Maintenance

1 Yearly Maintenance Tasks

Refer to the Alaris30 Preventive Maintenance Kit (DOC-04005) for the preventive maintenance task list for the Alaris30 printers.

2   Z-axis Cover Cleaning

The z-axis cover collects residue that falls inside the printer. Periodically, empty the cover to prevent buildup of foreign matter. The z-axis cover is behind the blower.

2.1   Tools

- Allen key set

2.2   Procedure

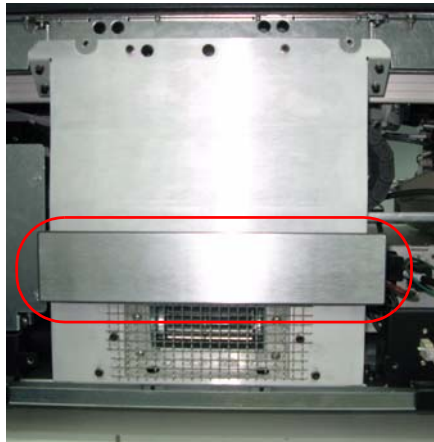1.   Remove the rear panel of the printer.

2.   Remove the filter from the blower.

Figure 1   Filter on Blower

3.   Open the pump panel (next to the blower).

Screw

Figure 2 Pump Panel—Closed

4.   Remove the two screws, which secure the guard to the blower and remove the guard.

Top screws
Side screws
Connector
Wing nuts
Guard screws
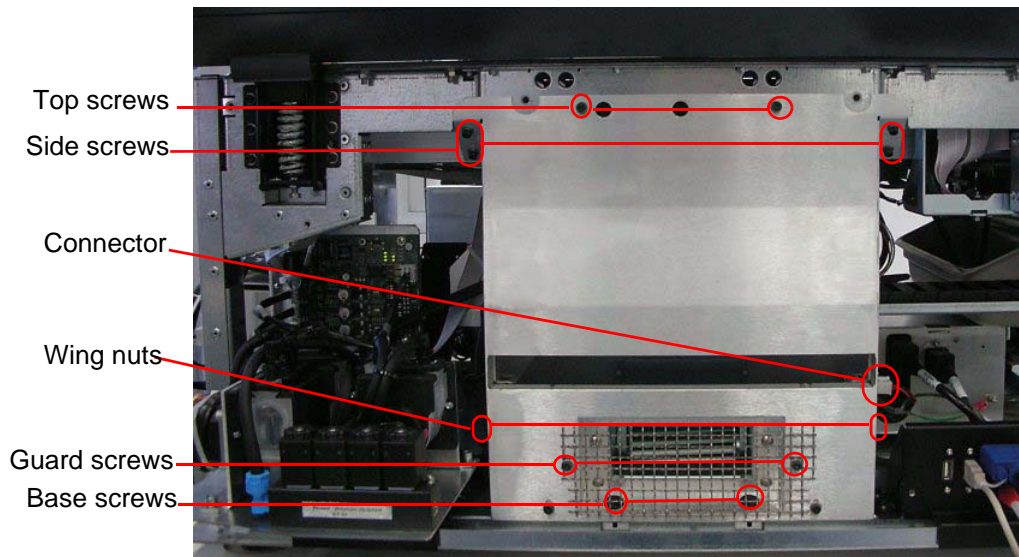Base screws

Figure 3 Blower

5.   Remove the rubber cover from each of the base screws.

6.   Remove the following screws, which secure the blower to the frame:

   •   Base screws

   •   Top screws

   •   Side screws (two screws for each side).

7.   Loosen the wing nuts (one on each side).

8.   Disconnect the connector.

9.   Lift the blower by the wing nuts and remove the blower from the printer.

10. Loosen the 4 thumb screws that fasten the z-axis cover to the printer and remove the cover.
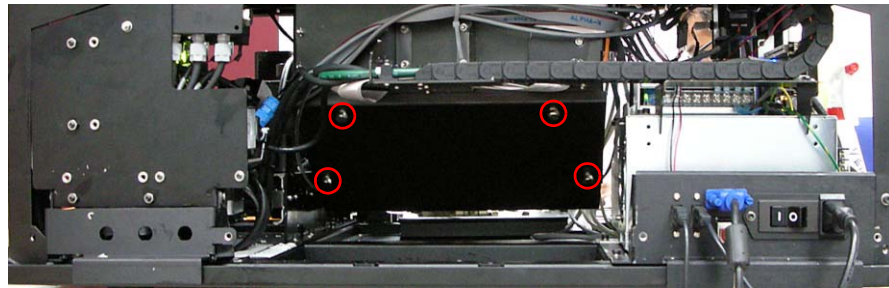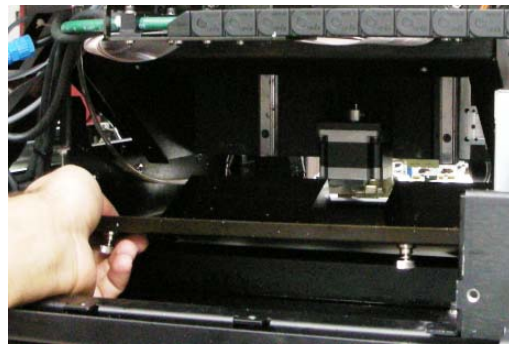

Figure 4 Z-axis Cover—Screws Circled

Figure 5 Remove Z-axis Cover

11. Discard (according to local regulations) any waste residue in the cover and wipe it clean with a paper towel.

12. Replace the z-axis cover and refasten the thumb screws.

13. Reattach the blower.

14. Insert the carbon filter into the blower

15. Close the pumps panel.

16. Reattach the back panel.

3   Leaks and Spills

As part of yearly maintenance, the service engineer checks for support or model material leaks. In particular, leaked printing material often collects in the reservoir underneath the blower.

⚠️ **Warning:** Be sure to read and understand "" on page 1.

3.1   Tools

- Paper towels
- Cleaning solution (isopropyl alcohol)

3.2   Procedure

1.   Remove the printer covers and the blower.

2.   Inspect for leaked printing material inside the printer. Be sure to look in the following locations:

   - Under the pumps panel
   - Under and around the check valves
   - Near the wiper motor (located underneath the build tray) and near the printer computer
   - Under the materials drawer
   - Under the blower

Figure 6 Reservoir Underneath Blower

Leak Cleaning 3.   If you detect a leak, do the following:

- Locate the source of the leak and repair it.

- For smaller leaks, soak up any leaked printing material using paper towels.

- For larger spills, follow the instructions in the Material Safety Data Sheet (MSDS) and any local regulations.

4.   Clean any residue using a paper towel wetted with cleaning solution (isopropyl alcohol).

5.   If people are in contact with the area (as compared to areas with electronics), rinse with soap and water, and then dry.

6.   Dispose of the waste in accordance with local regulations.

4   Model Cooling Fan Inspection

Inspection procedure to verify that the model cooling fans are operational.

The UV lamp and head driver cooling fans do not require inspection, since they contain speed sensors and their status is routinely checked by the printer.

4.1   Procedure

1.   Make sure the printer is powered ON.

2.   In the Alaris30 software, select Maintenance > Actuators and Sensors. The Actuators & Sensors Control window opens.
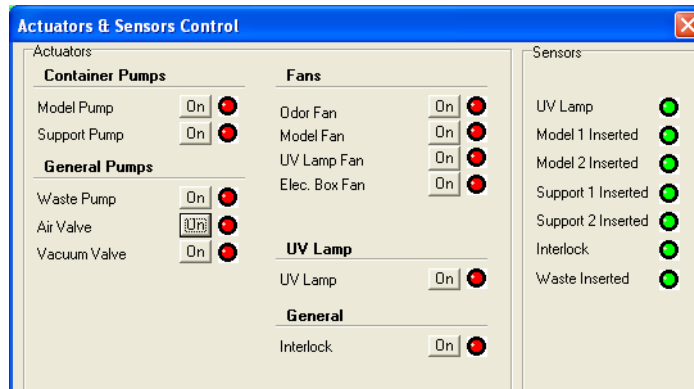

Figure 7 Actuators & Sensors Control Window

3.   In the Fans section, click On for the Model Fan (if the Model Fans are currently off).

4. Visually inspect the model cooling fans and verify the following:

- The blades are turning rapidly
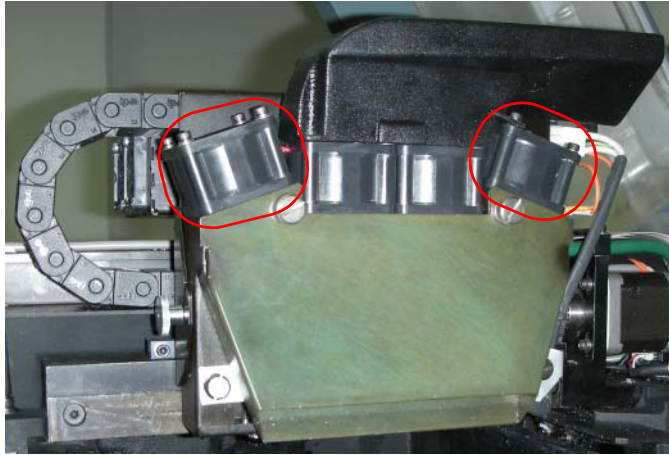- The fans are moving air and not clogged with dust.

Figure 8 Model Cooling Fans

5 Head Driver Interface Card Connector Cleaning

Proper cleaning of the connectors ensures good contact.

5.1 Tools

- Contact cleaner or isopropyl alcohol
- Non-shedding cleaning swab or cloth

5.2 Procedure

1. Turn off the printer.

2. Loosen the two thumb screws that secure the upper cover of the head driver compartment to the print block and lift off the cover.
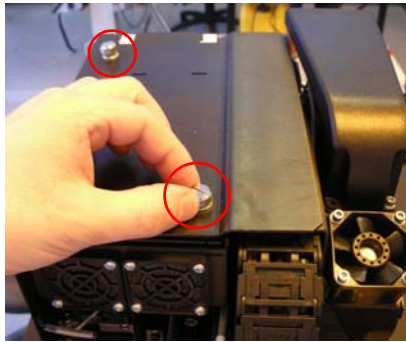

Figure 9 Upper Cover Thumb Screws

Model head interface card

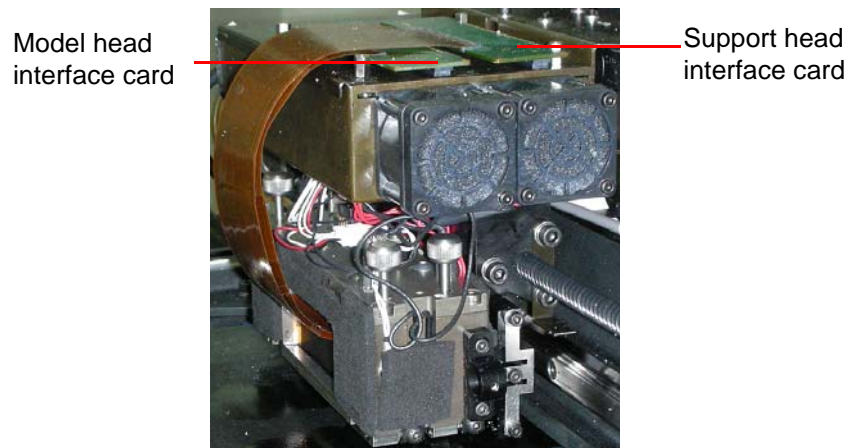Support head interface card

Figure 10 Print Head Interface Cards

3. Lift the support head interface card off its socket. (It may be necessary to lift the card using a rocking movement.)

4. Lift the model head interface card off its socket.

5. Apply contact cleaner or isopropyl alcohol to a non-shedding cleaning swab or cloth, and use it to clean the metal contacts in the two sockets.

6. Similarly clean the metal contacts of the interface cards.

7. Allow the contacts to air dry.

8. Reconnect the interface cards.

9. Place the upper cover back in its position on the print block and tighten its thumb screws

6 Electrical Cable Inspection

The electrical cables inside the printer may become dirty, move or work themselves loose from their connectors. As well, solvents in the printing material can attack and damage electrical insulation. Therefore, the service engineer must visually inspect the cleanliness, routing, and integrity of the cables.

6.1 Procedure

1. Inspect the cleanliness of the electrical cables inside the printer.

2. If a cable is dirty, clean it with isopropyl alcohol and air dry.

3. Inspect the routing of the electrical cables inside the printer.

4. If a cable has moved out of place, reposition it so that it will not be pinched by or impede mechanical parts. If necessary, use cable ties or another means to fasten it in position.

5. Inspect the integrity of the electrical cables inside the printer, and their insulation.

6. If a cable is damaged, replace it.

7 Needle Inspection & Replacement

To prevent leaks from the model and support material cartridges, regularly inspect the needle tips and ensure that they are straight. Replace needles with bent tips. When you replace a needle, inspect the needle dome and, if it is worn or torn, replace it too.

7.1 Tools

- Protective gloves
- Cleaning solution
- Needle Replacement Kit (KIT-04009-S)

The Needle Replacement kit contains:

- 2 needle domes (RBR-04016)
- 2 needles (MCP-04127)
- *Teflon®* roll (MSC-00094)
- A needle dome placement jig (JIG-04062)
- ¼ inch drive metric deep socket (D=10 mm L= 49 mm), (TOL-00119)

7.2 Procedure

1. Remove the material cartridges and examine the needle tips.

2. Replace needles with bent tips (see Figure 11).

Figure 11 Magnification of a Bent Needle Tip (Example)

3. Remove (using a plier) the needle dome from the base of the needle.

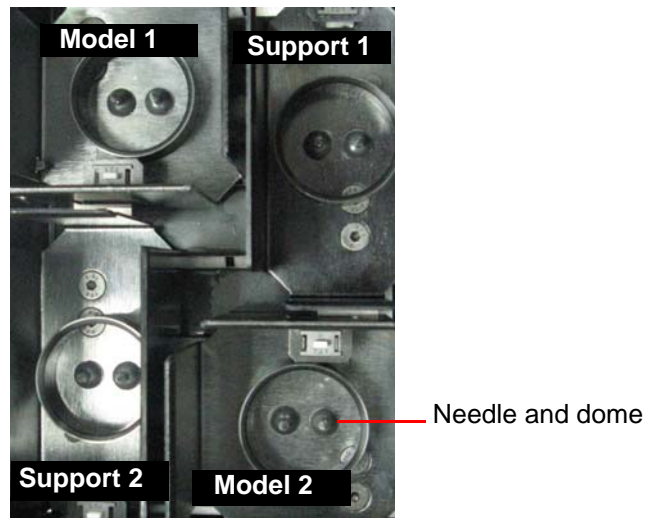⚠️ **Caution:** The needle tips are very sharp and can cause injury.

Figure 12 Cartridge Drawer

4. Using the socket, remove the needle.

Figure 13 Removing Needle with Socket

Figure 14 Socket and Needle

5. Remove the old thread-seal tape from the needle.

6. Wrap new *Teflon* tape twice around the threaded shaft of the new needle.

Figure 15 Wrapping Thread-Seal Tape

7. Put on protective gloves and clean the area in the drawer surrounding the needle.

⚠️ **Caution:** The needle tips are very sharp and can cause injury.

8. Using the socket, install the new needle.

9. Examine the needle and make sure it is straight and firmly attached to the cartridge drawer. Tighten as required.

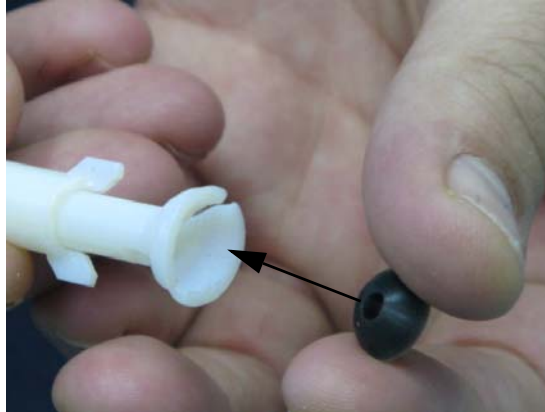10. Using the placement jig, attach a dome to the base of the needle.

Figure 16 Placing a Needle Dome in the Jig

Figure 17 Placing a Dome on a Needle

Calibrate Load 1. In the Alaris30 software, select Maintenance > Calibration. The
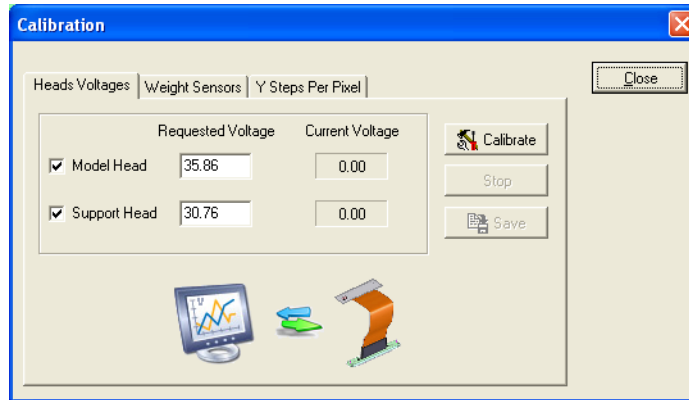**Cells** Calibration window opens.

Figure 18 Calibration Window

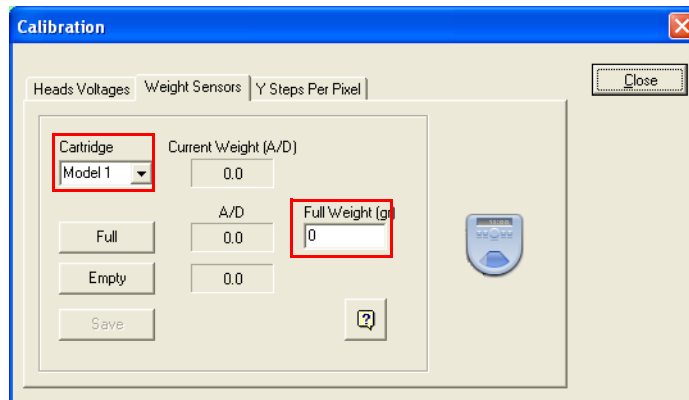2. Select the Weight Sensors tab.

Figure 19 Calibration Window—Weight Sensors Tab

3. Select Model 1 from the Cartridge list.

4. Remove the Model 1 cartridge from the cartridge drawer.

5. Click **Empty**.

6. In the Full Weight (gr.) text box, enter the known weight of the test
   load in grams.

   Test load is a known weight ± 15 g. The test load should weigh about
   2 kg.

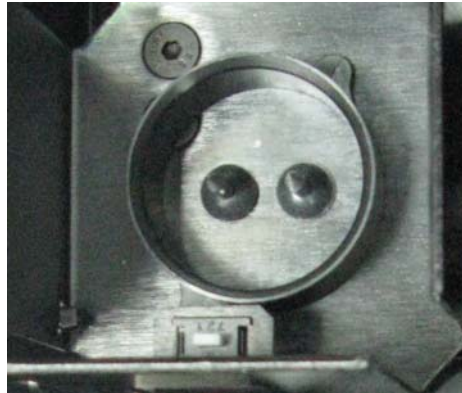7. Place the test load into the Model 1 compartment.

Figure 20 Model 1 Compartment

8. Click **Full** and then click **Save**.

9. Repeat this procedure for the Model 2, Support 1 and Support 2 load cells.

10. Reinstall the material cartridges.

8 UV Lamp

When the intensity of a UV light drops below a usable level, replace the UV lamp.

8.1 Procedure

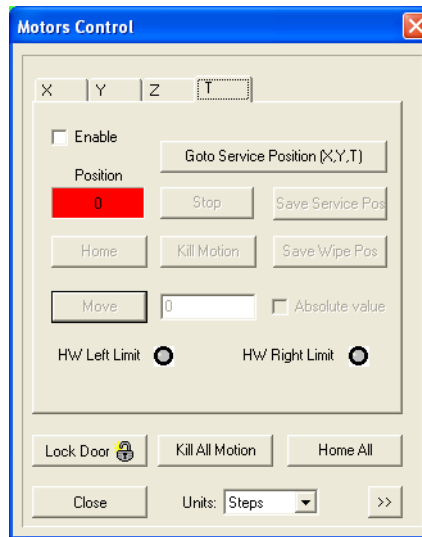1. In the Alaris30 software, select Maintenance > Motors Control. The Motors Control window opens.

Figure 21 Motors Control Window
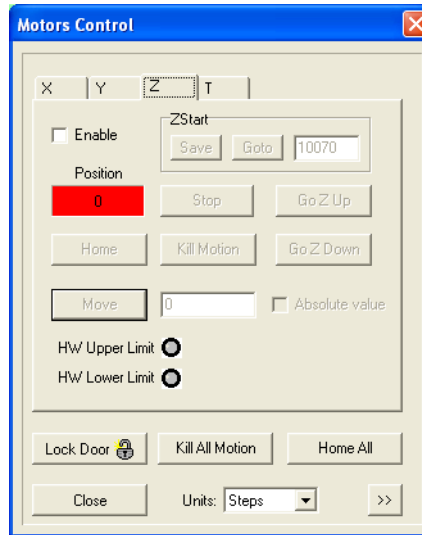
2. Select the Z tab.

Figure 22 Motors Control Window—Z Tab

3. If the Z-axis is disabled, select the Enable check box.

4. Click **Home**.

5. Click **Go Z Down**.

6. Click **Close**.

7. Shutdown the Alaris30 software.

8. Shutdown the Alaris30 computer.

9. Turn off the printer.

10. Open the cover of the printer.

Warning: Make sure that the UV lamp is not hot.

11.   Disconnect the power connection to the UV lamp.

Figure 23 Disconnect Power Cable to UV Lamp

Do not disconnect the power connection to the cooling fans.

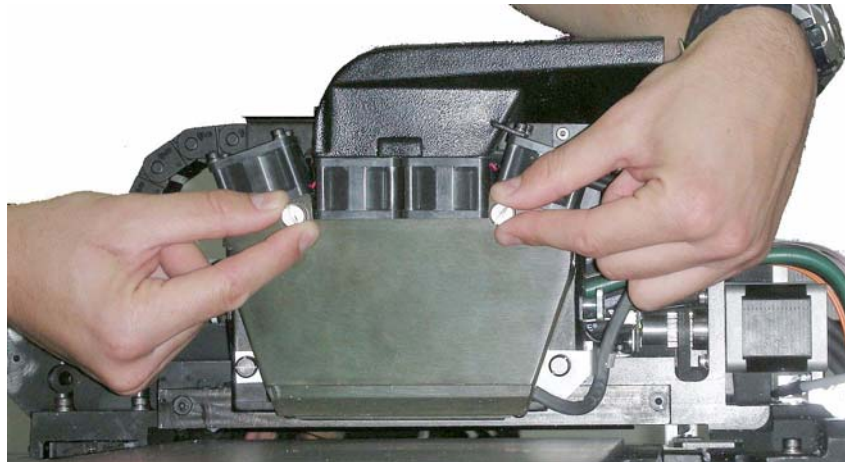12.   Loosen the screws securing the UV lamp cover and remove the cover.

Figure 24 Loosen UV Lamp Cover Screws

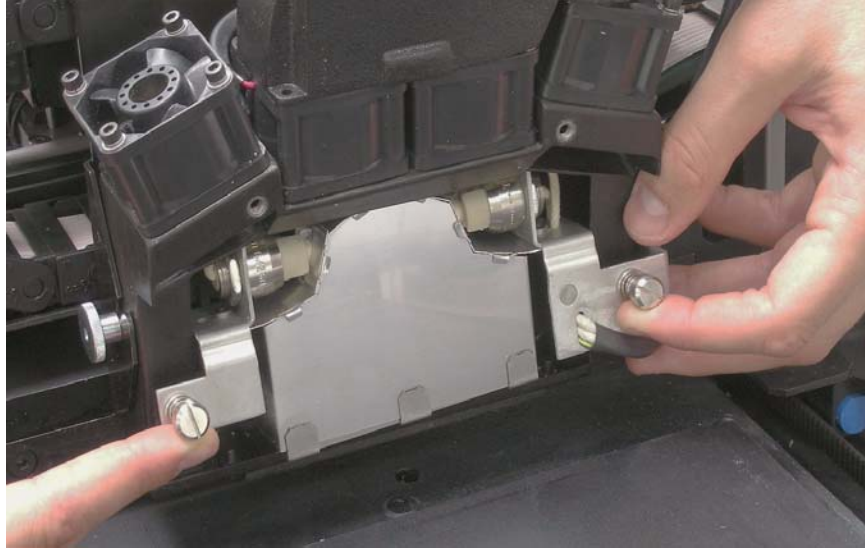13. Loosen the two screws that secure the lamp housing.

Figure 25 UV Lamp Housing Screws

14. Remove the lamp housing by raising and tilting it slightly while pulling it out of the printing assembly.

15. Discard the old reflector and lamp (according to local regulations).

16. Ensure that the black strip is present along the head side of the new UV lamp/reflector unit and the internal surface of the unit is clean.

17. Insert the new UV lamp/reflector unit into the housing and tighten the two screws to secure it.

18. Put the lamp cover back on and tighten the securing screws.

19. Reconnect the power connection to the UV lamp.

20. Turn on the printer.

21. Start the Alaris30 software.

22. Check that the tray is clear.

23. Close the cover of the Alaris30 printer.

24. Press F5 (Go to Tray Upper Position). The following Confirmation box opens.
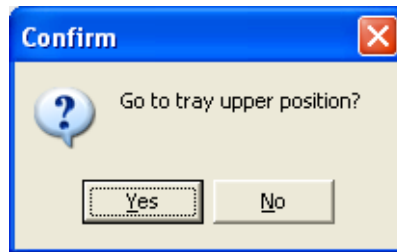

Figure 26 Confirm Dialog Box—Go to Tray Upper Position

25. Click **Yes**.

26. Continue with the UV Lamp calibration procedure on page 26.

9   Support and Model Material Filters

Material filters gradually become clogged and must be periodically replaced to prevent blockage.

9.1   Tools

- Screwdrivers
- Protective gloves and glasses
- Disposable container or absorbent paper
- Material filters

9.2   Procedure

1. Remove the rear panel of the printer.

2. Loosen the screw fastening the pumps panel to the printer, and open the pumps panel.

Screw

Figure 27 Pumps Panel

3. Put on protective gloves.

4. Put on protective glasses. This is prevent any possibility of printing material splashing into the eyes.

5. Place a container (or piece of absorbent paper) underneath the material filters to catch any printing material that spills while the tubing is open.

For each of the material filters, do the following:

6. Unscrew the tubing from both sides of the old filter.

   Identify the tube connected to the INLET side of the filter. This tube is to be connected to the INLET side of the new filter.

Figure 28 Material Filter—Inlet Side

7. Discard the old filter (according to local regulations).

8. Tightly screw the tube fittings onto the filter. Be sure that the INLET tube is connected to the INLET side of the filter.

9. Print a test model and check the material filter area for any leaks. If there are leaks, tighten the tube fittings on the filter connectors until they seal.

10. Clean up any spilled model and support material with a paper towel and discard (according to local regulations).

10 Pump Tubing

The model and support material pumps use a "peristaltic" action to pump the printing material to the printing head—the pump action squeezes the a length of tubing within the pump progressively and this action pumps the printing material. The squeezing action crushes and gradually deforms the pump tubing, which must therefore be periodically replaced.

To replace the tubes in the model and support pumps, it is necessary to remove the waste pump from the pump panel.

The pump tube replacement procedure consists of the following main steps:

- Removing the waste pump from the pump panel.
- Replacing the model pump tube
- Replacing the support pump tube.
- Replacing the waste pump tube.
- Reattaching the waste pump to the pump panel.

10.1 Tools

- Norprene® 3/16'' ID 5/16'' OD tubing (PNM-01006-S)
- Cutting pliers
- 6 cable ties
- Allen key set
- Protective gloves and glasses
- Cleaning cloths

10.2 Procedure

1. Cut three 18 cm (7.1 in) lengths of the Norprene tubing for use as replacement tubes.
2. Switch off the printer.
3. Remove the rear panel of the printer.

4. Loosen the screw fastening the pumps panel to the printer, and open the pump panel.
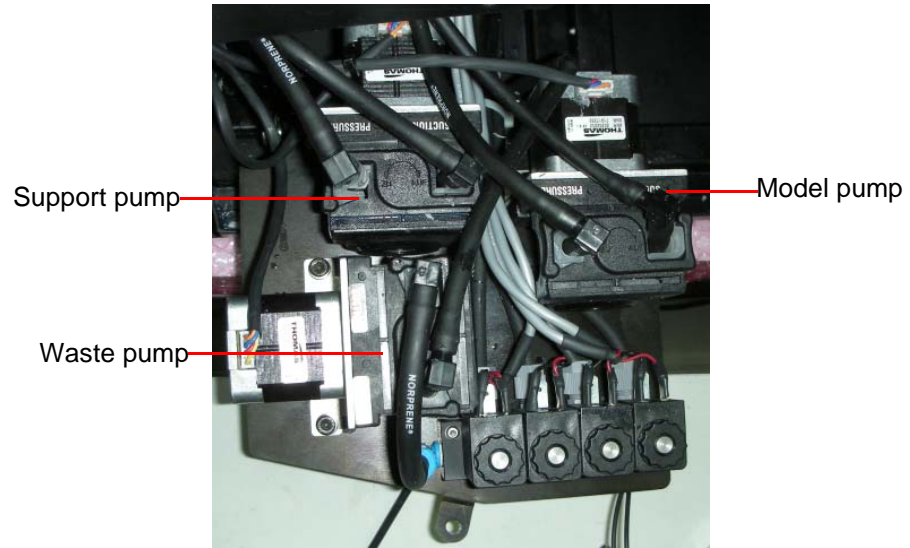

Support pump ——— ——— Model pump

Waste pump ———

Figure 29 The Pump Panel

5. Put on protective gloves.

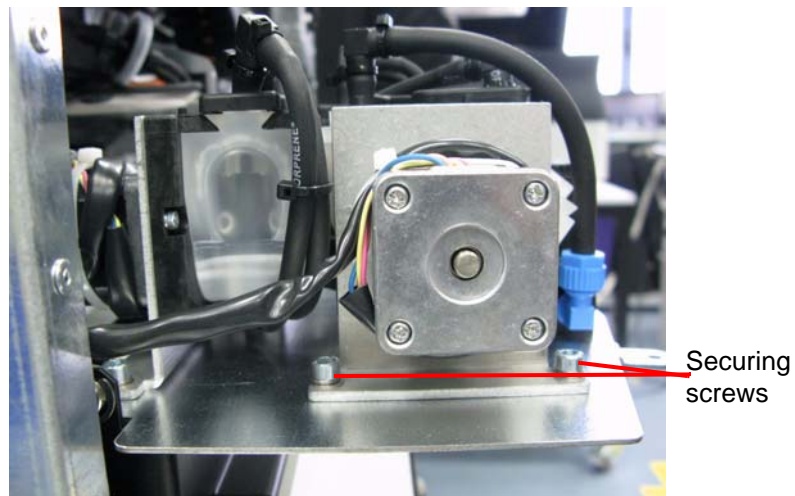6. Using a M3 Allen key, remove the screws that fasten the waste pump to the pump panel.

Securing screws

Figure 30 Pump Screws

7. Open (turn) the clip that locks the tube cover to the waste pump.
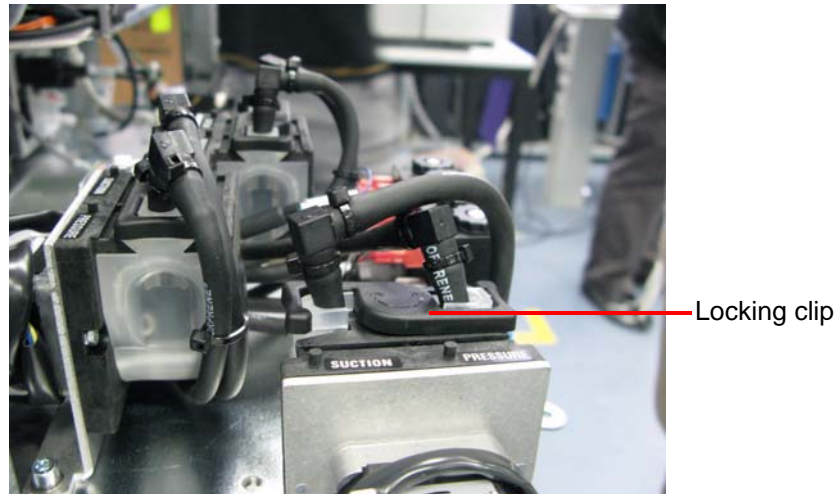

Locking clip

Figure 31 Waste Pump Locking Clip

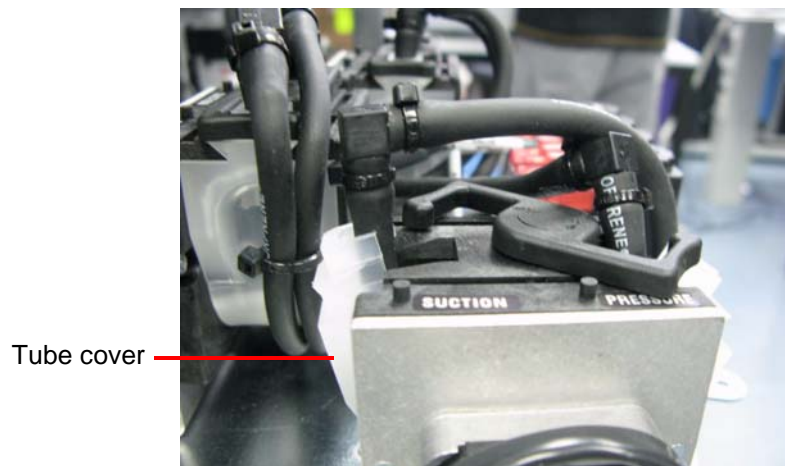8. Remove the plastic tube cover from the pump.

Tube cover

Figure 32 Removing the Tube Cover

9. Remove the waste pump from the pump panel.

Replacing the Model and Support Pump Tubes

10.   Open (turn) the clip that locks the tube cover to the model pump.
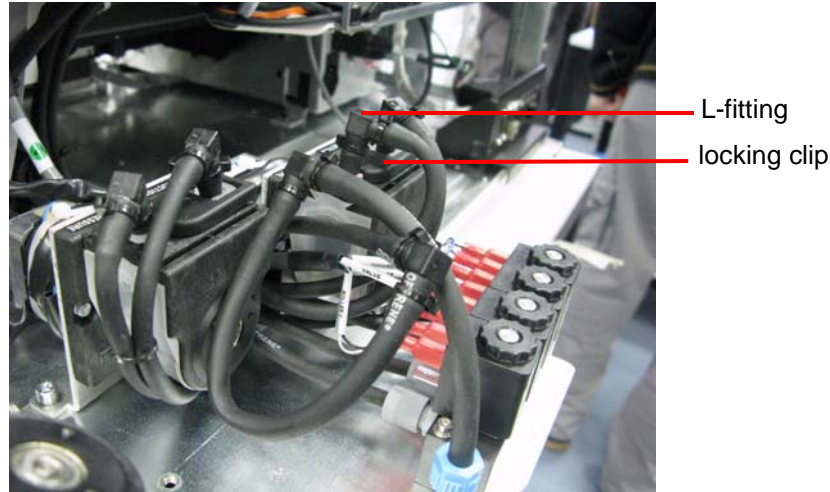

— L-fitting

— locking clip

Figure 33 Model Pump Locking Clip

11.   Remove the plastic tube cover from the model pump.

12.   Remove the two cable ties securing the model pump tube to the L-fittings.

13.   Disconnect the ends of the tube from the two L-fittings and discard the old tube (according to local regulations).

14.   Attach a new tube to the tube cover.

Figure 34 New Tube Attached to a Tube Cover

15.   Reattach the tube cover with the new tube to the model pump.

16. Close the clip that locks the tube cover to the model pump.

17. Attach the ends of new tube to the two L-fittings and secure each end with a cable tie.

Make sure you connect the pressure and suction tubes correctly. The tube from the valves connects to the suction inlet and the tube from the cartridge drawer connects to the pressure outlet.

18. Clean up any spills and leaks from the tubes.

19. Repeat this procedure from Step 10 for the support pump tube.

20. Repeat this procedure from Step 12 for the waste pump tube.

21. Make sure the pump panel is clean.

22. Secure the waste pump with two screws to the pump panel.

23. Close the pump panel and fasten the screw that secures the panel closed.

24. Reattach the rear cover of the printer.

11 Wiper Assembly Servicing

A rubber wiper blade removes excess material from the print heads after the purge sequence. This is done automatically before each print job, and performed manually during maintenance tasks.

The following maintenance tasks are required:

- Inspect the wiper blade, if the wiper is damaged or worn, replace it.
- After replacing the wiper blade, seal the front end of the wiper waste collector (bath) and area surrounding the wiper blade with paste.

11.1 Tools

- Isopropanol (IPA—isopropyl alcohol) or ethanol (ethyl alcohol)
- Disposable protective gloves
- An Objet-supplied cleaning cloth or equivalent
- A spare wiper blade
- Molykote® DX Paste
- A M2.5 Allen key

11.2 Procedure

Cleaning the Wiper

1. In the Alaris30 software, select Options > Wizards > Wiper Cleaning. The Clean Wiper Wizard window opens.

Figure 35 Clean Wiper Wizard Window

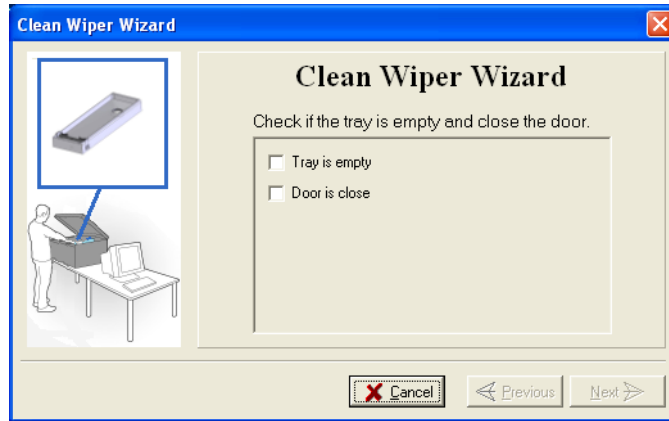2. Close the printer cover and click **Next** in the wizard screen.

Figure 36 Clean Wiper Wizard—Check Boxes

3. Check that the tray in the Alaris30 printer is clean and then close the printer cover.

4. Select both the check boxes on the Clean Wiper Wizard screen and click **Next**.
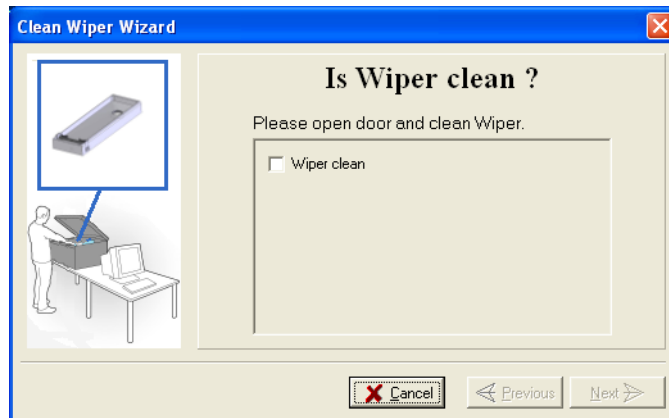
5. When the Is Wiper Clean window opens, open the cover.

Figure 37 Is Wiper Clean Window

6. Put on the cleaning glove.

Replace the Wiper Blade   7.   With the M2.5 Allen key, loosen (but do not remove) the screw securing the wiper blade.
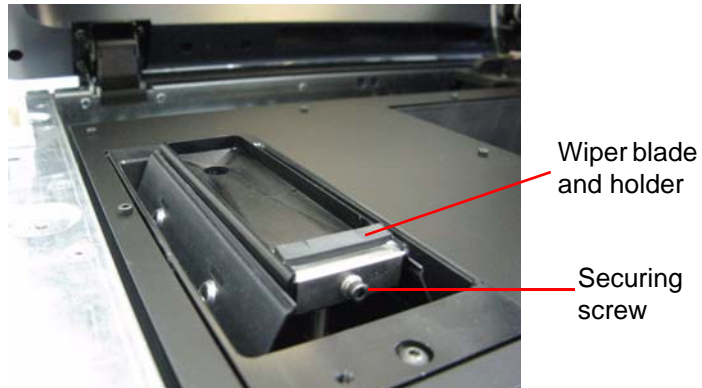

Wiper blade and holder

Securing screw

Figure 38 Wiper Blade & Wiper Waste Collector

8.   Remove the wiper blade unit.

Apply Paste to the Wiper   9.   Push the washers on the wiper blade's securing screw and washer away from the wiper waste collector (bath) so they do not get covered with paste.

10.   Using a flat-headed screwdriver, apply paste onto the entire area where the wiper blade unit sits on the wiper waste collector, including the front corners of the wiper waste collector as shown in Figure 39 and Figure 40.
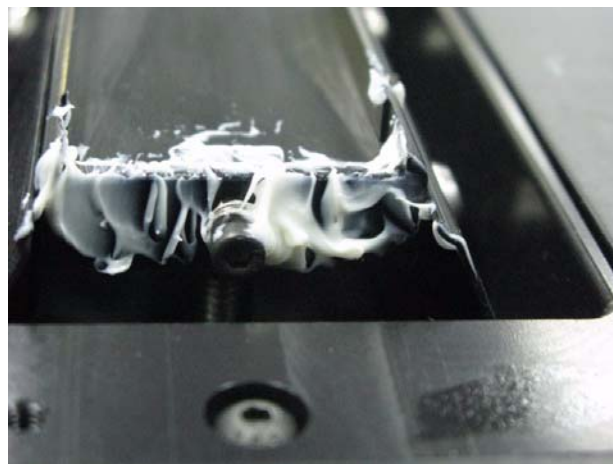

Figure 39 Wiper Waste Collector with Paste—Front View

Figure 40 Wiper Waste Collector with Paste—Side View

11. Inspect the wiper blade.

    If the wiper blade is scratched, torn or worn, or if you cannot clean it completely, replace it.

    To ensure that model quality does not decrease over time, you should replace the wiper at least once a month, even if you do not notice any wear.

12. Apply paste to the metal part of the wiper blade that attaches to the wiper waste collector.

13. Insert the wiper blade, making sure that it is level, and tighten the securing screw.

14. Using a generous amount of cleaning fluid and the cleaning cloth, remove any material and excess paste remaining on the wiper blade and the wiper waste collector.
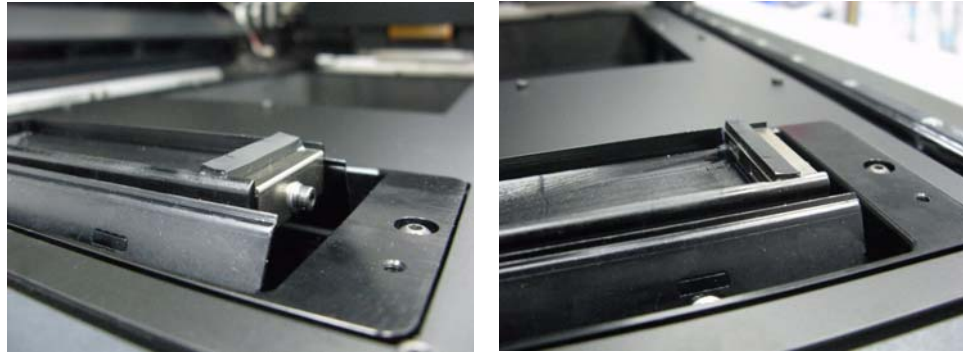

Figure 41 Clean Wiper Waste Collector

15. In the wizard window ("Is wiper clean?") (see Figure 37), select the confirmation check box and click **Next**. A Clean Wiper Wizard window opens.
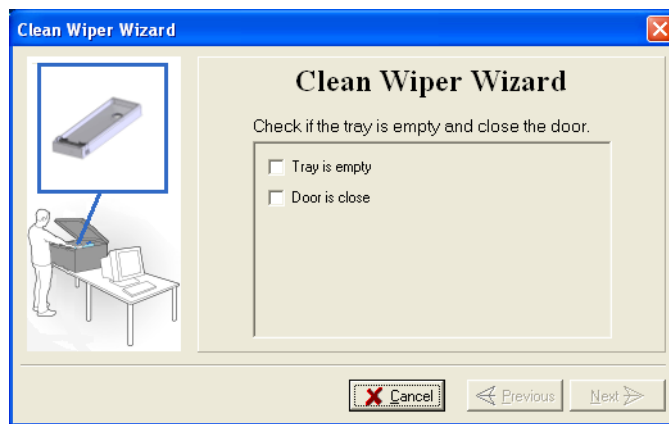

Figure 42 Clean Wiper Wizard—Finishing Up

16. Make sure that you have removed all tools and cleaning materials from the printer, and close the cover.

17. Select both the check boxes on the Clean Wiper Wizard window and click **Next**.

Figure 43 Wiper Cleaning—Final Screen

18. Click **Done** to close the wizard.

19. Select Options > Execute Purge Sequence.

20. Check that the wiper operates properly.

12   Roller Assembly Servicing

The roller assembly must be serviced every year or if damage is suspected. The following steps are required:

- "Remove Roller Waste Collector Assembly" on page 39
- "Remove Old Roller Knife" on page 42
- "Install New Knife on Clamp" on page 44
- "Check Roller Surface" on page 45
- "Smoothing the Roller Surface" on page 46
- "Clean Roller Surface" on page 46
- "Clean Roller Waste Collector" on page 46
- "Closing the Roller Waste Collector Assembly" on page 47
- "Reinstall the Roller Waste Collector Assembly" on page 48

12.1   Tools

- Roller Knife
- Screwdriver
- M3 Allen key
- Cleaning wipes
- WD40

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12.2 Procedure

Remove Roller Waste Collector Assembly

1. In the Alaris30 software, select Options > Wizards > Heads Cleaning. The Clean Heads Wizard window opens.

Figure 44 Clean Heads Window

2. Close the printer cover and click **Next**. The next wizard window opens.

Figure 45 Clean Heads Window

3. Select the two check boxes to confirm that the tray is empty and the cover is closed

4. Click **Next**. The build tray moves down and the print block moves over the center of the build tray.

5. When the following window opens, open the cover.

Figure 46 Are the Heads Clean Window

⚠️ **Warning:** The print head orifice plate (bottom surface) and the UV lamp may be hot. Do not touch them with your bare hands, and proceed with caution.

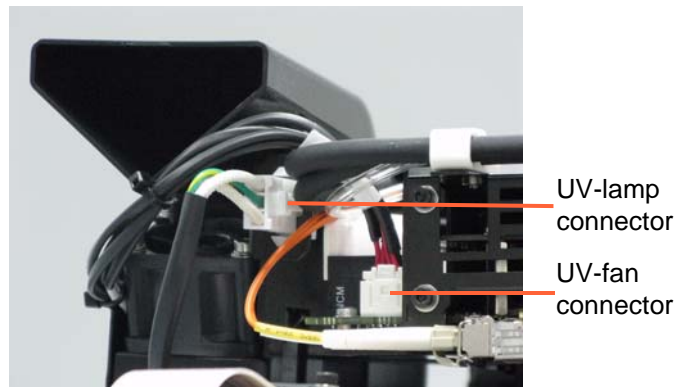6. Disconnect the UV lamp power and ventilation connections from the printing assembly.

UV-lamp connector

UV-fan connector

Figure 47 UV Lamp/Fan Connections

7. Loosen the two side screws securing the UV lamp assembly, and remove the UV lamp assembly.

    This permits access to the roller waste collector assembly.

Figure 48 UV Lamp Assembly Securing Screws

8. Put on protective gloves.

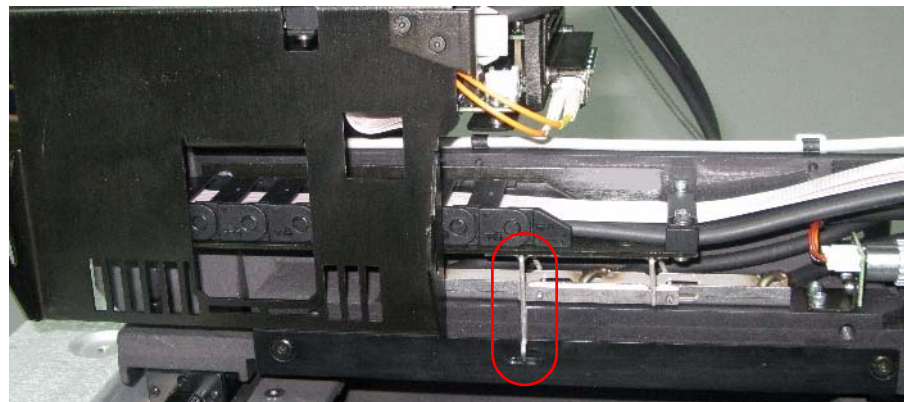9. Pull the print block all the way to the front, exposing the roller waste collector locking pin.

Figure 49 Roller Waste Collector Locking Pin

10. Lift the locking pin's hook and turn it counter-clockwise, to raise the drain-tube bracket from the roller waste collector.
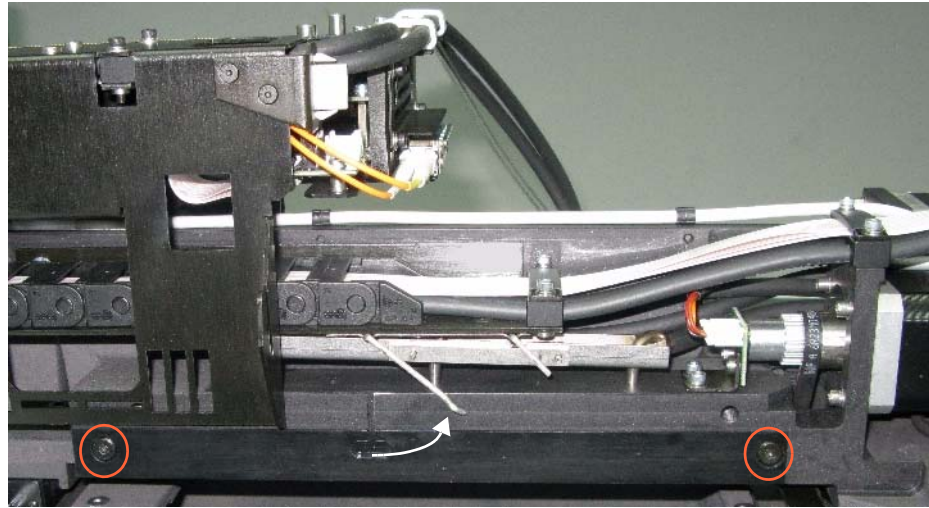
Confidential and Proprietary Information

Figure 50 Raised Drain-Tube Bracket

11. Place your hand under the roller waste collector to support it, and use a M3 Allen key to loosen the screws

Remove Old Roller Knife

12. Insert the tip of a screwdriver into the end of the roller waste collector assembly between the knife clamp and the knife and carefully pry apart (separate) the knife clamp from the roller waste collector.

Figure 51 Removing the Roller Knife

Figure 52 Prying Apart the Clamp from the Roller Waste Collector

The roller knife is sandwiched between the knife clamp and the roller waste collector. Strong magnets fasten the knife between the clamp and the roller waste collector.

13.   Remove the old roller knife from the knife clamp.

Figure 53 Removing the Roller Knife from the Knife Clamp

The knife clamp features two pins, one wide and one narrow, that penetrate holes in the knife and the roller waste collector. These pins ensure proper orientation and alignment of the knife.

Install New Knife on Clamp

14. Align a new roller knife with the knife clamp. The large and small holes in the knife must match the large and small pins of the clamp.

15. Lay the new knife onto the clamp and make sure the knife is installed flat and oriented correctly. It may be necessary to carefully stretch the knife flat.

⚠️ **Caution:** Be careful not to damage the roller knife; it is delicate.
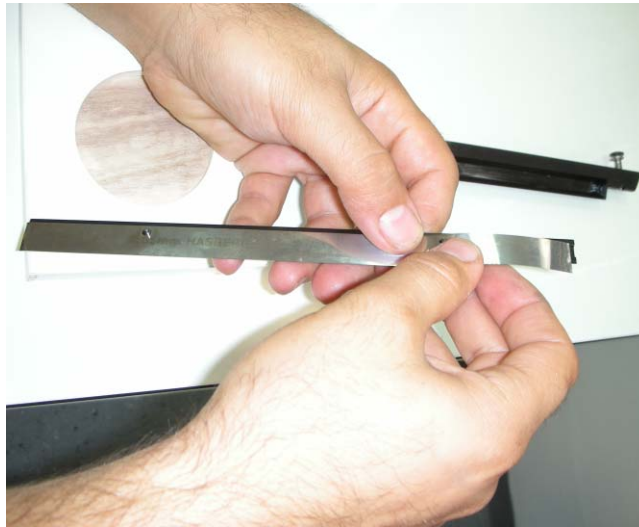

Figure 54 New Roller Knife on Clamp

Figure 55 Roller Knife Installed Correctly

Ensure that the knife is installed parallel to the edge of the clamp as shown in Figure 55.

Check Roller Surface

16. In the Alaris30 software, select Maintenance > General Devices Control. The General Devices window opens.
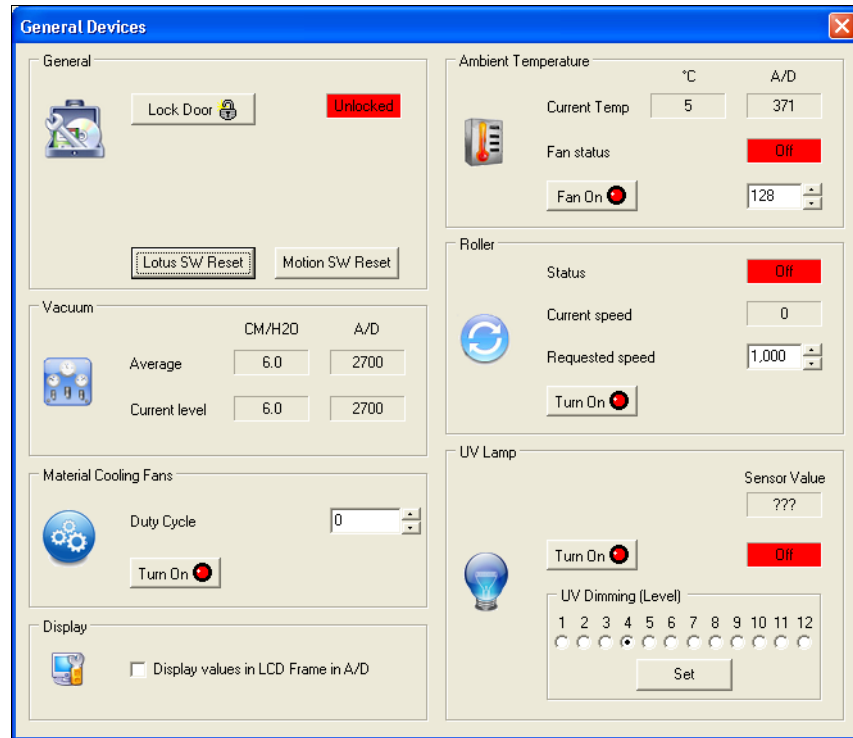

Figure 56 General Devices Window

17. In the Roller area, click **Turn On**.

18. Place your fingertips against the underside of the roller and, by moving your fingertips along the length of the roller, feel the roller surface for bumps.

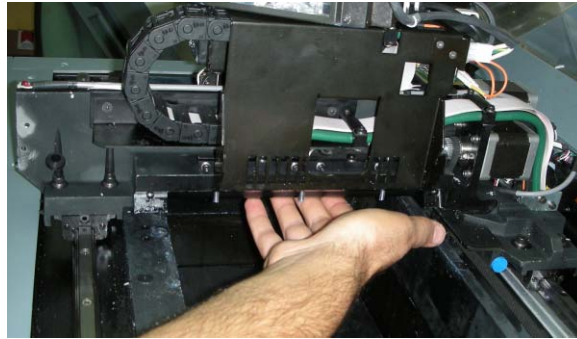   If the roller surface is smooth then continue with Step 20.

Figure 57 Checking the Roller Surface

Smoothing the Roller Surface 19. If the roller surface is rough, wipe the roller with a cleaning wipe sprayed with WD40.

> Replacing the roller is very complicated. Only a severely damaged roller should be replaced. An example of severe roller damage is deep scratches that cause lines or drips on the printed model. If you suspect the roller is damaged, first make sure that the roller knife is installed straight.

Clean Roller Surface 20. Wet a paper towel in cleaning solution (isopropyl alcohol) and wipe the surface of the roller until the roller is clean.

Clean Roller Waste Collector 21. Discard the paper towel (according to local regulations).

22. Wet a paper towel with cleaning solution (isopropyl alcohol) and wipe the inside of the roller waste collector until the it is clean.

Figure 58 Roller Waste Collector Cleaning

23. Discard the paper towel (according to local regulations).

Closing the Roller Waste Collector Assembly

24. Align the large and small knife clamp pins with the similar holes in the roller waste collector.

Figure 59 Align Roller Knife Clamp with the Roller Waste Collector

25. Insert the pins into the holes and press the clamp against the roller waste collector assembly.

26. Inspect the roller knife to see whether there are ripples in the knife.

Reinstall the Roller Waste Collector Assembly

27. Carefully insert the roller waste collector assembly.

28. Secure the assembly evenly, by alternating between the screws as you tighten them.

29. Turn the locking pin clockwise to lower the drain-tube bracket onto the roller waste collector, and secure the locking pin's hook in its socket.

30. Push the print block to the center of the Y-axis (over the middle of the build tray).

31. In the Heads Cleaning wizard screen, click **Cancel** to exit the wizard and return the build tray to its former position.

32. In the Roller area of the General Devices window, click **Turn On**. Check that the roller works well without any retries.

33. Turn off the roller.

34. Replace the UV lamp assembly and secure it.

35. Connect the UV lamp power and ventilation connections to the printing assembly (see Figure 47).

13 Roller Replacement

Replacing the roller is very complicated. Only a severely damaged roller should be replaced. An example of severe roller damage is deep scratches that cause lines or drips on the printed model. If you suspect the roller is damaged, first make sure that the roller knife is installed straight.

13.1 Tools

- Allen key set
- 5.5 × 125 mm socket screwdriver
- Lift jig
- 2 pivot jigs

13.2 Procedure

1. In the Alaris30 software, select Maintenance > Motors Control. The Motors Control window opens.
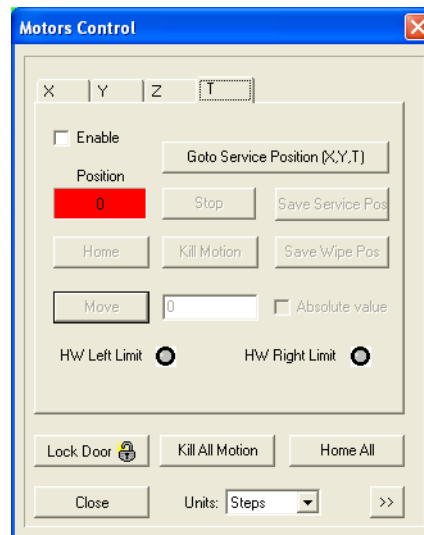
Figure 60 Motors Control Window
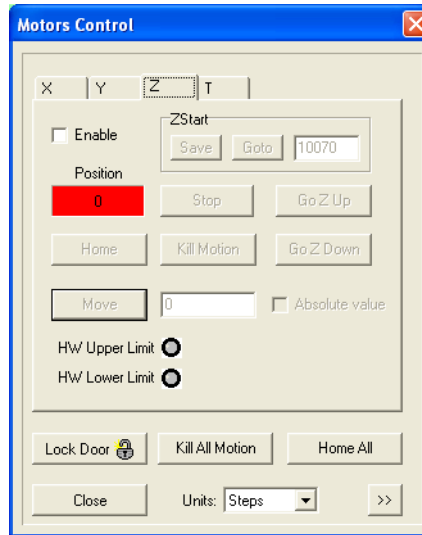
2. Select the Z tab.

Figure 61 Motors Control Window—Z Tab

3. If the z-axis is disabled, select the Enable check box.

4. Click **Home**.

5. Click **Go Z Down**.

6. Turn off the printer.

7. Remove all the printer covers:

   • Top
   • Front
   • Back
   • Left
   • Right.

Remove UV Lamp Assembly 8. Disconnect the UV lamp power and ventilation connections from the printing assembly.
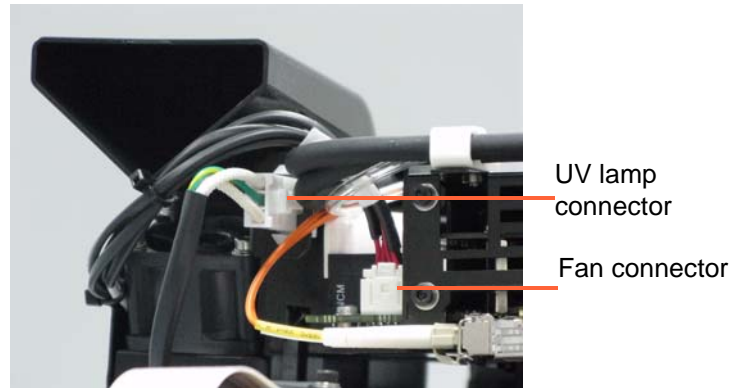

UV lamp connector

Fan connector

Figure 62 UV Lamp Assembly Connection

⚠ **Warning:** Be careful when handling the UV lamp assembly. It may be hot!

9. Loosen the two securing screws at the ends of the UV lamp assembly.

Figure 63 UV Lamp Assembly Securing Screws

10. Lift the UV lamp assembly off of the printing assembly.

Open Pump Panel   11.   Open the pump panel (next to the blower).

Screw

Figure 64   Pump Panel—Closed

Remove Blower   12.   Remove the carbon filter.

13.   Remove the two screws, which secure the guard to the blower and remove the guard.

Top screws
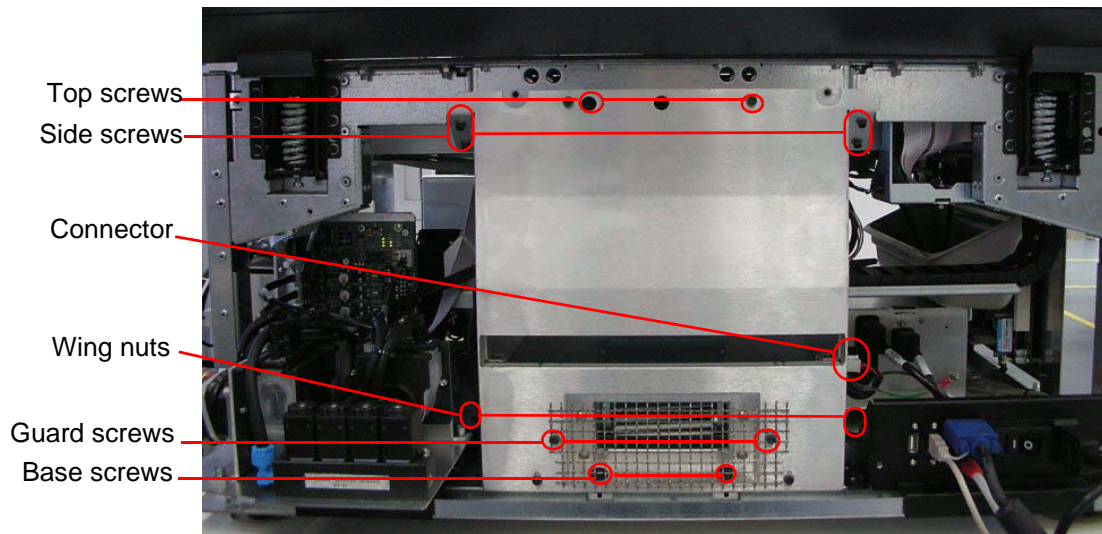Side screws
Connector
Wing nuts
Guard screws
Base screws

Figure 65   Blower

14. Remove the rubber cover from each of the base screws.

15. Remove the following screws, which secure the blower to the frame:

- Base screws

- Top screws

- Side screws (two screws for each side).

16. Loosen the wing nuts (one on each side).

17. Disconnect the connector.

18. Lift the blower by the wing nuts and remove the blower from the printer.

Remove Encoder 19. Detach the blue sensor holder bracket. Remove the two bottom screws first.

The bracket is secured with 4 screws: two at the top and two at the bottom.
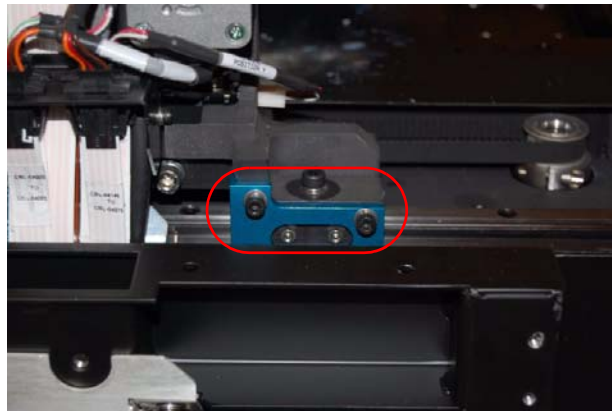
Figure 66 Sensor Holder Bracket—Top Two Screws Visible

20. Hold the encoder and use a M3 Allen key to remove the screw at each end of the encoder.

To unscrew the screw at the ends of the encoder, insert the M3 Allen key through the access holes in the frame of the printer.

21. Carefully remove the encoder through the "right" side (determined when standing at the back of the printer) of the printer.

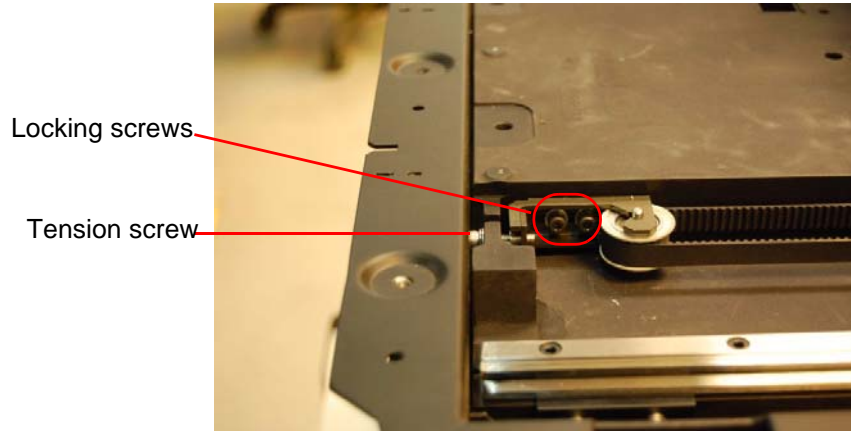**Loosen X-axis Belt**   22.   Loosen the X-axis belt locking screws.

Locking screws

Tension screw

Figure 67 X-belt Pulley

23.   Loosen (a lot) the tension on the X-axis belt.

Remove Roller Waste Collector   24.   Pull the print block all the way to the front, exposing the roller waste collector locking pin.
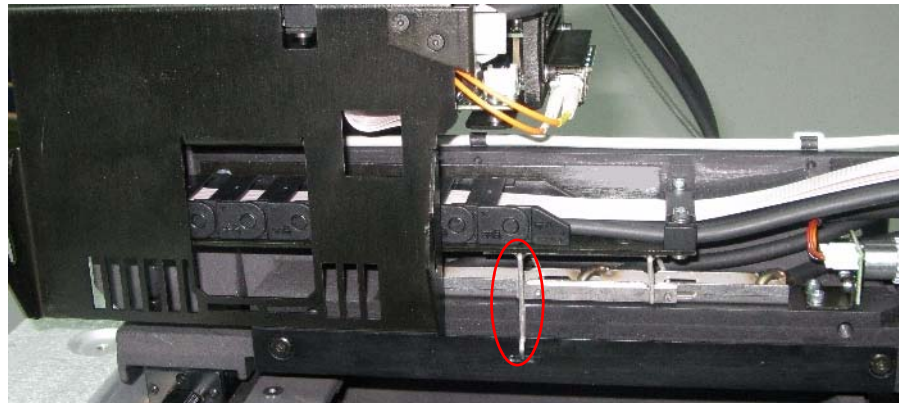
Figure 68 Roller Waste Collector Locking Pin

25. Pull the bottom of the locking pin, and turn it counter-clockwise, to raise the drain-tube bracket from the roller waste collector.
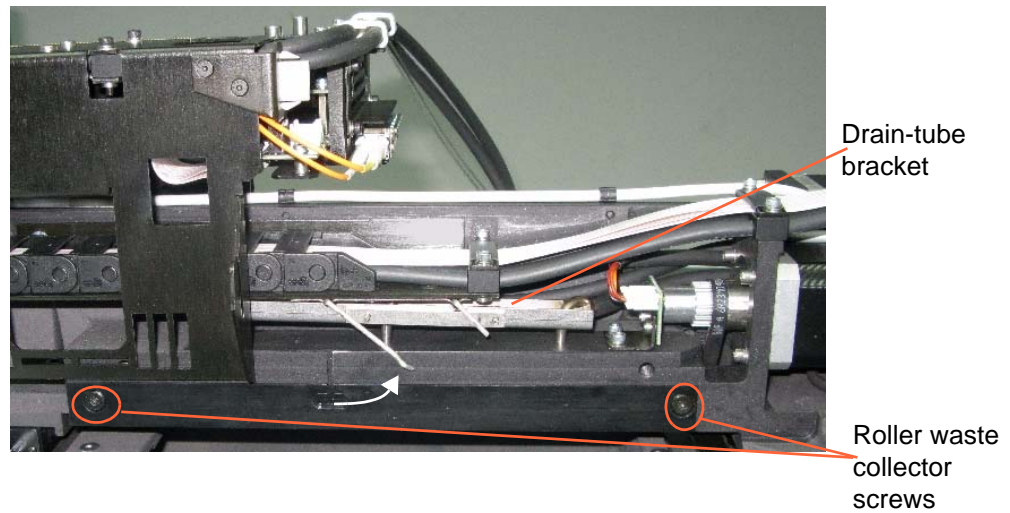
Drain-tube bracket

Roller waste collector screws

Figure 69 Raising the Drain-Tube

26. Support the roller waste collector with your hand under it, and use a M3 Allen key to loosen the 2 screws.

27. Pull out the roller waste collector, taking care not to touch or damage the roller knife.

Loosen Print Block Set Screws

28. Loosen the locking nuts and then use a M1.5 Allen key to loosen the set screws of the printing assembly.

Use a 5.5 × 125 mm socket screwdriver to loosen the rear locking nuts

There are 2 set screws at the front side of the printer and 4 set screws at the rear. For better access to the back set screws, move the print block until the set screws are visible through the access holes in the printer frame (see Figure 72).

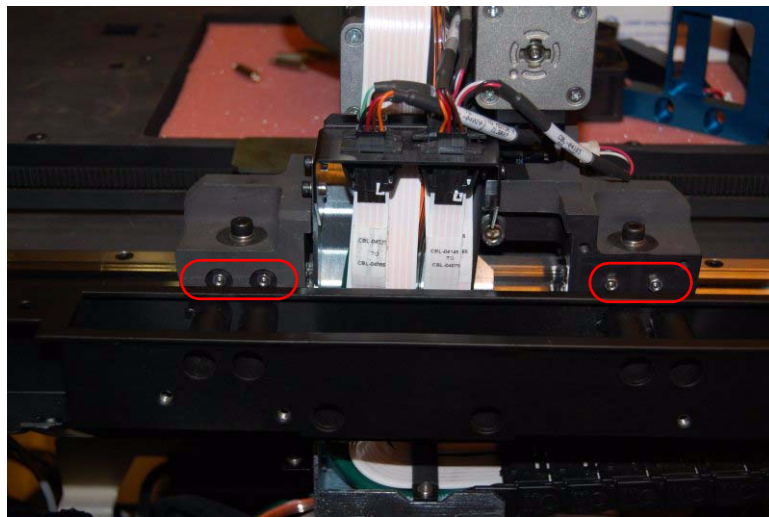**Figure 70 Front Print Block Set Screws and Locking Nuts**

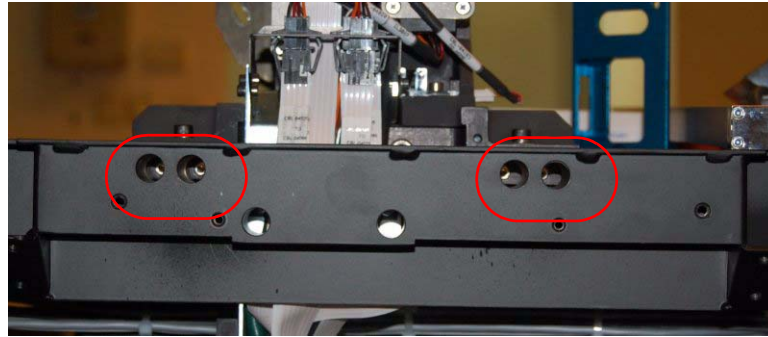**Figure 71 Back Print Block Set Screws and Locking Nuts**

Figure 72 Set Screws Visible through Access Holes

Remove Y-axis Screws 29. Use a M4 Allen key to remove the 6 screws holding the Y-axis carriage to the X-axis rails (see Figure 73 and Figure 74).
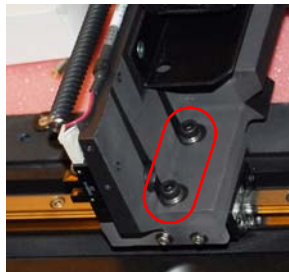

Figure 73 Front Y-axis Screws

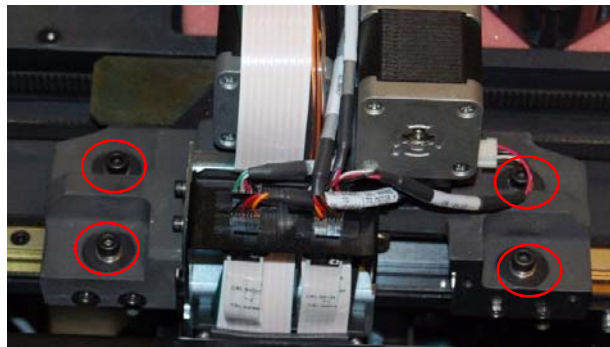The front Y-axis screws are required later in this procedure to secure the Y-axis carriage to the lift jig (Step 40).

Figure 74 Back Y-axis Screws

Disconnect Cable Bridge   30.   Use a M2.5 Allen key to remove the 3 screws that secure the cable bridge to the bracket.
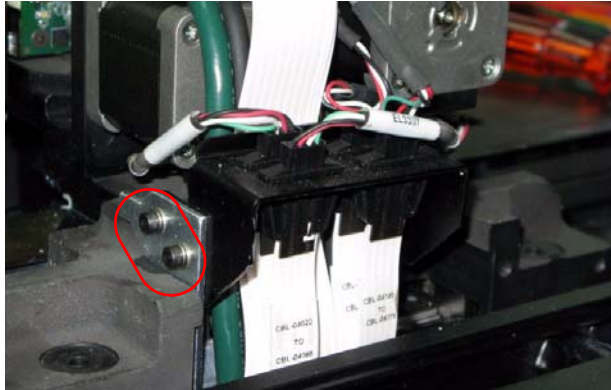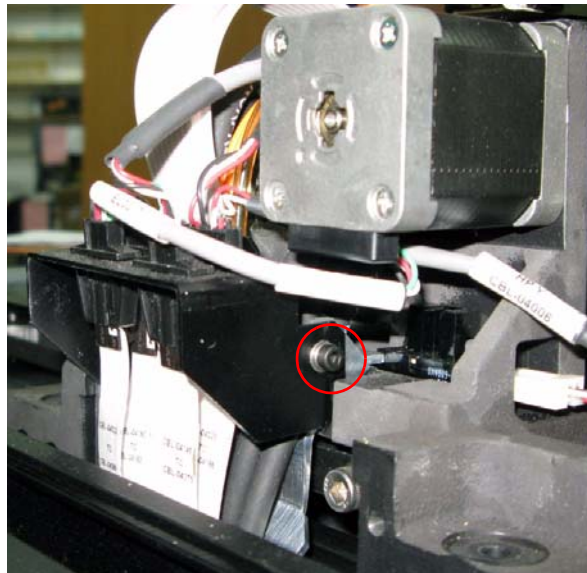

Figure 75 Left Side Cable Bridge Screws

Figure 76 Right Side Cable Bridge Screw

31.   Disconnect all the ribbon cable connectors from the underside of the cable bridge.

Disconnect Bracket   32.   Remove the 2 screws that secure the bracket to the rear of the Y-axis carriage.
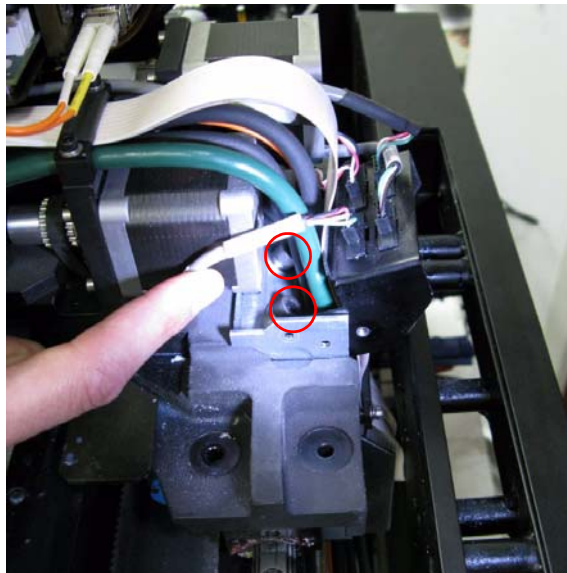

Figure 77 Bracket Screws

Lower Roller Motor   33.   Use a M2.5 Allen key and remove the rear cable clamp.
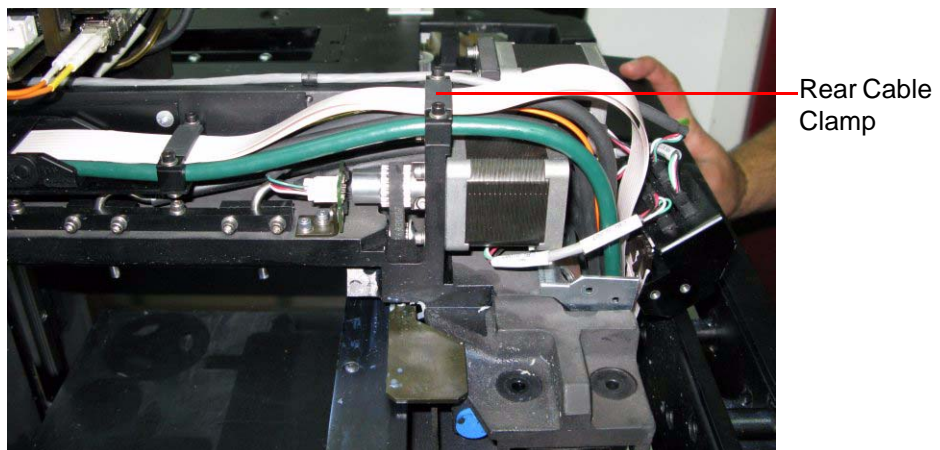

Figure 78 Rear Cable Clamp

34. Use a M2.5 Allen key and loosen the 4 screws that hold the roller motor.
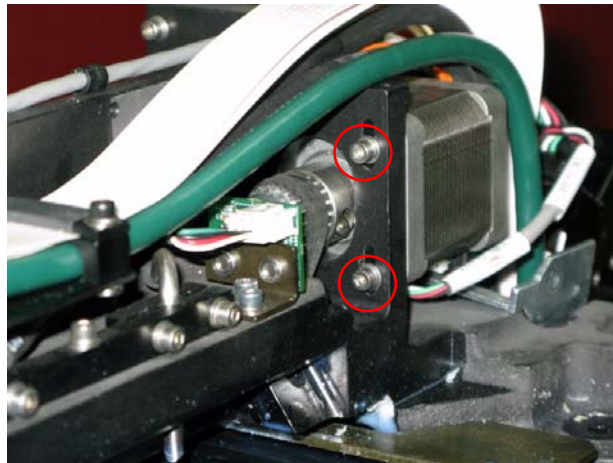

Figure 79 Roller Motor Screws (2 Visible)

35. Slide the motor downward. (This removes the tension from the roller motor pulley belt.)

Insert Pivot Jigs

36. Lift the rear Y-axis carriage, slide the left-side (determined when standing at the back of the printer) linear-slide carrier out from under the carriage and insert the pivot jig under the carriage. (Lower the carriage onto the jig.)
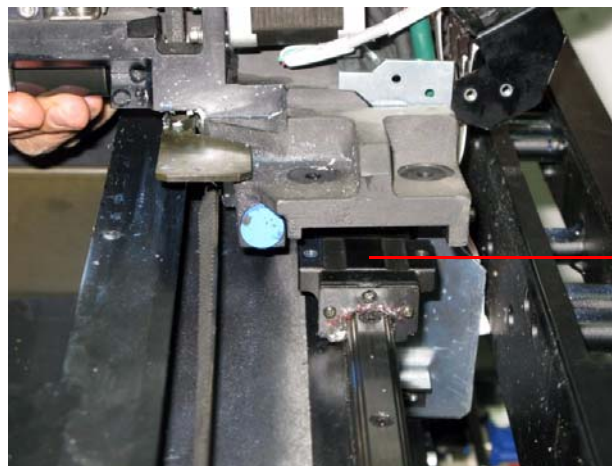
Linear-slide
Carrier

Figure 80 Lift the Rear Y-axis Carriage

Pivot Jig

Figure 81 Pivot Jig Inserted

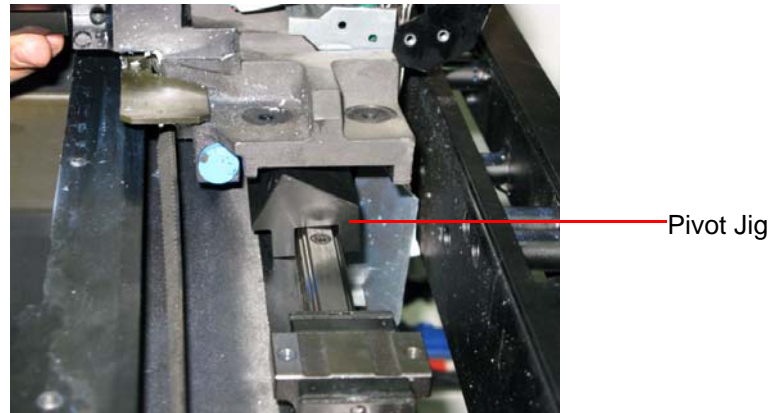Note the orientation of the pivot jig under the carriage.

37.   Repeat Step 36 for the right side of the carriage.

38.   Carefully insert the lift jig into the space in front of the front X-axis rail.

Figure 82 Lift Jig Inserted Next to Front X-axis Rail
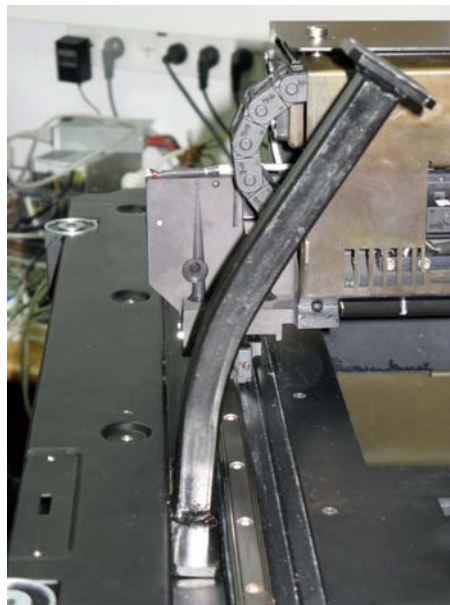
39. Lift the front of the Y-axis carriage and gently slide the lift jig across until the Y-axis carriage can be lowered onto the lift jig.

Make sure that the X-axis belt is not stretched. If necessary, loosen the X-axis belt more.

Figure 83 Lift Jig Under Y-axis Carriage

40. Use the front Y-axis screws (from Step 29) to secure the Y-axis carriage to the lift jig.

Remove Roller Brackets 41. Remove the 2 brackets supporting the roller (2 hex screws for each bracket).

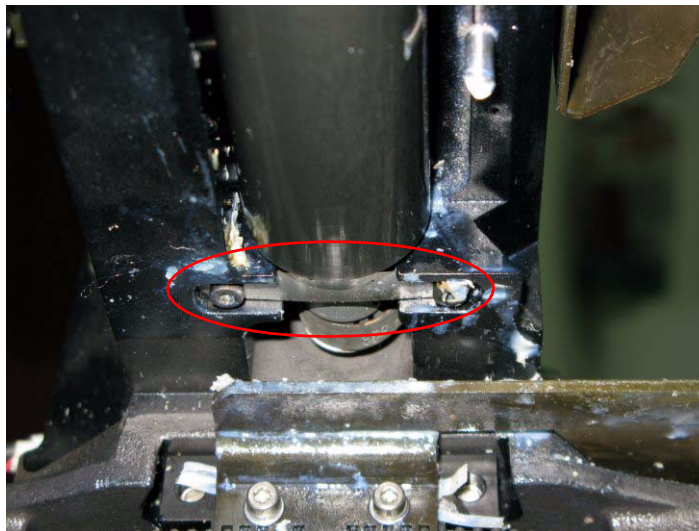**Figure 84 Front Roller Bracket**

Figure 85 Rear Roller Bracket

Remove Roller 42. Lower the roller from the front first and then pull the roller out of the roller motor pulley belt.

> If necessary, carefully use a screwdriver to assist in lowering the roller and in separating the roller from the roller motor pulley belt.

Install Roller	43.	Clean the area that contained the roller.
	44.	Install the new roller: first one end in the roller motor pulley belt, and then the other end of the roller to the front of the Y-axis carriage.
		Pull the roller toward the front of the printer and push the roller up.
	45.	Hold the roller and secure the roller in place with its 2 brackets.
Remove Lift Jig	46.	Remove the front Y-axis screw securing the Y-axis carriage to the lift jig.
	47.	Lift the front of the Y-axis carriage and gently slide the lift jig away from the carriage.
	48.	Lower the front of the Y-axis carriage onto the front X-axis rail carrier.
	49.	Remove the lift jig from the printer.
Remove Pivot Jigs	50.	Lift the rear of the Y-axis carriage, remove each pivot jig and move the linear-slide carriers back under the Y-axis carriage.
	51.	Lower the Y-axis carriage onto the carriers.
Raise Roller Motor	52.	Re-establish the tension in the roller motor pulley belt by raising the roller motor while keeping it horizontal.
	53.	Tighten evenly the 4 screws that secure the roller motor.
Reconnect Bracket	54.	Secure the bracket to the rear of the Y-axis carriage (2 screws).
Reconnect Cable Bridge	55.	Connect all the ribbon cables to the underside of the cable bridge.
	56.	Reattach the cable bridge to the bracket (3 screws).
Y-axis Screws & Set Screws	57.	Attach the Y-axis carriage to the front and rear linear-slide carriers with its six screws. Do not tighten.
	58.	Tighten the four back set screws.
	59.	Tighten the four back Y-axis carriage screws.
	60.	Tighten the two front set screws.
	61.	Tighten the two front Y-axis carriage screws.
Retension X-belt	62.	Tighten the x-belt.
	63.	Check that the X-axis movement is smooth and easy.
	64.	Tighten the x-belt locking screws.
Check Roller Parallel to Print Tray	65.	Move the Y-axis carriage so that the roller is not above the print tray.
	66.	Turn on the printer.

67. Bypass the printer's interlock.

68. In the Alaris30 software, select Maintenance > Motors Control. The Motors Control window opens.

69. Select the Z tab.

70. If the z-axis is disabled, select the Enable check box.

71. Click **Home**.

72. Move the Y-axis carriage close to the print tray and check that the roller is parallel to the tray.

> If in this step or in Step 75 the roller is not parallel to the tray, start again from Step 28 until Step 41 and check that the roller is flat in its holding area.

73. Move the Y-axis carriage so that the roller is not above the print tray.

74. In the ZStart section of the Motor Control window, click **Goto**.

75. Again move the Y-axis carriage close to the print tray and check that the roller is parallel to the tray.

Check Roller Rotation

76. In the Alaris30 software, select Maintenance > General Devices Control. The General Devices window opens.
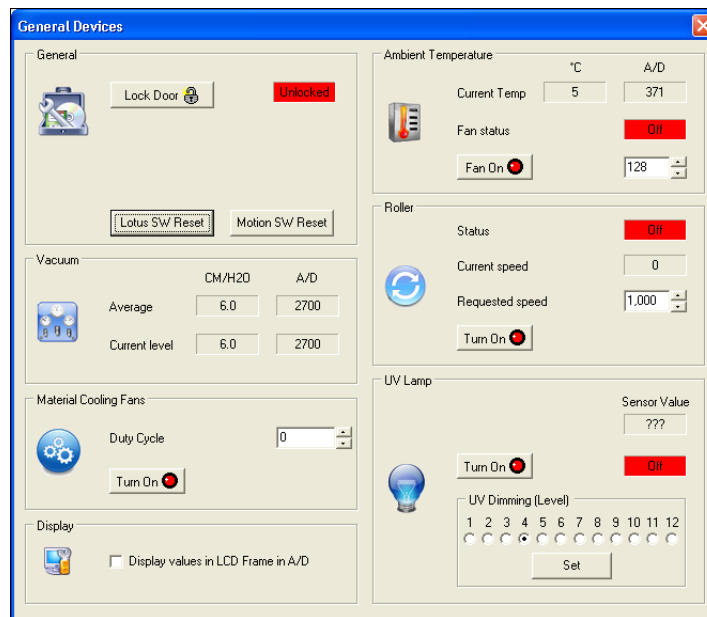

Figure 86 General Devices Window

77. In the Roller section, click **Turn On**.

78. Check that the roller rotates smoothly.

79. Click **Turn Off** and close the General Devices window.

80. Click **Go Z Down** (in the Motors Control window).

81. Turn off the printer and remove the interlock bypass.

Attach Roller Waste Collector, UV Lamp and Encoder Assembly

82. Reattach the roller waste collector.

83. Reattach the UV Lamp.

84. Check and adjust the X-axis belt tension.

85. Reattach the encoder assembly.

86. Reattach the blue sensor holder bracket. Secure the 2 top screws first.

Checks and Calibrations

87. Check and adjust the Z-Start position.

88. Check the encoder calibration.

89. Reattach the Blower.

90. Close the pumps panel.

91. Check the transparency test.

92. Reattach the covers of the printer.

14   Head Driver Card Cooling Fan Filters

14.1   Tools

- Allen key set
- Screwdriver

14.2   Procedure

1.   Turn the printer power switch OFF.

2.   Using a Allen key, loosen and remove the 2 thumb screws that secure the print block cover to the print block.

3.   Remove the print block cover.

For both fans do the following:

4.   Loosen the 4 screws that fasten the filter and the filter grille to the fan.

Figure 87 Filter Grilles

5.   Remove the filter grille.

Figure 88 Removing the Filter Grille

6.   Remove and discard the used filter pad.

7.   Insert a new filter pad.

8.   Re-install the filter grille and secure the grille with 4 screws.

15   Print Head Replacement

Print heads are expensive and should only be replaced after contacting Objet for assistance.

Print heads with clogged nozzles should be unblocked by cleaning and purging the affected head.

15.1   Tools

- Protective gloves

15.2   Procedure

Empty Print Block   1.   In the Alaris30 software, select Options > Shutdown Wizard. The Shutdown Wizard window opens.
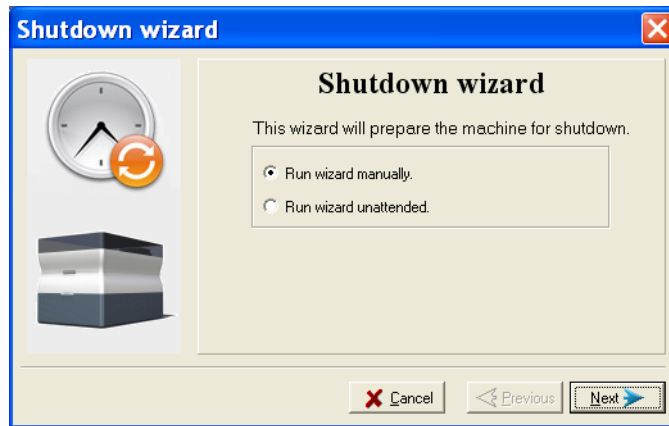

Figure 89   Preparing for Shutdown Window

2. Select the option "Run wizard manually" and click **Next**. The next wizard window opens.

Figure 90 Door Status Window

3. Close the printer cover and select the check box to confirm.

4. Click **Next**. The next wizard window opens.

Figure 91 Tray Status Window

5. Indicate whether or not the tray is empty and click **Next.** The shutdown procedure begins.
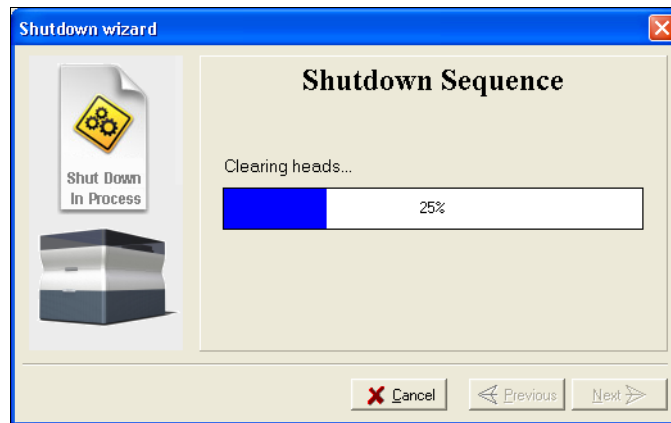

Figure 92 Shutdown Sequence Window

The shutdown procedure may take up to 10 minutes while the following tasks are performed. When the shutdown procedure is complete, the final wizard window opens.
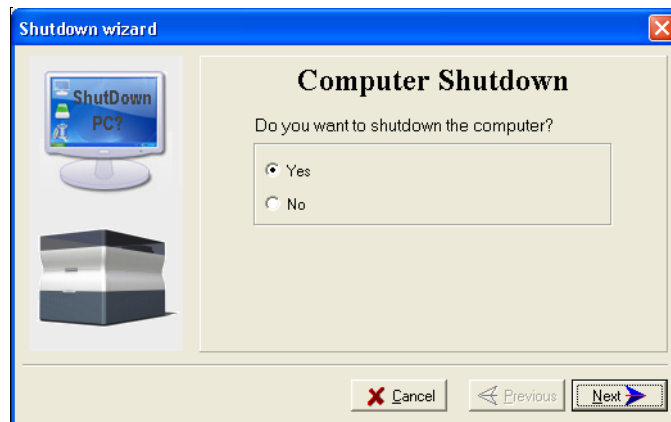

Figure 93 Computer Shutdown Confirmation Window

6. Select **No** and click **Next**.

Prepare for Print Head Replacement

7. In the Alaris30 software, select Maintenance > Motors Control. The Motors Control window opens.
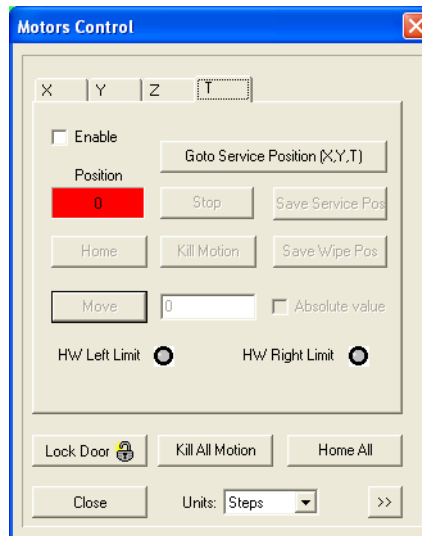

Figure 94 Motors Control Window

8. (If required, select the T tab.) Ensure that the T motor is enabled and click **Home**.

9. Select the Z tab.

10. Make sure that the Z motor is enabled and click **Home**.

11. Click **Go Z Down**.

12. Select the Y tab and clear the Enable check box.

13. Select the X tab and clear the Enable check box.

14. Put on protective gloves.

15. Move the print block to the middle of the build tray manually.

⚠ **Warning:** Ensure that you only touch cool areas of the printing assembly. Avoid burning yourself.

16. Close the printer application.

17. Shut down the printer computer.

18. Turn off the printer.

19. Loosen the two thumb screws that secure the upper cover of the head driver compartment to the print block and lift off the cover.
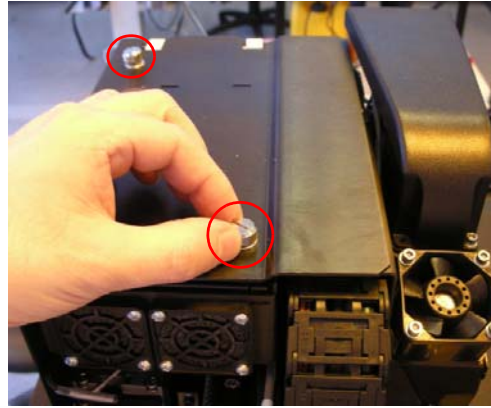

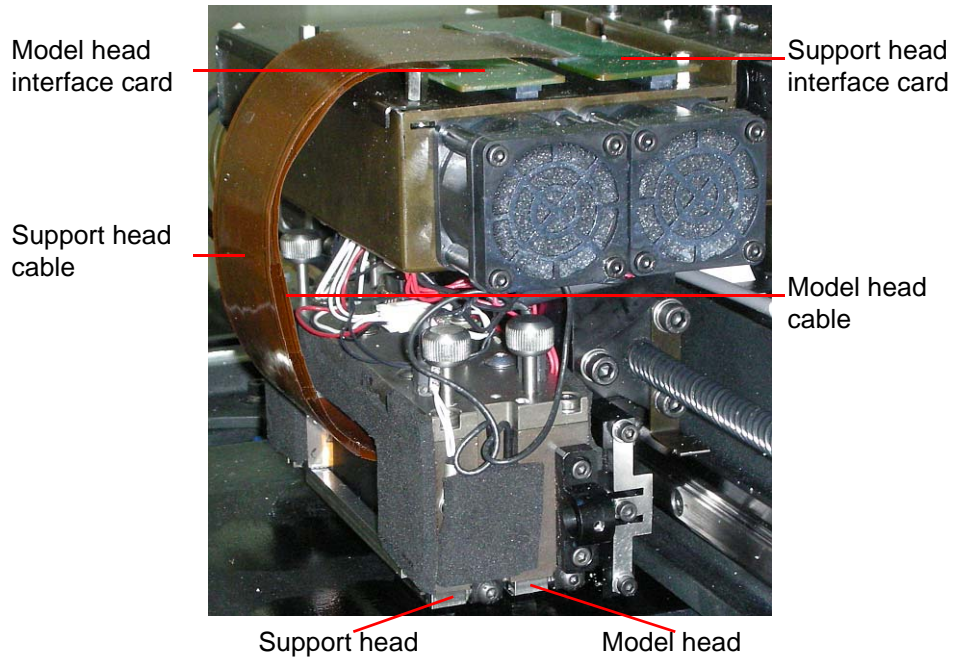**Figure 95 Upper Cover Thumb Screws**

Model head interface card

Support head interface card

Support head cable

Model head cable

Support head

Model head

Figure 96 Print Heads

Remove Support Print Head

20. Lift the support head interface card off its socket. (It may be necessary to lift the card using a rocking movement.)

The support head cable lies over and in front of the model head cable. Removing the support head is therefore required even if you are replacing only the model head.
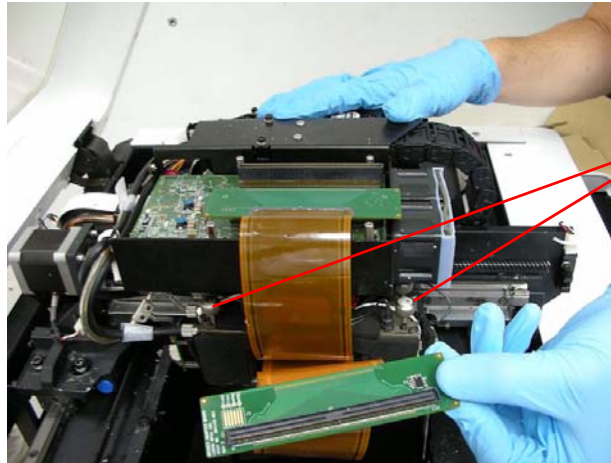
Figure 97 Support Head Interface Card

21. Loosen the two (left-most) thumb screws. These thumb screws fasten the support head to the print block.

Caution: In the **next** step, support the print head as shown in Figure 98 to prevent the print head falling once it is released from the print block.

22. Press down on the two thumb screws loosened in Step 21. The print head separates from the print block.

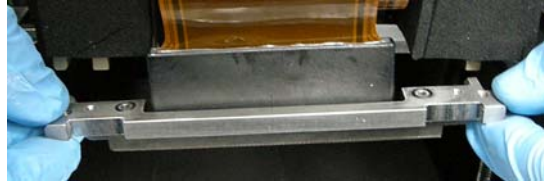

Figure 98 Release the Print Head

Figure 99 Print Head Released from Print Block

23. Check that the print head's two rubber O-rings remained together with the print head.
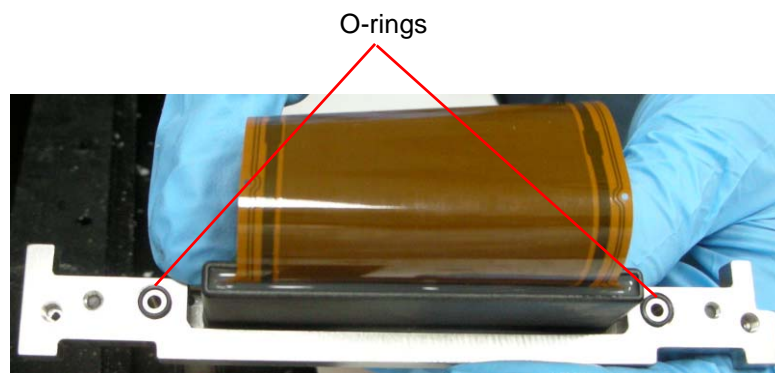

Figure 100 Print Head

24. If both O-rings did not remain with the print head, use a mirror to inspect the bottom of the print block. If an O-ring is stuck to the print block, remove it from the print block.

Figure 101 Underside of Print Block

25. If the support head is **not** being replaced, cover the (now-removed) support head with a cleaning cloth to protect it from UV light. Set the support head aside for later reinstallation.

26. If only the support head is to be replaced, continue with Step 36.

Remove Model Print Head 27. Lift the model head interface card off its socket. (It may be necessary to lift the card using a rocking movement.)
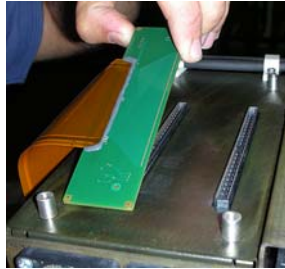

Figure 102 Model Head Interface Card

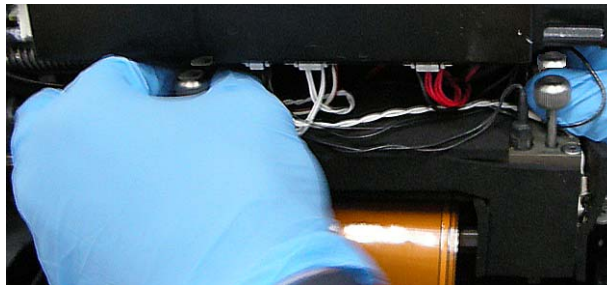28. Loosen the two (inner) thumb screws that fasten the model head to the print block.

Figure 103 Model Head Thumb Screws

⚠️ **Caution:** In the **next** step, support the print head to prevent the print head falling once it is released from the print block.

29. Press down on the two thumb screws loosened in Step 28. The print head separates from the print block.

30. Check that the print head's two rubber O-rings remained together with the print head.

31. If both O-rings did not remain with the print head, use a mirror to inspect the bottom of the print block. If an O-ring is stuck to the print block, remove it from the print block.

Install Model Print Head	32.	Inspect the replacement head and make sure that the O-ring seals are in place (see Figure 100 on page 75).
	33.	Lift the replacement head and press it firmly upwards into its location in the print block, until it clicks into place. Ensure that the model head is in the (inner) model head position.
	34.	Fasten the print head to the print block by tightening the two (inner) thumb screws.
	35.	Route the interface cable over the side of the print block. and press the print head interface card into its socket (the left socket) on the top of the print block.
Install Support Print Head	36.	Inspect the original/replacement head and make sure that the O-ring seals are in place (see Figure 100 on page 75).
	37.	Lift the print head and press it firmly upwards into its location in the print block, until it clicks into place. Ensure that the support head is in the (outer) support head position.
	38.	Fasten the print head to the print block by tightening the two (outer) thumb screws.
	39.	Route the interface cable over the side of the print block and press the print head interface card into its socket (the right socket) on the top of the print block.
Install Cover	40.	Place the upper cover back in its position on the print block and tighten its thumb screws (see Figure 95 on page 73).

15.3 Testing and Aligning the Heads

1. Turn on the printer power.

2. Execute the purge sequence.

3. Perform a pattern test (see page 68).

4. Run the Transparency test (see page 43).

5. Perform a weight test (see page 71).

16 X Encoder Replacement

16.1 Tools

- M4 Allen key
- 1 mm (orange) spacers (two required)

16.2 Procedure

1. Turn off the printer.

2. If required to improve access to the back of the printer, disconnect the following cables from the printer:

    - power
    - monitor
    - USB
    - communication

3. Remove the side (left and right) and rear printer panels.

Remove Blower

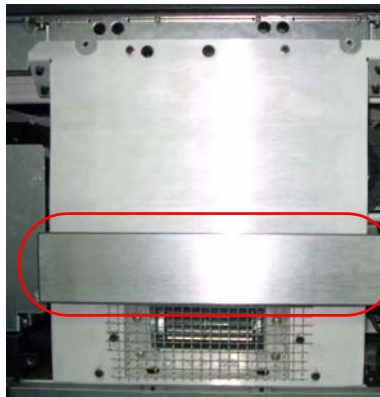4. Remove the carbon filter from the blower.

Figure 104 Carbon Filter on Blower

5.   Open the pump panel (next to the blower).

— Screw

Figure 105 Pump Panel—Closed

6.   Remove the two screws, which secure the guard to the blower and remove the guard

Top screws
Side screws
Connector
Wing nuts
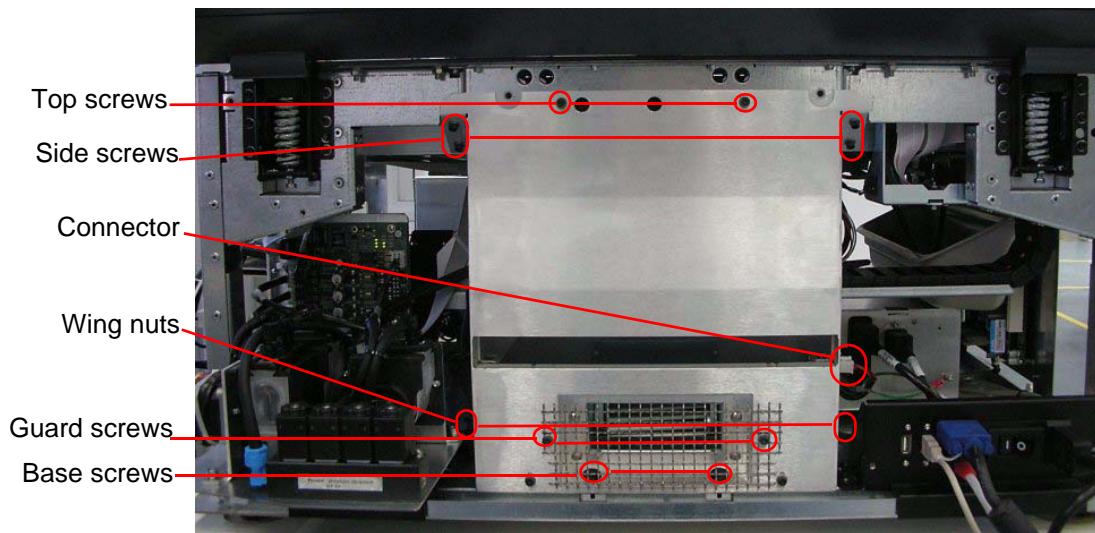Guard screws
Base screws

Figure 106 Blower

7.   Remove the rubber cover from each of the base screws.

8. Remove the following screws, which secure the blower to the frame:

   - Base screws

   - Top screws

   - Side screws (two screws for each side).

9. Loosen the wing nuts (one on each side).

10. Disconnect the connector.

11. Lift the blower by the wing nuts and remove the blower from the printer.

Remove Encoder

12. Move the print-print block all the way over to the right.

13. Remove the two screws securing the encoder sensor to the sensor holder bracket and separate the encoder sensor from the bracket.
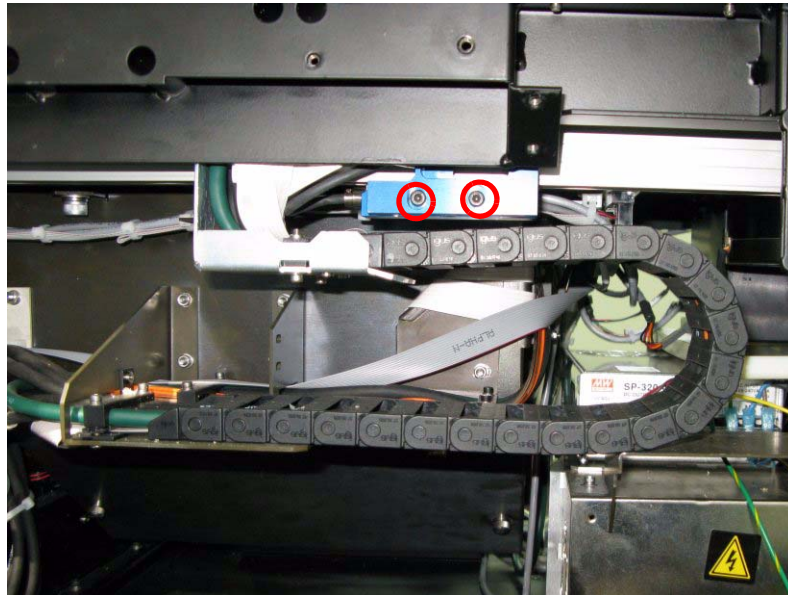

Figure 107 Encoder Sensor Screws

14. Disconnect the sensor's cable connectors. Move the disconnected cables away from the sensor holder bracket.
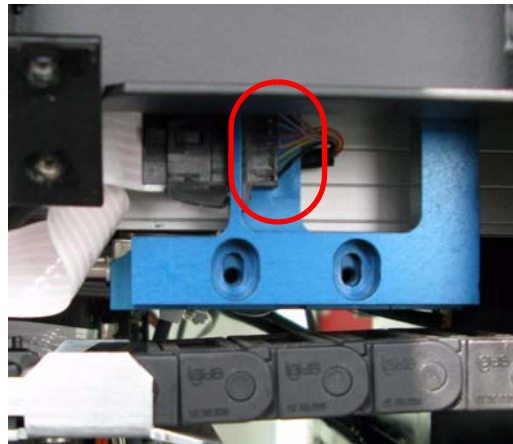

Figure 108 Sensor Cable Connectors

15. Hold the encoder and use a M3 Allen key to remove the screw at each end of the encoder.

To unscrew the screw at the ends of the encoder, insert the M3 Allen key through the access holes in the frame of the printer.
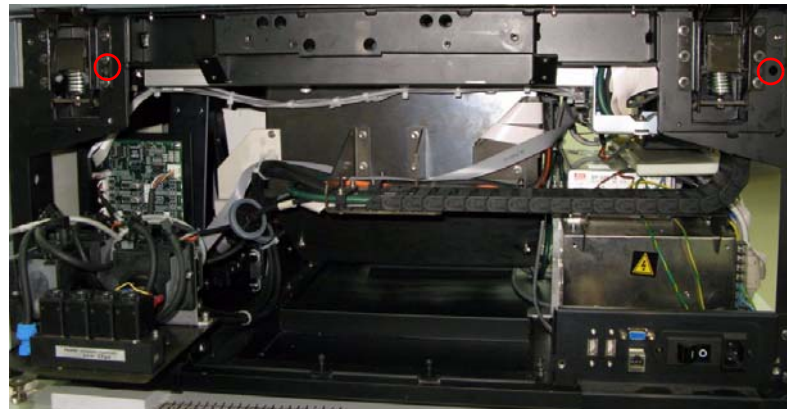

Figure 109 Right and Left Access Holes

Figure 110 Left Encoder Screw

16. Move the print block all the way to the right.

17. Carefully remove the encoder through the "right" side (determined when standing at the back of the printer) of the printer.
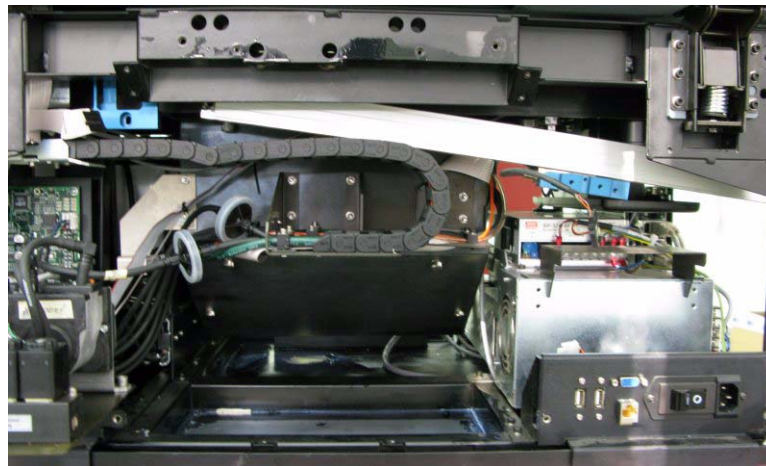

Figure 111 Remove Encoder

18.   Remove the bracket attached to the sensor on the encoder (2 screws).
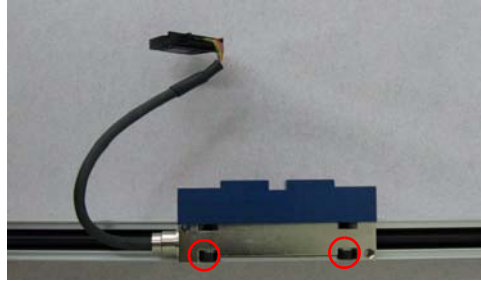

Figure 112 Sensor Bracket Screws

19.   Attach the bracket to the sensor on the new encoder. Tighten the screws.

20.   Slide the encoder back into the printer through the right side and align the encoder-reader screw holes.

Make sure the sensor bracket is on the bottom of the encoder when you slide it into the printer.

Install New Encoder   21.   Reattach (with 2 screws) the encoder to the printer.

22.   Reattach the sensor to the sensor holder bracket (2 screws). (Don't tighten the screws.)

23.   Move the print block all the way to the right side of the printer.

24.   Insert the 1 mm spacers between the sensor holder bracket and the encoder (as shown in Figure 114).

Figure 113 Orange Spacer

Figure 114 Orange Spacers between Encoder and Bracket.

25. Adjust the position of the screws of the sensor and the sensor holder bracket so that the orange spacer should just fit between the bracket and the encoder.

26. Remove the spacers.

27. Move the print block all the way to the left side of the printer.

28. Insert the 1 mm spacers between the sensor holder bracket and the encoder.

29. The orange spacer should just fit between the bracket and the encoder.

30. Adjust the position of the screws of the sensor and the sensor holder bracket so that the orange spacer should just fit between the bracket and the encoder.

31. If disconnected, connect the power, monitor, USB and communication cables.

Locate Encoder Zero Position

32. Turn the printer on.

33. Start the Alaris30 software.

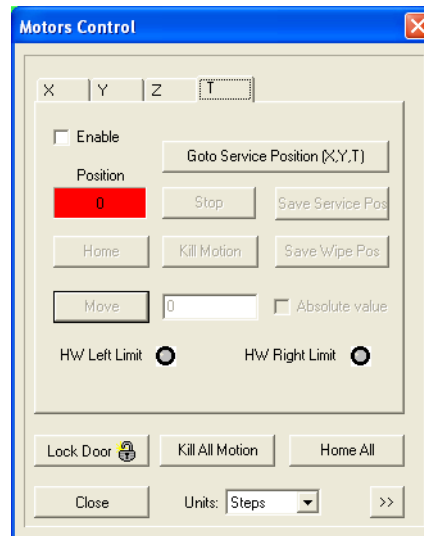34. Select Maintenance > Motors Control. The Motors Control window opens.

Figure 115 Motors Control Window

35. Select the **X** tab.

36. Select **Enable**.

37. Click **Home**.

38. Select Maintenance > Parameters Manager. The Parameters Settings window opens.
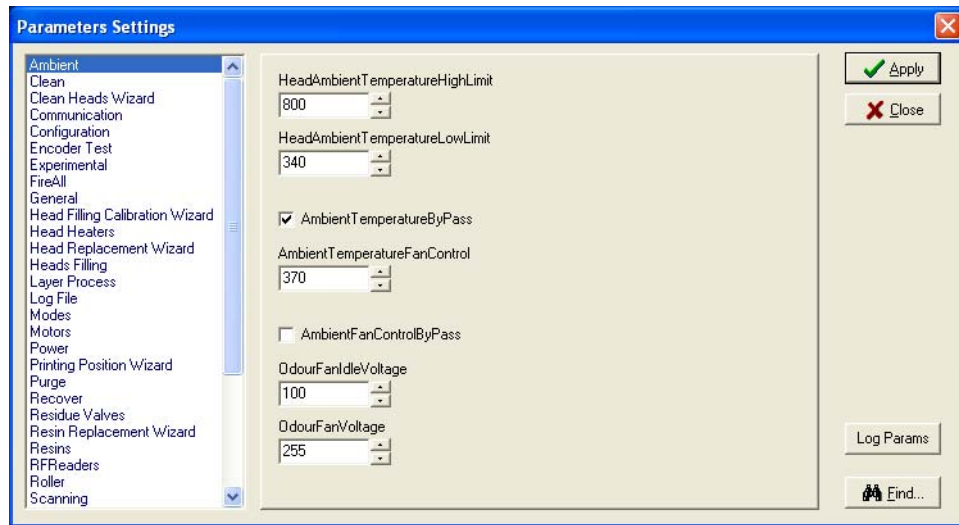

Figure 116 Parameters Settings Window

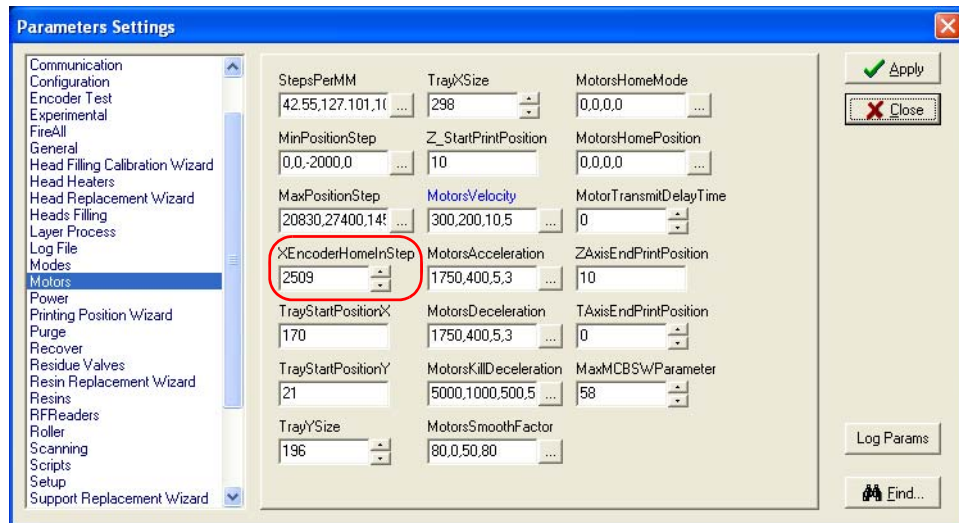39. Select **Motors** from the parameter list.

Figure 117 Motors Parameters

40. Write down the value in the XEncoderHomeInStep parameter.

41. Click **Close** (on the Parameters Settings screen).

42. Type the value from Step 40 in the Move field.

43. Select **Absolute value**.

44. Click **Move**.

45. When the print block has stopped moving, clear **Absolute value**.

46. Type small positive or negative values in the Move field and click **Move** until the encoder's zero position (0000/FFFF) is reached.

47. Once the encoder's zero position is reached, write down the value of the Position field.

48. Select Maintenance > Parameters Manager. The Parameters Settings window opens.

49. Type the value from Step 47 into the XEncoderHomeInStep parameter.

50. Click **Close** (on the Parameters Settings screen).

Verify Encoder Zero Position

51. Type 17000 (steps) in the Move field. (Make sure Absolute value is not selected.)

52. Click **Move**.

53. Write down the value displayed in the Read Encoder field.

54. Type the number -17000 in the Move field.

55. Click **Move**.

56. Make sure that the Read Encoder field returns to zero (0000/FFFF).

    The permitted deviation is up to two steps (0002 or FFFD).

57. Repeat Steps 51–56 five times.

58. Make sure the encoder returns to the zero position each time. If the deviation is larger than two steps, do the following:

    • Clear Enable (on the X tab of the Motors Control window)

    • Adjust the position of the screws of the sensor holder bracket (see steps 23–30).

Completion Steps

59. Reinstall the Blower.

60. Reinstall the carbon filter in the blower.

61. Reattach the printer's side and rear panels.

17 Print Block Replacement

Print blocks are expensive and should only be replaced after contacting an Objet Regional Technical Specialist (RTS) for assistance.

One of the following may indicate the print block must be replaced.

- Leaks from the print block.

- The vacuum levels in the print block are unstable.

- Malfunction of the material level thermistors.

- The print block heaters do not heat the print block to the required temperature.

17.1 Tools

- Protective gloves

- Allen keys (M2.5, M4)

- Cleaning cloths

- Micrometer (for block rotation test)

- Loupe/measuring microscope

17.2 Procedure

Empty the Print Block

1. In the Alaris30 software, select Options > Shutdown Wizard. The Shutdown Wizard window opens.
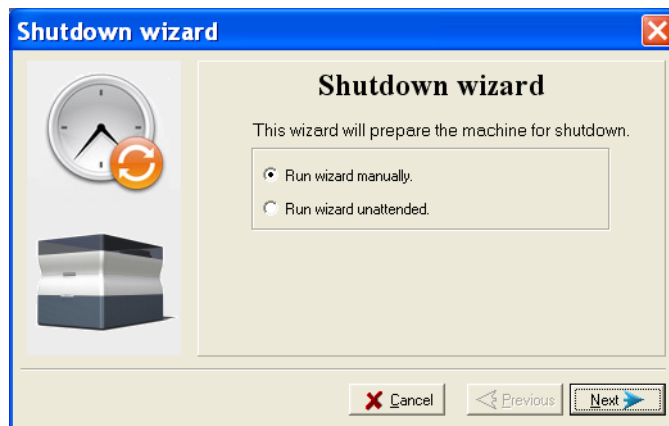

Figure 118 Preparing for Shutdown Window

2. Select the option "Run wizard manually" and click **Next**. The next wizard window opens.

Figure 119 Door Status Window

3. Close the printer cover and select the check box to confirm.

4. Click **Next**. The next wizard window opens.

Figure 120 Tray Status Window

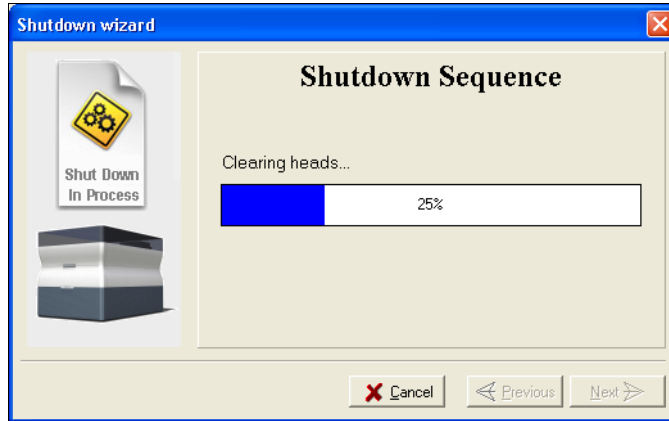5. Select the "Tray is full" option to lower the build tray.

Figure 121 Shutdown Sequence Window

The shutdown procedure may take up to 10 minutes.

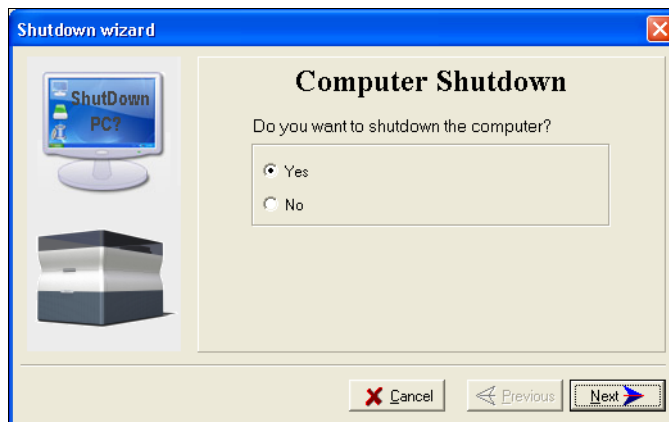When the shutdown procedure is complete, the final wizard window opens.

Figure 122 Computer Shutdown Confirmation Window

6. Before shutting down the computer verify that the tray has been lowered.

   • If so, select **Yes**, click **Next** and continue with Step 14.

   • If not, select **No**, click **Next** and continue with Step 7.

7. In the Alaris30 software, select Maintenance > Motors Control. The Motors Control window opens.
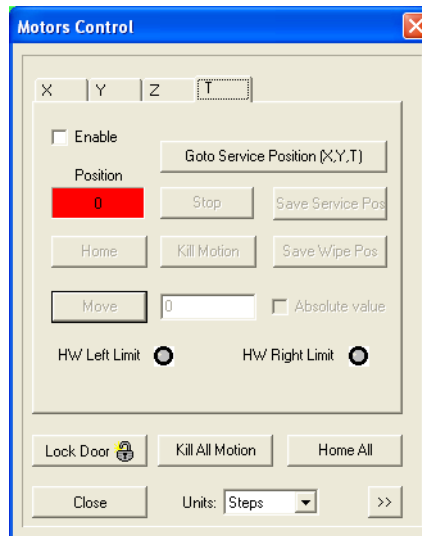

Figure 123 Motors Control Window

8. (If required, select the T tab.) Ensure that the T motor is enabled and click **Home**.

9. Select the Z tab.

10. Make sure that the Z motor is enabled and click **Home**.

11. Click **Go Z Down**.

12. Select the Y tab and clear the Enable check box.

13. Select the X tab and clear the Enable check box.

14. Put on protective gloves.

15. Move the print block to the middle of the build tray manually.

⚠️ **Warning:** Ensure that you only touch cool areas of the printing assembly. Avoid burning yourself.

16. Close the printer application.

17. Shut down the printer computer.

18. Remove the print heads manually from the print block. (For the procedure on removing the print heads, refer to "Print Head Replacement" on page 69.)

19. Disconnect the model, support and vacuum tubes from the print block.
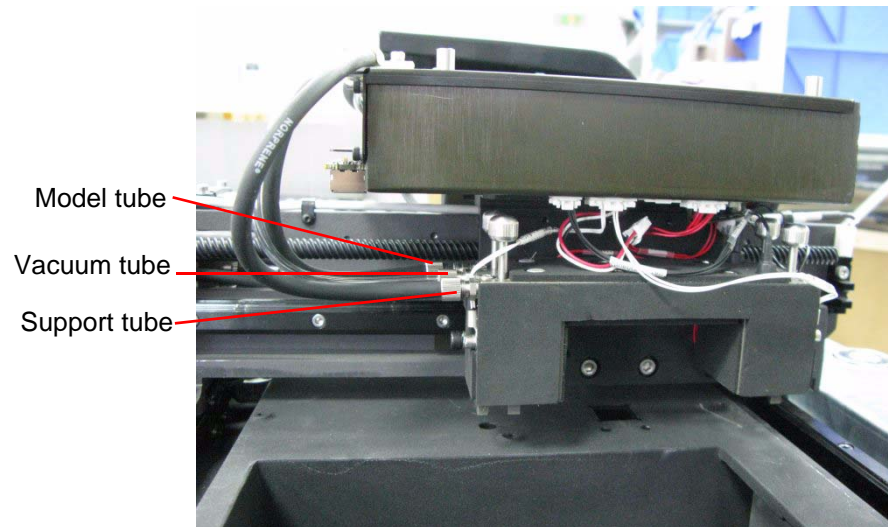

Figure 124 Tubes Connected to the Print Block

When you disconnect the tubes from the print block, excess material may leak from the tubes.
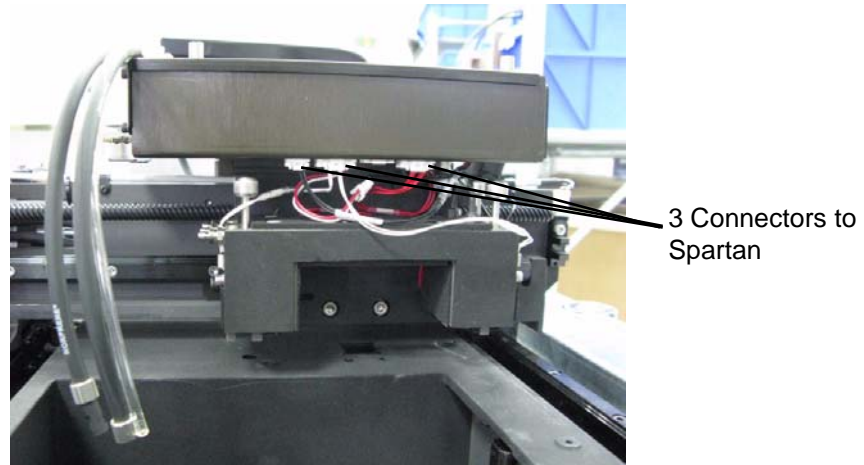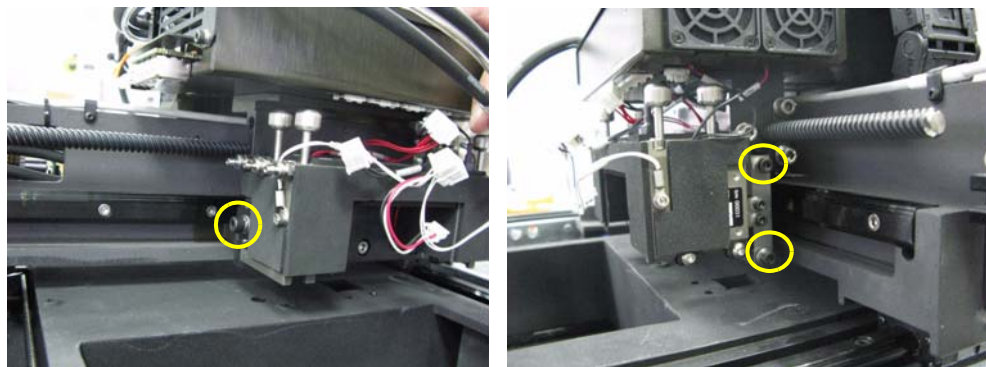
20.   Disconnect the 3 connectors to the Spartan board.

3 Connectors to
Spartan

Figure 125 Print Block Connectors to the Spartan Board

21.   Remove the three screws (2 at the front and 1 at the rear of the print
       block) that secure the print block to the printing assembly.

Rear securing screw   Front securing screw

Figure 126 Print Block Securing Screws

22. Pull the print block towards the front of the printer to release the pins from the securing bracket, and remove it from the printer.
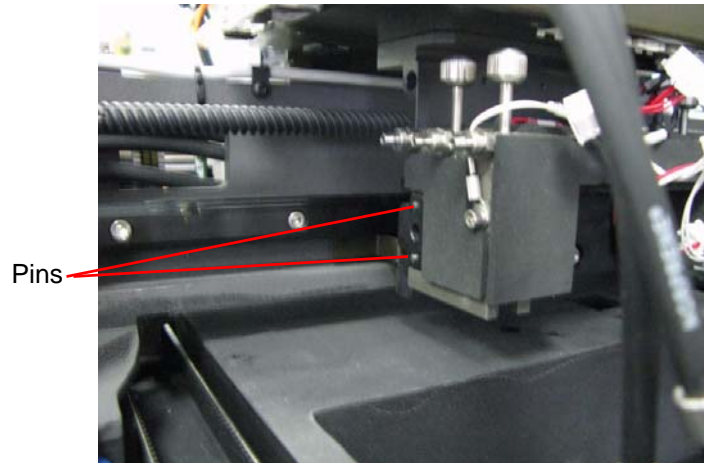

Figure 127 Print Block Attached to the Securing Bracket

23. Remove the block rotation bracket (two screws) from the old print block and attach it the new print block.
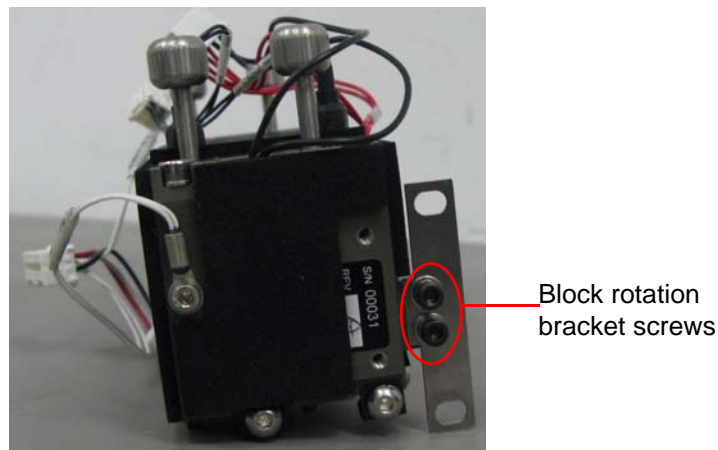

Figure 128 Print Block with Block Rotation Bracket Attached

24. Reattach the new print block. Make sure you insert the pins at the rear of the print block into their the holes on the securing bracket.

25. Reattach the print block to the printing assembly with 3 screws (2 at the front and 1 at the rear of the print block).

26. Connect all the connectors to the Spartan board.

27. Connect the material and vacuum tubes.

28. Install the print heads.

29. Turn on the printer and start the printer computer.

30. Press F4 (Execute Purge Sequence).

31. Run the Head Filling Calibration wizard.

32. Perform a Transparency test.

33. Print the *service_engineer_ATP.stl* file.
    (Partner Zone> Customer Support > Technical resources > Alaris30
    Lobby > Main Service Documents)

34. Perform a Weight test.

18   Main Power Supply Replacement

18.1   Tools

- Allen keys (M2.5, M3)
- Screwdriver
- Small screwdriver
- Pliers
- 7 mm open-end wrench

18.2   Procedure

Disconnect Printer

1.   Close the printer application.

2.   Shut down the printer computer.

3.   **Turn off the printer and disconnect the power cord from the wall outlet.**

4.   Remove the front and rear printer panels.

5.   Remove the excess fluid collector from the printer. (Dispose of the waste according to local regulations.)

Removing the Power Supply Unit

6. Disconnect the following from the rear of power supply unit:

- DC power cable (at the end of CBL-04034)
- UV power cable (at the end of CBL-04034)
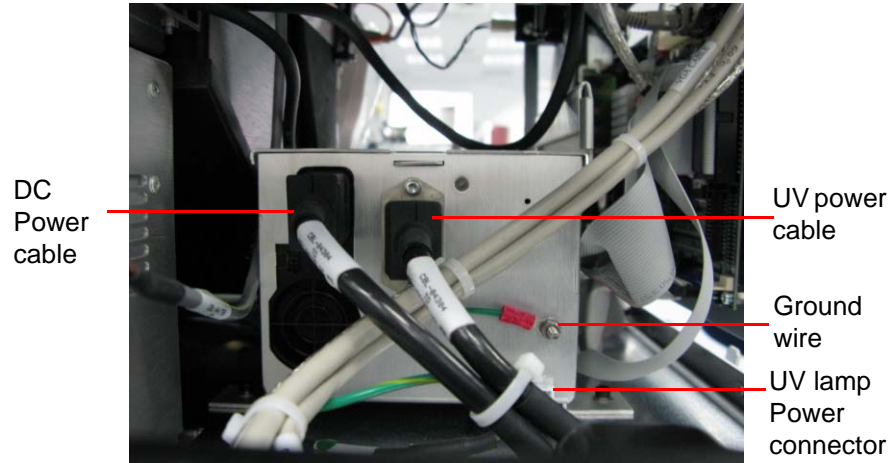- UV lamp power connector (at the end of CBL-04005)
- ground (earth) wire

DC Power cable

UV power cable

Ground wire

UV lamp Power connector

Figure 129 Power Supply Unit (rear view)

7. Using an M3 Allen key, remove the two rear screws that secure the power supply to the printer.
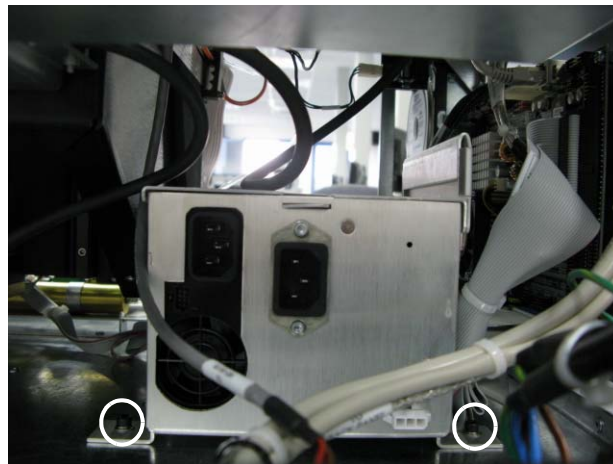
Figure 130 Power Supply Rear Screws

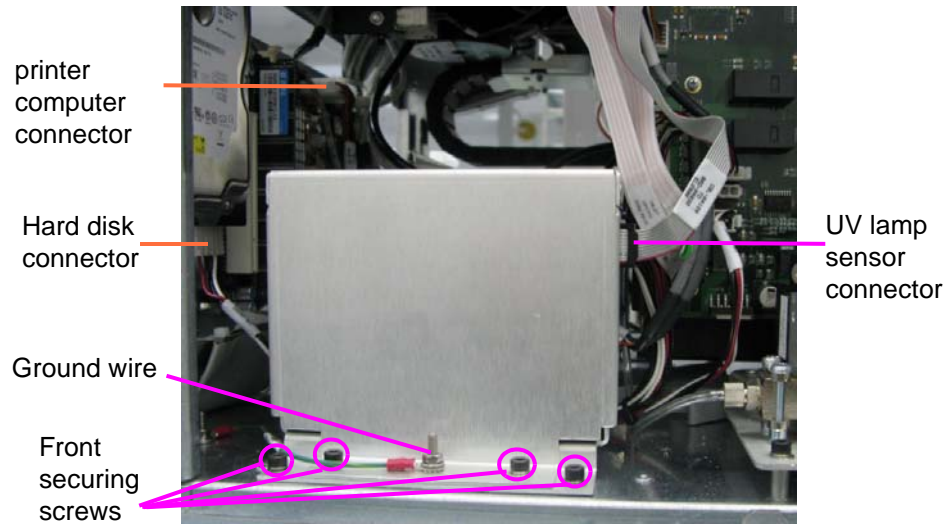8.   Remove the four front securing screws.

Figure 131 Power Supply Unit (Front View)

9.   Disconnect the following at the front of the power supply unit (see Figure 131):

- ground wire

- UV lamp sensor connector (at the end of CBL-04120)

10.   Lift off the power supply cover.

11.   Disconnect the power cable from the hard disk (CBL-04305) shown in Figure 131.

12.   Disconnect the DC power cable from the printer computer board (CBL-04305) shown in Figure 131.

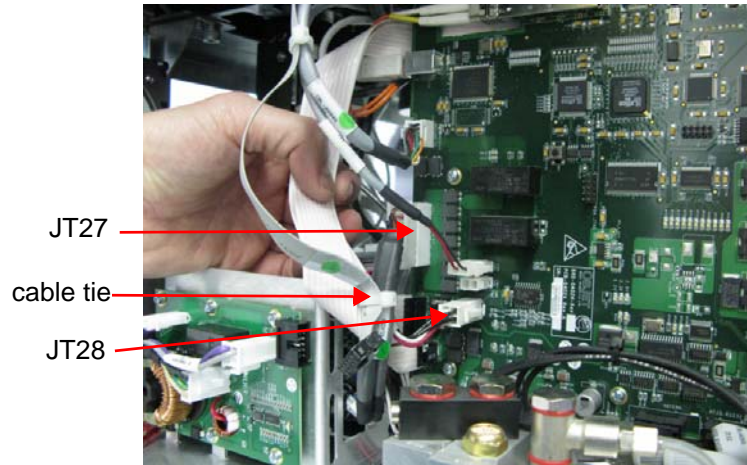13. Disconnect JT27 and JT28 connectors on the Lotus board.

JT27

cable tie

JT28

Figure 132 JT27 and JT28 Connectors

14. Cut the cable tie around CBL-04120, CBL-04306 and CBL-04305.

15. Remove the power supply unit from the printer and place it on a flat surface.

Replacing the Main Power Supply

16. Using an M3 Allen key, remove the four screws that secure the main power supply (PWR-04004) to its housing.
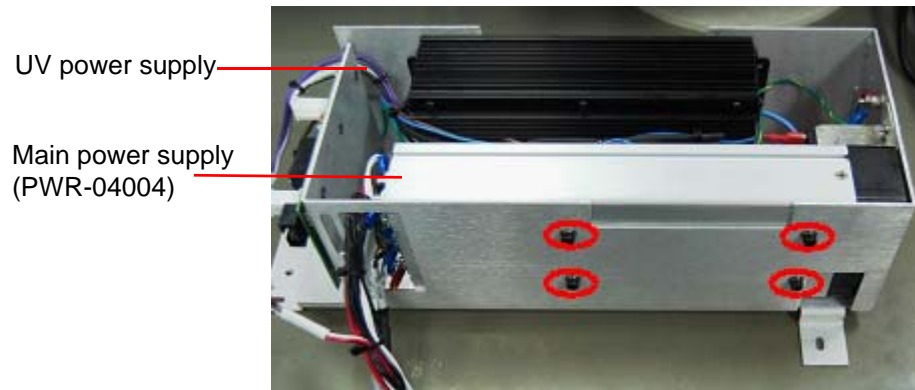

UV power supply

Main power supply (PWR-04004)

Figure 133 Power Supply Housing

17. Remove the main power supply from the housing.

18. Place the new (wired) power supply in the housing.

19.   Make sure you route the power supply cables through the side opening on the metal housing.

20.   Secure the power supply to the metal housing with the four screws (Figure 133).

Reinstalling the Power Supply Unit

21.   Replace the power supply housing in the printer. Make sure you route the hard disk and printer computer power cables under the power supply unit.

Caution: To avoid damage the ribbon cables on the floor of the printer, place the power supply unit carefully in the printer.
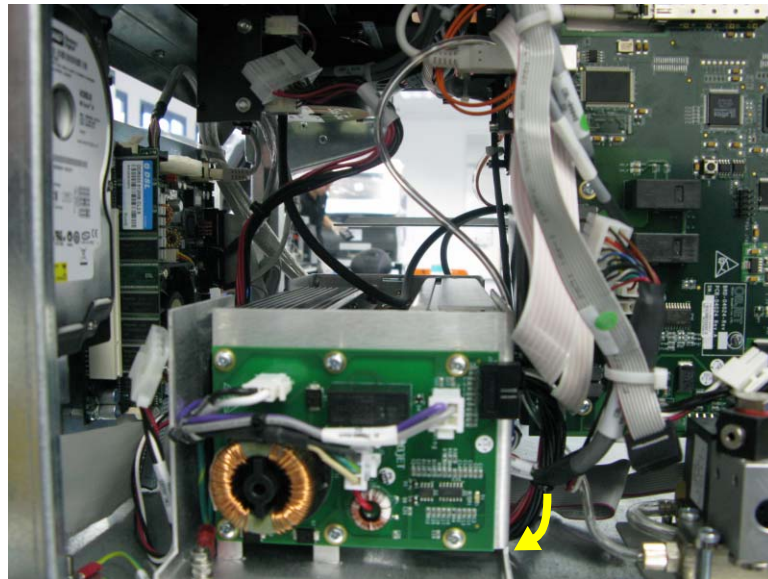

Figure 134 Cables Routed Under the Power Supply

22.   Reconnect the following at the front of the printer:

- Hard disk power connector

- DC printer computer power connector

- JT27 (Lotus board)

- JT28 (Lotus board)

23.   Secure the power supply unit to the printer with four screws (see Figure 130 and Figure 131).

24. Make sure the cables at the front of the power supply are routed around the solenoid as shown in Figure 135, so they do not touch the power supply cover.
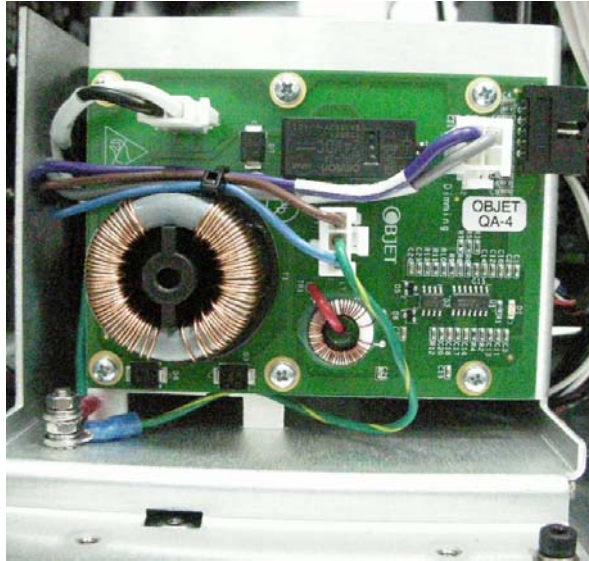

Figure 135 Correct Wire Routing Around Solenoid.

25. Replace the cover and secure with two screws to the printer (see Figure 131).

26. Connect the ground wire.

27. Connect the UV lamp sensor connector at the end of CBL-04120 (see Figure 131).

28. Reconnect the following at the rear power supply unit:

     • power cables

     • UV lamp power connector

     • ground wire

29. Carefully place the excess fluid collector on the power supply cover.

30. Reattach the panels of the printer.

31. Connect the printer to the electric line.

32. Switch on the printer.

19 UV Power Supply Replacement

19.1 Tools

- Allen keys (M2.5, M3)
- Screwdriver
- Small screwdriver
- Pliers
- 7 mm open-end wrench

19.2 Procedure

Disconnect Printer

1. Close the printer application.

2. Shut down the printer computer.

3. **Turn off the printer and disconnect the power cord from the wall outlet.**

4. Remove the front and rear printer panels.

5. Remove the excess fluid collector from the printer. (Dispose of the waste according to local regulations.)

Confidential and Proprietary Information

Removing the Power Supply Unit

6. Disconnect the following from the rear of power supply unit:

    *   DC power cable (at the end of CBL-04034)

    *   UV power cable (at the end of CBL-04034)

    *   UV lamp power connector (at the end of CBL-04005)
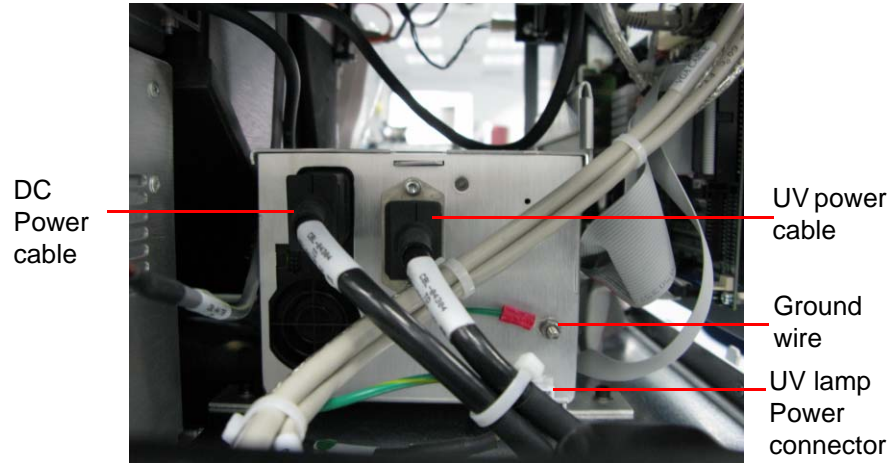
    *   ground (earth) wire

DC Power cable

UV power cable

Ground wire

UV lamp Power connector

Figure 136 Power Supply Unit (rear view)

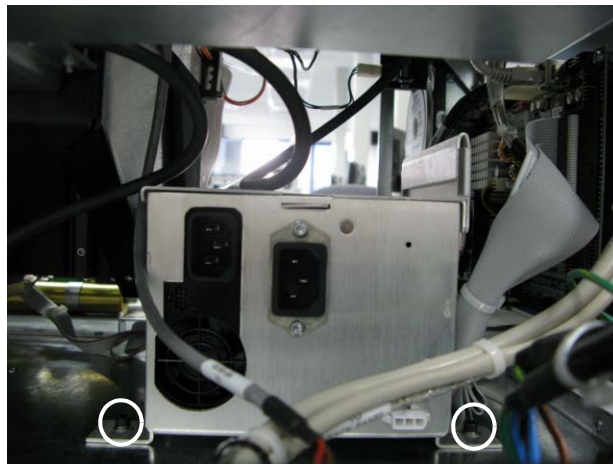7. Using an M3 Allen key, remove the two rear screws that secure the power supply to the printer.

Figure 137 Power Supply Rear Screws

8.   Remove the four front securing screws.

printer
computer
connector

Hard disk
connector

UV lamp
sensor
connector

Ground wire
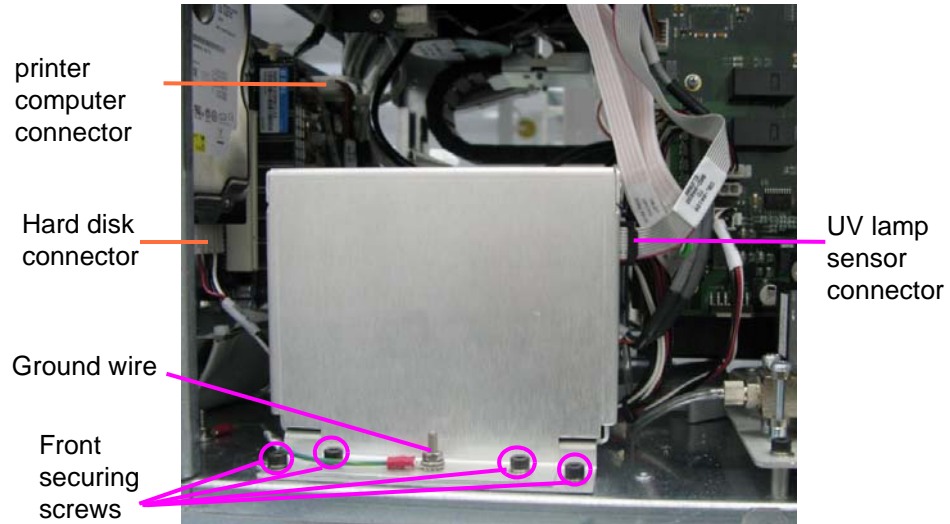
Front
securing
screws

Figure 138 Power Supply Unit (Front View)

9.   Disconnect the following at the front of the power supply unit (see Figure 131):

   • ground wire

   • UV lamp sensor connector (at the end of CBL-04120)

10.   Lift off the power supply cover.

11.   Disconnect the power cable from the hard disk (CBL-04305) shown in Figure 131.

12.   Disconnect the power cable from the printer computer board (CBL-04305) shown in Figure 131.

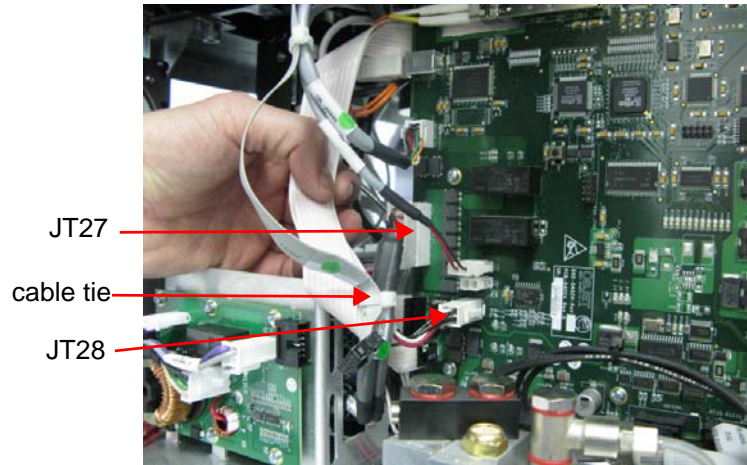13. Disconnect JT27 and JT28 connectors on the Lotus board.

JT27

cable tie

JT28

Figure 139 JT27 and JT28 Connectors

14. Cut the cable tie around CBL-04120, CBL-04306 and CBL-04305.

15. Remove the power supply unit from the printer and place it on a flat surface.

Replacing the UV Power Supply

16. Detach the UV lamp connector shown in Figure 140 from the metal housing.

UV lamp power connector

Figure 140 Power Supply Housing (Rear View)

17. Disconnect the Live (black) and Neutral (white) wires from the terminals on back of the UV power socket.

Figure 141 Wires Connected to the UV Power Socket

18. Disconnect the following from the UV power supply interface board (BRD-04032):

   • J2

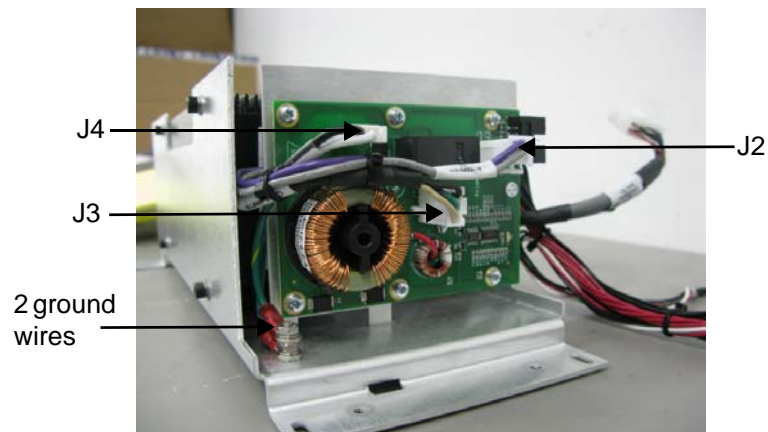   • J3

   • J4

   • 2 ground (earth) wires

Figure 142 Power Supply Unit (Front View)

19. Remove the four screws that secure the UV power supply to the housing.
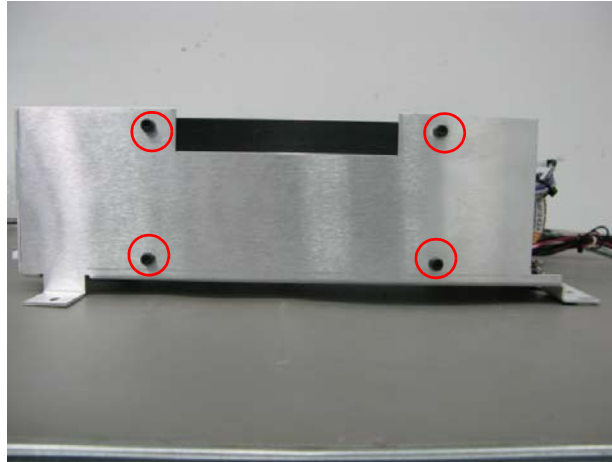

Figure 143 UV Power Supply Securing Screws

20. Remove the UV power supply.

21. Place the new (wired) UV power supply in the housing and secure with four screws.
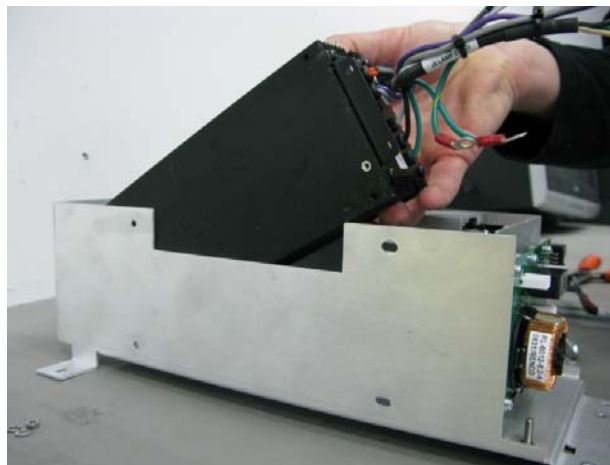

Figure 144 Replacing the UV Power Supply

22. Reconnect the following at the front of the power supply (see Figure 142):

    - J2, J3 and J4

    - two ground wires

23. Reconnect the following at the rear of the power supply (see Figure 136 and Figure 137):

    - Live wire (Black)

    - Neutral wire (white)

    - UV lamp power connector

Reinstalling the Power Supply Unit

24. Replace the power supply unit in the printer. Make sure you route the hard disk and printer computer power cables under the power supply unit.

⚠️ **Caution:** To avoid damage the ribbon cables on the floor of the printer, place the power supply unit carefully in the printer.
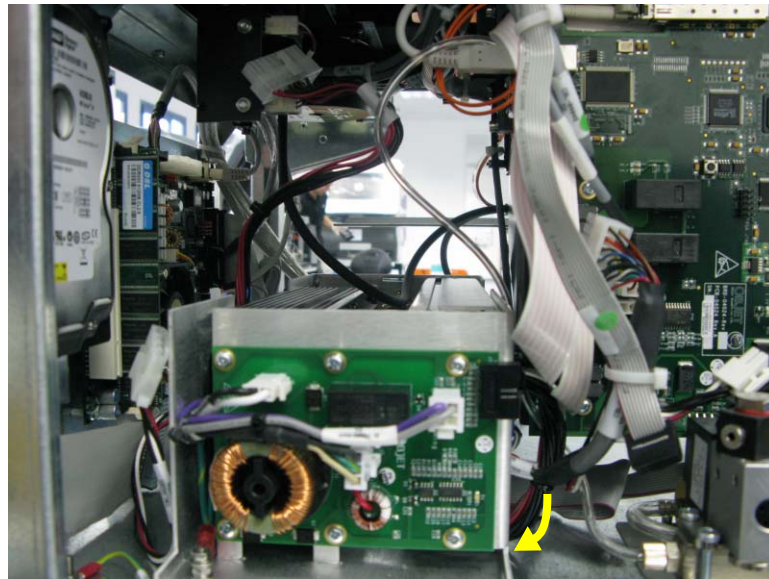

Figure 145 Cables Routed Under the Power Supply

25. Reconnect the following at the front of the printer:
    - Hard disk power connector
    - Printer computer power connector
    - JT27 (Lotus board)
    - JT28 (Lotus board)

26. Secure the power supply unit to the printer with four screws (see Figure 130 and Figure 131).

27. Make sure the cables at the front of the power supply are routed around the solenoid as shown in Figure 135, so they do not touch the power supply cover.
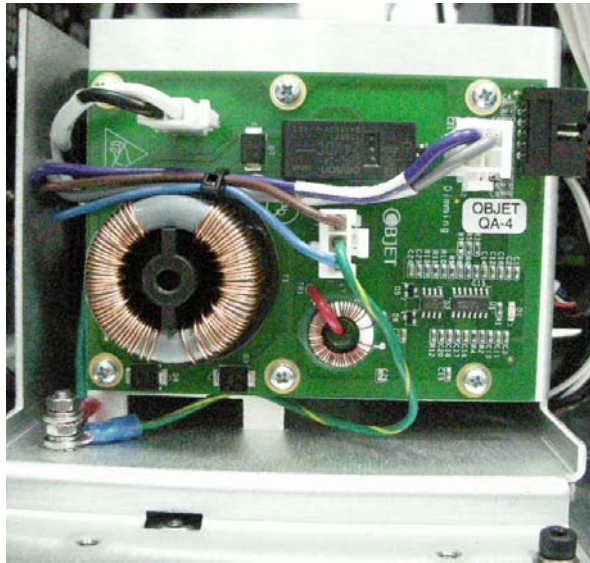

Figure 146 Correct Wire Routing Around Solenoid.

28. Replace the cover and secure with two screws to the printer (see Figure 131).

29. Connect the ground wire.

30. Connect the UV lamp sensor connector at the end of CBL-04120 (see Figure 131).

31.   Reconnect the following at the rear power supply unit:

- Power cables

- UV lamp power connector

- Ground wire

32.   Carefully place the excess fluid collector on the power supply cover.

33.   Reattach the panels of the printer.

34.   Connect the printer to the electric line.

35.   Switch on the printer.