



Equipment Maintenance & Calibration Log

Scope of Application: Dental 3D Printing Equipment and Related Production Equipment

Document Version: V1.0

Creation Date: 20260325

Responsible Department: Technical Department

Record Filling Instructions

Maintenance Status: Normal: Maintenance completed as scheduled, equipment status normal. | Abnormal: Abnormalities found in equipment, components, or operating status, requiring further inspection or handling.

Calibration Results Recording Chain: Pre-calibration value → Adjustment/Calibration → Post-calibration value → Whether it meets the standard.

Recording Principles: 1) Record promptly after each maintenance completion; 2) Abnormalities must be documented with an explanation; 3) Calibration must record pre- and post-calibration data; 4) Replacement of parts must record specific models; 5) Maintenance and calibration records must be confirmed by the operator; 6) When parameter adjustments are involved, relevant printing parameter records must be updated accordingly.

Document Management Information

Equipment Name: Light-Curing 3D Printer

Equipment Model: CC

Serial Number: 2516489311

Record Start Date: 20250325

Record End Date: 20260325

Person in Charge: Hu

Reviewer: Li

Document Version: V1.0

Worksheet 1 | Basic Equipment Information

I. Basic Equipment Information

Item	Content
Equipment Name	Photopolymerization 3D Printer
Equipment Brand	PHROZEN
Equipment Model	Csonic mini 8k
Equipment Serial No. / Serial No.	2516489311
Equipment Location	On Desktop
Installation Date	20250325
Commissioning Date	20250326
Responsible Person	Hu
Using Department	Technical Department
Equipment Supplier	PHROZEN
Contact Information	+8618682330083
Warranty Period	1 Year
Remarks	None



II. Equipment Technical Information

Item	Content
Equipment Type	Photopolymerization 3D Printer
Light Source Type	LCD
Light Source Wavelength	405nm
Printing Size	165*71*170mm
Recommended Layer Thickness	50
Software Version	chitubox
Firmware Version	None
Other Important Parameters	None

III. Equipment Status

Item	Content
Current Device Status	☒ Normal ☐ Pending Maintenance ☐ Abnormal ☐ Deactivated
Last Maintenance Date	2026.03.25
Last Calibration Date	2026.03.25
Next Maintenance Date	2026.04.25
Next Calibration Date	2026.05.25
Remarks	None

Worksheet 2 | Regular Maintenance Record Form

I. Maintenance Records

Date	Maintenance Item	Maintenance Content	Maintenance Status	Abnormal Description	Handling Measures	Remarks	Operator	Signature
2025.06.25	Device Inspection	Check Device Light Source Energy	Good	Severe Scratches on Release Film	Replace Release Film	None	Hu	
2025.08.25	Device Inspection	Check Device Light Source Energy	Good	None	None	None	Hu	
2025.10.25	Device Inspection	Check Device Light Source Energy	Good	Screen Energy Slightly Low	Increase Exposure Time for Printing	None	Hu	
2025.12.25	Device Inspection	Check Device Light Source Energy	Good	None	None	None	Hu	
2026.01.25	Device Inspection	Check Device Light Source Energy	Good	Z-axis Abnormal	Replace Limit Switch	None	Hu	
2026.02.25	Device Inspection	Check Device Light Source Energy	Good	None	None	None	Hu	
2026.03.25	Device Inspection	Check Device Light Source Energy	Good	Excessive Dust on Screen	Clean Screen Thoroughly	None	Hu	



II. Abnormal Incident Handling Records

Date	Abnormal Item	Abnormal Phenomenon	Root Cause Analysis	Handling Method	Handling Result	Operator
2025.10.25	Crown Loose on Model with Same Printing Method	Printed Test Size Too Small	Screen Energy Low	Increase Exposure Time	Good	Hu
2026.01.25	Printing Products Missing Irregularly	Some Abnormal Noises Present	Z-axis or release film	Z-axis limit switch is broken	Good	Hu
2026.03.25	Normal equipment inspection	Check for heavy dust on the device light source screen	No printing for a long time or not cleaned properly	Clean the screen thoroughly with alcohol	Good	Hu

Appendix A | Maintenance Item Standards (Recommended)

Category	Maintenance Item	Inspection method	Standard value / Requirement	Allowable error	Judgment method	Recommended frequency
Daily maintenance	External cleaning of the device	Wipe the housing and operating surface with a lint-free cloth dampened with neutral cleaner	No dust, oil stains, or residual resin	—	Visual inspection, cleanliness meets standard as qualified	Daily / After each use
Daily maintenance	Print platform cleaning	Scrape off residue + wipe with lint-free cloth dampened with IPA, check flatness	Platform flat, no scratches, no cured residue	Flatness ≤ 0.05 mm	Visual + straightedge / feeler gauge inspection	Each print
Daily maintenance	Resin tank cleaning	Drain resin, rinse with IPA + gently wipe with lint-free cloth	No particles or cured blocks in the tank, FEP without scratches	—	Visual + backlight inspection	Each material change / Weekly
Daily maintenance	Resin residue check	Filter resin, visually inspect tank bottom and liquid	No particles or gel lumps	—	Visual, no residue as qualified	Each print
Daily maintenance	Release film inspection	Visual + light touch with fingertip	No scratches, dents, whitening, or wrinkles	Uniform light transmission without cloudy spots	Visual, replace if defects appear	Weekly
Regular maintenance	Optical System Inspection	Wipe lens/LCD surface with lint-free cloth and lens cleaning solution	No dust, no stains, no haze	—	Visual inspection, clean is acceptable	Monthly
Regular maintenance	LCD/DLP Inspection	Light up full screen, check for dead pixels/dark areas	No dead pixels, no dark areas, no light leakage	Dead pixels = 0	Full screen lighting visual inspection	Monthly
Regular maintenance	Light Source Inspection	Measure at platform surface with light intensity meter ($\mu\text{W}/\text{cm}^2$)	Light intensity $\geq 80\%$ of factory calibration value	$\pm 5\%$	Compare measured value with factory value	Monthly
Regular maintenance	Guide Rail Inspection	Manual sliding + visual inspection	No sticking, no abnormal noise, no scratches	—	Manual check, smooth is acceptable	Monthly
Regular maintenance	Guide Rail Lubrication	Apply grease as per manufacturer's requirements	Even lubrication, no dryness	—	Visual + tactile inspection	Monthly/Quarterly
Regular maintenance	Fan/Cooling System Inspection	Visual + tactile airflow check	Normal operation, no abnormal noise, no dust accumulation	—	Visual + tactile	Monthly
Regular maintenance	Filter Replacement	Replace fresh air/exhaust filter	Filter not clogged, not damaged	—	Visual comparison, replace when due	Quarterly
Regular maintenance	Electrical Connection Inspection	Check cables, plugs, grounding	Secure connection, no overheating, no damage	—	Visual + tactile	Semi-annually
Regular maintenance	Screws and Mechanical Structure Inspection	Check key screws according to specified torque	No looseness, no cracks	According to manufacturer's torque specifications	Torque Wrench / Feel	Quarterly

Worksheet 3 | Calibration Record Form

I. Calibration Records

Calibration Date	Calibration Item	Pre-Calibration Value	Standard Range	Post-Calibration Value	Pass/Fail	Next Recommended Calibration Date	Operator	Remarks
2025.06.25	Test Block Calibration	3.94mm	4mm	3.98mm	Yes	2025.08.25	Hu	Good
2025.08.25	Test Block Calibration	3.93mm	4mm	3.99mm	Yes	2025.10.25	Hu	Good
2025.10.25	Test Block Calibration	3.96mm	4mm	3.98mm	Yes	2025.12.25	Hu	Good
2025.12.25	Test Block Calibration	3.955mm	4mm	3.985mm	Yes	2026.01.25	Hu	Good
2026.01.25	Test Block Calibration	3.94mm	4mm	3.98mm	Yes	2026.02.25	Hu	Good
2026.02.25	Test Block Calibration	3.90mm	4mm	3.99mm	Yes	2026.03.25	Hu	Good
2026.03.25	Test Block Calibration	3.85mm	4mm	3.97mm	Yes	2026.05.25	Hu	Good

Appendix B | Calibration Item Standards (Recommended)

Category	Calibration Item	Inspection method	Standard value / Requirement	Allowable error	Judgment method	Recommended frequency
Printing Device	Platform Level Calibration	Spirit Level / Leveling Shim Adjustment	Platform Level, Parallel to Light Source Surface	Parallelism ≤ 0.05 mm	Spirit Level / First Layer Test Print Judgment	Monthly / After Movement
Printing Device	Platform Position Calibration	Set Platform Zero Position with Gauge / Zeroing Shim	First Layer Adhesion Consistent, No Skew	± 0.02 mm	First Layer Print Uniformity Judgment	Monthly
Printing Device	Z-Axis Calibration	Measure Actual Z Travel with Gauge Block / Standard Test Piece	Z Travel Matches Command	≤ 0.05 mm	Measured vs. Command Value	Quarterly
Printing Device	Light Source / Light Intensity Calibration	Measure Light Intensity at Platform Surface with Light Meter	$\geq 80\%$ of Factory Calibration Value	$\pm 5\%$	Measured vs. Factory Value	Monthly
Printing Device	Exposure Calibration	Print Exposure Test Piece, Measure Curing Depth / Dimensions	Curing Depth and Dimensions Within Process Window	Dimensions ± 0.1 mm	Test Piece Measurement Comparison	Quarterly
Printing Device	Layer Thickness Calibration	Measure Printed Test Piece Layer Thickness with Micrometer	Matches Set Layer Thickness	± 0.01 mm	Micrometer Measurement	Quarterly
Printing Device	Dimensional Accuracy Calibration	Print Standard Dimension Test Piece	Matches Digital Model Dimensions	± 0.1 mm (X/Y) , ± 0.05 mm (Z)	CMM / Caliper Measurement	Quarterly
Color / Appearance Equipment	Color Difference Calibration	Comparison with Standard Color Chart / Colorimeter	Color Difference within Allowable Range	$\Delta E \leq 2$	Colorimeter / Visual Comparison	Quarterly
Color / Appearance Equipment	Color Reference Calibration	Establish Color Reference with Standard Sample	Reference Drift within Allowable Range	$\Delta E \leq 1$	Comparison with Standard Sample	Quarterly
Color / Appearance Equipment	Optical System Calibration	Cleaning + Correction of Imaging / Light Source	Clear Imaging, Uniform Illumination	—	Standard Sample Visual / Imaging Inspection	Quarterly
Other Equipment	Temperature Calibration	Comparison with Standard Thermometer	Display Value Matches Actual Value	± 1 °C	Thermometer Comparison	Annually
Other Equipment	Time Calibration	Comparison with Standard Timer	Accurate Timing	$\pm 1\%$ / ± 1 s	Timer Comparison	Annually
Other Equipment	Power Calibration	Power Meter Measurement	Output Power Meets Nominal Value	$\pm 5\%$	Power Meter Actual Measurement	Annually
Other Equipment	Sensor Calibration	Comparison with Standard Component	Accurate Reading	According to Sensor Specifications	Comparison with Standard Component	Annually

Worksheet 4 | Maintenance Cycle Settings

Maintenance Item	Cycle	Last Maintenance Date	Next Maintenance Date	Responsible Person	Status
External cleaning of the device	Daily	2025.06.25	2025.08.25	Hu	Good
Print platform cleaning	Each print	2025.06.25	2025.08.25	Hu	Good
Resin tank cleaning	Weekly	2025.07.01	2025.07.07	Hu	Good
Release film inspection	Weekly	2025.07.01	2025.07.07	Hu	Good
Optical System Inspection	Monthly	2025.07.25	2025.08.25	Hu	Good
Light Source Inspection	Monthly	2025.07.25	2025.08.25	Hu	Good
Guide Rail Inspection / Lubrication	Monthly	2025.07.25	2025.08.25	Hu	Good
Fan / Heat Dissipation Inspection	Monthly	2025.07.25	2025.08.25	Hu	Good
Filter Replacement	Quarterly	2025.09.25	2025.12.25	Hu	Good
Electrical Connection Inspection	Semi-annually	2025.12.25	2026.05.25	Hu	Good

Worksheet 5 | Calibration Cycle Settings

Calibration Item	Calibration Cycle	Last Calibration Date	Next Calibration Date	Responsible Person	Status
Platform Level Calibration	Monthly	2026.02.25	2026.03.25	Lin	Good
Platform Position Calibration	Monthly	2026.02.25	2026.03.25	Lin	Good
Z-Axis Calibration	Quarterly	2026.02.25	2026.05.25	Lin	Good
Light Source / Light Intensity Calibration	Monthly	2026.02.25	2026.03.25	Lin	Good
Exposure Calibration	Quarterly	2026.02.25	2026.05.25	Lin	Good
Layer Thickness Calibration	Quarterly	2026.02.25	2026.05.25	Lin	Good
Dimensional Accuracy Calibration	Quarterly	2026.02.25	2026.05.25	Lin	Good
Color Difference / Color Reference Calibration	Quarterly	2026.02.25	2026.05.25	Lin	Good
Temperature / Time / Power Calibration	Annually	2026.02.25	2027.02.25	Lin	Good

Worksheet 6 | Equipment Abnormalities and Repair Records

Date	Equipment Name	Fault / Abnormal Phenomenon	Downtime	Cause	Repair Measures	Replacement Parts	Repair Result	Restoration Date	Maintenance Personnel
2025.10.25	3D Printer	Crown Loose on Model with Same Printing Method	1H	Retest Device Energy	Confirm Single Layer Exposure Time	None	Good	2025.10.25	Xie
2025.12.25	3D Printer	Printing Products Missing Irregularly	2 Days	Replace Accessories	Awaiting Parts	Limit Switch	Good	2025.12.25	Xie

2026.2.25	3D Printer	Print Plate Drop	30min	Wipe Clean the Device	Clean with Alcohol	None	Good	2026.2.25	Xie

Worksheet 7 | Consumables and Parts Replacement Records

Date	Equipment	Components / Consumables	Model	Replacement Reason	Usage Time / Count	Replacement Personnel	Remarks
2025.06.25	Photopolymerization 3D Printer	Release Film	FEP	Release Film Scratches Severe, Wear Exceeded Limit	Approximately 3 Months	Hu	Replaced During Maintenance
2025.12.25	Photopolymerization 3D Printer	Limit Switch	—	Z-axis Abnormal, Limit Switch Damaged	Approximately 9 Months	Hu	Replaced During Repair

Worksheet 8 | Annual Maintenance Summary

Month	Planned Maintenance Count	Actual Maintenance Count	Abnormality Count	Calibration Count	Maintenance Count	Remarks
January	1	1	1	1	0	
February	1	1	0	1	1	
March	1	1	1	1	0	
April	1	0	0	0	0	No Maintenance Records
May	1	0	0	0	0	No Maintenance Records
June	1	1	0	1	0	
July	1	0	0	0	0	No Maintenance Records
August	1	1	0	1	0	
September	1	0	0	0	0	No Maintenance Records
October	1	1	1	1	1	
November	1	0	0	0	0	No Maintenance Records



December	1	1	0	1	1	
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SEO Keywords / Long-tail Terms

- dental lab 3D printer maintenance schedule template
- SLA printer calibration log for dental labs
- DLP resin printer quality control checklist
- dental 3D printing equipment maintenance records
- calibration records for dental SLA printers
- preventive maintenance for dental DLP printers
- dental lab 3D printer service log template
- resin 3D printer calibration protocol dental
- monthly maintenance schedule dental 3D printer
- dental distributor equipment calibration documentation
- quality assurance for dental 3D printing labs
- SLA printer maintenance checklist for dentists
- DLP printer calibration guide dental practice
- dental lab equipment calibration log software
- regulatory compliance for 3D printer maintenance
- dental 3D printer preventive maintenance plan
- maintaining accuracy in dental resin printers
- calibration records management for dental labs
- dental CAD CAM printer maintenance schedule
- standard operating procedures for printer calibration
- dental lab quality control documentation template
- resin 3D printer upkeep for dental clinics