

Maintenance Guide

Maintenance task must be perform on a regular basis in order to maintain optimal system operation.

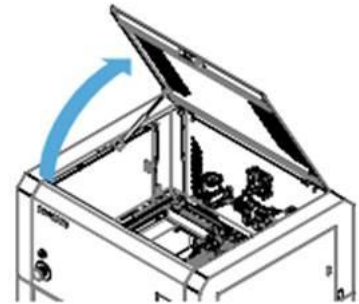
General Maintenance

6 months	3 months	As Needed	Maintenance Task
	X		Linear guides and Leadscrew
		X	Clean extruder
X			Coolant liquid level
		X	Build plate
		X	Fans

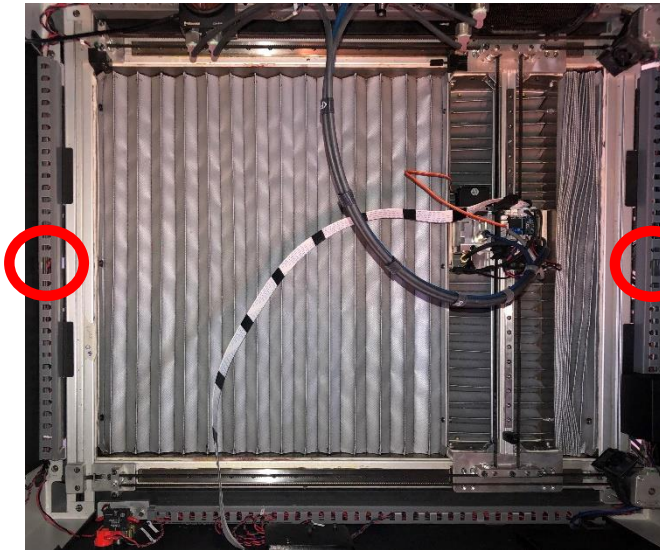
Linear guides and leadscrew

To access the leadscrew of the Macro unit, please follow these instructions.

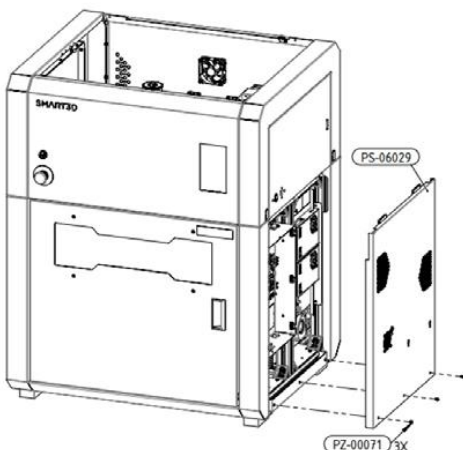
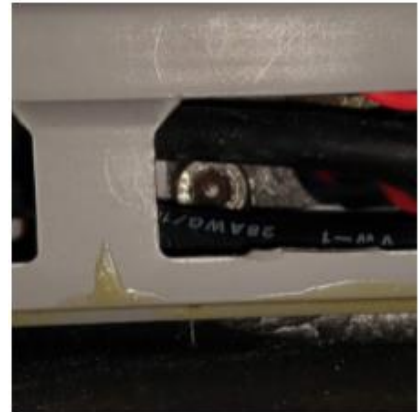
IMPORTANT: Make sure the Macro 3D Printer is turned off and unplugged from any and all power sources to avoid any accidents.



1. Open the top door.
2. Located and remove the screw inside the rail on the left side of the unit (see images) using a 3mm Allen wrench. Be careful not to damage the surrounding cables.



(close-up view)



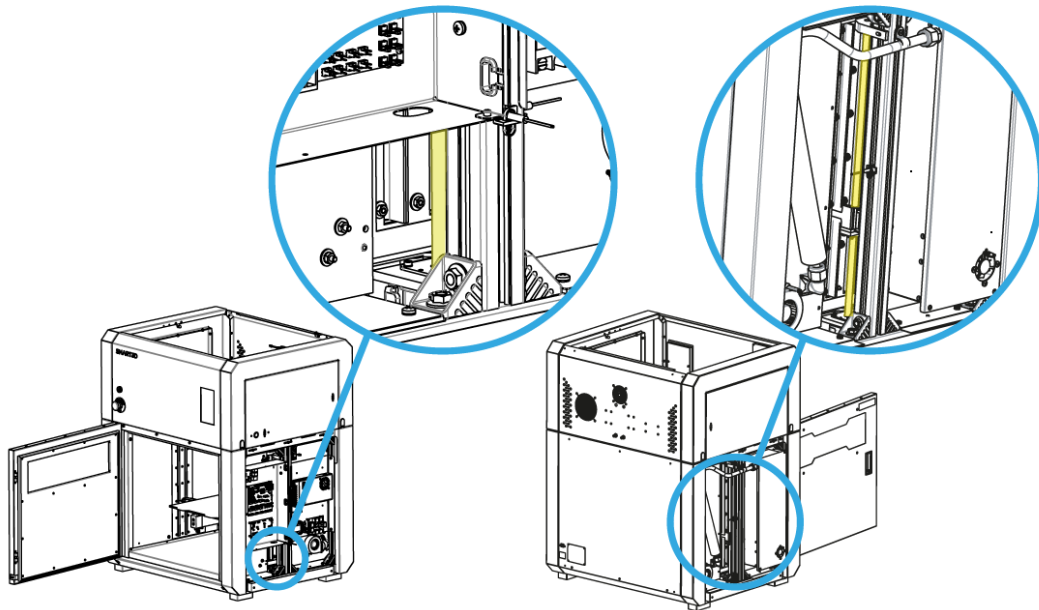
3. Remove the 3 bottom screws that secures the side panels using a 2.5mm hex key.

WARNING! Be careful not to damage dangerous electrical parts with higher voltages (220V/230V). Both linear guides and leadscrew need maintenance every three months (if the use of the printer is frequent the maintenance periods must be shorter). You will need grease to lubricate the items. Use a brush to apply the grease on the linear guide.

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Size Leadscrews

For the leadscrews, you must use high-temperature grease. To apply it, put a small amount on the nut.



Once you have applied the grease to both leadscrews, turn on the printer and move the build plate up and down all along the printing area.

To do this, press **HOME ALL**, send the command **G1 Z400** on the upper command bar, and press **HOME ALL** again.

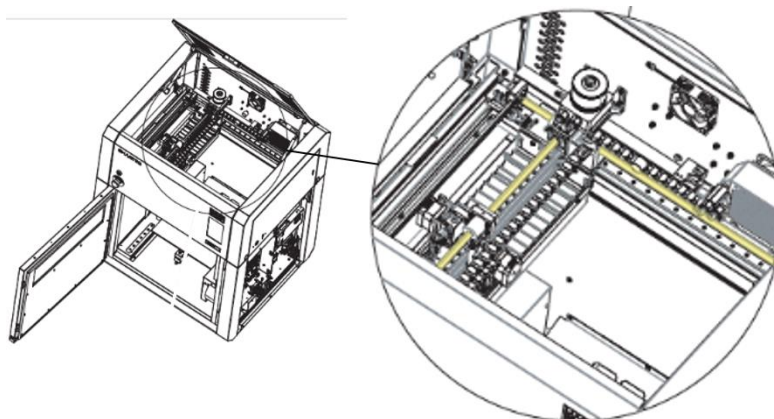
Turn off the printer.

Top Leadscrews

NOTE: make this procedure with the printer off

Open the top door.

For the top leadscrews, you must also use high-temperature grease. To apply it, put a small amount along the sides.



Move the printhead all over to lubricate the guidelines properly.
 To do this, Turn ON the printer and press the button **HOME X** and **HOME Y**

HOME ALL	← Machine Movement								COMPENSATION & CALIBRATION ▾
HOME X	< X-50	< X-10	< X-1	< X-0.1	X+0.1 >	X+1 >	X+10 >	X+50 >	
HOME Y	< Y-50	< Y-10	< Y-1	< Y-0.1	Y+0.1 >	Y+1 >	Y+10 >	Y+50 >	
HOME Z	< Z-25	< Z-5	< Z-0.5	< Z-0.05	Z+0.05 >	Z+0.5 >	Z+5 >	Z+25 >	

Then, on the upper command bar send the following command **G1 X345 Y345**

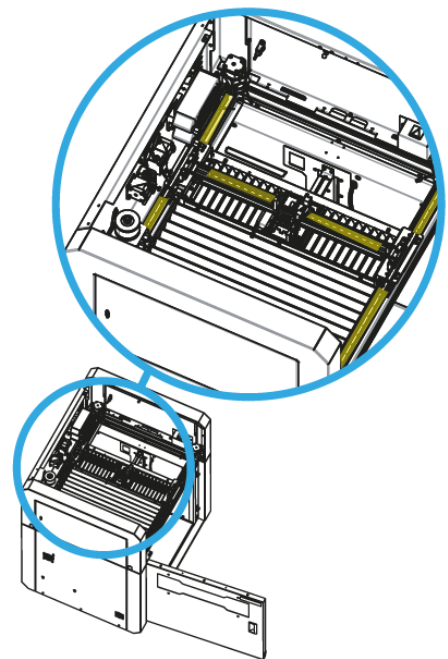
Guidelines

For the axes guidelines, you must use bearings grease. To apply it, you have to put a little amount along the side of the rail.

Move the hotend all over to lubricate the guidelines properly. To do this, Turn ON the printer and press the button **HOME X** and **HOME Y**

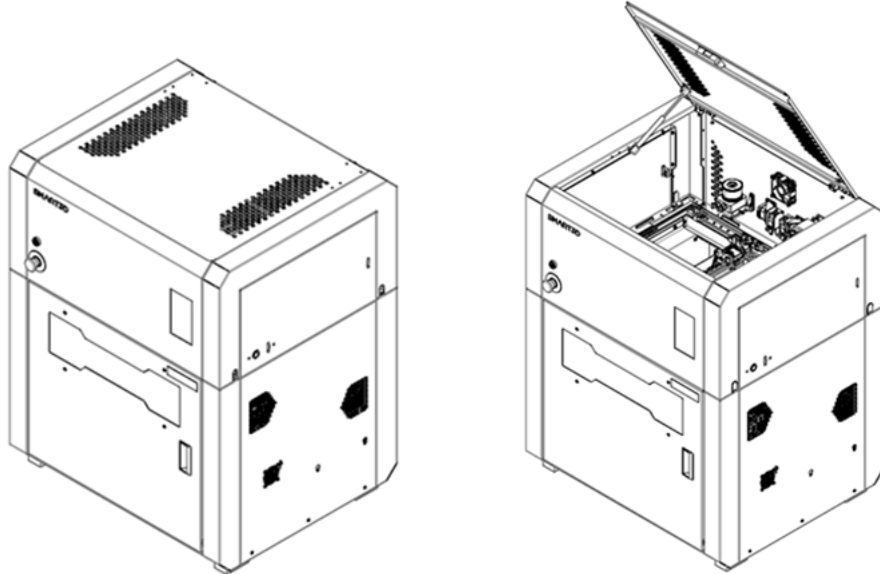
HOME ALL	← Machine Movement								COMPENSATION & CALIBRATION ▾
HOME X	< X-50	< X-10	< X-1	< X-0.1	X+0.1 >	X+1 >	X+10 >	X+50 >	
HOME Y	< Y-50	< Y-10	< Y-1	< Y-0.1	Y+0.1 >	Y+1 >	Y+10 >	Y+50 >	
HOME Z	< Z-25	< Z-5	< Z-0.5	< Z-0.05	Z+0.05 >	Z+0.5 >	Z+5 >	Z+25 >	

Then, on the upper command bar send the following command **G1 X345 Y345**.



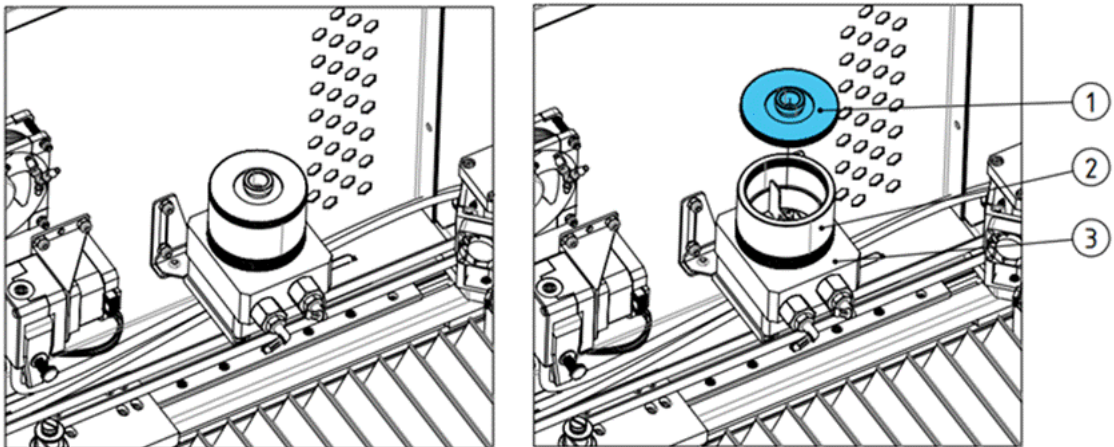
Coolant liquid level:

1. Make sure the Macro HT 3D Printer is off. For this procedure, it is important to have the printer off in order to completely refill the water pump system. Then, open the top door.



2. Carefully, take out the reservoir top cup.

Attention: Be careful because the cup has an O-ring. It can fall out while taking the cup out.



Picture references:

1. Reservoir top cup + O-ring
2. Reservoir
3. Water pump

3. Take the Smart3D liquid coolant and fill the system.

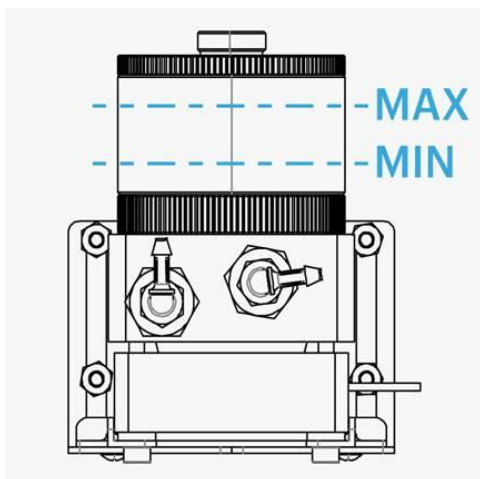
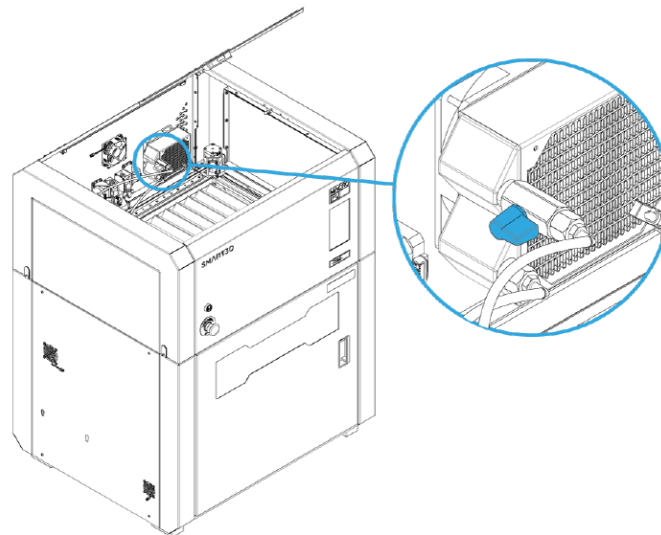
⚠ WARNING: This product can expose you to chemicals including Ethylene glycol (ingested), which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

⚠ CAUTION: Wash your hands if you accidentally touch it, avoid touching your mouth/ nose/ eyes.



Note: The Smart3D liquid coolant includes a small amount of additional chemicals to address biological growth and corrosion. It is important to add only Smart3D-approved coolants in filling your system. Regular tap water, bottled drinking water, and "purified" water will eventually develop organic growth (and possibly corrosion). This is bad for temperatures, can be messy to clean up, and could potentially cause hardware damage.

4. Open the cooling system stopcock.

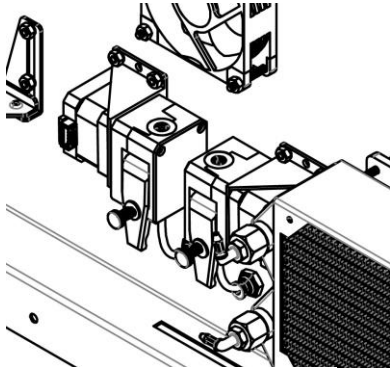


5. Once the reservoir is loaded, turn on the machine. The system will begin to purge the remaining air in the system and the user will see that the level drops. You will need to add more liquid to reach the max level. Repeat this operation until you see the max level is stabilizing. After this procedure, close the reservoir and open the small cap, and leave it open. The machine should be left running without printing for about 30 minutes to finish the air purge. Once completed, close the reservoir permanently.

Note: The reservoir level must be checked periodically and if necessary, refilled to the max level.

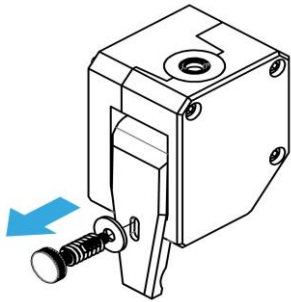
Extruders:

Both extruders need to be checked periodically as filament debris can accumulate around it. You may have a quick view at least once every 2 weeks, but a careful examination of the extruders is recommended at least every 2 months, where a close inspection of the gears and the extruder must be carried out to ensure that there's no debris or dust present. If so, please use the provided brush to clean it.



1. First, be sure to check the surroundings of the extruders.

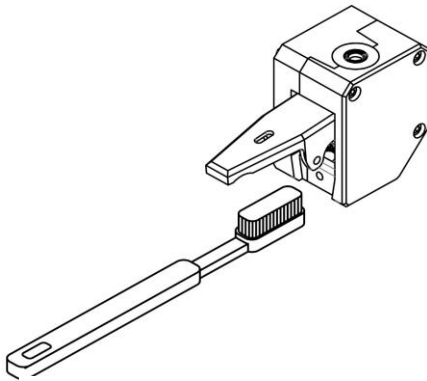
If there is much debris accumulated, it will be easily spotted below them.



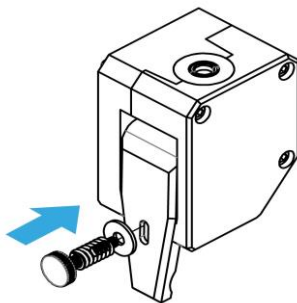
2. There is no need to remove the extruder in order to carry out the cleaning procedure.

Remove the thumbscrew tensioner in order to access the internal gears.

Note: It is recommended to count how many revolutions the screw had.



3. Using a brush, gently clean the inside of the Bowden and the gears. Removing any residue will improve the grip of the extruder and will minimize the risk of cross-material contamination when printing.



4. Insert back the thumbscrew tensioner and be sure to screw in the same amount of revolutions it had.

Note: if you don't know how many it had, apply 3-4 full clockwise screw revolutions.

PEI Print Bed

After every print, you must clean the print bed properly. It is important to keep the bed clean and without any irregularities to prevent issues with the next print and to make sure it is aligned relative to the platform. During the use of the printer, the print bed may get scratched. You can prolong its serviceability by cleaning it with isopropyl alcohol using a clean cloth.



How to clean the PEI Print bed

Note: If the printer has recently finished printing, use the corresponding protective gear to avoid possible burns.

Remove the PEI sheet from the bed.

If a print was recently made, please remove it by flexing the PEI sheet.

Moisturize a microfiber cloth with clean water and use it to clean the PEI sheet. Use abundant water if necessary. Then use isopropyl alcohol to do a final cleaning of the PEI sheet. Acetone can be used to remove leftovers or grease that cannot be cleaned with alcohol.

If a print job is about to be sent, you can apply the corresponding adhesive at this stage before putting the PEI sheet back into the print bed.

Fans Maintenance

Fans need to be checked every 1-2 months. Check that they are free of any residue of dust or grime that could affect their operation. Use a brush to carefully remove any dirt