QL-800 Service Guide

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Contents

1 Introduction

Intended Audience

This service guide is intended for use by qualified service and maintenance personnel. For more operation and configuration information, refer to the QL-800 User Guide and QL-800 Quick Start Guide. This service guide assumes you have read these other documents and you have them available for reference.

Note: *This service guide is for use by authorized service and maintenance personnel. Do not distribute it to others.*

General Safety Precautions

Workplace and Work Methods

- Keep the area around the device clean during and after maintenance.
- Work in a safety-conscious manner.
- Store dismantled device parts in a safe place while maintenance is being performed.
- Ensure tools do not become trip hazards.

Clothing

Danger: *Moving parts can draw in clothing and lead to injuries.*

- If possible, do not wear clothing which could be caught by moving device parts.
- Button or roll up shirt or jacket sleeves.
- Tie or pin up long hair.
- Tuck the ends of scarves, ties and shawls into your clothing or secure them with non-conductive clips.

Danger: *Risk of death from increased flow of current via metal parts which come into contact with the device.*

- Do not wear clothing with metal parts.
- Do not wear jewelry.
- Do not wear glasses with a metal frame.

Protective Clothing

If a possible danger to your eyes is present, wear protective goggles, especially in the following cases:

- when knocking in or knocking out pins and similar parts with a hammer
- when using spring hooks
- when loosening or inserting springs, snap rings and gripping rings
- when soldering
- when using solvents, cleaning agents or other chemicals

Protective Equipment

Danger: *Risk of injury in case of missing or faulty protective equipment.*

- After performing maintenance work, attach all safety equipment (covers, safety precautions, ground cables, etc.).
- Replace faulty parts and those which have become unusable.

Safety When Working with Electricity

Qualifications of Personnel

The following work may only be performed by instructed and trained electricians:

- work on the electrical assemblies
- work on the device while it is open and connected to the power supply

Maintenance Precautions

- Locate the emergency-stop or power switch so that it can be actuated in case of an emergency.
- Unplug the device from the electrical outlet before performing the following work:
  - removing or installing power supply units
  - working in the immediate vicinity of exposed power supply parts
  - mechanical inspection of power supply parts
  - modifying the device circuits
- Ensure that the device is de-energized.
- Check the workplace for possible sources of danger, e.g. moist floors, defective extension cables, faulty protective conduction connections.

Additional Precautions for Devices with Exposed Energized Parts

- Give another person the task of remaining near the workplace. This person must be familiar with the location and operation of the emergency-stop and power switches and switch off the power if danger arises.
- Use only one hand while working on electrical circuits when a device is switched on. Hold the other hand behind your back or put it in your jacket pocket. This prevents the electricity from flowing through your body.

Tools

- Do not use worn or damaged tools.
- Use only tools and testing equipment that is suitable for the respective task.

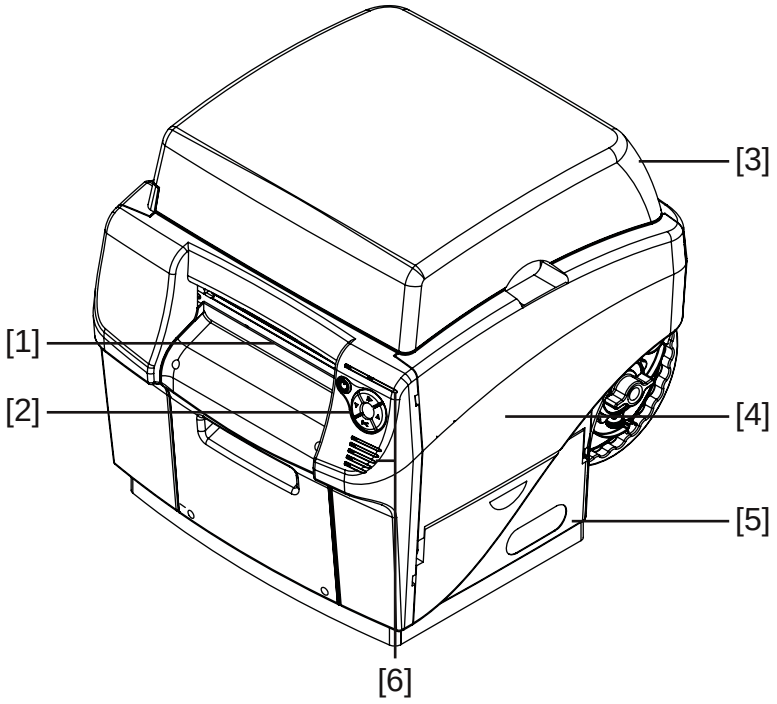
If an Accident Occurs

- Proceed in a very cautions and calm manner.
- Avoid endangering yourself.
- Switch the power off.
- Request medical help (emergency physician).
- Call for first aid if necessary.

2 QL-800 Overview

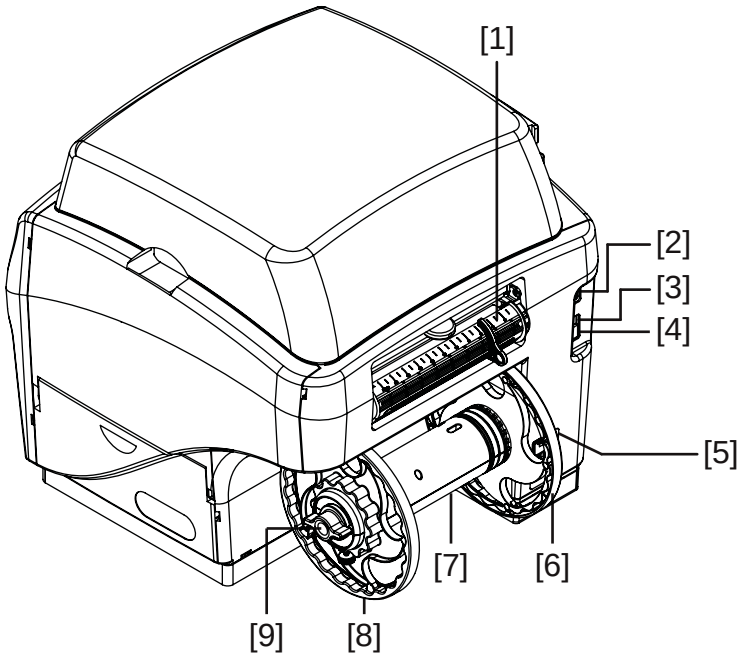
Printer Part Names and Functions

Front View



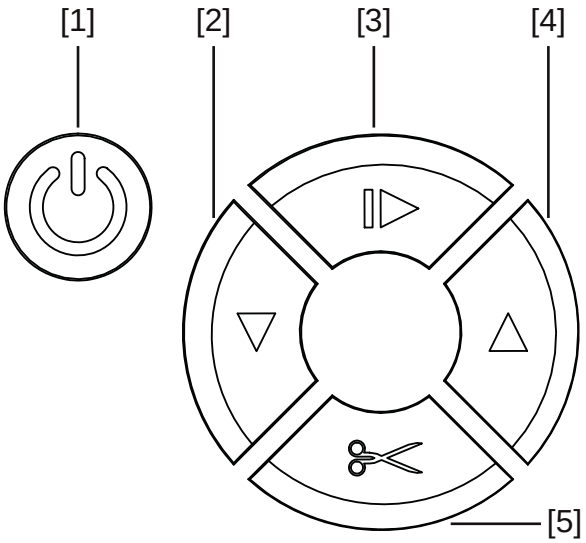
#	Part	Description
1	Media Exit Slot	Printed labels are ejected through this slot.
2	Operation Panel	Use these keys to operate various printer functions.
3	Top Cover	Open this cover to access the printhead.
4	Main Side Door	Open this door to access the transport unit and ink cartridges.
5	Lower Side Door	Open this door to access the maintenance cartridge.
6	LED Indicators	LEDs indicate the status of the printer.

Back View



#	Part	Description
1	Media Entry Slot	Media enters the printer through this slot.
2	Serial Port	This port is used for advanced troubleshooting.
3	USB Port	Connect the USB cable here when using the USB connection method.
4	LAN Port	Connect the LAN cable here when using the LAN connection method.
5	Power Inlet	Connect the power cord here.
6	Inner Flange	Position the media roll edge so it touches this flange.
7	Mandrel	Install the media roll on the mandrel.
8	Outer Flange	Adjust this flange so it touches the media roll edge opposite the inner flange.
9	Wing Nut	Turn this nut to tighten or loosen the media roll lock on the mandrel.

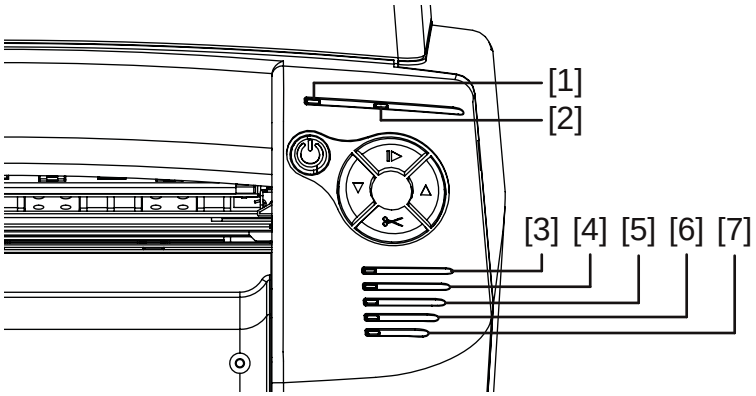
Operation Panel



#	Key	Description
1	Power	• If the printer power is off, press and release this key to turn the power on. • If the printer power is on, press and hold this key to turn the power off. • Press and release this key to recover from some error conditions.
2	Feed	• Press and release the feed key to feed media one label length. • Press and hold the feed key to feed media until you release the key.
3	Pause/Resume	• While printing, press and release this key to pause the print job. • While paused, press and release this key to resume the print job. • While paused, press and hold this key for approximately three seconds to cancel the print job.

#	Key	Description
4	Back-Feed	• Press and release the back-feed key to back-feed media one label length. • Press and hold the back-feed key to back-feed media until you release the key. • To unload media, press and hold the back-feed key until the printer beeps once. Press and hold the back-feed key again to continue and unload media.
5	Cut	If the printer is in the ready state, press and hold this key for approximately one second to cut media at the exit.

LED Indicators



#	LED	Description
1	Power	This green LED indicates the power status of the printer. • **Off** - Printer is off or in sleep mode. • **Flashing** - Printer is initializing or busy. • **Solid** - Printer is on and ready.
2	Error	This red LED indicates when error conditions occur.
3	Cyan Ink	These yellow LEDs indicate the status of each ink cartridge. • **Off** - Ink cartridge has sufficient ink. • **Flashing** - Ink cartridge is low. • **Solid** - Ink cartridge is empty.
4	Magenta Ink	
5	Yellow Ink	
6	Black Ink	

#	LED	Description
7	Non-Ink Consumables	This yellow LED indicates the status of the following items. • Printhead • Cutter • Aerosol Filter • Maintenance Cartridge • Maintenance Roller The LED will illuminate based on remaining service life. • **Off** - All items are above 20% service life remaining. • **Flashing Slowly** - One or more items are below 20% service life remaining. • **Flashing** - One or more items are below 10% service life remaining. • **Solid** - One or more items are at 0% service life remaining. Refer to the System Logs tab in the Maintenance Utility to determine the affected items.

Modules

The printer contains the following modules:

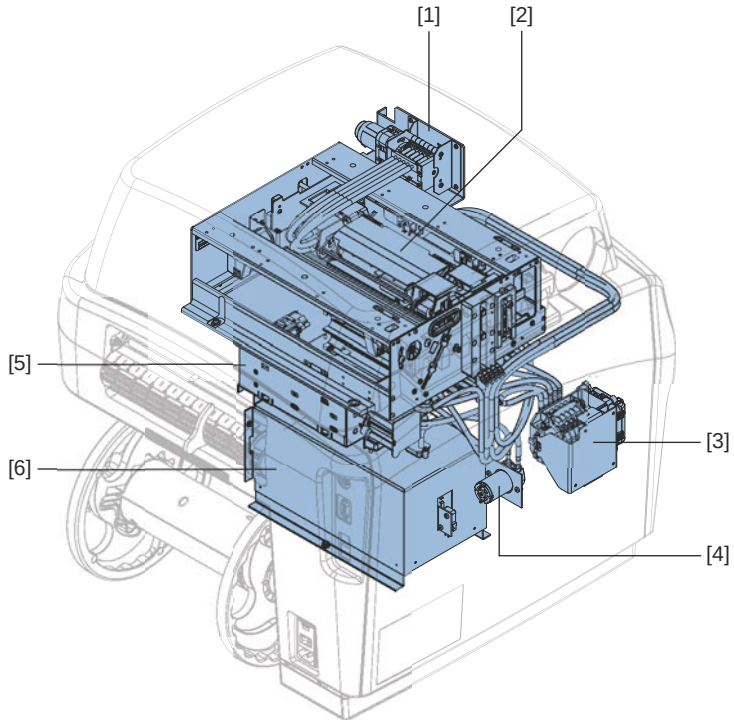
- **Ink Delivery System (IDS)** - *See "Ink Delivery System (IDS)" on page 21.*
- **Print Engine** - *See "Print Engine" on page 33.*
- **Unwind** - *See "Unwind" on page 35.*
- **Entrance Pinch** - *See "Entrance Pinch" on page 37.*
- **Transport** - *See "Transport" on page 39.*
- **Electrical** - *See "Electrical" on page 41.*

3 Ink Delivery System (IDS)

IDS Main Parts

The IDS is located inside the printer. It consists of parts necessary to circulate ink throughout the system.

The basic configuration of the IDS is shown below.

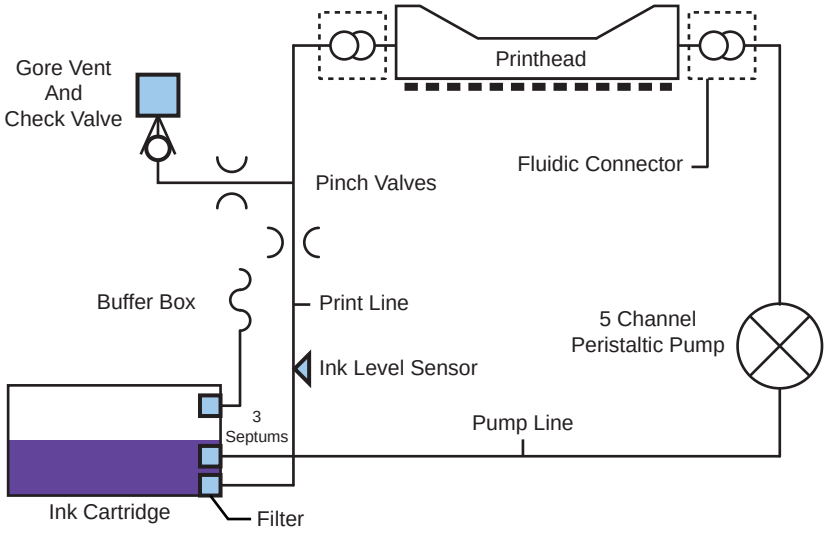


#	Description	#	Description
[1]	Peristaltic Pump	[4]	Sump Pump
[2]	Printhead	[5]	Ink Cartridge Holder Assembly
[3]	Pinch Valve	[6]	Maintenance Cartridge Holder Assembly

IDS Functions

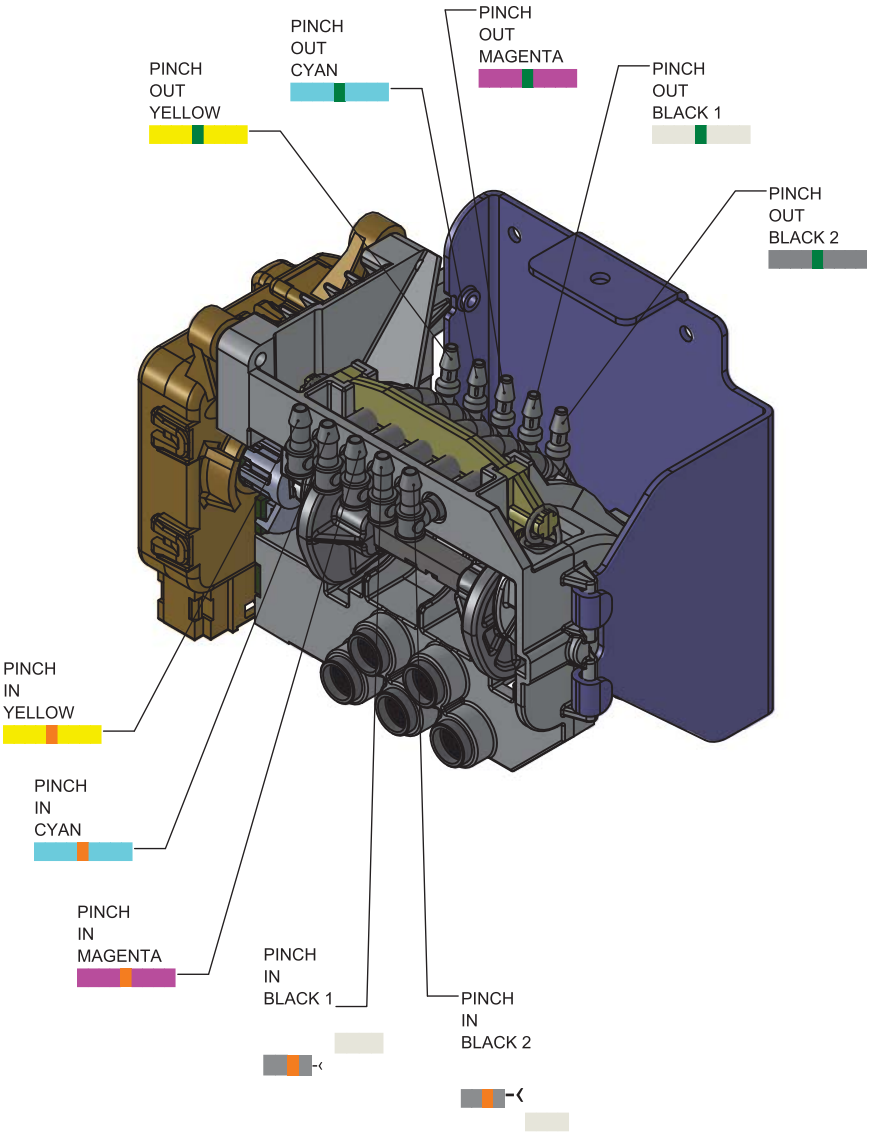
Ink Circulation

The main function of the IDS is to circulate ink throughout the printing system. It delivers ink from the ink cartridges to the printhead. It also delivers waste ink to the maintenance cartridge.

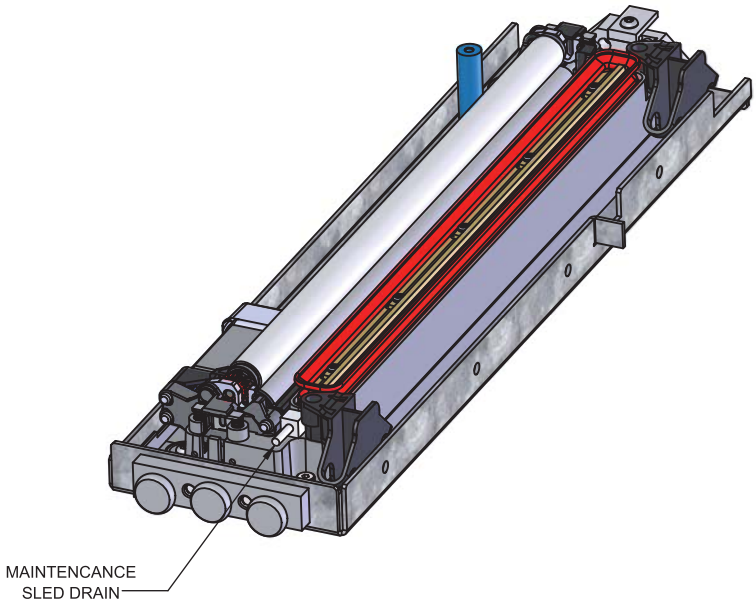


IDS Plumbing Diagrams

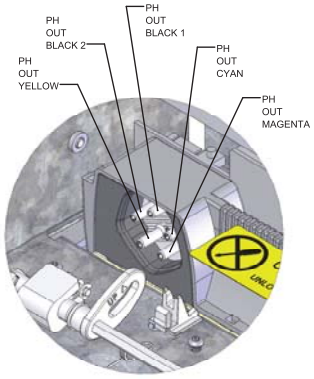
Pinch Valve

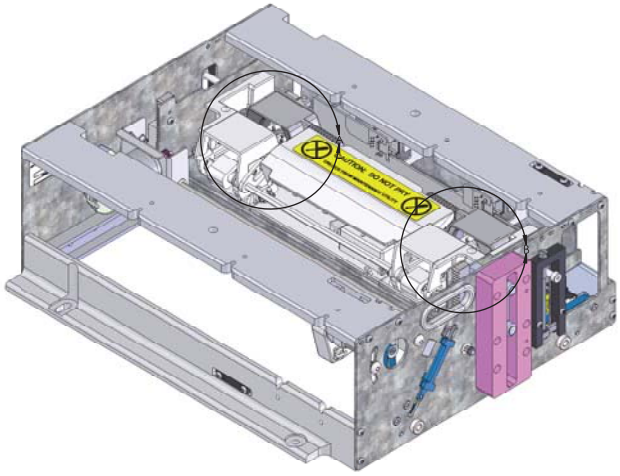


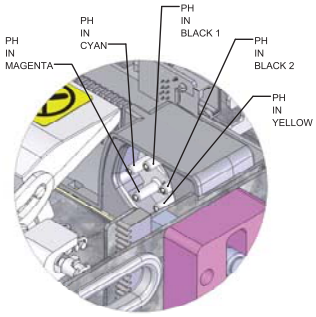
Maintenance Sled



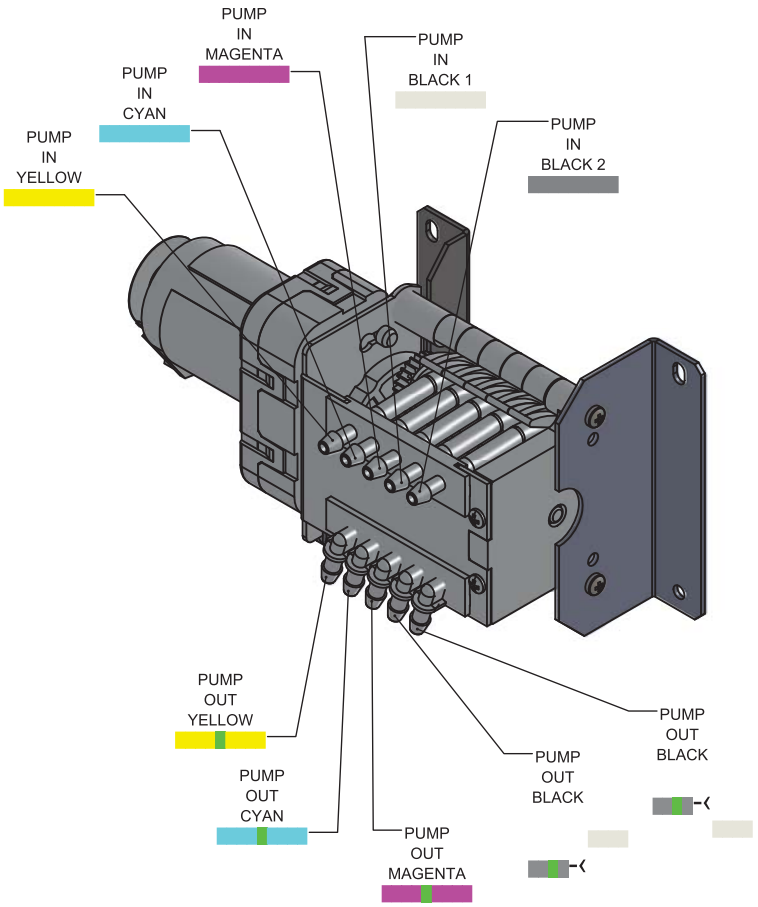
Printhead



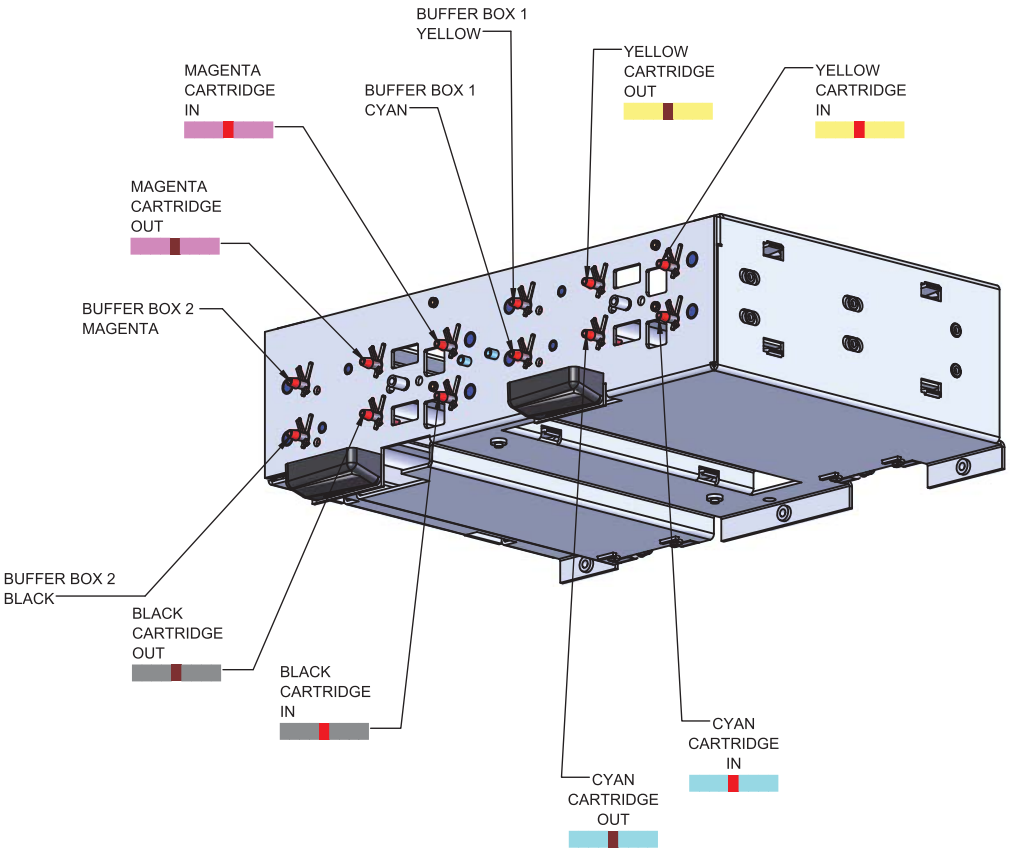




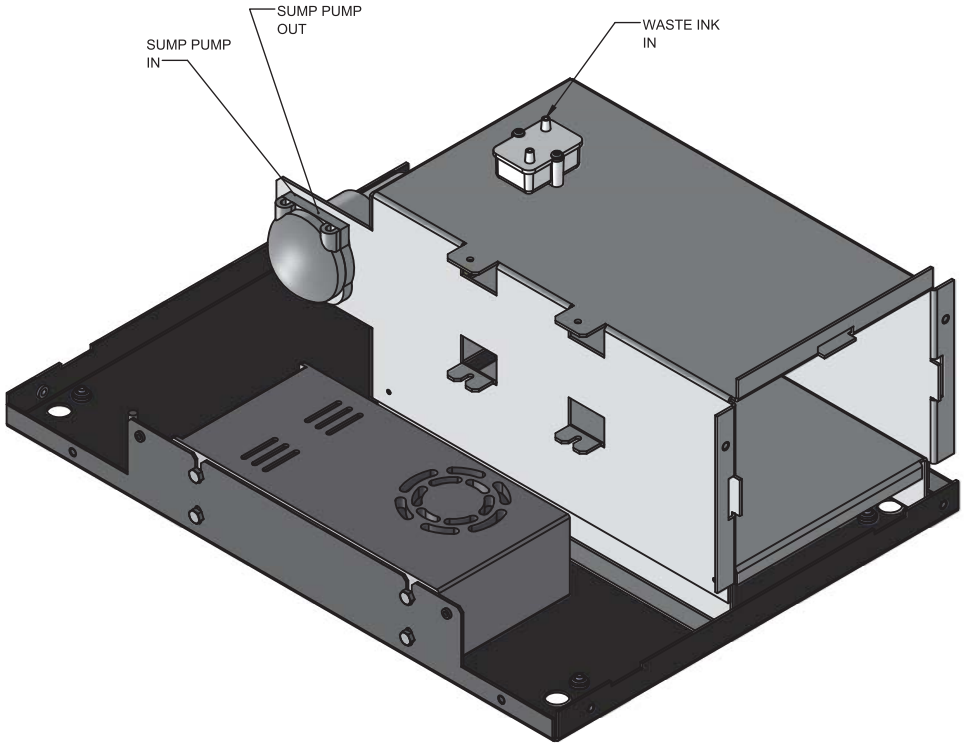
Peristaltic Pump



Cartridges



Sump Pump



IDS Plumbing Connection Tables

FROM			TUBING			TO	TUBING		TO		
COMPONENT	DIRECTION	COLOR	MARKING END 1	TUBE A/M#	(INK COLOR) / TUBING COLOR	LENGTH (IN)	MARKING END 2	COMPONENT	LENGTH (IN)	COMPONENT	DIRECTION	COLOR
PINCH (14799805)	OUT	YELLOW		14795704	(YELLOW)	13		14795445	10	PRINT HEAD	IN	YELLOW
PINCH (14799805)	OUT	CYAN		14795705	(CYAN)	13		14795445	10	PRINT HEAD	IN	CYAN
PINCH (14799805)	OUT	MAGENTA		14795706	(MAGENTA)	13		14795445	10	PRINT HEAD	IN	MAGENTA
PINCH (14799805)	OUT	BLACK		14795707	(BLACK)	13		14795445	10	PRINT HEAD	IN	BLACK
PINCH (14799805)	OUT	BLACK 2		14795708	(BLACK 2)	13		14795445	10	PRINT HEAD	IN	BLACK 2

FROM			TUBING		TO	TUBING			TO		
COMPONENT	DIRECTION	COLOR	TUBE A/M#	LENGTH (IN)	COMPONENT	MARKING END 1	TUBE A/M#	(INK COLOR) / TUBING COLOR	LENGTH (IN)	MARKING END 2	COMPONENT	DIRECTION
PINCH (14799805)	IN	YELLOW					14795709	(YELLOW)	6		CARTRIDGE	OUT
PINCH (14799805)	IN	CYAN					14795710	(CYAN)	6		CARTRIDGE	OUT
PINCH (14799805)	IN	MAGENTA					14795711	(MAGENTA)	10		CARTRIDGE	OUT
PINCH (14799805)	IN	BLACK 1	14795713	3	14795440		14795712	(BLACK)	6		CARTRIDGE	OUT
PINCH (14799805)	IN	BLACK 2	14795713	3								

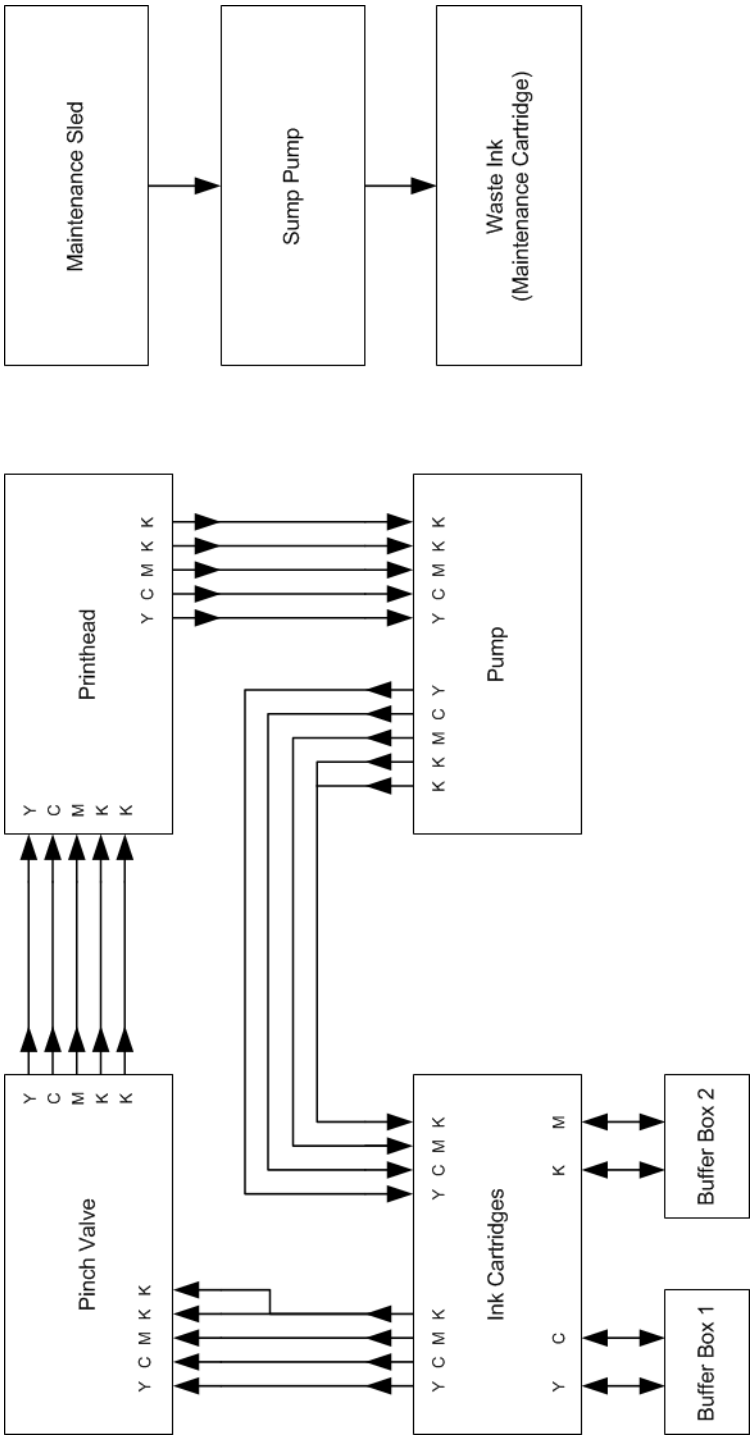
FROM			TUBING		TO	TUBING			TO		
COMPONENT	DIRECTION	COLOR	TUBE A/M#	LENGTH (IN)	COMPONENT	MARKING END 1	TUBE A/M#	(INK COLOR) / TUBING COLOR	LENGTH (IN)	MARKING END 2	COMPONENT	DIRECTION
PUMP (14799806)	OUT	YELLOW					14795700	(YELLOW)	40		CARTRIDGE	IN
PUMP (14799806)	OUT	CYAN					14795701	(CYAN)	40		CARTRIDGE	IN
PUMP (14799806)	OUT	MAGENTA					14795702	(MAGENTA)	36		CARTRIDGE	IN
PUMP (14799806)	OUT	BLACK 1	14795713	3	14795440		14795703	(BLACK)	33		CARTRIDGE	IN
PUMP (14799806)	OUT	BLACK 2	14795713	3								

FROM			TUBING		TO		TO	
COMPONENT	DIRECTION	COLOR	LENGTH (IN)	COMPONENT	DIRECTION	COLOR		
PUMP (14799806)	IN	YELLOW	11	PRINT HEAD	OUT	YELLOW		
PUMP (14799806)	IN	CYAN	11	PRINT HEAD	OUT	CYAN		
PUMP (14799806)	IN	MAGENTA	11	PRINT HEAD	OUT	MAGENTA		
PUMP (14799806)	IN	BLACK 1	11	PRINT HEAD	OUT	BLACK 1		
PUMP (14799806)	IN	BLACK 2	12	PRINT HEAD	OUT	BLACK 2		

FROM	TUBING		TO		TO	
COMPONENT	TUBE A/M#	LENGTH (IN)	COMPONENT		COMPONENT	DIRECTION
MAINTENANCE SLED	14795715	36	14795455		SUMP PUMP (27440007)	IN

FROM	TUBING		TO		TO	
COMPONENT	TUBE A/M#	LENGTH (IN)	COMPONENT		COMPONENT	DIRECTION
WASTE INK	14795714	6	14795455		SUMP PUMP (27440007)	OUT

IDS Ink Flow Diagram



Buffer Boxes

Buffer boxes are expansion tanks used to take up ink volume during certain processes.

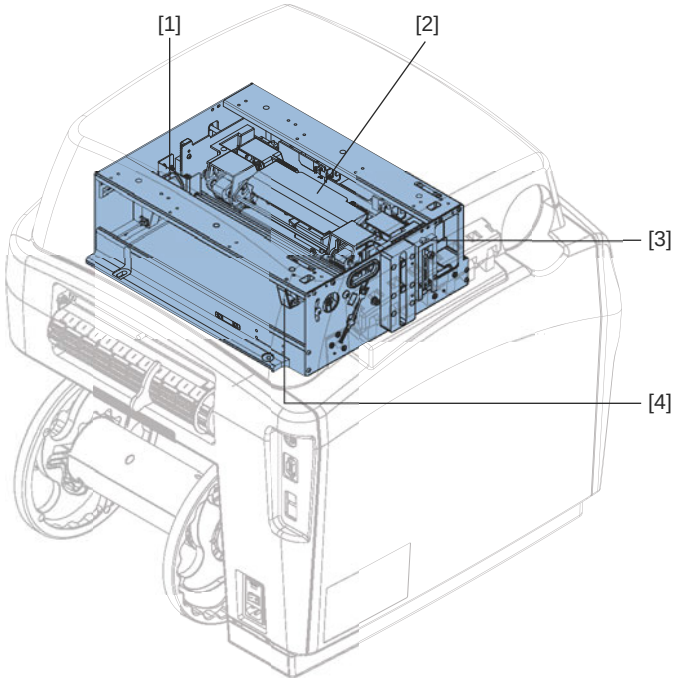
Buffer boxes can overflow if the printer de-primes into full cartridges. They can also overflow during repeated priming operations if the printhead has an air leak.

4 Print Engine

Print Engine Main Parts

The print engine is located inside the printer. It consists of a printhead, lift motor, maintenance tray motor, and printhead adjustment hardware.

The basic configuration of the print engine is shown below.



#	Description	#	Description
[1]	Lift Motor	[3]	Printhead Height Adjustment (1 of 2)
[2]	Printhead	[4]	Maintenance Tray Motor

Print Engine Functions

Printing, Cleaning, and Capping

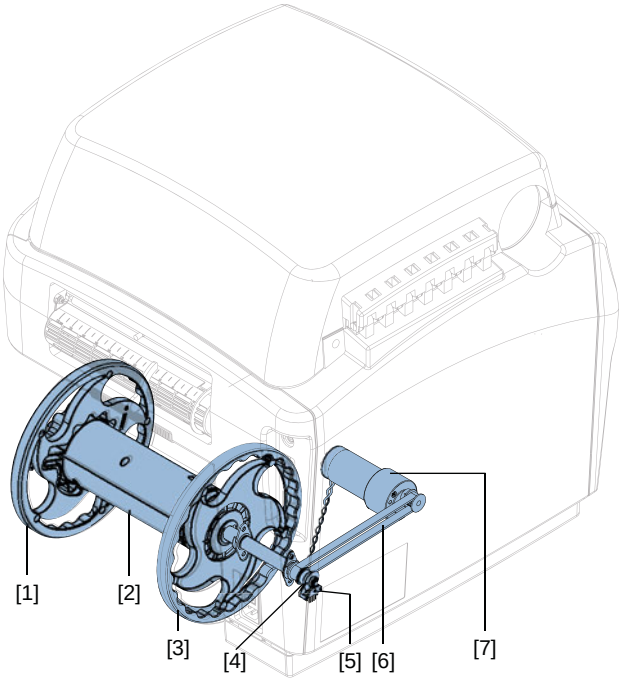
The print engine consists of two moving assemblies. The print head carrier traverses vertically and the maintenance carriage traverses horizontally. These two assemblies work together to position the printhead, the wiper roller, and the printhead cap in the correct positions for printing, cleaning, and capping.

5 Unwind

Unwind Main Parts

The unwind system is located in the back of the printer. It consists of an external mandrel with flanges driven by an internal motor.

The basic configuration of the unwind system is shown below.



#	Description	#	Description
[1]	Outer Flange	[5]	Encoder Sensor
[2]	Mandrel	[6]	Mandrel Drive Belt
[3]	Inner Flange	[7]	Unwind Motor
[4]	Encoder Disc		

Unwind Functions

Media Back Tension

The unwind system provides back tension as media unspools from the roll and enters the printer. It also takes up slack when the system back feeds media.

Media Alignment

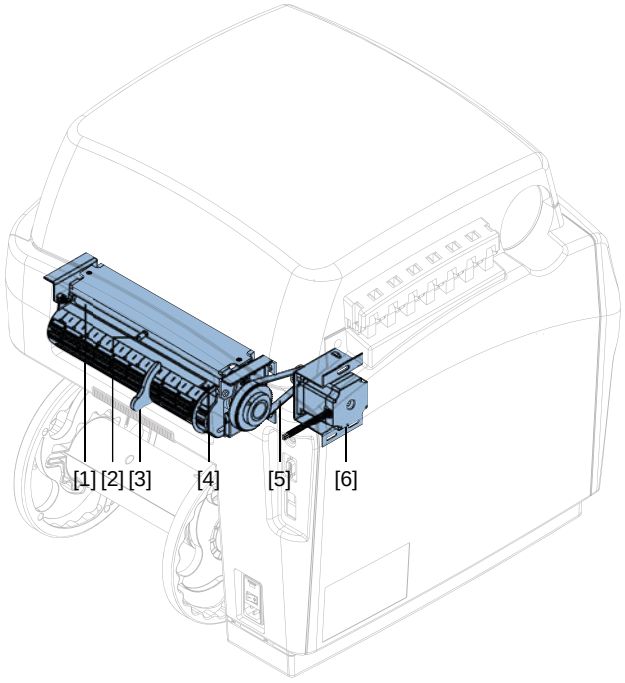
The inner flange and outer adjustable flange help guide the media to track in a straight path through the printer.

6 Entrance Pinch

Entrance Pinch Main Parts

The entrance pinch is located in the back of the printer. It consists of pinch rollers and media guides.

The basic configuration of the entrance pinch is shown below.



#	Description	#	Description
[1]	Input Pinch Rollers	[4]	Feed Sensor
[2]	Roller Handle	[5]	Entrance Pinch Belt
[3]	Adjustable Media Guide	[6]	Entrance Pinch Motor

Entrance Pinch Functions

Media Feeding and Back-Feeding

The entrance pinch assembly has a urethane coated drive roller with two pinch rollers that feed media in and out of the system. The entrance guide has an inner fixed edge guide and an outer adjustable edge guide. The transport and unwind assemblies are aligned to this fixed edge guide.

Media Detection

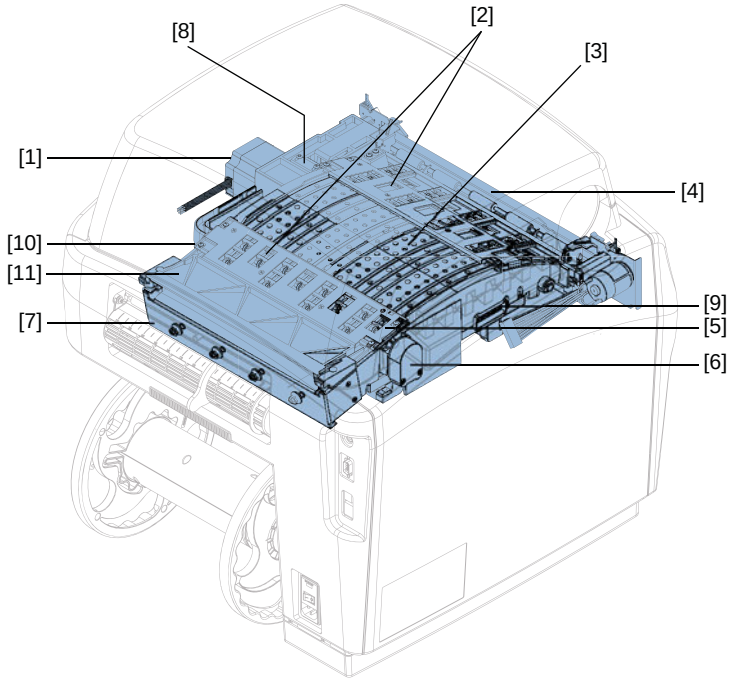
A reflective sensor is used to detect when media is present. The sensor is also used to detect when media is presented in order to load the media into the system.

7 Transport

Transport Main Parts

The transport unit is located inside the printer. It consists of vacuum belts, fans, encoders, stepper motor, star rollers, and a cutter.

The basic configuration of the transport is shown below.



#	Description	#	Description
[1]	Stepper Motor	[7]	Vacuum Belt Tensioner
[2]	Star Wheel Assembly	[8]	Drive Belt Tensioner
[3]	Vacuum Belts	[9]	Connector
[4]	Cutter	[10]	Encoder Roller (Hidden under star wheel assembly)
[5]	TOF/Reflective Sensor	[11]	Entrance Guide
[6]	Encoder		

Transport Functions

Media Feeding and Back-Feeding

The transport carries media under the printhead. It drives media forward and backward through the system so that it is possible to print on the first label and to resume printing after a printhead cleaning operation.

The star roll assemblies and the vacuum fans/belts work to keep the media in contact with the arc profile of the transport.

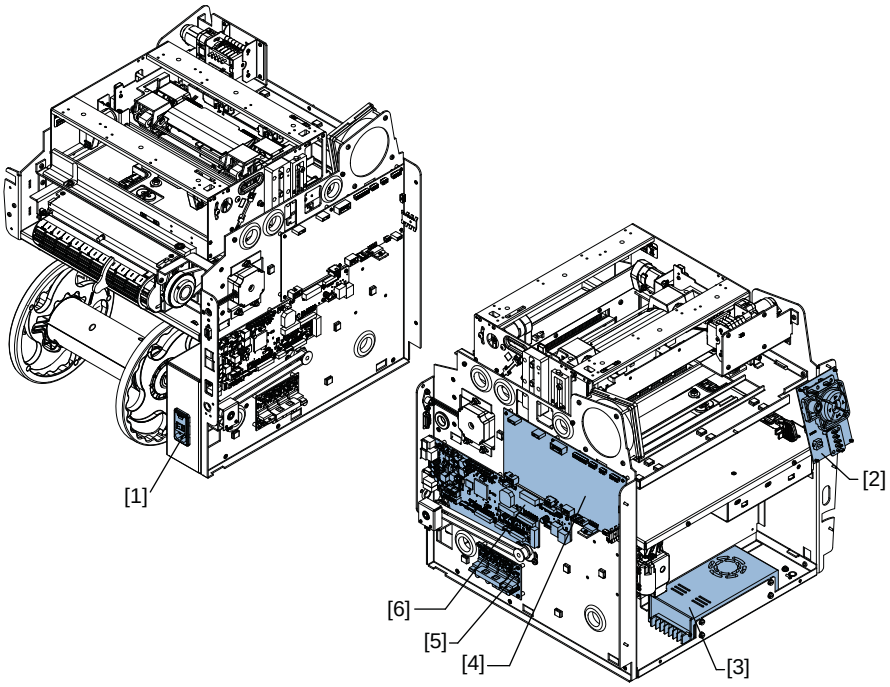
Media Sensing

A gap/reflective sensor found at the first star wheel assembly works to detect top of form and leading edge. The encoder/roller is responsible for relating the position of the media to every line printed.

8 Electrical

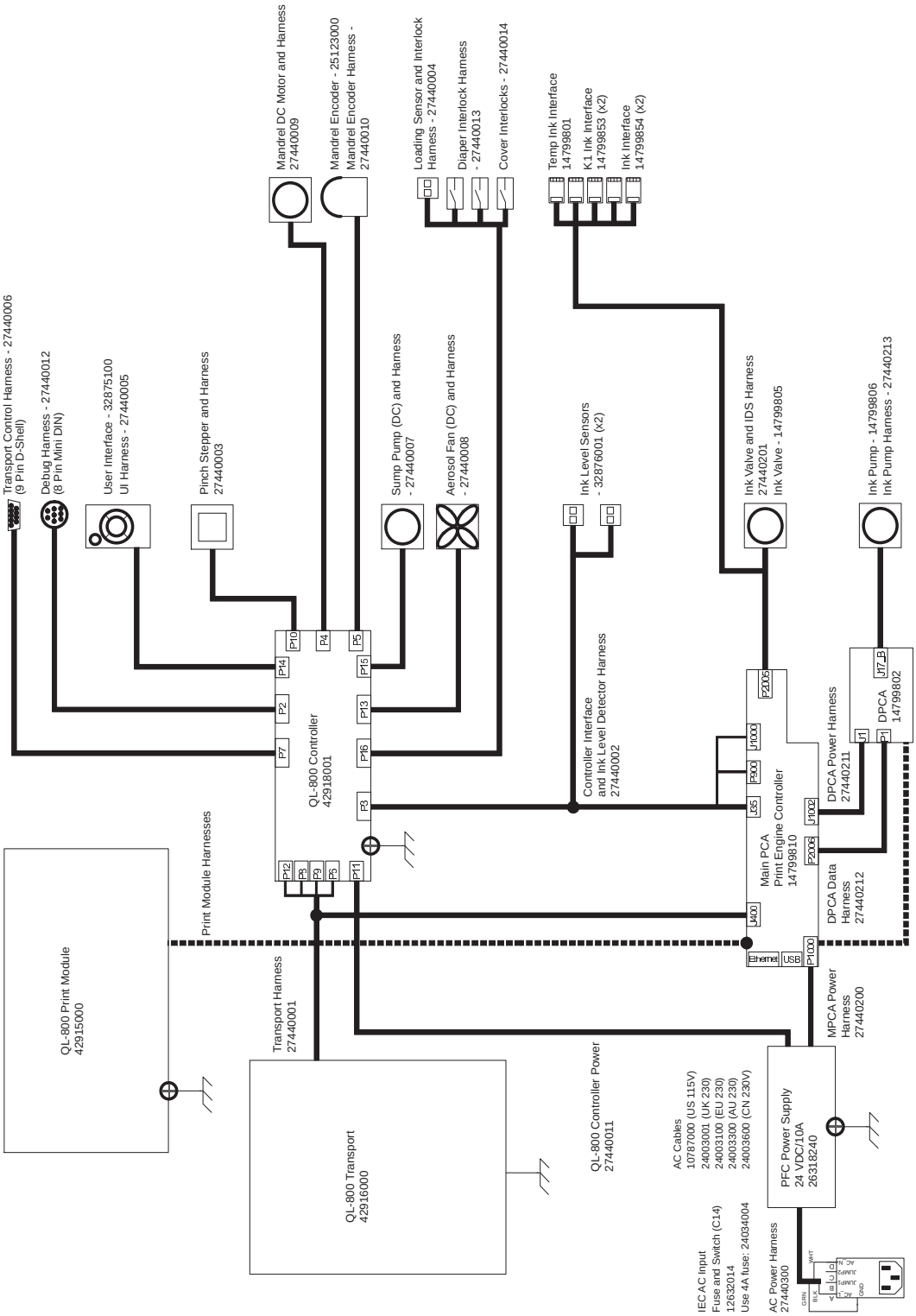
Electrical Main Parts

The basic configuration of the electrical system is shown below.



#	Description	#	Description
[1]	Power Inlet (fuses)	[4]	QL-800 Controller PCB
[2]	User Interface	[5]	Motor Controller PCB
[3]	Power Supply	[6]	Main PCB

Electrical Main Parts Block Diagram



9 Parts Replacement

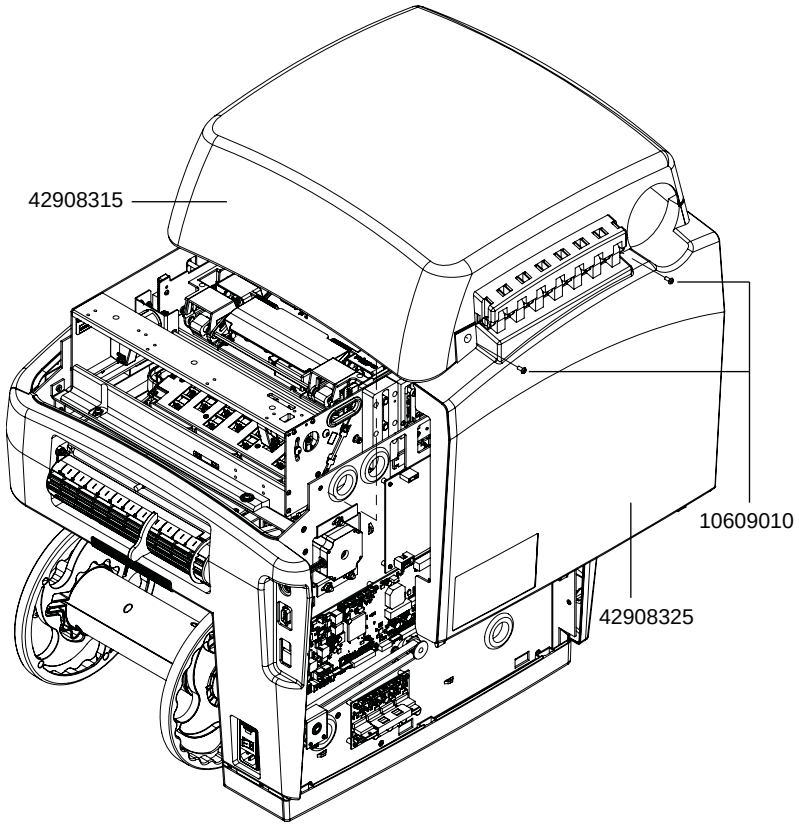
External Covers

Removing the Top and Side Covers

Use the following instructions to remove the top (42908315) and side (42908325) covers. The top and side covers are removed as a unit. It is generally not necessary to disconnect the top cover from the side cover.

1 Turn the printer power off and disconnect the power cable from the power outlet.

2 Remove the two screws (10609010) from the side cover.



3 Open the top cover. Support the top cover in the open position during the rest of this procedure.

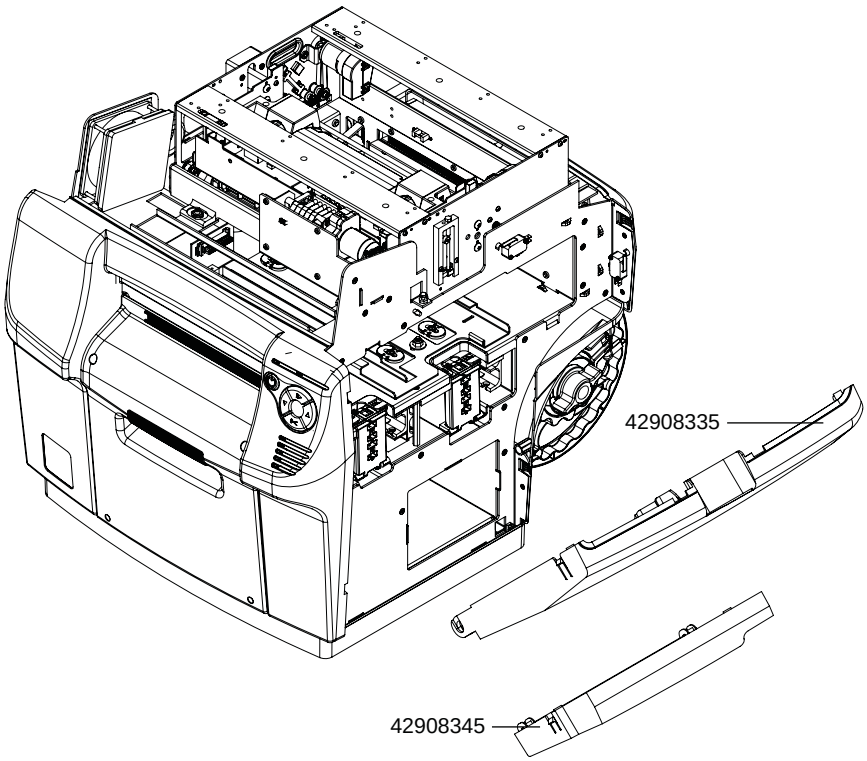
4 Lift the feet of the side cover out of the mounting features in the base panel.

Removing the Main and Lower Side Doors

Use the following instructions to remove the main (42908335) and lower (42908345) side doors.

1 Turn the printer power off and disconnect the power cable from the power outlet.

2 Flex the legs of the lower side door (42908345) so the pivot holes fall out of the pivot bosses in the user interface cover and roll cover.



3 Flex the hinge pivots of the main side door (42908335) out of the pivot holes in the base panel.

Removing the Input Cover

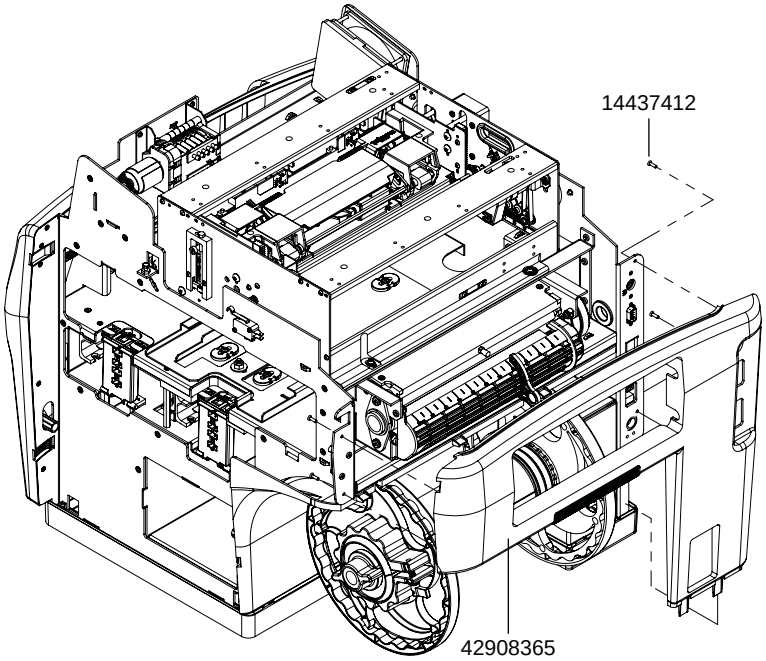
Use the following instructions to remove the input cover (42908365).

1 Turn the printer power off and disconnect the power cable from the power outlet.

2 Remove the top and side covers. *See "Removing the Top and Side Covers" on page 43.*

3 Remove the main and lower side doors. *See "Removing the Main and Lower Side Doors" on page 44.*

4 Remove the screws (14437412) from the input cover.



5 Unseat the input cover feet from the mounting features in the base panel.

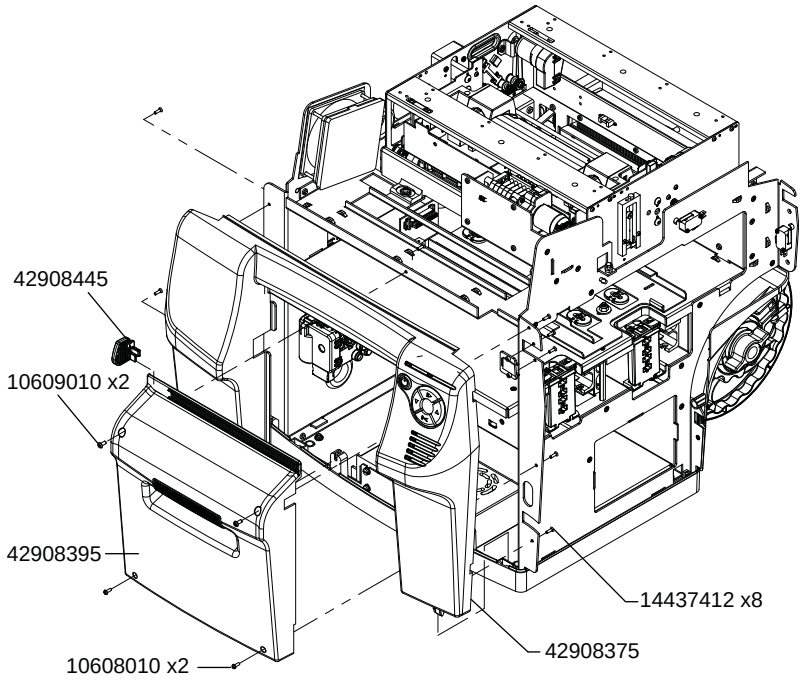
Removing the User Interface and Accessory Covers

1 Turn the printer power off and disconnect the power cable from the power outlet.

2 Remove the top and side covers. *See "Removing the Top and Side Covers" on page 43.*

3 Remove the main and lower side doors. *See "Removing the Main and Lower Side Doors" on page 44.*

4 Disconnect the accessory cover (42908395) by removing the two upper (10609010) and two lower (10608010) screws.



5 If the adjustable media exit guide (42908445) requires replacement, remove it from the ratchet track in the accessory cover. Otherwise, removing the guide is not necessary.

6 Disconnect the user interface cover (42908375) by removing the six screws (14437412). Disconnect the small screw (14437412) in the top center of the user interface cover. Do not remove the catch plate.

7 Disconnect the user interface harness (27440005) from the user interface (32875100).

Replacing Ink Delivery System (IDS) Parts

Replacing the Peristaltic Pump

Use the following instructions to replace the peristaltic pump (14799806).

Personal Protective Equipment (PPE)

Caution: *In order to avoid personal injury, always use appropriate personal protective equipment (PPE) when performing maintenance tasks.*

- Safety glasses
- Nitrile powder-free gloves
- Clothing protection (smock, jacket, etc.)

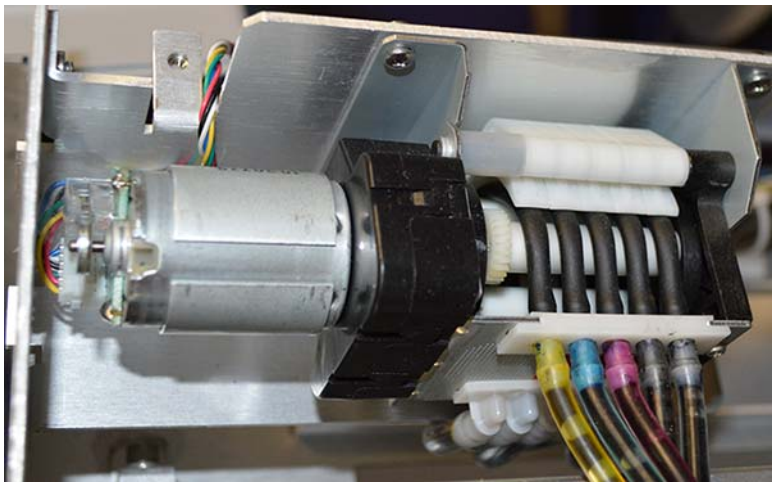
Required Tools and Supplies

Gather all supplies and tools before starting this process.

- Disposable towels
- Hemostats
- Phillips screwdriver

Removal

1. In the **Cleaning** tab of the QL-800 Maintenance Utility, run the Before Moving procedure to deprime the printer.
2. Turn the printer power off and disconnect the power cable from the power outlet.
3. Open the top cover and main side door.
4. Note the position of each input tube and its corresponding connection point on the peristaltic pump input barbs. This information will be important when reinstalling tubes.



5. To reduce the ink leaking from the tubes when they are removed, you can apply a hemostat to the end of each tube near the connection point.
6. Grasp and pull the ink tubes off the pump input barbs.

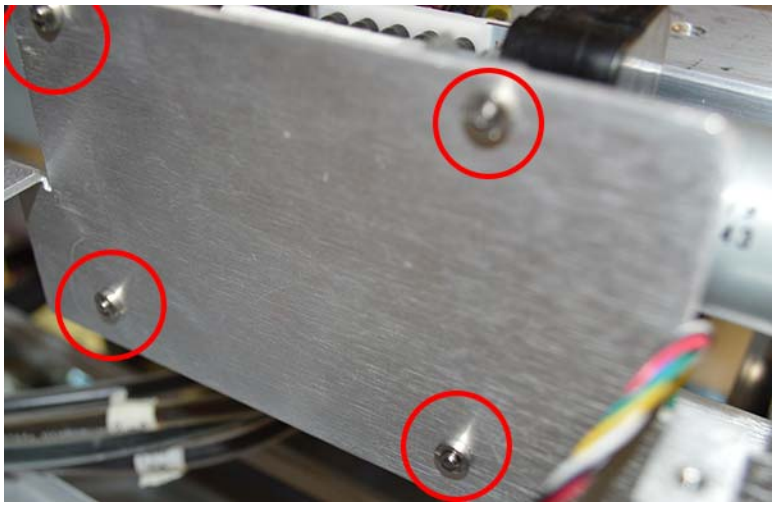
7 Remove the pump and its bracket from the chassis by removing the three screws.

8 Disconnect the harness from the pump.

9 Note the position of each output tube and its corresponding connection point on the peristaltic pump output barbs. This information will be important when reinstalling tubes.

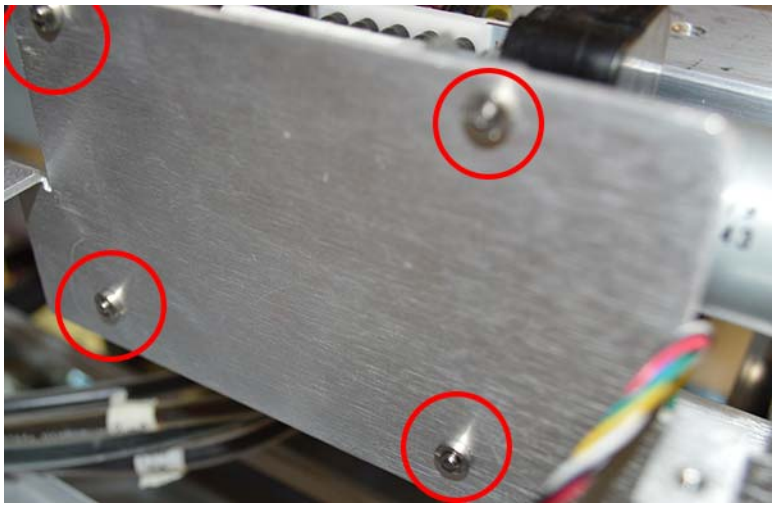
10 Grasp and pull the ink tubes off the pump output barbs.

11 Remove the pump from the bracket by removing the four screws.



Installation

1 Attach the pump to the bracket by installing the four screws.

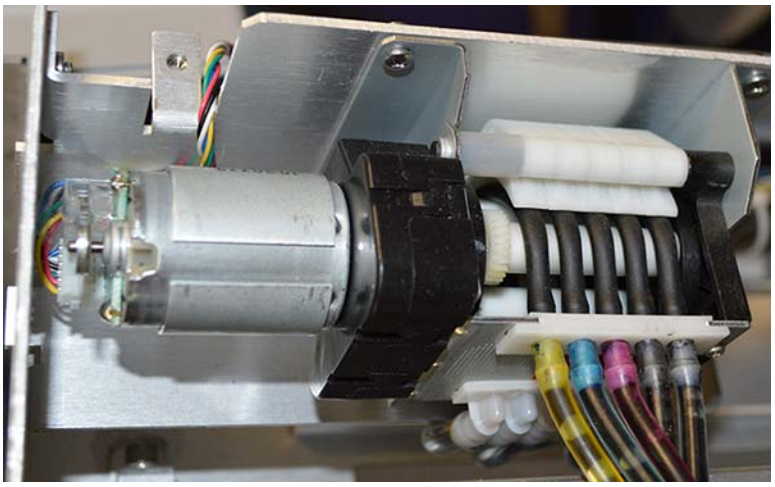


2 Install the ink tubes on the pump output barbs. Ensure you install the tubes in the correct positions.

3 Connect the harness to the pump.

4 Install the pump and its bracket on the chassis by installing the three screws.

5 Install the ink tubes on the pump input barbs. Ensure you install the tubes in the correct positions.



6 If hemostats were applied remove them from the tubes.

7 Close the top cover and main side door.

Replacing the Pinch Valve

Use the following instructions to replace the pinch valve (14799805).

Note: *During the pinch valve replacement procedure, hemostats are used to prevent ink leakage from the valve input tubes. An alternate method is to flush all ink from the printer.* *See "Flushing Ink from the Printer" on page 195.*

Personal Protective Equipment (PPE)

Caution: *In order to avoid personal injury, always use appropriate personal protective equipment (PPE) when performing maintenance tasks.*

- Safety glasses
- Nitrile powder-free gloves
- Clothing protection (smock, jacket, etc.)

Required Tools and Supplies

Gather all supplies and tools before starting this process.

- Disposable towels
- Hemostats
- Phillips screwdriver
- 1/4" wrench, socket, or nut driver

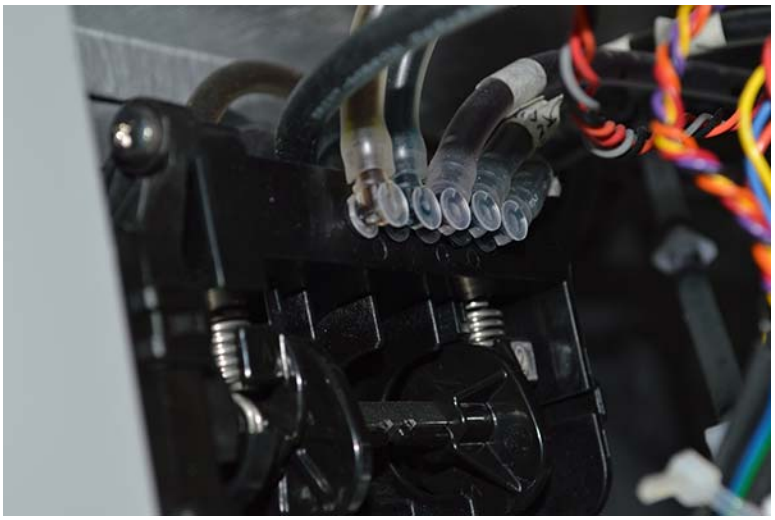
Removal

1 In the **Cleaning** tab of the QL-800 Maintenance Utility, run the Before Moving procedure to deprime the printer.

2 Turn the printer power off and disconnect the power cable from the power outlet.

3 Remove the user interface and accessory covers. *See "Removing the User Interface and Accessory Covers" on page 45.*

4 Note the position of each input tube and its corresponding connection point on the valve input barbs. This information will be important when reinstalling tubes.



5 To reduce the ink leaking from the tubes when they are removed, apply a hemostat to the end of each tube near the connection point.

6 Grasp and pull the ink tubes off the valve input barbs.

7 Disconnect the two harnesses from the pinch valve. One of these harnesses has a locking tab that must be pressed before disconnecting.

8 Remove the pinch valve from the chassis by removing the four 1/4 inch locking nuts.

9 Note the position of each output tube and its corresponding connection point on the valve output barbs. This information will be important when reinstalling tubes.

These output tubes will likely be free of ink. Using hemostats on these tubes is not required.

10 Grasp and pull the ink tubes off the valve output barbs.

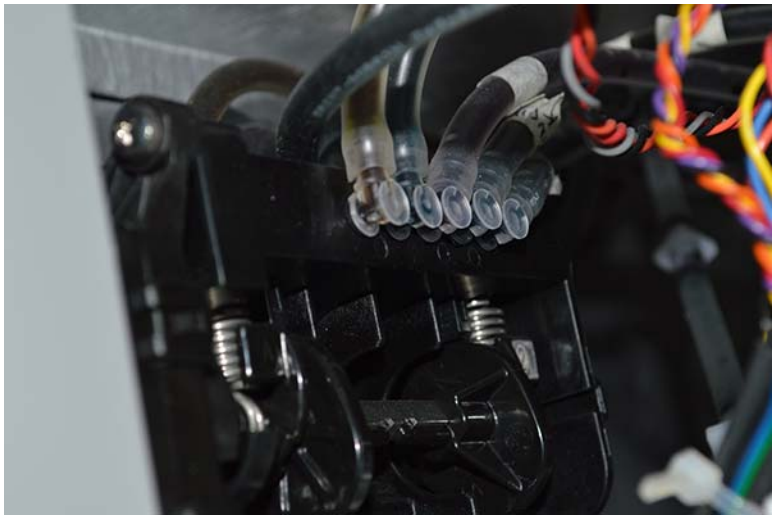
Installation

1 Install the ink tubes on the valve output barbs. Ensure you install the tubes in the correct positions.

2 Install the pinch valve on the chassis by installing the four 1/4 inch locking nuts.

3 Connect the two harnesses to the pinch valve.

4 Install the ink tubes on the valve input barbs. Ensure you install the tubes in the correct positions. Remove the hemostats as you install the tubes.



5 Install the user interface and accessory covers. *See "Removing the User Interface and Accessory Covers" on page 45.*

Replacing Ink Tubes

Use the following instructions to replace ink tubes. When replacing ink tubes, it may be helpful to refer to the IDS plumbing diagrams and tables.

- *See "IDS Plumbing Diagrams" on page 23.*
- *See "IDS Plumbing Connection Tables" on page 29.*

Note: *During the ink tube replacement procedure, hemostats are used to prevent ink leakage from the tubes. An alternate method is to flush all ink from the printer.* *See "Flushing Ink from the Printer" on page 195.*

Personal Protective Equipment (PPE)

Caution: *In order to avoid personal injury, always use appropriate personal protective equipment (PPE) when performing maintenance tasks.*

- Safety glasses
- Nitrile powder-free gloves
- Clothing protection (smock, jacket, etc.)

Required Tools and Supplies

Gather all supplies and tools before starting this process.

- Disposable towels
- Hemostats
- Phillips screwdriver
- 1/4” wrench, socket, or nut driver

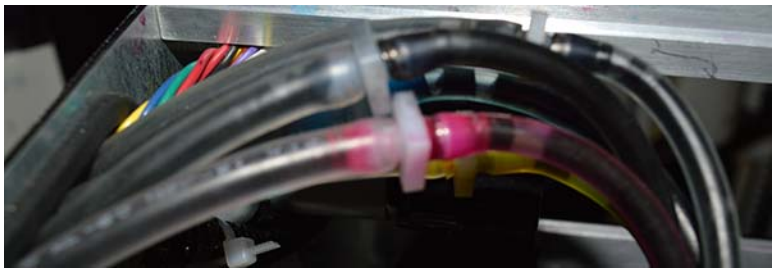
Replacing Ink Cartridge to Pinch Valve Tubes

1. Turn the printer power off and disconnect the power cable from the power outlet.
2. Release the two ink cartridge latches.
3. Carefully slide all four ink cartridges, one at a time, out of the unit.
4. Remove the user interface and accessory covers. *See “Removing the User Interface and Accessory Covers” on page 45.*
5. To reduce the ink leaking from the tubes when they are removed, apply hemostats to the ends of each tube near the connection points.
6. Grasp and pull the affected ink tubes off the barbs connecting the ink cartridges to the pinch valve.
7. Install the replacement tubes on the barbs connecting the ink cartridges to the pinch valve.
8. Install the user interface and accessory covers. *See “Removing the User Interface and Accessory Covers” on page 45.*
9. Install ink cartridges.

Replacing Pinch Valve to Printhead Tubes

1. In the **Cleaning** tab of the QL-800 Maintenance Utility, run the Before Moving procedure to deprime the printer.
2. Turn the printer power off and disconnect the power cable from the power outlet.
3. Remove the top and side covers. *See “Removing the Top and Side Covers” on page 43.*
4. Remove the user interface and accessory covers. *See “Removing the User Interface and Accessory Covers” on page 45.*
5. Remove the pinch valve from the chassis by removing the four 1/4 inch locking nuts. Use caution to avoid disconnecting tubes or harnesses.

6 Grasp and pull the affected ink tubes off the barbs connecting the pinch valve to the printhead. Note the printhead tubes connect to couplings and not to the printhead directly.



7 Install the replacement tubes on the barbs connecting the pinch valve to the printhead. Note the printhead tubes connect to couplings and not to the printhead directly.

8 Install the pinch valve on the chassis by installing the four 1/4 inch locking nuts.

9 Install the user interface and accessory covers. *See "Removing the User Interface and Accessory Covers" on page 45.*

10 Install the top and side covers. *See "Removing the Top and Side Covers" on page 43.*

Replacing Peristaltic Pump to Ink Cartridge Tubes

1 In the **Cleaning** tab of the QL-800 Maintenance Utility, run the Before Moving procedure to deprime the printer.

2 Turn the printer power off and disconnect the power cable from the power outlet.

3 Remove the top and side covers. *See "Removing the Top and Side Covers" on page 43.*

4 Remove the user interface and accessory covers. *See "Removing the User Interface and Accessory Covers" on page 45.*

5 Remove the pump and its bracket from the chassis by removing the three screws. This step will provide better access to the tubes.

6 Grasp and pull the affected ink tubes off the barbs connecting the pump to the cartridge.

7 Install the replacement tubes on the barbs connecting the pump to the cartridge.

8 Install the pump and its bracket on the chassis by installing the three screws.

9 Install the user interface and accessory covers. *See "Removing the User Interface and Accessory Covers" on page 45.*

10 Install the top and side covers. *See "Removing the Top and Side Covers" on page 43.*

Replacing Buffer Boxes

Use the following instructions to replace buffer boxes (14799856).

Personal Protective Equipment (PPE)

Caution: *In order to avoid personal injury, always use appropriate personal protective equipment (PPE) when performing maintenance tasks.*

- Safety glasses
- Nitrile powder-free gloves
- Clothing protection (smock, jacket, etc.)

Required Tools and Supplies

Gather all supplies and tools before starting this process.

- Disposable towels
- Phillips screwdriver

Removal

1 Turn the printer power off and disconnect the power cable from the power outlet.

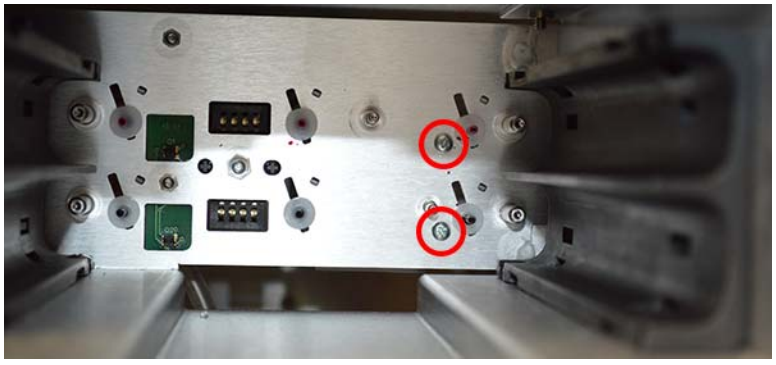
2 Release the two ink cartridge latches.

3 Carefully slide all four ink cartridges, one at a time, out of the unit.

4 Remove the accessory cover. *See "Removing the User Interface and Accessory Covers" on page 45.*

5 Reach into the printer and support the buffer box with your hand during the next step.

6 Unfasten the two buffer box mounting screws from inside the ink cartridge area of the printer.



7 Remove the buffer box from the printer.

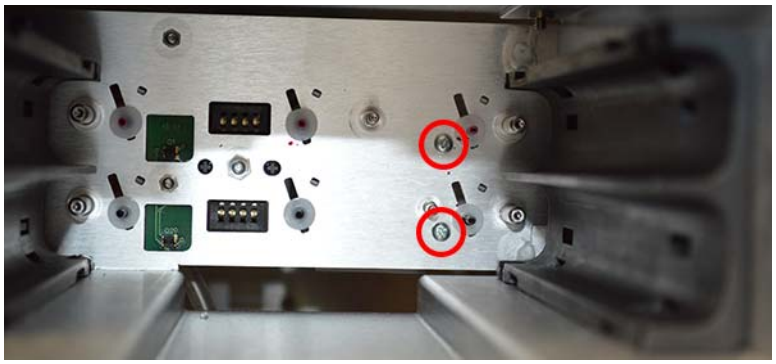
8 Save the two gaskets (14799325) from the buffer box for use on the new buffer box.

Installation

1 Install the two gaskets (14799325) in the buffer box.

2 Position the buffer box in the mounting location inside the printer. Support the buffer box with your hand during the next step.

3 Fasten the two buffer box mounting screws from inside the ink cartridge area of the printer. Ensure the buffer box is securely installed.



4 Install the accessory cover. *See "Removing the User Interface and Accessory Covers" on page 45.*

5 Install ink cartridges.

Replacing the Buffer Box Drip Diaper Material

Drip diaper material pads are positioned beneath the buffer boxes inside the printer. These pads are designed to capture ink in the event of a buffer box overflow.

Use the following instructions to replace the buffer box drip diaper material.

Personal Protective Equipment (PPE)

Caution: *In order to avoid personal injury, always use appropriate personal protective equipment (PPE) when performing maintenance tasks.*

- Safety glasses
- Nitrile powder-free gloves
- Clothing protection (smock, jacket, etc.)

Required Tools and Supplies

Gather all supplies and tools before starting this process.

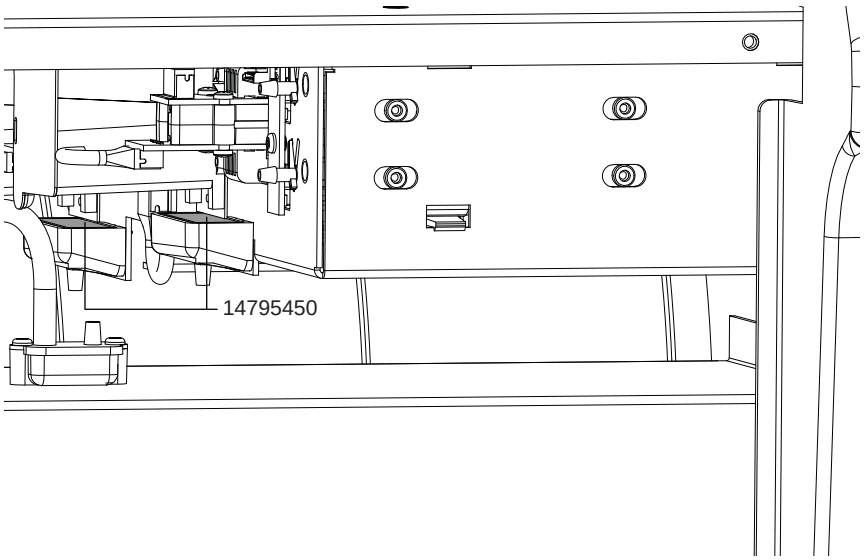
- Diaper box drip material (14795450) x 2
- Phillips screwdriver

Removal

1 Turn the printer power off and disconnect the power cable from the power outlet.

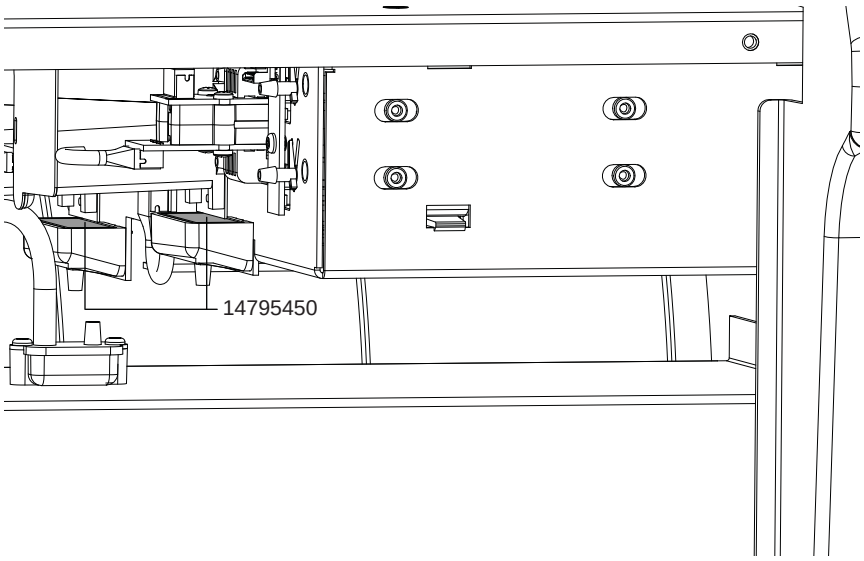
2 Remove the accessory cover. *See "Removing the User Interface and Accessory Covers" on page 45.*

3 Reach into the interior of the printer and remove the two drip diaper material pads (14795450).



Installation

1 Reach into the printer and install the two drip diaper material pads (14795450).



2 Install the accessory cover. *See "Removing the User Interface and Accessory Covers" on page 45.*

3 Reconnect the power cable.

Replacing the Sump Pump and Harness

Use the following instructions to replace the sump pump and harness assembly (27440007).

Personal Protective Equipment (PPE)

Caution: *In order to avoid personal injury, always use appropriate personal protective equipment (PPE) when performing maintenance tasks.*

- Safety glasses
- Nitrile powder-free gloves
- Clothing protection (smock, jacket, etc.)

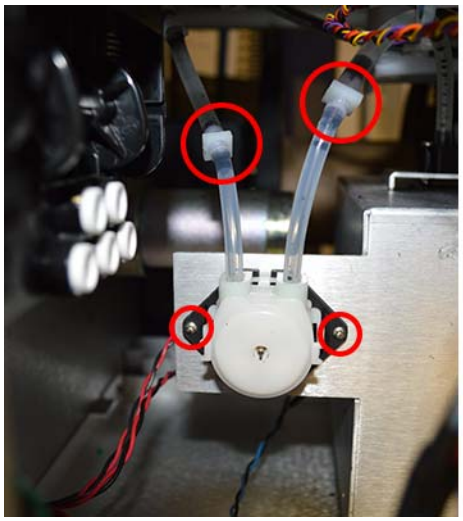
Required Tools and Supplies

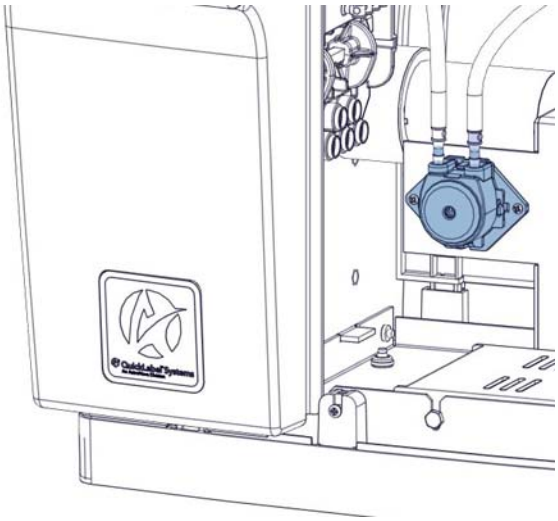
Gather all supplies and tools before starting this process.

- Phillips screwdriver
- Hemostats

Removal

1. Turn the printer power off and disconnect the power cable from the power outlet.
2. Remove the accessory cover. *See "Removing the User Interface and Accessory Covers" on page 45.*
3. Remove the top and side covers. *See "Removing the Top and Side Covers" on page 43.*
4. Disconnect the sump pump harness from P15 on the QL-800 Controller PCB (42918001).
5. Note the position of each tube and its corresponding connection point on the sump pump tube couplings. This information will be important when reinstalling tubes.





6. Fasten a hemostat above the tube coupling on each tube connected to the sump pump.
7. Disconnect the sump pump tubes from the couplings.

8 Remove the sump pump from the bracket. This process varies based on the mounting configuration of the pump.

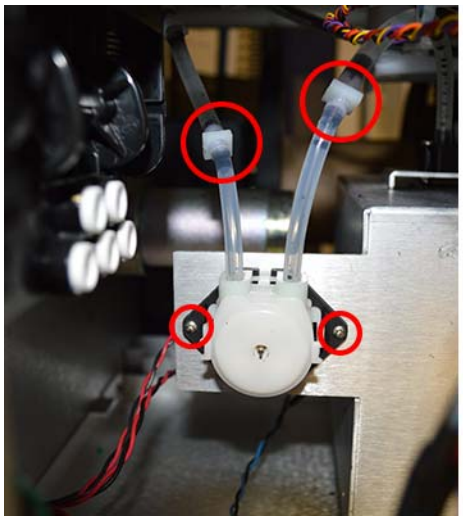
- If the sump pump is mounted with screws, unfasten the two mounting screws and remove the sump pump from the bracket.
- If the sump pump is mounted without screws, unsnap the sump pump from the cutout in the mounting bracket.

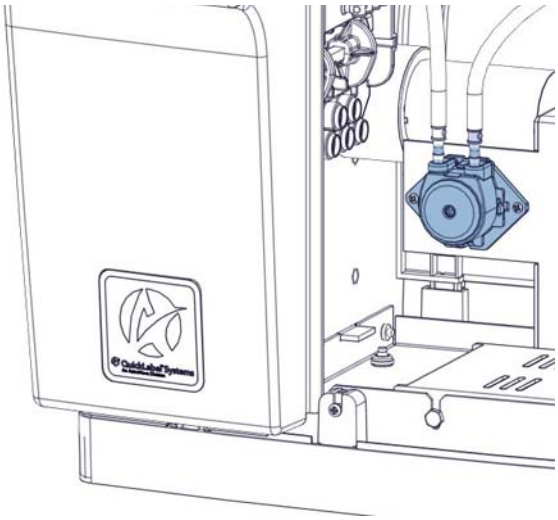
Installation

1 Install the sump pump in the bracket. This process varies based on the mounting configuration of the pump.

- If the sump pump is mounted with screws, attach the sump pump to the bracket by fastening the two mounting screws.
- If the sump pump is mounted without screws, snap the sump pump into the cutout in the mounting bracket.

2 Connect the sump pump tubes to the couplings. Ensure you install the tubes in the correct positions.





3 Disconnect the hemostats above the tube couplings.

4 Route the sump pump harness and connect to P15 on the QL-800 Controller PCB (42918001).

5 Install the top and side covers. *See "Removing the Top and Side Covers" on page 43.*

6 Install the accessory cover. *See "Removing the User Interface and Accessory Covers" on page 45.*

Replacing Print Engine Parts

Replacing the Transfer Wiper Module

Use the following instructions to replace the transfer wiper module (14799861).

Personal Protective Equipment (PPE)

Caution: *In order to avoid personal injury, always use appropriate personal protective equipment (PPE) when performing maintenance tasks.*

- Safety glasses
- Nitrile powder-free gloves
- Clothing protection (smock, jacket, etc.)

Required Tools and Supplies

Gather all supplies and tools before starting this process.

- Diagonal cutter
- Cable tie

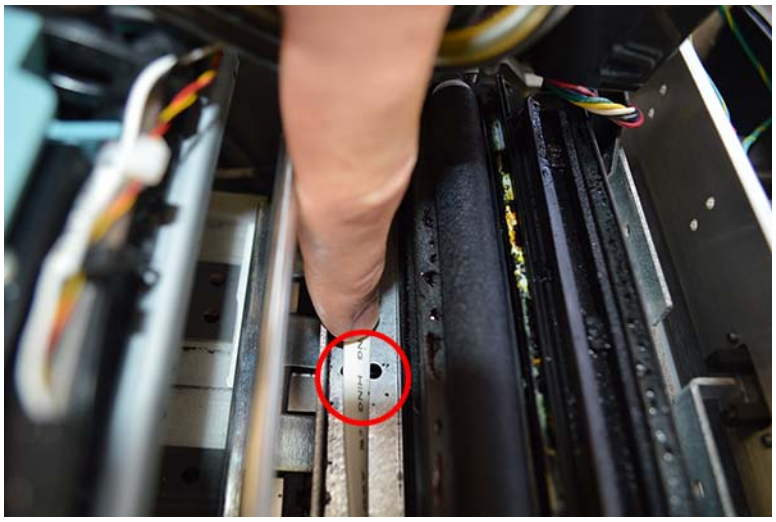
Removal

1 In the **Part Replacement** tab of the Maintenance Utility, start the replacement wizard for the maintenance roller.

When prompted to remove the maintenance roller, proceed to the next step.

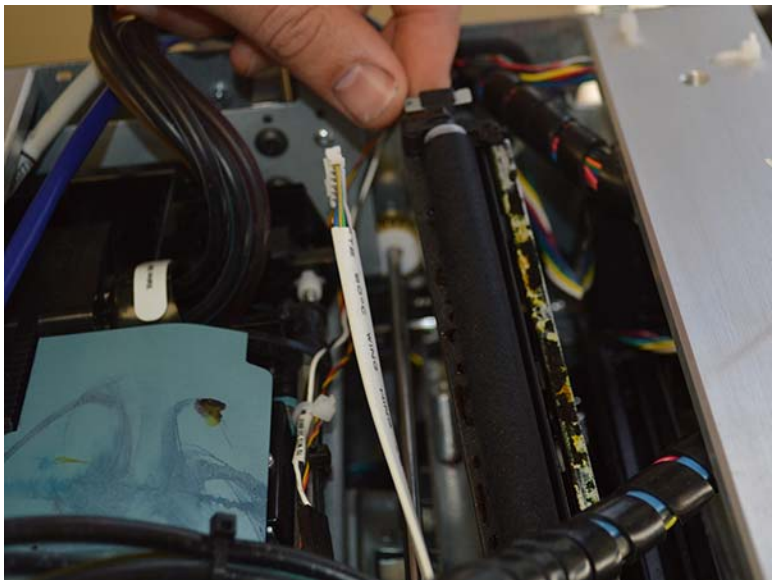
2 Open the top cover.

3 Locate and cut the cable tie that secures the transfer wiper module harness. Remove the cable tie.



4 Unplug the wiper module harness from the connector.

5 Lift the side near the harness connector and start to disengage the wiper module from the printer.

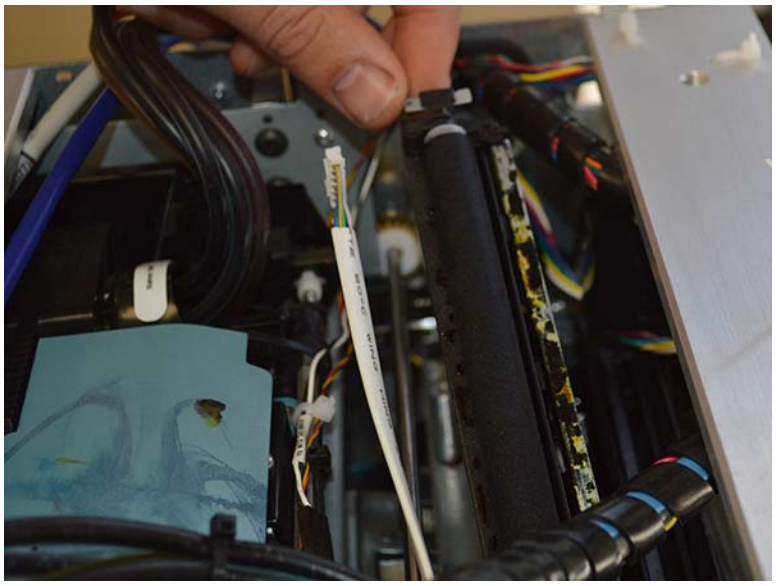


6 Disengage the side near the motor and lift the wiper module out of the printer.

Installation

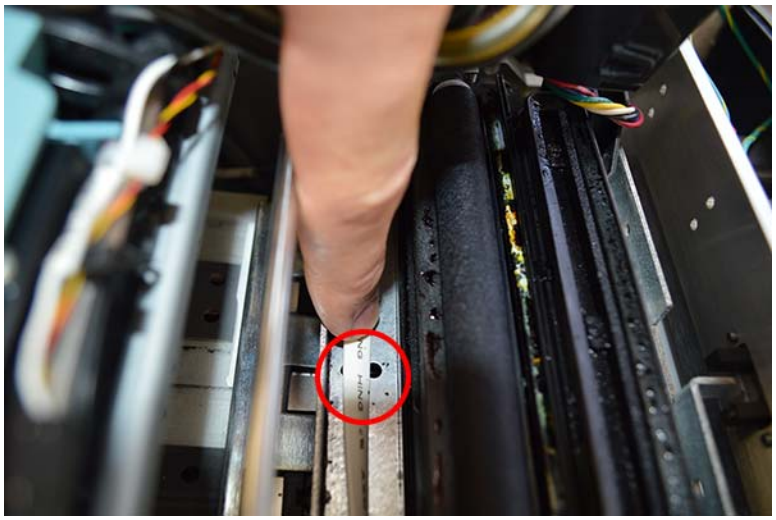
1 Engage the side near the motor and position the wiper module inside the printer.

2 Install the side near the harness connector and ensure the wiper module is engaged in the printer.



3 Plug the wiper module harness into the connector.

4 Install a cable tie and secure the transfer wiper module harness. It will be necessary to temporarily remove the transfer unit while installing the cable tie.



5 Close the top cover.

6 Finish the part replacement wizard for the maintenance roller.

Replacing the Printhead Lever Latch

Use the following instructions to replace the printhead lever latch (14799862) and springs (14799863).

Personal Protective Equipment (PPE)

Caution: *In order to avoid personal injury, always use appropriate personal protective equipment (PPE) when performing maintenance tasks.*

- Safety glasses
- Nitrile powder-free gloves
- Clothing protection (smock, jacket, etc.)

Required Tools and Supplies

Gather all supplies and tools before starting this process.

- Disposable towels
- Needle-nose pliers
- Small, flat-head screwdriver

Removal

1 Open the top cover.

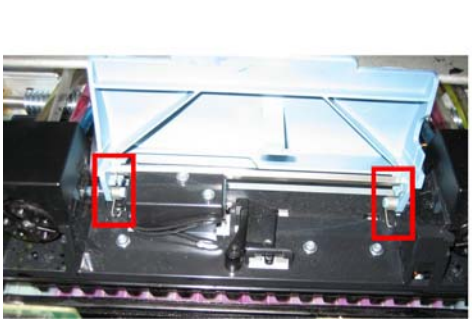
2 Open the printhead latch using one of the following methods.

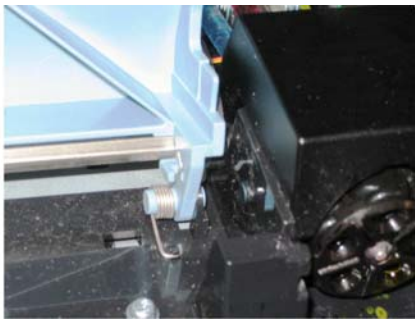
- If a QL-800 Serial Debug cable is available, connect it to the printer and open a Serial Terminal application. Remember to set the baud rate to 38400. Type the command: eco ph_latch_open
- If the serial debug cable is not available, open the Maintenance Utility and run the Before Shipping procedure. After the latch is replaced and the unit is powered back on, you will be required to run the After Shipping procedure to re-prime the head.

3 Turn the printer power off and disconnect the power cable from the power outlet.

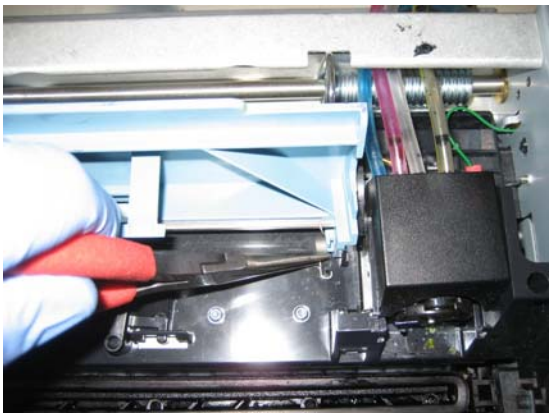
4 Lift the latch to access the springs.

5 Remove the printhead cartridge (according to standard procedure) and place in a moistened cap to avoid dehydration.

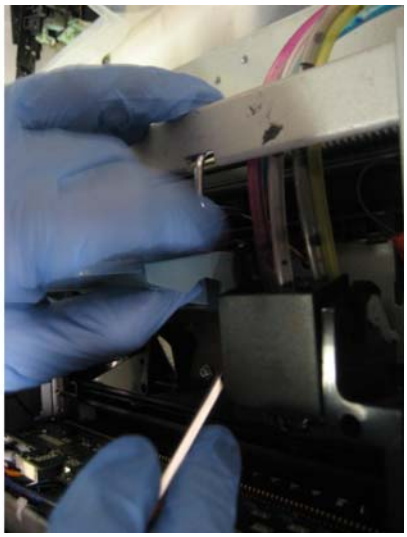




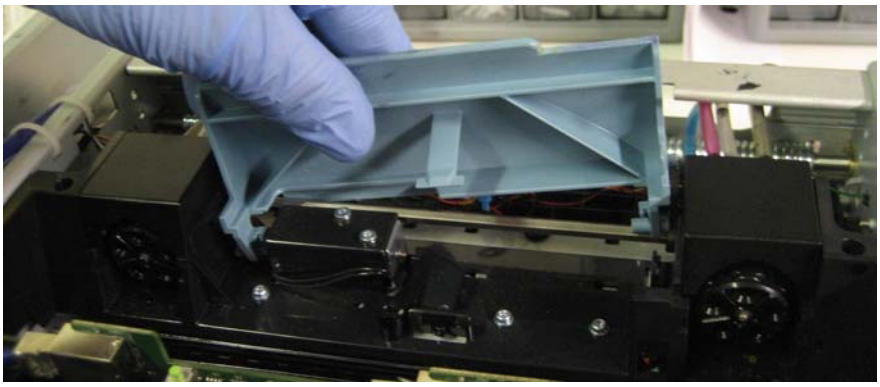
6 Use needle-nose pliers to gently pull the rounded end of the spring out from underneath the plastic tab in the housing and remove the spring. Repeat for the second spring.

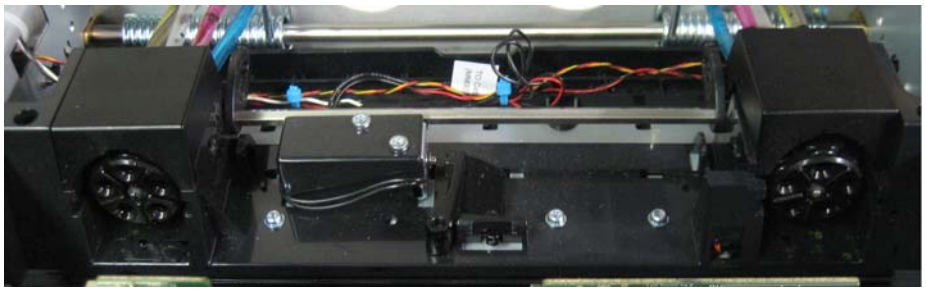


7 Gently insert a small, flat-head screwdriver between the blue PH latch pin and the black plastic hinge and rotate to pop the PH latch out of the hinge without damaging either piece.



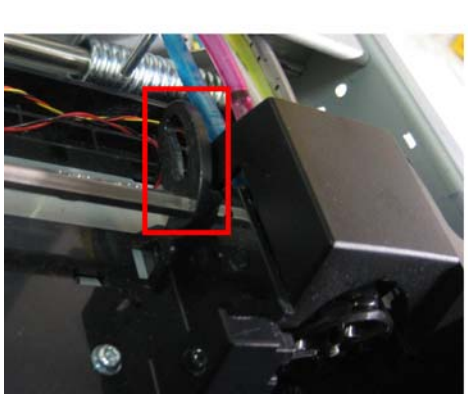
The second side should easily slide out of the hinge.

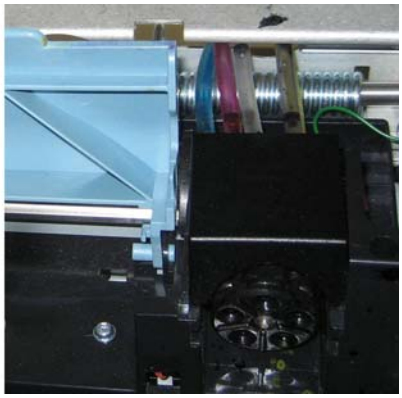




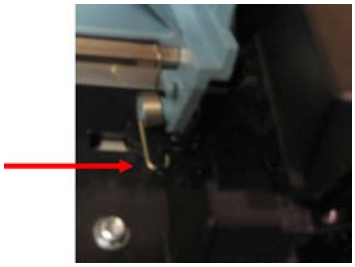
Installation

1 Align the right tab of the new latch with the right hinge and gently press into place. Repeat for the left side.

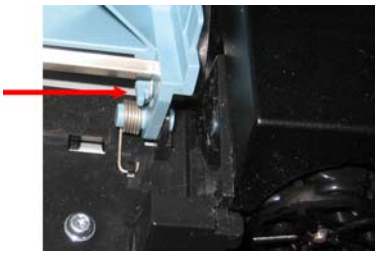




2 Use needle-nose pliers to install the right spring into the plastic tab in the base of the housing. Be sure to orient the spring as shown in the figure below.



3 Use needle-nose pliers to position the other end of the spring into the cutout in the PH latch.



4 Repeat Steps 2 and 3 for the left side.

5 Uncap and wipe the printhead cartridge according to standard procedures, then install.

6 Restart the system.

7 Manually close the printhead latch until it clicks. The system will automatically prime and be ready for testing.

Note: *If the latch is closed with the system powered down, it will not automatically prime.*

Replacing Unwind Parts

Replacing the Mandrel Motor

Use the following instructions to replace the mandrel motor (27440009).

Personal Protective Equipment (PPE)

Caution: *In order to avoid personal injury, always use appropriate personal protective equipment (PPE) when performing maintenance tasks.*

- Safety glasses
- Nitrile powder-free gloves
- Clothing protection (smock, jacket, etc.)

Required Tools and Supplies

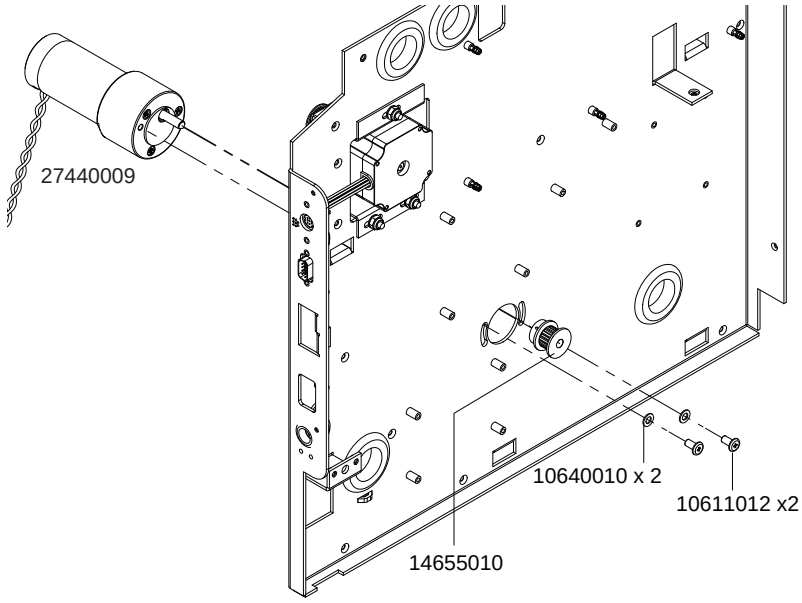
Gather all supplies and tools before starting this process.

- Disposable towels
- Phillips screwdriver
- Hex wrench

Removal

1. Turn the printer power off and disconnect the power cable from the power outlet.
2. Remove the top and side covers. *See "Removing the Top and Side Covers" on page 43.*
3. Remove the accessory cover. *See "Removing the User Interface and Accessory Covers" on page 45.*

4 Remove the mandrel motor by unfastening the screws (10611012) and washers (10640010).



5 Remove the pulley (14655010) by loosening the set screw with a hex wrench.

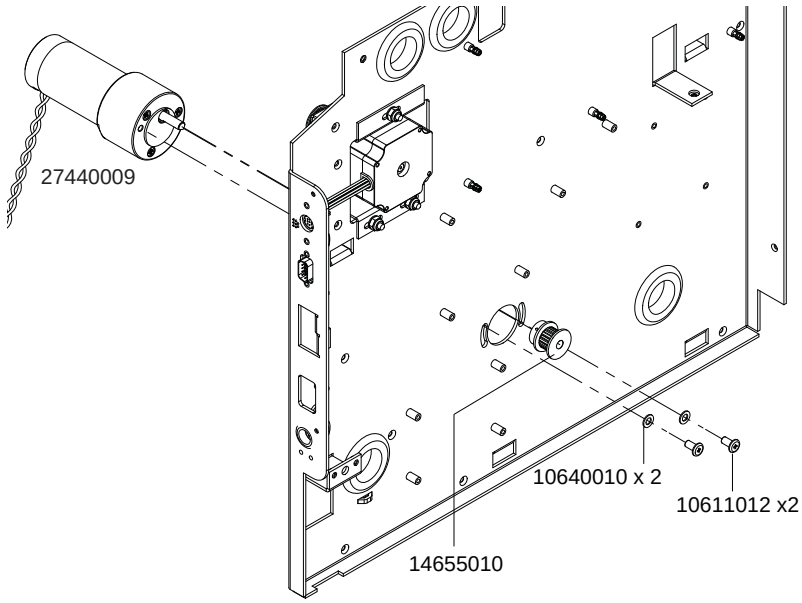
6 Unplug the motor harness from P4 on the controller PCB.

Installation

1 Plug the motor harness into P4 on the controller PCB.

2 Install the pulley (14655010) by fastening the set screw with a hex wrench.

3 Install the mandrel motor by fastening the screws (10611012) and washers (10640010). Install the mandrel motor such that there is moderate tension on the mandrel belt.



4 Install the accessory cover. *See "Removing the User Interface and Accessory Covers" on page 45.*

5 Install the top and side covers. *See "Removing the Top and Side Covers" on page 43.*

Replacing the Encoder Sensor

Use the following instructions to replace the encoder sensor (25123000).

Personal Protective Equipment (PPE)

Caution: *In order to avoid personal injury, always use appropriate personal protective equipment (PPE) when performing maintenance tasks.*

- Safety glasses
- Nitrile powder-free gloves
- Clothing protection (smock, jacket, etc.)

Required Tools and Supplies

Gather all supplies and tools before starting this process.

- Disposable towels
- Phillips screwdriver

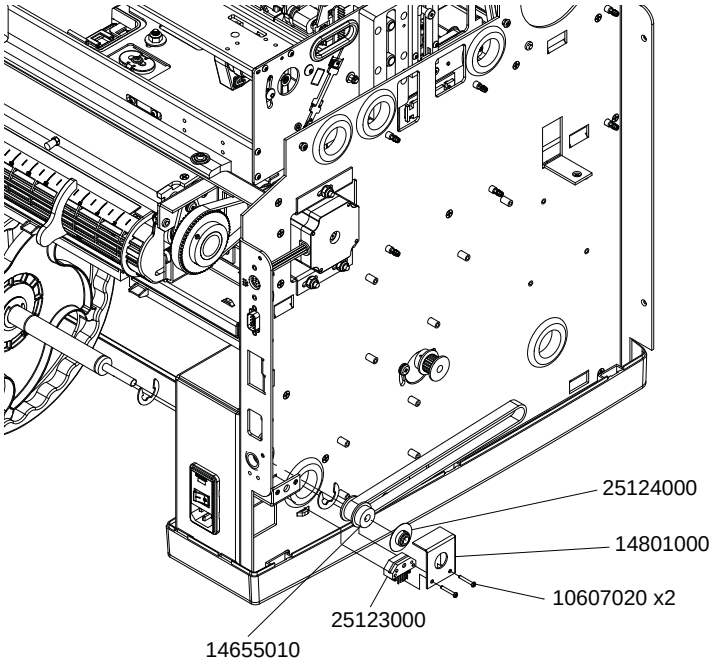
Removal

1 Turn the printer power off and disconnect the power cable from the power outlet.

2 Remove the top and side covers. *See "Removing the Top and Side Covers" on page 43.*

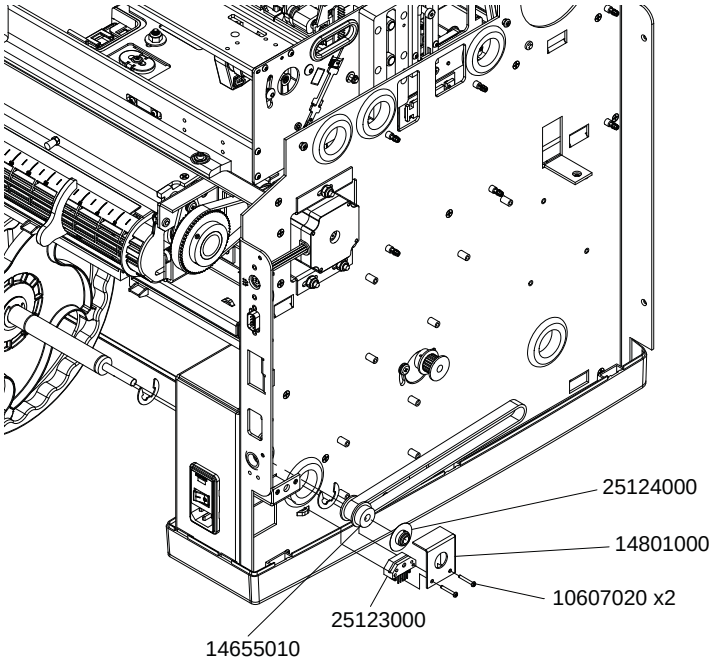
3 Disconnect the harness (27440010) from the encoder sensor.

4 Remove the bracket (14801000) and encoder sensor (25123000) by unfastening the screws (10607020).



Installation

1 Install the bracket (14801000) and encoder sensor (25123000) by fastening the screws (10607020).



2 Connect the harness (27440010) to the encoder sensor.

3 Install the top and side covers. *See "Removing the Top and Side Covers" on page 43.*

Replacing the Encoder Disc

Use the following instructions to replace the encoder disc (25124000).

Personal Protective Equipment (PPE)

Caution: *In order to avoid personal injury, always use appropriate personal protective equipment (PPE) when performing maintenance tasks.*

- Safety glasses
- Nitrile powder-free gloves
- Clothing protection (smock, jacket, etc.)

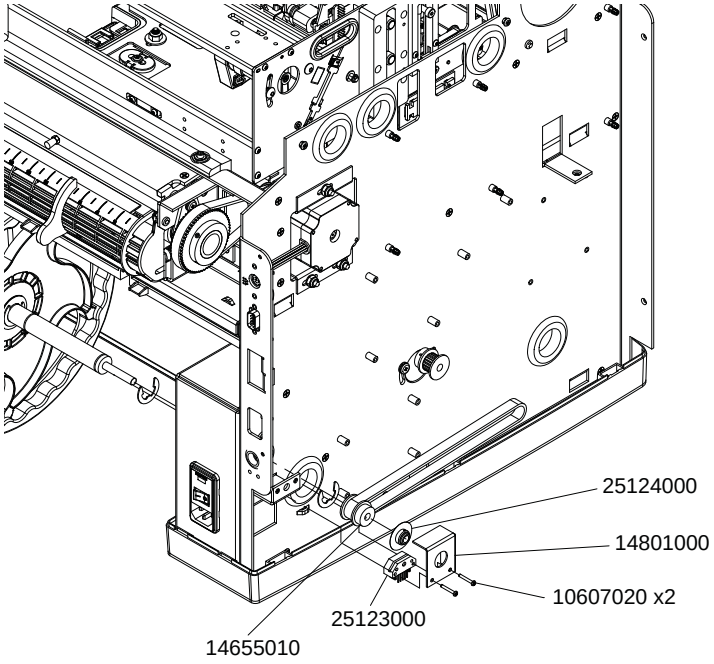
Required Tools and Supplies

Gather all supplies and tools before starting this process.

- Disposable towels
- Phillips screwdriver
- Hex wrench

Removal

1. Turn the printer power off and disconnect the power cable from the power outlet.
2. Remove the top and side covers. *See "Removing the Top and Side Covers" on page 43.*
3. Remove the bracket (14801000) and encoder sensor (25123000) by unfastening the screws (10607020).

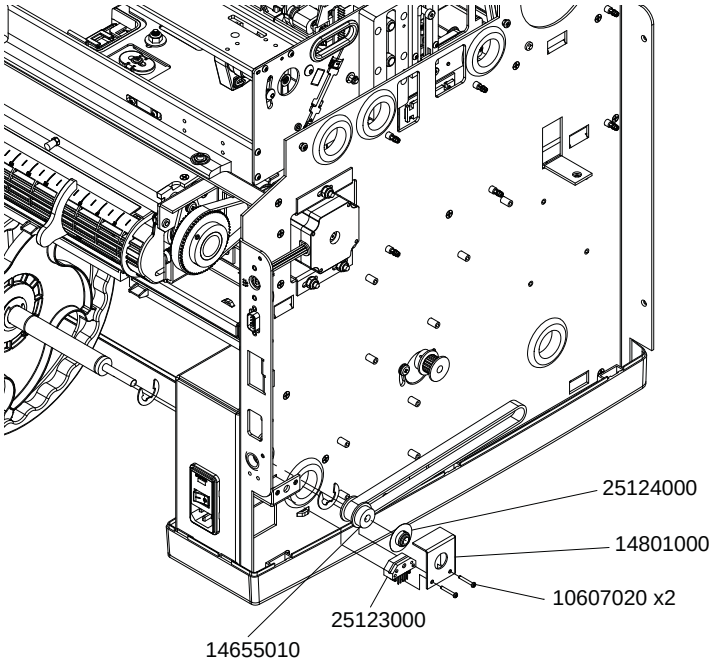


4. Remove the encoder disc (25124000) by unfastening the set screw.

Installation

1 Install the encoder disc (25124000) but do not fasten the set screw.

2 Install the bracket (14801000) and encoder sensor (25123000) by fastening the screws (10607020). Ensure the disc (25124000) is centered in the sensor slot and then tighten the disc set screw.



3 Install the top and side covers. *See "Removing the Top and Side Covers" on page 43.*

Replacing the Unwind Bushings

Use the following instructions to replace the unwind bushings (14795545).

Personal Protective Equipment (PPE)

Caution: *In order to avoid personal injury, always use appropriate personal protective equipment (PPE) when performing maintenance tasks.*

- Safety glasses
- Nitrile powder-free gloves
- Clothing protection (smock, jacket, etc.)

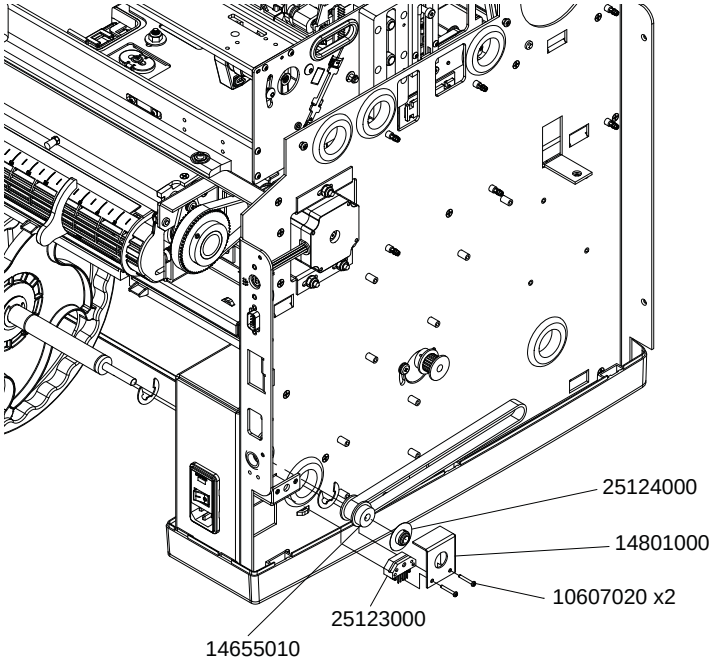
Required Tools and Supplies

Gather all supplies and tools before starting this process.

- Disposable towels
- Phillips screwdriver
- Hex wrench
- E-clip puller

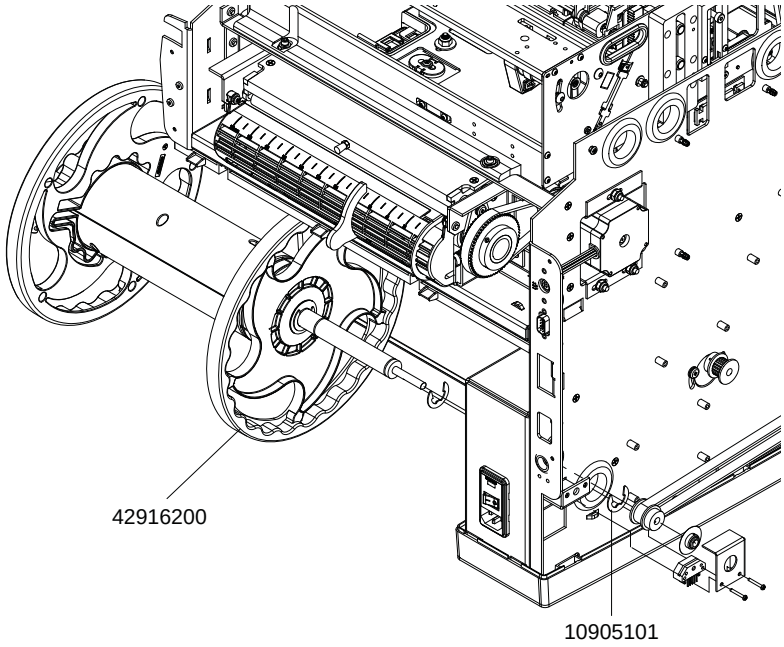
Removal

1. Turn the printer power off and disconnect the power cable from the power outlet.
2. Remove the top and side covers. *See "Removing the Top and Side Covers" on page 43.*
3. Remove the bracket (14801000) and encoder sensor (25123000) by unfastening the screws (10607020).

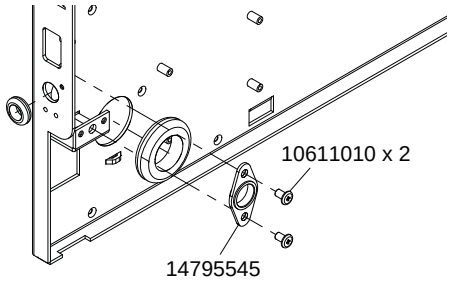


4. Remove the encoder disc (25124000) by unfastening the set screw.
5. Remove the pulley (14655010) by unfastening the set screw.

6 Remove the e-ring (10905101). Then remove the mandrel assembly (42916200) from the printer.

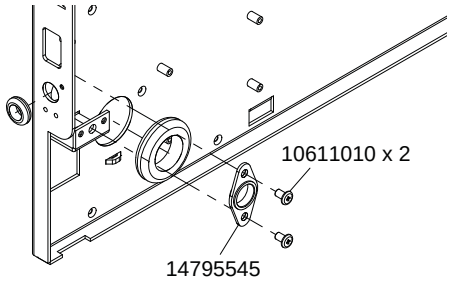


7 Remove the bushings (14795545) by unfastening the screws (10611010).

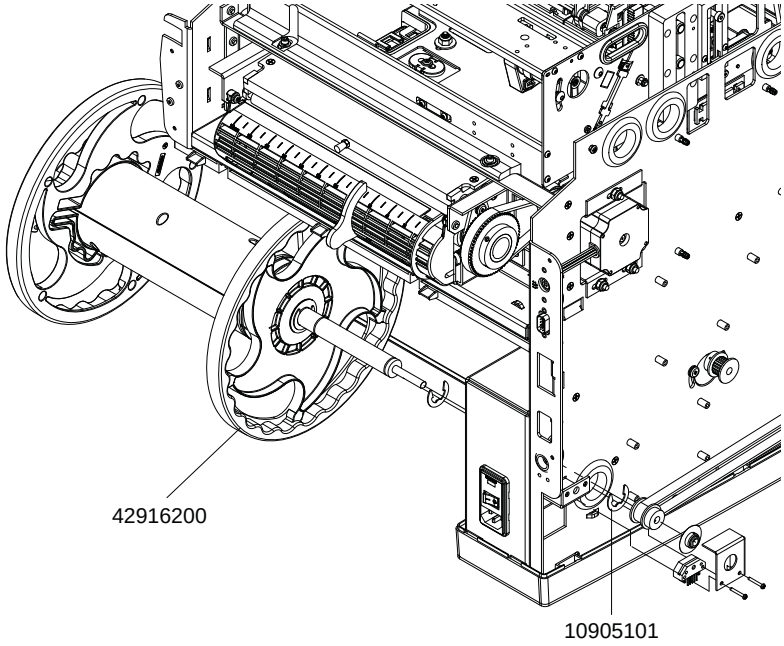


Installation

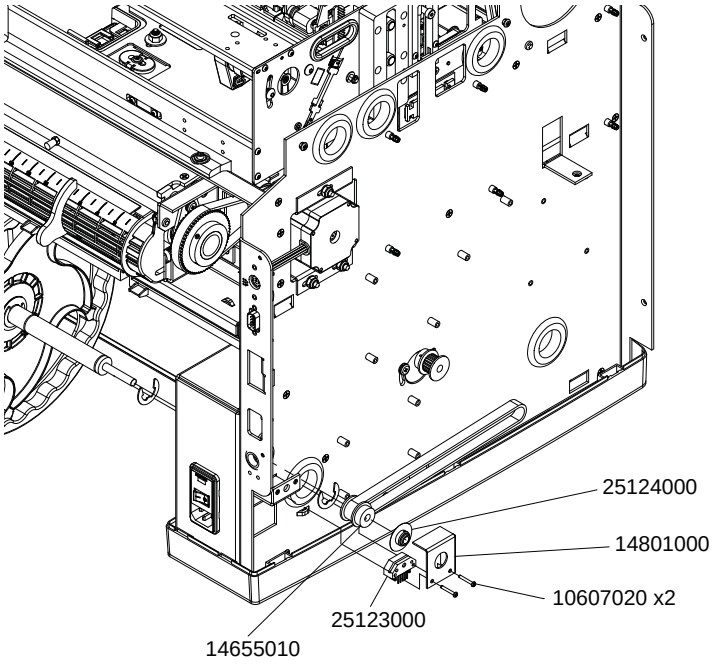
1 Install the bushings (14795545) by fastening the screws (10611010).



2 Install the mandrel assembly (42916200) in the printer. Then install the e-ring (10905101).



3 Install the pulley (14655010) by fastening the set screw.



4 Install the encoder disc (25124000) by fastening the set screw.

5 Install the bracket (14801000) and encoder sensor (25123000) by fastening the screws (10607020).

Replacing the O-rings

Use the following instructions to replace the o-rings (14655610).

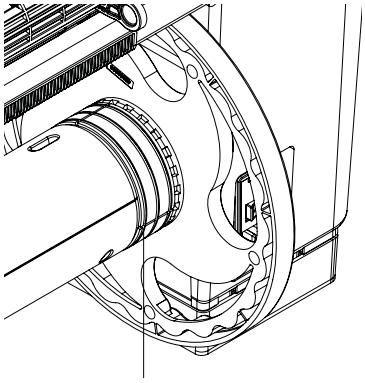
Personal Protective Equipment (PPE)

Caution: *In order to avoid personal injury, always use appropriate personal protective equipment (PPE) when performing maintenance tasks.*

- Safety glasses
- Nitrile powder-free gloves
- Clothing protection (smock, jacket, etc.)

Removal

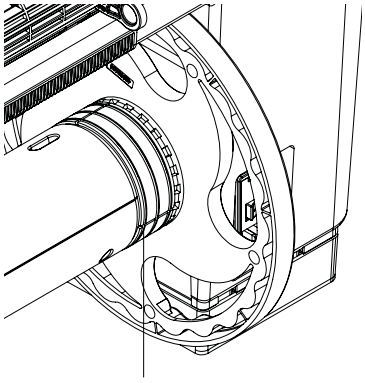
1. Turn the printer power off and disconnect the power cable from the power outlet.
2. Remove the outer flange.
3. Slide the three o-rings (14655610) off the mandrel.



14655610

Installation

1. Slide the three o-rings (14655610) on the mandrel.



14655610

2. Install the outer flange.

Replacing Transport Parts

Replacing the Cutter Assembly

Use the following instructions to replace the cutter assembly (27440130).

Personal Protective Equipment (PPE)

Caution: *In order to avoid personal injury, always use appropriate personal protective equipment (PPE) when performing maintenance tasks.*

- Safety glasses
- Nitrile powder-free gloves
- Clothing protection (smock, jacket, etc.)

Required Tools and Supplies

Gather all supplies and tools before starting this process.

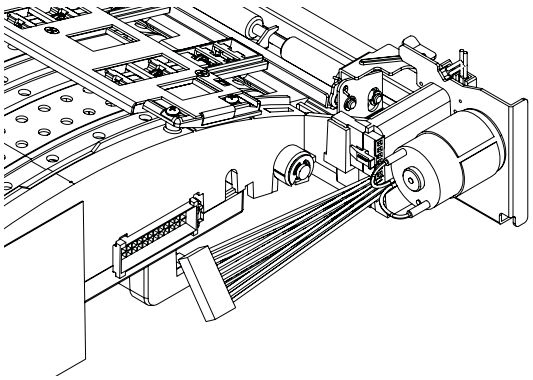
- Phillips screwdriver

Removal

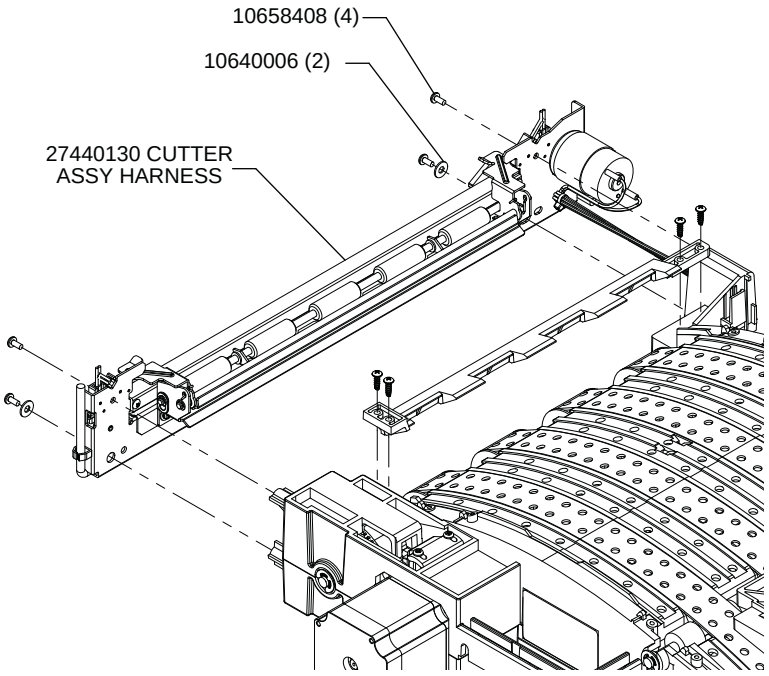
Caution: *The cutter blade is sharp. Use caution to avoid personal injury or damage to clothing when working with cutting blades or around exposed blade surfaces.*

1. Remove media from the printer.
2. Open the main side door.
3. Grasp the handle on the transport unit. Then pull the transport unit straight out of the printer.

   Note: *If the yellow transport unit shipping lock is installed, you will not be able to remove the transport unit. You must first remove the shipping lock by rotating it counterclockwise and then pulling it straight out. This lock is usually removed during the unpacking process.*
4. Place the transport unit on a flat surface.
5. Unplug the cutter motor harness.



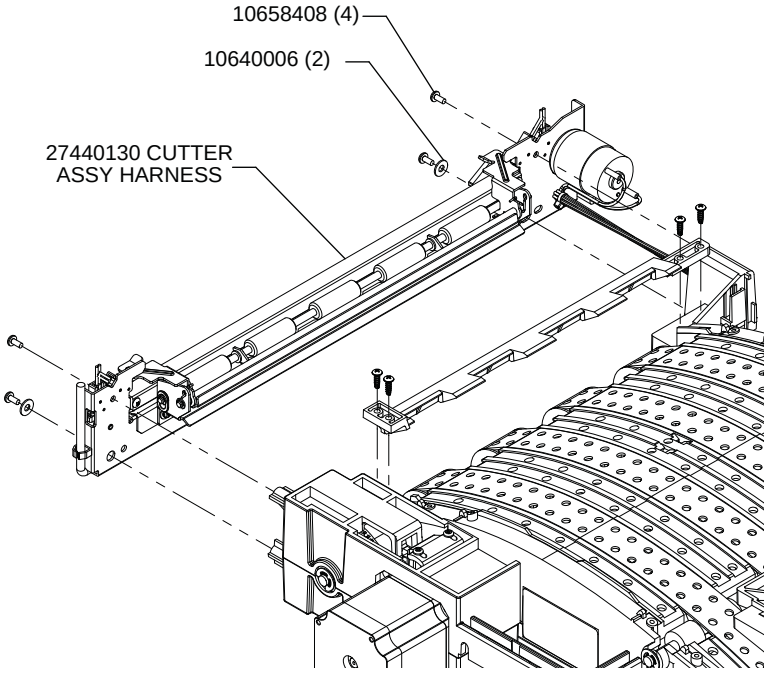
6 Remove the four screws (10658408) and two washers (10640006). Note the washers are installed on the bottom two screws. Remove the cutter assembly.



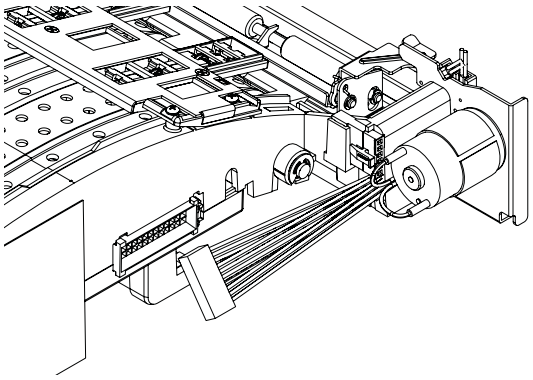
Installation

Caution: *The cutter blade is sharp. Use caution to avoid personal injury or damage to clothing when working with cutting blades or around exposed blade surfaces.*

1 Install the cutter assembly by fastening the four screws (10658408) and two washers (10640006). Note the washers are installed on the bottom two screws.



2 Connect the cutter motor harness.



3 Reinstall the transport unit in the printer.

Replacing Star Wheel Assemblies

Use the following instructions to replace the star wheel assemblies (42916100 and 42916110).

Personal Protective Equipment (PPE)

Caution: *In order to avoid personal injury, always use appropriate personal protective equipment (PPE) when performing maintenance tasks.*

- Safety glasses
- Nitrile powder-free gloves
- Clothing protection (smock, jacket, etc.)

Required Tools and Supplies

Gather all supplies and tools before starting this process.

- Phillips screwdriver

Removal

1 Remove media from the printer.

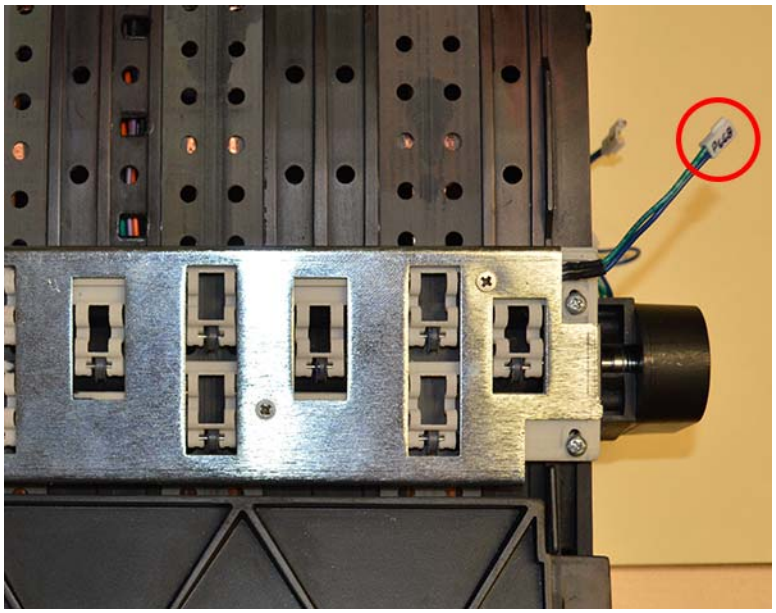
2 Open the main side door.

3 Grasp the handle on the transport unit. Then pull the transport unit straight out of the printer.

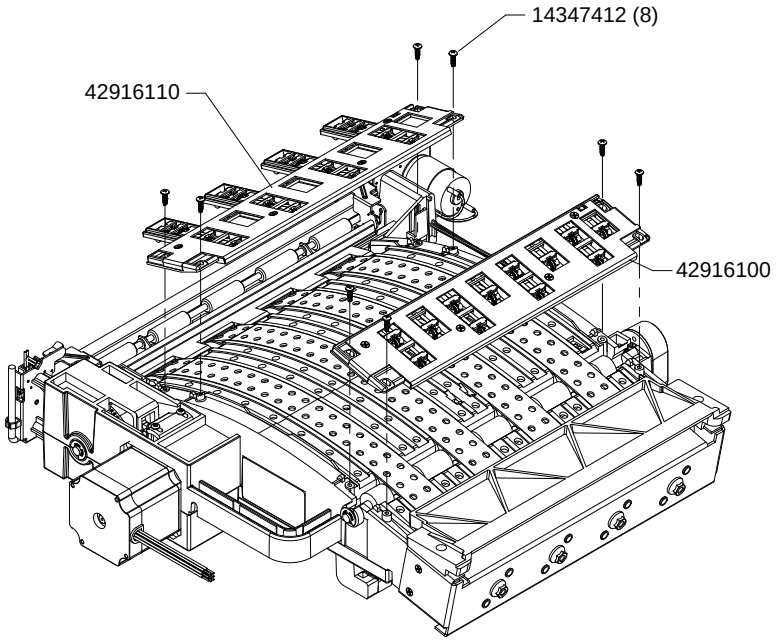
Note: *If the yellow transport unit shipping lock is installed, you will not be able to remove the transport unit. You must first remove the shipping lock by rotating it counterclockwise and then pulling it straight out. This lock is usually removed during the unpacking process.*

4 Place the transport unit on a flat surface.

5 Unplug the sensor harness from the star wheel assembly (42916100) near the media entrance.

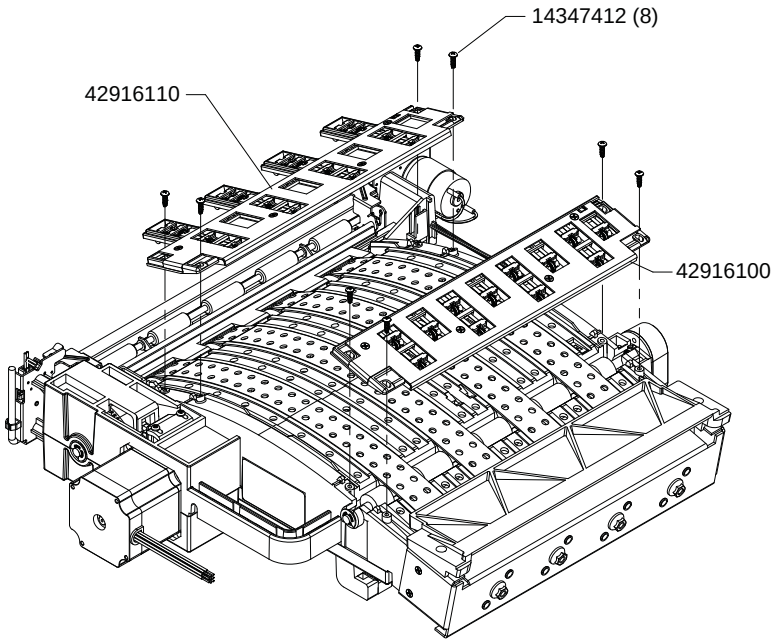


6 Remove the star wheel assemblies (42916100 and 42916110) by unfastening the screws (14347412). Each assembly is secured by four screws.

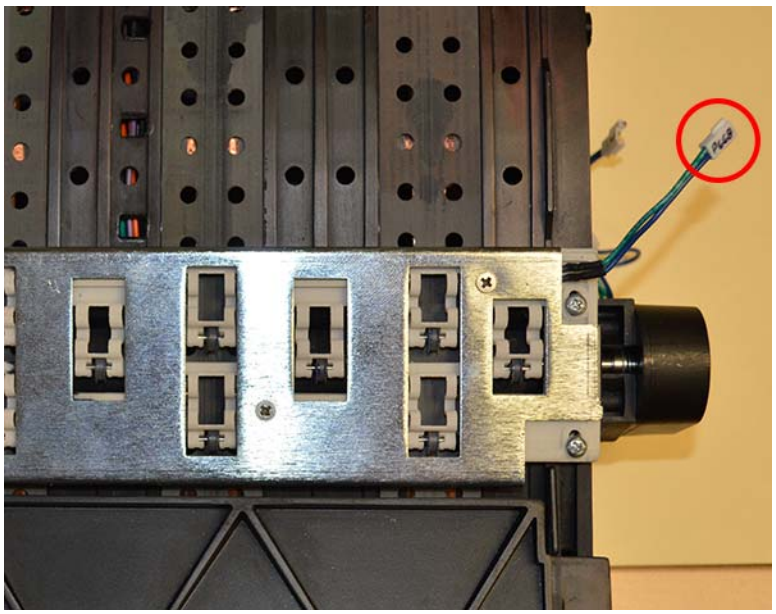


Installation

1 Install the star wheel assemblies (42916100 and 42916110) by aligning the mounting pins and then fastening the screws (14347412). Each assembly is secured by four screws.



2 Plug in the sensor harness from the star wheel assembly (42916100) near the media entrance.



3 Reinstall the transport unit in the printer.

Replacing the Drive Belt

Use the following instructions to replace the drive belt (14795585).

Personal Protective Equipment (PPE)

Caution: *In order to avoid personal injury, always use appropriate personal protective equipment (PPE) when performing maintenance tasks.*

- Safety glasses
- Nitrile powder-free gloves
- Clothing protection (smock, jacket, etc.)

Required Tools and Supplies

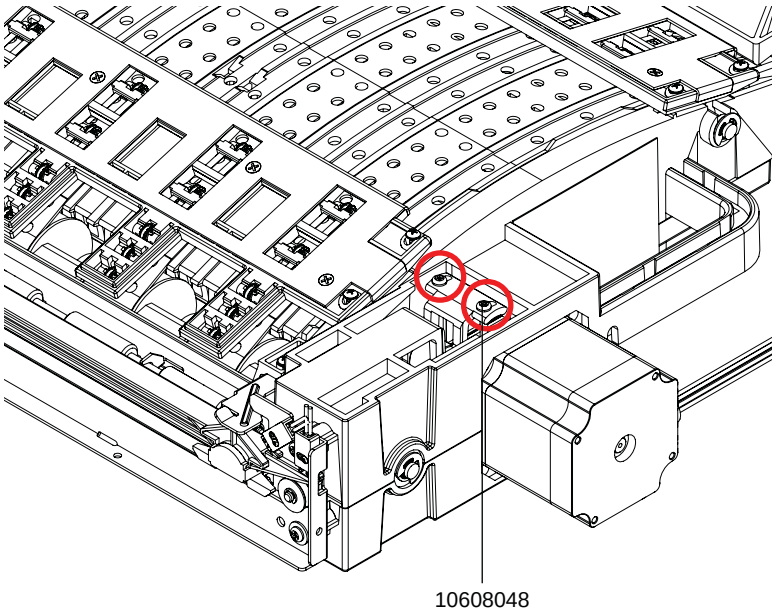
Gather all supplies and tools before starting this process.

- Phillips screwdriver

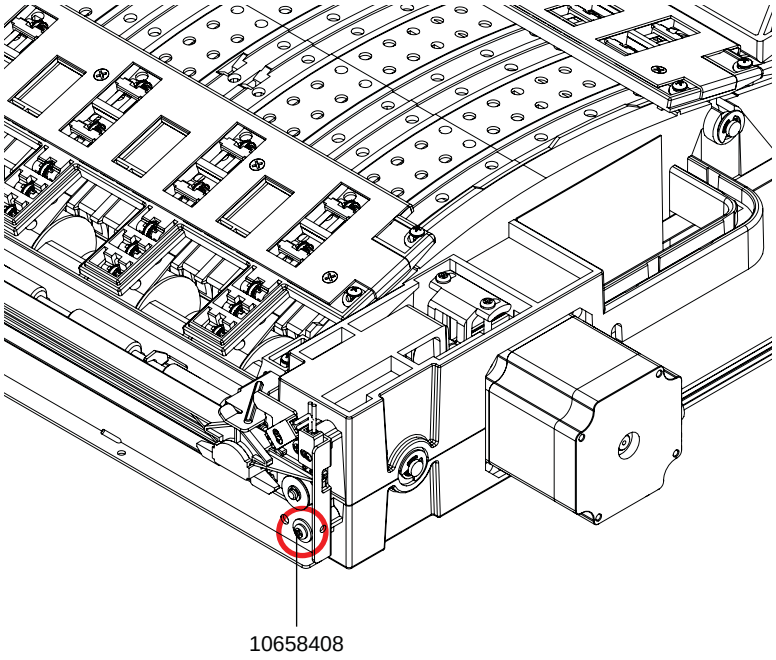
Removal

1. Remove media from the printer.
2. Open the main side door.
3. Grasp the handle on the transport unit. Then pull the transport unit straight out of the printer.

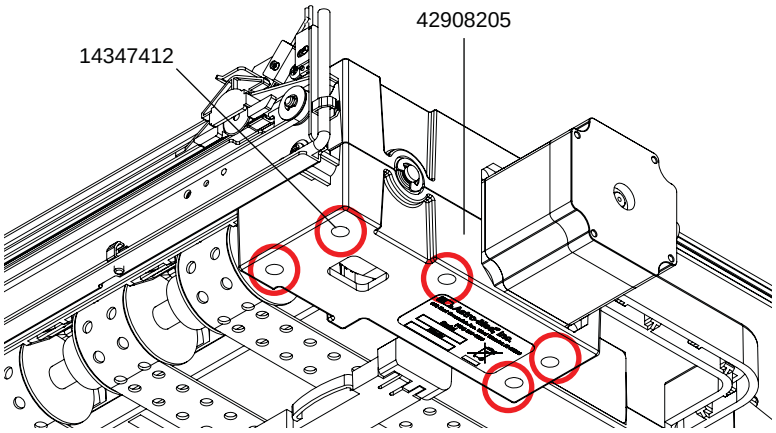
   Note: *If the yellow transport unit shipping lock is installed, you will not be able to remove the transport unit. You must first remove the shipping lock by rotating it counterclockwise and then pulling it straight out. This lock is usually removed during the unpacking process.*
4. Place the transport unit on a flat surface.
5. Unfasten the two screws (10608048) from the belt tensioner.



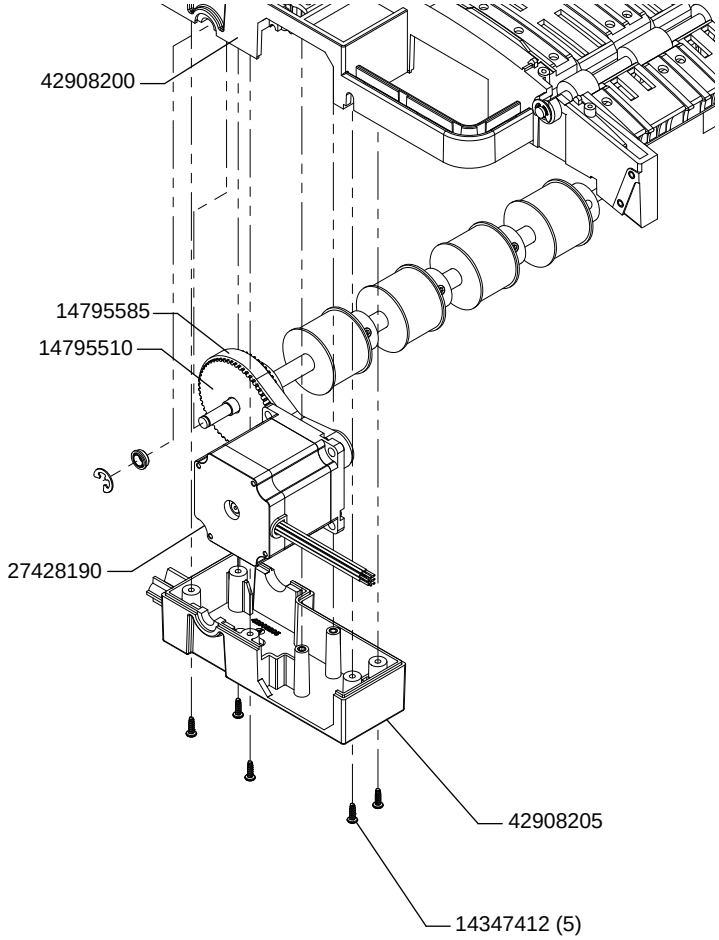
6 Unfasten the indicated screw (10658408) on the cutter. This screw fastens the cutter to the transport housing.



7 Remove the motor box cover (42908205) by unfastening the five screws (14347412).



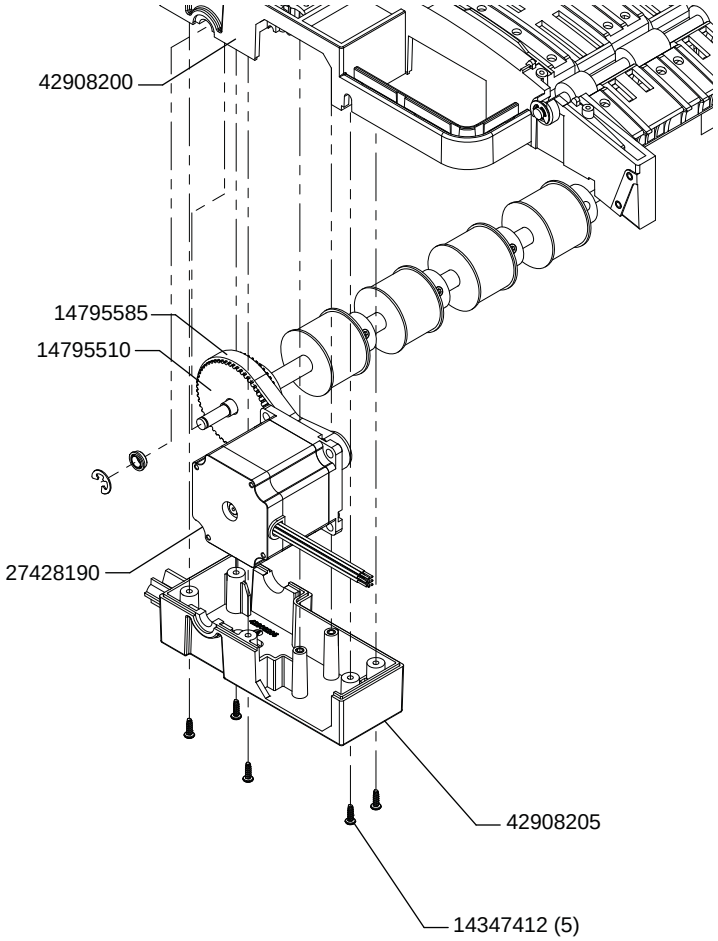
8 Unseat the stepper motor (27428190) from the upper transport housing (42908200).



9 Slide the belt (14795585) off the pulley (14795510).

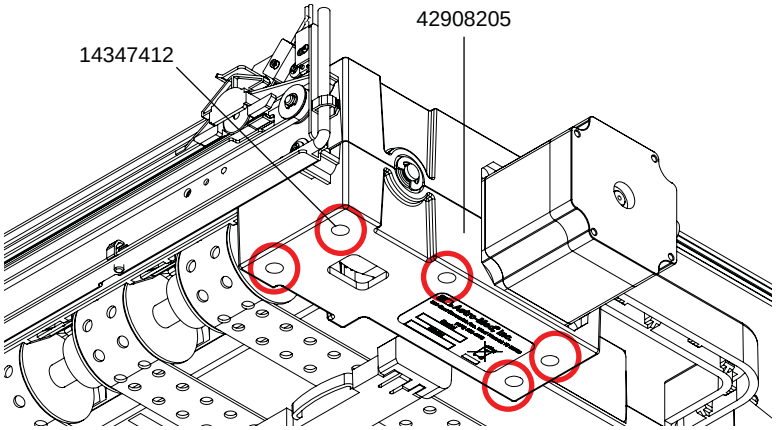
Installation

1 Slide the belt (14795585) on the pulley (14795510).

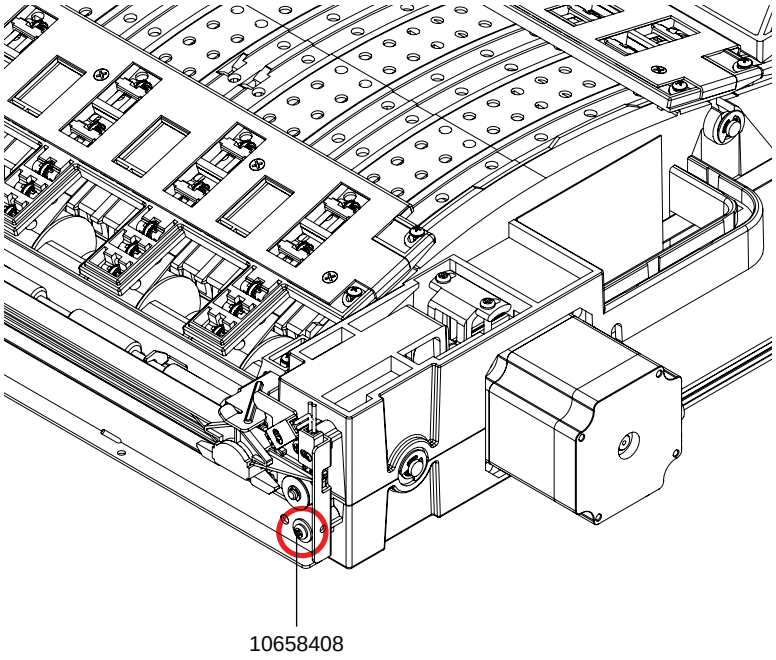


2 Pass the belt (14795585) over the stepper motor (27428190) pulley. Then install the stepper motor into the upper transport housing (42908200).

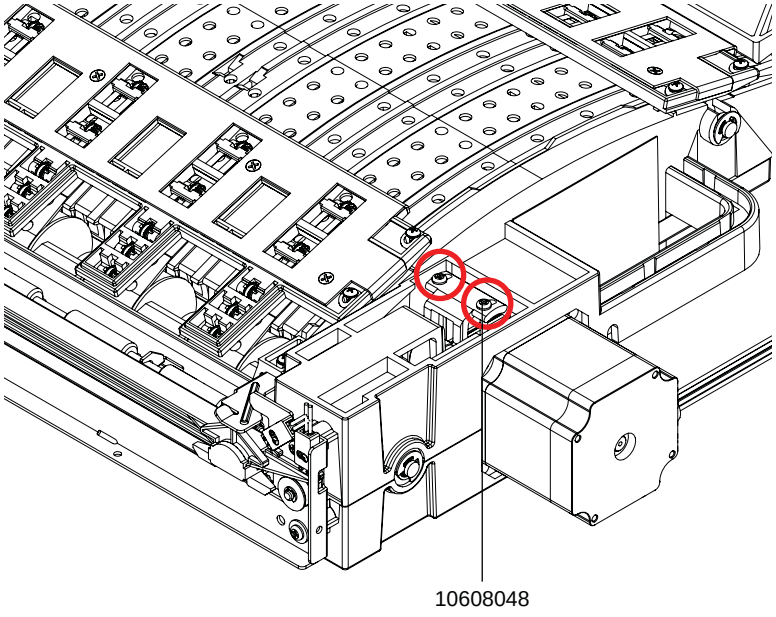
3 Install the motor box cover (42908205) by fastening the five screws (14347412).



4 Fasten the indicated screw (10658408) on the cutter. This screw fastens the cutter to the transport housing.



5 Fasten the two screws (10608048) from the belt tensioner. Tighten screws until they contact the plastic tensioner then give one full turn. These screws should be adjusted equally.



6 Reinstall the transport unit in the printer.

Replacing the Transport Encoder Sensor and Disc

Use the following instructions to replace the transport encoder sensor (27428420) and encoder disc (27428420).

Personal Protective Equipment (PPE)

Caution: *In order to avoid personal injury, always use appropriate personal protective equipment (PPE) when performing maintenance tasks.*

- Safety glasses
- Nitrile powder-free gloves
- Clothing protection (smock, jacket, etc.)

Required Tools and Supplies

Gather all supplies and tools before starting this process.

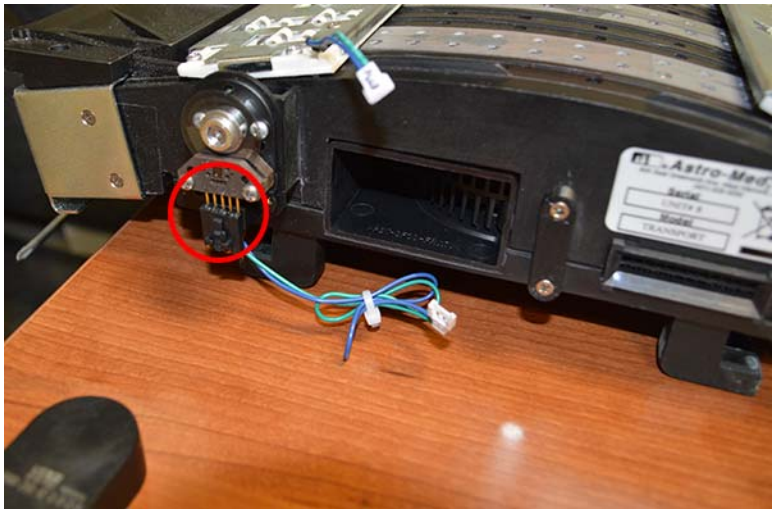
- Phillips screwdriver
- Hex wrench (.050")
- Encoder spacing tool

Removal

1. Remove media from the printer.
2. Open the main side door.
3. Grasp the handle on the transport unit. Then pull the transport unit straight out of the printer.

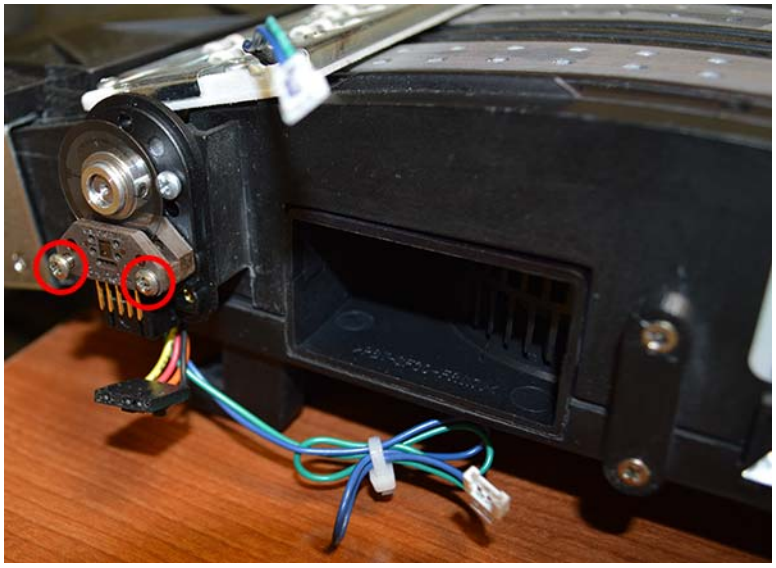
   Note: *If the yellow transport unit shipping lock is installed, you will not be able to remove the transport unit. You must first remove the shipping lock by rotating it counterclockwise and then pulling it straight out. This lock is usually removed during the unpacking process.*
4. Place the transport unit on a flat surface.
5. Unplug the sensor harness. Remove the encoder cover by unfastening the two screws.

6 Disconnect the harness from the encoder.



7 Remove the two screws securing the encoder sensor. Then carefully remove the sensor.

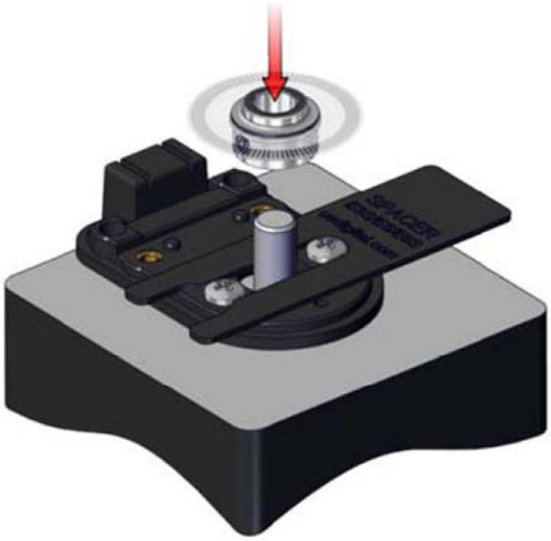
Caution: *Use caution when removing the sensor. The encoder disc is a sensitive component that can be damaged by debris, scratches, etc.*



8 If you are replacing the encoder disc, loosen the set screw on the encoder disc. Remove the disc from the shaft.

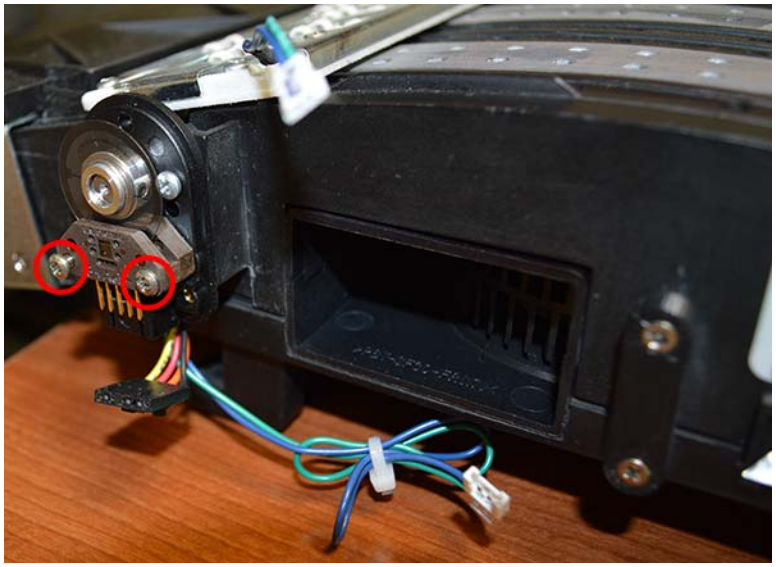
Installation

1 If you are installing the encoder disc, use the encoder spacing tool and install the encoder disc on the shaft. Fasten the disc in place with the set screw.

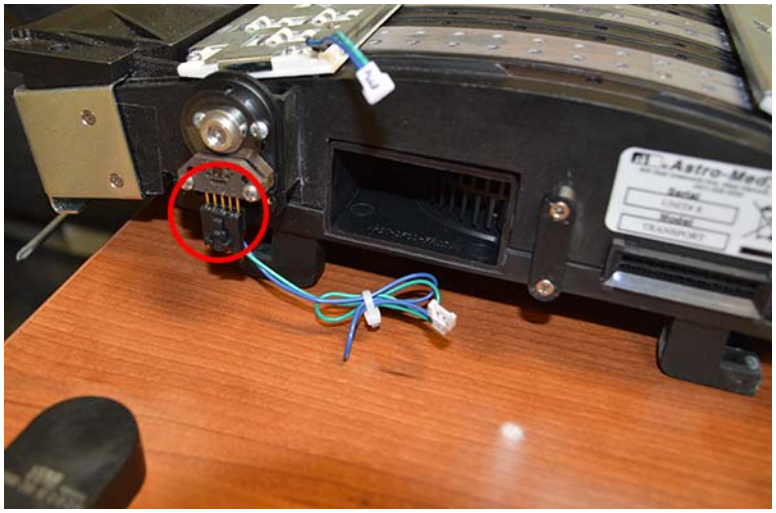


2 Carefully position the sensor with the encoder disc in the slot. Fasten the two screws securing the encoder sensor.

Caution: *Use caution when installing the sensor. The encoder disc is a sensitive component that can be damaged by debris, scratches, etc.*



3 Connect the harness to the encoder.



4 Install the encoder cover by fastening the two screws. Plug in the sensor harness.

5 Reinstall the transport unit in the printer.

Replacing the TOF LED Harness

Use the following instructions to replace the top-of-form LED harness (27440120).

Personal Protective Equipment (PPE)

Caution: *In order to avoid personal injury, always use appropriate personal protective equipment (PPE) when performing maintenance tasks.*

- Safety glasses
- Nitrile powder-free gloves
- Clothing protection (smock, jacket, etc.)

Required Tools and Supplies

Gather all supplies and tools before starting this process.

- Phillips screwdriver
- Cable tie (14799025)

Removal

1 Remove media from the printer.

2 Open the main side door.

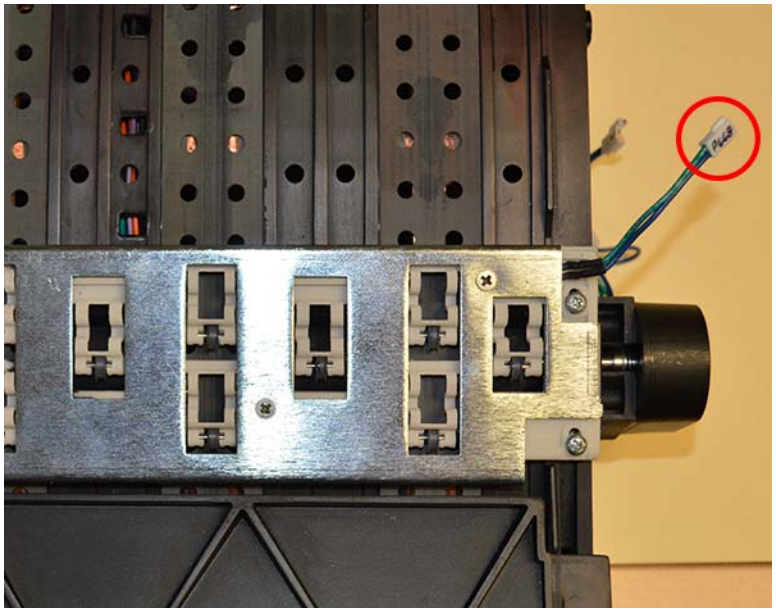
3 Grasp the handle on the transport unit. Then pull the transport unit straight out of the printer.

Note: *If the yellow transport unit shipping lock is installed, you will not be able to remove the transport unit. You must first remove the shipping lock by rotating it counterclockwise and then pulling it straight out. This lock is usually removed during the unpacking process.*

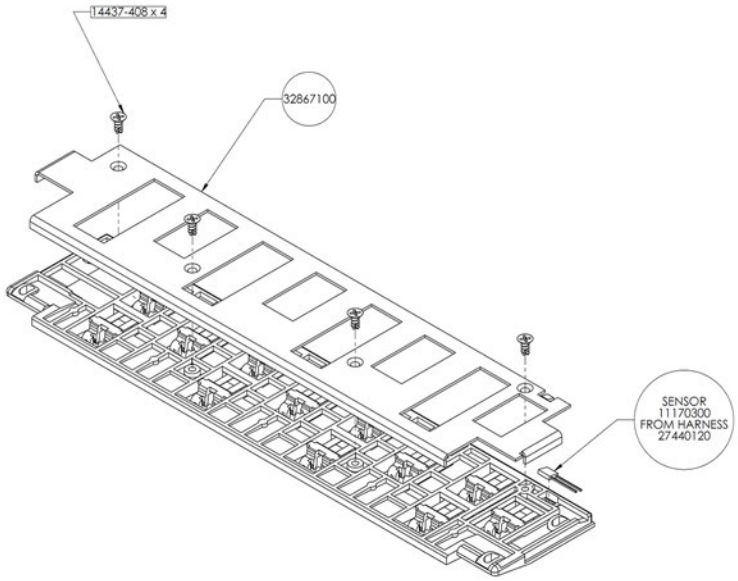
4 Place the transport unit on a flat surface.

5 Cut the cable tie on the TOF LED harness.

6 Unplug the sensor harness from the star wheel assembly (42916100) near the media entrance.



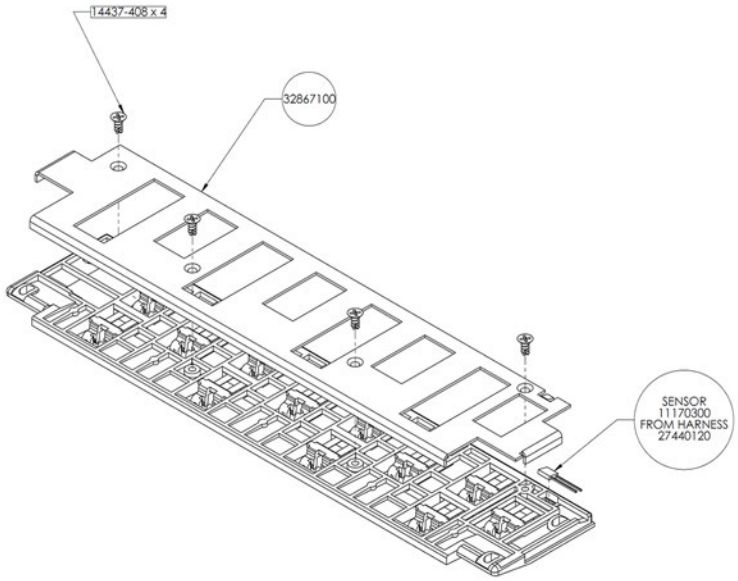
7 Loosen the four screws (14437408) from the star wheel assembly (42916100). Lift the star wheel bracket (32867100).



8 Remove the TOF LED harness (27440120).

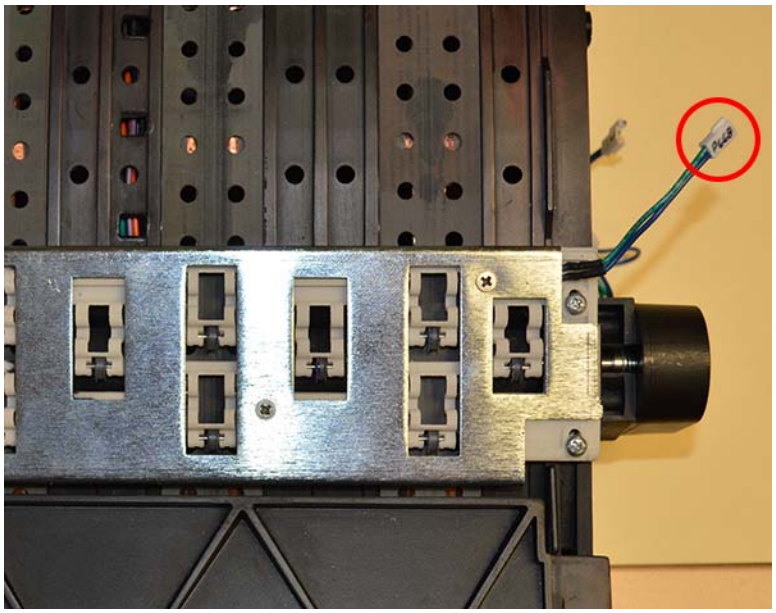
Installation

1 Install the TOF LED harness (27440120). The dome feature of the LED must be facing down.



2 Position the star wheel bracket (32867100) on the star wheel assembly (42916100). Install the four screws (14437408).

3 Plug in the sensor harness from the star wheel assembly (42916100) near the media entrance.



4 Install the cable tie on the TOF LED harness as shown to prevent excess slack.

5 Reinstall the transport unit in the printer.

Replacing a Complete Transport

Use the following instructions to replace a complete transport unit.

Removal

1 Remove media from the printer.

2 Open the main side door.

3 Grasp the handle on the transport unit. Then pull the transport unit straight out of the printer.

Note: *If the yellow transport unit shipping lock is installed, you will not be able to remove the transport unit. You must first remove the shipping lock by rotating it counterclockwise and then pulling it straight out. This lock is usually removed during the unpacking process.*

Replacement

1. Install the new transport unit in the printer.
2. Adjust the transport belt speed for the new transport. *See "Setting the Transport Speed" on page 191.*
3. Adjust the new transport position. *See "Adjusting the Transport Position" on page 179.*
4. Set the cut/stop position in the Print Settings tab in the QL-800 Maintenance Utility. Refer to the QL-800 User Guide for details. A summary is included below for reference.
   - Positive values result in more media being fed after printing before the media stops.
   - Negative values result in less media being fed after printing before the media stops.
5. Adjust the printhead height. *See "Adjusting the Printhead Height" on page 171.*
6. Clear the transport count using the Clear Transport Count feature in the Advanced tab of the QL-800 Maintenance Utility. *See "Using the Advanced Utilities Options" on page 192.*

Replacing Electrical Parts

Replacing the Power Supply

Use the following instructions to replace the power supply (26318240).

Personal Protective Equipment (PPE)

Caution: *In order to avoid personal injury, always use appropriate personal protective equipment (PPE) when performing maintenance tasks.*

- Safety glasses
- Nitrile powder-free gloves
- Clothing protection (smock, jacket, etc.)

Required Tools and Supplies

Gather all supplies and tools before starting this process.

- Disposable towels
- Phillips screwdriver
- 7mm wrench

Removal

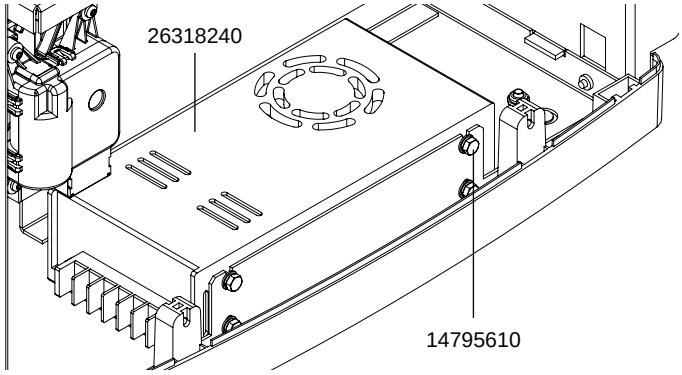
Caution: *PC boards can be damaged by static electricity. Use standard anti-static precautions including anti-static bags, mats, and wrist straps.*

1. Turn the printer power off and disconnect the power cable from the power outlet.
2. Remove the accessory cover. *See "Removing the User Interface and Accessory Covers" on page 45.*

3 Disconnect all wires from the power supply (26318240) terminals.

- Remove snap-on terminal shield.
- Loosen all screw terminals and remove bare wires. Do not unscrew them all the way.

Use the electrical block diagram as a guide. *See "Electrical Main Parts Block Diagram" on page 42.*

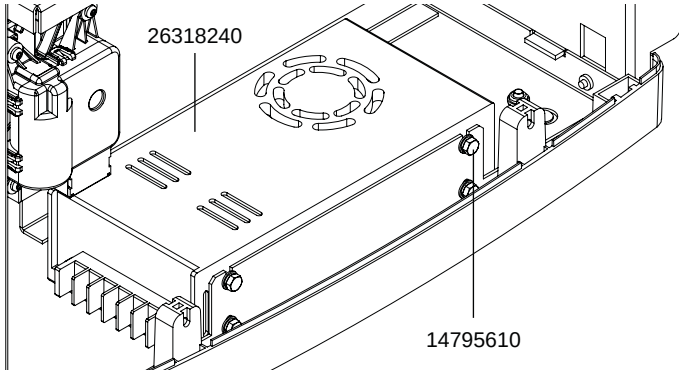


4 Remove the power supply by unfastening the four screws (14795610).

Installation

Caution: *PC boards can be damaged by static electricity. Use standard anti-static precautions including anti-static bags, mats, and wrist straps.*

1 Install the power supply by fastening the four screws (14795610).



2 Connect all wires to the power supply (26318240) terminals.

- Fasten all screw terminals to secure the bare wires.
- Install snap-on terminal shield.

Use the electrical block diagram as a guide. *See "Electrical Main Parts Block Diagram" on page 42.*

3 Install the accessory cover. *See "Removing the User Interface and Accessory Covers" on page 45.*

Replacing the User Interface

Use the following instructions to replace the user interface (32875100) on the user interface cover (42908375).

Personal Protective Equipment (PPE)

Caution: *In order to avoid personal injury, always use appropriate personal protective equipment (PPE) when performing maintenance tasks.*

- Safety glasses
- Nitrile powder-free gloves
- Clothing protection (smock, jacket, etc.)

Required Tools and Supplies

Gather all supplies and tools before starting this process.

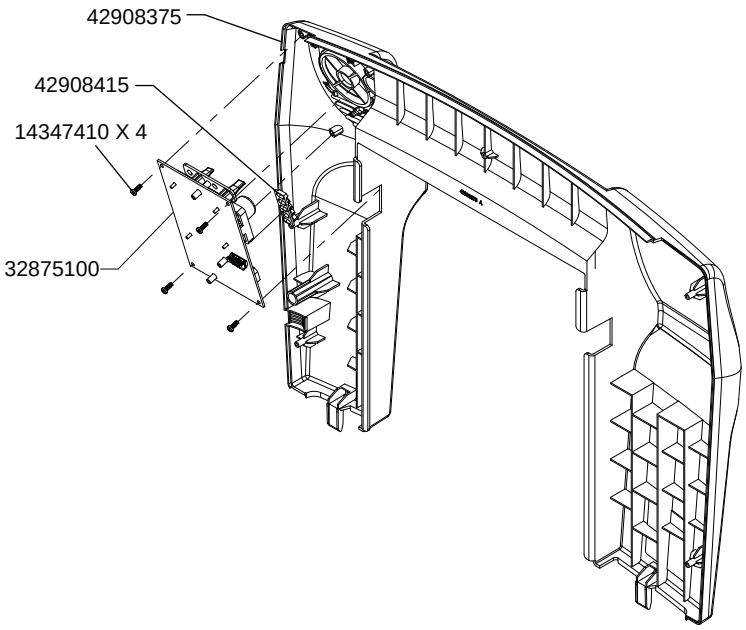
- Disposable towels
- Phillips screwdriver

Removal

Caution: *PC boards can be damaged by static electricity. Use standard anti-static precautions including anti-static bags, mats, and wrist straps.*

1. Turn the printer power off and disconnect the power cable from the power outlet.
2. Remove the top and side covers. *See "Removing the Top and Side Covers" on page 43.*
3. Remove the user interface and accessory covers. *See "Removing the User Interface and Accessory Covers" on page 45.*

4 Remove the user interface (32875100) from the user interface cover (42908375) by removing four screws (14347410).

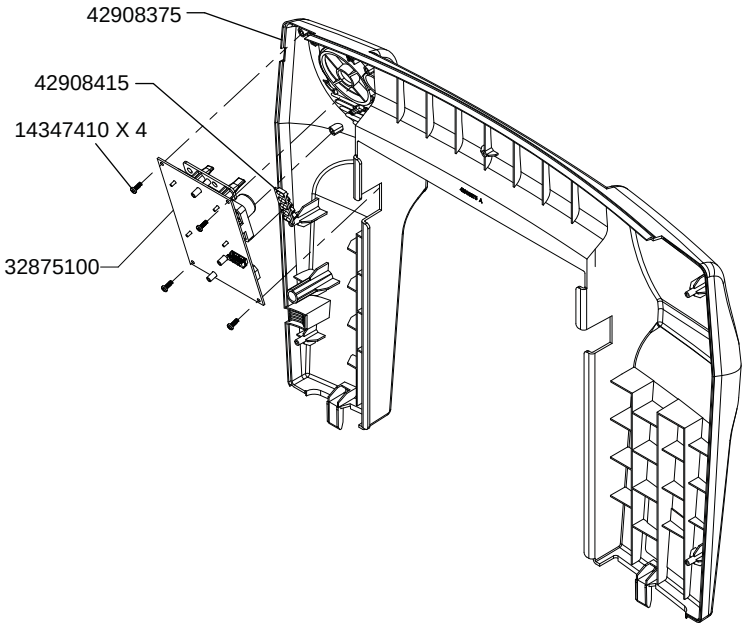


5 Slip light pipe shroud (42908415) off the light pipes in the user interface (32875100).

Installation

Caution: *PC boards can be damaged by static electricity. Use standard anti-static precautions including anti-static bags, mats, and wrist straps.*

1 Slip light pipe shroud (42908415) over the light pipes in user the interface (32875100).



2 Install the user interface (32875100) in the user interface cover (42908375) by fastening four screws (14347410).

3 Install the user interface and accessory covers. *See "Removing the User Interface and Accessory Covers" on page 45.*

4 Install the top and side covers. *See "Removing the Top and Side Covers" on page 43.*

Replacing the QL-800 Controller PCB

Use the following instructions to replace the Controller PCB (42918001).

Personal Protective Equipment (PPE)

Caution: *In order to avoid personal injury, always use appropriate personal protective equipment (PPE) when performing maintenance tasks.*

- Safety glasses
- Nitrile powder-free gloves
- Clothing protection (smock, jacket, etc.)

Recording Controller PCB Settings

Some factory settings are specific to each printer. These settings are stored on the QL-800 Controller PCB. If this PCB is replaced, then these settings must be transferred to the new PCB in order for the printer to operate properly.

1 Before beginning the replacement procedure, and with the printer powered and turned on, connect the serial debug cable. *See "Advanced Troubleshooting with the Serial Port" on page 133.*

2 Enter the following commands and record the values.

- "PEC"
- "SER"
- "HZB"
- "VTB" (Pixels)
- "CSA" (Pixels)
- "ABS" (Middle Value)

Removal

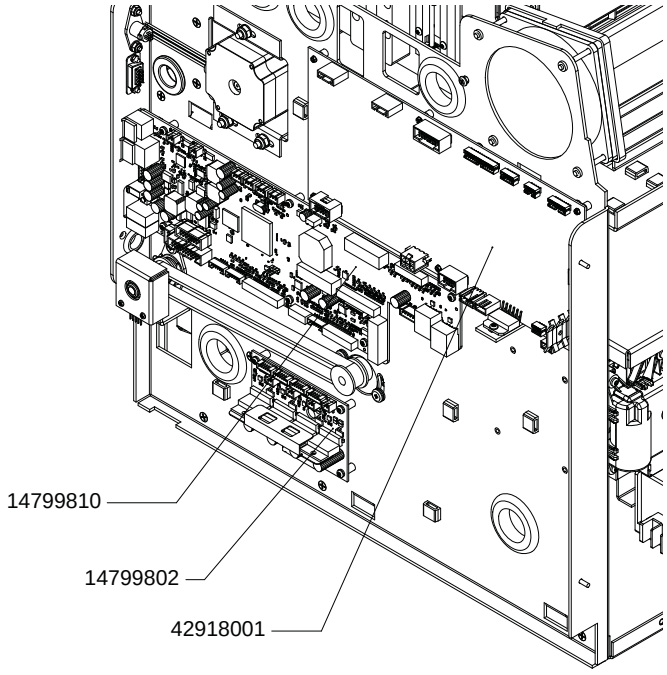
Caution: *PC boards can be damaged by static electricity. Use standard anti-static precautions including anti-static bags, mats, and wrist straps.*

1 Ensure you have recorded the Controller PCB settings as described in the previous section.

2 Turn the printer power off and disconnect the power cable from the power outlet.

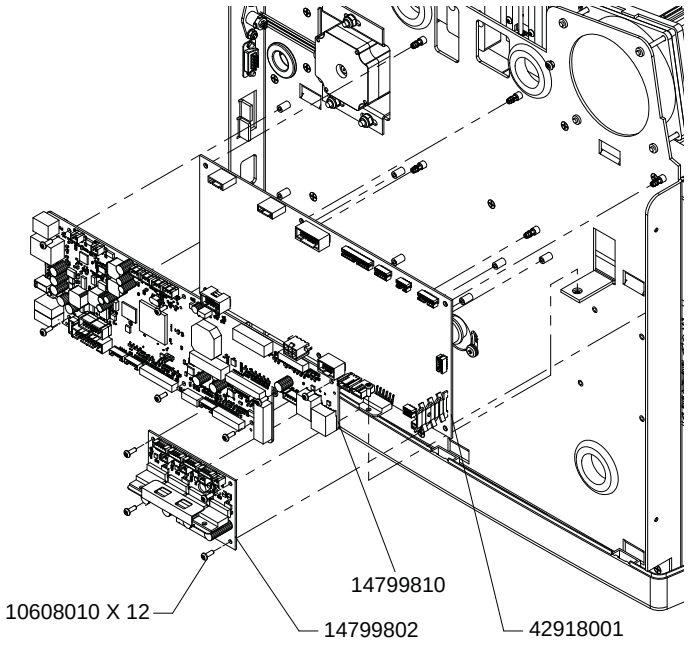
3 Remove the top and side covers. *See "Removing the Top and Side Covers" on page 43.*

4 Unplug all harnesses from the Controller PCB (42918001). Use the electrical block diagram as a guide. *See "Electrical Main Parts Block Diagram" on page 42.*



5 Unfasten the screws (10608010) attaching the Controller PCB (42918001) to the chassis bracket.

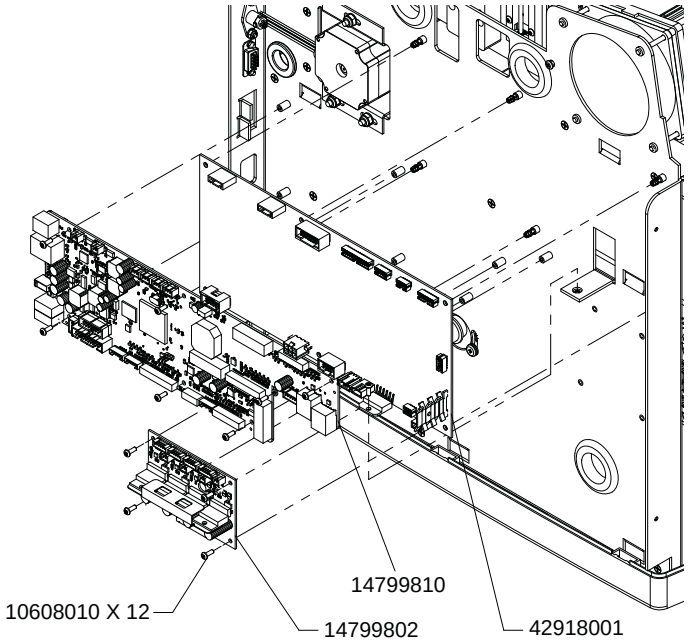
6 Pull the Controller PCB (42918001) off the snap-top standoffs in the chassis bracket.



Installation

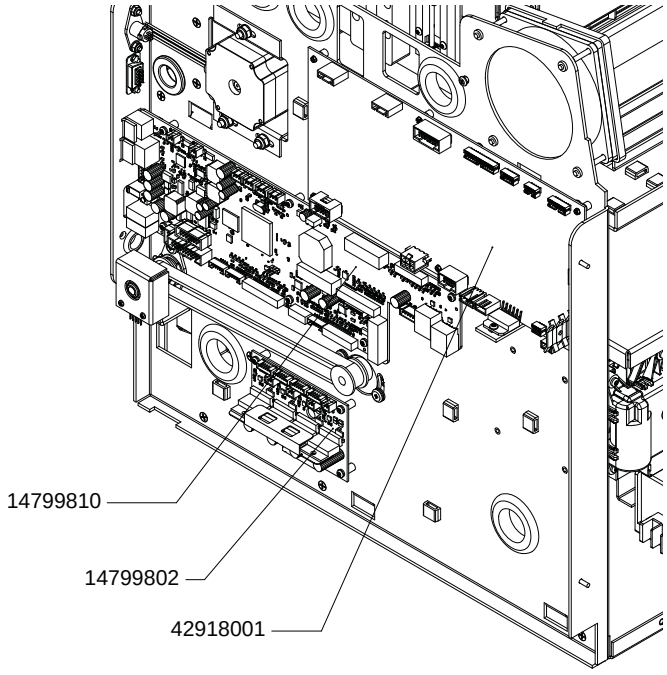
Caution: *PC boards can be damaged by static electricity. Use standard anti-static precautions including anti-static bags, mats, and wrist straps.*

1 Push the Controller PCB (42918001) onto the snap-top standoffs in the chassis bracket.



2 Fasten the screws (10608010) attaching the Controller PCB (42918001) to the chassis bracket.

3 Plug all harnesses into the Controller PCB (42918001). Use the electrical block diagram as a guide. *See "Electrical Main Parts Block Diagram" on page 42.*



4 Install the top and side covers. *See "Removing the Top and Side Covers" on page 43.*

5 Proceed to the following section to apply Controller PCB settings.

Applying Controller PCB Settings

After installing the replacement Controller PCB, use the following instructions to transfer the printer-specific settings to the new PCB.

1 With the printer powered and turned on, connect the serial debug cable. *See "Advanced Troubleshooting with the Serial Port" on page 133.*

2 Save the recorded values onto the new board by entering the 3-character command immediately followed by the value. For example, if 2360 was recorded for PEC, enter "PEC2360" and then press Enter.

Enter the following commands and their associated values.

- "PEC"
- "SER"
- "HZB"
- "VTB" (Pixels)
- "CSA" (Pixels)
- "ABS" (Middle Value)

3 Once all the values have been transferred, turn off the printer with the front panel power button to ensure the values are properly saved.

Replacing the Motor Controller PCB

Use the following instructions to replace the Motor Controller PCB (14799802).

Personal Protective Equipment (PPE)

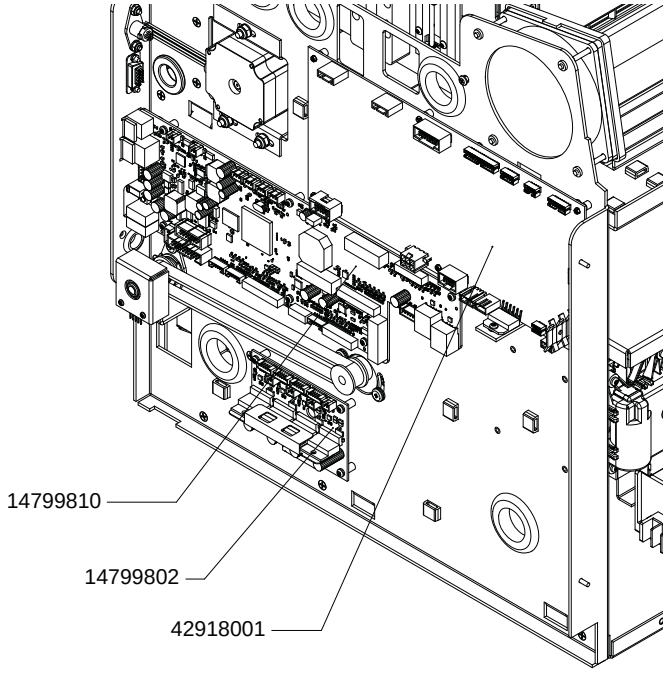
Caution: *In order to avoid personal injury, always use appropriate personal protective equipment (PPE) when performing maintenance tasks.*

- Safety glasses
- Nitrile powder-free gloves
- Clothing protection (smock, jacket, etc.)

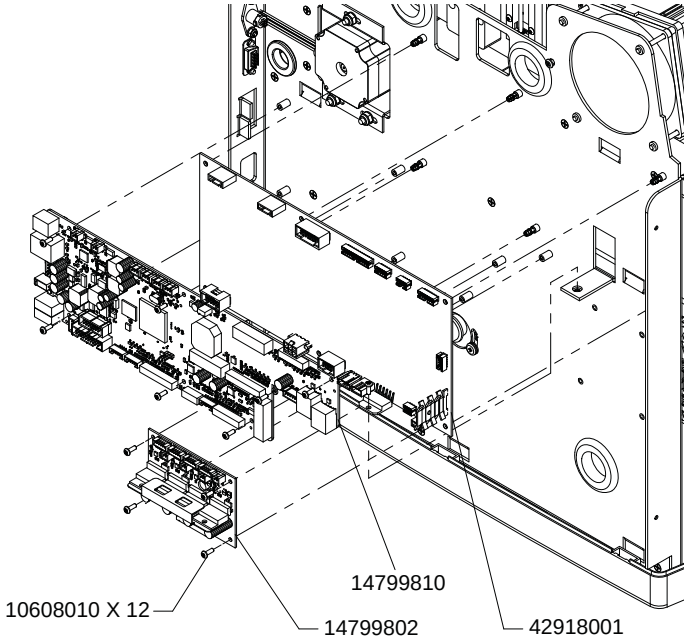
Removal

Caution: *PC boards can be damaged by static electricity. Use standard anti-static precautions including anti-static bags, mats, and wrist straps.*

1. Turn the printer power off and disconnect the power cable from the power outlet.
2. Remove the top and side covers. *See "Removing the Top and Side Covers" on page 43.*
3. Unplug all harnesses from the Motor Controller PCB (14799802). Use the electrical block diagram as a guide. *See "Electrical Main Parts Block Diagram" on page 42.*



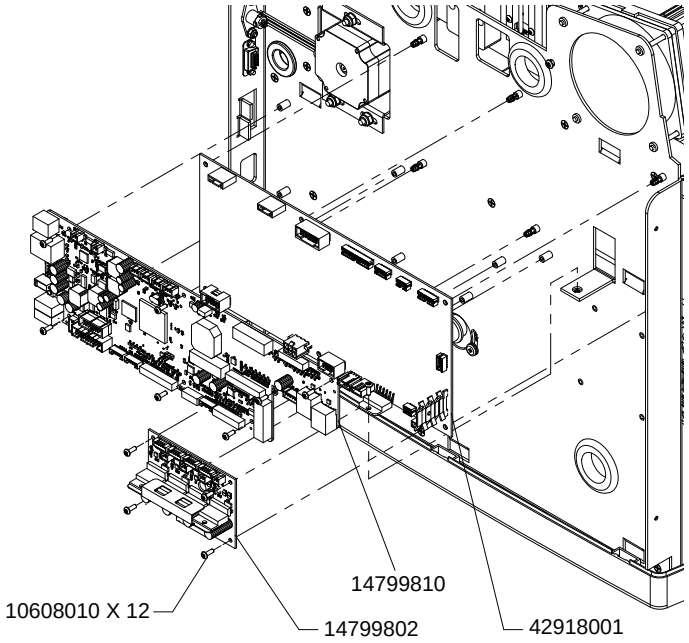
4 Remove the Motor Controller PCB (14799802) by unfastening the four screws (10608010).



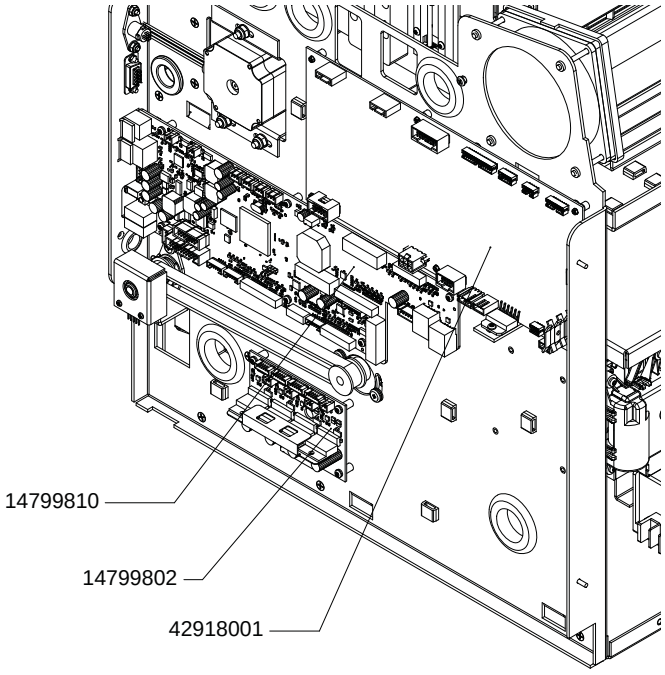
Installation

Caution: *PC boards can be damaged by static electricity. Use standard anti-static precautions including anti-static bags, mats, and wrist straps.*

1 Install the Motor Controller PCB (14799802) by fastening the four screws (10608010).



2 Plug all harnesses into the Motor Controller PCB (14799802). Use the electrical block diagram as a guide. *See "Electrical Main Parts Block Diagram" on page 42.*



3 Install the top and side covers. *See "Removing the Top and Side Covers" on page 43.*

Replacing the Main PCB

Use the following instructions to replace the Main PCB (14799810).

Personal Protective Equipment (PPE)

Caution: *In order to avoid personal injury, always use appropriate personal protective equipment (PPE) when performing maintenance tasks.*

- Safety glasses
- Nitrile powder-free gloves
- Clothing protection (smock, jacket, etc.)

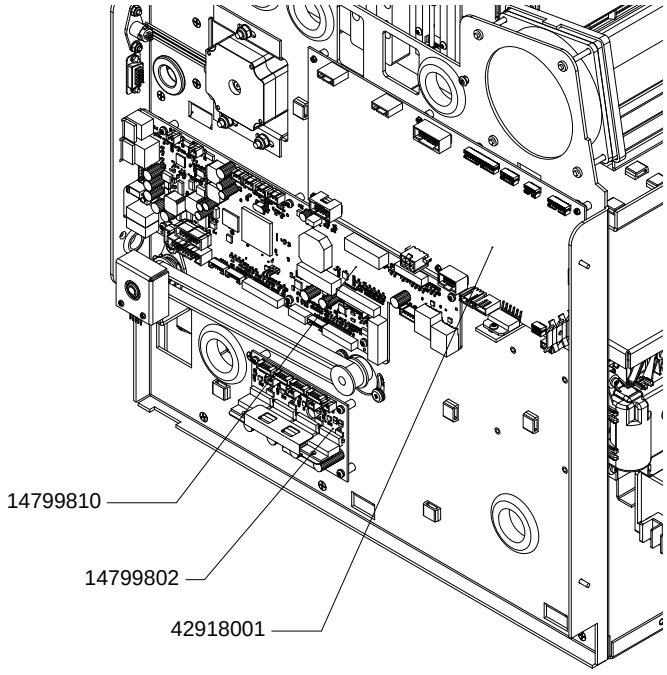
Removal

Caution: *PC boards can be damaged by static electricity. Use standard anti-static precautions including anti-static bags, mats, and wrist straps.*

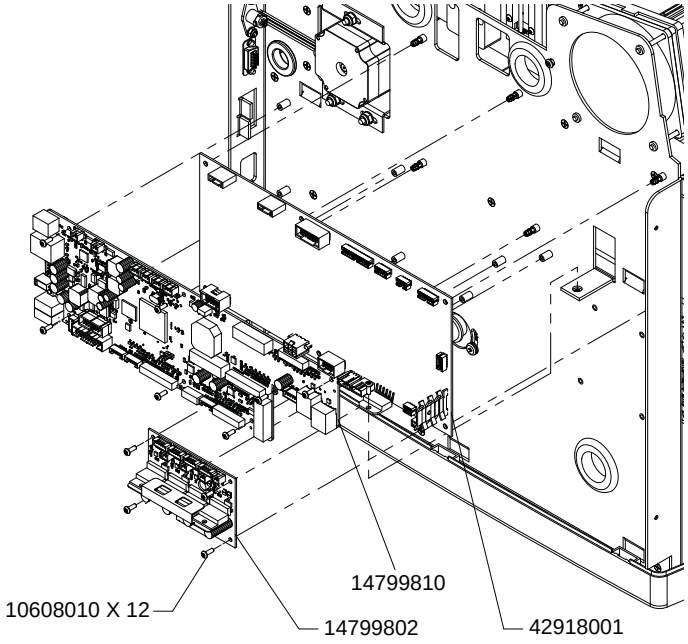
1 Turn the printer power off and disconnect the power cable from the power outlet.

2 Remove the top and side covers. *See "Removing the Top and Side Covers" on page 43.*

3 Unplug all harnesses from the Main PCB (14799810). Use the electrical block diagram as a guide. *See "Electrical Main Parts Block Diagram" on page 42.*



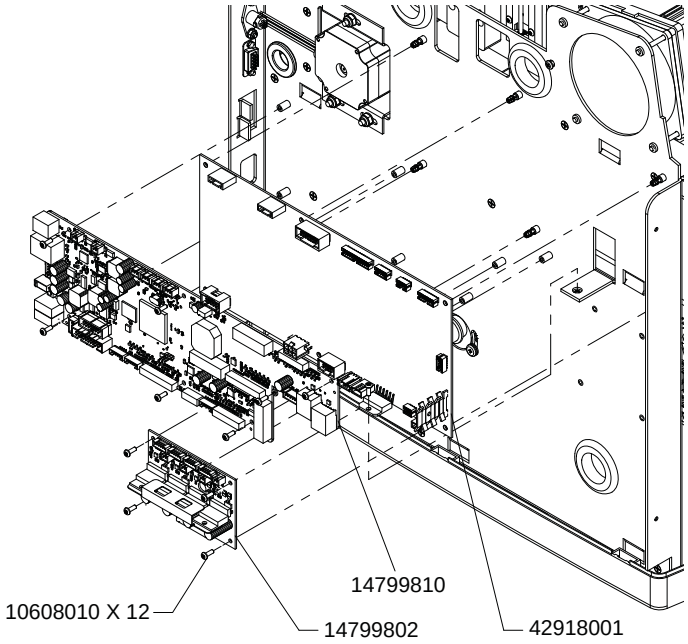
4 Remove the Main PCB (14799810) by unfastening the seven screws (10608010).



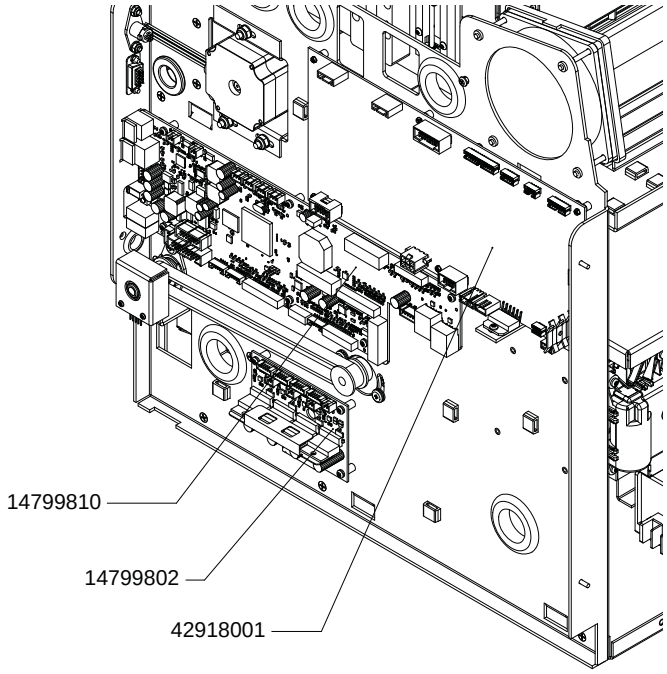
Installation

Caution: *PC boards can be damaged by static electricity. Use standard anti-static precautions including anti-static bags, mats, and wrist straps.*

1 Install the Main PCB (14799810) by fastening the seven screws (10608010).



2 Plug all harnesses into the Main PCB (14799810). Use the electrical block diagram as a guide. *See "Electrical Main Parts Block Diagram" on page 42.*



3 Install the top and side covers. *See "Removing the Top and Side Covers" on page 43.*

4 Power on the printer.

5 Set the Idle Nozzle Level to Medium in the QL-800 Maintenance Utility. *See "Setting the Idle Nozzle Level" on page 190.*

6 Enable all Auto-Maintenance options in the Cleaning tab of the QL-800 Maintenance Utility.

Replacing Fuses

The power inlet on the back of the printer contains two fuses (24034004). Use the following instructions to replace these fuses.

Personal Protective Equipment (PPE)

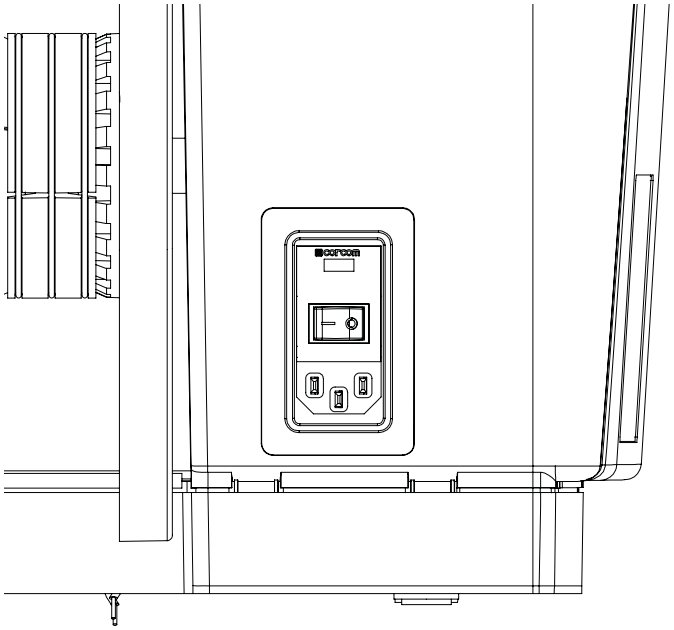
Caution: *In order to avoid personal injury, always use appropriate personal protective equipment (PPE) when performing maintenance tasks.*

- Safety glasses
- Nitrile powder-free gloves
- Clothing protection (smock, jacket, etc.)

Removal

1 Turn the printer power off and disconnect the power cable from the power outlet.

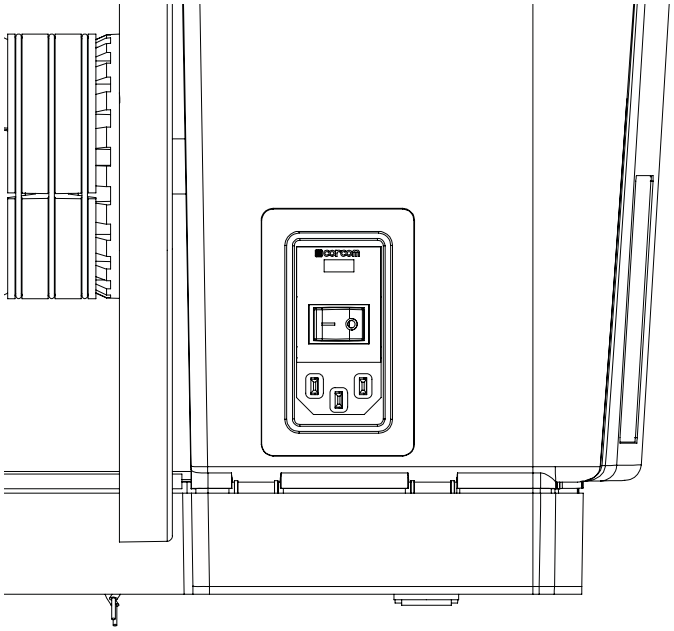
2 Disconnect the power cable from the power inlet connector on the back of the printer.



3 Open the face of the power inlet connector and remove two fuses (24034004).

Installation

1 Open the face of the power inlet connector and install two fuses (24034004).



2 Close the face of the power inlet connector.

10 Cleaning

Cleaning the Cutter Assembly

Use the following instructions to clean the cutter assembly.

Personal Protective Equipment (PPE)

Caution: *In order to avoid personal injury, always use appropriate personal protective equipment (PPE) when performing maintenance tasks.*

- Safety glasses
- Nitrile powder-free gloves
- Clothing protection (smock, jacket, etc.)

Required Tools and Supplies

Gather all supplies and tools before starting this process.

- Clean, lint-free cloth
- Long cleaning swabs
- Isopropyl alcohol
- Paper clip
- Goo Gone® (14691000) (optional)

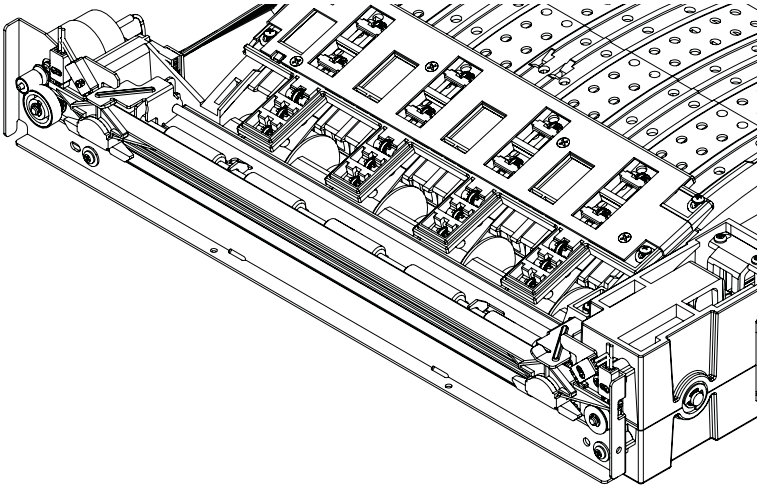
Cleaning

Caution: *The cutter blade is sharp. Use caution to avoid personal injury or damage to clothing when working with cutting blades or around exposed blade surfaces.*

1. Remove media from the printer.
2. Open the main side door.
3. Grasp the handle on the transport unit. Then pull the transport unit straight out of the printer.

   Note: *If the yellow transport unit shipping lock is installed, you will not be able to remove the transport unit. You must first remove the shipping lock by rotating it counterclockwise and then pulling it straight out. This lock is usually removed during the unpacking process.*
4. Place the transport unit on a flat surface.

5 Visually inspect the cutter area and clean debris with a lint-free cloth.



6 If adhesive is present, use a swab dampened with isopropyl alcohol to clean the affected areas.

If isopropyl alcohol is insufficient, Goo Gone may be used as an alternative.

7 Inspect the area behind the cutter blade and exit lip. If material buildup is present, you can use a paper clip or other narrow tool to remove it.

8 Reinstall the transport unit in the printer.

Cleaning the Gap/Reflective Sensor

Use the following instructions to clean the gap/reflective sensor.

Personal Protective Equipment (PPE)

Caution: *In order to avoid personal injury, always use appropriate personal protective equipment (PPE) when performing maintenance tasks.*

- Safety glasses
- Nitrile powder-free gloves
- Clothing protection (smock, jacket, etc.)

Required Tools and Supplies

Gather all supplies and tools before starting this process.

- Clean, lint-free cloth
- Long cleaning swabs
- Isopropyl alcohol
- Paper clip
- Goo Gone® (14691000) (optional)

Cleaning

1 Remove media from the printer.

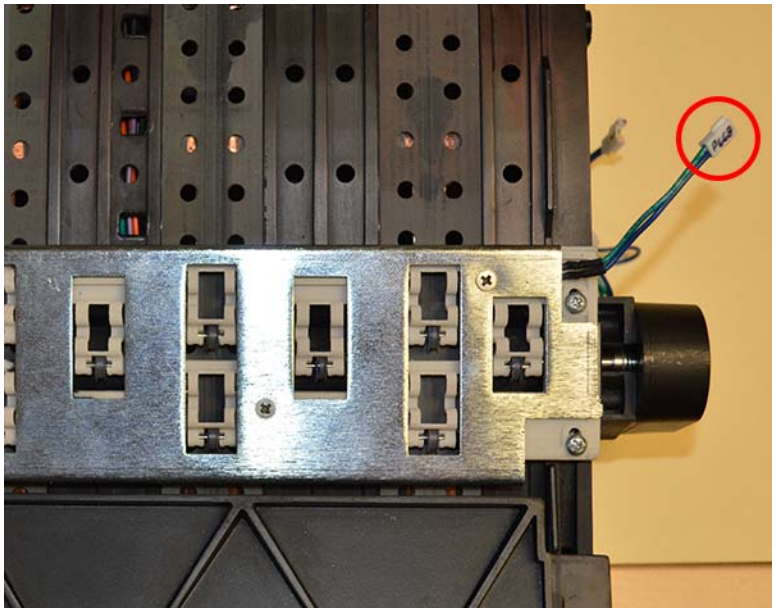
2 Open the main side door.

3 Grasp the handle on the transport unit. Then pull the transport unit straight out of the printer.

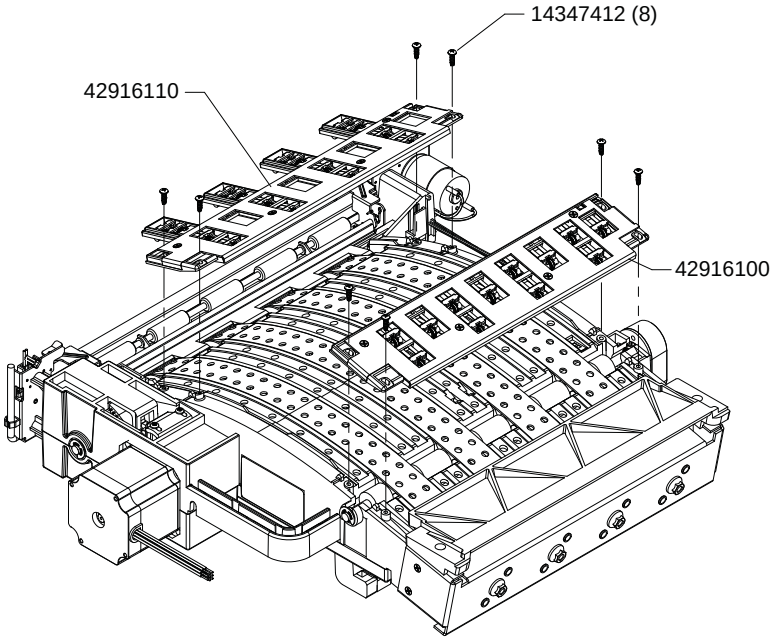
Note: *If the yellow transport unit shipping lock is installed, you will not be able to remove the transport unit. You must first remove the shipping lock by rotating it counterclockwise and then pulling it straight out. This lock is usually removed during the unpacking process.*

4 Place the transport unit on a flat surface.

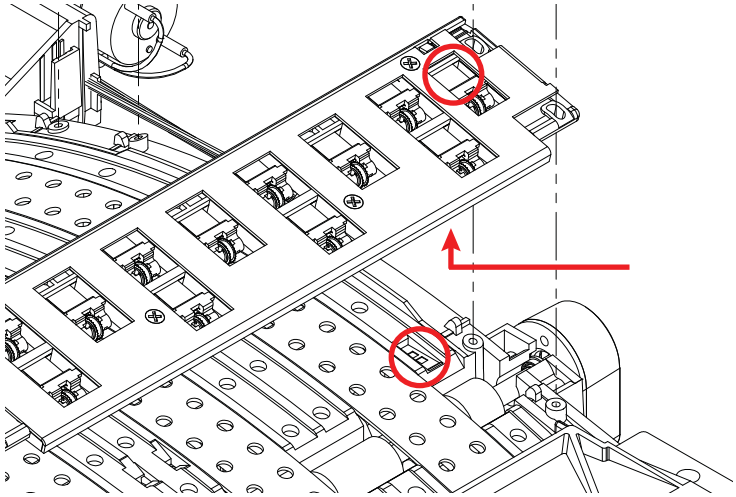
5 Unplug the sensor harness from the star wheel assembly (42916100) near the media entrance.



6 Remove the star wheel assembly (42916100) that contains the LED by unfastening the screws (14347412). This assembly is secured by four screws.



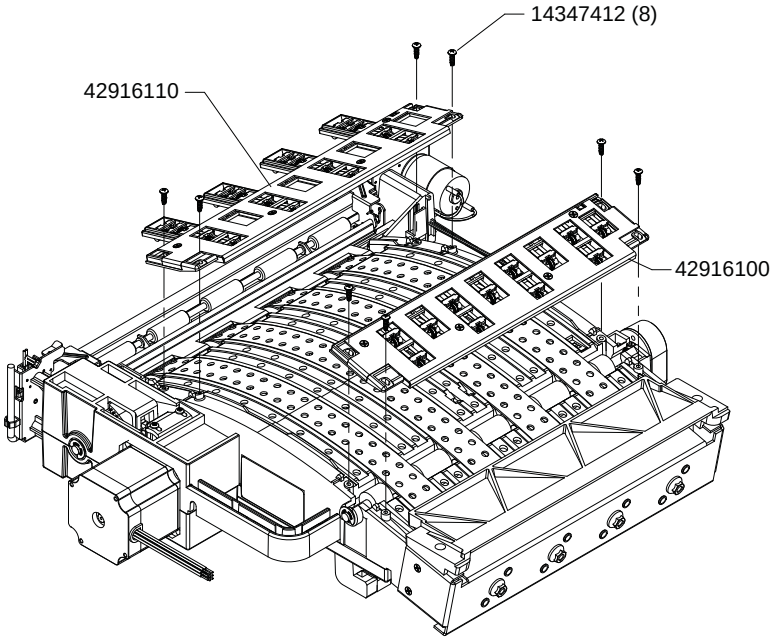
7 Visually inspect the LED (on the star wheel panel) and sensor area (on the transport unit) and clean debris with a lint-free cloth.



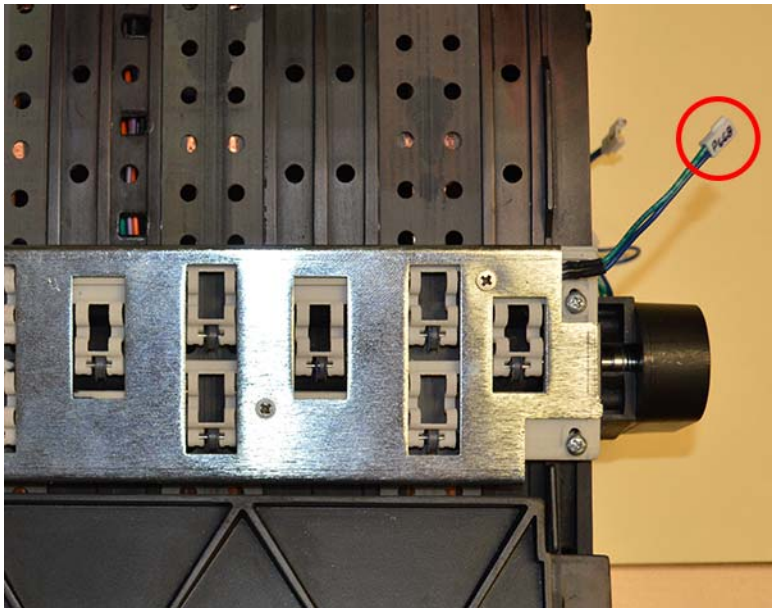
8 If adhesive is present, use a swab dampened with isopropyl alcohol to clean the affected areas.

If isopropyl alcohol is insufficient, Goo Gone may be used as an alternative. Use Goo Gone sparingly when cleaning sensors. Using excessive amounts may result in sensor damage.

9 Install the star wheel assembly (42916100) by aligning the mounting pins and then fastening the screws (14347412). This assembly is secured by four screws.



10 Plug in the sensor harness from the star wheel assembly (42916100) near the media entrance.



11 Reinstall the transport unit in the printer.

Cleaning the Feed Sensor

Use the following instructions to clean the feed sensor.

Personal Protective Equipment (PPE)

Caution: *In order to avoid personal injury, always use appropriate personal protective equipment (PPE) when performing maintenance tasks.*

- Safety glasses
- Nitrile powder-free gloves
- Clothing protection (smock, jacket, etc.)

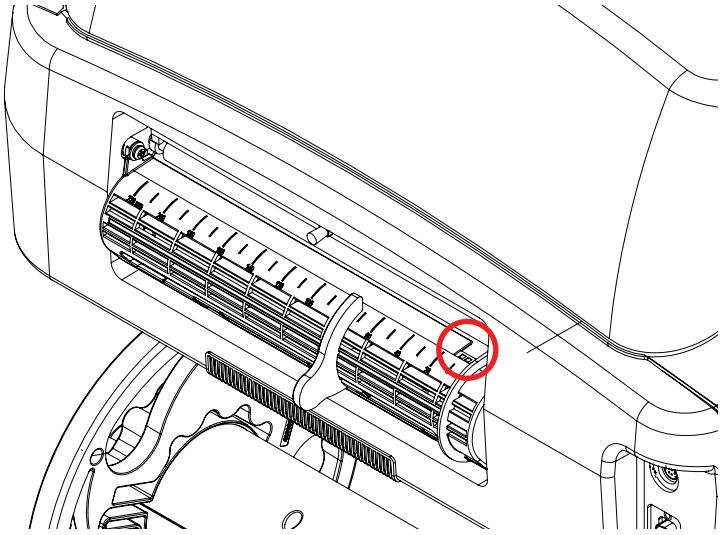
Required Tools and Supplies

Gather all supplies and tools before starting this process.

- Clean, lint-free cloth
- Long cleaning swabs
- Isopropyl alcohol
- Goo Gone® (14691000) (optional)

Cleaning

1. Turn the printer power off and disconnect the power cable from the power outlet.
2. Visually inspect the feed sensor where media enters the printer and clean debris with a lint-free cloth.



3. If adhesive is present, use a swab dampened with isopropyl alcohol to clean the affected areas.

   If isopropyl alcohol is insufficient, Goo Gone may be used as an alternative. Use Goo Gone sparingly when cleaning sensors. Using excessive amounts may result in sensor damage.

Cleaning the Ink Cartridge Contacts

If an ink cartridge is installed but not recognized by the printer, you can clean the electrical connection points to resolve the issue.

Use the following instructions to clean the electrical contacts on the ink cartridges. The electrical contacts in the ink cartridge slots inside the printer can also be cleaned.

Personal Protective Equipment (PPE)

Caution: *In order to avoid personal injury, always use appropriate personal protective equipment (PPE) when performing maintenance tasks.*

- Safety glasses
- Nitrile powder-free gloves
- Clothing protection (smock, jacket, etc.)

Required Tools and Supplies

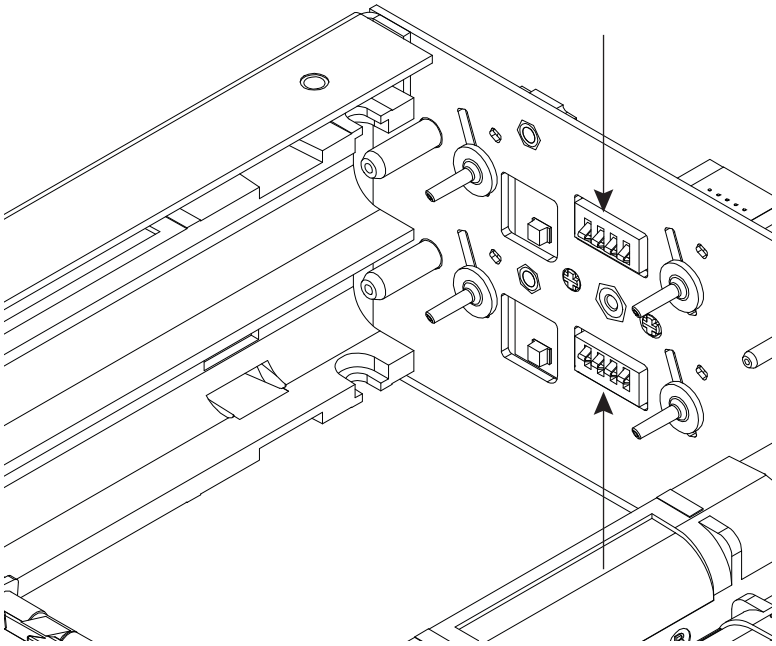
Gather all supplies and tools before starting this process.

- Long cleaning swabs
- Isopropyl alcohol

Cleaning

1. Turn the printer power off and disconnect the power cable from the power outlet.
2. Release the two ink cartridge latches.
3. Carefully slide all four ink cartridges, one at a time, out of the unit.
4. Use a swab or lint-free cloth dampened with isopropyl alcohol to clean the ink cartridge electrical contacts.

5 Use a swab dampened with isopropyl alcohol to clean the ink cartridge connection contacts inside the printer.



6 Insert all four ink cartridges into the unit, one at a time, according to the ink color indicated on the ink cartridge latches.

7 Close the two ink cartridge latches.

8 Reconnect the power cable.

Cleaning the Maintenance Cradle

Use the following instructions to clean ink from the maintenance cradle area. This procedure is typically used before shipping the printer.

Personal Protective Equipment (PPE)

Caution: *In order to avoid personal injury, always use appropriate personal protective equipment (PPE) when performing maintenance tasks.*

- Safety glasses
- Nitrile powder-free gloves
- Clothing protection (smock, jacket, etc.)

Required Tools and Supplies

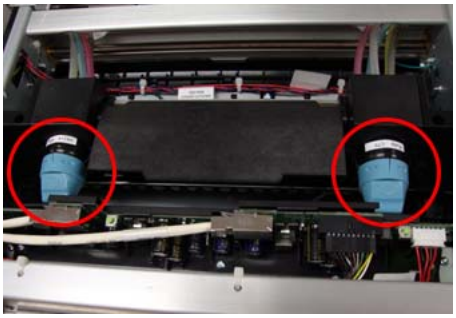
Gather all supplies and tools before starting this process.

- Septum Drain Tool (TF1229) or paper cup
- Serial Debug Cable (TF1225)
- Serial Terminal Application (set to 38400 baud rate)
- DI Water
- 1” foam block

Cleaning

1. Remove the top and side covers. *See “Removing the Top and Side Covers” on page 43.*
2. Connect power cable, USB cable, and serial debug cable to printer.
3. Open the serial terminal application.
4. Power on the QL-800 and verify the serial connection.
5. Once the printer is idle, perform the Before Shipping procedure from the Maintenance Utility.

   Note: *Do not secure the maintenance roller during the Before Shipping procedure.*
6. Remove the maintenance roller.
7. Re-install revolver caps for shipping.

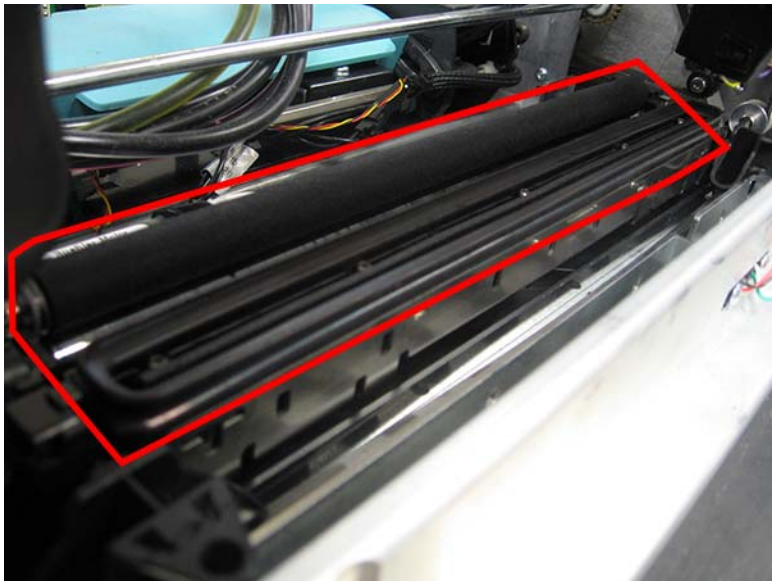


8 Insert an approximately 1-inch thick piece of material such as a foam block under the left side of the unit as shown below.

9 Turn the sump pump on by entering the serial command: SPS250

10 Slowly and carefully dispense small amounts of DI water across the maintenance cradle sump. You can use the septum drain tool (TF1229) or a paper cup to dispense the DI water.

Danger: *The printer is powered on during this step. Use extreme caution and do not spill DI water into other areas of the printer.*



11 Continue dispensing DI water until the ink drainage tube exiting the maintenance cradle sump is clear of ink.

When you are finished dispensing water, allow the sump to run dry (approximately 1 minute).

12 Turn the sump pump off by entering the serial command: SPS0

13 Remove the block from under the left side of the unit.

14 Install the maintenance roller and secure it for shipping.

15 Follow the maintenance cartridge replacement procedure to install a new maintenance cartridge.

16 Install the top and side covers. *See "Removing the Top and Side Covers" on page 43.*

Cleaning the Pinch Rollers

Use the following instructions to clean the pinch drive roller.

Personal Protective Equipment (PPE)

Caution: *In order to avoid personal injury, always use appropriate personal protective equipment (PPE) when performing maintenance tasks.*

- Safety glasses
- Nitrile powder-free gloves
- Clothing protection (smock, jacket, etc.)

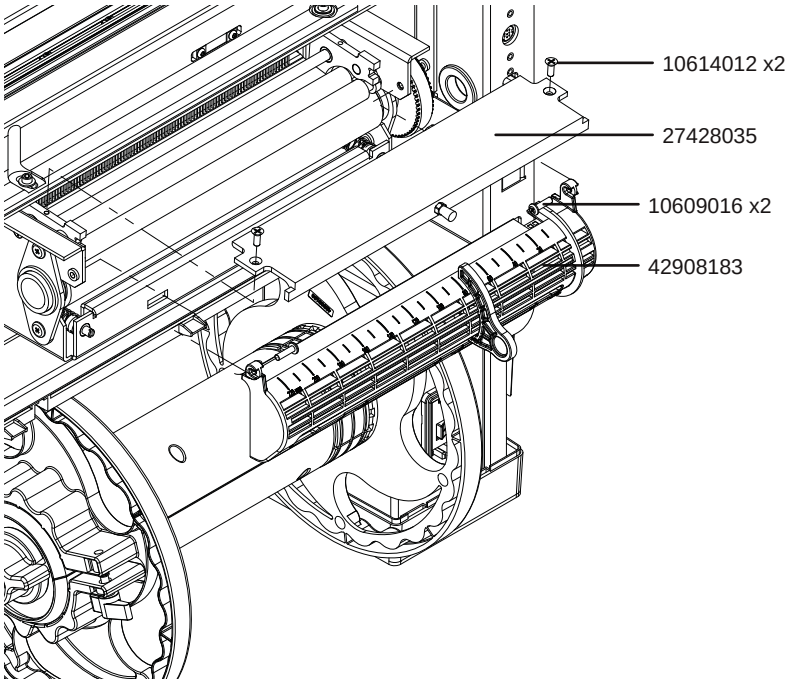
Required Tools and Supplies

Gather all supplies and tools before starting this process.

- Phillips screwdriver
- Clean, lint-free cloth
- Isopropyl alcohol
- Goo Gone® (14691000) (optional)

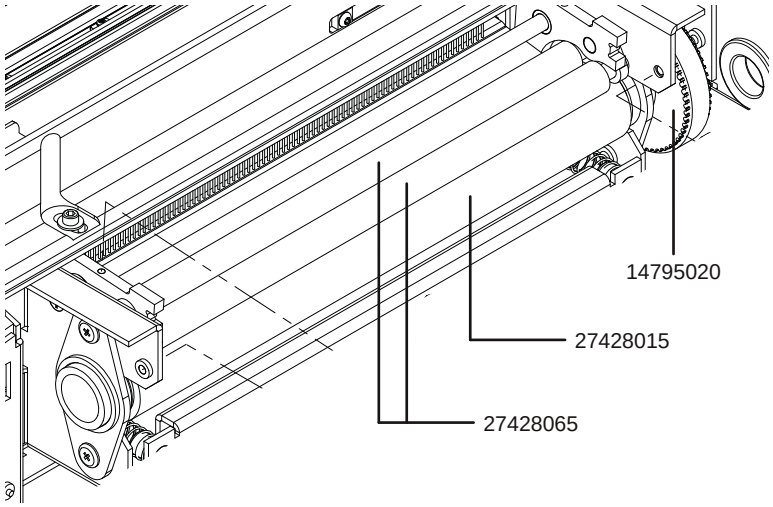
Cleaning

1. Remove media from the printer.
2. Turn the printer power off and disconnect the power cable from the power outlet.
3. Remove the top and side covers. *See "Removing the Top and Side Covers" on page 43.*
4. Remove the input cover. *See "Removing the Input Cover" on page 44.*
5. Disconnect the roller cover plate (27428035) by removing the two screws (10614012). Slide the plate outward, and then up away from the printer. Removing the plate may require a small amount of force because of the tight fit. Set the plate and screws aside.



6. Remove the two screws (10609016) from the media entrance. Tilt the top of the media entrance (42908183) away from the printer. Then lift the media entrance up and away from the printer. Carefully support the media entrance and its attached sensor during the rest of this procedure.

7 Use a clean, lint-free cloth dampened with isopropyl alcohol to clean the metal pinch rollers (27428065) and rubber drive roller (27428015). If necessary, you can rotate the rollers by turning the drive pulley (14795020) by hand.



If isopropyl alcohol is insufficient, Goo Gone may be used as an alternative.

8 Insert the tabs from the media entrance (42908183) into the corresponding slots on the printer. Then tilt the top of the media entrance toward the printer. Secure the media entrance by installing two screws (10609016).

9 Position the roller cover plate (27428035) in the mounting location and install the two screws (10614012). Installing the plate may require a small amount of force because of the tight fit.

10 Install the input cover. *See "Removing the Input Cover" on page 44.*

11 Install the top and side covers. *See "Removing the Top and Side Covers" on page 43.*

Cleaning the Printhead Manually

When heavy and light automated cleanings are not sufficient in nozzle restoration, a manual cleaning method can be used.

Personal Protective Equipment (PPE)

Caution: *In order to avoid personal injury, always use appropriate personal protective equipment (PPE) when performing maintenance tasks.*

- Safety glasses
- Nitrile powder-free gloves
- Clothing protection (smock, jacket, etc.)

Required Tools and Supplies

Gather all supplies and tools before starting this process.

- Clean, lint-free cloth
- De-ionized or distilled water
- Printhead packaging cap

Cleaning

1. Remove the printhead using the printhead replacement function in the Parts Replacement tab of the QL-800 Maintenance Utility.

   Although the printhead will not be replaced, this procedure can be used to remove the printhead and reinstall it.

2. Fill the orange packaging cap with approximately an 1/8th of an inch of de-ionized or distilled water. Place the printhead in the cap. Allow the printhead to soak for approximately 5 minutes.

   If the orange printhead packaging cap is not available, the printhead can be wiped with a lint free cloth thoroughly wet with de-ionized or distilled water.

3. Wipe the printhead with a dry lint-free cloth to remove excess water. Ensure that the electrical contacts on the printhead are dry and clear of all ink and water.

4. Reinstall the printhead in the printer and close the latch. Complete the printhead replacement procedure.

11 Troubleshooting

Initial Check Items

Checking the Installation Environment

Check whether the installation location meets the following requirements:

1) The power requirements are 100-240 VAC 50-60 Hz, 2.6A.
2) Printer should be installed on level surface with no more than 1º tilt in any axis.
3) Operating environment must be 41º F to 95º F (5º C to 35º C), 20% to 90% Relative Humidity (non-condensing).
4) Avoid installing the printer where the temperature and humidity are high (near a faucet, boiler, or humidifier for example), the temperature is extremely low, or the temperature changes greatly. Also avoid places near fire.
5) Avoid dusty locations.
6) Avoid installing the printer in locations exposed to direct sunlight. If it is inevitable to install the printer in such a place, instruct the customer to hang curtains.
7) The room must be well-ventilated.

Checking the Media

1) Check whether the correct media is used.
2) Check whether the media is moist. Unpack new media, load it in the printer, and check for printing.
3) Check whether the media is curled.

Checking Settings

Check whether the printer settings are suitable for the media used and other requirements, specifically, in terms of the following:

1) Media setting. Media size (length and width).
2) Printing condition. Number of prints.
3) Interface setting

   USB 2.0 High Speed Function

   Gigabit Ethernet
4) Saving of set conditions

   Check whether settings have been saved properly.

Image Defect Samples

Nozzle Voiding

Description

Small thin lines that may appear white or off color that do not grow in size.

Possible Causes

- Internal contaminants
- External contaminants (paper fiber, dust)
- Printhead damage

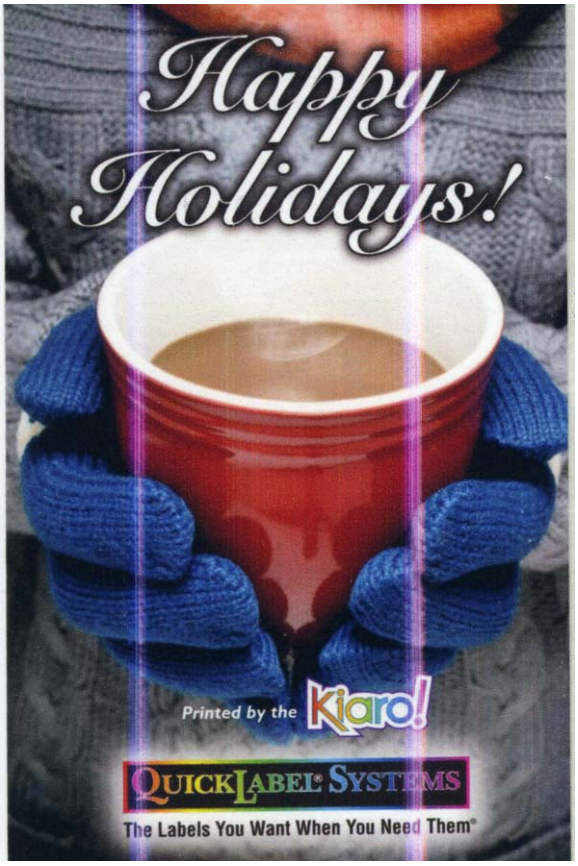
Possible Solutions

- Use light cleaning.
- Use heavy cleaning.
- Use Mid-Job servicing (if not already used).
- Increase the frequency of Mid-job servicing.
- Use a non-zero Idle Nozzle Level setting in the Maintenance Utility Advanced Tab to prolong nozzle health

Repeated Nozzle Voiding

Description

Similar to “Nozzle Voiding”, but voids are repeated every approximately 15/16th of an inch. Voids can be a single color channel or multiple channels.



Possible Causes

- This type of nozzle voiding is related to the internal construction of the printhead. This type of voiding indicates that there is poor ink flow around the boundaries of each Printhead segment.

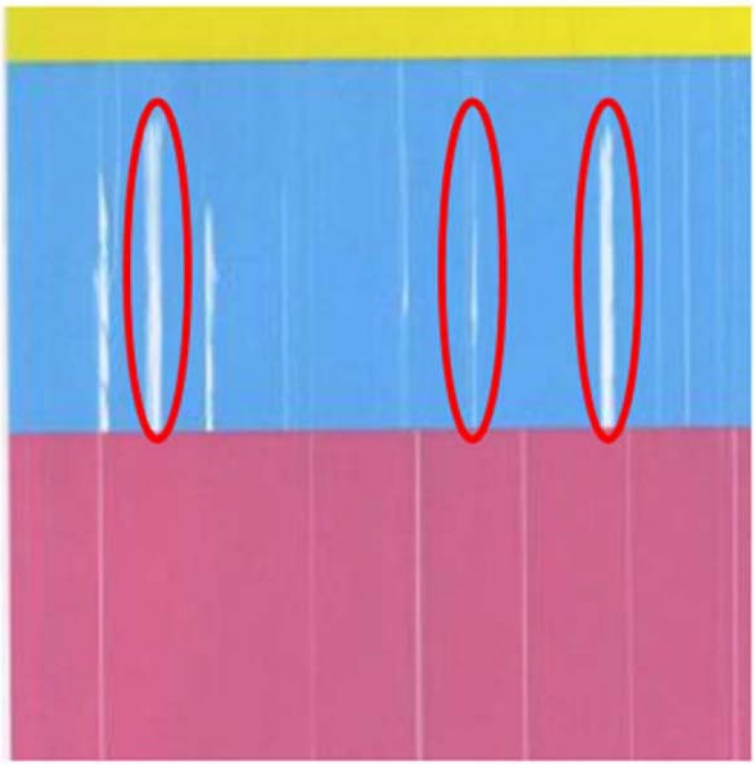
Possible Solutions

- Check and reseat the ink cartridges. Low ink level as well as poorly inserted cartridges can decrease the quality of the ink circulation.
- Re-prime the printhead. Preform an After Moving procedure in the QL-800 Maintenance Utility.
- Replace the printhead if necessary.

Parabolic Voids

Description

Larger voids that grow in size that typically are limited to one color channel.



Possible Causes

- Air bubbles in tubes/printhead

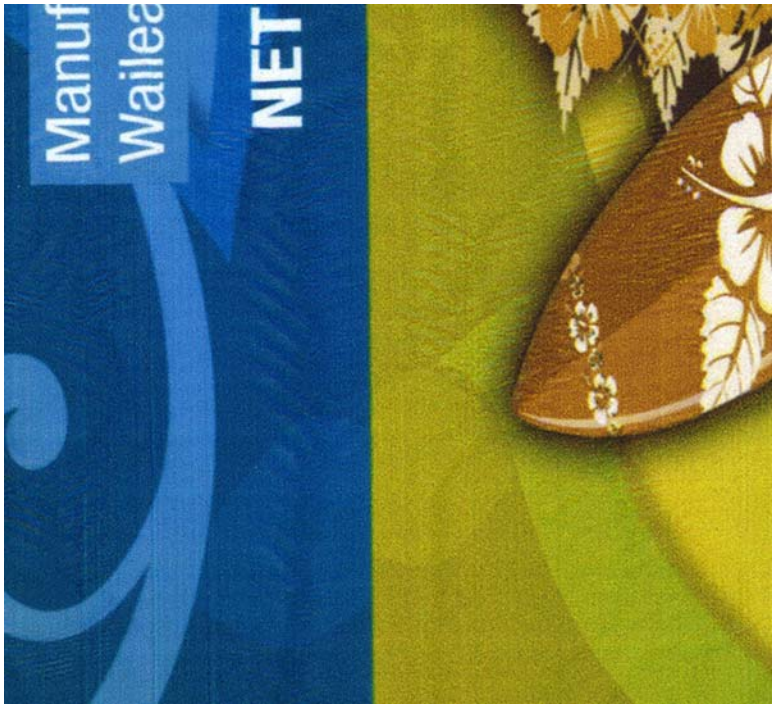
Possible Solutions

- Check level of all ink cartridges. Replace any that are empty.
- Use heavy cleaning.
- Be sure that Pump While Printing (PWP) in the Maintenance Utility Advanced Tab is set to “10”.

Sand-Dunning

Description

Wavy texture in print.



Possible Causes

- Printhead height too high
- Thin media

Possible Solutions

- Lower the printhead. *See “Adjusting the Printhead Height” on page 171.*

Grainy Texture

Description

Grainy or sandy texture in print.

Possible Causes

- Printhead height too low
- Thick media

Possible Solutions

- Raise the printhead. *See "Adjusting the Printhead Height" on page 171.*

Rubbing

Description

Dark smudge with a pull in the direction of print.

Possible Causes

- Printhead height too low
- Thick media
- Belt speed not set properly

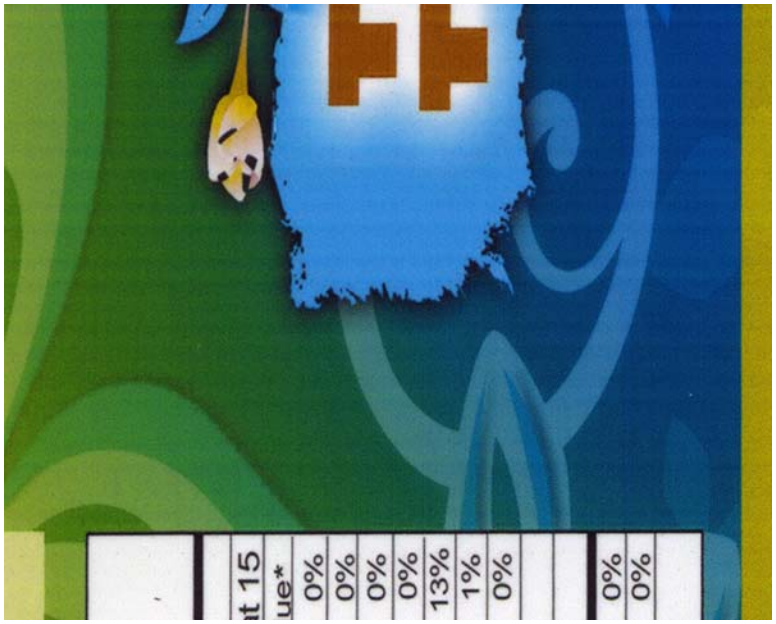
Possible Solutions

- If rubbing is accompanied by grainy appearance, try raising the printhead first. *See "Adjusting the Printhead Height" on page 171.*
- If rubbing is sporadic but the rest of the print looks fine, adjust belt speed in the Maintenance Utility Advanced Tab. *See "Setting the Transport Speed" on page 191.*

Banding

Description

Regular periodic horizontal ripple that goes through width of print.



Possible Causes

- Banding can result from a number of root causes. Generally, it is due to something that is preventing the paper path from running as smoothly as possible.
- Thick label face stock with matrix removed (gap media) will cause greater impacts at the pinch which can ripple through media. Be sure label face stock is no thicker than necessary.

Possible Solutions - Transport

- Check and adjust the transport drive tensioner if necessary.
- Check and adjust tension of all four transport belts if necessary.
- Check the motion resistance of the transport belts. Sometimes ink can collect underneath the belt in the belt track and increase friction. Clean underside of belts and track by loosening the transport belt(s) and cleaning with alcohol pad.

Possible Solutions - Pinch

- Inspect pinch rollers for debris or wrapped labels. If present, the pinch assembly may have to be removed and partially disassembled to clean.
- Check belt tension of pinch drive. Tighten if necessary.

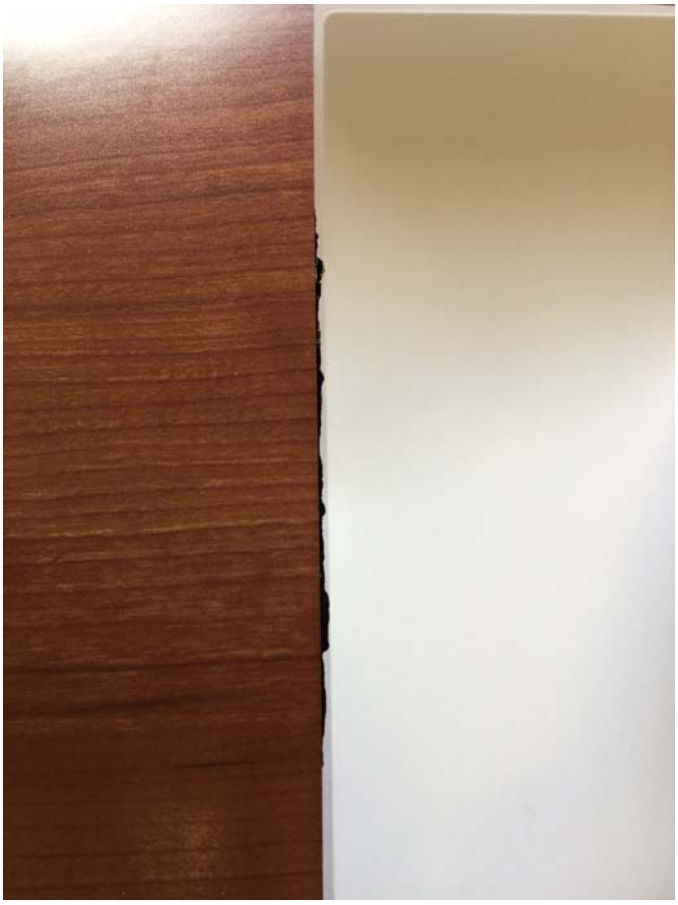
Possible Solutions - Unwind Mandrel

- Verify the unwind motor is still functioning properly by back feeding media. Make sure the mandrel turns to take up the slack.

Dark Ink Appearing on the Inside Edge of the Liner

Description

Ink appears on the inside edge of the label liner.



Possible Causes

- This is commonly caused by media not tracking adjacent to the edge guide. If there is a gap between the edge guide and the edge of the media, then ink drops from the idle nozzle feature can collect in this location.

Possible Solutions

- Adjust tracking so that media is running along the edge guide.
- Minimize overbleed.
- If necessary, set the Idle Nozzle Level to Off in the Maintenance Utility Advanced Tab.

Dark Ink Appearing Across Underside of the Liner

Description

Ink appears on the back of the label liner.

Possible Causes

- This is commonly caused by switching from narrow media to wide media. The typical cause is due to the idle nozzle feature depositing ink onto the unused portion of the transport when printing narrow media. This ink deposit can then be transferred to the wide media liner.

Possible Solutions

- Wipe the print zone of the transport unit with a damp cloth to remove any idle nozzle ink. This can be done at a regular interval such as the start of each day, or selectively such as when transitioning to a wide media format after printing a large volume of a narrow format.

Advanced Troubleshooting with the Serial Port

A serial port is located on the back of the QL-800 printer. This port provides access to debugging and advanced troubleshooting functions.

Required Tools and Supplies

Gather all supplies and tools before starting this process.

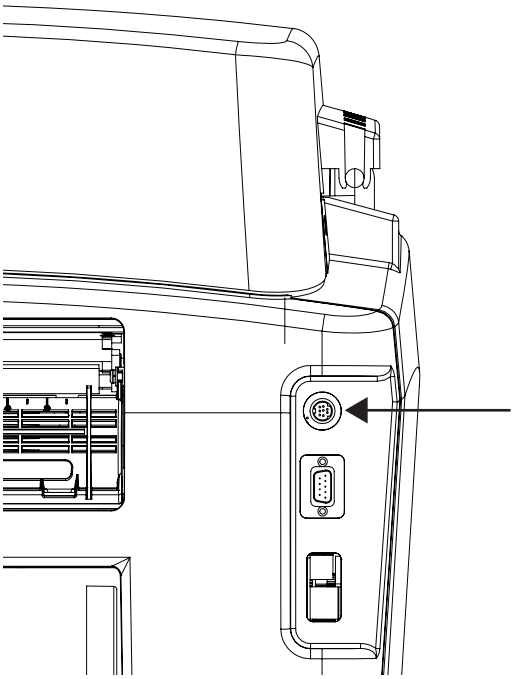
- Serial Debug Cable (TF1225)
- Serial Terminal Application (such as Tera Term or Windows Hyper Term)

Using the Serial Connection

Use the following instructions to set up a serial connection for troubleshooting. For specific usage instructions, contact Technical Support.

Caution: *These instructions assume you are working with guidance from Technical Support. Using commands without knowledge of their functions can render the printer inoperable.*

1 Connect the serial debug cable to both the QL-800 serial port and an available serial port on your PC.



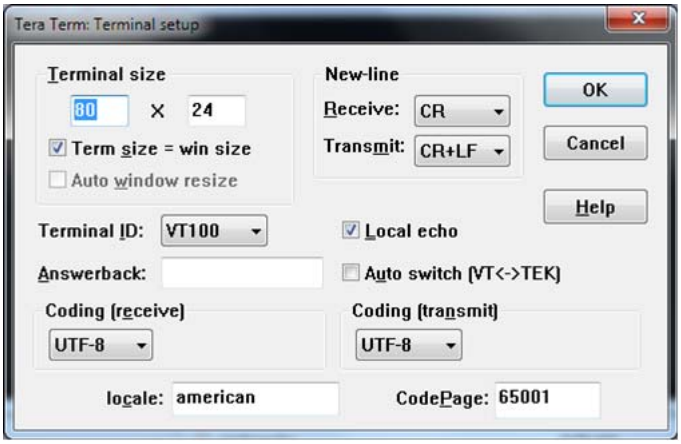
If your PC does not have a serial port, you can use an adapter.

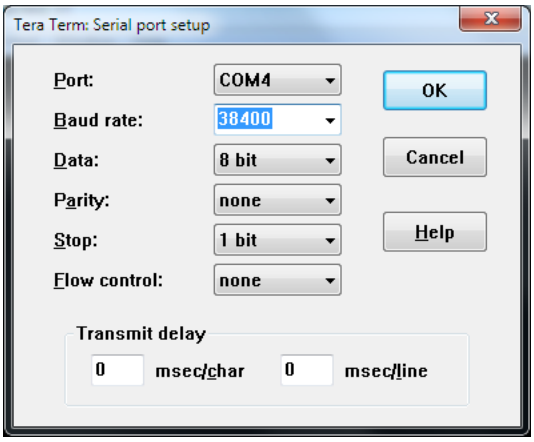
2 Open the serial terminal application and select to connect to the serial port you are using.

3 Set up the serial terminal application as described below.

- Baud Rate: 38400
- Data: 8-bit
- Parity: None
- Stop: 1-bit
- Flow Control: none

As an example, Tera Term screen illustrations are provided below.





4 If the printer is not already powered and turned on, do so now.

5 Confirm the connection by typing in “hlp” and then pressing Enter. This will list a number of available commands with a brief description.

All commands are three characters long. Commands are not case sensitive. If an argument can be entered, it will follow the command immediately without a space. For example, if setting the encoder rate to 2390, the command would be “pec2390” and then press Enter.

6 When you are finished entering commands, press and hold the front panel power key to power off the printer and save the settings.

Common Commands

The following table describes commands that may be used during troubleshooting.

Command	Description	Example
AFN	Turns the aerosol fan on/off • AFN0 turns the aerosol fan off • AFN1 turns the aerosol fan on	AFN0
BEP	Beeps the UI beeper.	BEP
BMF	Turns the transport belts on/off. • BMF0 turns the belts off. • BMF1 turns the belts on (3 ips). • BMF2 turns the belts on (6 ips). • BMF3 turns the belts on (12 ips).	BMF1
DNV	Displays the paper path's non-volatile memory.	DNV
FAN	Turns the transport fans on/off. • FAN0 turns the fan off. • FAN1 turns the fans on.	FAN1
LED	Turns on/off the specified front panel LED indicators. • LED1111111 turns on all indicators. • LED0000000 turns off all indicators. LED indicators can be toggled on (1) and off (2) individually.	LED1111111
PEC	Sets the print encoder count. • PECXXXX Where XXXX = ticks per inch	PEC2390
SPS	Sets the sump pump to a specified speed. • SPS0 turns the pump off. • SPSX turns the pump on. Where X = pump speed	SPS250

Commands to Avoid

The following table describes commands that **should not** be used.

Command	Description	Warning
RST	Resets the paper path firmware.	Do not use this command when the printer is on/awake. This will create a condition which the printer will not be able to wake up from or shutdown.
DFS	Resets the paper path non-volatile memory to default.	Do not use this command unless instructed to do so by Technical Support. This command will erase all settings, consumable counts, and the serial number.

Simulating a Network Printer for Troubleshooting

You can set up a simulated network printer that can be used for troubleshooting purposes.

During the driver installation process, select to install a network printer and enter the IP address 127.0.0.1.

12 Error Messages

Error 1001 - Paper Path Error

The printer did not move media into the proper position within the expected time.

Solutions

Use the following solutions to troubleshoot the issue. The most likely solutions are listed first, followed by other possibilities. Check to see if the issue is resolved after performing each recommended solution. If the issue is not resolved, proceed to the next solution. If the issue persists after performing all solutions, contact Technical Support.

1) Look for and clear a potential jam.

   - If a jam is present, cut the media. Press and hold the pause/resume key to cancel the job. Then clear the jam.

     Cut a fresh edge on the media and then reload it. The remainder of the job can be sent again.

   - If no jam is present, press and hold the pause/resume key to cancel the job. Press and release the feed key as needed until the last label printed is aligned with the exit. Resend the print job.

Error 1002 - No Media at Pinch

There is no media at the loading pinch (where the media enters the printer).

Solutions

Use the following solutions to troubleshoot the issue. The most likely solutions are listed first, followed by other possibilities. Check to see if the issue is resolved after performing each recommended solution. If the issue is not resolved, proceed to the next solution. If the issue persists after performing all solutions, contact Technical Support.

1) Load media.
2) Press and release the power key to resume the job. Or press and hold the pause/resume key to cancel the job.

Error 1003 - Unwind too Slow

The mandrel is moving slower than expected.

Solutions

Use the following solutions to troubleshoot the issue. The most likely solutions are listed first, followed by other possibilities. Check to see if the issue is resolved after performing each recommended solution. If the issue is not resolved, proceed to the next solution. If the issue persists after performing all solutions, contact Technical Support.

1) Ensure that the wing nut on the end of the mandrel is tightened by turning it clockwise.
2) Look for and clear obstructions at the unwind mandrel.
3) Check for media slack between the media entry slot and roll. Reload media if necessary.
4) Ensure the outer diameter of the roll is 8 inches or less.
5) Press and release the power key to resume the job. Or press and hold the pause/resume key to cancel the job.

Error 1004 - Unwind too Fast

The mandrel is moving faster than expected.

Solutions

Use the following solutions to troubleshoot the issue. The most likely solutions are listed first, followed by other possibilities. Check to see if the issue is resolved after performing each recommended solution. If the issue is not resolved, proceed to the next solution. If the issue persists after performing all solutions, contact Technical Support.

1) Press and release the power key to resume the job. Or press and hold the pause/resume key to cancel the job.

Error 1005 - Out of Media

The media roll is empty.

Solutions

Use the following solutions to troubleshoot the issue. The most likely solutions are listed first, followed by other possibilities. Check to see if the issue is resolved after performing each recommended solution. If the issue is not resolved, proceed to the next solution. If the issue persists after performing all solutions, contact Technical Support.

1) Load media.
2) Press and release the power key to resume the job. Or press and hold the pause/resume key to cancel the job.

Error 1006 - Cutter Jam

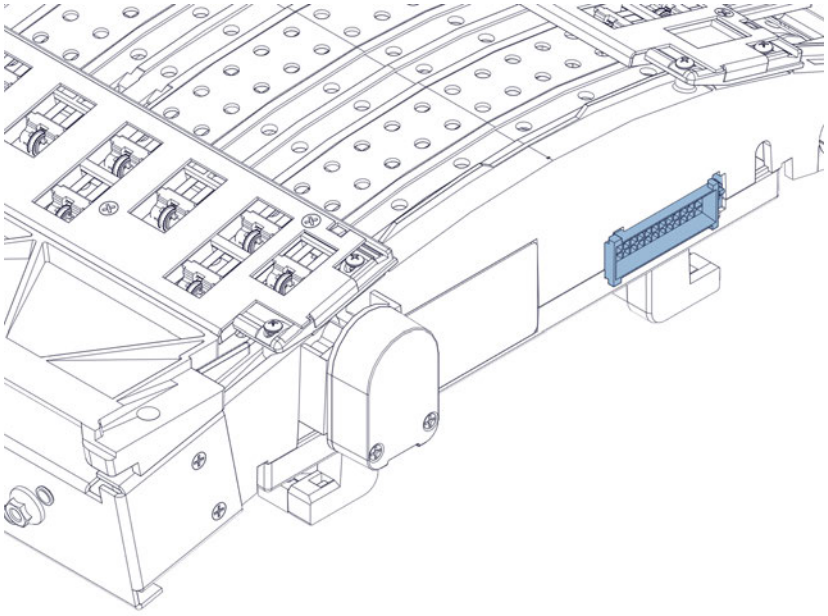
The cutter did not make it to the opposite side, or the cutter may not be moving.

Solutions

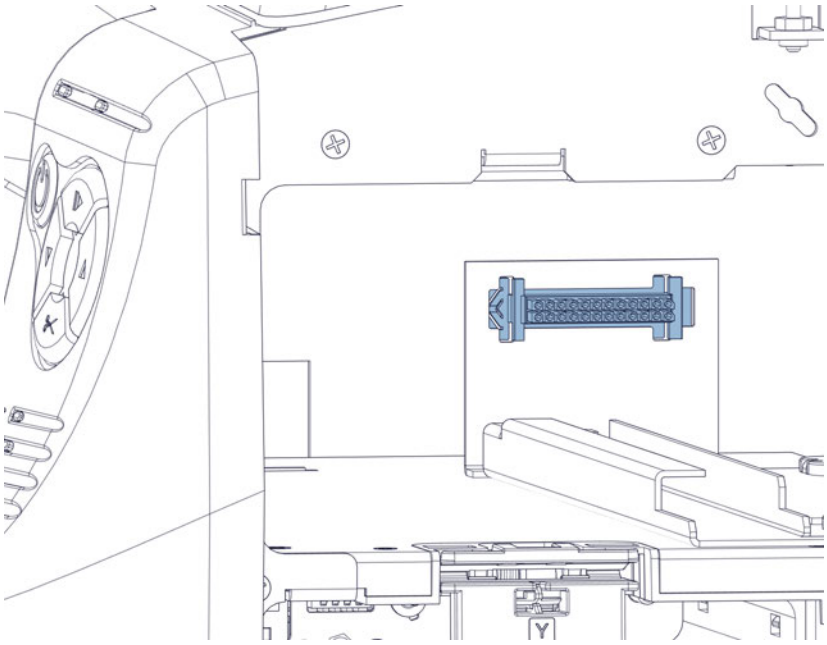
Use the following solutions to troubleshoot the issue. The most likely solutions are listed first, followed by other possibilities. Check to see if the issue is resolved after performing each recommended solution. If the issue is not resolved, proceed to the next solution. If the issue persists after performing all solutions, contact Technical Support.

1) Press and hold the power key on the operation panel for three seconds to turn the printer off. On the rear of the printer, turn the power inlet switch off. Clear the obstruction in the cutter area. On the rear of the printer, turn the power inlet switch on. Power on the printer.
2) If the cutter is not moving at all, remove media from the printer. Remove and then reinstall the transport unit. Ensure it is fully inserted in the printer.
3) An electrical connection is not being made where the transport unit plugs into the printer. Examine both connectors and make sure the connectors' pins are clean and not pushed in or damaged.

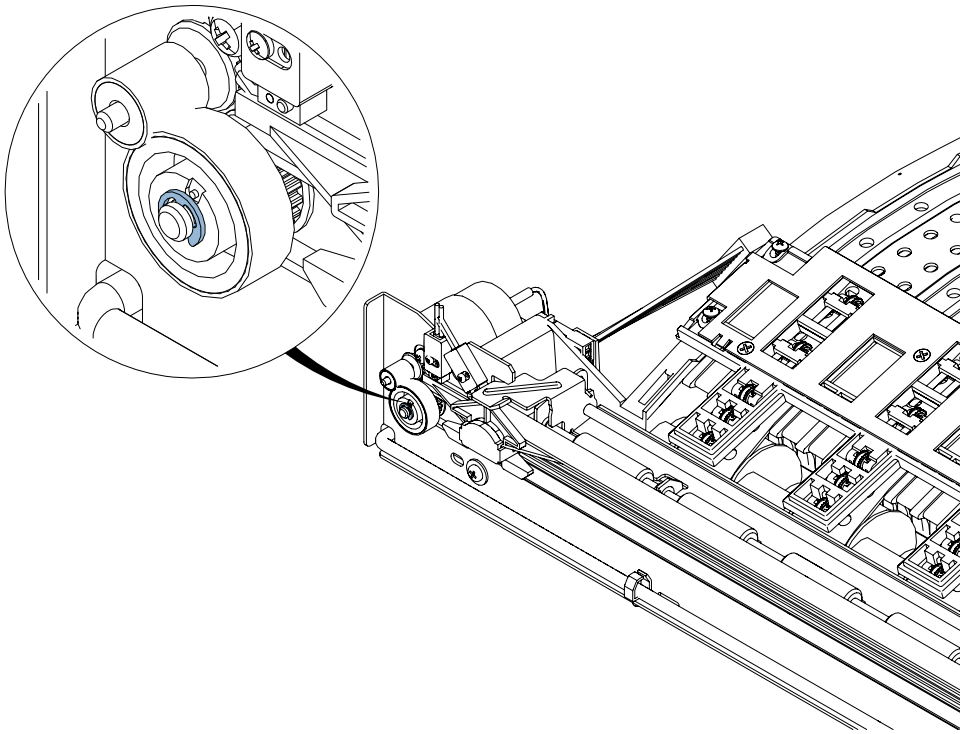
   The connector on the transport unit is illustrated below.



The mating connector inside the printer is illustrated below.



4) Examine the cutter assembly on the transport unit. Make sure all parts are intact. Ensure the metal locking washer that retains the white plastic gear is installed.



5) Clean the cutter. *See "Cleaning the Cutter Assembly" on page 109.*

6) Ensure that the cut is occurring through the label liner between labels. If necessary, adjust the cut/stop position in the Print Settings tab of the QL-800 Maintenance Utility.

7) Frequent cutter jams could indicate that it is time to replace the cutter assembly. *See "Replacing the Cutter Assembly" on page 77.*

Error 1007 - Reserved

This error is reserved (not applicable).

Error 1008 - Continuous Media Selected

Attempting an operation incompatible with continuous media (a single label feed, for example).

Solutions

Use the following solutions to troubleshoot the issue. The most likely solutions are listed first, followed by other possibilities. Check to see if the issue is resolved after performing each recommended solution. If the issue is not resolved, proceed to the next solution. If the issue persists after performing all solutions, contact Technical Support.

1) Press and release the power key to clear the error.

Error 1009 - Can't Calibrate Media

The printer cannot read TOF marks.

Solutions

Use the following solutions to troubleshoot the issue. The most likely solutions are listed first, followed by other possibilities. Check to see if the issue is resolved after performing each recommended solution. If the issue is not resolved, proceed to the next solution. If the issue persists after performing all solutions, contact Technical Support.

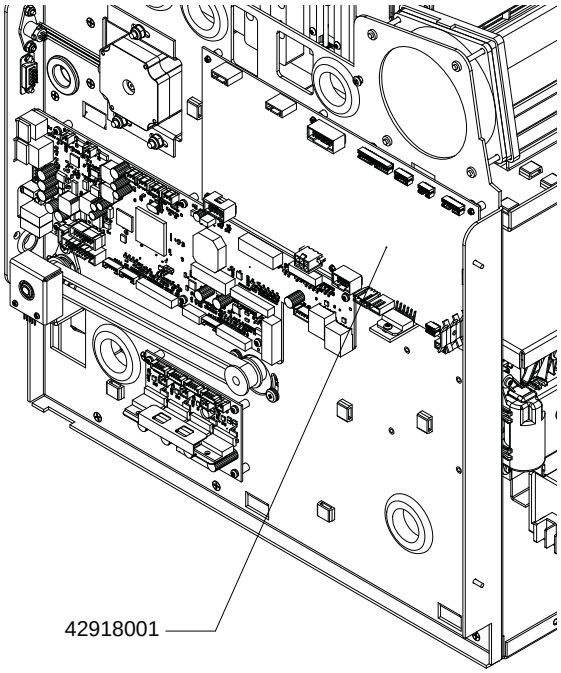
1) Press and release the power key to clear the error.
2) Confirm the media meets specifications.
3) This message can occur when changing media types. For example, when switching to reflective after the previous job was printed on gap material.

   When switching material types, the job should be sent to the printer before loading the media. There will be a brief delay before an error is produced due to unloaded media. Media can be loaded during this time. If media is not loaded before the error is produced, clear the error and re-attempt the load. The job will not be lost.
4) This message can occur if media is tracking off the edge guide. Confirm that media is tracking well against the edge guide of the transport. If this not the case, adjust the transport position. *See “Adjusting the Transport Position” on page 179.*
5) The transport unit belt motor does not turn.

- The electrical connections on the controller PCB may be loose.

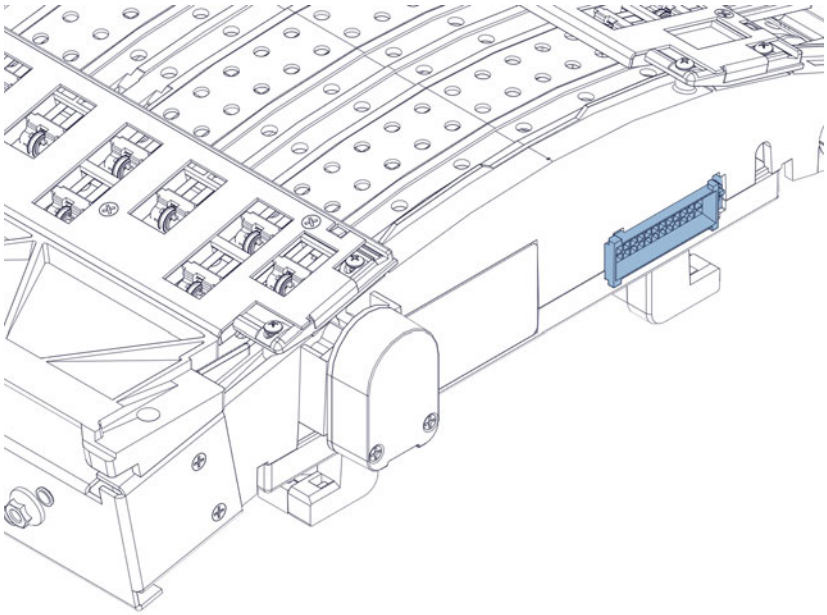
  Remove the top and side covers. *See "Removing the Top and Side Covers" on page 43.*

  Check the harness connections for P12, P8, P9, and P6 on the controller PCB (42918001). If any connections are loose, unplug them and then plug them back in securely.

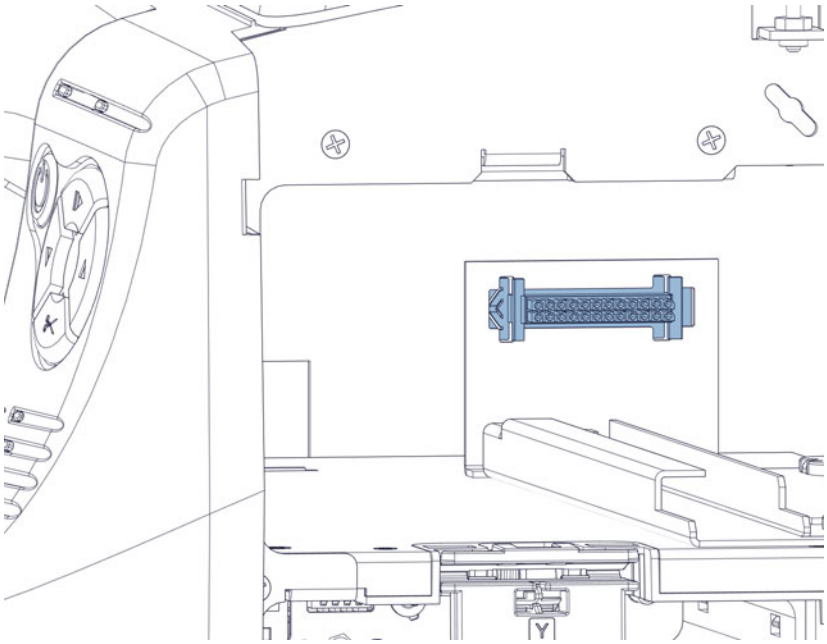


- An electrical connection is not being made where the transport unit plugs into the printer. Examine both connectors and make sure the connectors' pins are clean and not pushed in or damaged.

  The connector on the transport unit is illustrated below.



  The mating connector inside the printer is illustrated below.



- If a loud noise is coming from the transport area, the transport motor might be stalling. This can occur if the transport belts are overtightened. Adjust the belt tension as needed. *See "Adjusting the Transport Belt Tension" on page 177.*
- The TOF LED harness may be damaged. Inspect the harness and replace it if necessary. *See "Replacing the TOF LED Harness" on page 90.*

Error 100A - Main Side Door Open

The main side door was opened during a print job.

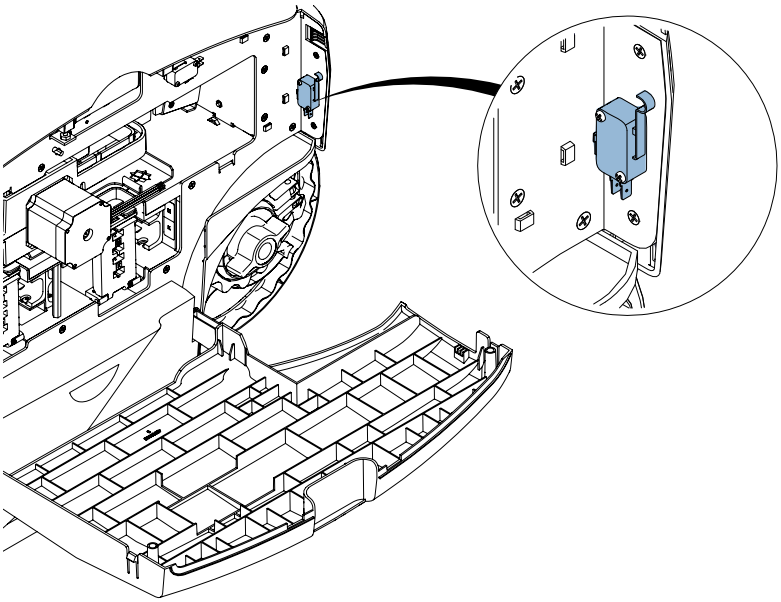
Solutions

Use the following solutions to troubleshoot the issue. The most likely solutions are listed first, followed by other possibilities. Check to see if the issue is resolved after performing each recommended solution. If the issue is not resolved, proceed to the next solution. If the issue persists after performing all solutions, contact Technical Support.

1) Close the door.

   Press and release the power key to resume the job. Or press and hold the pause/resume key to cancel the job.

2) If the door is closed and the error persists, ensure that the door switch is engaged when the door is closed. Bend the switch arm outward if necessary.



Error 100B - Top Cover Open

The top cover was opened during a print job.

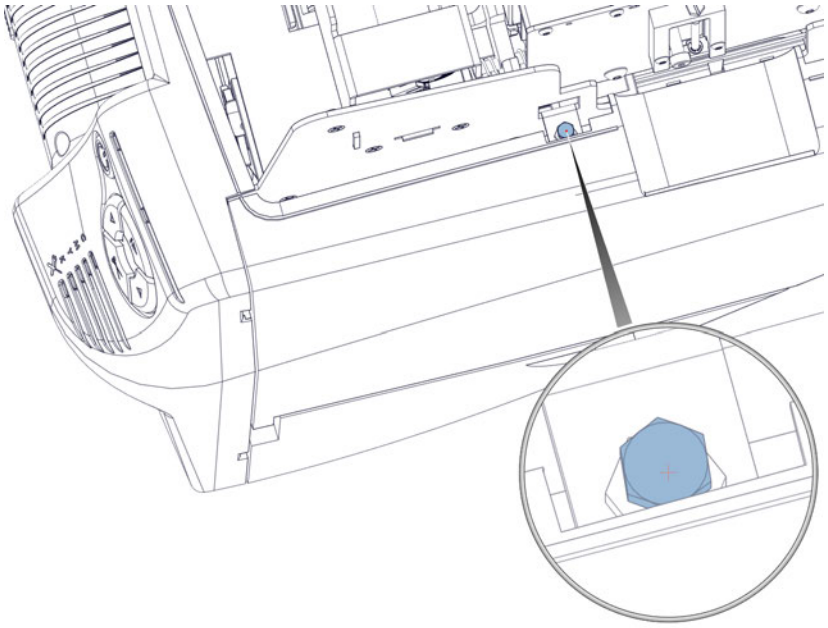
Solutions

Use the following solutions to troubleshoot the issue. The most likely solutions are listed first, followed by other possibilities. Check to see if the issue is resolved after performing each recommended solution. If the issue is not resolved, proceed to the next solution. If the issue persists after performing all solutions, contact Technical Support.

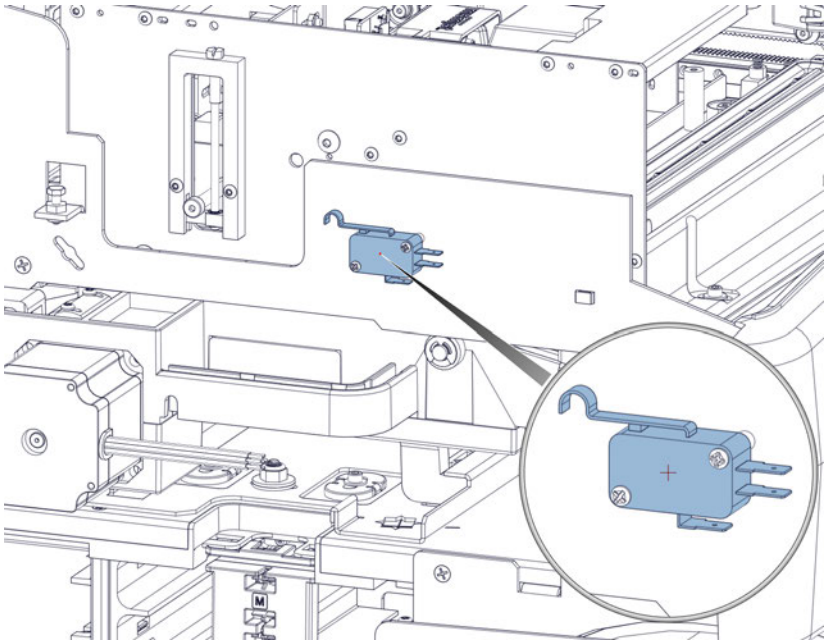
1) Close the top cover.

Press and release the power key to resume the job. Or press and hold the pause/resume key to cancel the job.

2) If the top cover is closed and the error still occurs, ensure that the cover switch is engaged when the cover is closed. The closed position of the cover is controlled by a screw that acts as a stop. Adjust this screw to lower the closed position of the cover.



3) Check the cover switch harness assembly. Make sure it is intact. Replace the assembly if any components are damaged.



Error 100C - Maintenance Cartridge Missing

The printer cannot detect the maintenance cartridge.

Solutions

Use the following solutions to troubleshoot the issue. The most likely solutions are listed first, followed by other possibilities. Check to see if the issue is resolved after performing each recommended solution. If the issue is not resolved, proceed to the next solution. If the issue persists after performing all solutions, contact Technical Support.

1) Install the maintenance cartridge. If a maintenance cartridge is installed, try repositioning it.

   Press and release the power key to clear the error.

Error 100D - Transport not Installed

The printer cannot detect the transport unit.

Solutions

Use the following solutions to troubleshoot the issue. The most likely solutions are listed first, followed by other possibilities. Check to see if the issue is resolved after performing each recommended solution. If the issue is not resolved, proceed to the next solution. If the issue persists after performing all solutions, contact Technical Support.

1) Install the transport unit. If the transport unit is installed, try repositioning it.

   Press and release the power key to clear the error.

Error 100E - Belt Motor Stall

The belt motor has stalled.

Solutions

Use the following solutions to troubleshoot the issue. The most likely solutions are listed first, followed by other possibilities. Check to see if the issue is resolved after performing each recommended solution. If the issue is not resolved, proceed to the next solution. If the issue persists after performing all solutions, contact Technical Support.

1) Remove and then reinstall the transport unit. Ensure it is fully inserted in the printer.
2) Remove the transport unit and inspect it.

   Ensure no label media or excessive ink build-up is restricting movement of the belts.

   Press and release the power key to resume the job. Or press and hold the pause/resume key to cancel the job.
3) Ensure the transport belts and transport drive belt are not overtightened.
   - *See “Adjusting the Transport Belt Tension” on page 177.*
   - *See “Adjusting the Transport Drive Tensioner” on page 176.*

Error 100F - Pinch Motor Stall

The pinch motor has stalled.

Solutions

Use the following solutions to troubleshoot the issue. The most likely solutions are listed first, followed by other possibilities. Check to see if the issue is resolved after performing each recommended solution. If the issue is not resolved, proceed to the next solution. If the issue persists after performing all solutions, contact Technical Support.

1) Inspect the loading pinch (where the media enters the printer).

   Make sure there is no label media or other debris on or near the pinch rollers that could restrict the rollers from turning.

2) Clean the input pinch rollers.

Error 1010 - Can't Start Vacuum Fans

There is an electronics failure.

Solutions

Use the following solutions to troubleshoot the issue. The most likely solutions are listed first, followed by other possibilities. Check to see if the issue is resolved after performing each recommended solution. If the issue is not resolved, proceed to the next solution. If the issue persists after performing all solutions, contact Technical Support.

1) Press and hold the power key on the operation panel for three seconds to turn the printer off. Wait three seconds. Then press and hold the power key for one second to turn the printer on again.

2) On the rear of the printer, turn the power inlet switch off. Wait three seconds. Then turn the power inlet switch on. Power on the printer.

Error 1011 - Unwind Over Current

Unwind motor requires more current than should be supplied.

Solutions

Use the following solutions to troubleshoot the issue. The most likely solutions are listed first, followed by other possibilities. Check to see if the issue is resolved after performing each recommended solution. If the issue is not resolved, proceed to the next solution. If the issue persists after performing all solutions, contact Technical Support.

1) Look for and clear obstructions at the unwind mandrel.

   Press and release the power key to resume the job. Or press and hold the pause/resume key to cancel the job.

Error 1012 - TOF Mark not Found

The printer cannot read TOF marks.

Solutions

Use the following solutions to troubleshoot the issue. The most likely solutions are listed first, followed by other possibilities. Check to see if the issue is resolved after performing each recommended solution. If the issue is not resolved, proceed to the next solution. If the issue persists after performing all solutions, contact Technical Support.

1) Press and release the power key to clear the error.
2) Confirm the media meets specifications.
3) Make sure the printer profile is set up correctly and the correct sensor type is selected in the printer driver.
4) Clean the gap/reflective sensor on the transport unit. *See "Cleaning the Gap/Reflective Sensor" on page 110.*

   Inspect the gap/reflective sensor harness during cleaning. Make sure it is not damaged or disconnected.

Error 1013 - Internal Error

There is an electronics failure.

Solutions

Use the following solutions to troubleshoot the issue. The most likely solutions are listed first, followed by other possibilities. Check to see if the issue is resolved after performing each recommended solution. If the issue is not resolved, proceed to the next solution. If the issue persists after performing all solutions, contact Technical Support.

1) Press and release the power key to clear the error.
2) Press and hold the power key on the operation panel for three seconds to turn the printer off. Wait three seconds. Then press and hold the power key for one second to turn the printer on again.
3) On the rear of the printer, turn the power inlet switch off. Wait three seconds. Then turn the power inlet switch on. Power on the printer.

Error 1014 - Internal Error

There is an electronics failure.

Solutions

Use the following solutions to troubleshoot the issue. The most likely solutions are listed first, followed by other possibilities. Check to see if the issue is resolved after performing each recommended solution. If the issue is not resolved, proceed to the next solution. If the issue persists after performing all solutions, contact Technical Support.

1) Press and release the power key to clear the error.

2) Press and hold the power key on the operation panel for three seconds to turn the printer off. Wait three seconds. Then press and hold the power key for one second to turn the printer on again.

3) On the rear of the printer, turn the power inlet switch off. Wait three seconds. Then turn the power inlet switch on. Power on the printer.

Error 1015 - Internal Error

There is an electronics failure.

Solutions

Use the following solutions to troubleshoot the issue. The most likely solutions are listed first, followed by other possibilities. Check to see if the issue is resolved after performing each recommended solution. If the issue is not resolved, proceed to the next solution. If the issue persists after performing all solutions, contact Technical Support.

1) Press and release the power key to clear the error.

2) Press and hold the power key on the operation panel for three seconds to turn the printer off. Wait three seconds. Then press and hold the power key for one second to turn the printer on again.

3) On the rear of the printer, turn the power inlet switch off. Wait three seconds. Then turn the power inlet switch on. Power on the printer.

Error 1016 - Can't Tighten Unwind

The printer cannot tighten media at the supply mandrel.

Solutions

Use the following solutions to troubleshoot the issue. The most likely solutions are listed first, followed by other possibilities. Check to see if the issue is resolved after performing each recommended solution. If the issue is not resolved, proceed to the next solution. If the issue persists after performing all solutions, contact Technical Support.

1) Look for and resolve issues at the unwind mandrel.

Error 1017 - Print Engine Start Timeout

The printer did not detect a top-of-form mark after the job was set to start.

Solutions

Use the following solutions to troubleshoot the issue. The most likely solutions are listed first, followed by other possibilities. Check to see if the issue is resolved after performing each recommended solution. If the issue is not resolved, proceed to the next solution. If the issue persists after performing all solutions, contact Technical Support.

1) Look for and clear a potential jam.

2) Remove and then reinstall the transport unit. Ensure it is fully inserted in the printer.

3) Confirm that the label dimensions set up in the driver match the actual material label size.

4) Inspect the transport unit encoder harnessing. Make sure the harness is not cut or loose. If the printer is advancing blank labels, there may be a problem with the encoder. Examine the encoder and harnessing using the replacement instructions as a guide. *See "Replacing the Transport Encoder Sensor and Disc" on page 87.*

Error 1018 - Reserved

This error is reserved (not applicable).

Error 1019 - Reserved

This error is reserved (not applicable).

Error 101A - TOF Calibration

The printer is not ready to start calibration.

Solutions

Use the following solutions to troubleshoot the issue. The most likely solutions are listed first, followed by other possibilities. Check to see if the issue is resolved after performing each recommended solution. If the issue is not resolved, proceed to the next solution. If the issue persists after performing all solutions, contact Technical Support.

1) Press and hold the pause/resume key to cancel the job.

   Press and release the power key to clear the error.

Error 1020 - Shared Memory Read Timeout

There is an internal communications failure.

Solutions

Use the following solutions to troubleshoot the issue. The most likely solutions are listed first, followed by other possibilities. Check to see if the issue is resolved after performing each recommended solution. If the issue is not resolved, proceed to the next solution. If the issue persists after performing all solutions, contact Technical Support.

1) Press and release the power key to clear the error.

2) Press and hold the power key on the operation panel for three seconds to turn the printer off. Wait three seconds. Then press and hold the power key for one second to turn the printer on again.

3) On the rear of the printer, turn the power inlet switch off. Wait three seconds. Then turn the power inlet switch on. Power on the printer.

Error 1021 - Shared Memory Write Timeout

There is an internal communications failure.

Solutions

Use the following solutions to troubleshoot the issue. The most likely solutions are listed first, followed by other possibilities. Check to see if the issue is resolved after performing each recommended solution. If the issue is not resolved, proceed to the next solution. If the issue persists after performing all solutions, contact Technical Support.

1) Press and release the power key to clear the error.
2) Press and hold the power key on the operation panel for three seconds to turn the printer off. Wait three seconds. Then press and hold the power key for one second to turn the printer on again.
3) On the rear of the printer, turn the power inlet switch off. Wait three seconds. Then turn the power inlet switch on. Power on the printer.

Error 1022 - Shared Memory Response Timeout

There is an internal communications failure.

Solutions

Use the following solutions to troubleshoot the issue. The most likely solutions are listed first, followed by other possibilities. Check to see if the issue is resolved after performing each recommended solution. If the issue is not resolved, proceed to the next solution. If the issue persists after performing all solutions, contact Technical Support.

1) Press and release the power key to clear the error.
2) Press and hold the power key on the operation panel for three seconds to turn the printer off. Wait three seconds. Then press and hold the power key for one second to turn the printer on again.
3) On the rear of the printer, turn the power inlet switch off. Wait three seconds. Then turn the power inlet switch on. Power on the printer.

Error 1023 - System Initialization Timeout

The print engine was not online in the expected time.

Solutions

Use the following solutions to troubleshoot the issue. The most likely solutions are listed first, followed by other possibilities. Check to see if the issue is resolved after performing each recommended solution. If the issue is not resolved, proceed to the next solution. If the issue persists after performing all solutions, contact Technical Support.

1) Press and hold the power key on the operation panel for three seconds to turn the printer off. Wait three seconds. Then press and hold the power key for one second to turn the printer on again.

2) On the rear of the printer, turn the power inlet switch off. Wait three seconds. Then turn the power inlet switch on. Power on the printer.

Error 1024 - Unexpected Engine Response

There is an internal communications failure.

Solutions

Use the following solutions to troubleshoot the issue. The most likely solutions are listed first, followed by other possibilities. Check to see if the issue is resolved after performing each recommended solution. If the issue is not resolved, proceed to the next solution. If the issue persists after performing all solutions, contact Technical Support.

1) Press and release the power key to clear the error.
2) Press and hold the power key on the operation panel for three seconds to turn the printer off. Wait three seconds. Then press and hold the power key for one second to turn the printer on again.
3) On the rear of the printer, turn the power inlet switch off. Wait three seconds. Then turn the power inlet switch on. Power on the printer.

Error 1025 - Shutdown Timeout

There was a failure to shut down the print engine.

Solutions

Use the following solutions to troubleshoot the issue. The most likely solutions are listed first, followed by other possibilities. Check to see if the issue is resolved after performing each recommended solution. If the issue is not resolved, proceed to the next solution. If the issue persists after performing all solutions, contact Technical Support.

1) Turn the printer off using the power inlet switch on the rear of the printer.

Error 1030 - Can't Erase EEPROM

An internal EEPROM failure occurred.

Solutions

Use the following solutions to troubleshoot the issue. The most likely solutions are listed first, followed by other possibilities. Check to see if the issue is resolved after performing each recommended solution. If the issue is not resolved, proceed to the next solution. If the issue persists after performing all solutions, contact Technical Support.

1) Press and release the power key to clear the error.
2) Press and hold the power key on the operation panel for three seconds to turn the printer off. Wait three seconds. Then press and hold the power key for one second to turn the printer on again.

3) On the rear of the printer, turn the power inlet switch off. Wait three seconds. Then turn the power inlet switch on. Power on the printer.

Error 1031 - Can't Program EEPROM

An internal EEPROM failure occurred.

Solutions

Use the following solutions to troubleshoot the issue. The most likely solutions are listed first, followed by other possibilities. Check to see if the issue is resolved after performing each recommended solution. If the issue is not resolved, proceed to the next solution. If the issue persists after performing all solutions, contact Technical Support.

1) Press and release the power key to clear the error.
2) Press and hold the power key on the operation panel for three seconds to turn the printer off. Wait three seconds. Then press and hold the power key for one second to turn the printer on again.
3) On the rear of the printer, turn the power inlet switch off. Wait three seconds. Then turn the power inlet switch on. Power on the printer.

Error 1032 - Invalid EEPROM Checksum

An internal EEPROM failure occurred.

Solutions

Use the following solutions to troubleshoot the issue. The most likely solutions are listed first, followed by other possibilities. Check to see if the issue is resolved after performing each recommended solution. If the issue is not resolved, proceed to the next solution. If the issue persists after performing all solutions, contact Technical Support.

1) Press and release the power key to clear the error.
2) Press and hold the power key on the operation panel for three seconds to turn the printer off. Wait three seconds. Then press and hold the power key for one second to turn the printer on again.
3) On the rear of the printer, turn the power inlet switch off. Wait three seconds. Then turn the power inlet switch on. Power on the printer.

Error 1038 - Upgrade Failure

There was an internal upgrade failure.

Solutions

Use the following solutions to troubleshoot the issue. The most likely solutions are listed first, followed by other possibilities. Check to see if the issue is resolved after performing each recommended solution. If the issue is not resolved, proceed to the next solution. If the issue persists after performing all solutions, contact Technical Support.

1) Press and release the power key to clear the error.
2) Press and hold the power key on the operation panel for three seconds to turn the printer off. Wait three seconds. Then press and hold the power key for one second to turn the printer on again.
3) On the rear of the printer, turn the power inlet switch off. Wait three seconds. Then turn the power inlet switch on. Power on the printer.

Error 1039 - Upgrade Failure

There was an internal upgrade failure.

Solutions

Use the following solutions to troubleshoot the issue. The most likely solutions are listed first, followed by other possibilities. Check to see if the issue is resolved after performing each recommended solution. If the issue is not resolved, proceed to the next solution. If the issue persists after performing all solutions, contact Technical Support.

1) Press and release the power key to clear the error.
2) Press and hold the power key on the operation panel for three seconds to turn the printer off. Wait three seconds. Then press and hold the power key for one second to turn the printer on again.
3) On the rear of the printer, turn the power inlet switch off. Wait three seconds. Then turn the power inlet switch on. Power on the printer.

Error 103A - Upgrade Failure

There was an internal upgrade failure.

Solutions

Use the following solutions to troubleshoot the issue. The most likely solutions are listed first, followed by other possibilities. Check to see if the issue is resolved after performing each recommended solution. If the issue is not resolved, proceed to the next solution. If the issue persists after performing all solutions, contact Technical Support.

1) Press and release the power key to clear the error.
2) Press and hold the power key on the operation panel for three seconds to turn the printer off. Wait three seconds. Then press and hold the power key for one second to turn the printer on again.

3) On the rear of the printer, turn the power inlet switch off. Wait three seconds. Then turn the power inlet switch on. Power on the printer.

Error 1040 - Failed to Read Job Status

Corrupt or incomplete job status message was received from print engine.

Solutions

Use the following solutions to troubleshoot the issue. The most likely solutions are listed first, followed by other possibilities. Check to see if the issue is resolved after performing each recommended solution. If the issue is not resolved, proceed to the next solution. If the issue persists after performing all solutions, contact Technical Support.

1) Press and release the power key to clear the error.
2) Press and hold the power key on the operation panel for three seconds to turn the printer off. Wait three seconds. Then press and hold the power key for one second to turn the printer on again.
3) On the rear of the printer, turn the power inlet switch off. Wait three seconds. Then turn the power inlet switch on. Power on the printer.

Error 1042 - Can't find Job Parameter

Job status message does not contain valid horizontal offset parameter.

Solutions

Use the following solutions to troubleshoot the issue. The most likely solutions are listed first, followed by other possibilities. Check to see if the issue is resolved after performing each recommended solution. If the issue is not resolved, proceed to the next solution. If the issue persists after performing all solutions, contact Technical Support.

1) Press and hold the pause/resume key to cancel the job. Reprint the job.
2) Press and release the power key to resume the job. Or press and hold the pause/resume key to cancel the job.

Error 1043 - Can't find Job Parameter

Job status message does not contain valid vertical offset parameter.

Solutions

Use the following solutions to troubleshoot the issue. The most likely solutions are listed first, followed by other possibilities. Check to see if the issue is resolved after performing each recommended solution. If the issue is not resolved, proceed to the next solution. If the issue persists after performing all solutions, contact Technical Support.

1) Press and hold the pause/resume key to cancel the job. Reprint the job.

2) Press and hold the power key on the operation panel for three seconds to turn the printer off. Wait three seconds. Then press and hold the power key for one second to turn the printer on again.

3) On the rear of the printer, turn the power inlet switch off. Wait three seconds. Then turn the power inlet switch on. Power on the printer.

Error 1044 - Can't find Job Parameter

Job status message does not contain valid top-of-form parameter.

Solutions

Use the following solutions to troubleshoot the issue. The most likely solutions are listed first, followed by other possibilities. Check to see if the issue is resolved after performing each recommended solution. If the issue is not resolved, proceed to the next solution. If the issue persists after performing all solutions, contact Technical Support.

1) Press and release the power key to resume the job. Or press and hold the pause/resume key to cancel the job.

Error 1045 - Can't find Job Parameter

Job status message does not contain valid cut at end of job parameter.

Solutions

Use the following solutions to troubleshoot the issue. The most likely solutions are listed first, followed by other possibilities. Check to see if the issue is resolved after performing each recommended solution. If the issue is not resolved, proceed to the next solution. If the issue persists after performing all solutions, contact Technical Support.

1) Press and release the power key to resume the job. Or press and hold the pause/resume key to cancel the job.

Error 1046 - Can't find Job Parameter

Job status message does not contain valid cut every N parameter.

Solutions

Use the following solutions to troubleshoot the issue. The most likely solutions are listed first, followed by other possibilities. Check to see if the issue is resolved after performing each recommended solution. If the issue is not resolved, proceed to the next solution. If the issue persists after performing all solutions, contact Technical Support.

1) Press and release the power key to resume the job. Or press and hold the pause/resume key to cancel the job.

Error 1050 - The Maint Cartridge is Full

A print job cannot start if the maintenance cartridge is full.

Solutions

Use the following solutions to troubleshoot the issue. The most likely solutions are listed first, followed by other possibilities. Check to see if the issue is resolved after performing each recommended solution. If the issue is not resolved, proceed to the next solution. If the issue persists after performing all solutions, contact Technical Support.

1) Install a new maintenance cartridge.

Error 1051 - Not ready to print

The printer is unable to start a print job in the current state.

Solutions

Use the following solutions to troubleshoot the issue. The most likely solutions are listed first, followed by other possibilities. Check to see if the issue is resolved after performing each recommended solution. If the issue is not resolved, proceed to the next solution. If the issue persists after performing all solutions, contact Technical Support.

1) Complete the current task.

   Press and release the power key to clear the error.

Error 10FF - Print Engine Error

There was an error with the print engine.

Solutions

Use the following solutions to troubleshoot the issue. The most likely solutions are listed first, followed by other possibilities. Check to see if the issue is resolved after performing each recommended solution. If the issue is not resolved, proceed to the next solution. If the issue persists after performing all solutions, contact Technical Support.

1) Clear the error using the Maintenance Utility or Status Monitor.

Error 2001 - Faulty Printhead

The printhead is damaged or has a poor electrical connection.

Solutions

Use the following solutions to troubleshoot the issue. The most likely solutions are listed first, followed by other possibilities. Check to see if the issue is resolved after performing each recommended solution. If the issue is not resolved, proceed to the next solution. If the issue persists after performing all solutions, contact Technical Support.

1) Remove the printhead using the printhead replacement function in the Parts Replacement tab of the QL-800 Maintenance Utility.

   Clean the electrical contacts on the printhead with a clean, lint-free cloth and isopropyl alcohol.

   Finish using the printhead replacement function but reinstall the same printhead.

2) Check the printhead latch and electrical harness connections.

3) Replace the printhead.

Error 2002 - Incorrect Printhead

The installed printhead is not appropriate for this printer.

Solutions

Use the following solutions to troubleshoot the issue. The most likely solutions are listed first, followed by other possibilities. Check to see if the issue is resolved after performing each recommended solution. If the issue is not resolved, proceed to the next solution. If the issue persists after performing all solutions, contact Technical Support.

1) Install a genuine QuickLabel printhead.

Error 2003 - Printhead Missing

The printhead is not installed, has a poor electrical connection, or a printhead latch is not recognized as being closed.

Solutions

Use the following solutions to troubleshoot the issue. The most likely solutions are listed first, followed by other possibilities. Check to see if the issue is resolved after performing each recommended solution. If the issue is not resolved, proceed to the next solution. If the issue persists after performing all solutions, contact Technical Support.

1) Remove the printhead using the printhead replacement function in the Parts Replacement tab of the QL-800 Maintenance Utility.

   Clean the electrical contacts on the printhead with a clean, lint-free cloth and isopropyl alcohol.

   Finish using the printhead replacement function but reinstall the same printhead.

2) Check the printhead latch and electrical harness connections.

3) Replace the printhead.

Error 2004 - Unlicensed Printhead

A qualified electrical component is not being found by the system.

Solutions

Use the following solutions to troubleshoot the issue. The most likely solutions are listed first, followed by other possibilities. Check to see if the issue is resolved after performing each recommended solution. If the issue is not resolved, proceed to the next solution. If the issue persists after performing all solutions, contact Technical Support.

1) Install a genuine QuickLabel printhead.

Error 2005 - Unusable Printhead

A qualified electrical component is not appropriate for the system.

Solutions

Use the following solutions to troubleshoot the issue. The most likely solutions are listed first, followed by other possibilities. Check to see if the issue is resolved after performing each recommended solution. If the issue is not resolved, proceed to the next solution. If the issue persists after performing all solutions, contact Technical Support.

1) Remove the printhead using the printhead replacement function in the Parts Replacement tab of the QL-800 Maintenance Utility.

   Clean the electrical contacts on the printhead with a clean, lint-free cloth and isopropyl alcohol.

   Finish using the printhead replacement function but reinstall the same printhead.

2) Check the printhead latch and electrical harness connections.

3) Replace the printhead.

Error 2006 - Printhead Unprimed

The printhead is detected as not primed.

The printhead is primed when you run the After Moving function in the Cleaning tab of the QL-800 Maintenance Utility.

Solutions

Use the following solutions to troubleshoot the issue. The most likely solutions are listed first, followed by other possibilities. Check to see if the issue is resolved after performing each recommended solution. If the issue is not resolved, proceed to the next solution. If the issue persists after performing all solutions, contact Technical Support.

1) If the printhead has been primed and used successfully and then this error occurs, the printer may have been powered off using the power inlet switch on the rear of the printer after priming.

   Run the After Moving procedure in the Cleaning tab of the QL-800 Maintenance Utility to re-prime the printhead. After priming the printer, turn the printer off with the power key on the operation panel first for the settings to be saved.

2) Remove the printhead using the printhead replacement function in the Parts Replacement tab of the QL-800 Maintenance Utility.

   Clean the electrical contacts on the printhead with a clean, lint-free cloth and isopropyl alcohol.

   Finish using the printhead replacement function but reinstall the same printhead.

Error 2007 - Maintenance Busy

The printer is performing maintenance.

Solutions

Use the following solutions to troubleshoot the issue. The most likely solutions are listed first, followed by other possibilities. Check to see if the issue is resolved after performing each recommended solution. If the issue is not resolved, proceed to the next solution. If the issue persists after performing all solutions, contact Technical Support.

1) Wait until the printer has finished the maintenance operation.

Error 2008 - 1000 Series Error Occurred

Error 2008 in the Maintenance Utility log indicates that a 1000 series error has occurred or did previously occur. The specific 1000 series error can be viewed in the Status Monitor. 1000 series error details are not retained in the Maintenance Utility log.

Error 2009 - Maintenance Jam

Mechanical components in the print module have failed to move.

Solutions

Use the following solutions to troubleshoot the issue. The most likely solutions are listed first, followed by other possibilities. Check to see if the issue is resolved after performing each recommended solution. If the issue is not resolved, proceed to the next solution. If the issue persists after performing all solutions, contact Technical Support.

1) It is often best to monitor the motion of print module parts with the cover up. Power down the printer, open the cover, and restart the printer.

Observe the positional calibration routine as well as the start up maintenance. Problems with the printhead lift can often be observed here. Listen carefully when the printer attempts to lift the printhead from a lowered position. There is often a chirp or squeaking sound that can be heard if the lift motor has stalled.

2) Open the top cover and check for obstructions.

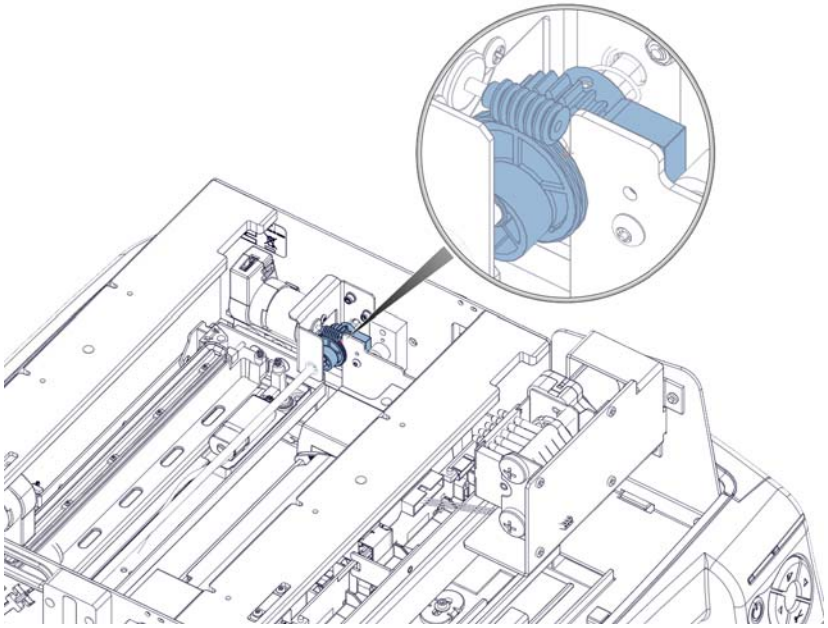
   Open the main side door. Remove the transport unit and inspect it. Make sure the star wheel assemblies are tightened. If they are not tightened, or if they are bent, the assemblies may come in contact with the maintenance assembly and prevent it from moving.

3) Inspect the waste ink tube from the maintenance sled. This can shift position and prevent the maintenance sled from moving into position.

4) Tension in the printhead harness bundles can restrict motion and make it more difficult for the printhead to move up and down. Check the harness routing.

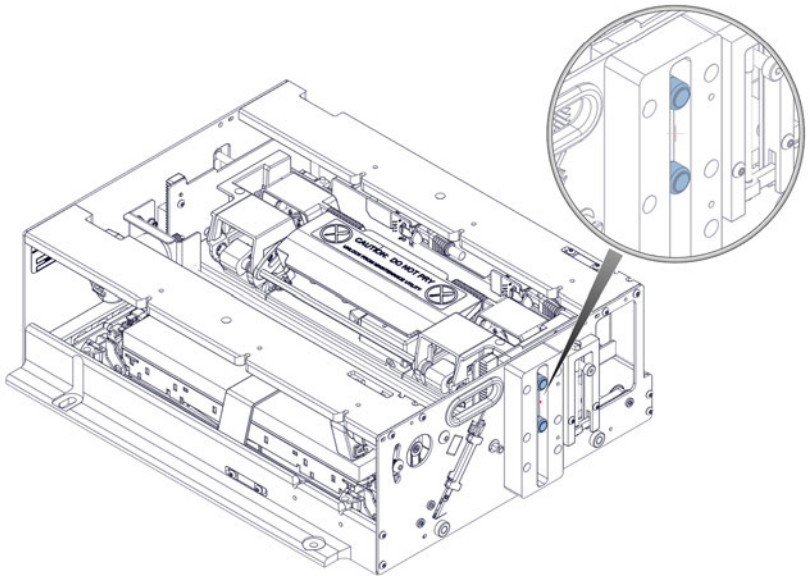
5) Inspect the gears of the printhead positioning motor.

   The worm gear and lift gear combination is illustrated below. Make sure the gears are in alignment and there is no damage or significant wear in the black plastic lift gear.



6) Inspect the printhead angularity and adjust if needed. *See "Adjusting the Printhead Angularity" on page 172.*

7) Inspect the cam rollers on the print engine. Ensure both rollers are present.



Error 200A - Black Cartridge is Missing

The black ink cartridge was not detected.

Solutions

Use the following solutions to troubleshoot the issue. The most likely solutions are listed first, followed by other possibilities. Check to see if the issue is resolved after performing each recommended solution. If the issue is not resolved, proceed to the next solution. If the issue persists after performing all solutions, contact Technical Support.

1) Clean the ink cartridge electrical contacts and the ink cartridge connection contacts inside the printer with a swab or lint-free cloth dampened with isopropyl alcohol. Reinstall the ink cartridge.

Error 200B - Magenta Cartridge is Missing

The magenta ink cartridge was not detected.

Solutions

Use the following solutions to troubleshoot the issue. The most likely solutions are listed first, followed by other possibilities. Check to see if the issue is resolved after performing each recommended solution. If the issue is not resolved, proceed to the next solution. If the issue persists after performing all solutions, contact Technical Support.

1) Clean the ink cartridge electrical contacts and the ink cartridge connection contacts inside the printer with a swab or lint-free cloth dampened with isopropyl alcohol. Reinstall the ink cartridge.

Error 200C - Yellow Cartridge is Missing

The yellow ink cartridge was not detected.

Solutions

Use the following solutions to troubleshoot the issue. The most likely solutions are listed first, followed by other possibilities. Check to see if the issue is resolved after performing each recommended solution. If the issue is not resolved, proceed to the next solution. If the issue persists after performing all solutions, contact Technical Support.

1) Clean the ink cartridge electrical contacts and the ink cartridge connection contacts inside the printer with a swab or lint-free cloth dampened with isopropyl alcohol. Reinstall the ink cartridge.

Error 200D - Cyan Cartridge is Missing

The cyan ink cartridge was not detected.

Solutions

Use the following solutions to troubleshoot the issue. The most likely solutions are listed first, followed by other possibilities. Check to see if the issue is resolved after performing each recommended solution. If the issue is not resolved, proceed to the next solution. If the issue persists after performing all solutions, contact Technical Support.

1) Clean the ink cartridge electrical contacts and the ink cartridge connection contacts inside the printer with a swab or lint-free cloth dampened with isopropyl alcohol. Reinstall the ink cartridge.

Error 200E - Multiple Cartridges are Missing

Multiple ink cartridges were not detected.

Solutions

Use the following solutions to troubleshoot the issue. The most likely solutions are listed first, followed by other possibilities. Check to see if the issue is resolved after performing each recommended solution. If the issue is not resolved, proceed to the next solution. If the issue persists after performing all solutions, contact Technical Support.

1) Clean the ink cartridge electrical contacts and the ink cartridge connection contacts inside the printer with a swab or lint-free cloth dampened with isopropyl alcohol. Reinstall the ink cartridge.

Error 200F - Black Ink Out

The black ink cartridge is empty.

Solutions

Use the following solutions to troubleshoot the issue. The most likely solutions are listed first, followed by other possibilities. Check to see if the issue is resolved after performing each recommended solution. If the issue is not resolved, proceed to the next solution. If the issue persists after performing all solutions, contact Technical Support.

1) Replace the ink cartridge.

Error 2010 - Magenta Ink Out

The magenta ink cartridge is empty.

Solutions

Use the following solutions to troubleshoot the issue. The most likely solutions are listed first, followed by other possibilities. Check to see if the issue is resolved after performing each recommended solution. If the issue is not resolved, proceed to the next solution. If the issue persists after performing all solutions, contact Technical Support.

1) Replace the ink cartridge.

Error 2011 - Yellow Ink Out

The yellow ink cartridge is empty.

Solutions

Use the following solutions to troubleshoot the issue. The most likely solutions are listed first, followed by other possibilities. Check to see if the issue is resolved after performing each recommended solution. If the issue is not resolved, proceed to the next solution. If the issue persists after performing all solutions, contact Technical Support.

1) Replace the ink cartridge.

Error 2012 - Cyan Ink Out

The cyan ink cartridge is empty.

Solutions

Use the following solutions to troubleshoot the issue. The most likely solutions are listed first, followed by other possibilities. Check to see if the issue is resolved after performing each recommended solution. If the issue is not resolved, proceed to the next solution. If the issue persists after performing all solutions, contact Technical Support.

1) Replace the ink cartridge.

Error 2013 - Multiple Inks Out

Two or more ink cartridges are empty.

Solutions

Use the following solutions to troubleshoot the issue. The most likely solutions are listed first, followed by other possibilities. Check to see if the issue is resolved after performing each recommended solution. If the issue is not resolved, proceed to the next solution. If the issue persists after performing all solutions, contact Technical Support.

1) Replace the ink cartridges indicated by the front panel LEDs.

Error 2014 - Missed TOF

The top-of-form mark was not found within the expected time.

Solutions

Use the following solutions to troubleshoot the issue. The most likely solutions are listed first, followed by other possibilities. Check to see if the issue is resolved after performing each recommended solution. If the issue is not resolved, proceed to the next solution. If the issue persists after performing all solutions, contact Technical Support.

1) Ensure the printer driver is set up correctly for your label size and sensor type.

Error 2015 - Page Sequence Error

The print job could not start.

Solutions

Use the following solutions to troubleshoot the issue. The most likely solutions are listed first, followed by other possibilities. Check to see if the issue is resolved after performing each recommended solution. If the issue is not resolved, proceed to the next solution. If the issue persists after performing all solutions, contact Technical Support.

1) Check for obstructions in the paper path and re-attempt the print job.

Error 2016 - Cartridge Error

There was an error communicating to an ink cartridge.

Solutions

Use the following solutions to troubleshoot the issue. The most likely solutions are listed first, followed by other possibilities. Check to see if the issue is resolved after performing each recommended solution. If the issue is not resolved, proceed to the next solution. If the issue persists after performing all solutions, contact Technical Support.

1) Clean the ink cartridge electrical contacts and the ink cartridge connection contacts inside the printer with a swab or lint-free cloth dampened with isopropyl alcohol. Reinstall the ink cartridge.

Error 2017 - Encoder Error

The media motion is not consistent across the print encoder.

Errors 2017 and 2100 indicate the same error. It will appear as 2017 on versions of the QL-800 Status Monitor 1.1 and beyond. It will appear as 2100 in the Print Monitor of CQL 7.8.

The first step in diagnosing the cause of the error is determining when the error occurs after sending the print job. Error timing and related solutions are described in the following sections.

Error Occurs Prior to Media Moving

The error occurs as the printhead moves into the print position but before media moves forward to start printing. This can be confirmed by opening the top cover, defeating the interlock, and then sending a print job.

1) If the media does not move after the printhead moves to the print position, the printer may be receiving corrupt data.

   This is believed to be a CQL software issue which is being investigated. Current corrective action is to reduce the size of the image slightly. For example, if your label is 8” x 8”, then use a 7.980" x 7.980" image.

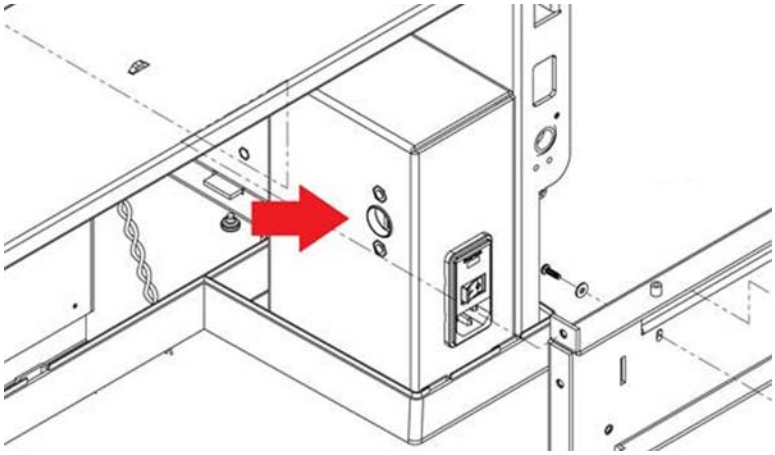
Error Occurs During Printing

The error occurs after the printhead moves into the print position and after media moves forward to start printing.

1) The pinch roller is slipping. This may result from excessive drag on the unwind mandrel.

   - The unwind mandrel belt may be too tight. *See “Adjusting the Mandrel Drive Belt Tension” on page 183.*
   - The unwind mandrel shaft and bushing fit may be too tight. In this situation, the mandrel will often fail to rewind slack and the encoder will detect a jolt when printing starts.

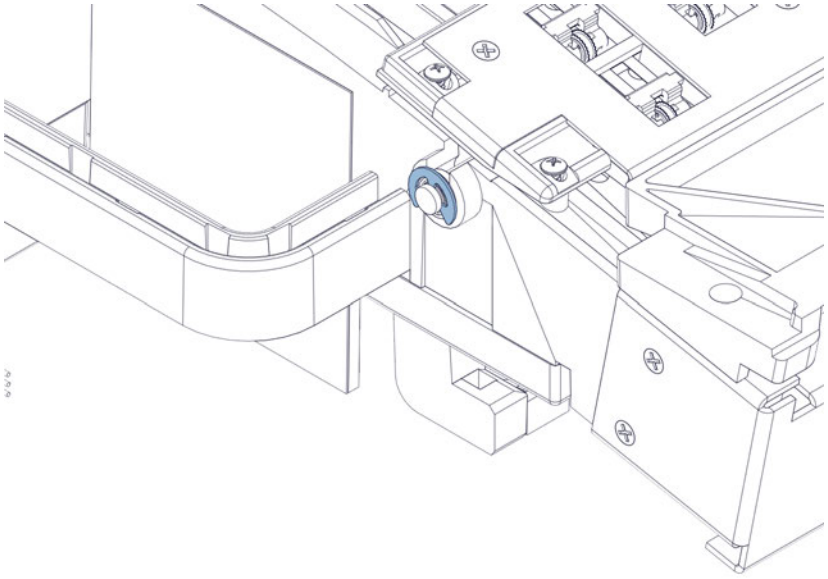
     The solution for this issue is reaming the unwind bushing with a reamer (.6299”). Use the unwind bushing replacement procedure as a guide. *See “Replacing the Unwind Bushings” on page 72.* However, instead of replacing the bushing, ream the bushing to allow a better fit for the mandrel shaft.



2) The printhead height is too low. The printhead comes into contact with media in the print position. Ink smudges are a good indication of this condition.

Adjust the height of the printhead. *See "Adjusting the Printhead Height" on page 171.*

3) The encoder roller does not spin freely because the retaining ring is not installed properly.



- The wave spring should be captured between the retaining ring and the bearing. There should not be any overlap.
- The prongs of the retaining ring should fall in the valleys of the wave spring. If it is misaligned in relation to the wave spring, the encoder roller may not rotate smoothly. Spin the retaining ring by hand and adjust if necessary.

4) Media is tracking poorly. This may occur under the following conditions.

- Inappropriate unwind mandrel back-tension - This may be caused by the following conditions.

  There is excessive drag from the unwind mandrel. The mandrel shaft/bushing fit may be incorrect, or the mandrel belt may be too tight. *See "Adjusting the Mandrel Drive Belt Tension" on page 183.*

  Media is wound loose on the roll. Reload media and ensure media is tightly wound around the roll.

  Roll is not secure on the mandrel. Secure the roll and tighten the wing nut.

- Incorrect transport alignment - *See "Adjusting the Transport Position" on page 179.*

- Incorrect mandrel/fixed entrance guide alignment - *See "Adjusting the Mandrel Alignment" on page 185.*
- Misalignment of unwind/rewind - If the media is not squarely aligned with the rewinder inner flange, adjust the position of the rewinder as needed.

  Loosen the thumb screws that fasten the rewinder to the bracket. Slide the rewinder left/right as allowed by the adjustment slots until the media is squarely aligned with the inner flange. Then tighten the thumb screws.

5) The transport speed is incorrect.

   - The belt is slipping on the transport drive pulley.

     The belt tension may be too low. *See "Adjusting the Transport Belt Tension" on page 177.*

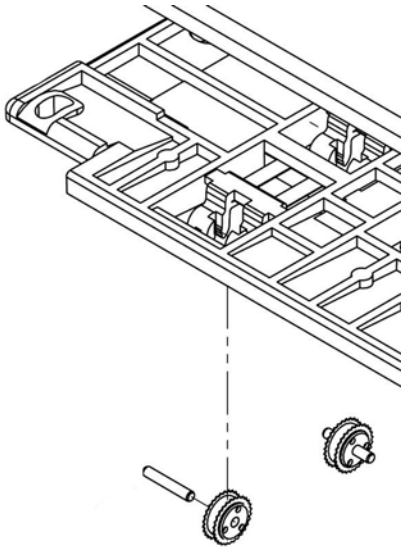
     Dry (sticky) ink under the transport unit belts is causing drag on the belts.
   - The transport speed setting is incorrect. *See "Setting the Transport Speed" on page 191.*

6) The transport belt has climbed over the pulley flange. The belt tension may be incorrect. *See "Adjusting the Transport Belt Tension" on page 177.*

7) There is a star wheel malfunction.

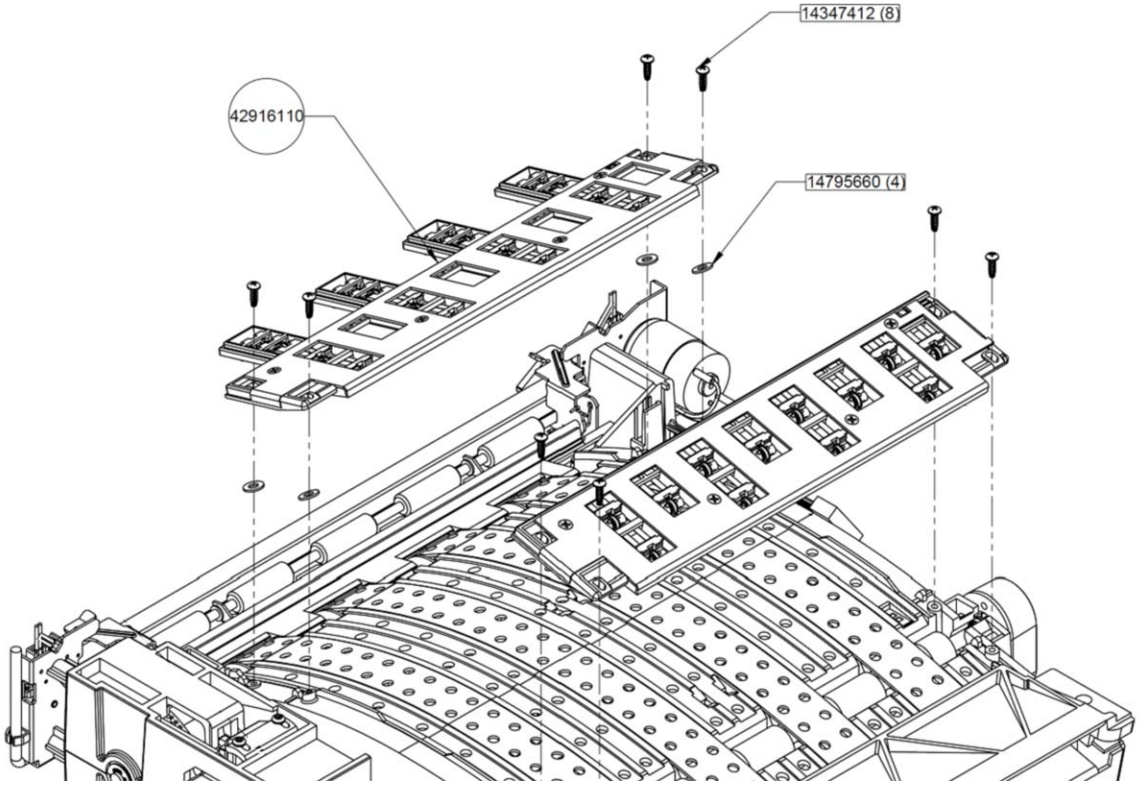
   - A star wheel is not spinning. Replace the affected star wheel or the star wheel assembly. *See "Replacing Star Wheel Assemblies" on page 79.*
   - A star wheel has become unseated. Remove and reinstall the affected star wheel.

   Proper operation is for the star wheel to spin on the dowel pin that snaps into the star wheel bracket. If the bore in the star wheel is too tight, the star wheel will not spin.



8) No slip is allowed between the media and transport belt. This may occur if there is excessive star wheel pressure.

- Star wheel bracket warpage (cupping) - Adhesive-backed shim washers (14795660) can be used as shims on the star wheel assembly (42916110). Refer to the illustration below and the star wheel assembly replacement instructions as a guide. *See "Replacing Star Wheel Assemblies" on page 79.*



- Fixed star wheel locations too low - A tool revision is being made. Adhesive-backed shim washers (14795660) can be used as shims

9) The encoder signal is poor. This may result from the disc/sensor not being spaced properly or disc/sensor damage.

   Examine the disc/sensor using the replacement procedure as a guide. *See "Replacing the Transport Encoder Sensor and Disc" on page 87.*

Error 2100 - Unspecified Paper Path

The media motion is not consistent across the print encoder.

Errors 2017 and 2100 indicate the same error. It will appear as 2017 on versions of the QL-800 Status Monitor 1.1 and beyond. It will appear as 2100 in the Print Monitor of CQL 7.8.

Detailed information is provided in the troubleshooting topic for error 2017. *See "Error 2017 - Encoder Error" on page 166.*

Error 3XXX - Software Communication Error

Errors in the 3000 series indicate software communication errors.

Solutions

Use the following solutions to troubleshoot the issue. The most likely solutions are listed first, followed by other possibilities. Check to see if the issue is resolved after performing each recommended solution. If the issue is not resolved, proceed to the next solution. If the issue persists after performing all solutions, contact Technical Support.

1) Contact Technical Support.

13 Adjustments

Adjusting the Printhead Height

The printhead height is factory set to be 0.7mm above the surface of standard gloss paper label stock. It could become necessary to adjust the printhead height for any of the following reasons:

- The media in use is excessively thick or thin.
- The transport has been replaced with a new transport.
- For any reason the printhead stop block position has changed and the printed media is displaying imperfections attributed to printhead mis-height such as:
  - Ink smudges or rub marks due to media coming in contact with the printhead
  - A hazy, wavy, or out-of-focus look to printed output due to the printhead being positioned too far off the media

Personal Protective Equipment (PPE)

Caution: *In order to avoid personal injury, always use appropriate personal protective equipment (PPE) when performing maintenance tasks.*

- Safety glasses
- Nitrile powder-free gloves
- Clothing protection (smock, jacket, etc.)

Required Tools and Supplies

Gather all supplies and tools before starting this process.

- 1/4” wrench, socket, or nut driver

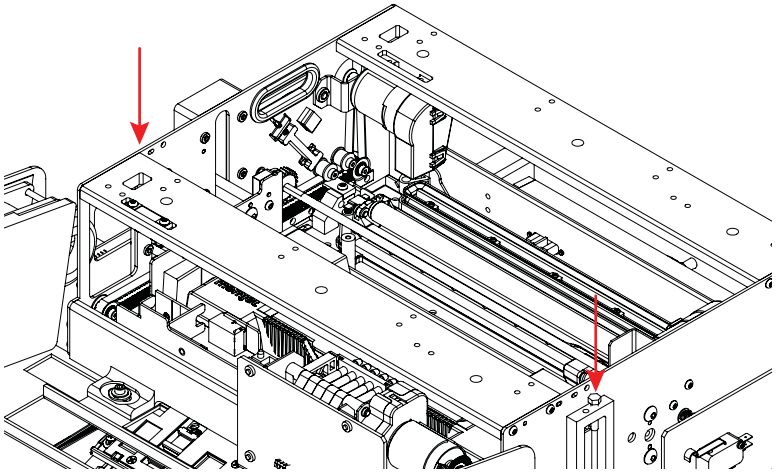
Adjustment Guidelines

At the factory, the printhead height is set by loading media, placing a 0.7mm feeler gauge across the print zone, and lowering the head. Then the printhead height is locked to its resting position. In the field, the printhead height can be adjusted by best guess and some trial and error. Below are some guidelines.

- When testing printhead height adjustments, use the widest media available. This way, the height at both ends of the printhead can be verified.

- Printhead height adjustments are made at both ends of the printhead. If the artifact is occurring more on one side of the head, begin by making the adjustment on the corresponding side.

  The printhead adjustment screws are accessible by opening the top cover.



- Adjustment increments should be small (1/4 to 1/2 turn at a time).
- If the media appears to be rubbing, raise the printhead with counterclockwise turns.
- If printed output is wavy or out of focus, lower the printhead with clockwise turns.

Adjusting the Printhead Angularity

The printhead angularity is factory set to ensure the left and right sides of the printhead are at a consistent height. If one side is higher than the other, you can adjust the angularity to correct the issue.

Personal Protective Equipment (PPE)

Caution: *In order to avoid personal injury, always use appropriate personal protective equipment (PPE) when performing maintenance tasks.*

- Safety glasses
- Nitrile powder-free gloves
- Clothing protection (smock, jacket, etc.)

Required Tools and Supplies

Gather all supplies and tools before starting this process.

- TF1262
- Hex wrench

Adjustment Procedure

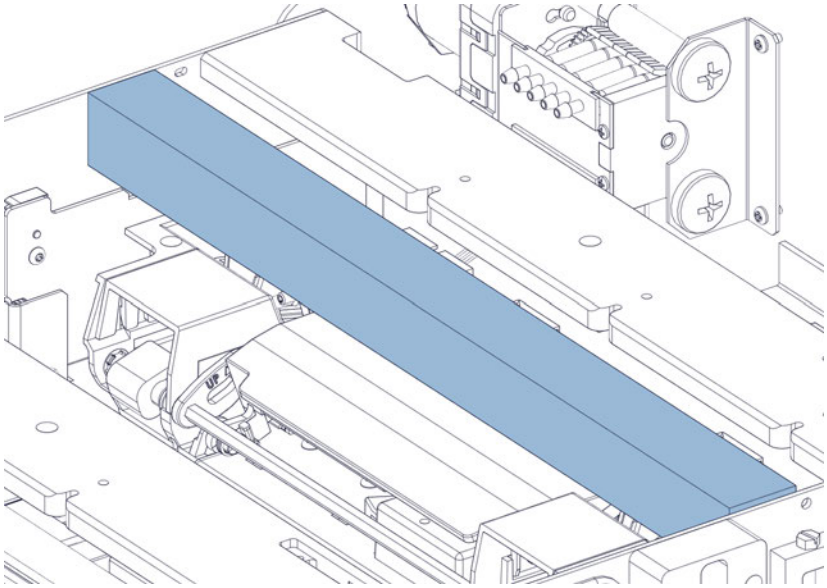
1 Perform the Before Shipping procedure from the Maintenance Utility. This action will de-prime the printhead.

Note: *Do not secure the maintenance roller during the Before Shipping procedure.*

2 Turn the printer power off and disconnect the power cable from the power outlet.

3 Open the top cover.

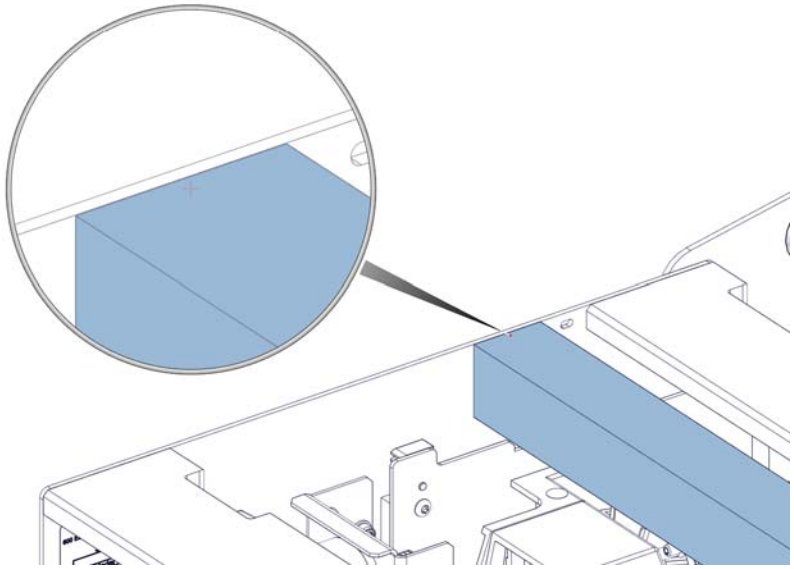
4 Position the ends of TF1262 on the lowest left and right flats of the print engine bracket. TF1262 will span the width of the bracket.



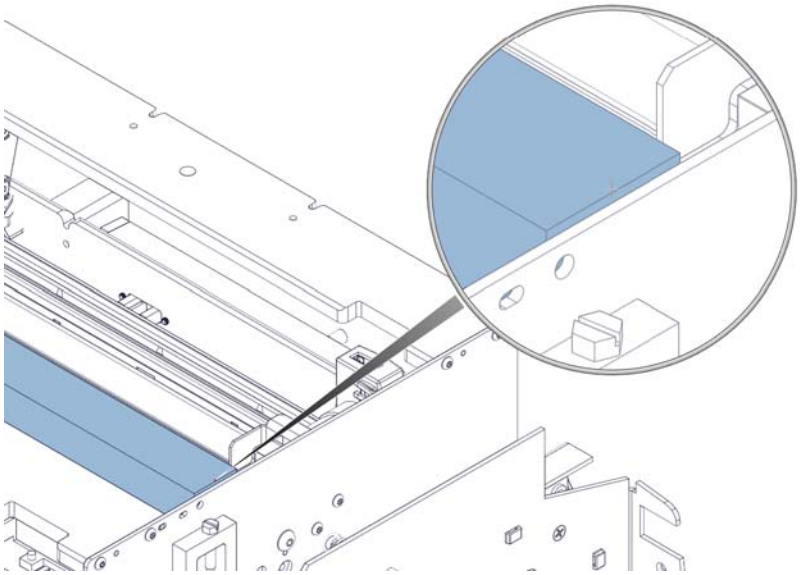
TF1262 will be used to test for angularity on each side of the bracket with respect to the print engine left/right plates.

5 Compare the top edge of TF1262 with the top edges of the print engine left/right plates. TF1262 should be level with the plates.

The left side plate alignment is illustrated below.

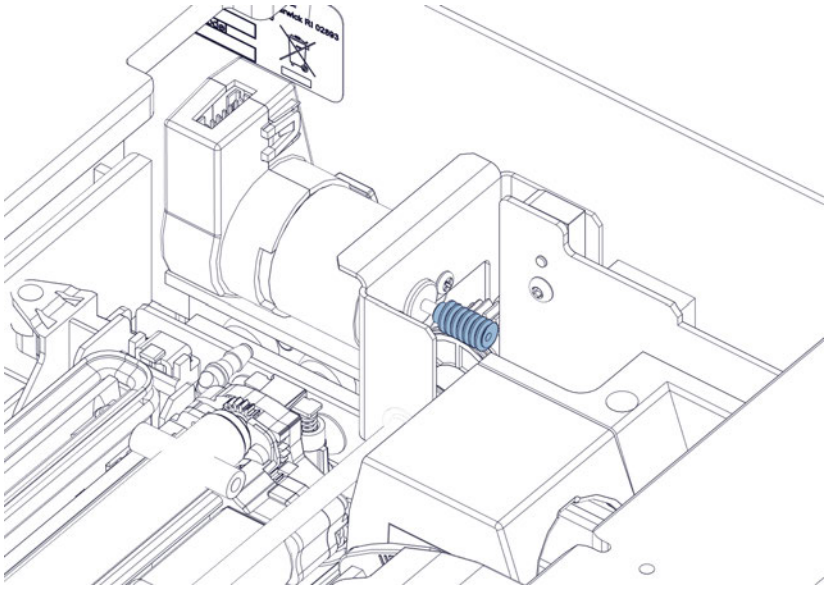


The right side plate alignment is illustrated below.

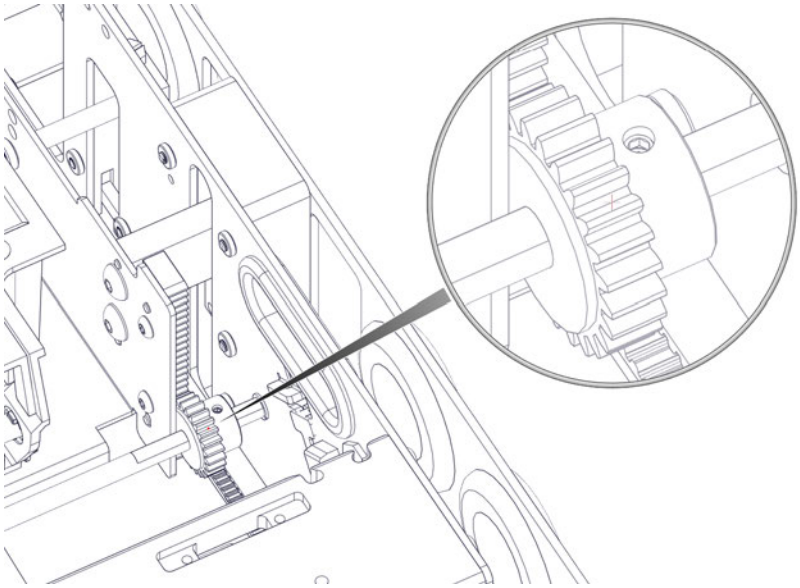


If either side is not level, follow the rest of this procedure for angularity adjustment instructions.

6 Turn the worm screw clockwise to lower the printhead until the gear on the opposite side of the printhead is positioned with the set screw facing directly upward.



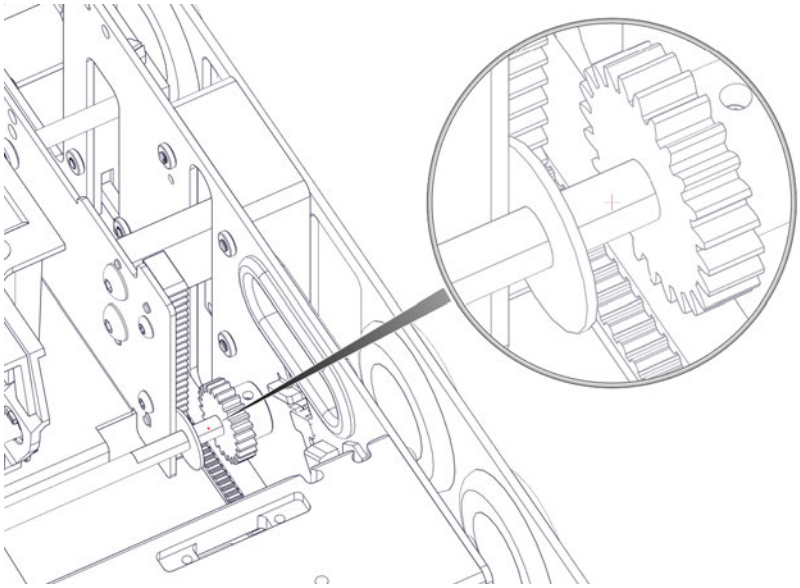
When the set screw is facing upward, it will be accessible during the rest of this procedure.



7 Loosen the set screw until the gear slides on the shaft. Use caution when turning the set screw, as the threads can be stripped easily.

8 With help from another person, adjust the printhead angularity. One person should support the printhead lift while the other makes the adjustment.

With the weight of the printhead lift supported, slide the gear outward to disengage it from the printhead lift rack lift teeth.



Lift or lower the printhead lift by the height of one gear tooth. Then slide the gear inward to engage it with the printhead lift teeth. Do not pinch the nylon washer. The nylon washer should be able to spin freely.

Tighten the set screw. Use caution when turning the set screw, as the threads can be stripped easily.

9 Turn the worm gear counterclockwise to raise the printhead. Repeat the measurement with TF1262. If necessary, repeat the adjustment steps until an even angularity is achieved.

Adjusting the Transport Drive Tensioner

The transport drive belt tension is controlled by two Phillips pan head screws on the transport unit. The tension is factory set by tightening the screws until they contact the plastic tensioner, and then tightening one full turn.

Personal Protective Equipment (PPE)

Caution: *In order to avoid personal injury, always use appropriate personal protective equipment (PPE) when performing maintenance tasks.*

- Safety glasses
- Nitrile powder-free gloves
- Clothing protection (smock, jacket, etc.)

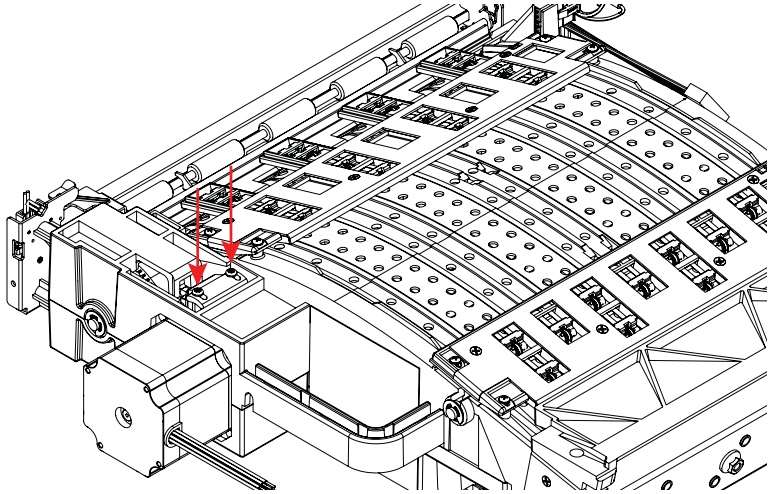
Required Tools and Supplies

Gather all supplies and tools before starting this process.

- Phillips screwdriver

Adjustment Guidelines

The two adjustment screws are indicated below.



Use the following guidelines when adjusting the transport drive tension.

- If the screws are un-tensioned, thread in the screws equally until they just contact the tensioner.
- These screws should be adjusted equally in 1/4-turn increments.
- If the drive belt is skipping, these screws should be tightened.
- If the drive motor is stalling, these screws should be loosened.

Adjusting the Transport Belt Tension

The transport belt tension is controlled by four nuts on the transport unit. The tension is factory set by so that each belt can be pulled by hand and drive the other three belts without slipping.

Personal Protective Equipment (PPE)

Caution: *In order to avoid personal injury, always use appropriate personal protective equipment (PPE) when performing maintenance tasks.*

- Safety glasses
- Nitrile powder-free gloves
- Clothing protection (smock, jacket, etc.)

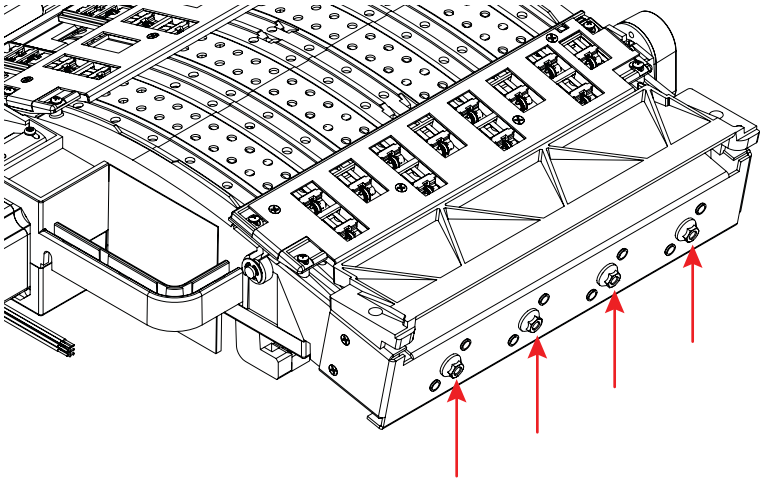
Required Tools and Supplies

Gather all supplies and tools before starting this process.

- 8 mm wrench, socket, or nut driver
- Transport Belt Tension Fixture TF1261 (optional)

Adjustment Guidelines

The four adjustment nuts are indicated below. Each nut adjusts the tension of the corresponding belt.



Use the following guidelines when adjusting the transport belt tension.

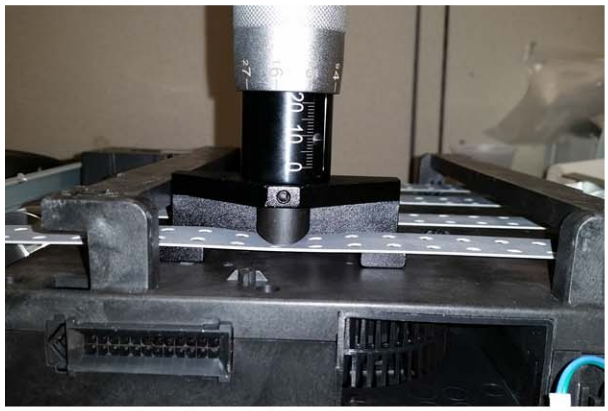
Note: *Only trained technicians should adjust belt tension.*

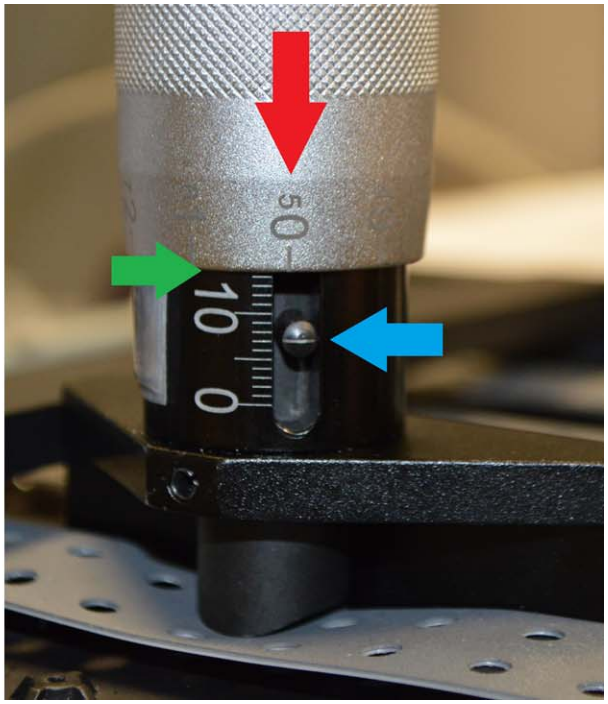
- Turn nuts clockwise in 1/4-turn increments to increase belt tension.
- Turn nuts counterclockwise in 1/4-turn increments to decrease belt tension.
- Increase tension on belts individually so that each belt can be pulled by hand and drive the other three belts without slipping.
- Do not overtension the middle two belts or the shaft may bend.

Adjustment Guidelines with TF1261

If the Transport Belt Tension Fixture (TF1261) is available, it can be used to accurately measure belt tension during adjustment.

Position TF1261 as shown in the image below. Adjust the silver dial to 14 (Green Arrow). The large 0 marker on the silver dial will be centered over the slot (Red Arrow). Adjust the belt tensioning nut until the reading on the gauge is 7 (Blue Arrow). Do this process for all four belts.





Adjusting the Transport Position

The transport position is calibrated at the factory for optimal media tracking. Field adjustments are possible if media tracking adjustments are required.

Personal Protective Equipment (PPE)

Caution: *In order to avoid personal injury, always use appropriate personal protective equipment (PPE) when performing maintenance tasks.*

- Safety glasses
- Nitrile powder-free gloves
- Clothing protection (smock, jacket, etc.)

Required Tools and Supplies

Gather all supplies and tools before starting this process.

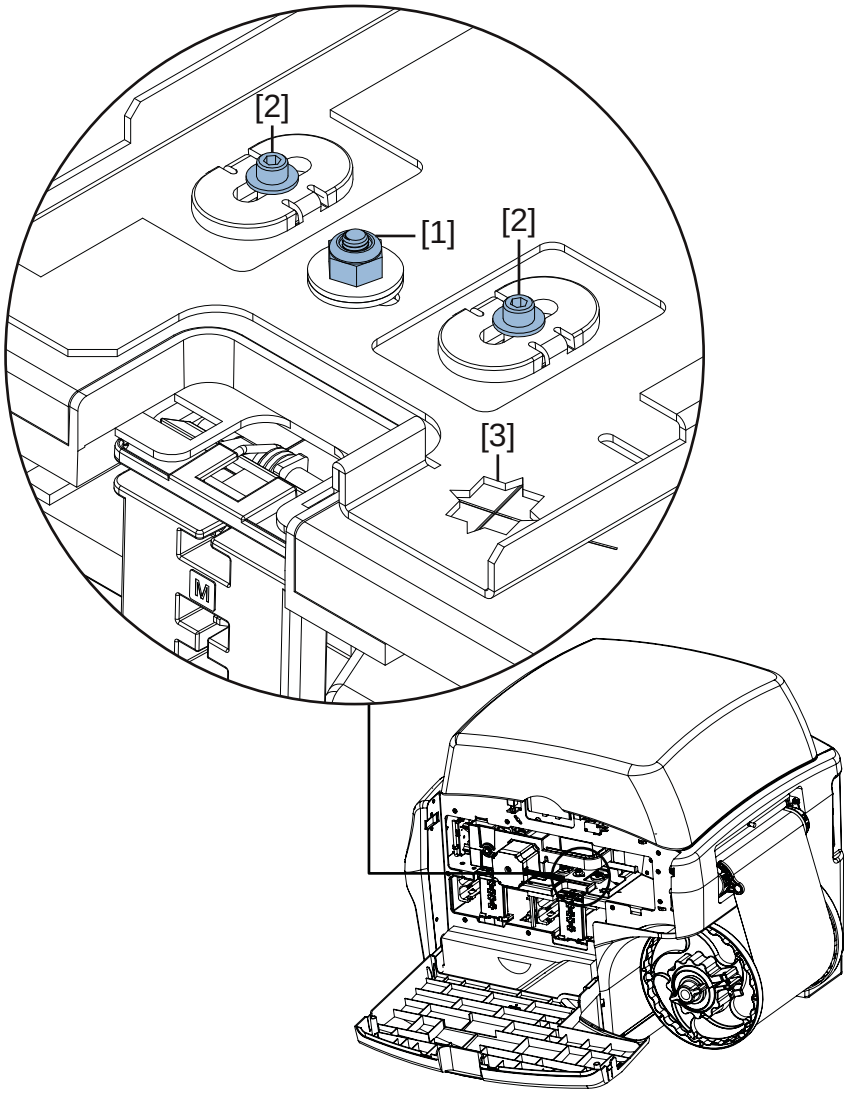
- 3/8” wrench
- 7/64” hex wrench

Adjustment Procedure

Use the following instructions to adjust the transport position. The printer should remain powered on during this procedure.

1 Open the main side door. Remove the transport unit from the printer.

2 Loosen the two socket head screws [2] with the 7/64” hex wrench.



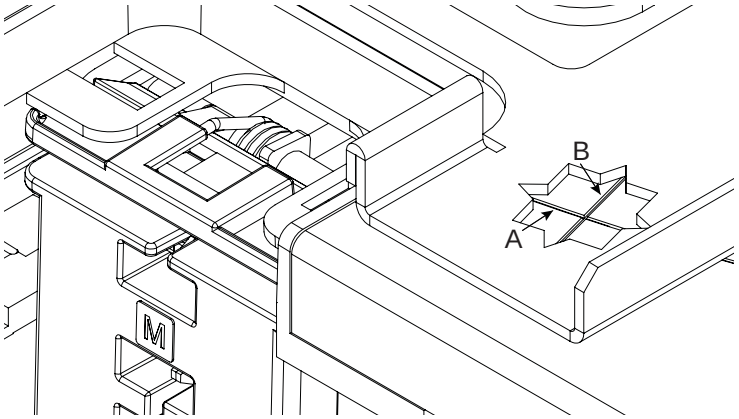
3 Reinstall the transport unit in the printer.

4 Load media and feed it forward to the media exit slot.

5 Loosen the transport tray locking nut [1] with a 3/8” wrench.

6 Manually adjust the position of the transport tray in small increments. Verify each adjustment by feeding media forward via the operation panel.

A cross-hair and corresponding window [3] can be used as a visual indicator when adjusting the transport tray position. The horizontal position indicator (A) and angularity indicator (B) are noted in the following illustration. When the transport tray is in the default position, the etched lines will match up with the corresponding points in the window.



Use the following guidelines when adjusting the transport position. These guidelines assume you are facing the side of the printer with the main side door open.

- If media is feeding into the fixed guide in the media exit slot, move the transport inward. If media is tracking away from the fixed guide, move the transport outward. In general, the transport bracket should be moved in the direction the media is tracking.
- If the media motion from entrance to exit is tracking away from the fixed guide, rotate the transport counterclockwise. If the media is tracking towards the fixed guide, rotate the transport clockwise. In general, the angularity should be adjusted to ensure that media is tracking parallel along the transport.

Achieving an optimal position may require gradual adjustments to both horizontal position and angularity.

7 Once media appears to be running straight and aligned to the transport, tighten the transport tray locking nut [1] with a 3/8” wrench.

8 Remove the transport unit from the printer.

9 Tighten the two socket head screws [2] with the 7/64” hex wrench.

10 Reinstall the transport unit in the printer.

Adjusting the Pinch Drive Belt Tension

The pinch drive belt tension is controlled by the position of the stepper mount bracket. You can move this bracket toward and away from the entrance pinch assembly to adjust belt tension as needed. It is secured into position by three locknuts.

Personal Protective Equipment (PPE)

Caution: *In order to avoid personal injury, always use appropriate personal protective equipment (PPE) when performing maintenance tasks.*

- Safety glasses
- Nitrile powder-free gloves
- Clothing protection (smock, jacket, etc.)

Required Tools and Supplies

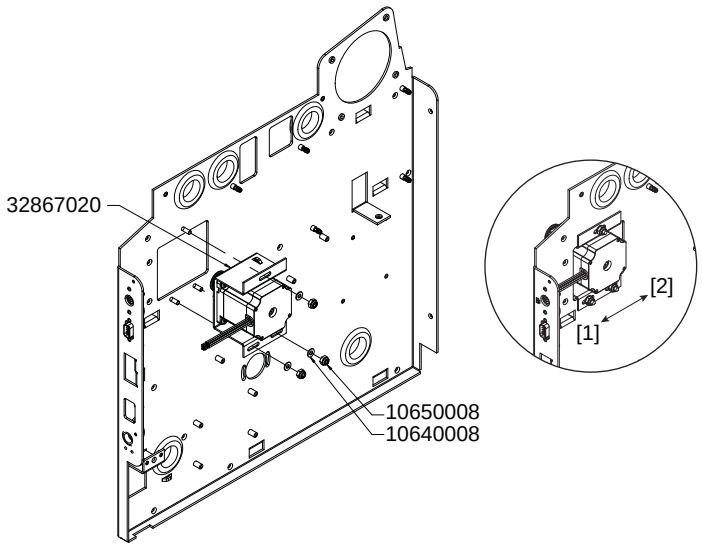
Gather all supplies and tools before starting this process.

- 11/32” wrench, socket, or nut driver

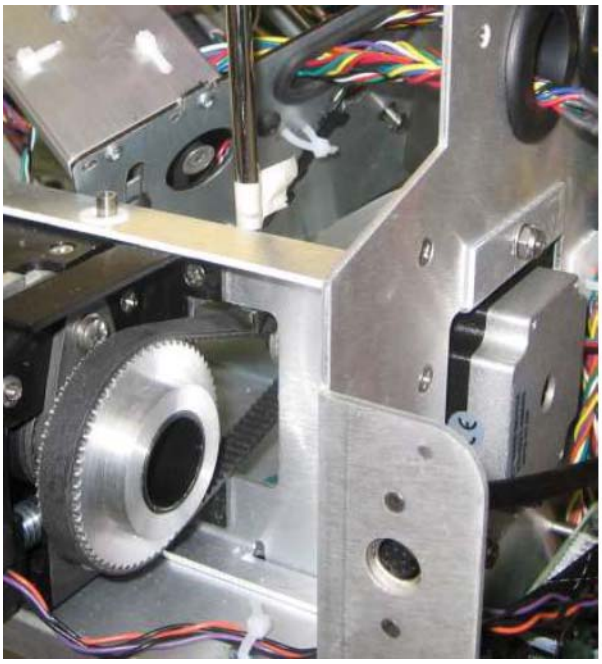
Adjustment Guidelines

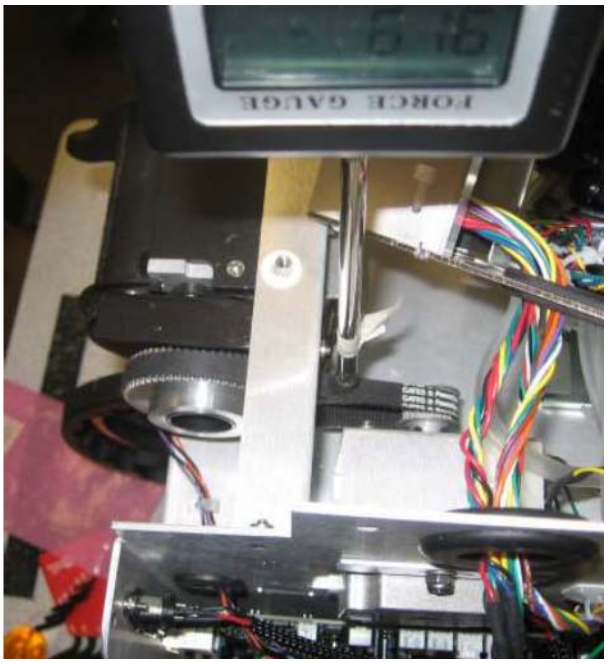
Slide the stepper mount bracket (32867020) away from the entrance pinch assembly (42916300), in order to set belt tension and re-secure the three locknuts (10650008) and washers (10640008).

In the diagram below, loosening [1] and tightening [2] directions are indicated.



Tension should be set to approximately 1500 grams for a 1/8” deflection at the point shown below.





Adjusting the Transport Belt Speed

The speed of the transport belt can be specified in units of clock ticks. *See “Setting the Transport Speed” on page 191.*

Adjusting the Mandrel Drive Belt Tension

The mandrel drive belt tension is controlled by the rotation of the mandrel motor in the mounting slots. The belt tension is factory set to approximately 800g for a 3/8” deflection at the center of the belt span.

Personal Protective Equipment (PPE)

Caution: *In order to avoid personal injury, always use appropriate personal protective equipment (PPE) when performing maintenance tasks.*

- Safety glasses
- Nitrile powder-free gloves
- Clothing protection (smock, jacket, etc.)

Required Tools and Supplies

Gather all supplies and tools before starting this process.

- Disposable towels
- Phillips screwdriver

Adjustment Procedure

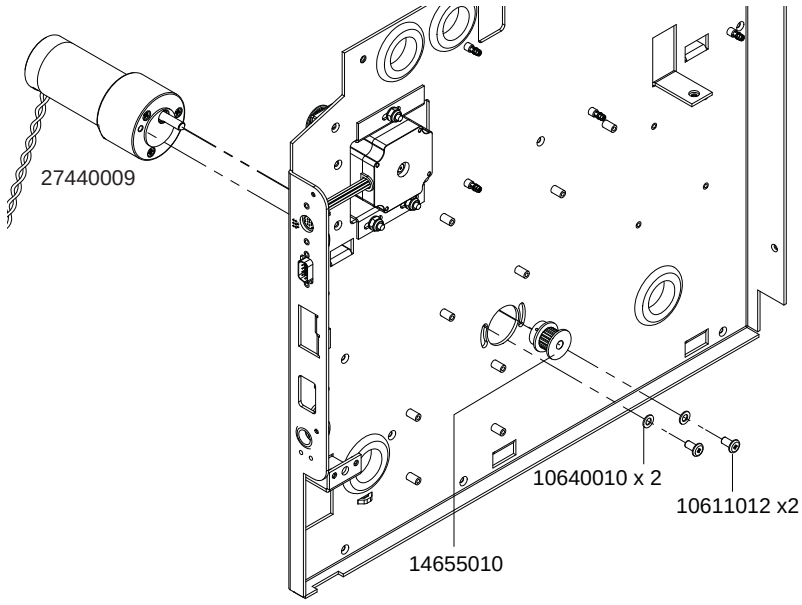
1 Turn the printer power off and disconnect the power cable from the power outlet.

2 Remove the top and side covers. *See "Removing the Top and Side Covers" on page 43.*

3 Remove the accessory cover. *See "Removing the User Interface and Accessory Covers" on page 45.*

4 Loosen the mandrel motor by partially unfastening the screws (10611012).

Note: *The following drawing illustrates the locations for the motor and its mounting screws. Do not fully disconnect the motor during this procedure. Additionally, the drive belt is not illustrated for clarity.*



5 Rotate the mandrel motor and re-tighten the screws (10611012) to set belt tension to approximately 800g for a 3/8" deflection at the center of the belt span.

Note: *If a force gauge is not available, test the tension by pinching the belt together in the middle of the span. The belts should come together with little pressure.*

Adjusting the Mandrel Alignment

The mandrel alignment with the fixed guide on the entrance pinch is controlled by adding or removing shim washers (14823000). The alignment is set at the factory but it can be adjusted in the field.

Personal Protective Equipment (PPE)

Caution: *In order to avoid personal injury, always use appropriate personal protective equipment (PPE) when performing maintenance tasks.*

- Safety glasses
- Nitrile powder-free gloves
- Clothing protection (smock, jacket, etc.)

Required Tools and Supplies

Gather all supplies and tools before starting this process.

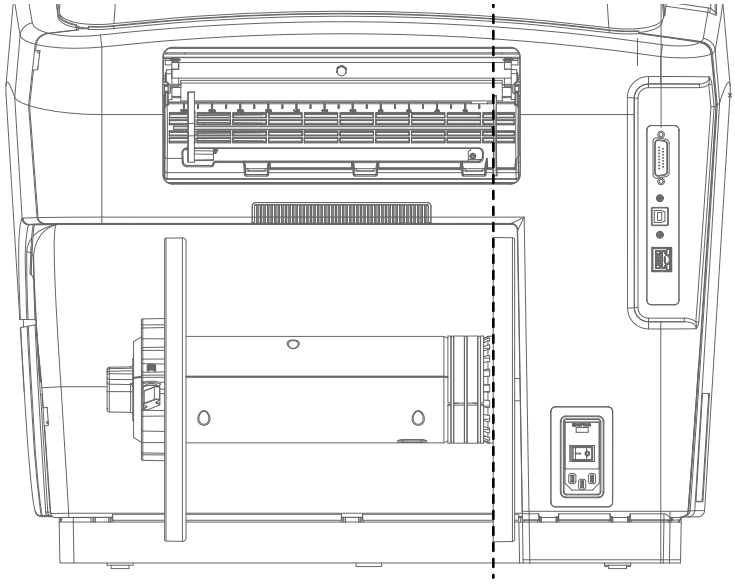
- Disposable towels
- Phillips screwdriver
- Hex wrench
- Alignment fixture TF1222 (flexible stainless steel ruler)

Adjustment Procedure

1 Turn the printer power off and disconnect the power cable from the power outlet.

2 Use TF1222 (flexible stainless steel ruler) as a straight edge and check the alignment of the mandrel with the fixed guide on the entrance.

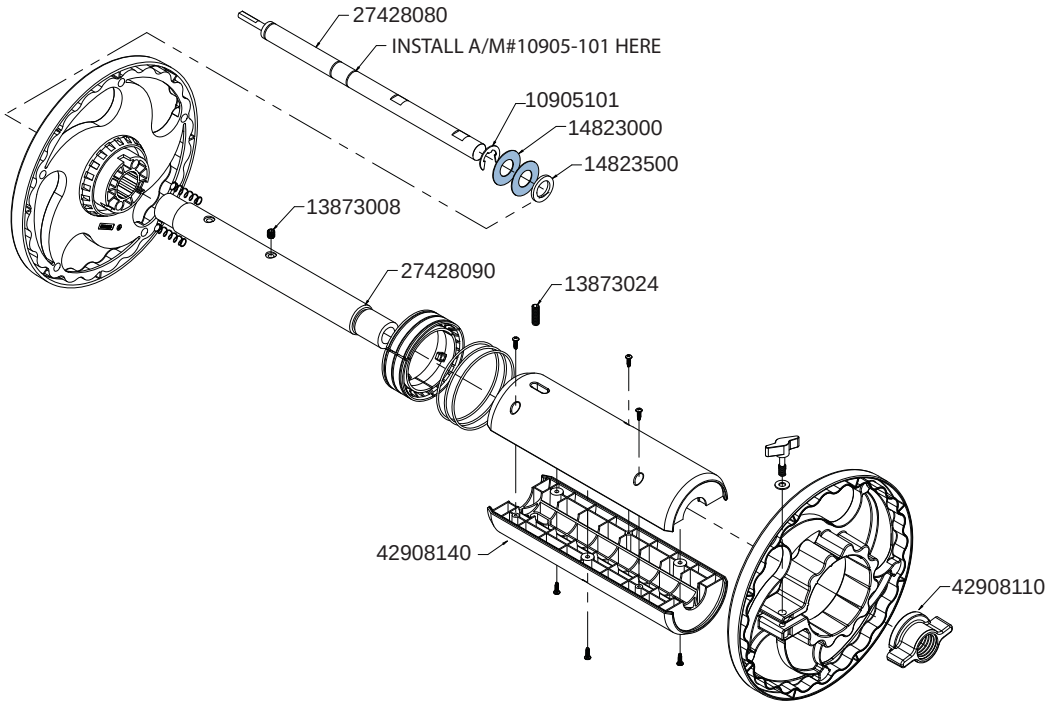
The inside edge of the fixed flange should be in line with the inside edge of the fixed media guide, as shown by the dashed line in the following illustration.



3 If adjustment is needed, continue with this procedure and note the required adjustment direction of the mandrel.

- Moving the mandrel left will require adding shims.
- Moving the mandrel right will require removing shims.

4 Partially disassemble the mandrel assembly to access the shim washers (14823000) as described in the following steps. Complete disassembly of the mandrel is not required. Refer to the following illustration during this procedure.



5 Remove the ¼”-20 x ¾” set screw (13873024).

6 Unscrew and remove the wing-nut (42908110).

7 Slide the mandrel core body (42908140) off the mandrel core (27428090).

8 Remove the ¼”-20 x ¼” set screw (13873008).

9 Slide the mandrel core (27428090) off the mandrel shaft (27428080).

10 Add or remove shims as needed.

- Remove shim washers (14823000) as needed from the mandrel shaft (27428080).
- Add shim washers (14823000) as needed over the mandrel shaft (27428080), such that they are flush against the 5/8” retention e-ring (10905101).

11 Slide the mandrel core (27428090) onto the mandrel shaft (27428080).

12 Install the ¼”-20 x ¼” set screw (13873008) on the flat of the mandrel shaft as shown. If the mandrel core is an earlier revision that leaves a 0.100” gap between the flange face and the end of the mandrel core, use a mandrel washer (14823500).

13 Slide the mandrel core body (42908140) onto the mandrel core (27428090).

14 Reinstall the wing-nut (42908110).

15 Reinstall the ¼”-20 x ¾” set screw (13873024).

16 Recheck the alignment using TF1222 (flexible stainless steel ruler) as a straight edge. Repeat the adjustment steps if necessary.

14 QL-800 Maintenance Utility

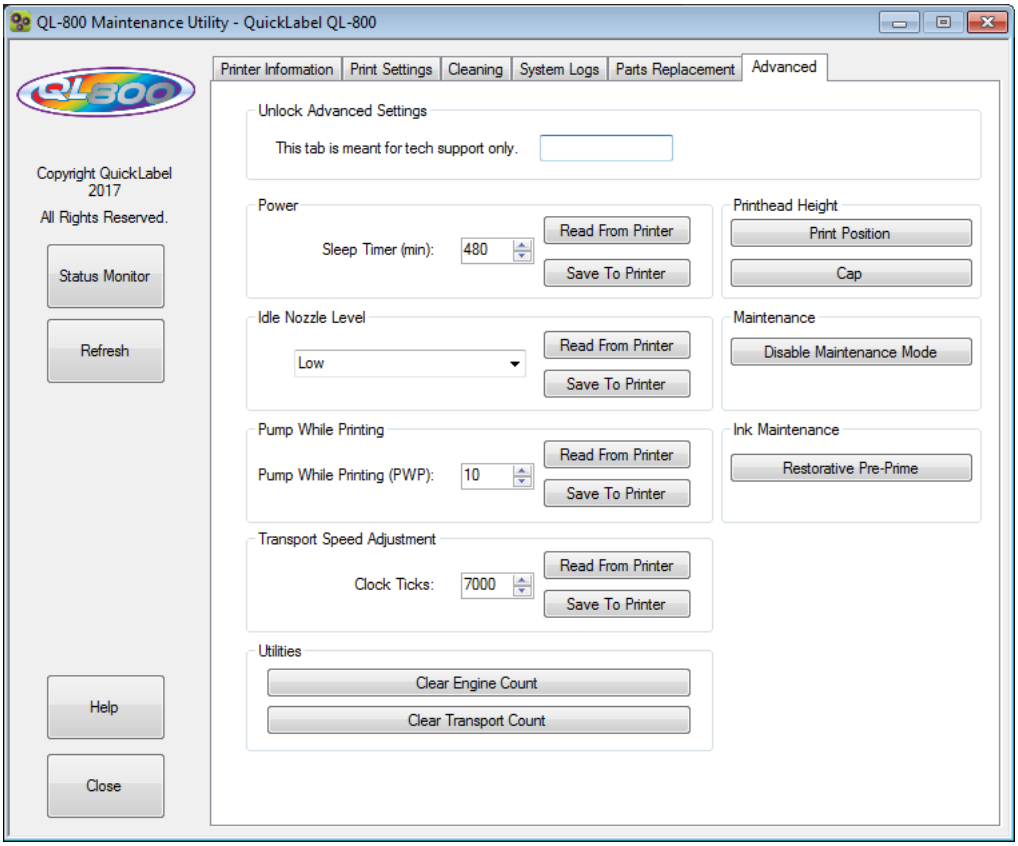
About the Maintenance Utility

The QL-800 Maintenance Utility is installed during the driver installation process. The utility allows you to view printer information and perform a variety of maintenance functions.

This guide describes service functions located in the Advanced tab. For details about functions located in other tabs, refer to the QL-800 User Guide.

Unlocking the Advanced Tab

By default, the Advanced tab will not display any functions. Enter the following code to unlock the Advanced tab: 27876



Changing Power Options

1. Unlock the Advanced tab in the QL-800 Maintenance Utility. *See "Unlocking the Advanced Tab" on page 189.*
2. To read the power timer settings from the printer, choose Read From Printer. The current settings will be displayed.
3. To set the number of idle minutes after which the printer will enter sleep mode, enter a number of minutes in the Sleep Timer field.
4. Choose Save to Printer.

Setting the Idle Nozzle Level

The idle nozzle level feature maintains printhead nozzle health by firing all nozzles at some minimal level while idle.

1. Unlock the Advanced tab in the QL-800 Maintenance Utility. *See "Unlocking the Advanced Tab" on page 189.*
2. To read the idle nozzle level setting from the printer, choose Read From Printer. The current setting will be displayed.
3. To set an idle nozzle level, select a value from the list.
   - **Low, Medium, or High** - Selects low, medium, or high idle nozzle levels respectively.
   - **Off** - Disables the idle nozzle level feature. The idle nozzle level feature affects all nozzles across the printhead, and there is the potential for ink to be jetted onto the transport when printing on media that is not full width. Disabling idle nozzle level prevents this situation.

     Note: *If you disable the idle nozzle level feature, it is recommended that mid-job auto-maintenance be set to 50 feet or less in the Cleaning tab.*
4. Choose Save to Printer.

Setting the Pump While Printing (PWP) Value

The PWP value controls the ink circulation pump rate while printing. By default, the rate is 10 rpm. This default is appropriate for most situations. However, the PWP value can be changed if needed.

1. Unlock the Advanced tab in the QL-800 Maintenance Utility. *See "Unlocking the Advanced Tab" on page 189.*
2. To read the PWP setting from the printer, choose Read From Printer. The current setting will be displayed.
3. To set a PWP value, enter a value in the Pump While Printing (PWP) field.
4. Choose Save to Printer.

Setting the Transport Speed

The speed of the transport belt can be specified in units of clock ticks. The transport belt speed should be checked and adjusted if needed after every 500,000 linear inches of media (approximately 100 rolls). You can view the transport usage count in the Printer Information tab in the QL-800 Maintenance Utility.

This adjusts the difference in speed between the pinch drive roller and the transport vacuum belts. Ideally these speeds would match but this is not possible in practice.

The transport speed will be set slightly faster to account for slip in the system. The more slip there is, the higher the setting will be. The amount of slip will vary based on several factors.

- Slip between transport drive pulleys and vacuum belts - This form of slip is less desirable and should be minimized.
  - Higher transport belt tension results in less slip between drive pulleys and belts.
  - Higher belt tension is possible with larger diameter drive shaft.
  - Earlier units have smaller diameter drive shafts. Higher tension in these units results in drive shaft flex which results in belts walking over pulley flanges.
- Slip between media and vacuum belts - This form of slip is more desirable. The system should be set up to allow for a small amount of this kind of slip.
  - Warped (cupped) exit star wheel brackets result in excessive star wheel pressure (tracks). Shim washers between star wheel brackets and mounting bosses were used to counteract this.
  - Leaving star wheel bracket mounting screws loose results in more slip. This is not advised because it is not repeatable or exact.
  - Weaker star wheel brackets are currently being prototyped which will allow for a reasonable amount of slip.

Use the following instructions to set the transport belt speed.

1. Unlock the Advanced tab in the QL-800 Maintenance Utility. *See “Unlocking the Advanced Tab” on page 189.*
2. To read the clock ticks setting from the printer, choose Read From Printer. The current setting will be displayed.
3. Feed media forward by holding down the feed forward button for several seconds. Watch for media jams. If the media does not jam or jolt, the transport belt speed is correct.

4 If necessary, adjust the speed using the Transport Speed Adjustment controls. The recommended speed range is between 4000 and 7000.

Before making adjustments, clear any jam and reload media if necessary.

- If the transport speed is too low, buckling will occur and result in a media jam or label peel off. Buckling is usually visible between the entrance guide and the first star wheel bracket.

  Increase the transport speed value by 500.

- If the transport speed is too high, the media jolts and results in a loud stuttering noise (this occurs while form feeding). This also may result in error 2017 while printing. This is more likely at 12 inches/second.

  Decrease the transport speed value by 500.

Choose Save to Printer.

5 Feed media again and watch for media jams or jolts. The goal is to adjust the belt speed to the point that media does not jam but does not pull excessively on the media. Verify the setting by running a 200' print job at 12 inches/second.

Using the Advanced Utilities Options

1 Unlock the Advanced tab in the QL-800 Maintenance Utility. *See "Unlocking the Advanced Tab" on page 189.*

2 Select a utility option.

- **Clear Engine Count** - Choose this option to clear the number of inches the print module has printed over its service life. If the module is replaced, the count should be reset using this feature.

- **Clear Transport Count** - Choose this option to clear the number of inches the transport has moved over its service life. If the transport is replaced, the count should be reset using this feature.

Setting the Printhead Position

The printhead position settings are currently only used during manufacturing.

1 Unlock the Advanced tab in the QL-800 Maintenance Utility. *See "Unlocking the Advanced Tab" on page 189.*

2 Choose Print Position to move the printhead to the position used during printing.

3 Choose Cap to move the printhead to the position used during capping.

Using the Advanced Maintenance Options

1. Unlock the Advanced tab in the QL-800 Maintenance Utility. *See "Unlocking the Advanced Tab" on page 189.*
2. Select maintenance option.
   - **Disable Maintenance Mode** - Choose this option to recover if the printer is not responding properly to the Maintenance Utility. For example, if cleaning is being performed and the printer connection is lost during cleaning, this feature can be used to exit maintenance mode without repeating the cleaning operation.

Using the Restorative Pre-Prime Option

If priming has been attempted and failed, use the restorative pre-prime feature to prepare the printer for priming.

Before using this procedure after a priming failure, confirm that all five ink channels are devoid of ink in the tubes visible underneath the top cover.

1. Unlock the Advanced tab in the QL-800 Maintenance Utility. *See "Unlocking the Advanced Tab" on page 189.*
2. Choose **Restorative Pre-Prime**. A progress indicator will be displayed, and the pre-prime process will begin. Wait until the pre-prime process has completed.
3. Prime the printer using the **After Moving** feature in the Cleaning tab of the QL-800 Maintenance Utility.

15 Misc. Procedures

Flushing Ink from the Printer

Use the following instructions to flush ink from the printer before shipping. Use this procedure in the following cases.

- Ink cartridge is forced into the wrong slot
- Incorrectly handling ink tubing
- Not following proper procedures before moving and shipping the printer

Personal Protective Equipment (PPE)

Caution: *In order to avoid personal injury, always use appropriate personal protective equipment (PPE) when performing maintenance tasks.*

- Safety glasses
- Nitrile powder-free gloves
- Clothing protection (smock, jacket, etc.)

Required Tools and Supplies

Gather all supplies and tools before starting this process.

- “Flush” Printhead (A clean printhead used only for this procedure)
- Flush Cartridge gang
- Buffer Box Pump Cartridge
- DI Water
- Sink
- Serial Debug Cable (TF1225)
- Serial Terminal Application (set to 38400 baud rate)

Flushing Ink

The following instructions assume you are flushing ink from a primed QL-800 printer.

1. Connect power cable, USB cable, and serial debug cable to printer.
2. Open the serial terminal application.
3. Power on the QL-800 and verify the serial connection.
4. Once the printer is idle, perform the Before Shipping procedure from the Maintenance Utility.

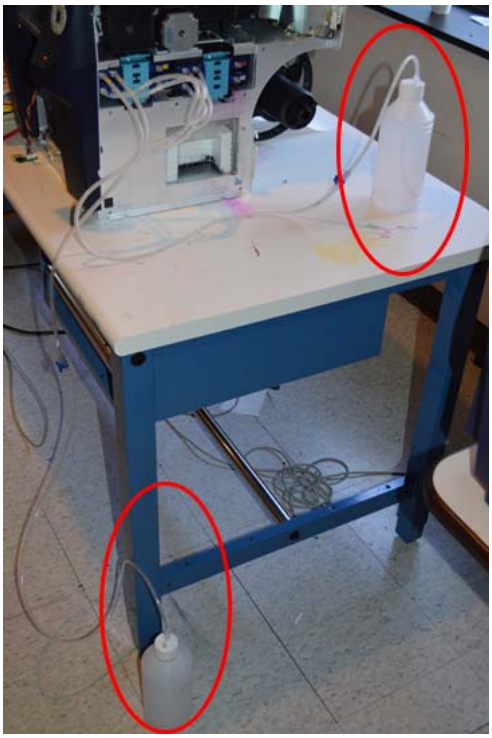
5 Remove the printhead. Install the flush printhead and close the latch.

6 Remove the ink cartridges.

7 Install the flush ink cartridges.

8 Connect the DI water tube harness to the inlet port on the flush cartridge gang. Make sure the DI water reservoir is filled with DI water. Make sure the valve is open to water and closed to air (see below).

9 Connect the waste tube harness to the outlet port on the flush cartridge gang. (Waste reservoir must be lower than DI water reservoir.)



10 In the Serial Terminal, type the following command: eco ids_valve openink

11 In the Serial Terminal, type the following command: eco run_pump 100 1000

Repeat this step as necessary until clean water is going into the waste tank. Verify that no ink appears in the tubes going into and out of the printhead.

12 Open the reservoir valve to air and close it water (see below).

13 In the Serial Terminal, type the following command: eco run_pump 100 1000

Repeat this step as necessary until only air is going into the waste tank. Verify that no water appears in the tubes going into and out of the printhead.

14 In the Serial Terminal, type the following command: eco ids_valve openair

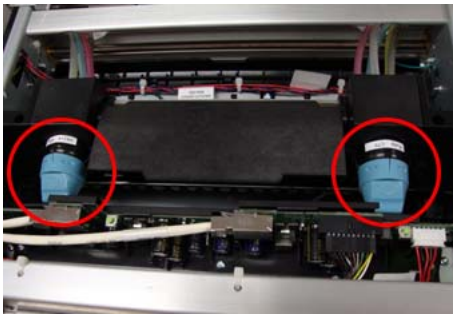
15 In the Serial Terminal, type the following command: eco run_pump 100 1000

16 In the Serial Terminal, type the following command: eco ids_valve closed

17 In the Serial Terminal, type the following command: eco ph_latch_open

18 Remove the flush printhead from the unit and close the latch.

19 Re-install revolver caps for shipping.



20 Remove cartridge flush gang and dump waste.

21 For each of the buffer boxes that ink appears in, perform the buffer box pump procedure detailed below.

22 Shut down the unit.

Buffer Box Pump Procedure

1 Insert the buffer box pump cartridge into the corresponding color channel where ink is in the buffer box.

2 Connect the cartridge tube to the sump pump. With the front panel removed, disconnect the input side of the sump pump (left side). Connect the cartridge tube.

3 In the Serial Terminal, type the following command: eco maint_activate 1

4 Monitor the pump until ink cannot pass through the pump any longer.

5 In the Serial Terminal, type the following command: eco maint_activate 0

6 Repeat to flush another channel if necessary.

7 When complete, disconnect the cartridge tube, reconnect the sump pump tube and rinse the cartridge tube.

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