ADDITIVE MANUFACTURING TECHNOLOGIES

postpro3D™



PREVENTATIVE MAINTENANCE GUIDE

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CONTENTS

1	**RISKS AND SAFETY WARNINGS**	**4**
2	**PREVENTATIVE MAINTENANCE SCHEDULE**	**5**
	2.1 POSTPRO3D	5
	2.2 BOFA AD1500IQ EXTRACTOR	6
	2.3 LAUDA UC4 CHILLER	6
3	**MAINTENANCE PROCEDURES**	**7**
	3.1 POSTPRO3D MAINTENANCE PROCEDURES	7
	3.2 BOFA AD1500IQ EXTRACTOR MAINTENANCE PROCEDURES	10
	3.3 LAUDA UC4 CHILLER MAINTENANCE PROCEDURES	10
4	**CONTACT INFORMATION**	**15**

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1 // RISKS AND SAFETY WARNINGS

⚠DANGER Danger indicates an imminently hazardous situation, which, if not avoided, will result in death or serious injury.

⚠WARNING Warning indicates a potentially hazardous situation, which, if not avoided, could result in death or serious injury.

⚠CAUTION Caution indicates a potentially hazardous situation, which, if not avoided, may result in minor or moderate injury.

⚠DANGER **Chemical Hazard: BlastX** may cause severe skin burns and permanent eye damage, including blindness. The chemical may also cause organ damage with prolonged exposure. Pregnant and breastfeeding women should not enter the processing room or operate PostPro3D®. The client must have an eye wash station and emergency shower available when using this consumable and follow the general lab safety precautions. The consumables may also cause an allergic skin reaction. Do not breathe the mist or vapour.

⚠CAUTION **Chemical Hazard:** Avoid touching parts that have been partially or recently processed, even when wearing nitrile gloves. Ensure that all PostPro3D® process steps are concluded to the manufacturer's instructions before touching any processed parts with bare hands.

⚠CAUTION **Chemical Hazard:** If an operator gets chemicals in their eye, immediately flush it out with water using the safety eye wash. Consult the MSDS for more information about treating eye exposure.

⚠CAUTION **Chemical Hazard:** If an operator gets chemicals on their skin, immediately rinse with water. Consult the MSDS for more information about treating skin exposure.

⚠CAUTION **Chemical hazard:** If a processed part is sticky, even after full processing, something may have gone wrong with the processing steps or the part maybe partially processed. Do not handle the part with bare hands and avoid any inhalation of fumes by using an appropriate mask with filter.

⚠DANGER **Chemical Hazard:** Always keep the PostPro3D® machine closed when not processing to ensure no fumes are inhaled by operators. Keep waste containers closed all the time

⚠CAUTION **Pinch Hazard:** The lid of the processing chamber is heavy. Close the lid carefully using the handles on the PostPro3D® to avoid pinching fingers or hands.

⚠CAUTION **Electrical Hazard:** Do not open any door in the body of the device as there is an electric shock risk. The doors are for service entry only by AMT Support team only.

⚠WARNING **Chemical warning:** Do not place processed parts in the mouth or give processed parts to children or to animals.

⚠DANGER **Tipping Hazard:** Always use at least two people to move PostPro3D®. Unlock the castor heels at the base of the machine before attempting to move the machine. Lock the wheels once PostPro3D® is in its new position.

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2 // PREVENTATIVE MAINTENANCE SCHEDULE

To ensure continued and ongoing safe and successful operation of the PostPro3D® the following maintenance schedule is recommended.

⚠ **Note: prior to performing any maintenance procedure the PostPro3D® must be switched off and unplugged from the three-phase power socket. Auxiliary units must also be switched off and unplugged, unless otherwise stated.**

⚠ **Note: operations that involve the systems where the BlastX is contained (i.e. replacing Santoprene tubes, replacing cannisters) must be carried out by personnel trained by AMT to do so. The person in charge shall make sure that all the safety measures specified in the training are taken.**

⚠ **Before the operation of the PostPro3D® ensure the operator is wearing the appropriate PPE and is following the procedures for safe operation as outlined in Section 2 of this manual.**

2.1 // POSTPRO3D

2.1.1 Weekly

- Clean process chamber with IPA or similar cleaning solution to prevent contamination of parts during processing.
- Clean the lid slide rail to prevent a build-up of dust, dirt or other contaminants

2.1.2 Monthly

- Remove lid cover and check the heat exchanger glycol mix level. Top up, if necessary.

2.1.3 Yearly

- Replace the Heat Exchanger Water/Glycol Mix this should be done in conjunction with replacing the water/glycol mix in the chiller.

2.1.4 On machine “warning”

- Virgin cannister level low: replace empty virgin cannister with new full virgin cannister. Full virgin cannister will be provided by AMT and empty cannister should be returned to AMT.
- Used cannister level high: replace full used cannister with new empty used cannister. Empty used cannister will be provided by AMT and full used cannister should be returned to AMT.
- Carbon Filter Saturation above 95%: Contact AMT for a replacement carbon filter. This will be fitted by AMT.
- All other machine warnings: contact AMT for technical support.

2.1.5 On machine “error”

- All machine errors: contact AMT technical support at support@amtechnologies.com

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2.2 // BOFA AD1500IQ EXTRACTOR

2.2.1 Weekly

- Check the connection of the extraction ducts on the inlet and outlet of the extractor as well as the PostPro3D.

2.2.2 On machine "warning"

- Pre-filter Replacement: Replace the Pre filter on the extractor
- Combined Filter Replacement: Replace the combined filter on the extractor.
- All other machine warnings: Consult the BOFA AD1500iQ user manual. Contact support@amtechnologies.com

2.3 // LAUDA UC4 CHILLER

2.3.1 Weekly

- Verify that the water temperature indicated on the controller is approximately at the setpoint.
- Verify the water/glycol level in the tank.
- Verify the state of the water filter

2.3.2 Monthly

- Clean the condenser
- Clean the housing

2.3.3 Yearly

- Change the water filter
- Change the water/glycol in the system this should be done in conjunction with replacing the water/glycol mix in the PostPro3D.

2.3.4 On machine "warning"

- All machine warnings: Consult the Lauda UC4 user manual. Contact support@amtechnologies.com

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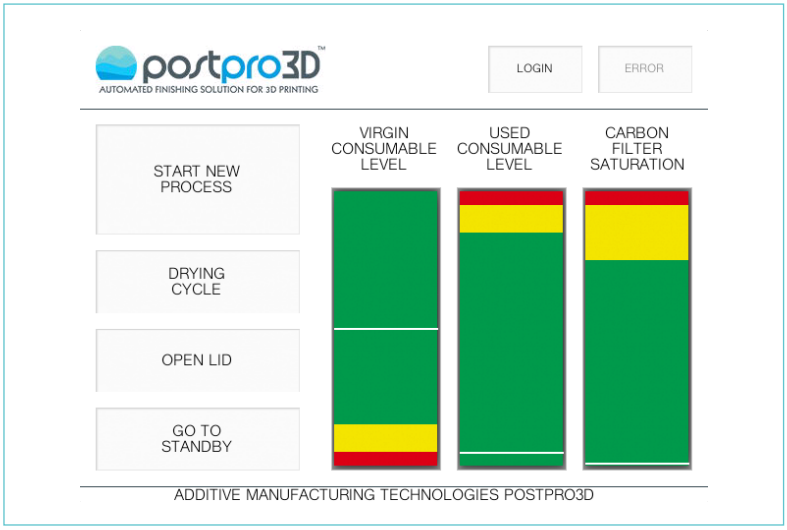
3 // MAINTENANCE PROCEDURES

Follow the procedures below for conducting the maintenance tasks.

3.1 // POSTPRO3D MAINTENANCE PROCEDURES

3.1.1 Cleaning The process Chamber

1. Log in as a Level 3 (Engineer) user.
2. On the start screen on the HMI, press the 'Open Lid' button
3. Press the two hand safety start to open the lid
4. Use a lint free cloth and IPA (Isopropyl Alcohol) to clean the process chamber.
5. Press the two hand safety start to close the lid.



3.1.2 Clean the Lid Slide Rail

1. Clean the lid slide rail using a cloth to remove a build of dirt or dust which could inhibit the movement of the lid.
2. After cleaning use a silicone grease to lubricate the rail.

3.1.3 Check Heat Exchanger Glycol Level

1. Ensure the machine is switched off and it is disconnected from the power supply.
2. Remove the screws holding the lid cover to the lid frame.
3. Check the glycol level using the three level sight glass indicators on the chamber. The level of the glycol should be completely filling the bottom two indicators and the top indicator should be half filled.
4. If required top up the glycol level by removing the screw cap located top of the tank and filling with the correct water/glycol mix. Glycol can be supplied in 5L containers.

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3.1.4 Replace the Heat Exchanger Water/Glycol Mix

1. Before performing a glycol pre-mix change, switch off the machine and unplug it from the three-phase socket. If the machine had been running, wait for the glycol temperature to drop below 30^0 C before carrying on with this procedure.
2. Use the supplied panel key to open the right hand side panel of the PostPro3D
3. Connect a ½" hose to the drain spigot on the heat exchanger and fix in place with a jubilee clip.





4. Place the other end of the hose in a container, or multiple containers, capable of holding at least 50 litres.



5. Open the drain valve and let the water/glycol mix flow from the system.



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6. Once the system is empty close the drain valve and remove the hose from the spigot.



7. Close the right hand side panel.

8. Remove the lid cover by removing the screws holding the lid cover to the frame.

9. Connect the PostPro3D to the power supply and turn the machine on.

10. Unscrew the cap from the tank

11. Fill the chamber with glycol until the centre level sight glass indicator is full and the top sight glass indicator is half full. Glycol can be supplied in 5L containers.

12. When the system is full replace the cap

13. Re-attach the lid cover

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3.2 // BOFA AD1500IQ EXTRACTOR MAINTENANCE PROCEDURES

3.2.1 Check the Extraction Duct Connection

1. Check the extraction duct connection on the inlet and outlet of the extractor
2. Check the extraction duct connection on the outlet of the PostPro3D
3. If any ducting is loose fix in place by tightening the jubilee clips holding the ducting in place.

3.2.2 Replace the Pre-Filter

1. Isolate the electrical supply to the extractor
2. Undo the catches on the front of the unit and open the door
3. The Pre-Filter is the lower of the two filters, using the handle on the front of the filter, pull it out of the unit
4. Once removed it is recommended that the used filters are bagged and sealed.
5. Slide the new filter into position making sure it is pushed all the way in and located correctly on the spigot on the back of the unit.
6. Close the door and fasten the two latches.

3.2.3 Replace the Combined Filter

1. Isolate the electrical supply to the extractor
2. Undo the catches on the front of the unit and open the door
3. The Combined Filter is the upper of the two filters, rotate the lever below the filter through 180 degrees to lower the combined filter.
4. Using the handle on the front of the filter, pull it out of the unit being careful to support it as it comes free as it is heavy.
5. Once removed it is recommended that the used filters are bagged and sealed.
6. Slide the new filter into position making sure it is pushed in all the way
7. Rotate the lever back through 180 degrees to raise the filter into position
8. Close the door and fasten the 2 latches
9. Reconnect the power supply.

3.3 // LAUDA UC4 CHILLER MAINTENANCE PROCEDURES

3.3.1 Check the indicated water temperature

1. Make note of the temperature displayed on the chiller
2. Press the Sel button for about 5 seconds. The display will show “- / -”.
3. Press Down until the display shows “- r -”.
4. Press Sel and the display will show “r01”. This parameter is the temperature setpoint.
5. Press Sel to display the current setpoint value.
6. Check the displayed set point is similar to the water temperature previously displayed on the chiller. It is normal for this to vary by a few degrees.
7. Press the Prg button 3 times to return to the standard display.
8. In the result of an abnormal reading please contact AMT Support.

3.3.2 Check the water/glycol level in the tank

1. Remove the lid from the chiller



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2. Check the water/glycol level in the tank



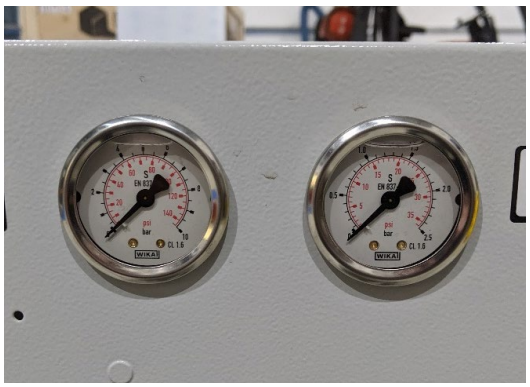
3. Ensure it is between the Min/Max level.



4. If necessary, top the tank up with water/glycol. Glycol can be supplied in 5L containers.

3.3.3 Check the Water Filter

1. Check the water filter pressure using the gauge on the front of the chiller



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2. If this value exceeds 1.5 bar it is necessary to change the water filter.

3. See Section 3.3.6 Change the Water Filter

3.3.4 Clean the Condenser

1. Ensure the chiller is powered off and disconnected from the power supply.

2. Remove the lid of the chiller



3. Use compressed air to clean the condenser from the inside towards the outside

4. Re-attach the lid.



3.3.5 Clean the Chiller Housing

1. Clean the chiller externally and internally using a cloth
2. Eliminate any dust present, especially on the water pump rack.

3.3.6 Change the Water Filter

4. Remove the lid of the chiller



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5. Remove the left hand side panel of the chiller



6. Unscrew the water filter

7. Remove the old water filter



8. Insert the new water filter

9. Attach the left hand panel

10. Place the lid on the chiller.



3.3. Change the water Glycol Mix

1. Disconnect the coolant hoses from the PostPro3D

2. Attach a ½" fitting to the drain tap on the chiller (NPT in the US, BSP in EU),



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3. Connect a length of hose to the pipe and place the other end into a container or containers capable of holding at least 50 litres.



4. Open the drain valve on the chiller

5. Allow the water/Glycol mix to flow from the chiller.

6. When the chiller is empty close the drain tap

7. Remove the hose and drain fitting from the chiller.

8. Place the coolant hoses over a container.



9. Remove the quick release fitting from the end of the hose

10. Allow the water/glycol mix to flow from the hoses.

11. Once empty reconnect the quick release fittings on the hose

12. Connect the coolant hoses to the PostPro3D.

13. Power on the unit and continue to fill with water/Glycol until the coolant level remains stable. It may be necessary to power cycle the chiller to ensure the coolant is being pumped through the system. Glycol can be supplied in 5L containers.

14. Ensure the level is between the ”min” and “max” indicators on the tank.

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4 // CONTACT INFORMATION

For further information please contact AMT:

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