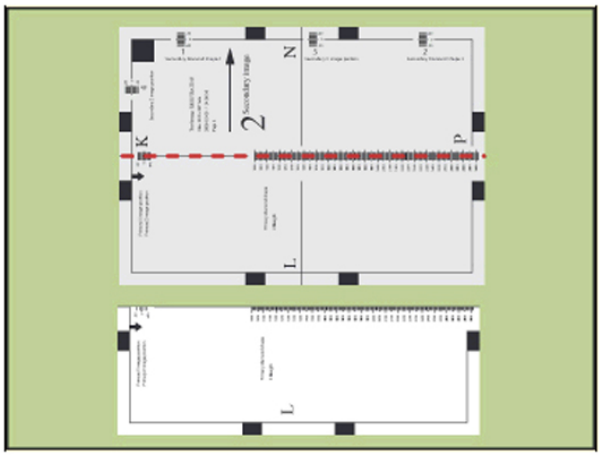
The system prints a measuring tool, called the ruler. Use the ruler to measure specific distances on the image registration prints.

Procedure

1. On the operator panel touch [2. Print the ruler].
2. Select the paper: A4, Letter 8.5x11, A3 or Tabloid 11x17.

   NOTE
   You must use standard media for this test. The test does not start if you use other media.
   - Weight: 80 g/m², 20 lbs
   - Type: plain paper, white

3. Touch [OK].
   The system prints one 2-sided print.
4. Fold the sheet along the line 'K-P' on the secondary side (2).



Adjust the X-length

Introduction

When you perform this adjustment, you adjust the image length in X-direction on both sides of the print.

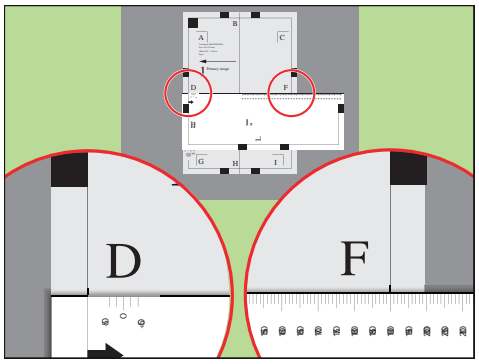
Use the printed ruler (see *Print the ruler* on page 99) for correct measurement.

Procedure

1. On the operator panel touch [3. X length adjustment].
2. Select the paper: A4, Letter 8.5x11, A3 or Tabloid 11x17.

   NOTE
   You must use standard media for this test. The test does not start if you use other media.
   - Weight: 80 g/m², 20 lbs
   - Type: plain paper, white

3. Touch [OK].
   The system prints three 2-sided prints.
4. **Adjustment for A4 or Letter media**
   Adjustment for A3 or Tabloid media is described in step 7 - 9.
5. X-length on the primary side.

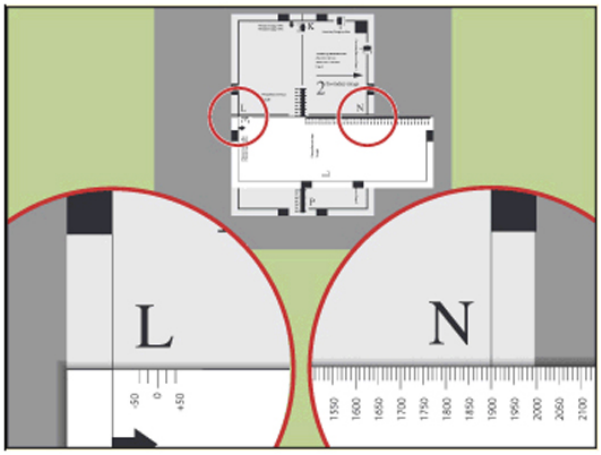


1. Put the ruler on the first sheet along the line D-F.
2. Enter the value of the ruler at F.

   NOTE
   You can touch the - and + buttons to change the values.

3. Touch [OK].
4. Repeat steps 1. - 3. for sheet 2 and sheet 3.

6. X-length on the secondary side.

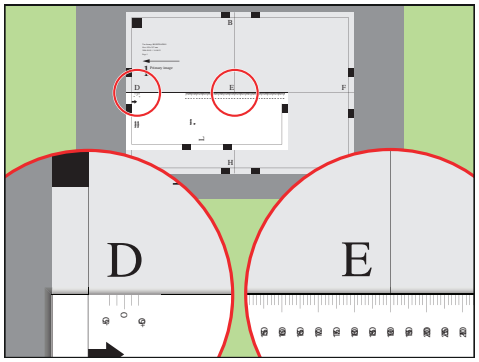


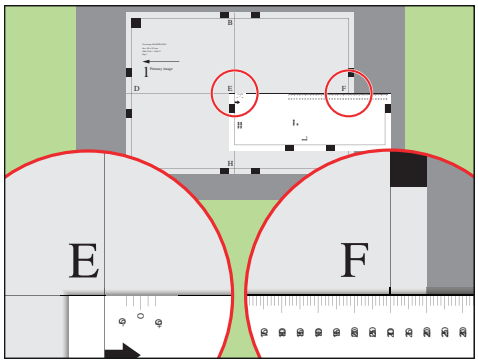
1. Put the ruler on the first sheet along the line L-N.
2. Enter the value of the ruler at N.

NOTE
You can touch the - and + buttons to change the values.

3. Touch [OK].
4. Repeat steps 1. - 3. for sheet 2 and sheet 3.

7. **Adjustment for A3 or Tabloid media**
8. X-length on the primary side.





1. Put the ruler on the first sheet along the line D-E.

2. Enter the value of the ruler at E.

   NOTE
   You can touch the - and + buttons to change the values.

3. Touch [OK].
4. Put the ruler on the first sheet along the line E-F.
5. Enter the value of the ruler at F.
6. Touch [OK].
7. Repeat steps 1. - 6. for sheet 2 and sheet 3.

9. X-length on the secondary side.
   1. Put the ruler on the first sheet along the line L-M.
   2. Enter the value of the ruler at M.

      NOTE
      You can touch the - and + buttons to change the values.

   3. Touch [OK].
   4. Put the ruler on the first sheet along the line M-N.
   5. Enter the value of the ruler at N.
   6. Touch [OK].
   7. Repeat steps 1. - 6. for sheet 2 and sheet 3.

Adjust the skew

Introduction

When you perform this adjustment, you adjust the skew of the sheet for both sides of the print.

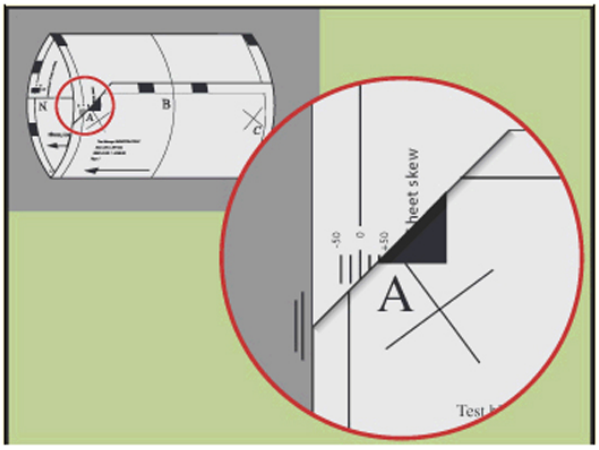
NOTE
You measure the skew of the sheet only on the primary side. The secondary side must be parallel to the primary side. If the secondary side is not parallel to the primary side, contact your local service representative.

Procedure

1. On the operator panel touch [4. Sheet skew adjustment].
2. Select the paper: A4, Letter 8.5x11, A3 or Tabloid 11x17.

   NOTE
   You must use standard media for this test. The test does not start if you use other media.
   - Weight: 80 g/m², 20 lbs
   - Type: plain paper, white

3. Touch [OK].
   The system prints three 2-sided prints.
4. **Adjustment for A4 or Letter media**
   Adjustment for A3 or Tabloid media is described in step 5.

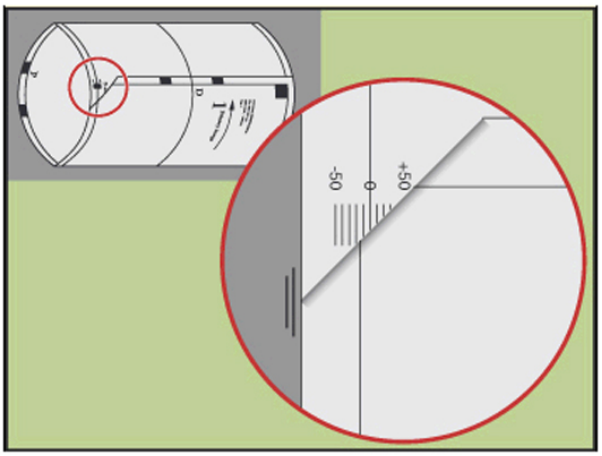


1. Make a "dog ear" fold on the upper left corner (A) of the sheet.
   Sheet orientation is portrait.
2. Bend the sheet as shown.
   You must align the leading edges exactly.
3. Enter the value on the small ruler "3 Sheet skew".

   NOTE
   You can touch the - and + buttons to change the values.

4. Touch [OK].
5. Repeat steps 1. - 4. for sheet 2 and sheet 3.

5. Adjustment for A3 or Tabloid media



1. Make a "dog ear" fold on the lower left corner (A) of the sheet.
   Sheet orientation is landscape.
2. Bend the sheet as shown.
   You must align the leading edges exactly.
3. Enter the value on the small ruler "3 Sheet skew".

   NOTE
   You can touch the - and + buttons to change the values.

4. Touch [OK].
5. Repeat steps 1. - 4. for sheet 2 and sheet 3.

Adjust the Z-sheet position

Introduction

When you perform this adjustment you adjust the position of the image in Z-direction on both sides of the print.

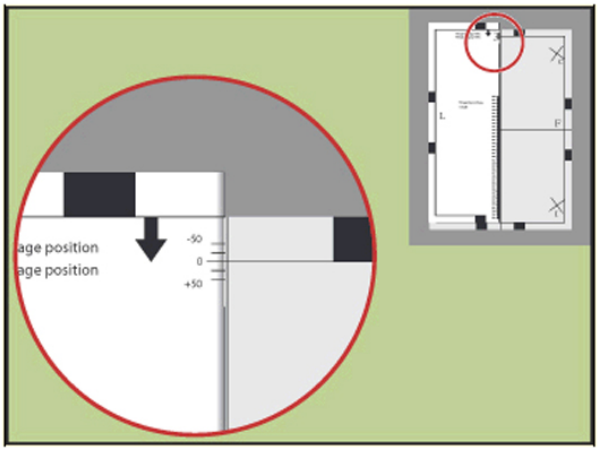
Use the printed ruler (see *Print the ruler* on page 99) for correct measurement.

Procedure

1. On the operator panel touch [5. Z sheet position adjustment].
2. Select the paper: A4, Letter 8.5x11, A3 or Tabloid 11x17.

   NOTE
   You must use standard media for this test. The test does not start if you use other media.
   - Weight: 80 g/m², 20 lbs
   - Type: plain paper, white

3. Touch [OK].
   The system prints three 2-sided prints.
4. **Adjustment for A4 or Letter media**
   Adjustment for A3 or Tabloid media is described in step 7 - 8.
5. Z-position on the primary side.

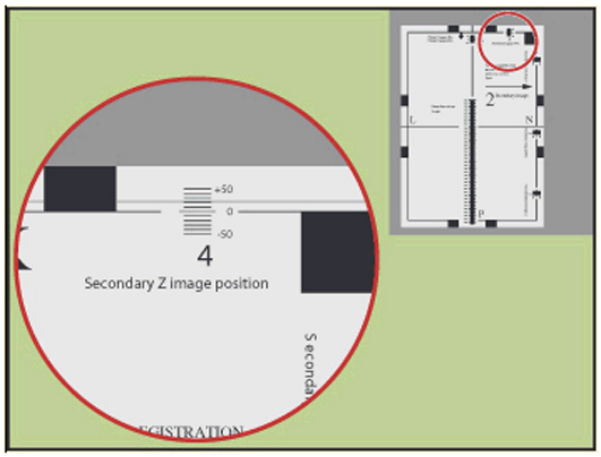


1. Put the ruler on the first sheet as displayed.
2. Measure the distance between the top edge and B.
3. Enter the measured value.

   NOTE
   You can touch the - and + buttons to change the values.

4. Touch [OK].
5. Repeat steps 1. - 4. for sheet 2 and sheet 3.

6. Z-position on the secondary side.

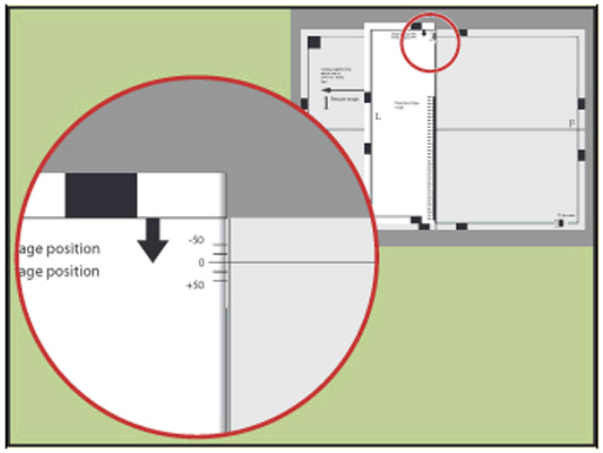


1. Hold the sheet with the primary side towards the light.
2. Look through the sheet at the ruler at '4 Secondary Z image position'.
3. Enter the value that is nearest to the line on the primary side.

NOTE
You can touch the - and + buttons to change the values.

4. Touch [OK].
5. Repeat steps 1. - 4. for sheet 2 and sheet 3.

7. **Adjustment for A3 or Tabloid media**
8. Z-position on the primary side.



1. Put the ruler on the first sheet as displayed.
2. Measure the distance between the top edge and B.
3. Enter the measured value.

NOTE
You can touch the - and + buttons to change the values.

4. Touch [OK].
5. Repeat steps 1. - 4. for sheet 2 and sheet 3.

Adjust the X-image position

Introduction

When you perform this adjustment you adjust the position of the image in X-direction on both sides of the print.

Use the printed ruler (see *Print the ruler* on page 99) for correct measurement.

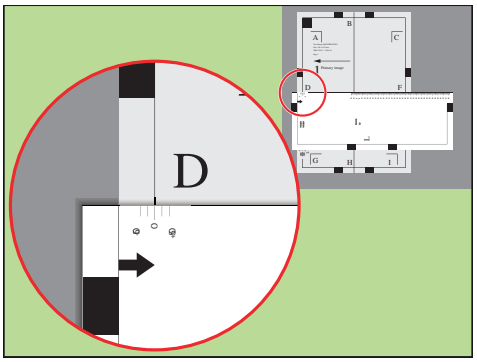
NOTE
You can adjust the X-image position only for A4 or Letter media. The adjustment is applicable to all media sizes.

Procedure

1. On the operator panel touch [6. X image position adjustment].
2. Select the paper: A4 or Letter 8.5x11.

   NOTE
   You must use standard media for this test. The test does not start if you use other media.
   - Weight: 80 g/m², 20 lbs
   - Type: plain paper, white

3. Touch [OK].
   The system prints three 2-sided prints.
4. X-position on the primary side.

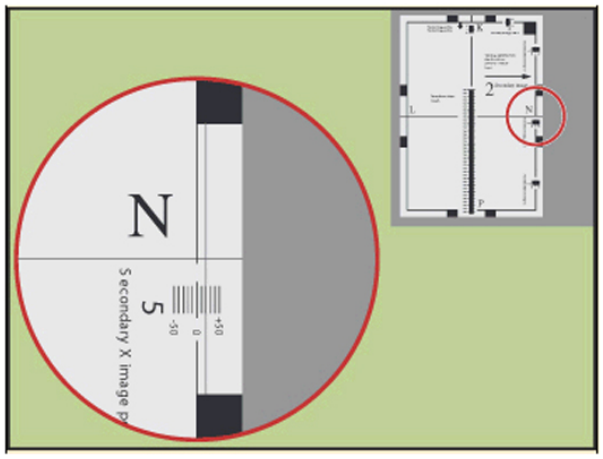


1. Put the ruler on the first sheet as displayed.
2. Measure the distance between the leading edge and D.
3. Enter the measured value.

   NOTE
   You can touch the - and + buttons to change the values.

4. Touch [OK].
5. Repeat steps 1. - 4. for sheet 2 and sheet 3.

5. X-position on the secondary side.



1. Hold the sheet with the primary side towards the light.
2. Look through the sheet at the ruler at '5 Secondary X image position'.
3. Enter the value that is nearest to the line on the primary side.

   NOTE
   You can touch the - and + buttons to change the values.

4. Touch [OK].
5. Repeat steps 1. - 4. for sheet 2 and sheet 3.

Chapter 6
Optional light-weight media module

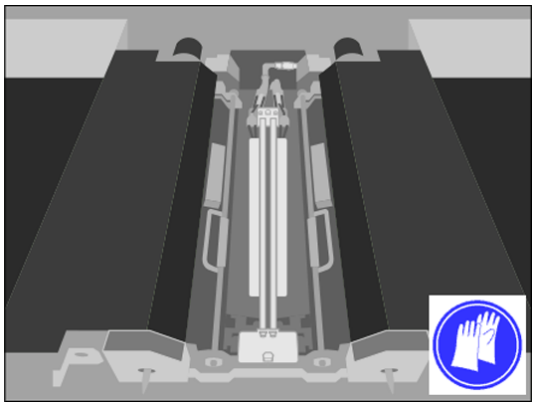
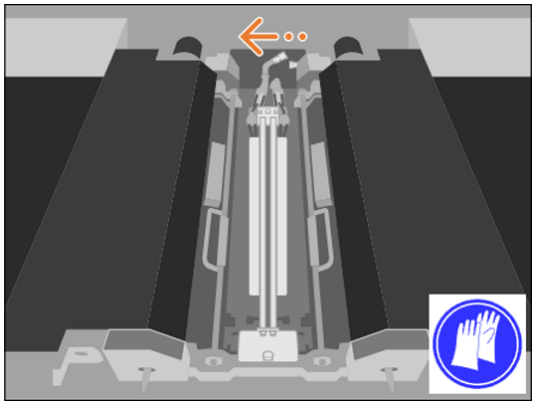
Remove the air guidance unit

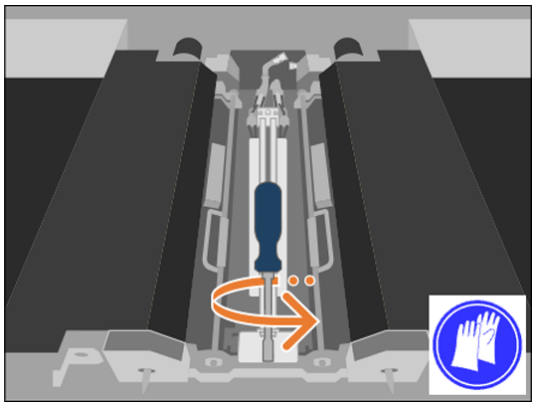
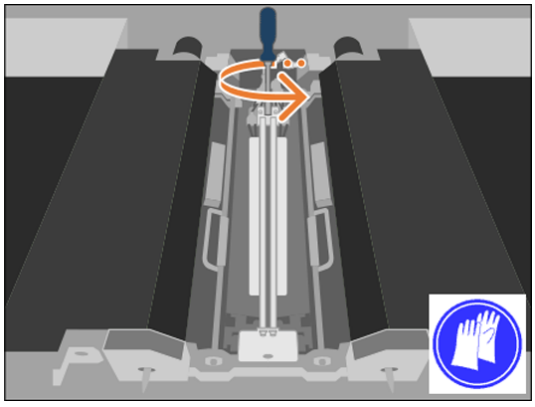
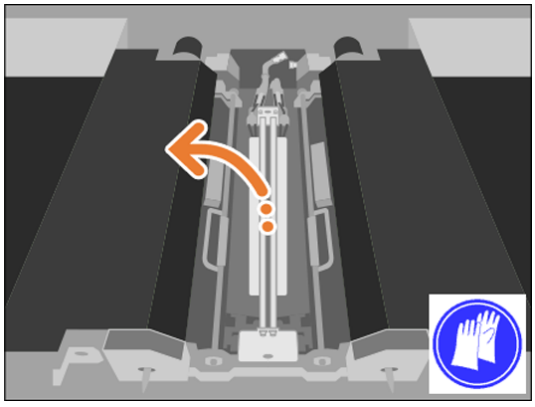
Introduction

This procedure is only intended for key operators who received the special maintenance training.

When to do

Use this procedure to remove the air guidance unit to access the TTF, for example when you need to remove sheets in the TTF.

	Action	
	CAUTION **The TTF area can be hot.**	
1	[Disconnect the connector of the air supply hose from the air guidance unit.]	

	Action	
2	[Unscrew the two bolts that attach the unit to the machine.] One bolt at the front side and one bolt at the rear side.	 
3	[Lift the air guidance unit and put it aside on a safe place.]	

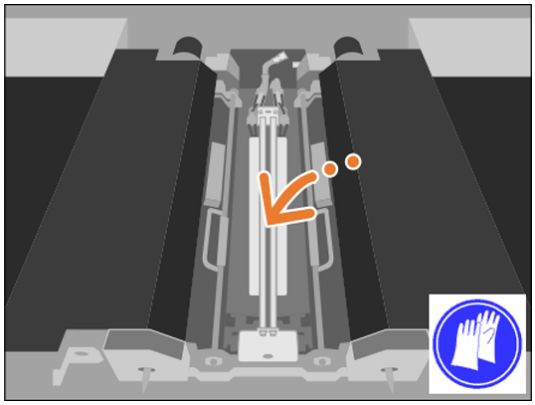
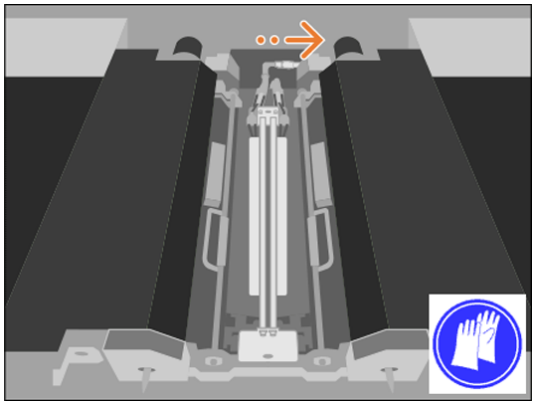
Install the air guidance unit

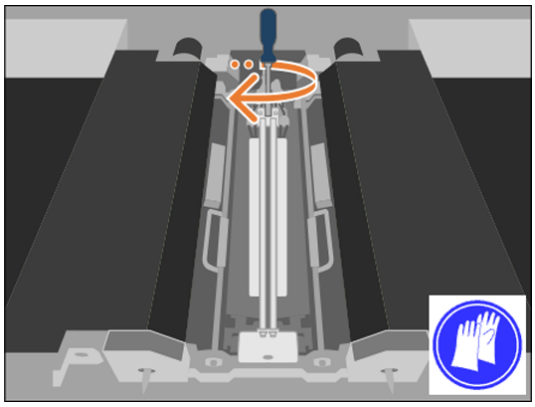
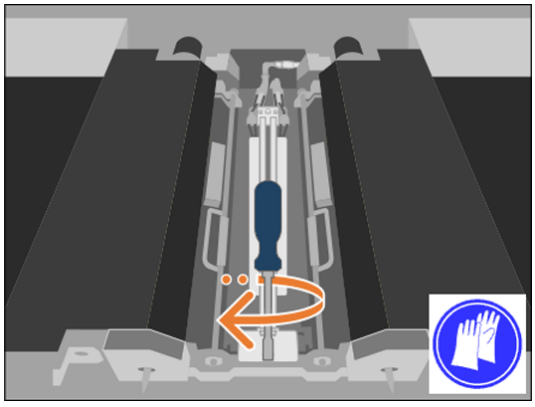
Introduction

This procedure is only intended for key operators who received the special maintenance training.

When to do

After you performed a maintenance action in the TTF area, you must install the air guidance unit again.

	Action	
	CAUTION **The TTF area can be hot.**	
1	[Take and place back the air guidance unit.]	
2	[Connect the connector of the air supply hose to the air guidance unit.]	

	Action	
3	[Screw the two bolts to attach the air guidance unit to the machine.] One bolt at the rear side and one bolt at the front side.	 

Adjust the LWM air guidance unit with respect to the TTF belts

Introduction

This procedure is only intended for key operators who received the special maintenance training.

Before you begin

Make sure that the air guides are pushed together as much as possible before you installed the air guidance unit.

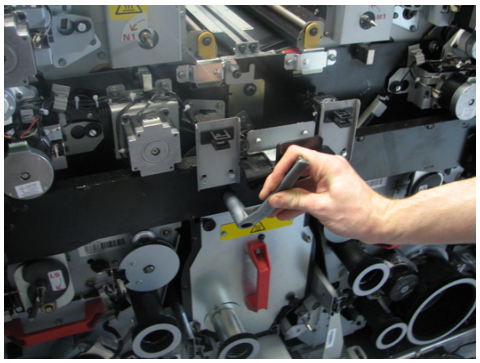
When to do

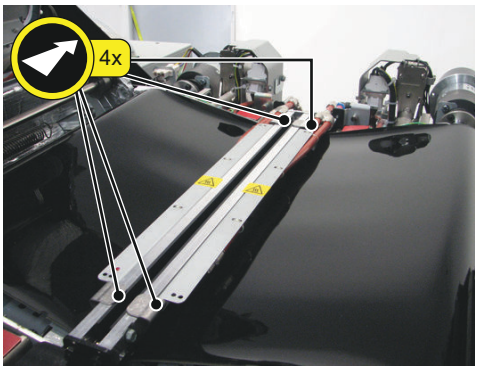
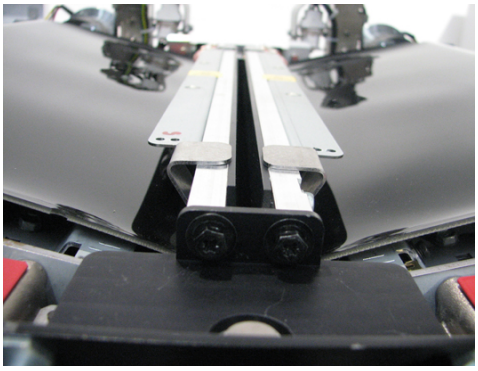
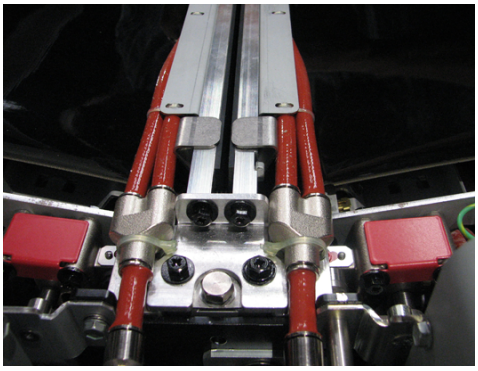
You must do this adjustment after you installed a new TTF belt.

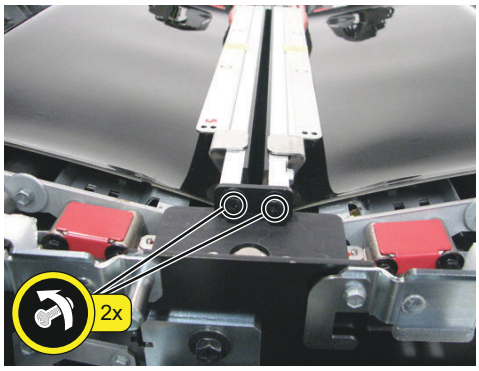
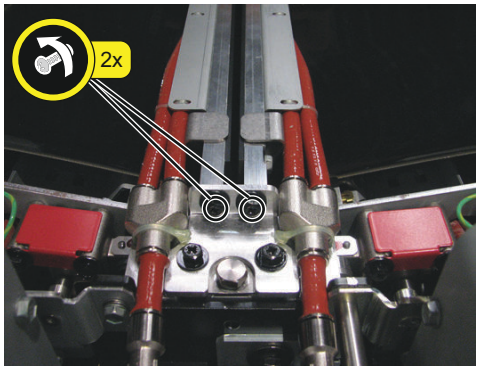
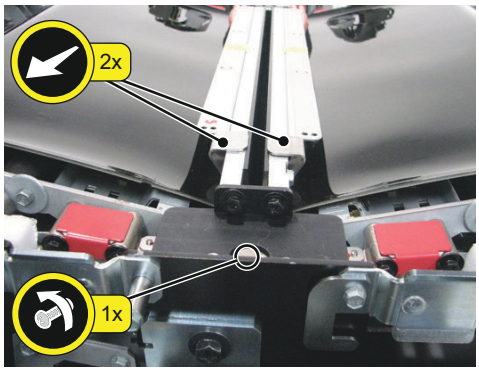
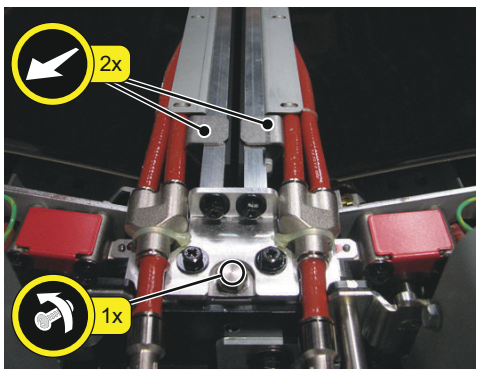
Required Tools

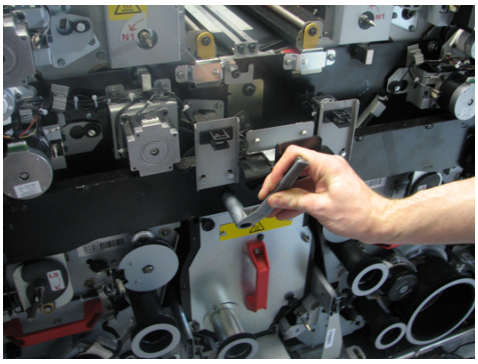
- D-wrench
- Socket wrench 7, 10
- 4 adjustment gauges, delivered with the LWM kit.

Procedure

	Action	Information
1	Use the D-wrench to close the transfuse pinch.	

	Action	Information
2	Position the 4 gauges at the front and rear side of the air guidance unit. NOTE Make sure not to damage the TTF belts.	  [45] Front side 

	Action	Information
3	• Loosen 2 screws at the front side and 2 screws at the rear side. • The spring pressure will move the air guides towards the gauges. In this way the unit will adjust itself.	 [46] Front side  [47] Rear side
4	• Fasten the 4 screws again.	
5	• Loosen the indicated screws at the front side and the rear side. • Remove the 4 gauges.	 [48] Front side  [49] Rear side
6	• Fasten the screws again.	

	Action	Information
7	Use the D-wrench to open the transfuse pinch.	

Chapter 7
Required tools

You need the following tools for extended key operator maintenance. Your service representative provides the tools.

Tool	Part number
Socket wrench 10 mm	1060040168 (provided with the machine)
Service key	2933932 (provided with the machine)
Cleaning pads	1060045592
Cleaner K	1060122188
Cleaner P	1060077688
Cleaner T	1060122187
Cleaner J	1070012177
Nitrile gloves	3012002270
Heat-resistant gloves	1060045590 (provided with the machine)
Cotton gloves	7203289
Lens cleaning tool	1989414 (provided with the machine)
Scale, loupe 10X	7991471
Vacuum cleaner	1060098470

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