

Maintenance 维护指南

A. Clean nozzle

To clear a clogged or dirty nozzle, preheat the nozzle to 200°C–250°C. Remove the print head cover, pull out the Teflon (PTFE) tube, and insert a nozzle cleaning needle through the top to push out the blockage.

清理喷嘴 (**Clean nozzle**) 若要清理堵塞或脏污的喷嘴, 请先将喷嘴预热至 200°C–250°C。拆下打印头保护罩, 拔出特氟龙 (PTFE) 管, 然后从顶部插入喷嘴清理针, 将堵塞物向下推挤出来。

B. Clean PEI plate

Ensure the bed is completely cooled and powered off. Remove the flexible magnetic sheet from the printer, wipe it down using a microfiber cloth dampened with Isopropyl Alcohol (IPA) to remove oils, and let it air dry before reinstalling.

清理 PEI 打印板 (**Clean PEI plate**) 请确保热床已完全冷却并关闭电源。从打印机上取下磁吸柔性钢板, 使用沾有异丙醇 (IPA) 的无尘布擦拭以清除油污, 待其完全风干后再安装回打印机。

C. Lubricate the Axes

Guide rods can accumulate debris and experience friction, causing resistance that leads to layer shifts and poor print quality. Ideally, the print head should glide smoothly along the axes without catching. To test this, turn off the printer and manually slide the print head and bed back and forth; if you feel stiffness or catching, the rods need to be cleaned and lubricated.

- **Recommended Lubricant:** White lithium grease or light machine oil.
- **Clean:** Use a lint-free cloth or paper towel to wipe away old grease, dust, and debris from the rods or lead screws first.
- **Apply Sparingly:** Dab a few small drops of lithium grease (or oil) along the rod or screw.
- **Distribute:** Manually move the print head or bed back and forth to spread the lubricant evenly, then wipe off any excess clumps.

****Note:** NEVER apply oil or grease to your timing belts.**

轴向润滑 (**Lubricate the Axes**) 导轨在长期使用后会积聚灰尘并产生摩擦, 导致运行阻力变大, 从而引发打印错位并影响打印质量。理想情况下, 打印头应能在各轴向上平滑滑动且无卡顿。测试方法: 关闭打印机电源, 用手手动前后左右滑动打印头和热床; 如果感觉到生硬、干涩或卡顿, 则说明导轨需要进行清洁和润滑。

- 推荐润滑剂: 白色锂基脂或轻质机械油。
- 清洁: 先使用无尘布或纸巾擦掉导轨或丝杠上的旧润滑脂、灰尘和杂质。
- 适量涂抹: 沿导轨或丝杠点上几滴少量的锂基脂 (或润滑油)。
- 均匀分布: 手动前后移动打印头或热床, 使润滑剂均匀铺开, 随后擦掉多余堆积的油脂。

- 注意:切勿将润滑油或润滑脂涂抹在同步带上。

D. Belt inspection

Check whether the belt is tight or not. Gently pluck the belt like a guitar string. It should produce a low, resonant note and offer slight resistance when pressed.

****Note: NEVER apply oil or grease to your timing belts.****

Adjust the X-Axis Belt:

1. Using a 2.0 mm hex screwdriver, loosen the 4 screws securing the X-axis motor while holding the motor steady with your left hand.
2. Slide the motor left or right with your right hand to adjust the belt tension. Moving the motor to the **left** tightens the belt; moving it to the **right** loosens it.
3. Once the belt reaches the proper tension, hold the motor firmly in position with your left hand and retighten the 4 screws with your right hand.

检查皮带 (**Belt inspection**) 检查皮带是否松弛。用手像拨动吉他弦一样轻轻弹一下皮带, 它应该发出低沉的回响, 且在向下按压时能感受到轻微的阻力。

- 注意:切勿将润滑油或润滑脂涂抹在同步带上。
- 调节 **X** 轴皮带:
 1. 用左手固定住后方的 X 轴电机, 使用 2.0mm 内六角螺丝刀拧松固定 X 轴电机的 4 颗螺丝。
 2. 用右手向左或向右移动 X 轴电机来调节皮带张紧度(将 X 轴电机向左移动会拉紧皮带, 向右移动则会放松皮带)。
 3. 调节到合适的皮带松紧度后, 用左手稳固住 X 轴电机的位置, 用右手将 4 颗螺丝重新拧紧。

E. Tighten screws

Check and tighten all structural screws, frame bolts, and the heating block assembly. If you notice sudden shifts in your print layers, it is likely caused by loose pulleys on the motor axes. Inspect the drive pulleys while the printer is moving; if they are slipping, use a small Allen key to firmly tighten their respective grub screws.

加固螺丝 (**Tighten screws**) 定期检查并拧紧所有结构螺丝、机架螺栓以及加热块组件。如果您在打印过程中注意到突然的层移(错层), 这很可能是由于电机轴上的同步轮没有固定好引起的。在打印机运转时观察驱动同步轮, 如果发现有打滑现象, 请使用细小的内六角扳手牢牢拧紧对应的顶丝(米字螺丝/机米螺丝)。

COMMON TROUBLESHOOTING

Problem Description	Reason	Troubleshooting
Printer does not turn on	Loose power connection, faulty adapter, or incorrect voltage supply	Ensure the original power adapter is securely connected to both the printer and a working wall outlet.
Filament is not loading	Filament tip is deformed, it was not inserted far enough, or the residual filament is blocking the nozzle hole	Reinsert it firmly through the filament runout sensor and into the extruder. If the nozzle is clogged, heat the nozzle to its printing temperature, carefully unload the filament, and clear the obstruction using a cleaning needle.
Filament cannot be extruded	Nozzle temperature setting is below the required melting point for the filament	Heat the printer to 230°C and use the provided needle to clear the 0.4mm hole at the end of the nozzle, or replace the nozzle entirely.
Nozzle Heating Failed	Faulty, disconnected nozzle temperature sensor	Unplug and firmly reconnect the thermistor wire harness, then try heating again.
Bed Heating Failed	Heating tube wire is loose or Detached	Reconnect the wires with the wire connector.
Hot bed temperature shows in negative	The hot bed thermistor is short-circuited, damaged, or loose	Check if the thermistor is loose or damaged, and re-plug the connection line. If it remains broken, contact after-sales personnel for a solution.
Probing Failed	The nozzle sensor fails to properly contact or read the build plate	Clean the Nozzle / Clear the Heated Bed / Check the Sensor Cable / Manually Level and Auto Home
Printer stops working during printing	Error occurred	Check the notification shown on screen and restart the printing.
Model detaches from the bed during printing	The nozzle is too far from the heated bed, or the nozzle is scraping/catching against the printed model.	Check if the first layer lines on the heated bed appear rounded, re-level the bed and decrease the Z-Offset (e.g., lower it by 0.05 mm to bring the nozzle closer) / Increase the Z-Offset . If the default setting is 0.4 mm, increase it by 0.2–0.6 mm to prevent the nozzle catching the model during movement. / Add a Brim or Skirt in your slicer to strengthen its grip on

		the heated bed. You can set the brim type to Outer only and increase the width from the default 5mm to 10 or 15 mm.
Filament stops coming out during printing	Filament runout	Press the control knob and select "Change Filament".
Filament melts too fast or slow	Incorrect speed or temperature	Pause the printing and remove the residual filament on the hot bed. Restart the printing.
SD card or card reader does not work	SD card error or incorrect insert	Format SD card / Reload the SD card / Wipe the metal contact with an eraser
Wi-Fi Connection Failed	Unsupported Network Frequency, or Weak Signal	Fix the network source. The printer's Wi-Fi module only supports 2.4GHz networks. / The printer is located too far from the wireless router or blocked by thick walls.

常见故障排除 (Common Troubleshooting)

故障现象 (Problem Description)	原因分析 (Reason)	故障排除方法 (Troubleshooting)
打印机无法开机	电源连接松动、电源适配器故障或电压供给不正确	确保原装电源适配器牢固连接至打印机以及正常工作的墙壁插座。
耗材无法装载 (无法进料)	耗材尖端变形、插入深度不够或残留耗材堵塞了喷嘴孔	将耗材牢固地重新插入，穿过耗材断料检测传感器并进入挤出机。 如果喷嘴堵塞，请将喷嘴加热至打印温度，小心地卸载耗材，并使用清理针清除堵塞物。

耗材无法挤出	喷嘴温度设置低于耗材所需的熔点	将打印机加热至 230°C, 使用随附的针清理喷嘴末端的 0.4mm 孔, 或者直接更换整个喷嘴。
喷嘴加热失败	喷嘴温度传感器 (热敏电阻) 故障或断开	拔下并牢固地重新连接热敏电阻线束, 然后再次尝试加热。
热床加热失败	加热管导线松动或脱落	使用接线端子 (连接器) 重新连接导线。
热床温度显示为负数	热床热敏电阻短路、损坏或松动	检查热敏电阻是否松动或损坏, 并重新插拔连接线。如果问题仍未解决, 请联系售后人员寻求解决方案。
探针调平失败 (Probing Failed)	喷嘴传感器未能正确接触或读取构建板	清理喷嘴 / 清理热床平台 / 检查传感器电缆 / 手动调平并自动回零 (Auto Home)。
打印过程中打印机停止工作	发生错误	检查屏幕上显示的错误提示通知, 并重新启动打印。

打印过程中模型与热床脱离 (翘边/掉件)	喷嘴距离热床太远, 或者喷嘴刮擦/卡住了打印中的模型	检查热床上的第一层线条是否显得圆润(未压扁), 重新调平热床并减小 Z 轴偏移量 (Z-Offset) (例如降低 0.05 mm 以使喷嘴更靠近热床)。/ 增加 Z 轴偏移量 (Z-Offset)。如果默认设置为 0.4 mm, 可将其增加 0.2-0.6 mm, 以防止喷嘴在移动过程中刮到模型。/ 在切片软件中**添加裙边 (Brim) 或侧边 (Skirt)**以加强其在热床上的抓地力。您可以将裙边类型设置为“仅外侧 (Outer only)”, 并将宽度从默认的 5mm 增加到 10 或 15 mm。
打印过程中耗材停止流出	耗材耗尽 (断料)	按下控制旋钮并选择“更换耗材 (Change Filament)”。
耗材熔化过快或过慢	速度或温度设置不正确	暂停打印, 清除热床上的残留耗材。然后重新启动打印。
SD 卡或读卡器无法工作	SD 卡错误或插入不正确	格式化SD卡 / 重新插拔SD卡 / 用橡皮擦擦拭金属触点。
Wi-Fi 连接失败	不支持的网络频段或信号微弱	检查并修复网络源。打印机的 Wi-Fi 模块仅支持 2.4GHz 网络。/ 打印机距离无线路由器太远, 或被厚墙阻挡。