

EPSON

**EVO TRE 32-180
EVO TRE 16-180
Maintenance Guide**

Notes

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1. Before Starting Maintenance Work



To use the machine safely, please read the user's manual for this machine carefully before using the machine. Failure to comply with the user's manual may cause malfunctions or accidents. Store the user's manual of this machine in a location where it can be easily referred to whenever you have a question.

1.1. Meaning of Symbols

The following warning symbols are used in this manual and on this machine to indicate hazardous operations, to ensure that this machine is used safely and correctly in order to prevent injury to the user and other persons and damage to property.



Please carefully read and understand these warnings before using this machine.

1.1.1 Symbols in This Manual

 WARNING	This symbol indicates that incorrect operation could result in death or serious injury.
 CAUTION	This symbol indicates that incorrect operation could result in injury and/or damage to property.

















				
Indicates actions that must not be taken (prohibited actions).	Indicates actions that must be taken and/or instructions that must be followed.	Do not disassemble	Do not touch	No flames
				
Eye protection must be worn	Protective gloves must be worn	Protective clothing must be worn	Respiratory protection must be worn	Hair net required

1.1.2 User Permissions

	<p>This symbol indicates user permissions for general users who have been trained in the operation of the machine, to perform machine normal operation, cleaning, and simple maintenance procedures while protective devices are engaged and using the button panel.</p>
	<p>This symbol indicates user permissions for general users who have been officially trained in the operation of this machine, to perform some functions and maintenance procedures that are allowed in addition to all of the functions for L.</p>

1.1.3 Symbols on This Machine

Do not remove the caution labels that are attached to this machine. If a caution label becomes illegible or is removed, contact your dealer or Epson Support for a replacement label.

				
<p>CAUTION: Risk of electric shock</p>	<p>CAUTION: High temperature</p>	<p>Do not touch</p>	<p>CAUTION: Risk of pinching or crushing fingers</p>	<p>CAUTION: Risk of hand injury</p>
				
<p>CAUTION: Risk of becoming pulled into machine</p>	<p>CAUTION: Risk of becoming caught between parts</p>		<p>Do not operate without guard</p>	
				
<p>CAUTION: Risk of damage, falling, or injury due to breakage</p>	<p>No pacemakers</p>	<p>CAUTION: Strong magnetic field</p>	<p>CAUTION: Watch your head</p>	<p>Connect an earth terminal to the ground</p>
				
<p>USB</p>				

1.1.4 Caution Labels

Labels are affixed to the machine to draw attention to dangerous locations.

Main electric box

It will look like either of the following.



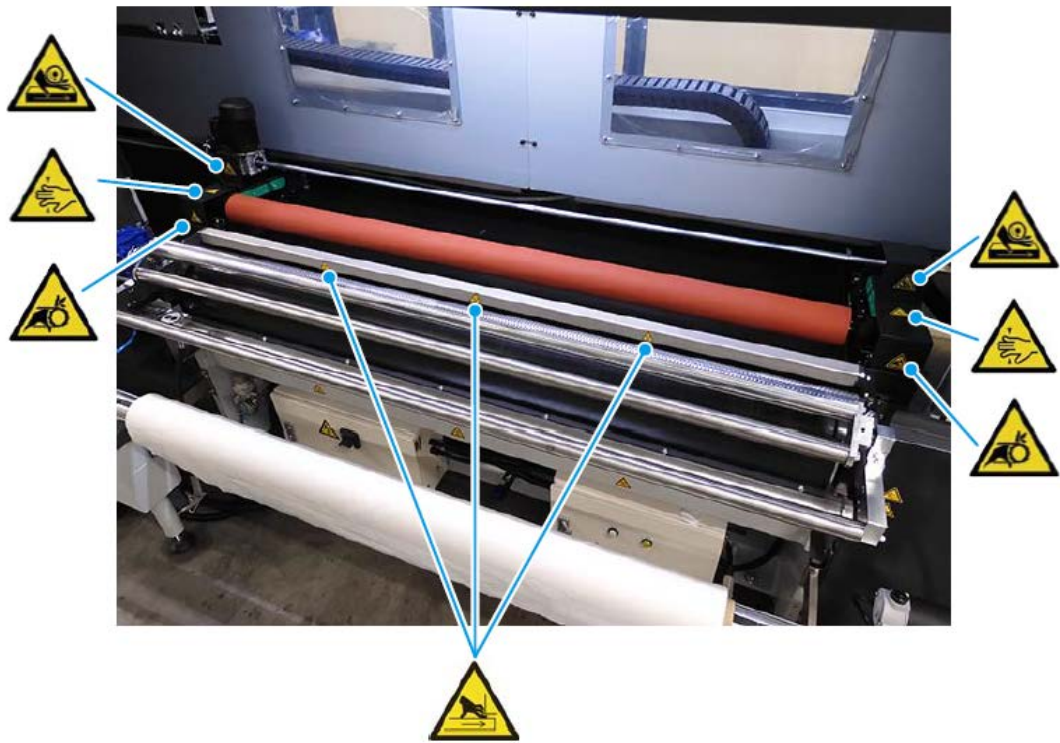
When opening the front protection cover



Print head



When opening the rear protection cover



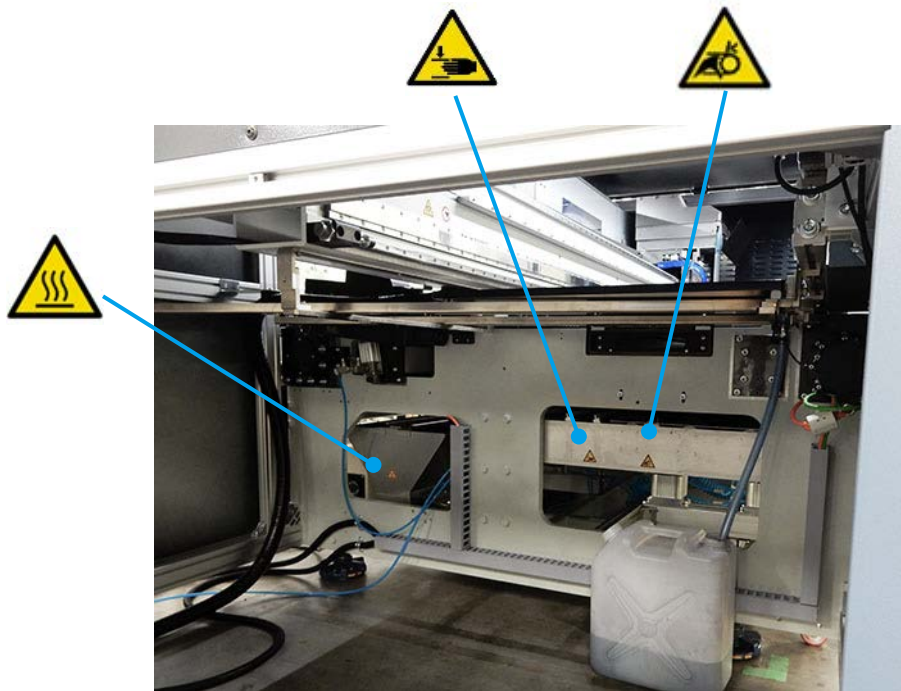
Ink rack



Left side of the Sub-tank rack





















Inside of the Ink tank housing







1.2. Safety Information







1.2.1 Safety Information for Maintenance Work

 WARNING	
    	<p>Do not operate this machine or the computer while maintenance is being performed.</p> <p>When performing maintenance work in a location that is out of sight of the control PC operator, make sure that only the person performing maintenance work and no one else is able to operate the control PC.</p> <p>Doing so leads to the risk of your hand or other parts of your body becoming caught in the machine.</p>
 	<p>Do not operate this machine if you have a pacemaker.</p> <p>The electromagnetic waves that are generated by this machine can affect the operation of pacemakers.</p>
 	<p>This machine generates a strong magnetic field. Do not use precision equipment such as watches and mobile phones nearby.</p> <p>Precision equipment could malfunction or become damaged by the strong magnetic field.</p>







 CAUTION	
   	<p>During maintenance work, wear all the protective equipment described in "Personal Protective Equipment" (eye protection, protective gloves, respiratory protection, etc.) in each section below. Long hair should be tied back and worn under a hair net.</p> <ul style="list-style-type: none"> • Use protective equipment compliant with the safety regulations. • Using additional protective equipment compliant with the safety regulations is recommended when necessary.
 	<p>Do not allow any person on the machine while working. Note that the machine is not designed to support the weight and can be easily damaged. When performing maintenance to parts on the upper part of the machine, use a tool, such as a step stool, appropriate for the work.</p> <p>Failure to do so could lead to injury or damage to the machine.</p>
	<p>Make sure that all maintenance work is performed at room temperature.</p>

1.2.2 Safety Information in Handling Consumables (Ink, Maintenance Liquid) and Waste Ink









 WARNING	
	<p>If fluid gets on your skin or enters your eyes or mouth, take the measures below.</p> <ul style="list-style-type: none"> • If fluid gets on your skin, rinse immediately with soap and water. • If the liquid enters your eyes, rinse immediately with water. Failure to observe this precaution could result in bloodshot eyes or mild inflammation. If problems persist, consult with a physician. • If the liquid enters your mouth, consult a physician immediately.
	<p>Do not disassemble or remodel the cartridge.</p> <p>Otherwise, the ink and/or cleaning liquid could get in your eyes or come in contact with your skin.</p>
	<p>Keep ink cartridges, maintenance liquid, cleaning liquid, scan spindle grease, waste ink, glue, remover, and ink film remover out of the reach of children.</p>

 CAUTION	
	<div style="display: flex; align-items: center;"> <div style="margin-right: 10px;">   </div> <div> <p>Be sure to wear eye protection and respiratory protection when applying or removing glue or removing ink film.</p> </div> </div>
	<div style="display: flex; align-items: center;"> <div style="margin-right: 10px;">  </div> <div> <p>Be sure to wear protective gloves when using maintenance liquid.</p> </div> </div>

1.2.3 Safety Precautions

	When maintenance work is completed, immediately return the protective equipment to its original location.
	Make sure that no tools or parts used in maintenance work, or other foreign materials are left on the operating parts of the machine or inside the machine.
	During maintenance, do not use sharpening stones, abrasive/corrosive materials, or solvents (excluding glue and ink film remover). Doing so may erase numbers, codes or characters indicated on the machine.
	Do not expose the electrical and electronic devices, and motors to liquid.
	Do not touch the micro switches on the alarm or on the front/rear protection cover.
	Use the products properly according to the "Safety Data Sheet" for each product.

1.3. Wearing of Personal Protective Equipment

 CAUTION		
	  	<p>Be sure to wear personal protective equipment (protective gloves and clothing) during maintenance work on this machine.</p> <p>Long hair should be tied back and worn under a hair net.</p> <p>Otherwise, your hands and clothing could become stained with ink, and your fingers and hair could become caught in the machine.</p>
		<p>Be sure to wear eye protection during maintenance work on areas near the ink path, including cleaning of the area around the head, caps, and wipers, and head replacement.</p> <p>Failure to do so could cause ink to splash into the eyes.</p>
	 	<p>Be sure to wear eye protection and respiratory protection when applying or removing glue or removing ink film.</p>

1.4. Checks Before Maintenance Work

Do not place tools, fasteners, or the like on the belt or near the pressure roller or print head. Doing so could cause them to be entangled in the belt, pressure roller, or print head, damaging this machine. Before turning the power on, check that there is nothing left near the moving parts, such as on the belt or near the print head.

Front

1. Open the front protection cover of this machine.
2. Check that there are no tools, fasteners, or the like left on the belt or near the carriage or print head.



3. Close the front protection cover.

Rear

1. Open the rear protection cover of this machine.
2. Check that there are no tools, fasteners, or the like left near the belt or the pressure roller.



3. Close the rear protection cover.

1.5. Machine Status During Maintenance Work

To ensure that maintenance work is done safely, for step 1 of each procedure, check that the machine is in the indicated status.

The following explains each status and the procedure to put the machine in that status.


1.5.1 Power Off Status

The machine's main power switch is in 0 (OFF) and the power is off.

Work which involves touching or entering the machine's operating parts is done in this status.

If the machine's power is on, turn the power off using the following procedure.

1. Press the emergency stop button.
2. Close the Leonardo screen and shut down the PC.
3. Turn the main power switch to 0 (OFF) to turn the power off.

	When performing maintenance after finishing a day's printing work, refer to "Workflow When Turning Off the Power" in the "Operation Guide".
---	---

1.5.2 Printing Standby Status


The machine's power is on, Leonardo has been started, and printing is possible.

Green on the tower lamp is lit up.

Operations performed after moving the machine's operating parts (head carriage, etc.) are started from this status.




If the machine is not in the Printing Standby Status, perform the following procedure.

- If the machine's power is off:
 - Turn on the power and then execute Set point. Refer to "Workflow before Beginning Work" in the "Operation Guide" for details.
- If the machine's power is on but it is not in Printing Standby Status:
 - Execute Set point using the following procedure.
 1. Check the area around the operating parts.
 2. Check that the protective covers on the front and rear sides are closed.
 3. Release all emergency stop buttons for this machine and any linked devices (if they have been pressed).
 4. On the Leonardo operation screen, click [Setpoint] and then press the reset button on the main electric panel.

	If an error message is output and you cannot perform Set point, refer to "Troubleshooting" in the "Operation Guide".
---	--

1.6. List of Maintenance Tools and Supplies

Prepare the items listed below before starting inspection/cleaning.

Item	Details/Use
<p>Clean stick (Dedicated consumables/commercially available)</p> 	<p>Use for cap and wiper cleaning</p> <p>If purchasing from Epson: Item name: Clean Stick B Model no.: C13S090011</p> <p>Epson recommends the following if purchasing yourself: ASPURE from AS ONE Corporation Model no.: AP125PCT</p>
<p>Cleaning cloth (Dedicated consumables/commercially available)</p> 	<p>Nonwoven fabric for head cleaning</p> <p>If purchasing from Epson: Item name: Head Cleaning Cloth A Model no.: C13S210050</p> <p>Epson recommends the following if purchasing yourself: Berkshire Corporation SuperPolx® 1200</p>
<p>Maintenance liquid (Dedicated consumables)</p>	<p>Cleaning liquid especially for maintenance of this machine Do not dilute the liquid.</p> <p>Dedicated consumables: Item Name: Maintenance Liquid Model no.: C13T42X000</p>
<p>Grease gun (Bundled item)</p> 	<p>Used for adding grease to the scan spindle.</p>

Item	Details/Use
Grease (Commercially available)	Grease added to the scan spindle. Epson recommends the following: NSK Ltd. Model no.: NSK GRS AS2
Plastic container (Commercially available)	Used to contain the maintenance liquid or tap water. Epson recommends the following: Disposable cup
Rubber gloves (Commercially available)	Use during cleaning.
Eye protection (Commercially available)	Use during cleaning of the area around the head, caps, and wipers, and when replacing the head.
Plastic tweezers (Commercially available)	Use for cap cleaning
Hex key (Commercially available)	Used to fasten or loosen screws on the machine.
Spanner (width: 7 mm) (Commercially available)	Used to fasten or loosen screws on the machine.
Flashlight (Commercially available)	Used when working in the ink tank housing.
Scraper/Brush (Commercially available)	Use for flushing plate cleaning
Forceps (Commercially available)	Use for cap replacement. Use a type that cannot damage the ink tube.
Feeler gauge (Commercially available)	Used for height check using the fabric slack detection sensor. A hex key (width: 2 mm) can be used as a substitute.
Tray (Commercially available)	Used for cleaning the cooling fan filters.
Replacement waste ink tank (Models with waste ink tanks only) (Commercially available)	Used for replacing the waste ink tank installed in the flushing area.

2. Maintenance Work List

2.1. Inspection/Cleaning

Category	Item	Inspection Frequency					User Permissions	Procedure Details
		Every shift	Everyday	Every week	Every month	Every six months		
Inspection/Cleaning	<input type="checkbox"/> Checking the area around operating parts	✓						L 3.1
	<input type="checkbox"/> Disposing of waste ink of the cleaning station (Models with waste ink tanks only)		✓					L 3.2.1
	<input type="checkbox"/> Disposing of waste ink of the flushing area (Models with waste ink tanks only)						✓	H 3.2.2
	<input type="checkbox"/> Inspecting the emergency stop equipment		✓					L 3.3
	<input type="checkbox"/> Inspecting the open cover detection		✓					L 3.4
	<input type="checkbox"/> Inspecting for leaks in the ink path		✓					L 3.5
	<input type="checkbox"/> Cleaning the area around the caps and wipers		✓				✓	L 3.6
	<input type="checkbox"/> Cleaning the flushing plate		✓					L 3.7
	<input type="checkbox"/> Checking the height with the foreign material detection sensor	✓					✓ *2	L 3.8
	<input type="checkbox"/> Cleaning the ink stains on the belt (pigment ink)		✓					L 3.9.1
	<input type="checkbox"/> Removing the ink film on the belt (pigment ink)						✓	L 3.9.2
	<input type="checkbox"/> Cleaning the area around the head and inspecting the sub-tank rack			✓			✓	H 3.10
	<input type="checkbox"/> Cleaning the cleaning brushes and the area around them			✓			✓ *1	L 3.11
	<input type="checkbox"/> Cleaning the head cover						✓	L 3.12
	<input type="checkbox"/> Cleaning the plate (guide beside the belt)						✓	L 3.13
	<input type="checkbox"/> Cleaning the carriage operating parts				✓			L 3.14
	<input type="checkbox"/> Adding grease to the scan spindle					✓		H 3.15
	<input type="checkbox"/> Checking for water leaks in the pipe joints				✓			L 3.16
	<input type="checkbox"/> Draining wastewater of the air filter and mist separator		✓					L 3.17
	<input type="checkbox"/> Cleaning/Replacing the mist filter				✓ Cleaning		✓ Replacement	L 3.18
<input type="checkbox"/> Checking the blower and cleaning/replacing the filter				✓ Inspection		✓ Cleaning/ Replacement	L 3.19	

	<input type="checkbox"/> Cleaning/Replacing the cooling fan filters				✓		✓	L	3.20
	<input type="checkbox"/> Checking the cable protection condition				✓			L	3.21

* 1: After printing on fabric with fuzzy surface

*2: When changing the fabric type

2.2. Adjustment/Replacement

Category	Item	Inspection Frequency					User Permissions	Procedure Details
		Every shift	Everyday	Every week	Every month	Every six months		
Adjustment	<input type="checkbox"/> Bi-directional adjustment						✓ *3	H 4.1
	<input type="checkbox"/> Belt feed amount adjustment						✓ *4	H 4.2
Replacement	<input type="checkbox"/> Cap replacement						✓	L 5.1
	<input type="checkbox"/> Wiper replacement					✓		L 5.2
	<input type="checkbox"/> Towel roller fabric replacement						✓	L 5.3
	<input type="checkbox"/> Washing T-shaped scraper replacement						✓	L 5.4
	<input type="checkbox"/> Washing silicone scraper replacement						✓	L 5.5
	<input type="checkbox"/> Pressure roller replacement						✓	L 5.6
Glue Re-Application	<input type="checkbox"/> Glue Removal						✓	H 6.1
	<input type="checkbox"/> Glue Application						✓	H 6.2

*3: When replacing heads/When changing jobs

*4: When irregular streaking occurs/When changing jobs

3. Inspection/Cleaning Procedure

3.1. Checking the Area around Operating Parts

Frequency	Every shift
User Permissions	L
Personal Protective Equipment	Protective gloves and clothing

1. Check that the machine is in the Power Off Status. (See: 1.5.1 Power Off Status)
2. Make sure that no tools or other items are left on operating parts such as the print head operating area [1] and the carriage operating area [2]. If any item is left, remove it.

Front



Rear



3.2. Disposing of Waste Ink (Models with Waste Ink Tanks Only)

Dispose of the waste ink in the waste ink tanks located in the cleaning station (2: Front right) and flushing area (1: Front left).



3.2.1 Disposing of Waste Ink of the Cleaning Station

Frequency	Inspection: Everyday, before beginning work Disposal: Everyday, when printing ends
User Permissions	L
Personal Protective Equipment	Protective gloves and clothing

1. Check that the machine is in the Power Off Status. (See: 1.5.1 Power Off Status)
2. Prepare the waste ink tank lid.



3. Slide the waste ink tank cover horizontally to remove it.



4. Make sure the waste ink tank does not contact the drain of the waste ink pipe when removing it.

5. Securely close the waste ink tank lid.




6. Dispose of the waste ink in the proper manner.
7. Set an empty waste ink tank in the original position.
Check that the mouth of the waste ink tank sits directly below the drain of the waste ink pipe.

- Slide the waste ink tank cover horizontally to install it.



3.2.2 Disposing of Waste Ink of the Flushing Area

Frequency	Inspection: Everyday, before beginning work Disposal: Dispose as necessary
User Permissions	H
Personal Protective Equipment	Eye protection, protective gloves and clothing
Required Items	Replacement waste ink tank

	Check that the amount of waste ink in the waste ink tank is not such that the waste ink will spill out.
---	---

- Check that the machine is in the Power Off Status. (See: 1.5.1 Power Off Status)


2. Open the side cover on the flushing area side.
Remove the six screws from the side cover.



3. Unlock the side cover key and remove the cover.




4. Hold the parts on the sub-tank rack as indicated by circles below with both hands, and pull it out from the ink tank housing.

	<p>Be careful of the following so as not to damage the cables:</p> <ul style="list-style-type: none">• Do not allow the sub-tank rack wheels to run over the cables.• Do not pull the cables hard or apply excessive force.
---	--




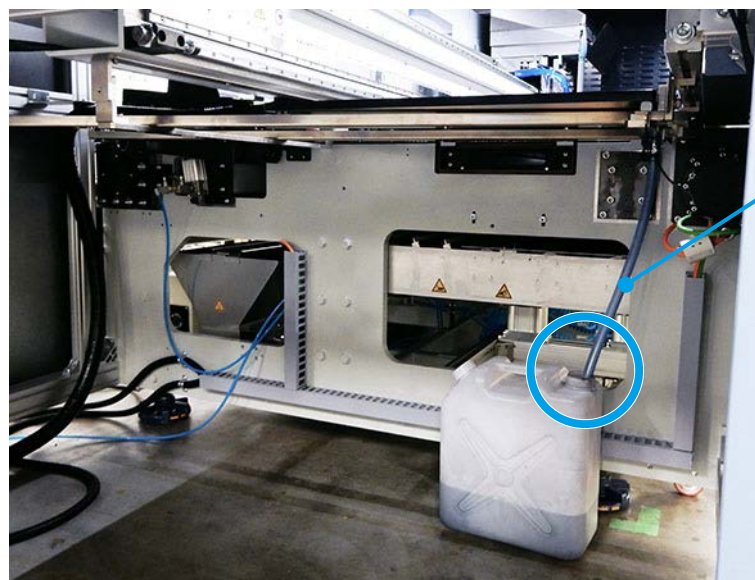
5. Wear eye protection.

 CAUTION	Be sure to wear eye protection. Failure to do so could cause ink to splash into the eyes.
--	--

6. Enter the ink tank housing with the replacement waste ink tank.

7. Remove the waste ink tube from the waste ink tank and insert it into the new waste ink tank.

	Carefully remove the waste ink tube. Pulling it out with force may result in ink splashing.
---	---



8. Securely close the lid of the waste ink tank containing waste ink.
9. Exit the ink tank housing with the waste ink tank containing waste ink.
10. Return the sub-tank rack to the original position.

11. Attach the side cover and tighten the six screws.

12. Lock the side cover.

13. Dispose of the waste ink in the proper manner.

3.3. Inspecting the Emergency Stop Equipment

Frequency	Everyday Inspection before beginning work
User Permissions	L
Personal Protective Equipment	Protective gloves and clothing

Check that the emergency stop button and the emergency stop function of the cleaning tank operate normally. For detailed procedures, refer to the "Operation Guide".

3.4. Inspecting the Open Cover Detection

Frequency	Everyday Inspection before beginning work
User Permissions	L
Personal Protective Equipment	Protective gloves and clothing

Check that the cover open detection function on the front/rear side is operating normally. For detailed procedures, refer to the "Operation Guide".

3.5. Inspecting for Leaks in the Ink Path


Frequency	Everyday
User Permissions	L
Personal Protective Equipment	Protective gloves and clothing

Check for ink leaks in each ink path. Check for ink leaks or runs around the connections between the heads and tubes, and around the print heads.


For detailed procedures, refer to the "Operation Guide".

3.6. Cleaning the Area Around the Caps and Wipers

Frequency	Everyday/When a problem occurs (When a problem such as mixed colors and nozzle clogging occurs)
User Permissions	L
Personal Protective Equipment	Protective gloves and clothing, eye protection
Required Items	Clean stick, maintenance liquid, plastic container, tweezers

	For cleaning, be sure to use the dedicated maintenance liquid.
---	--

1. Check that the machine is in the Printing Standby Status. (See: 1.5.2 Printing Standby Status)
2. Move the head carriage to the flushing area.
On the Leonardo operation screen, open [Maintenance] (1), and click [+] (2) for [Carriage] under [Axes] once. When the head carriage moves to the center, click [+] again. The head carriage moves to the left into the flushing area.

	Do not work for a long period of time while the head carriage is uncapped. Doing so can cause the print head nozzles to clog, causing a printing error. Pigment ink in particular causes a failure if left uncapped for 24 hours.
---	---





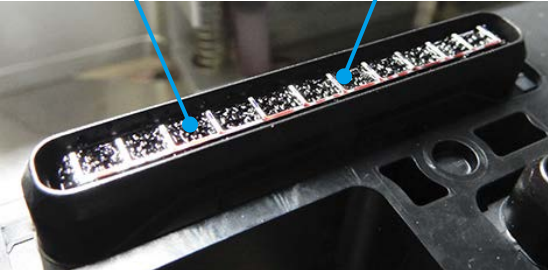
3. Press the emergency stop button.
4. Close the Leonardo screen and shut down the PC.
5. Turn the main power switch to 0 (OFF) to turn the power off.

6. Open the front protection cover.



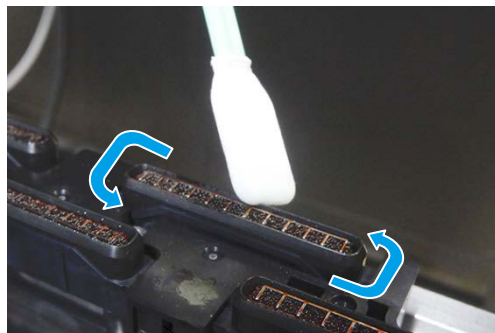
7. Lightly wipe off dirt from around the cap using the cleaning cloth or clean stick moistened with maintenance liquid.

 CAUTION	Make sure that the machine's power is off before performing work.
--	---

	<ul style="list-style-type: none">• Do not wipe around the cap with force. Doing so may damage the lip section of the cap, deteriorate nozzle recovery by cleaning, or result in nozzle clogging.• Do not allow the cleaning cloth or clean stick to touch the absorber or metal part in the cap. Doing so may deform the parts, resulting in damage to the head nozzle surface or nozzle clogging. <p data-bbox="730 725 826 752">Absorber</p> <p data-bbox="1027 725 1134 752">Metal part</p> 
---	--

Wipe off in the direction of the arrows.

For clean stick



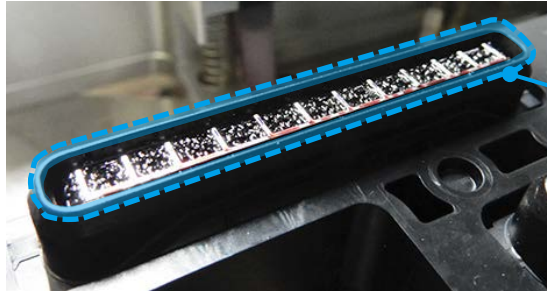
For cleaning cloth



- Remove fluffy dust if adhering around the cap using plastic tweezers.



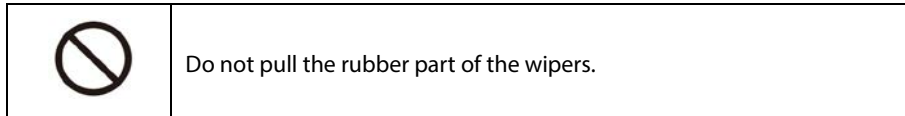
Do not pinch the lip section of the cap with the tweezers. Doing so may damage the lip section, deteriorate nozzle recovery by cleaning, or result in nozzle clogging.



Lip section



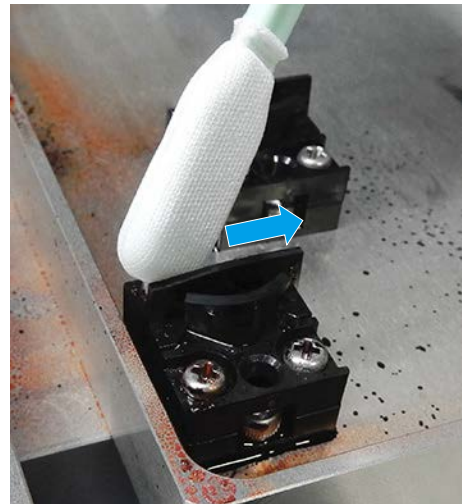
9. Lightly wipe off dirt from around the wiper using the cleaning cloth or clean stick moistened with maintenance liquid. Wipe off in the direction of the arrows. The same applies to the cleaning cloth.



Wiper section




Rear side of wiper



10. When cleaning is finished, close the front protection cover.
11. Turn the main power switch to 1 (ON) to turn the power on.
12. Release the emergency stop button.
13. Start up Leonardo.
14. Execute Set point.
On the Leonardo operation screen, click [Setpoint] and then press the reset button on the main electric panel. The head carriage moves to the cleaning station.

3.7. Cleaning the Flushing Plate

Frequency	Everyday, when printing ends
User Permissions	L
Personal Protective Equipment	Protective gloves and clothing, eye protection
Required Items	Clean stick, scraper/brush



 CAUTION	Be sure to wear eye protection. Failure to do so could cause ink to splash into the eyes.
--	--

Clean away any waste ink that has built up on the flushing plate.

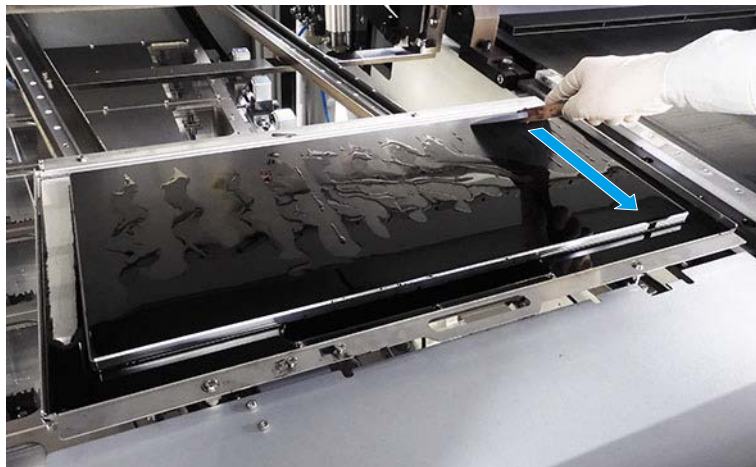
1. Check that the machine is in the Power Off Status. (See: 1.5.1 Power Off Status)
2. Open the front protection cover.



3. Sweep the ink remaining on the plate into the path at the corner of the plate using the scraper.

	<p>If waste ink is dried, apply maintenance liquid to dissolve the ink before cleaning.</p> 
---	--

For EVO TRE 16-180

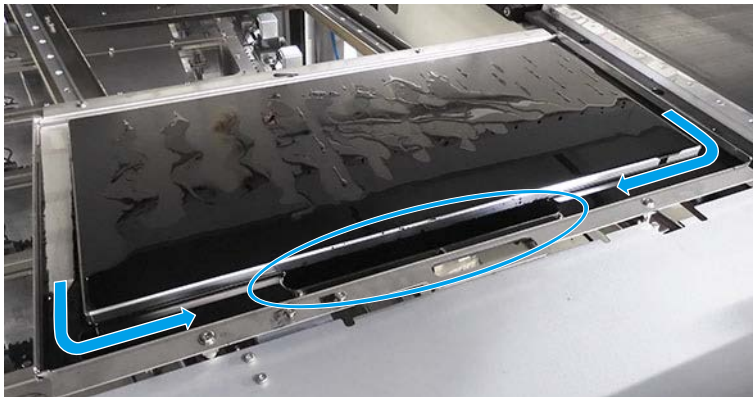


For EVO TRE 32-180

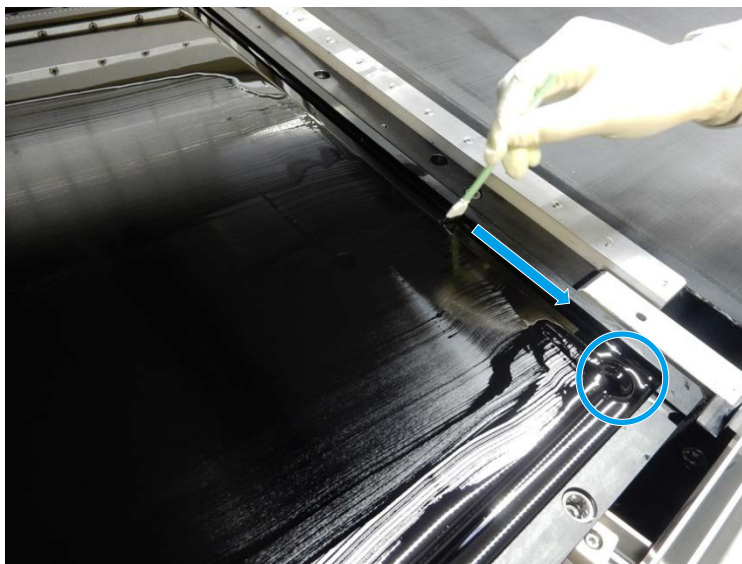


4. Discharge the waste ink collected in the path from the drain using the clean stick or brush.

For EVO TRE 16-180



For EVO TRE 32-180



5. When cleaning is finished, close the front protection cover.

3.8. Checking the Height with the Foreign Material Detection Sensor

Frequency	Every shift/When changing the fabric type
User Permissions	L
Personal Protective Equipment	Protective gloves and clothing
Required Items	Hex key (width: 2 mm) or feeler gauge (2 mm)

Check that the foreign material detection sensor is operating normally.

1. Check that the machine is in the Printing Standby Status. (See: 1.5.2 Printing Standby Status)
2. Before starting work, check the detection threshold value with nothing placed on the belt.
Check the foreign material detection sensor display on the front panel to confirm that the displayed value is 4,000 or higher.



3. Place the hex key (width: 2 mm) or feeler gauge (2 mm) on the front right of the belt.



4. Feed the belt in the reverse direction to the position where the hex key or feeler gauge is exposed the sensor laser beam.

5. Move to the machine rear, and check that the tool is exposed to the laser beam through the gap at the top of the pressure roller.









6. Check the foreign material detection sensor display again to confirm that the detection threshold value is 500 or more lower than the previous value.
7. Check on the front left side of the belt in the same way.

3.9. Cleaning the Belt and Removing Ink Film (When Using Pigment Ink)

When pigment ink adheres to the belt, an ink film is formed. When an ink film forms, the adhesive strength of the glue applied to the belt decreases and the fabric attached to the belt becomes more likely to float. To prevent ink film, clean any pigment ink adhering to the belt. Also, if an ink film has formed on the belt, remove the ink film.

3.9.1 Cleaning Ink Stains on the Belt

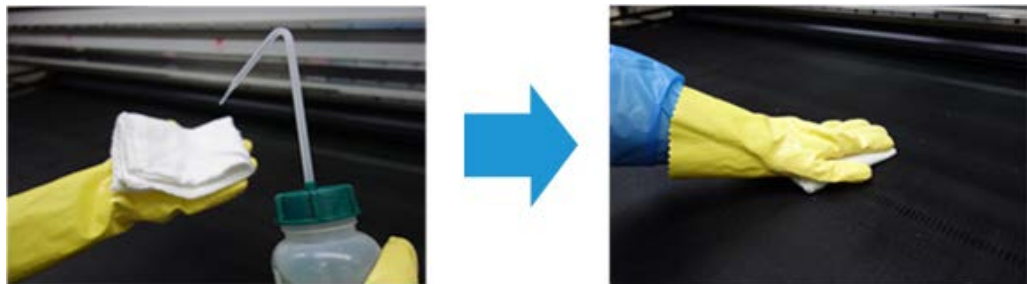
Frequency	Everyday, when printing ends	
User Permissions	L	
Required Number of Workers	1 person	
Personal Protective Equipment	The following is the protective equipment that must be worn when using the ethanol recommended by Epson. For details, refer to the instructions of the SDS for the ethanol you are actually using.	
	Eye protection (For organic solvent use; Optimal is a goggle-type that seals against your face)	
		
	Gas mask (For organic solvent use)	
		
	Protective gloves (Butyl or polyurethane)	
		
Protective clothing (Long-sleeved)		
Hat or hair net (Persons with long hair must be tied together with a hair net also worn)		
Safety shoes		

Required Items			
Item	Quantity	Details/Use	
Ethanol	Approx. 0.1 L	Commercially available	Removes any ink adhering to the belt. Mix with tap water before use.
Cleaning bottle 	1	Commercially available	This container is used to hold a cleaning liquid made by mixing tap water and ethanol.
Wipe cloths 	Proper amount	Commercially available	Used to wipe the belt. Use cloths of soft non-fluffy material that will not damage the belt.

1. Put ethanol (approx. 0.1 L) and tap water (approx. 0.1 L) in a bottle and mix well.
2. Open the front protection cover.







3. Soak a wipe cloth with a proper amount of the cleaning liquid made in step 1 and wipe the belt. Press the feed or back feed button on the front panel to rotate the belt and wipe the belt all the way around. Wring out the wipe cloth and then frequently soak the wipe cloth with the cleaning liquid.



4. Close the front protection cover.

3.9.2 Removing Ink Film

If an ink film has formed on the belt, remove the ink film.

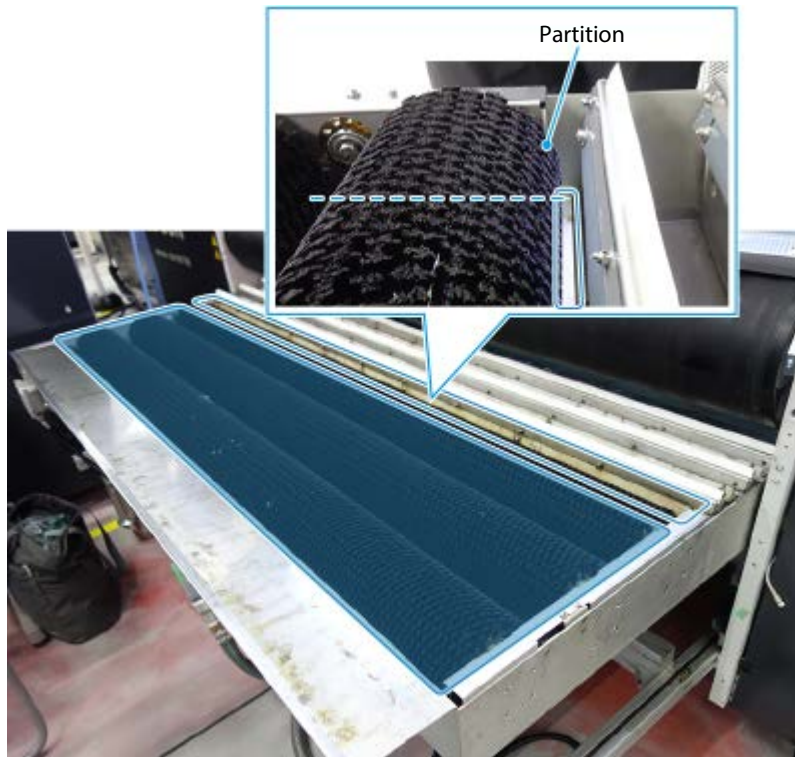
Frequency	When necessary/When a problem occurs	
User Permissions	L	
Required Number of Workers	1 person	
Personal Protective Equipment	The following is the protective equipment that must be worn when using the ethanol recommended by Epson. For details, refer to the instructions of the SDS for the ethanol you are actually using.	
	Eye protection (For organic solvent use; Optimal is a goggle-type that seals against your face)	
		
	Gas mask (For organic solvent use)	
		
	Protective gloves (Butyl or polyurethane)	
		
Protective clothing (Long-sleeved)		
Hat or hair net (Persons with long hair must be tied together with a hair net also worn)		
Safety shoes		

Required Items			
Item	Quantity	Details/Use	
Ink film remover (for pigment ink)	7 L	Recommended product <ul style="list-style-type: none"> • NETACOL-VL (ATR) • BP-WASH-SF (Murayama Chemical Laboratory) • FORCLEAN (ATR) 	A solvent that removes ink films that formed on the belt. Mix with tap water before use.
Container	1	Commercially available	This container is used to hold an ink film remover made by mixing tap water and remover.

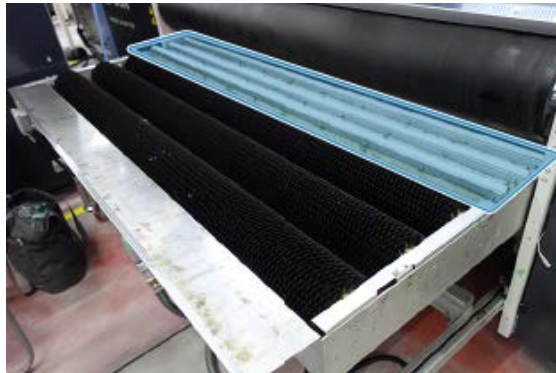
1. Put the ink film remover (7 L) and tap water (10 L) in the container and mix well.
2. Operate the lever to close the water supply valve.



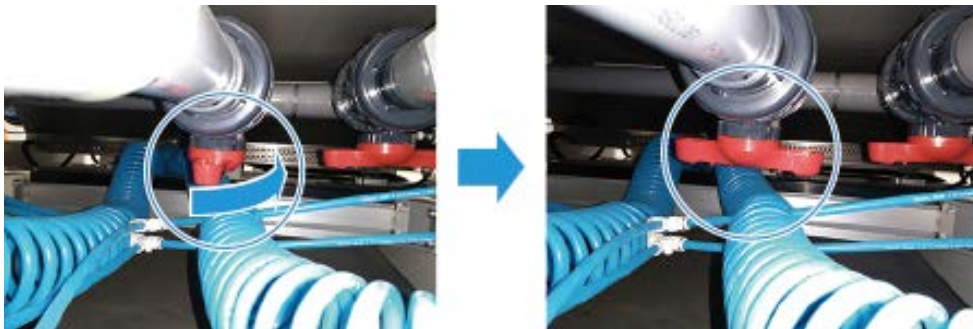
3. Check to see that water has filled up to the partition of the tank on the bottom of the cleaning brushes. If there is not enough water accumulated, use a bucket or the like to pour in tap water.



4. Check to see that no water remains in the tank at the bottom of the scraper.



5. Turn the left drain valve in the direction of the arrow to close it.

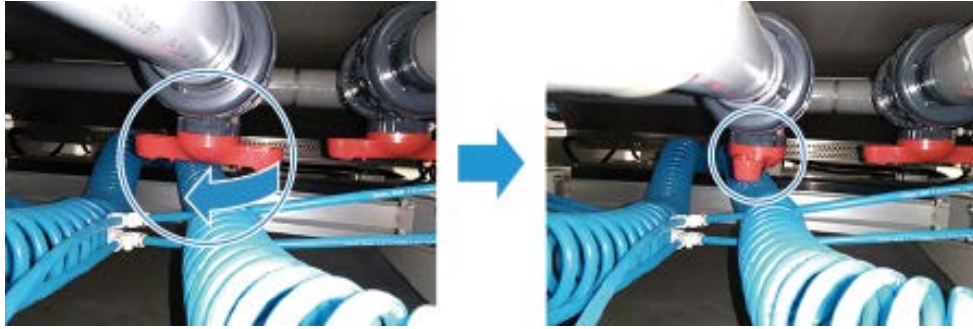


6. Pour the ink film remover made in step 1 into the tank on the bottom of the cleaning brushes.



7. Return the belt cleaning unit to the original position.

- In Leonardo, open [Maintenance] and then select [Status flags] - [Complete washing].
Confirm the message displayed and click [Yes] to start belt cleaning.
When belt cleaning is completed, the tower lamp changes from white to green. When belt cleaning is completed, perform [Complete washing] again, for a total of eight times.
- Turn the left drain valve in the direction of the arrow to open it.
The ink film remover in the cleaning tank is drained.




- Operate the lever to open the water supply valve.




If the fabric attached to the belt floats even after removing the ink film, reapply glue. For more information, refer to "Glue Re-Application".

3.10. Cleaning the Area around the Head and Inspecting the Sub-tank Rack

Frequency	Every week/When a problem occurs, When a large amount of printing is completed
User Permissions	H
Personal Protective Equipment	Protective gloves and clothing, eye protection
Required Items	Clean stick, cleaning cloth, maintenance liquid, plastic container, hex key (width: 4 mm), flashlight, side cover key (supplied with the machine)

 CAUTION	<p>Be sure to wear eye protection.</p> <p>Failure to do so could cause ink to splash into the eyes.</p>
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	<p>For cleaning, be sure to use the dedicated maintenance liquid.</p>
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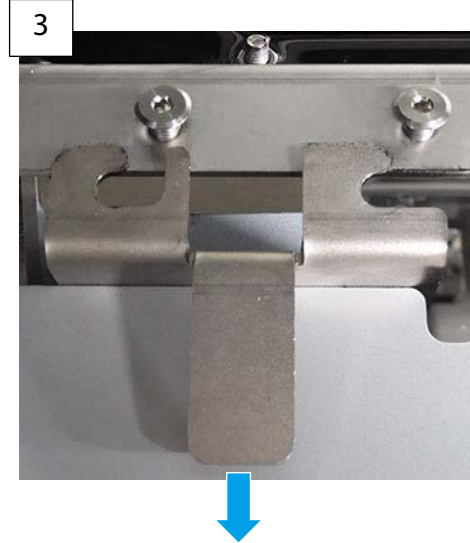
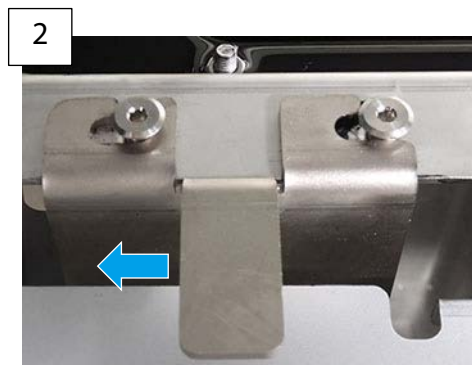
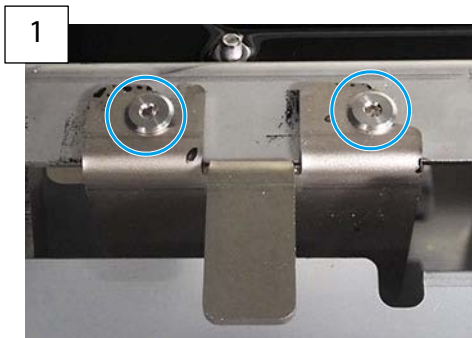
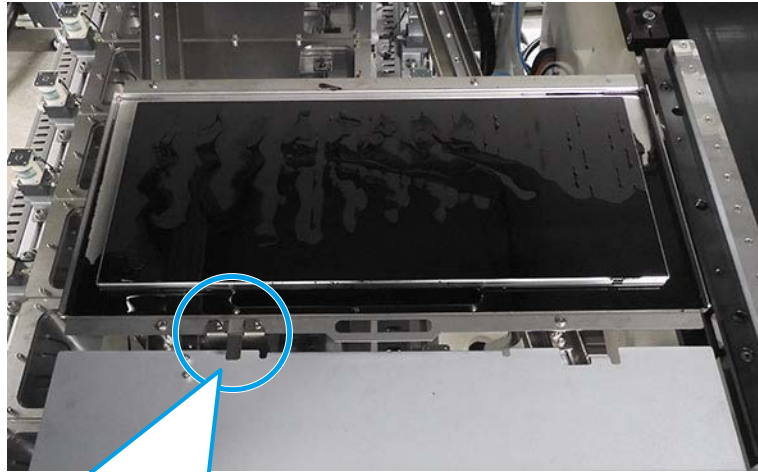
1. Check that the machine is in the Printing Standby Status. (See: 1.5.2 Printing Standby Status)
2. Press the emergency stop button.
3. Open the front protection cover.



4. Remove the fastener of the flushing plate.

For EVO TRE 16-180

(1) Loosen the 2 screws using the hex key (width: 2.5 mm), then (2) slide the fastener to the left and (3) pull the fastener toward you to remove it.



For EVO TRE 32-180

Loosen the two screws on the fastener of the flushing plate using the hex key (width: 4 mm), and remove the screws and fastener.



5. Move the flushing plate to the rear.

For EVO TRE 16-180



For EVO TRE 32-180




6. Close the front protection cover.

7. Release the emergency stop button.

8. Execute Set point.

On the Leonardo operation screen, click [Setpoint] and then press the reset button on the main electric panel. The head carriage returns to the origin position and moves to the cleaning station.

9. Move the head carriage to the flushing area.
 On the Leonardo operation screen, open [Maintenance] (1), and click [+] (2) for [Carriage] under [Axes] once.
 When the head carriage moves to the center, click [+] again.
 The head carriage moves to the left into the flushing area.

	<p>Do not work for a long period of time while the head carriage is uncapped. Doing so can cause the print head nozzles to clog, causing a printing error. Pigment ink in particular causes a failure if left uncapped for 24 hours.</p>
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10. Press the emergency stop button.
11. Close the Leonardo screen and shut down the PC.
12. Turn the main power switch to 0 (OFF) to turn the power off.


13. Open the side cover on the flushing area side.
Remove the six screws from the side cover.



14. Unlock the side cover key and remove the cover.



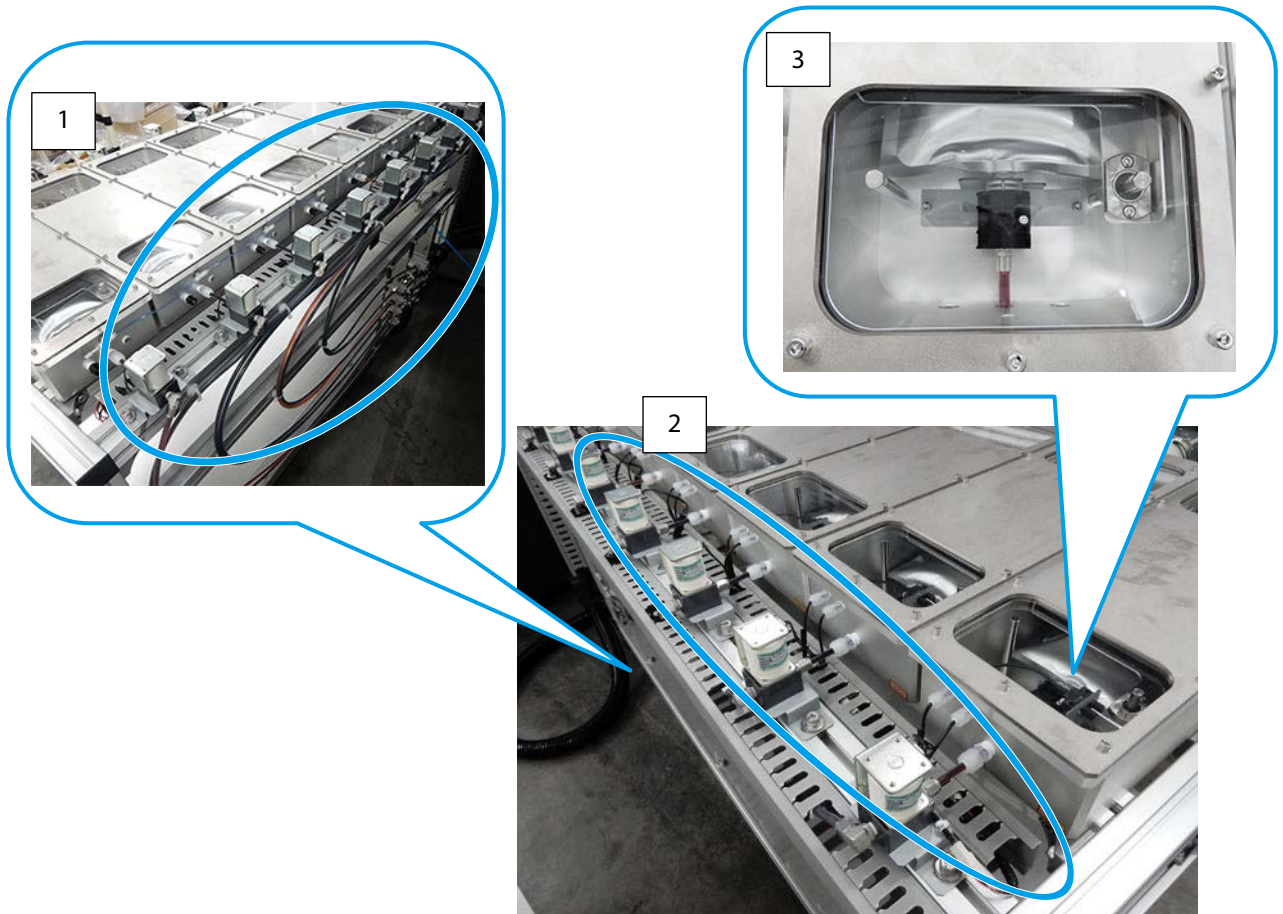
15. Hold the parts on the sub-tank rack as indicated by circles below with both hands, and pull it out from the ink tank housing.

	<p>Be careful of the following so as not to damage the cables:</p> <ul style="list-style-type: none">• Do not allow the sub-tank rack wheels to run over the cables.• Do not pull the cables hard or apply excessive force.
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16. Visually check for leaks in the ink path of the sub-tank rack.


- Check the connections of the ink tubes: [1], [2]
- Check for ink pack breakage and ink leaks: [3]




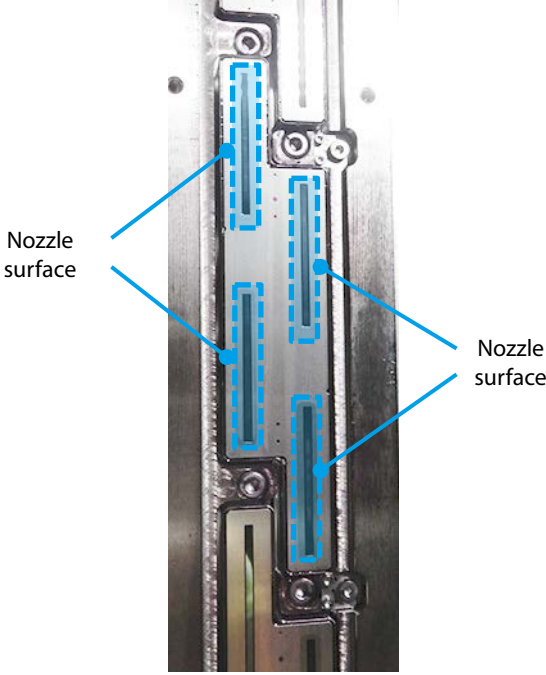

17. Wear eye protection.

18. Enter the ink tank housing with the following tools:

Cleaning cloth, clean stick, a container of maintenance liquid, flashlight

 CAUTION	Make sure that the machine's power is off before entering the ink tank housing.
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19. While shining the flashlight at your hands, wipe off fluffy dust from the head front and ink stains on the head side face using the clean stick.

	<p>Be careful not to touch the nozzle surface of the head or wipe it with the clean stick. Touching the nozzle surface may cause a printing error.</p>  <p>Nozzle surface</p> <p>Nozzle surface</p>
	<p>Completely wipe off ink-stained fiber or similar dust. Printing with such dust remaining on the parts may cause ink to drip on the fabric, resulting in a printing error.</p>



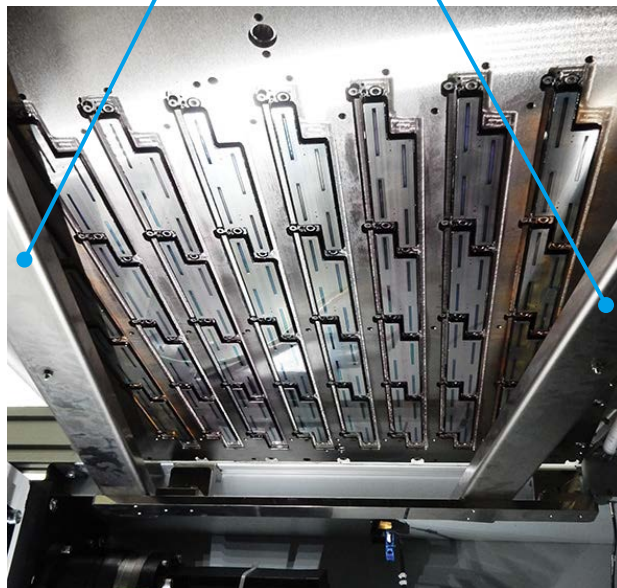
At a location where the flushing plate rail interferes with replacement operation, move the head carriage manually.

For EVO TRE 16-180



Flushing plate rails

For EVO TRE 32-180



After moving the head carriage to the outside, be sure to return it to the inside. If it is not returned to the inside, the sensor on the head carriage may activate, and you may not be able to execute Set point.

20. When cleaning is finished, exit the ink tank housing and return the sub-tank rack to the original position.

21. Attach the side cover and tighten the six screws.
22. Lock the side cover.
23. Turn the main power switch to 1 (ON) to turn the power on.
24. Start up Leonardo.
25. Release the emergency stop button.
26. Execute Set point.
On the Leonardo operation screen, click [Setpoint] and then press the reset button on the main electric panel.
27. Press the emergency stop button.
28. Open the front protection cover of the flushing area.
29. Return the flushing plate to the original position and then attach the fastener and tighten the two screws with the hex key.
For EVO TRE 16-180: Hex key (width: 2.5 mm)
For EVO TRE 32-180: Hex key (width: 4 mm)
30. Close the front protection cover.
31. Release the emergency stop button.
32. Execute Set point.
On the Leonardo operation screen, click [Setpoint] and then press the reset button on the main electric panel. The head carriage moves to the cleaning station.

33. From [Maintenance] menu of Leonardo, execute head cleaning.
Refer to the "Operation Guide" for the corresponding procedures.

34. Perform a nozzle check.
Refer to the "Operation Guide" for the corresponding procedures.

3.11. Cleaning the Cleaning Brushes and the Area around Them

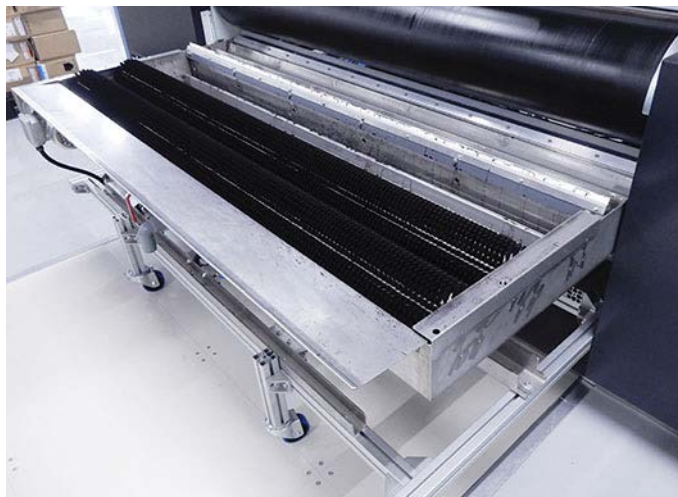
Frequency	Every week/When necessary (After printing on fabric with fuzzy surface)
User Permissions	L
Personal Protective Equipment	Protective gloves and clothing
Required Items	Hex key (width: 6 mm)

1. Check that the machine is in the Power Off Status. (See: 1.5.1 Power Off Status)
2. Remove the screw from each fastener that secures the belt cleaning carriage at two locations using the hex key (width: 6 mm).



3. Pull the belt cleaning carriage toward you and pull out the belt cleaning tank.

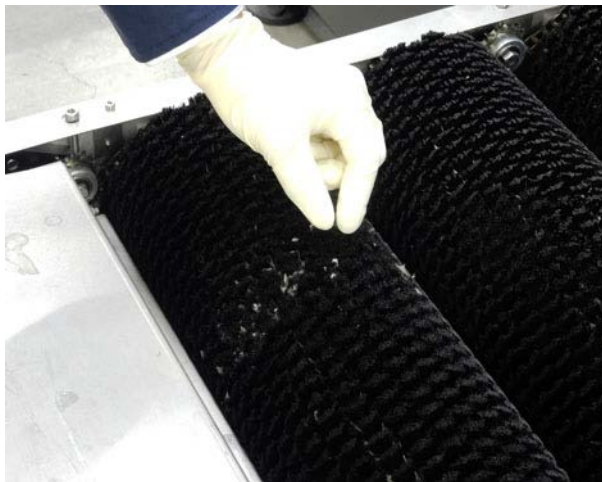
EVO TRE 16-180



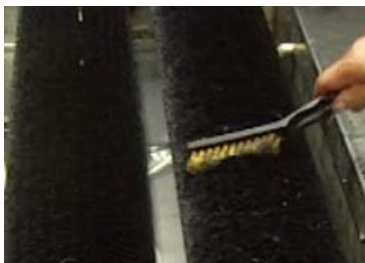
EVO TRE 32-180



4. Remove all fiber and other dust from the cleaning brushes.



For the cleaning brushes, a metallic brush as shown below can also be used.



- When cleaning is finished, return the belt cleaning tank to the original position.

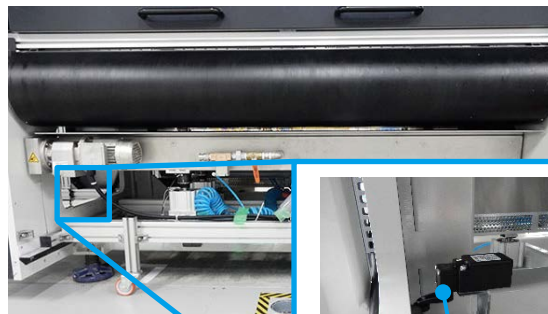
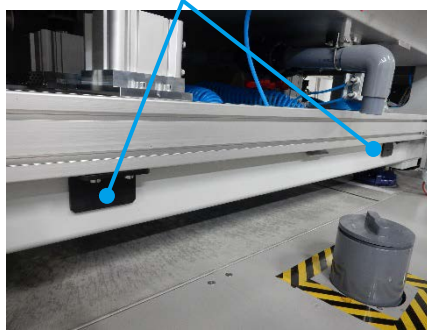


Insert the belt cleaning tank straight into its original position.
If put in at a slant, the frame of the belt cleaning carriage may touch the side, making it difficult to enter.



When returning the belt cleaning tank to the original position, check if the two fasteners on the belt cleaning tank are touching the machine, and if the belt cleaning tank is touching the belt cleaning unit position sensor.
If there is a gap between the two fasteners on the belt cleaning tank and the machine, or if the belt cleaning tank is not touching the belt cleaning unit position sensor, the machine enters the emergency stop condition and will not operate.

Fasteners on the belt cleaning tank




Belt cleaning unit position sensor


- Attach the two fasteners, and tighten the three screws of each using the hex key (width: 6 mm) to secure them.

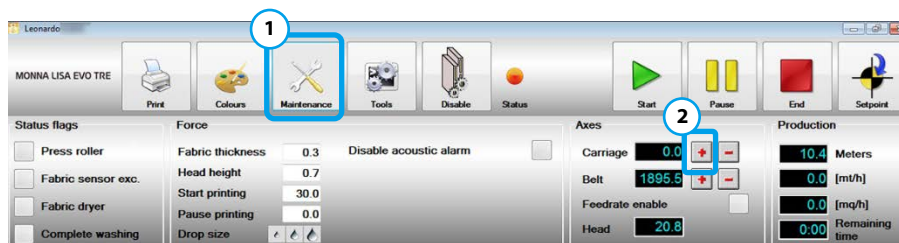
3.12. Cleaning the Head Cover

Frequency	When necessary
User Permissions	L
Personal Protective Equipment	Protective gloves and clothing
Required Items	Cleaning cloth, maintenance liquid, plastic container

	For cleaning, be sure to use the dedicated maintenance liquid.
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1. Check that the machine is in the Printing Standby Status. (See: 1.5.2 Printing Standby Status)
2. Move the head carriage to the flushing area.
On the Leonardo operation screen, open [Maintenance] (1), and click [+] (2) for [Carriage] under [Axes] once. When the head carriage moves to the center, click [+] again. The head carriage moves to the left into the flushing area.


	Do not work for a long period of time while the head carriage is uncapped. Doing so can cause the print head nozzles to clog, causing a printing error. Pigment ink in particular causes a failure if left uncapped for 24 hours.
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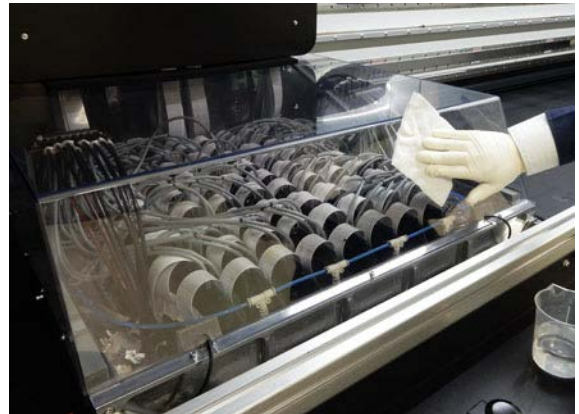


3. Press the emergency stop button.
4. Close the Leonardo screen and shut down the PC.
5. Turn the main power switch to 0 (OFF) to turn the power off.
6. Open the front protection cover.

7. Moisten the cleaning cloth with maintenance liquid and wipe the head cover surface.

 CAUTION	Make sure that the machine's power is off before performing work.
--	---

	Completely wipe off ink-stained fiber or similar dust. Printing with such dust remaining on the parts may cause ink to drip on the fabric, resulting in a printing error.
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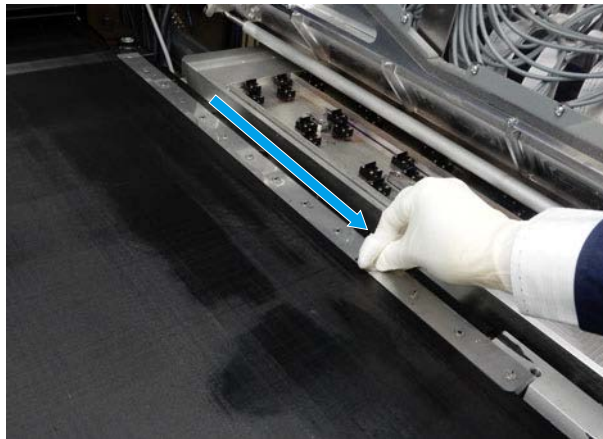
8. When cleaning is finished, close the front protection cover.
9. Turn the main power switch to 1 (ON) to turn the power on.
10. Start up Leonardo.
11. Release the emergency stop button.
12. Execute Set point.
On the Leonardo operation screen, click [Setpoint] and then press the reset button on the main electric panel. The head carriage returns to the origin position and moves to the cleaning station.

3.13. Cleaning the Plate (Guide Beside the Belt)

Frequency	When necessary
User Permissions	L
Personal Protective Equipment	Protective gloves and clothing
Required Items	Cleaning cloth, maintenance liquid, plastic container

If the plate (guide beside the belt) is stained by ink, wipe it off.

1. Check that the machine is in the Power Off Status. (See: 1.5.1 Power Off Status)
2. Open the front protection cover.
3. Wipe off the right and left plates using the cleaning cloth moistened with maintenance liquid.





4. When cleaning is finished, close the front protection cover.

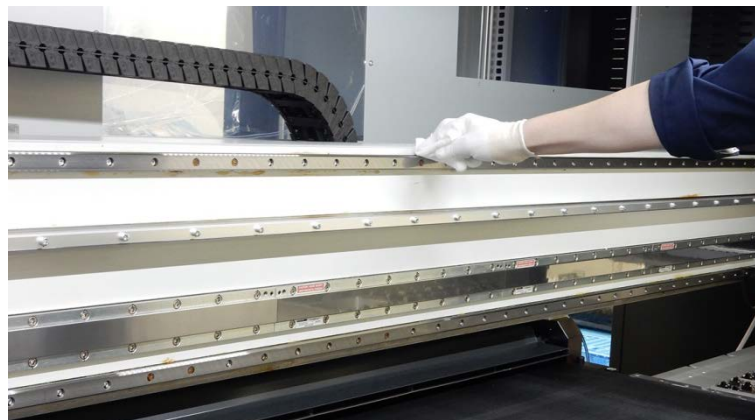
3.14. Cleaning the Carriage Operating Parts

Frequency	Every month
User Permissions	L
Personal Protective Equipment	Protective gloves and clothing
Required Items	Cleaning cloth


1. Check that the machine is in the Power Off Status. (See: 1.5.1 Power Off Status)
2. Open the front protection cover.
3. Clean the carriage rail with the cleaning cloth.

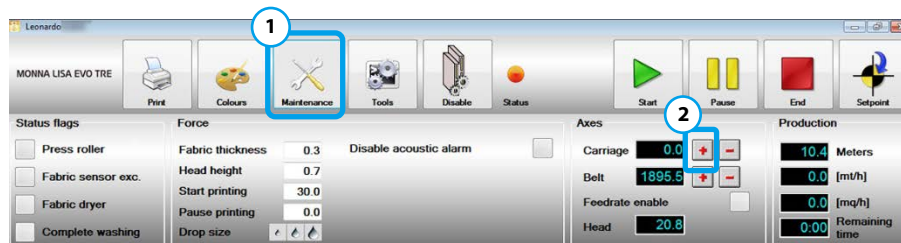
	CAUTION Make sure that the machine's power is off before performing work.
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	Never touch the linear scale or the magnet rail. Doing so may cause malfunction.
--	--




4. When cleaning is finished, close the front protection cover.
5. Turn the main power switch to 1 (ON) to turn the power on.
6. Start up Leonardo.
7. Release the emergency stop button.
8. Execute Set point. On the Leonardo operation screen, click [Setpoint] and then press the reset button on the main electric panel.
9. Move the head carriage to the flushing area.
 On the Leonardo operation screen, open [Maintenance] (1), and click [+] (2) for [Carriage] under [Axes] once.
 When the head carriage moves to the center, click [+] again.
 The head carriage moves to the left into the flushing area.


	<p>Do not work for a long period of time while the head carriage is uncapped. Doing so can cause the print head nozzles to clog, causing a printing error. Pigment ink in particular causes a failure if left uncapped for 24 hours.</p>
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10. Press the emergency stop button.
11. Close the Leonardo screen and shut down the PC.
12. Turn the main power switch to 0 (OFF) to turn the power off.
13. Open the front protection cover.

14. Clean the carriage rail on the cleaning station side with the cleaning cloth.

 CAUTION	Make sure that the machine's power is off before performing work.
--	---

	Never touch the linear scale or the magnet rail. Doing so may cause malfunction.
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15. When cleaning is finished, close the front protection cover.

16. Turn the main power switch to 1 (ON) to turn the power on.

17. Release the emergency stop button.

18. Start up Leonardo.

19. Execute Set point.


On the Leonardo operation screen, click [Setpoint] and then press the reset button on the main electric panel. The head carriage moves to the cleaning station.

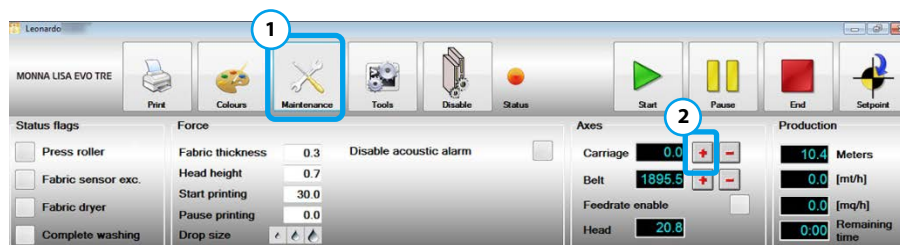
3.15. Adding Grease to the Scan Spindle

Frequency	Every six months
User Permissions	H
Personal Protective Equipment	Protective gloves and clothing
Required Items	Scan spindle grease, grease gun, cleaning cloths, flashlight

Add grease to the scan spindle.

1. Check that the machine is in the Printing Standby Status. (See: 1.5.2 Printing Standby Status)
2. Move the head carriage to the flushing area.
On the Leonardo operation screen, open [Maintenance] (1), and click [+] (2) for [Carriage] under [Axes] once. When the head carriage moves to the center, click [+] again. The head carriage moves to the left into the flushing area.

	<p>Do not work for a long period of time while the head carriage is uncapped. Doing so can cause the print head nozzles to clog, causing a printing error. Pigment ink in particular causes a failure if left uncapped for 24 hours.</p>
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3. Press the emergency stop button.
4. Close the Leonardo screen and shut down the PC.
5. Turn the main power switch to 0 (OFF) to turn the power off.

6. Open the front protection cover.




7. Open the side cover on the flushing area side.
Remove the six screws from the side cover.



8. Unlock the side cover key and remove the cover.




9. Hold the parts on the sub-tank rack as indicated by circles below with both hands, and pull it out from the ink tank housing.



	<p>Be careful of the following so as not to damage the cables:</p> <ul style="list-style-type: none">• Do not allow the sub-tank rack wheels to run over the cables.• Do not pull the cables hard or apply excessive force.
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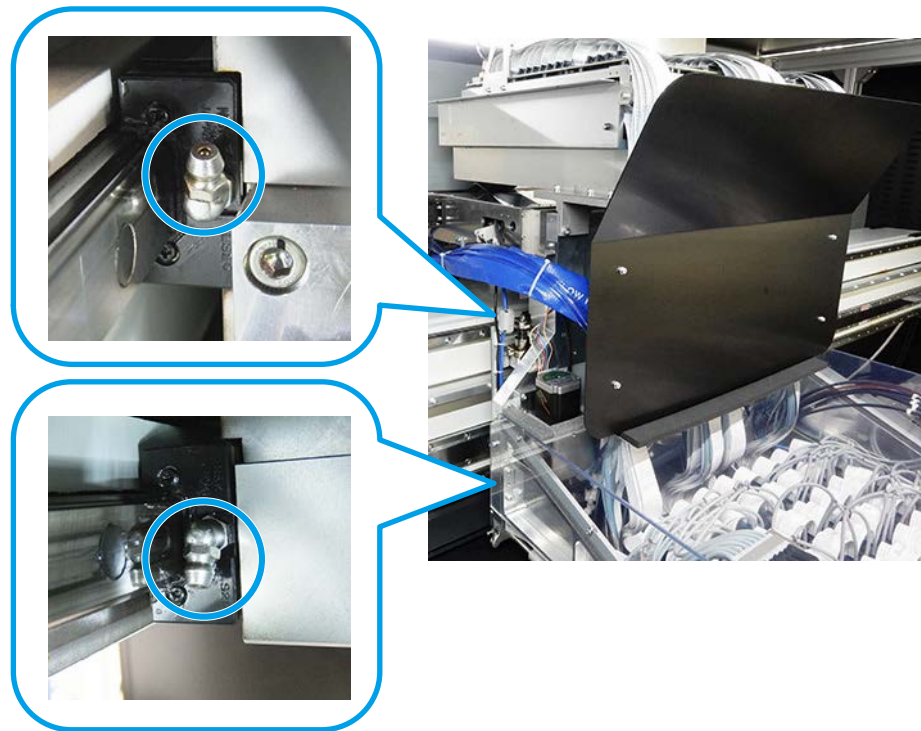


10. Enter the ink tank housing with the following tools:
Grease gun loaded with scan spindle grease, cleaning cloths, flashlight

 CAUTION	<p>Make sure that the machine's power is off before entering the ink tank housing.</p>
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11. Use the flashlight to light the area around your hands and add grease using the grease gun through the two oil filler holes (upper and lower holes) of the linear block on the left side of the scan spindle. Use cleaning cloths to wipe off any excess grease or ink adhering to the oil filler holes and surrounding area before working.

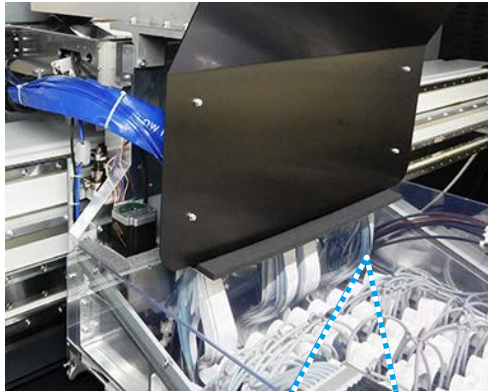
	<p>The proper grease amount is 1 to 3 g for each oil filler hole. Stop adding grease if it starts to come out from the edges of the slide.</p>
	<p>Do not add too much grease. Doing so can result in excess grease dripping onto fabric, resulting in a printing error.</p>



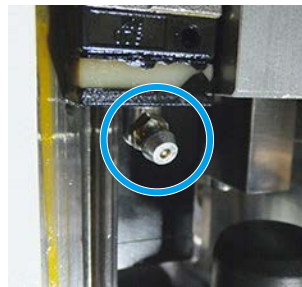
12. Add grease in the same way from under the head carriage to the oil filler hole (lower) of the linear block on the right side of the scan spindle.



Be careful of the area above your head while working.



Looking up from under the head carriage



13. Exit the ink tank housing.

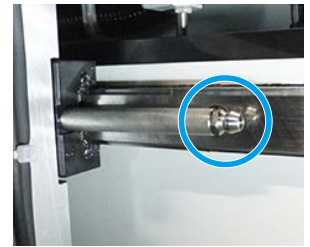
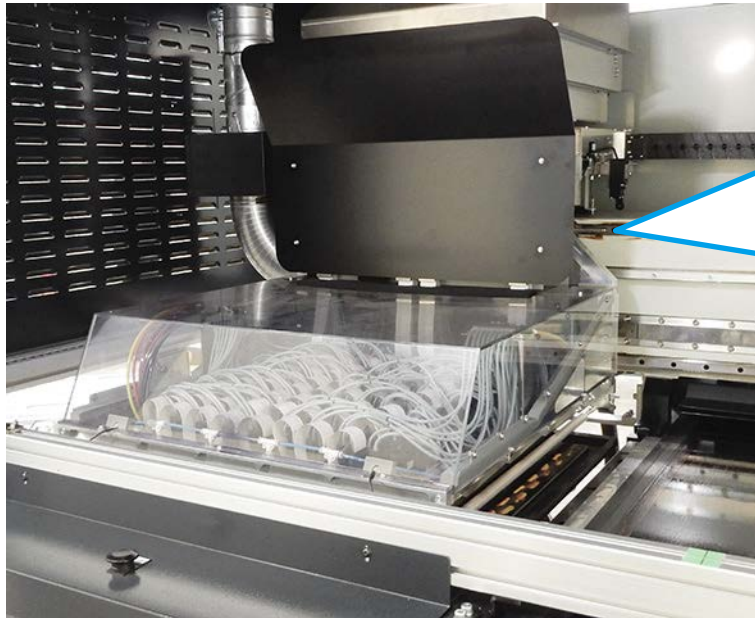
14. Add grease from the front of the machine to the oil filler hole (upper) of the linear block on the right side of the scan spindle.



Never touch the linear scale or the magnet rail. Doing so may cause malfunction.



- Use a step stool when working.
 - Be careful that body parts, protective clothing, tools, and other items do not contact the belt.
- Contact with the belt may result in glue peeling off from the belt surface or being damaged.

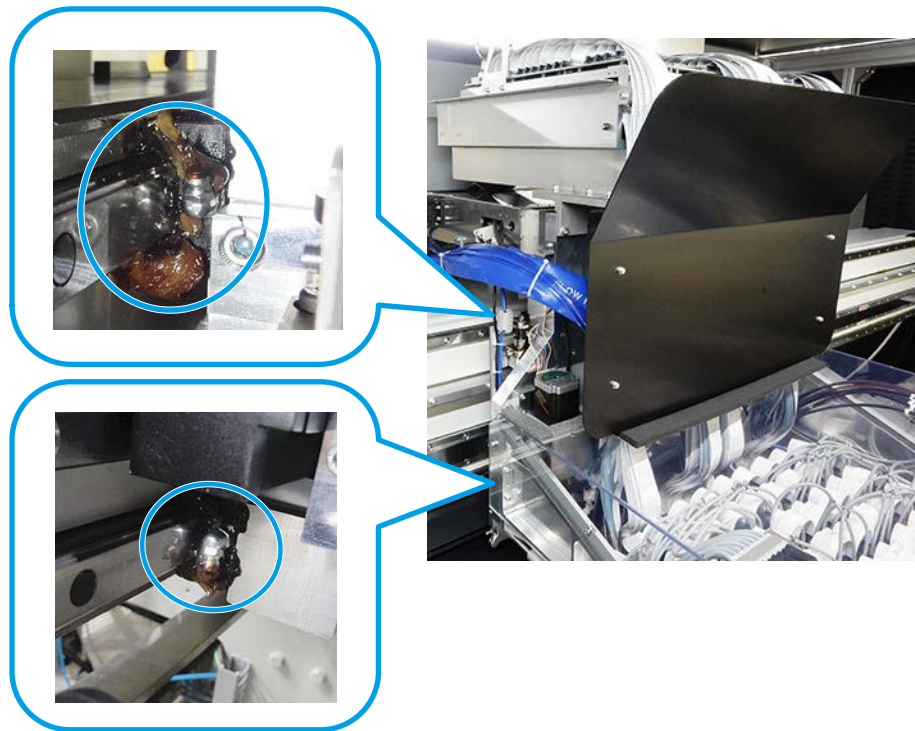


15. When work is finished, close the front protection cover.

16. Return the sub-tank rack to the original position.
17. Attach the side cover and tighten the six screws.
18. Lock the side cover.
19. Turn the main power switch to 1 (ON) to turn the power on.
20. Start up Leonardo.
21. Release the emergency stop button.
22. Execute Set point.
On the Leonardo operation screen, click [Setpoint] and then press the reset button on the main electric panel. The head carriage moves to the cleaning station.
23. On the Leonardo operation screen, specify the length under [Print] and select the [Colours exclusion] check box under [Colours]. Then move the head carriage back and forth five times to spread the grease across the entire surface.

24. Wipe off any grease that has spilled from around the oil filler holes.

Perform procedures 1 to 10, check the two oil filler holes (upper and lower holes) of the linear block on the left side of the scan spindle, and use cleaning cloths to wipe off any excess grease.



25. From under the head carriage, check the oil filler hole (lower) of the linear block on the right side of the scan spindle and use cleaning cloths to wipe off any excess grease.



Looking up from under the head carriage



26. Exit the ink tank housing.

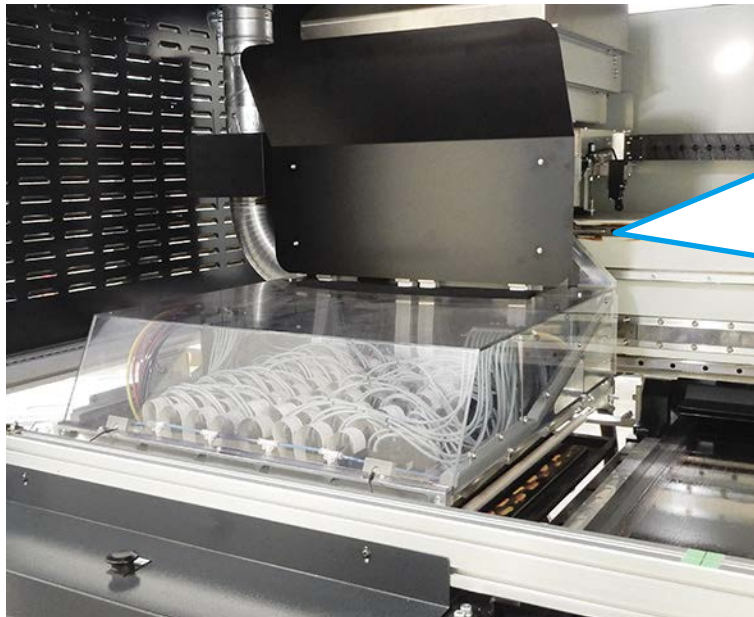
27. From the front of the machine, check the oil filler hole (upper) of the linear block on the right side of the scan spindle and use cleaning cloths to wipe off any excess grease.



Never touch the linear scale or the magnet rail. Doing so may cause malfunction.



- Use a step stool when working.
 - Be careful that body parts, protective clothing, tools, and other items do not contact the belt.
- Contact with the belt may result in glue peeling off from the belt surface or being damaged.



28. When work is finished, close the front protection cover.

29. Return the sub-tank rack to the original position.

30. Attach the side cover and tighten the six screws.

31. Lock the side cover.

32. Turn the main power switch to 1 (ON) to turn the power on.

33. Start up Leonardo.

34. Release the emergency stop button.

35. Execute Set point.

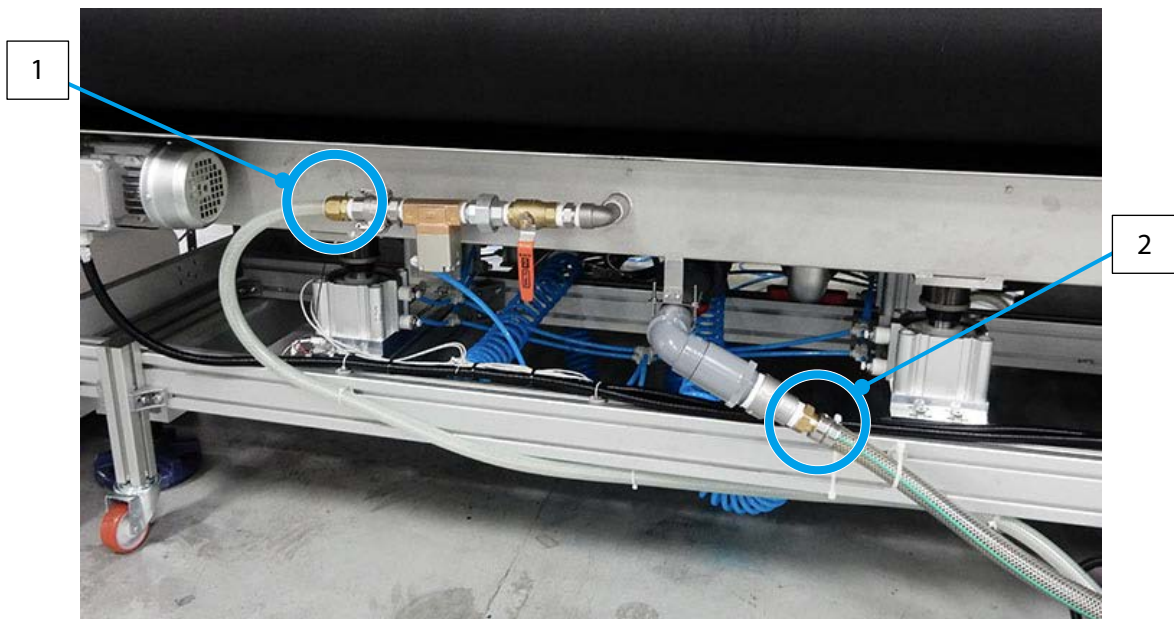
On the Leonardo operation screen, click [Setpoint] and then press the reset button on the main electric panel. The head carriage moves to the cleaning station.

This completes the work.

3.16. Checking for Water Leaks in the Pipe Joints

Frequency	Every month
User Permissions	L
Personal Protective Equipment	Protective gloves and clothing

1. Check that the machine is in the Power Off Status. (See: 1.5.1 Power Off Status)
2. Check that the joints for the cleaning tank of the cleaning unit [1] and [2] are not loosened and are free water leaks.



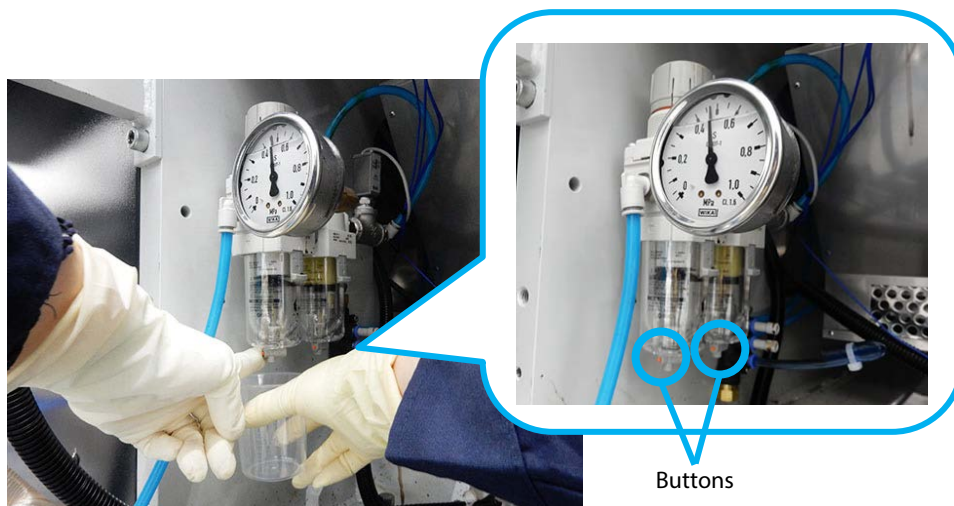
3.17. Draining Wastewater of the Air Filter and Mist Separator

Discharge any water or impurities that have accumulated in the air filter and mist separator.

3.17.1 Draining the Compressed Air Route Air Filter

Frequency	Everyday
User Permissions	L
Required Items	Plastic container and personal protective equipment (protective gloves and clothing)

1. Close the facility's pressurized air valve.
2. Check that the machine is in the Power Off Status. (See: 1.5.1 Power Off Status)
3. Set the plastic container under the air filter drain and press the two orange buttons. Check to see that the accumulated water was discharged.



4. Open the facility's pressurized air valve.

If water and impurities are not discharged

1. Open the facility's pressurized air valve.
2. Set the plastic container under the air filter drain.
3. Press the two buttons on the air filter. The water and impurities that have accumulated in the air filter will be discharged with force.

3.17.2 Draining the Dry Air System Air Filter and Mist Separator (Only for Models Equipped with a Dry Air System)

Frequency	Everyday
User Permissions	L
Required Items	Plastic container and personal protective equipment (protective gloves and clothing)

The water and impurities are discharged automatically. Dispose of the water and impurities collected in the container.



3.18. Cleaning/Replacing the Mist Filter

Frequency	Cleaning: Every month Replacement: When necessary
User Permissions	L
Personal Protective Equipment	Protective gloves and clothing
Required Items	Replacement: Replacement mist filter

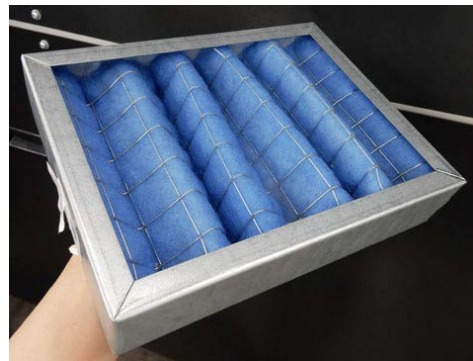
1. Check that the machine is in the Power Off Status. (See: 1.5.1 Power Off Status)
2. Remove the maintenance window cover from the mist filter on the side face of the machine.
Remove the two screws and remove the cover.



3. Remove the two screws from the mist filter cover and remove the cover.



4. Pull out the mist filter.



5. Clean the removed mist filter with water.

6. Dry the filter thoroughly and attach it again.
Replace the filter if it is extremely dirty.



Make sure that the mist filter is set in the correct direction while attaching it.
Top side: Blue, Bottom side: White

3.19. Checking the Blower and Cleaning/Replacing the Filter

Frequency	Inspection: Every month Cleaning/Replacement: When necessary
User Permissions	L
Personal Protective Equipment	Protective gloves and clothing

Clean the filter for the blower on the rear side of the machine.

1. Check that the machine is in the Power Off Status. (See: 1.5.1 Power Off Status)
2. Remove the screw from the filter cover.



3. Lift the cover to remove it.



4. Remove the filter and clean dirt and dust with a vacuum cleaner.



5. After cleaning, attach the filter again.
Replace the filter if it is extremely dirty.

3.20. Cleaning/Replacing the Cooling Fan Filters

If the cooling fan filters are used continuously without cleaning, the machine will become unable to lower the temperature of the print head drive substrate, which may result in a failure. Follow the procedures below to clean the cooling fan filters. If a stain cannot be removed even after cleaning, that cooling fan filter must be replaced. (See: 3.19.2 Replacing the Cooling Fan Filters)

To purchase new cooling fan filters, inquire with qualified service personnel.

Frequency	Every month When an error message is displayed stating that the temperature of the print head drive substrate cannot be lowered
User Permissions	L

3.20.1 Cleaning the Cooling Fan Filters

Required Items	Plastic container, tray, and personal protective equipment (protective gloves and clothing, eye protection)
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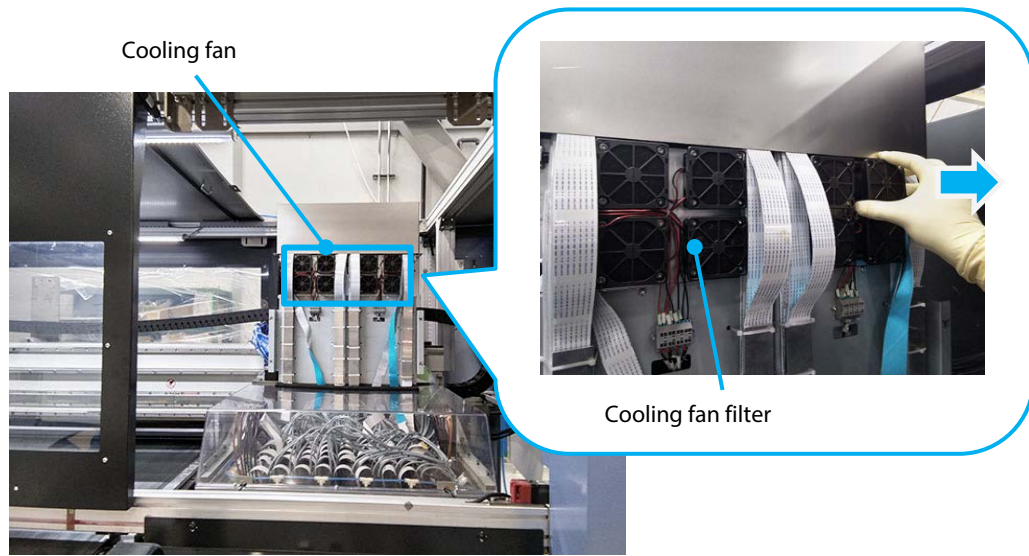
1. Check that the machine is in the Power Off Status. (See: 1.5.1 Power Off Status)
2. Open the front protection cover.



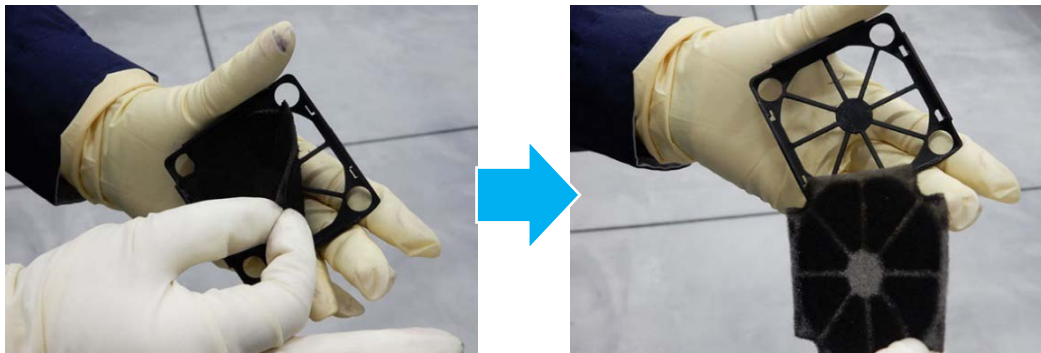
3. While holding the cooling fan cover so that it does not fall, loosen the four screws on the cover using the hex key (width: 3 mm) and remove the cover.



4. Remove all eight cooling fan filters.



5. Remove the cooling fan filter from the cover.



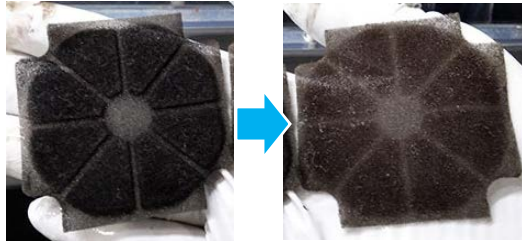
6. Put tap water into the container.

	Wash the cooling filter on the tray, so as not to spill dirty water.
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- Place the cooling fan filter in the plastic container and wash off the stains by hand.

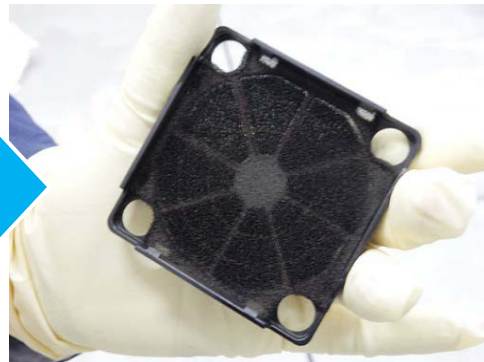
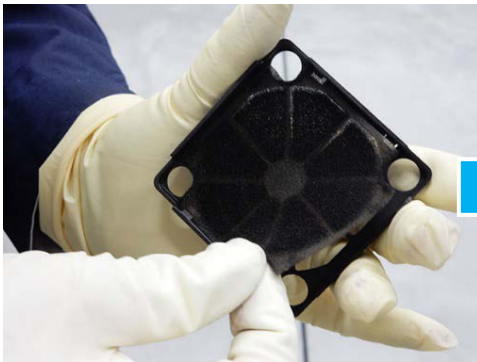


The dirty water is industrial waste. Dispose of it in the proper manner.

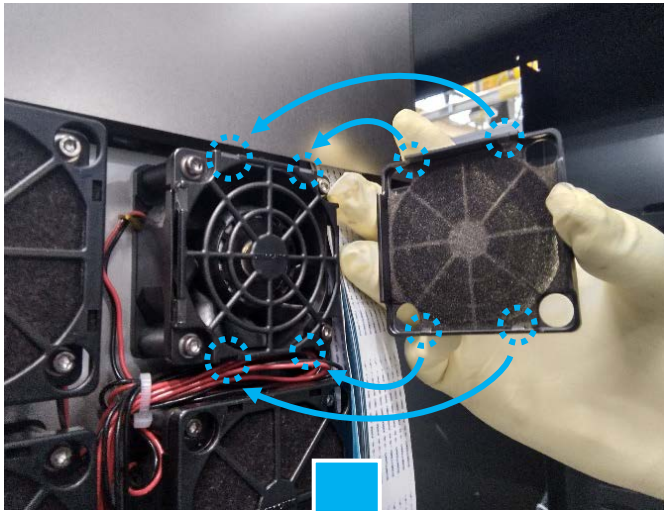


- Dry the cooling fan filter.

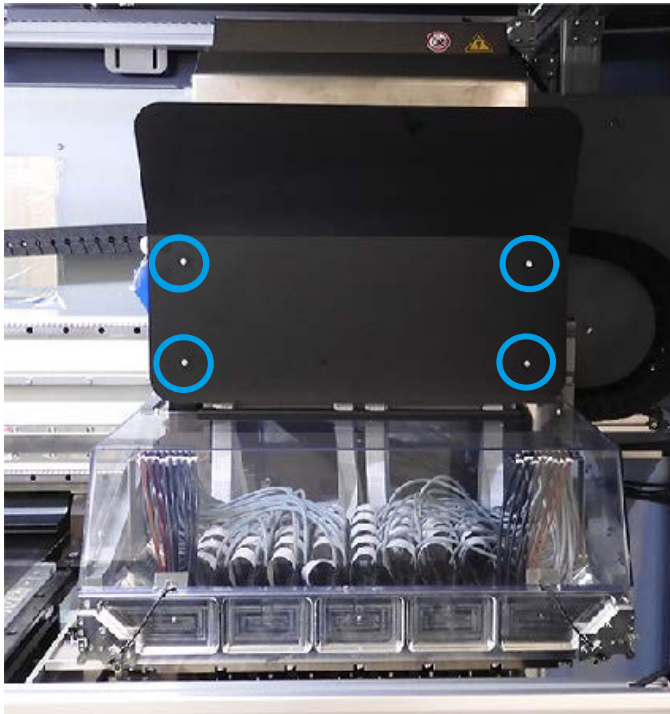
- Place the cooling fan filter on the cover.



10. Install all the cooling fan filters in their original positions.



11. Attach the cooling fan cover and tighten the four screws using the hex key (width: 3 mm).



12. Close the front protection cover.

3.20.2 Replacing the Cooling Fan Filters

Required Items	New cooling fan filters and personal protective equipment (protective gloves and clothing, eye protection)
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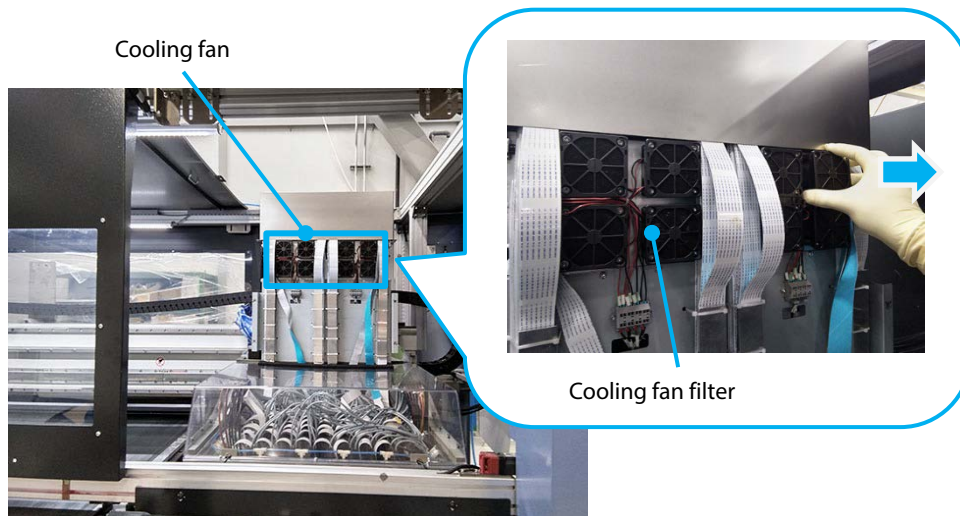
1. Check that the machine is in the Power Off Status. (See: 1.5.1 Power Off Status)
2. Open the front protection cover.




3. While holding the cooling fan cover so that it does not fall, loosen the four screws on the cover using the hex key (width: 3 mm) and remove the cover.



4. Remove the cooling fan filters.

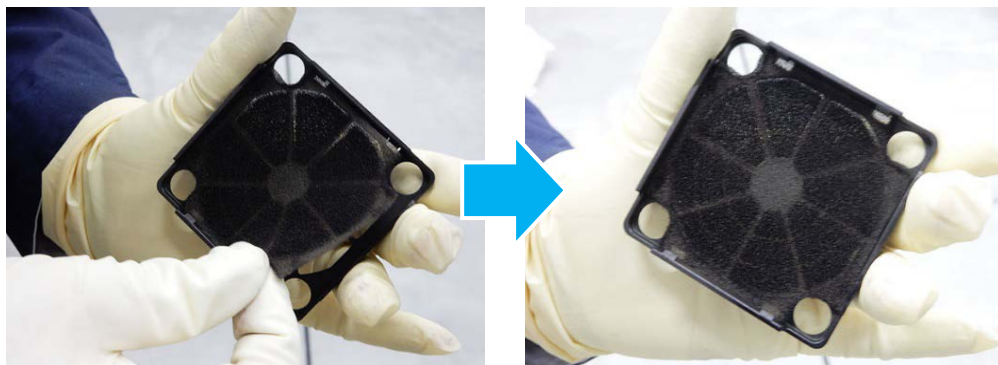


5. Remove the cooling fan filter from the cover.

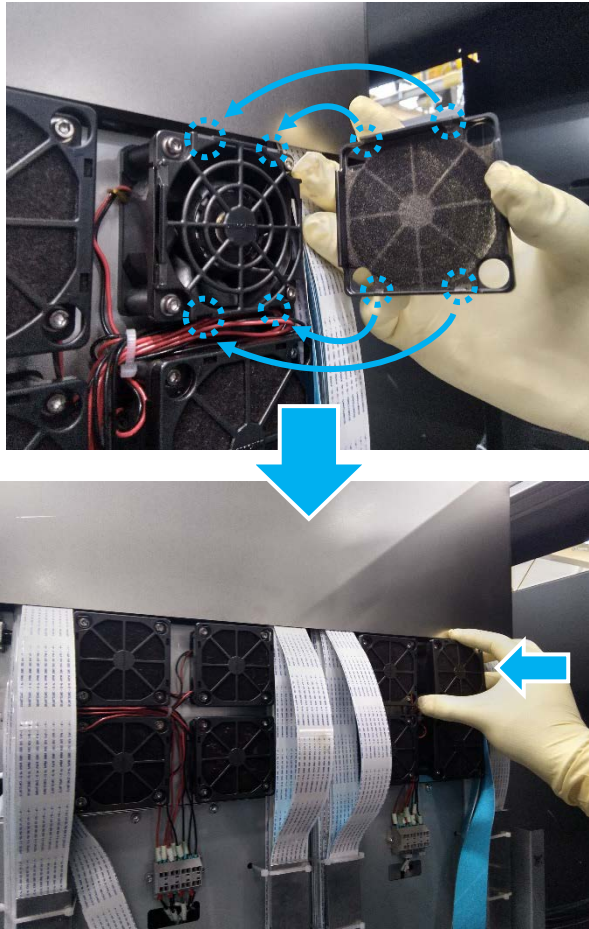
	A dirty filter is industrial waste. Dispose of it in the proper manner.
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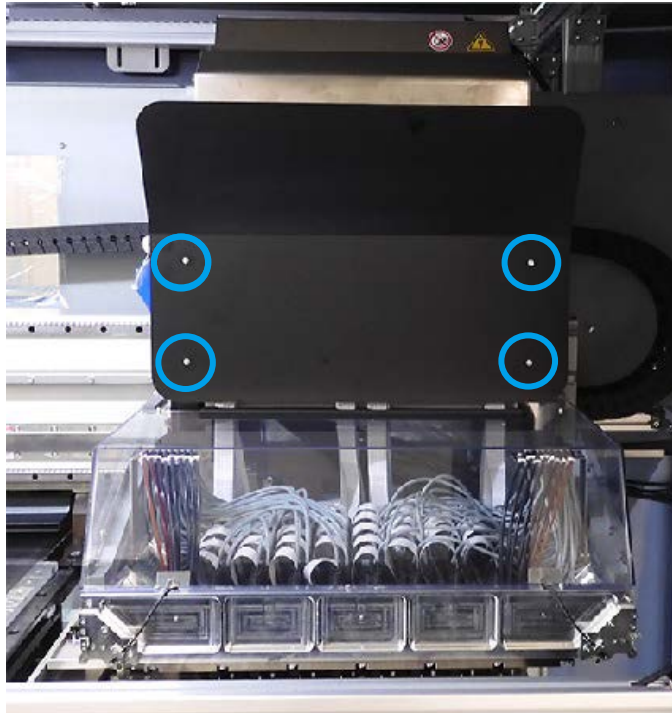
6. Place the new cooling fan filter on the cover.



7. Install the cooling fan filters straight in their original positions, with the cover protrusions on the top and bottom sides.



8. Attach the cooling fan cover and tighten the four screws using the hex key (width: 3 mm).



9. Close the front protection cover.

3.21. Checking the Cable Protection Condition

Frequency	Every month
User Permissions	L
Personal Protective Equipment	Protective gloves and clothing

1. Check that the machine is in the Power Off Status. (See: 1.5.1 Power Off Status)
2. Check the cable protective tubes between the machine and the main electric box for any damage.



4. Adjustment Procedure

4.1. Bi-directional Adjustment

Frequency	When replacing heads/When changing jobs
User Permissions	H
Personal Protective Equipment	Protective gloves and clothing

Adjust the ink dot position in the head reciprocating path. Make adjustment when vertical misalignment occurs.

1. Check that the machine is in the Printing Standby Status. (See: 1.5.2 Printing Standby Status)
2. From the printed result of a printing job, measure the misaligned amount in mm.
3. On the Leonardo operation screen, open [Maintenance] [1] and enter an adjustment value in [Bidirectional] [2]. Then press the Enter key on the keyboard.

An adjustment value of up to 0.500 can be entered. Entering "0.500" moves the ink dot position by 1 mm.

Plus side: Moves the returning path toward the cleaning station side.

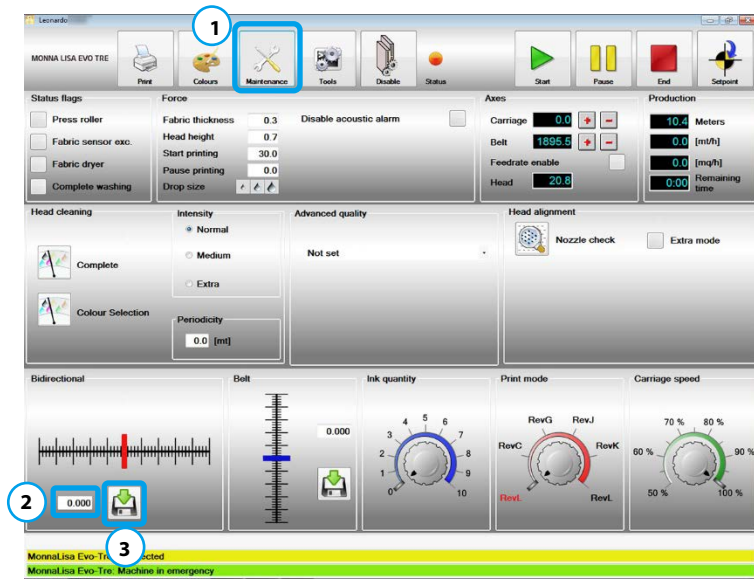
Minus side: Moves the returning path toward the flushing area side.

To enter a value larger than 0.500, save the value first by pressing [3], which resets the counter to "0". Then enter an additional value.

Example: To move the position by 1.5 mm

Enter "0.500" (1 mm) and press the Enter key on the keyboard. Press [3] to reset the counter to "0". Then enter an additional "0.250" (0.5 mm) and press the Enter key on the keyboard.

- Press [3] to save the settings.



- Print again and check the result.

4.2. Belt Feed Amount Adjustment

Frequency	When sideways streaking occurs/When changing jobs
User Permissions	H
Personal Protective Equipment	Protective gloves and clothing

When sideways streaking occurs horizontally in print results, adjust the belt feed amount at every printing pass.

1. Check that the machine is in the Printing Standby Status. (See: 1.5.2 Printing Standby Status)
2. From the printed result of a printing job, check the misaligned amount.
 - When white sideways streaking occurs:
A gap occurs between printing passes because the belt feeding amount is too much. Decrease it using the following procedure.
 - When dark sideways streaking occurs:
Printing passes overlap because the belt feeding amount is insufficient. Increase it using the following procedure.
3. On the Leonardo operation screen, open [Maintenance] [1] and enter an adjustment value in [Belt] [2]. Then press the Enter key on the keyboard.
An adjustment value of up to 0.500 can be entered.

Plus side: Increases the belt feed amount.

Minus side: Decreases the belt feed amount.

To enter a value larger than 0.500, save the value first by pressing [3], which resets the counter to "0". Then enter an additional value.



MonnaLisa Evo-Tre. Connected
MonnaLisa Evo-Tre. Machine in emergency


4. Press [3] to save the settings.

5. Print again and check the result.


5. Replacement Procedure

5.1. Cap Replacement

Frequency	When necessary/When a problem occurs (For example, when nozzle clogging is not resolved by cleaning)
User Permissions	L
Personal Protective Equipment	Eye protection, protective gloves and clothing
Required Items	Replacement cap unit, forceps, hex key (width: 2.5 mm), maintenance liquid, clean stick, plastic container

 CAUTION	<p>Be sure to wear eye protection.</p> <p>Failure to do so could cause ink to splash into the eyes.</p>
--	---

1. Check that the machine is in the Printing Standby Status. (See: 1.5.2 Printing Standby Status)
2. Move the head carriage to the flushing area.
 On the Leonardo operation screen, open [Maintenance] (1), and click [+] (2) for [Carriage] under [Axes] once.
 When the head carriage moves to the center, click [+] again.
 The head carriage moves to the left into the flushing area.

	<p>Do not work for a long period of time while the head carriage is uncapped.</p> <p>Doing so can cause the print head nozzles to clog, causing a printing error.</p> <p>Pigment ink in particular causes a failure if left uncapped for 24 hours.</p>
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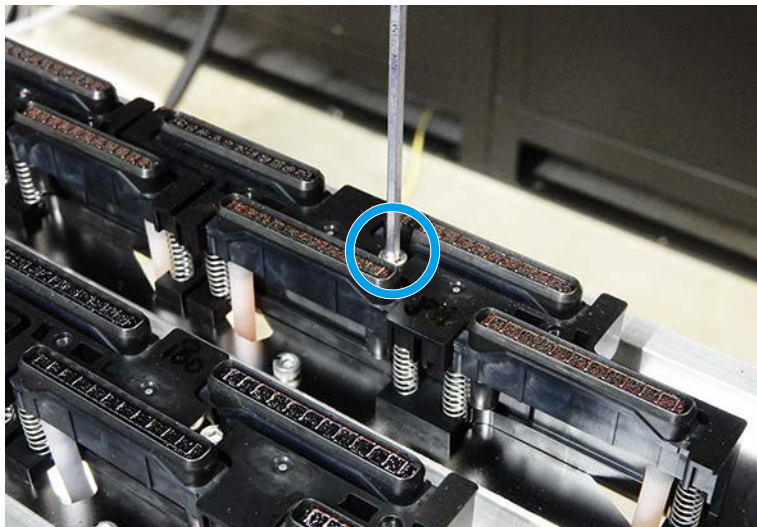
3. Press the emergency stop button.
4. Close the Leonardo screen and shut down the PC.

5. Turn the main power switch to 0 (OFF) to turn the power off.
6. Open the front protection cover.

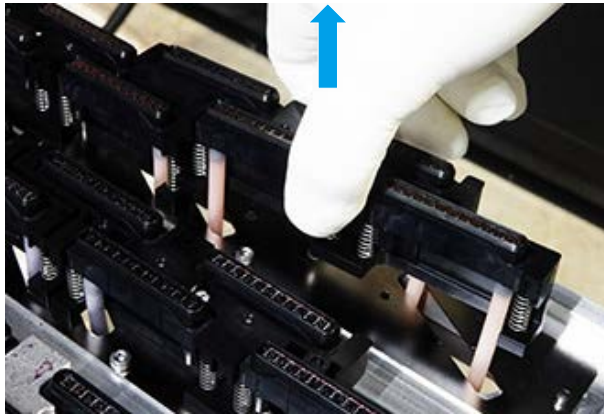


7. A cap unit is equipped with four caps.
Loosen the screw at the center of the cap unit with the hex key (width: 2.5 mm).

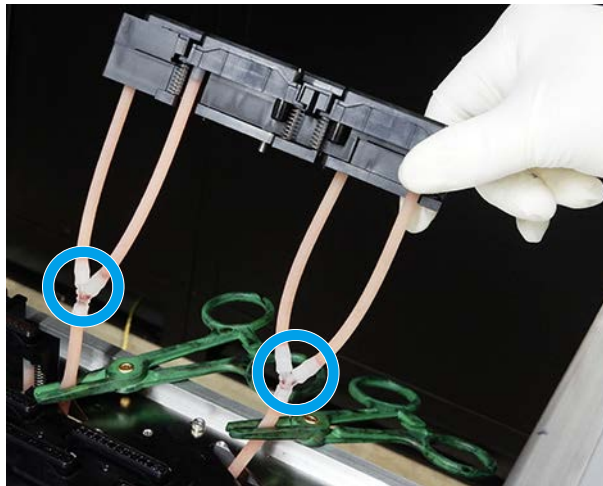
 CAUTION	Make sure that the machine's power is off before performing work.
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8. While taking care not to let the springs fall out, lift the cap upward keeping it horizontal.




9. Hold the ink tubes with the forceps.



10. Pull out the ink tubes at the locations indicated by circles.
Be careful of splashing ink.

11. Insert tubes into a new cap.
Insert the tubes securely as far as possible.

	Do not touch the lip surface of the cap.
---	--

12. Attach the cap.
Make sure that all springs are installed.
Make sure that the cap is set horizontally.

13. Secure the cap unit by tightening the screw at the center with the hex key (width: 2.5 mm).

14. Grease may have oozed out of the surface of the lip section.
Wipe the lip section gently using the clean stick moistened with maintenance liquid.

15. After replacement, make sure that no tools or other items are left on the print head operating area or carriage operating area.

16. Close the front protection cover.

17. Turn the main power switch to 1 (ON) to turn the power on.


18. Start up Leonardo.

19. Release the emergency stop button.


20. Execute Set point.
On the Leonardo operation screen, click [Setpoint] and then press the reset button on the main electric panel. The head carriage moves to the cleaning station.

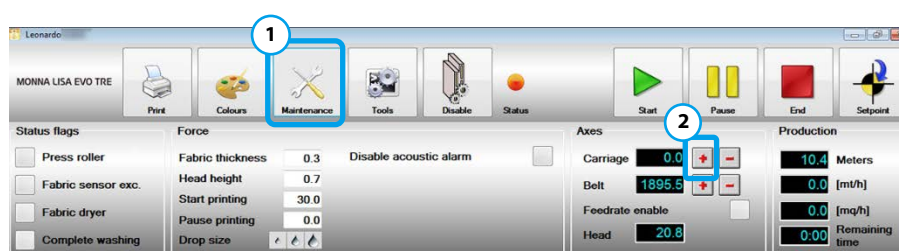
5.2. Wiper Replacement

Frequency	When necessary/When a problem occurs (For example, when nozzle clogging is not resolved by cleaning)
User Permissions	L
Personal Protective Equipment	Eye protection, protective gloves and clothing
Required Items	Replacement wiper unit, hex key (width: 2.5 mm), maintenance liquid, clean stick, cleaning wiper, plastic container

	<p>CAUTION</p> <p>Be sure to wear eye protection. Failure to do so could cause ink to splash into the eyes.</p>
---	--

1. Check that the machine is in the Printing Standby Status. (See: 1.5.2 Printing Standby Status)
2. Move the head carriage to the flushing area.
On the Leonardo operation screen, open [Maintenance] (1), and click [+] (2) for [Carriage] under [Axes] once. When the head carriage moves to the center, click [+] again. The head carriage moves to the left into the flushing area.

	<p>Do not work for a long period of time while the head carriage is uncapped. Doing so can cause the print head nozzles to clog, causing a printing error. Pigment ink in particular causes a failure if left uncapped for 24 hours.</p>
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3. Press the emergency stop button.
4. Close the Leonardo screen and shut down the PC.
5. Turn the main power switch to 0 (OFF) to turn the power off.

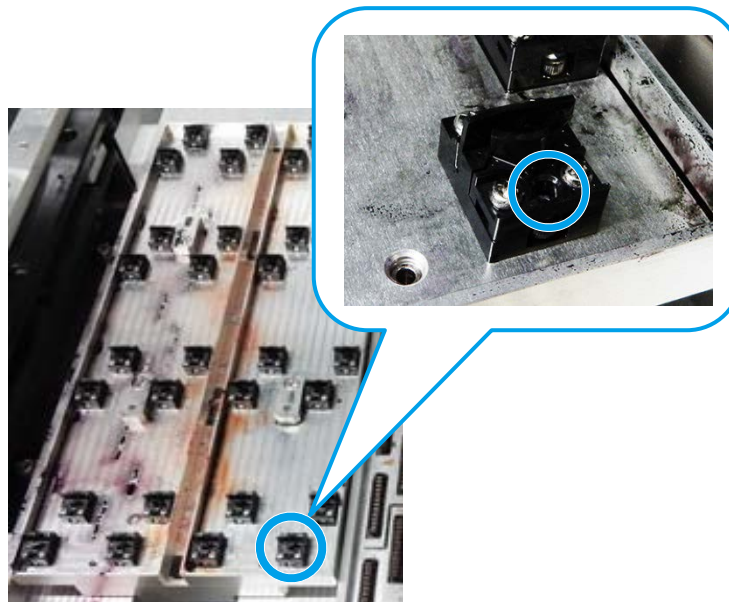
6. Open the front protection cover.



7. Remove the wiper unit (assembly).

Loosen the screw that secures the wiper unit at the center with the hex key (width: 2.5 mm) and remove the wiper unit.

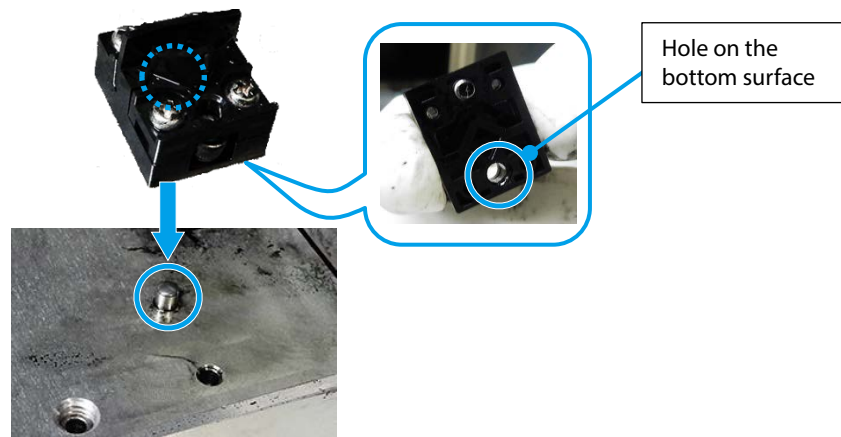
 CAUTION	Make sure that the machine's power is off before performing work.
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8. Wipe the location where the wiper unit is removed using the cleaning cloth or clean stick moistened with maintenance liquid.

9. Attach a new wiper unit.

Insert the pin at the installation position into the hole on the bottom surface of the wiper unit.

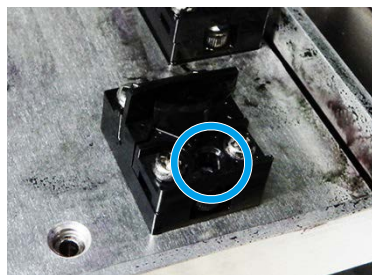


10. Tighten the screw on the wiper unit with the hex key (width: 2.5 mm).



Do not pull the rubber part of the wipers.

When attaching the wiper unit, make sure that the unit is installed in the proper position and direction.



11. Grease may have oozed out of the rubber surface.

Wipe the wiper rubber section gently using the clean stick moistened with maintenance liquid.



12. After replacement, make sure that no tools or other items are left on the print head operating area or carriage operating area.

13. Close the front protection cover.

14. Turn the main power switch to 1 (ON) to turn the power on.

15. Start up Leonardo.

16. Release the emergency stop button.


17. Execute Set point.

On the Leonardo operation screen, click [Setpoint] and then press the reset button on the main electric panel. The head carriage moves to the cleaning station.

5.3. Towel Roller Fabric Replacement

Frequency	When necessary/When a problem occurs
When to Replace	Replace the fabric attached to the towel roller when it is very wet or dirty. If you continue to use it without replacing it, the water left on the belt will not be sufficiently wiped up, leaving water remaining on the belt.
User Permissions	L
Personal Protective Equipment	Protective clothing, protective gloves (for when you touch the ink-stained fabric)
Required Items	Replacement fabric: Non-fluffy fabric with good water-absorption properties (Cotton recommended. Size: 1,850 x 1,600 mm), double-sided tape (Thick), alcohol disinfectant, wipe cloth

1. Check that the machine is in the Power Off Status. (See: 1.5.1 Power Off Status)
2. Check that the towel roller is on top of the support screws.
3. Remove the towel roller from the machine.
Firmly hold the towel roller in both hands, lift it up slowly and horizontally following the left and right grooves, and remove it from this machine.

	<p>Be careful not to interfere with the fabric feeding position sensor, which is located directly below the towel roller. When removing the towel roller, you can avoid interference by tilting the sensor diagonally.</p>
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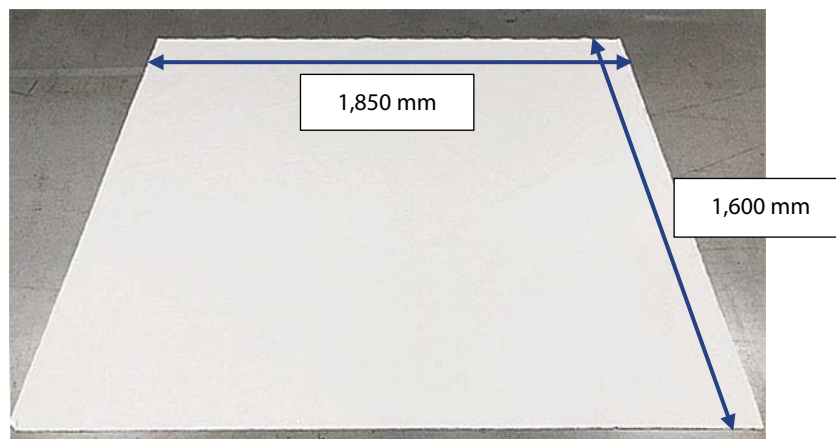


Fabric feeding position sensor

4. Place the towel roller on a horizontal location.
5. Peel off the double-sided tape from the edge of the fabric, and remove the fabric.



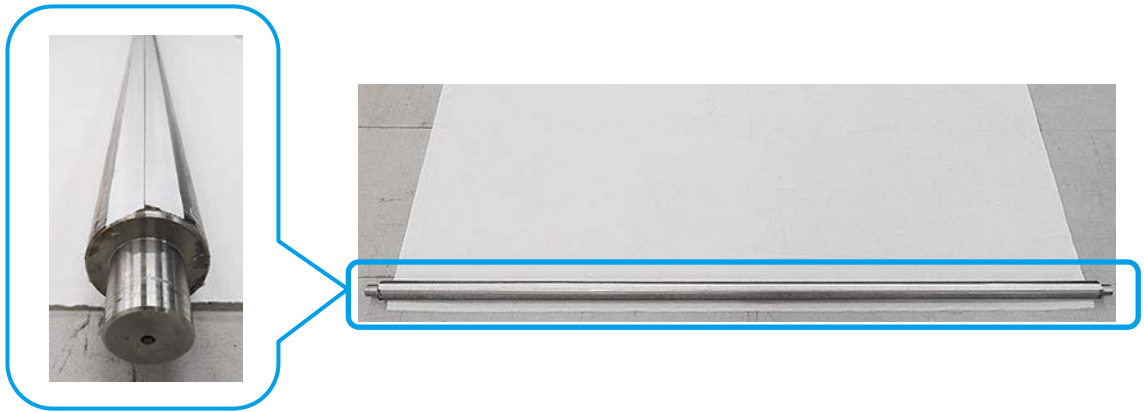
6. Use a wipe cloth soaked in alcohol disinfectant to remove any tape adhesive left on the towel roller shaft.
7. Spread out the replacement fabric on a level location free from foreign material.



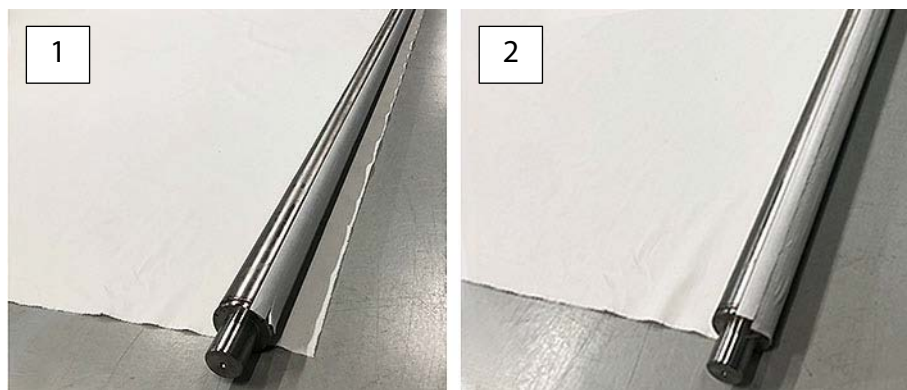
8. Place the towel roller on the edge of the fabric, and affix the opposite side using curing tape.



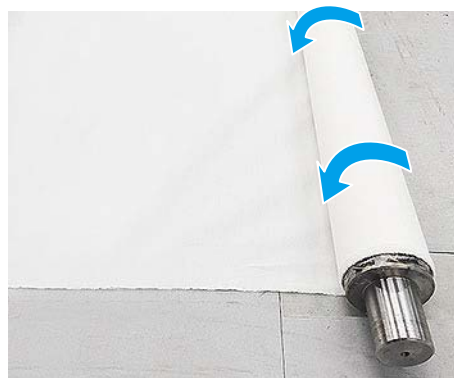
9. Apply double-sided tape to the towel roller shaft.



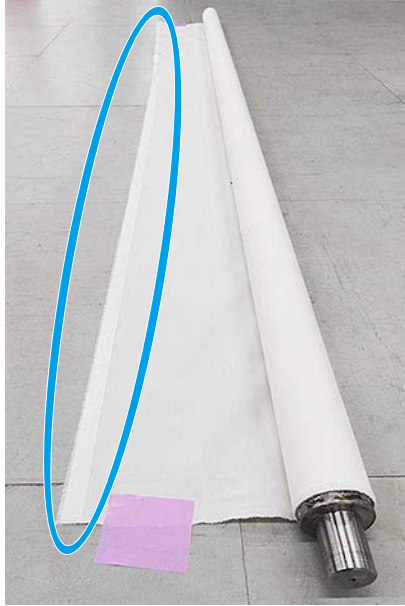
10. (1) Peel off the liner of the tape applied to the towel roller, then (2) press the tape up against the fabric edge to adhere it.



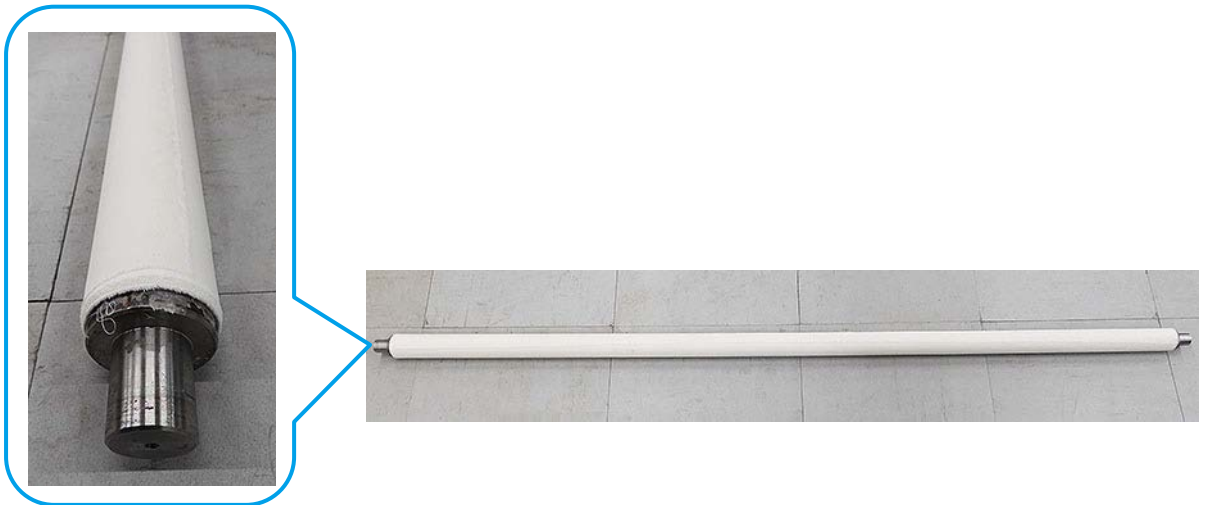
11. Turn the towel roller horizontally to roll up the fabric.



12. When you reach the edge of the fabric, peel off the curing tape and apply double-sided tape to the fabric edge.



13. Peel off the tape liner, and then adhere the fabric edge to the towel roller.



14. Attach the towel roller to this machine.

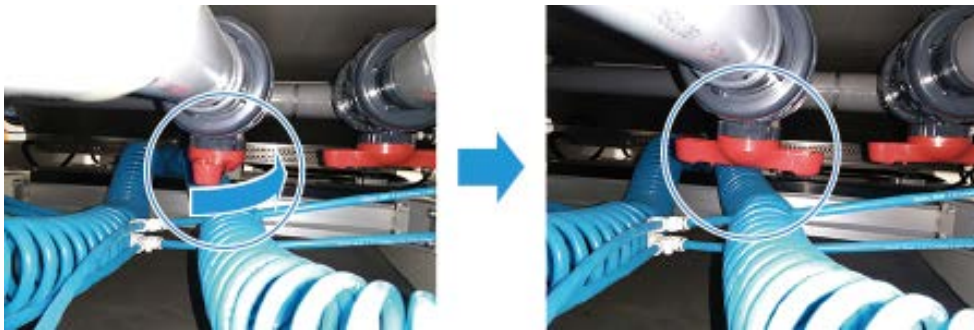
Firmly hold the towel roller in both hands, and move to the rear of this machine.

15. Align the towel roller shaft with the left and right towel roller grooves, and slowly and horizontally lower it. Place the left and right ends of the shaft on the support screws.

5.4. Washing T-shaped Scraper Replacement

Frequency	When necessary
When to Replace	When the area in contact with the glue belt is worn/deteriorated. If the contacting area is worn/deteriorated, water cannot be wiped off completely after belt cleaning, resulting in water remaining on the belt.
User Permissions	L
Personal Protective Equipment	Protective gloves and clothing
Required Items	Replacement washing T-shaped scraper, two belt cleaning unit wheels, hex key (width: 6 mm)

1. Check that the machine is in the Power Off Status. (See: 1.5.1 Power Off Status)
2. Turn the left drain valve in the direction of the arrow to close it.

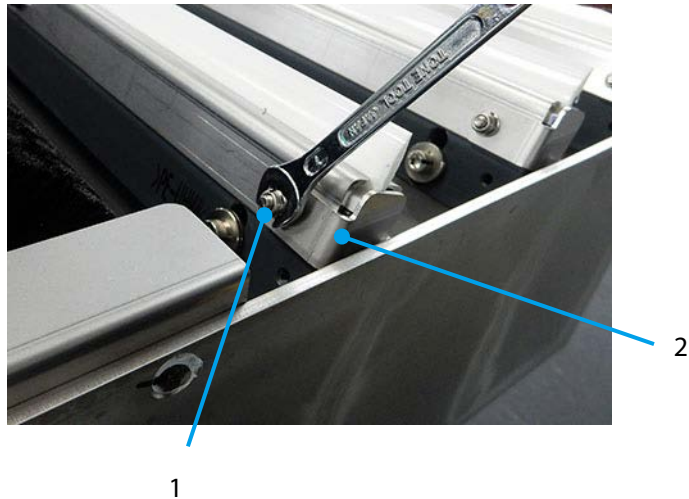


3. Remove the screw from each fastener that secures the belt cleaning carriage at two locations using the hex key (width: 6 mm).
4. Pull the belt cleaning tank toward you until the carriage rail hits the stopper nearest from you.
5. Attach the belt cleaning unit wheels on the right and left sides.
6. Remove the stopper and pull out the belt cleaning tank completely.

- Remove the fixing plate that secures the washing T-shaped scraper to be replaced.
Remove the screw and washer [1] on the fixing plate on the side to be pulled out using the spanner (width: 7 mm), and remove the fixing plate [2].



Be careful not drop the screw, washer, and fixing plate into the cleaning tank.

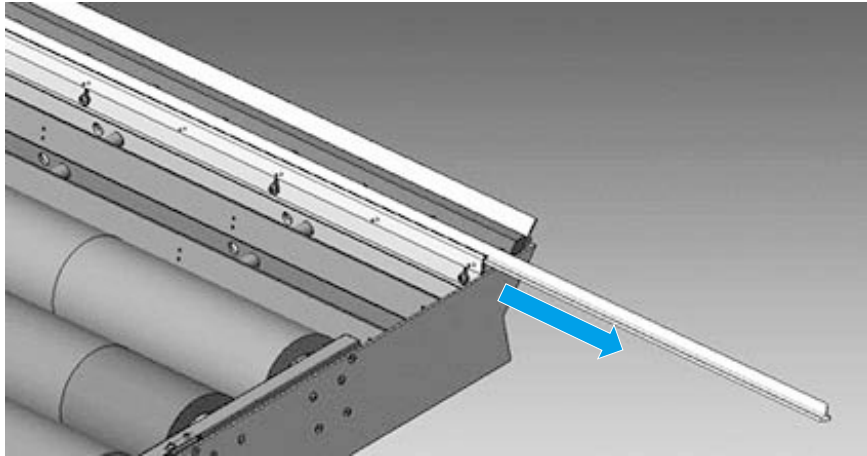


- Loosen the 10 screws that secure the whole scraper.
While holding the screw hole behind the screw with the hex key (width: 2.5 mm), loosen the screw with the spanner (width: 7 mm).



9. Pull out the scraper.

If fluffy dust has become fused, remove it first as the scraper may be stuck when pulled out.



10. Insert a new scraper in the location where the scraper was pulled out.

11. Tighten the 10 screws that secure the whole scraper using the spanner (width: 7 mm) and hex key (width: 2.5 mm).

12. Attach the fixing plate. Secure the screw, washer and fixing plate using the spanner (width: 7 mm). This completes the replacement procedure.

13. Return the belt cleaning tank to the original position.

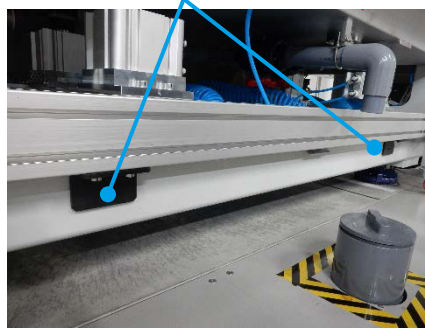
Return the belt cleaning tank to the carriage rail. Attach the stopper and remove the belt cleaning unit wheels.

When returning the belt cleaning tank to the original position, check if the two fasteners on the belt cleaning tank are touching the machine, and if the belt cleaning tank is touching the belt cleaning unit position sensor.

If there is a gap between the two fasteners on the belt cleaning tank and the machine, or if the belt cleaning tank is not touching the belt cleaning unit position sensor, the machine enters the emergency stop condition and will not operate.



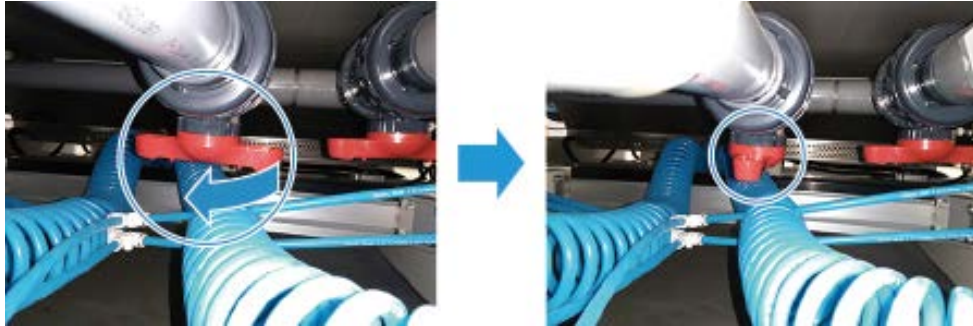
Fasteners on the belt cleaning tank



Belt cleaning unit position sensor

14. Tighten each screw on the two fasteners on the belt cleaning tank with the hex key (width: 6 mm).

15. Turn the left drain valve in the direction of the arrow to open it.



5.5. Washing Silicone Scraper Replacement

Frequency	When necessary
When to Replace	When the area in contact with the glue belt is worn/deteriorated. If the contacting area is worn/deteriorated, water cannot be wiped off completely after belt cleaning, resulting in water remaining on the belt.
User Permissions	L
Personal Protective Equipment	Protective gloves and clothing
Required Items	Replacement washing silicon scraper, two belt cleaning unit wheels, hex key (width: 4 mm)

1. Check that the machine is in the Power Off Status. (See: 1.5.1 Power Off Status)
2. Pull out the belt cleaning tank.
Perform Procedures 1 to 5 in 5.4. (See: 5.4 Washing T-shaped Scraper Replacement)
3. Remove the washing silicone scraper to be replaced.
Loosen the 15 screws that secure the silicon scraper using the hex key (width: 4 mm).
4. Lift out the silicone scraper and attach a new silicone scraper.

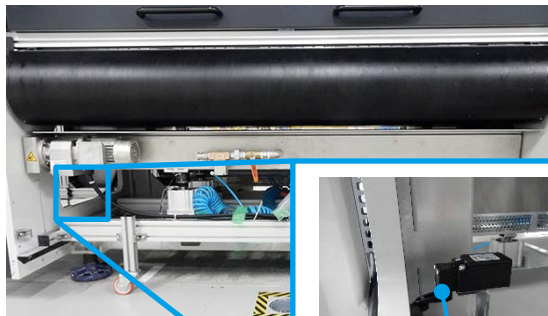
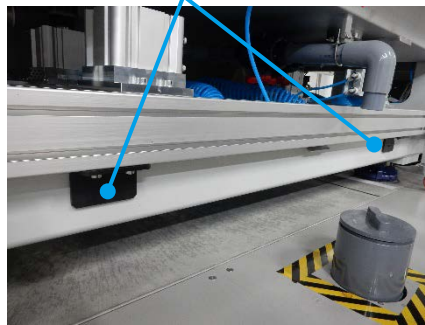
5. Return the belt cleaning tank to the original position.
Perform Procedures 12 to 13 in 5.4. (See: 5.4 Washing T-shaped Scraper Replacement)

When returning the belt cleaning tank to the original position, check if the two fasteners on the belt cleaning tank are touching the machine, and if the belt cleaning tank is touching the belt cleaning unit position sensor.

If there is a gap between the two fasteners on the belt cleaning tank and the machine, or if the belt cleaning tank is not touching the belt cleaning unit position sensor, the machine enters the emergency stop condition and will not operate.



Fasteners on the belt cleaning tank



Belt cleaning unit position sensor

5.6. Pressure Roller Replacement


Frequency	When necessary
User Permissions	L
Personal Protective Equipment	Protective gloves and clothing
Required Number of Workers	2
Required Items	Replacement pressure roller

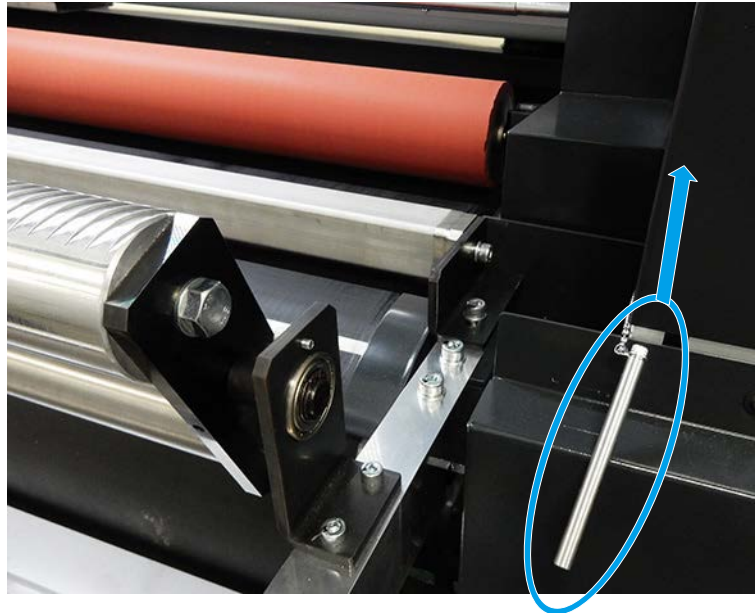
1. Check that the machine is in the Printing Standby Status. (See: 1.5.2 Printing Standby Status)
2. Operate the button to move the pressure roller toward you and stop it.
3. Operate the button to lift the pressure roller.




4. Press the emergency stop button.
5. Close the Leonardo screen and shut down the PC.
6. Turn the main power switch to 0 (OFF) to turn the power off.
7. Open the rear protection cover.

8. Insert the stopper pins on both sides.

	CAUTION Make sure that the machine's power is off before performing work.
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9. Lift the pressure roller vertically to remove it.

	CAUTION Make sure that removal and installation of the pressure roller is performed by two workers due to the weight of the roller. When lifting a pressure roller, lift with your legs and not your back.
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10. From the removed pressure roller, remove the two bearings and replace them.

11. Attach a new pressure roller.

12. Remove the stopper pins on both sides.

13. Close the rear protection cover.

14. Turn the main power switch to 1 (ON) to turn the power on.

15. Start up Leonardo.

16. Release the emergency stop button.





17. Execute Set point.
Performing Set point causes the pressure roller to automatically come down.

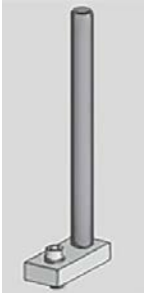

6. Glue Re-Application








6.1. Glue Removal


To remove glue, pour the remover from the rear of the machine to dissolve the glue, and then scrape glue away from the front of the machine.









This section describes the procedures for using the glue remover recommended by Epson.

Frequency	When the fabric attached to the belt rises slightly or when there is damage such as peeling of the glue	
User Permissions	H	
Required Number of Workers	Min. 2 persons	
Personal Protective Equipment	The following is the protective equipment that must be worn when using the glue or glue remover recommended by Epson. For details, refer to the instructions of the SDS for the glue and glue remover you are actually using.	
	Eye protection (For organic solvent use; Optimal is a goggle-type that seals against your face)	
		
	Gas mask (For organic solvent use)	
		
	Protective gloves (Butyl or polyurethane)	
		
Protective clothing (Long-sleeved)		
Hair net (Persons with long hair must be tied together with a hair net also worn)		
Safety shoes		

Required Items	Item	Quantity	Details
	Blade installation part 	2	Bundled item
	Application rod 	1	Bundled item

Required Items	Item	Quantity	Details
Glue collection bucket		1	Bundled item
Glue-removal felt		1 sheet	2 sheets bundled. After these are used, use commercially available felt products of the same size: 190 (Width) x 45 (Length) cm {75 x 18 in}
Glue remover		5 to 10 L	Recommended product • Cleanser TS (Murayama Chemical Laboratory) • ATR1222 (ATR) • ATR3222 (ATR)
Ethanol		0.25 L	Commercially available
Bottle (For ethanol)		1	Commercially available
Hex key		1 set	Commercially available
Wipe cloths (For wiping the belt. Use cloths of soft non-fluffy material that will not damage the belt.)		Proper amount	Commercially available
Bucket for glue remover		1	Commercially available
Cable ties		Approx. 4 ties	Commercially available

Required Items	Item	Quantity	Details
	Rubber spatula or plastic spatula (a material that does not dissolve in organic solvents) 	1	Commercially available
	Bags or plastic sheets (a material that does not dissolve in organic solvents)	Proper amount	Commercially available. Used to protect the belt cleaning tank and electric box.

 CAUTION	
    	<p>Wear eye protection, protective gloves, protective clothing, and respiratory protection when performing these procedures.</p> <p>Check the Safety Data Sheet (SDS) for the glue or remover you will actually use for details, and wear the necessary protective gear.</p>
 	<p>- Wear a hat so that your hair does not fall onto the belt.</p>
	<p>- Long hair should be tied back and worn under a hair net.</p>

6.1.1 Preparation

1. Check that the machine is in the Power Off Status.
2. Two persons are required to remove the fabric.
(See: "Operation Guide" - "Set the Fabric")



CAUTION

Make sure that removal and installation of the fabric roller is performed by two or more workers due to the weight of the fabric.

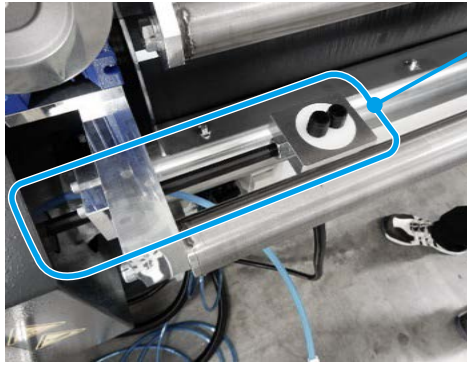
When lifting the fabric roller, lift with your legs and not your back.



3. Remove the towel roller shaft.

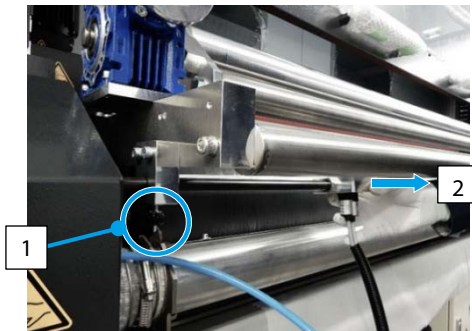


4. Remove the fabric feeding position sensor.



Fabric feeding position sensor

Turn by hand and loosen screw [1] under the sensor and remove the sensor in direction [2].



5. Open the rear protection cover.

6. Remove the fabric guide bar.

Remove the screws on each side of the roller (1 each) using the hex key (width: 6 mm).



7. Two persons are required to remove the fabric guide bar.

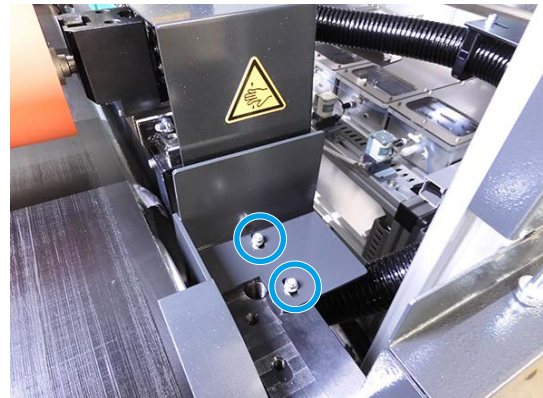
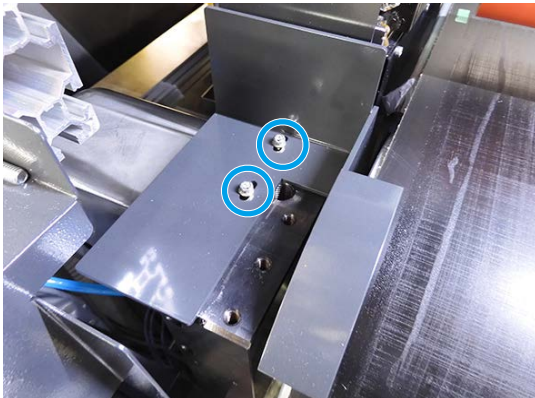
8. Remove the tension roller.
Remove the screws on each side of the roller (2 each) using the hex key (width: 5 mm).



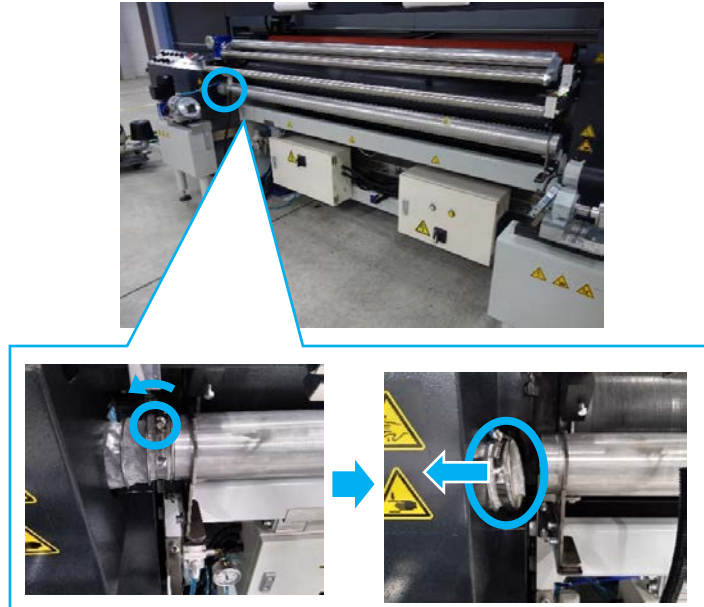
9. Two persons are required to remove the tension roller.



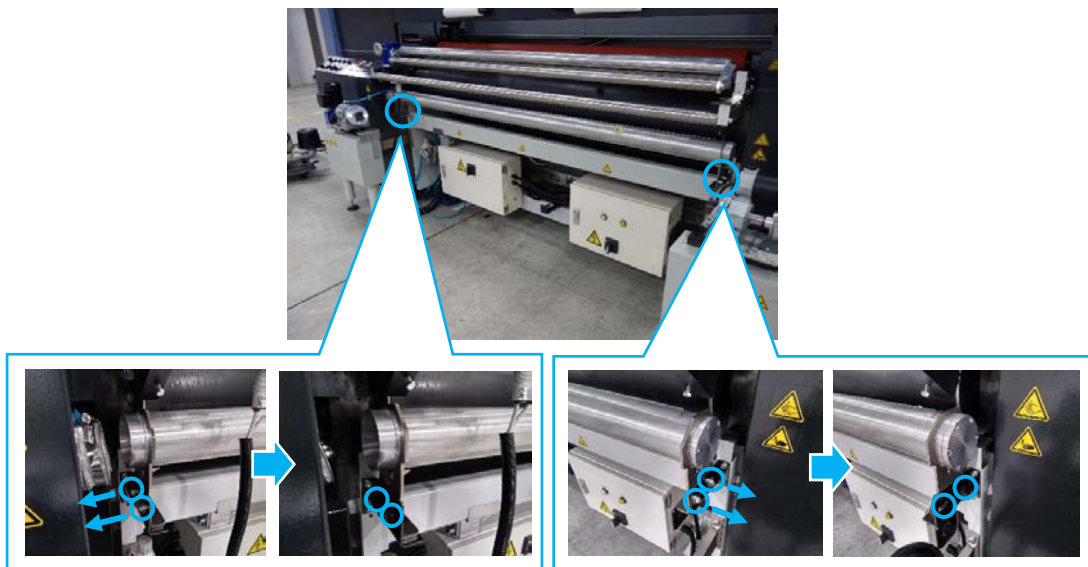
10. Remove the catching-prevention cover of hair and body parts on the right and left sides of the belt.
Remove the screws (2 each on left and right) of the catching-prevention cover using the hex key (width: 4 mm).



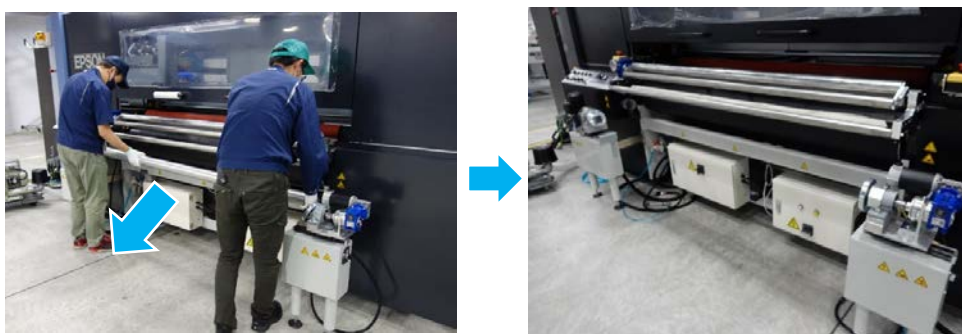
11. Use a spanner (width: 7 mm) to loosen the screw on the blower hose, and remove the blower hose from the blower.



12. Loosen and remove the screws on the blower (4 each) using the hex key (width: 5 mm).



13. With two persons, pull out the blower toward you and remove it.

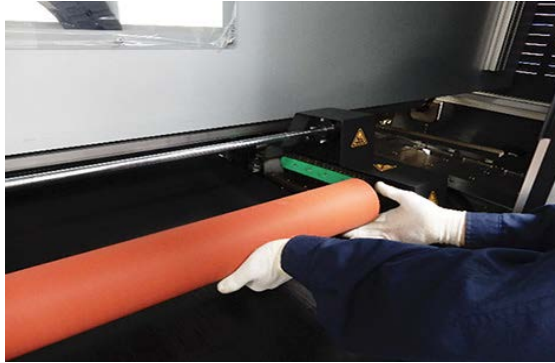


14. Remove the pressure roller.
Lift the pressure roller vertically to remove it.

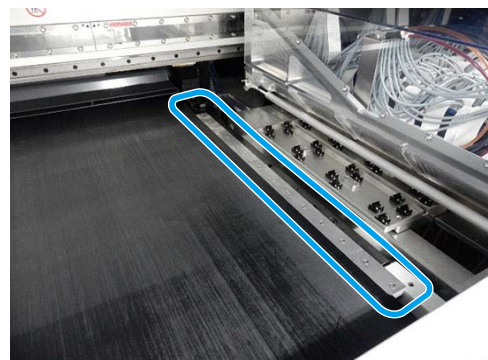


CAUTION

Make sure that removal and installation of the pressure roller is performed by two workers due to the weight of the roller.
When lifting a pressure roller, lift with your legs and not your back.



15. Remove the belt holder covers from both sides of the belt.
Remove the screws (14 each) of the belt holder covers using the hex key (width: 2.5 mm) and remove the covers.



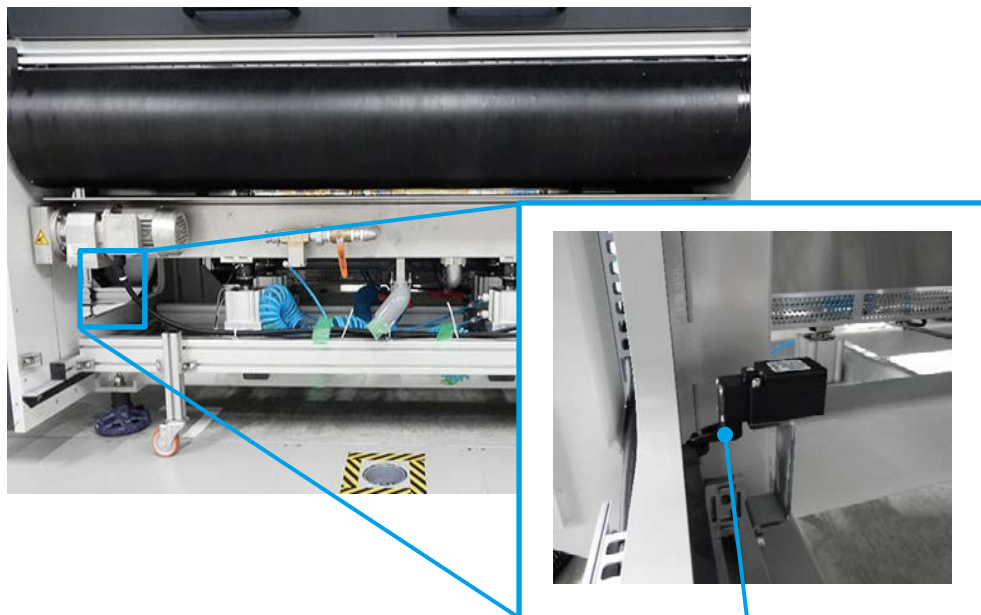
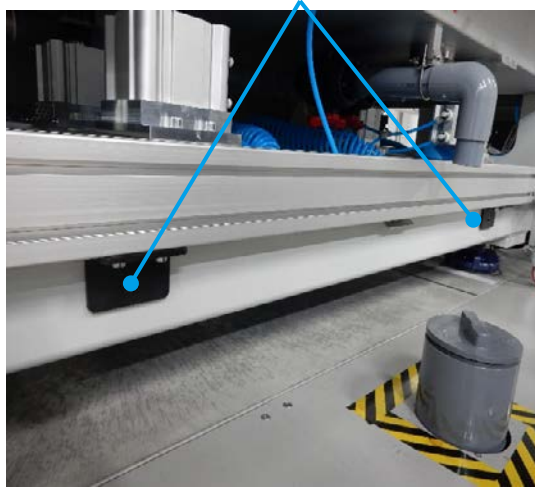
16. Pull out the belt cleaning tank.
Perform Procedures 1 to 6 in 5.4. (See: 5.4. Washing T-shaped Scraper Replacement)
17. Cover the belt cleaning tank and the electric box on the underside of the feeding side, so they do not become soiled by glue or solvents.
Example: Cover them with bags or plastic sheets.
18. Return the belt cleaning tank to the original position.
Perform Procedures 13 to 16 in 5.4. (See: 5.4. Washing T-shaped Scraper Replacement)



When returning the belt cleaning tank to the original position, check if the two fasteners on the belt cleaning tank are touching the machine, and if the belt cleaning tank is touching the belt cleaning unit position sensor.

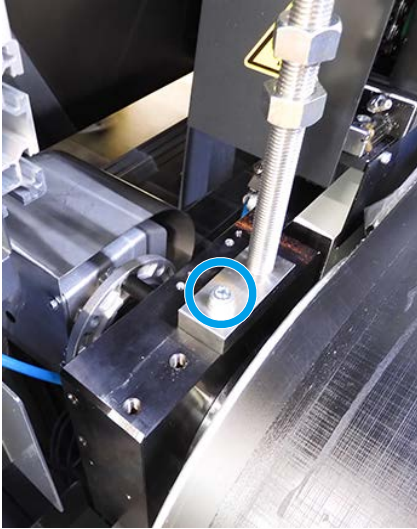
If there is a gap between the two fasteners on the belt cleaning tank and the machine, or if the belt cleaning tank is not touching the belt cleaning unit position sensor, the machine enters the emergency stop condition and will not operate.

Fasteners on the belt cleaning tank



Belt cleaning unit position sensor

19. Move to the rear of the machine, and install the blade installation parts on the right and left. Install next to the belt and tighten the screws (1 each on right and left) using the hex key (width: 5 mm).



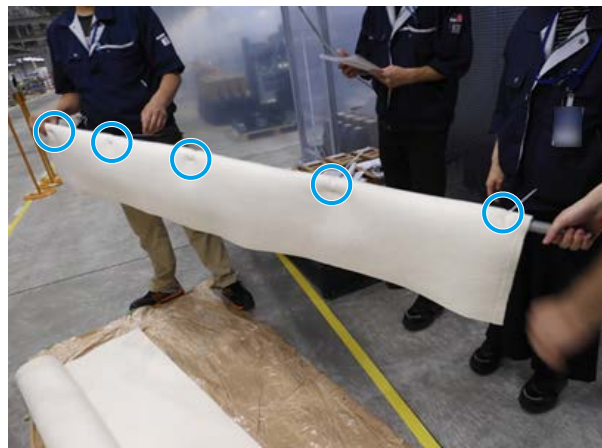
20. Attach the felt to the application rod.



When using commercially available felt:

Sew the ends into bag shapes to make mounting holes, or use cable ties to secure the felt in place after wrapping the felt around the application rod.

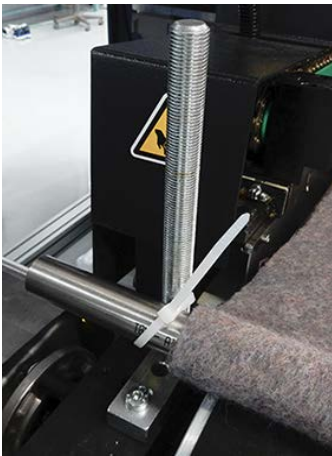
Example: Securing the felt with cable ties



21. Place the application rod on the belt.




22. Secure the application rod and blade installation parts with cable ties.

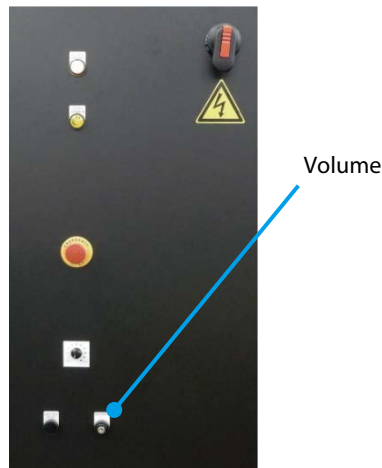


6.1.2 Glue Removal

1. Turn the main power switch to 1 (ON) to turn the power on.
2. Insert the maintenance key in [Maintenance] and turn it to the right. Leonardo switches to the glue application mode.

 CAUTION
Do not insert the maintenance key except for when applying glue. Inserting the maintenance key disables the belt operation safety function, resulting in a dangerous situation. The maintenance key should be stored by someone who has been authorized by the person in charge at the company. Store it in a safe location that can be locked.

3. Set the scale of the volume in the rear panel to 0.



4. Place a check mark in [Feedrate enable] in Leonardo and then click [+]. When continuously feeding the belt, you can adjust the feeding speed using the volume in the electric box.



5. Pour the glue remover into the glue remover bucket.



CAUTION

When using the glue remover, wear the personal protective equipment for organic solvent use, such as protective gloves, eye protection, and respiratory protection.

6. Soak the felt with an appropriate amount of glue remover (approx. 2 L).
Worker 1 (at the rear of the machine): Soak the felt a little at a time so that the remover completely permeates the felt.



7. Set the scale of the volume in the electric box at 1 to 3, and then rotate the belt in the forward direction.
8. Gradually soak with the glue remover until it is uniformly spread.
9. The glue on the belt surface begins to dissolve.
Make sure that the glue becomes loose and rises slightly along the entire belt.
10. When the glue rises slightly along the entire belt, raise the scale of the volume in the electric box to 3 to 5.
11. Start performing glue removal work.
Worker 2: Take the glue collection bucket and move to the front of the machine.

12. Remove the glue from all areas of the belt.

Worker 1 (at the rear of the machine): To prevent the glue remover on the surface of the belt from drying, soak the entire surface of the felt with more glue remover.

Worker 2 (at the front of the machine): Securely grasp the handles of the glue collection bucket with both hands and press it against the belt surface to scrape away the glue.



CAUTION

Pressing too hard on the glue collection bucket may scratch the surface of the belt.



13. Worker 2: Once most of the glue has been scraped away, gradually move to the left while scraping away glue from all areas of the belt.

Worker 1: While checking the scraping conditions, continue pouring an appropriate amount of remover onto the felt.

14. After scraping away the glue, if there are any areas with hardened glue remaining, stop the belt and use a wipe cloth to remove it.

If the hardened glue cannot be easily removed, soak the felt with remover again to make the hardened glue rise, and then scrape it away.



15. When all glue has been removed, remove the felt.
Dispose of the felt in the proper manner for industrial waste.

6.1.3 Belt Surface Cleaning

1. Use a wipe cloth soaked in ethanol (proper amount) to wipe the belt surface.
2. When the belt surface is completely clean, slowly rotate the belt and wipe clean using an ethanol-soaked cloth.



Wipe off the glue until the belt surface has a luster. Be especially careful to remove the glue from both edges of the belt.



3. Set the scale of the volume in the electric box to 0 and then stop the rotation of the belt.
4. Click [+] in Leonardo.



CAUTION

Do not insert the maintenance key except for when applying glue. Inserting the maintenance key disables the belt operation safety function, resulting in a dangerous situation. The maintenance key should be stored by someone who has been authorized by the person in charge at the company. Store it in a safe location that can be locked.


6.1.4 Clean-Up

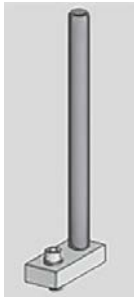

Use wipe cloths or similar to absorb any waste chemicals, and then dispose of them in the proper manner for industrial waste.








Next, perform glue application (6.2 Glue Application).

6.2. Glue Application

Glue application work is performed at the rear of the machine.
This section describes the procedures for using the glue recommended by Epson.

Frequency	When the fabric attached to the belt rises slightly or when there is damage such as peeling of the glue	
User Permissions	H	
Required Number of Workers	Min. 2 persons	
Personal Protective Equipment	The following is the protective equipment that must be worn when using the glue or glue remover recommended by Epson. For details, refer to the instructions of the SDS for the glue and glue remover you are actually using.	
	Eye protection (For organic solvent use; Optimal is a goggle-type that seals against your face)	
	Gas mask (For organic solvent use)	
	Protective gloves (Butyl or polyurethane)	
	Protective clothing (Long-sleeved)	
	Hair net (Persons with long hair must be tied together with a hair net also worn)	
Safety shoes		

Required Items	Item	Quantity	Details
	Blade installation part 	2	Bundled item
	Blade (For glue application) 	1	Bundled item

Required Items	Item	Quantity	Details
	Glue application blocks 	2	Bundled item
	Bucket for glue 	2	Commercially available
	Scale	1	Commercially available
	Scissors	1	Commercially available
	Stirring rod for preparing glue	1	Commercially available
	Hex key 	1 set	Commercially available
	Glue (1st layer): ATR1945 (ML/T)	1.6 kg	Recommended product
	Glue (2nd layer): ATR1946 (ML/S)	0.8 kg	Recommended product
	Glue (2nd layer): ATR1947 (ML/K)	0.8 kg	Recommended product
	Glue remover 	Proper amount	Recommended product • Cleanser TS (Murayama Chemical Laboratory) • ATR1222 (ATR) • ATR3222 (ATR) Used to clean the blade and the accessories.
	Ethanol	0.25 L	Commercially available
	Bottle (For ethanol) 	1	Commercially available
	Soapy water	Proper amount	Commercially available
	Cleaning bottle (For soapy water) 	1	Commercially available
	Wipe cloths (For wiping the belt. Use cloths of soft non-fluffy material that will not damage the belt.) 	Proper amount	Commercially available



CAUTION



Wear eye protection, protective gloves, protective clothing, and respiratory protection when performing these procedures.

Check the Safety Data Sheet (SDS) for the glue or remover you will actually use for details, and wear the necessary protective gear.



- Wear a hat so that your hair does not fall onto the belt.

- Long hair should be tied back and worn under a hair net.

6.2.1 Preparation

1. Clean the belt surface. Use a wipe cloth soaked in ethanol (proper amount) to wipe the belt surface clean while slowly feeding the belt.
Wipe off the glue until the belt surface has a luster. Be especially careful to remove the glue from both edges of the belt.



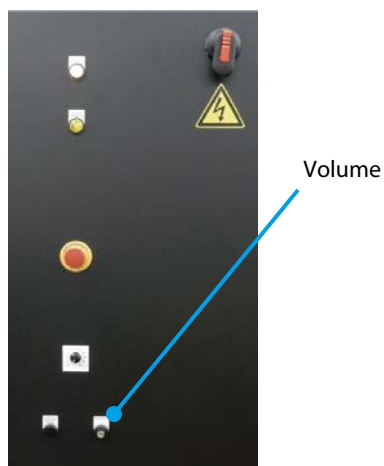
2. Insert the maintenance key in [Maintenance] and turn it to the right.
Leonardo switches to the glue application mode.



CAUTION

Do not insert the maintenance key except for when applying glue. Inserting the maintenance key disables the belt operation safety function, resulting in a dangerous situation. The maintenance key should be stored by someone who has been authorized by the person in charge at the company. Store it in a safe location that can be locked.

3. Set the scale of the volume in the rear panel to 0.



4. Check that a check mark is placed in [Feedrate enable] in Leonardo before clicking [+].
When continuously feeding the belt, you can adjust the feeding speed using the volume in the electric box.



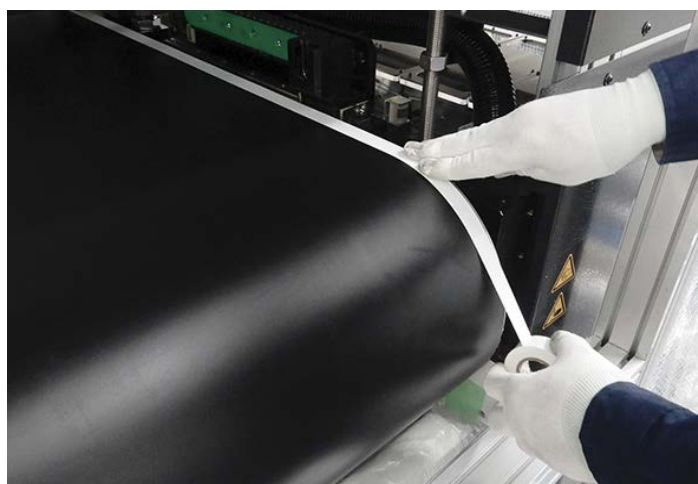
5. Dry the belt.
Set the scale of the volume in the electric box to 5, and then rotate the belt in the forward direction for 30 minutes.
6. From the front of the machine, affix the insulating tape (mending tape) to both edges of the belt.
Affix insulating tape completely around the belt. Stop rotating the belt so that the corners of the insulating tape contact the edges of the belt.



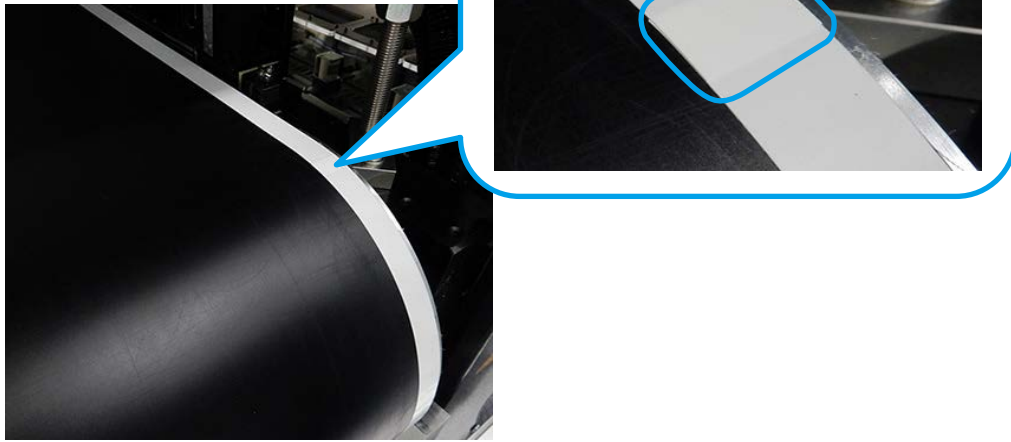
7. Set the scale of the volume in the electric box at 1 to 3, and then slowly rotate the belt in the forward direction so that the tape is affixed completely around the belt.
Press down any areas of tape that are floating up, and remove any foreign material using a wipe cloth or the like.



If the tape is floating up, friction with the blade could cause the tape to tear during glue application.
If the tape tears, the glue cannot be applied uniformly; therefore, the glue must be reapplied.



8. Stop rotation of the completely affixed belt and overlap the tape seams by about 5 to 10 mm.



9. Slowly rotate the belt again while checking there is no foreign material adhering to the belt and remove any that is found.

10. Clean the blade.

Use a wipe cloth soaked in ethanol to wipe off any dirt on the blade.

If it is extremely dirty, use the glue remover in advance to wipe off the dirt.



CAUTION

When using the glue remover, wear the personal protective equipment for organic solvent use, such as protective gloves, eye protection, and respiratory protection.

11. Install the blade.

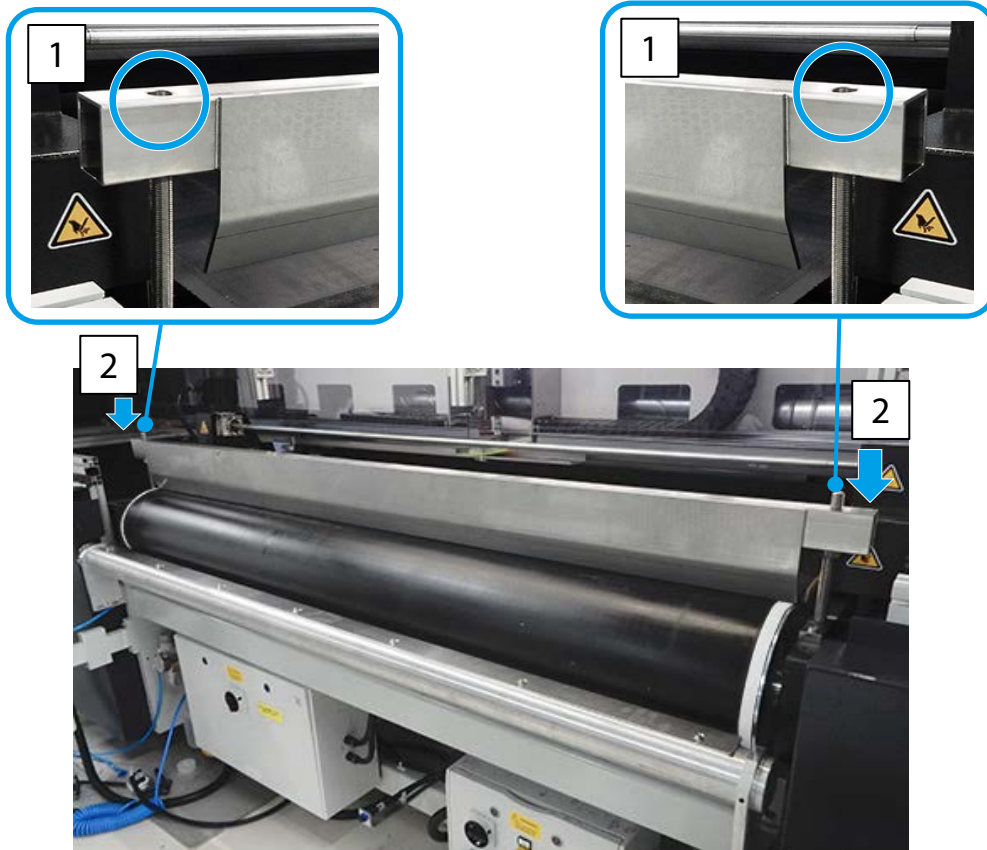
Two persons are required to carry the blade to the rear of the machine.



Do not place the blade on the floor with the sharp edge facing down, or bump it against other objects.

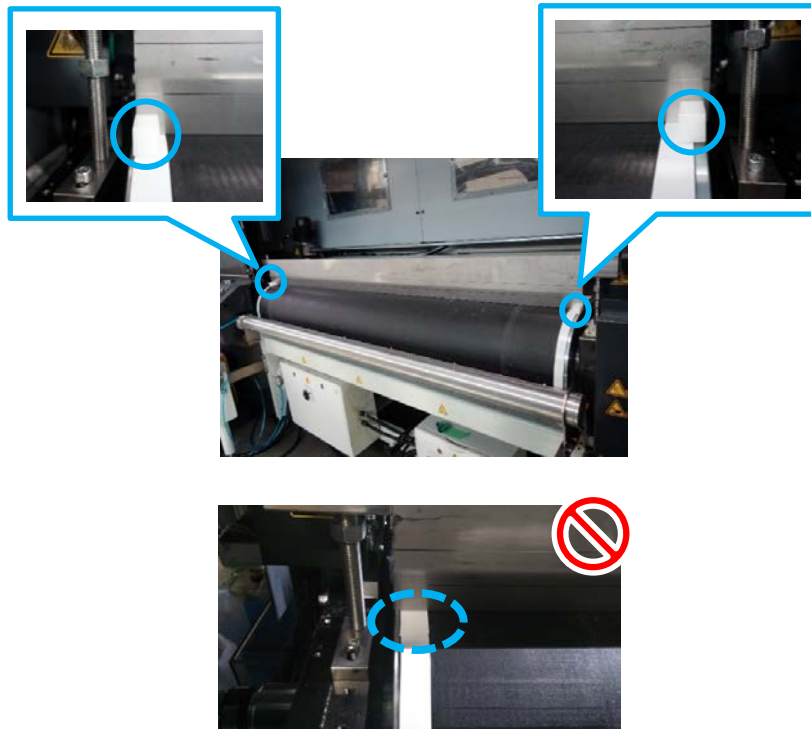
Doing so could damage the sharp edge. A damaged blade will not apply glue uniformly.

- 12.** Align the holes on each end of the blade with the supports on the blade installation parts, and slowly and evenly lower the blade on both right and left sides to avoid damaging the belt.



- 13.** Rotate the belt a little in the forward direction and stop.
This operation sets the blade at a slight angle against the belt. This completes the blade installation procedure.

14. Place one glue application block on each end of the belt so that they are aligned with the edge of the blade. When placing the blocks, do not place them on the seams of the insulating tape applied to both sides of the belt. If the seams of the insulating tape come where you want to place the blocks, feed the belt to where there are no seams.



15. Affix the glue application blocks to both ends of the blade using insulating tape so that there are no gaps in the following:

- Between the block and the belt
- Between the block and the blade



CAUTION

Do not affix the blocks in the states described below. There is a risk that the glue may not be applied evenly, or the glue may leak from the belt edge into the machine, causing a malfunction.

- There is a gap between the block and the belt.



- There is a gap between the block and the blade.



- The block is slanted.



6.2.2 Glue Preparation

1. Prepare the glue for the first layer.
Set the glue bucket on the scale and pour in the glue (ATR1945 (ML/T), 1.6 kg).



CAUTION

When using the glue, wear the personal protective equipment for organic solvent use, such as protective gloves, eye protection, and respiratory protection.



Pour glue into the bucket slowly along the bucket side, to avoid the glue forming bubbles in the bucket.

2. Mix the two glue types to prepare the 2nd-layer glue.
Set a glue bucket different from step 1 on the scale and pour in the second glue type (ATR1946 (ML/S), 0.8 kg).
Pour in the third glue type (ATR 1947 (ML/K), 0.8 kg) and blend them together using the rod.



Mix the glue slowly to avoid the glue forming bubbles in the bucket.

6.2.3 Glue Application (1st Layer)

1. Rotate the belt in the forward direction.
Set the scale of the volume in the electric box at 4 to 6, and then rotate the belt in the forward direction.
2. Apply the 1st-layer glue. Pour a proper amount of glue to right next to the blade.
Pour so that the glue flows from the center to both edges.



It is not necessary to pour all of the glue at once.

As the glue accumulates in front of the blade, rotate the belt to apply glue slowly to the belt surface through the gap between the blade and belt. As the glue decrease, pour in a proper amount of more glue.



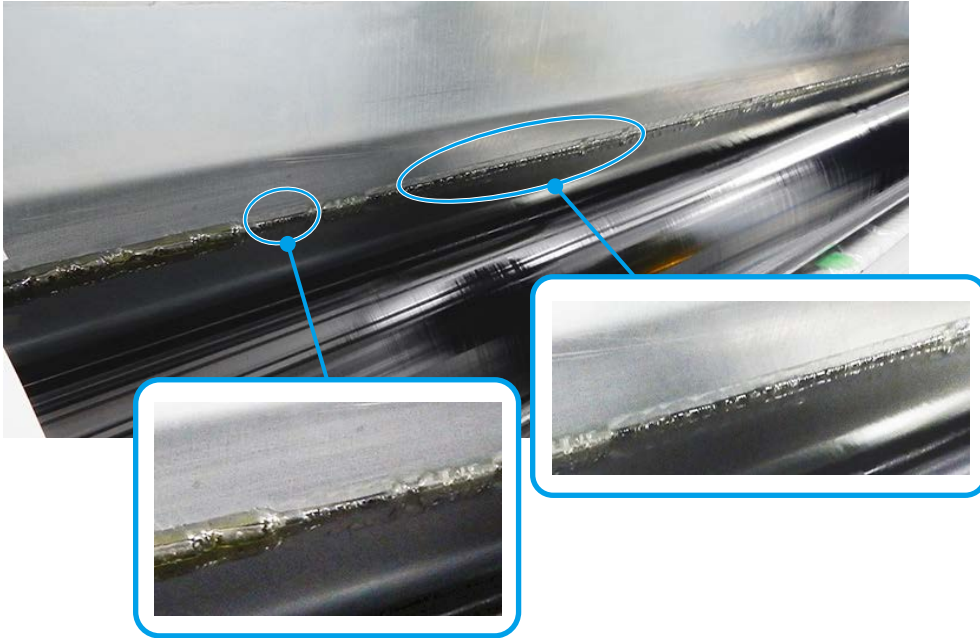
3. When the 1st-layer glue has been completely poured in, prepare the 2nd-layer glue.

6.2.4 Glue Application (2nd Layer)

1. Maintain the belt rotation speed as it is, and when the 1st-layer glue has nearly all been used, pour the 2nd-layer glue.



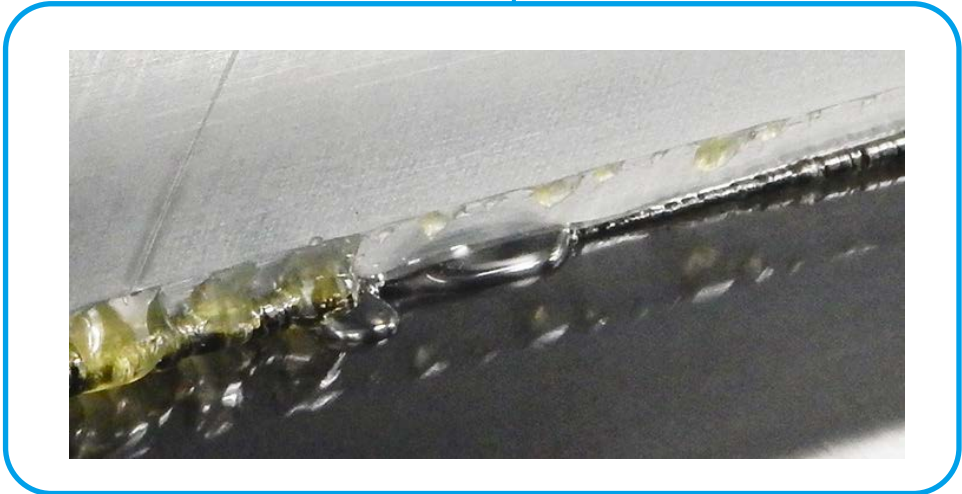
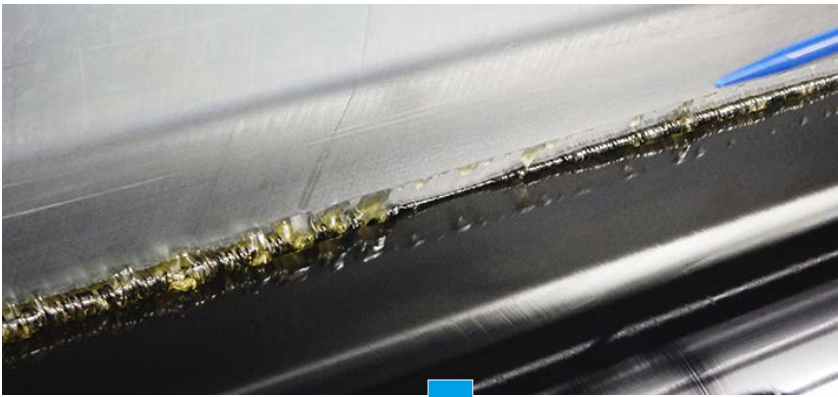
Pour the 2nd-layer glue before the 1st-layer glue has all been used.



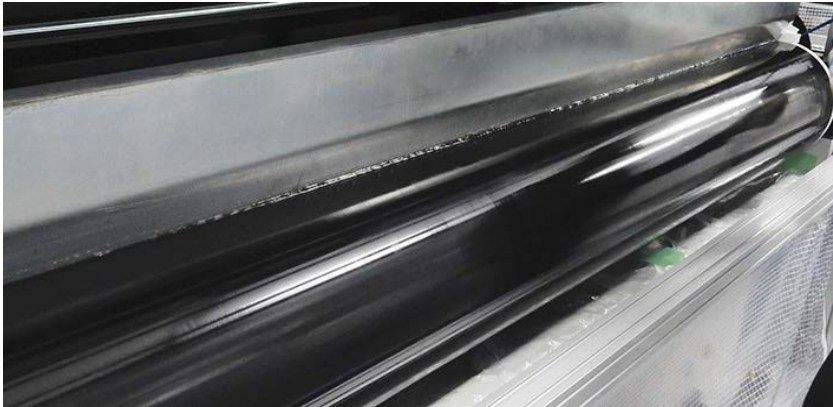
It is not necessary to pour all of the glue at once. Pour a small proper amount of time to the same area as the 1st layer.



- 2. After it has been completely poured, prepare the soapy water, and gradually pour the soapy water above the belt before locations where the 2nd-layer glue has nearly all been used. The soapy water creates a water repellent membrane on the belt surface so that the glue and blade can be easily separated. Repeat this procedure until the glue is completely used.



3. Check that the glue accumulated in front of the blade has been completely used and soapy water is completely applied.



6.2.5 Blade Removal

1. Two persons are required to lift the blade evenly on both right and left sides, and remove it.



Be careful that the blade does not contact the belt surface when removing it.



2. Wipe the blade, glue application blocks, and glue buckets clean using ethanol.
If the dirt cannot be removed, soak a wipe cloth in glue remover to wipe off any glue.



CAUTION

When using the glue remover, wear the personal protective equipment for organic solvent use, such as protective gloves, eye protection, and respiratory protection.

3. Use wipe cloths or similar to absorb any waste solvents, and then dispose of them in the proper manner for industrial waste.

6.2.6 Drying

1. Set the scale of the volume in the electric box to 10, and then rotate the belt in the forward direction for 2 hours.
2. Set the scale of the volume in the electric box to 0 and then stop the rotation of the belt.
3. Click [+] in Leonardo.



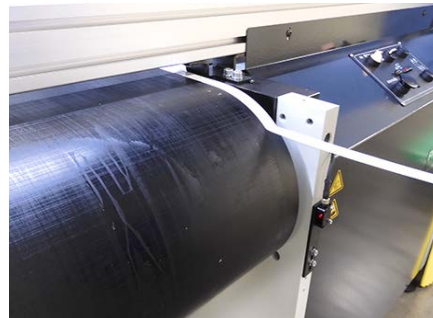
CAUTION

Do not insert the maintenance key except for when applying glue. Inserting the maintenance key disables the belt operation safety function, resulting in a dangerous situation. The maintenance key should be stored by someone who has been authorized by the person in charge at the company. Store it in a safe location that can be locked.

4. Allow to dry for 8 hours or more.

6.2.7 Work After Application

1. After application, leave for 8 hours or more, and then remove the insulating tape. Standing in front of the machine, peel off the insulating tape from the end, and hold the tape while slowly rotating the belt in the forward direction to completely remove it.



2. Attach the belt holder covers.
Attach the belt holder covers, and tighten the screws (14 each) using the hex key (width: 2.5 mm).
3. Check the entire belt for any foreign material.
4. Pull out the belt cleaning tank.
Perform Procedures 1 to 6 in 5.4. (See: 5.4. Washing T-shaped Scraper Replacement)
5. Remove the protection material (bags or plastic sheets) from the belt cleaning tank and electric box.
If there is any organic solvent adhered to the protection material, dispose of the protection material in the proper manner for industrial waste.

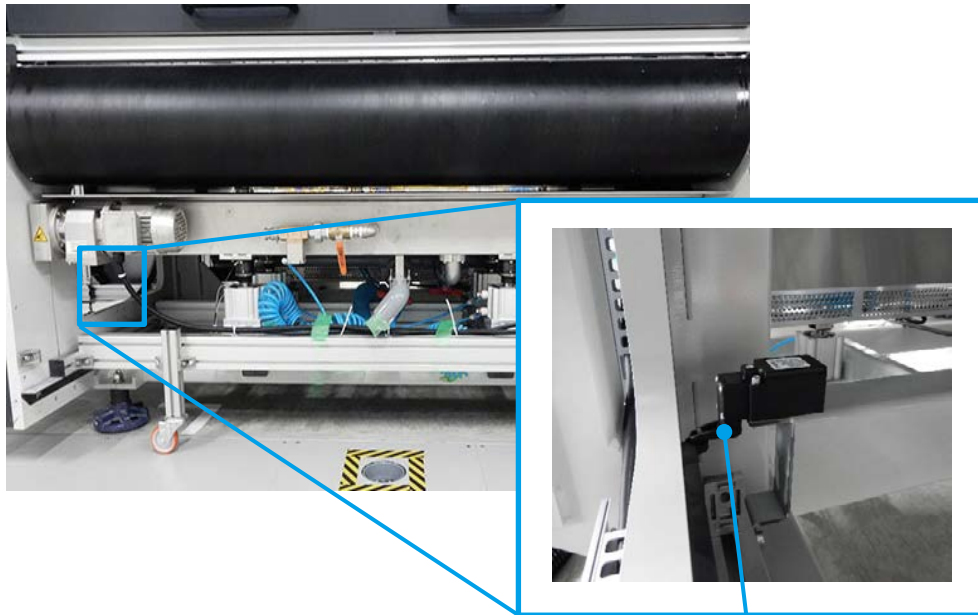
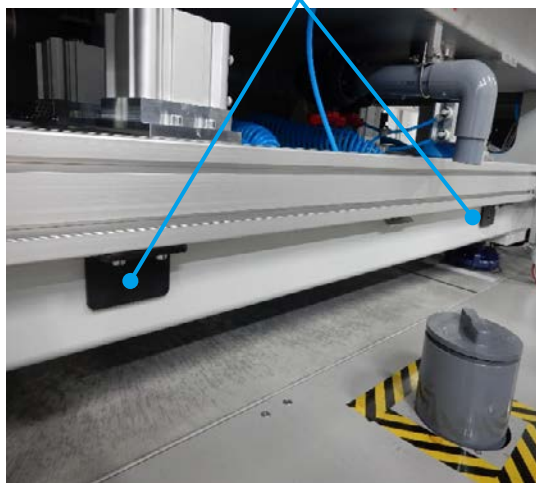
- Return the belt cleaning tank to the original position.
Perform Procedures 13 to 16 in 5.4. (See: 5.4. Washing T-shaped Scraper Replacement)



When returning the belt cleaning tank to the original position, check if the two fasteners on the belt cleaning tank are touching the machine, and if the belt cleaning tank is touching the belt cleaning unit position sensor.

If there is a gap between the two fasteners on the belt cleaning tank and the machine, or if the belt cleaning tank is not touching the belt cleaning unit position sensor, the machine enters the emergency stop condition and will not operate.


Fasteners on the belt cleaning tank



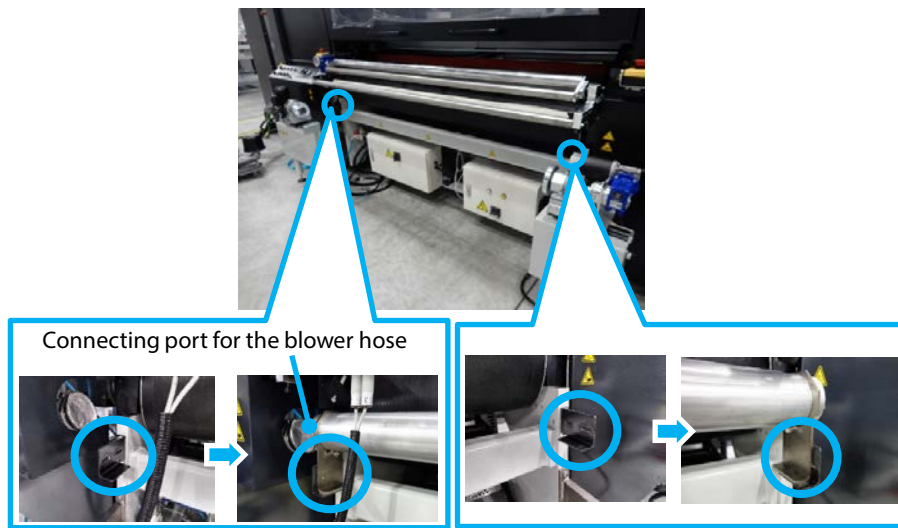
Belt cleaning unit position sensor

- Install the catching-prevention covers of hair and body parts on the right and left sides of the belt.
- Move to the rear of the machine, and remove the blade installation parts.
Loosen the screws (1 each on right and left) using the hex key (width: 5 mm) to remove them.

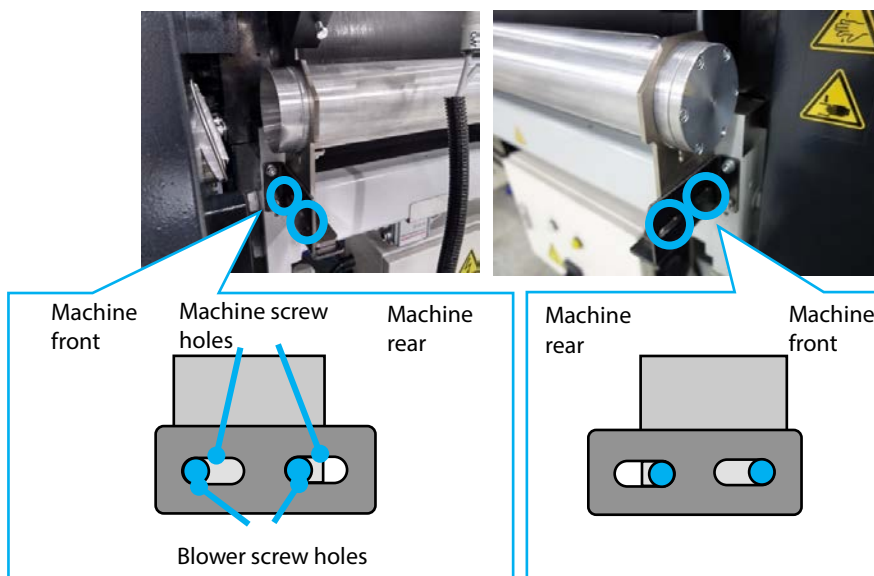
- 9. Install the catching-prevention covers of hair and body parts on the right and left sides of the belt. Install the catching-prevention covers, and tighten the screws (2 each on right and left) using the hex key (width: 4 mm).
- 10. Two persons are required to install the pressure roller.

 CAUTION
<p>Make sure that removal and installation of the pressure roller is performed by two workers due to the weight of the roller.</p> <p>When lifting a pressure roller, lift with your legs and not your back.</p>

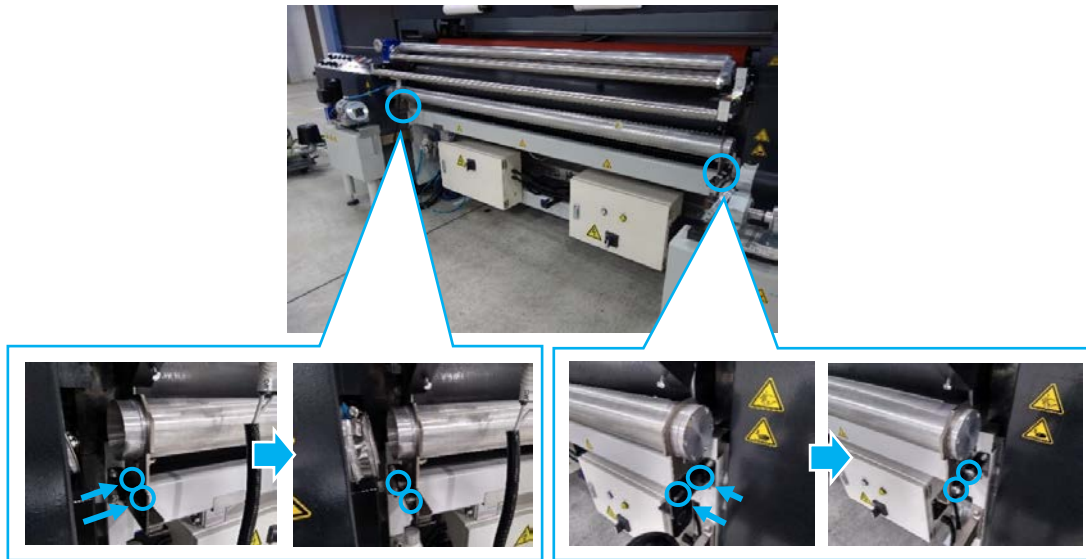
- 11. With two people, place the blower as indicated in the figure, with the connecting port for the blower hose on the rear left side.



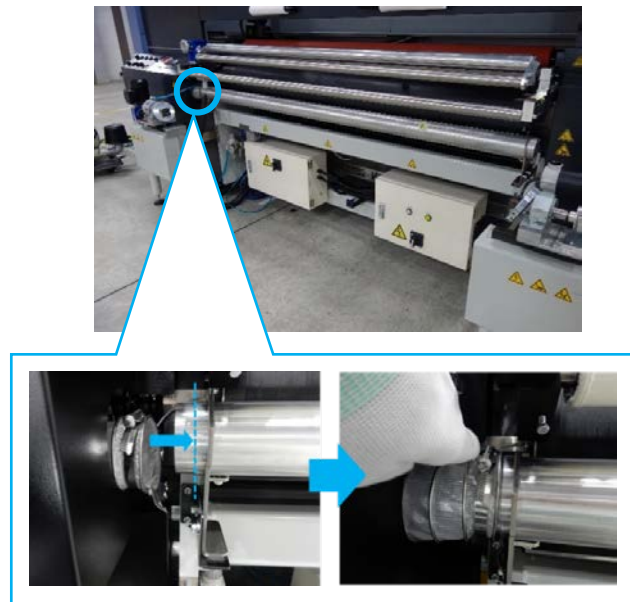
- 12. Align the screw holes on the blower and the screw holes on the machine as indicated in the figure.



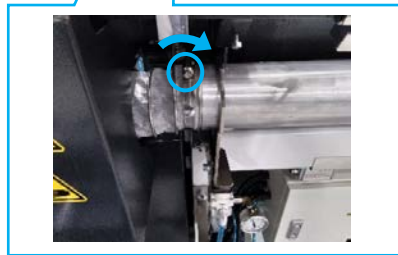
13. Tighten the screws on the blower (4 each) using the hex key (width: 5 mm).



14. Cover the blower with the blower hose, up to the position indicated in the figure.



15. Use a spanner (width: 7 mm) to tighten the screw on the blower hose.



16. Attach the tension roller.
Use two persons to attach the tension roller in the original position. Tighten the screws on each side of the roller (1 each) using the hex key (width: 5 mm).
17. Attach the fabric guide bar.
Use two persons to attach the fabric guide bar in the original position. Tighten the screws on each end of the roller (1 each) using a spanner (width: 13 mm).
18. Attach the fabric feeding position sensor.
Return the sensor to the original position, and tighten the screw on the bottom of the sensor by hand.
19. Use two persons to attach the fabric.
(See: "Operation Guide" - "Set the Fabric")



CAUTION

Make sure that removal and installation of the fabric roller is performed by two or more workers due to the weight of the fabric.
When lifting the fabric roller, lift with your legs and not your back.

20. Close the rear protection cover.

This completes the work.