stomdevice

FIVE-AXIS INTELLIGENT DENTAL MILLING MACHINE

Empowering Scalable and Intelligent Production



www.up3ds.com

Unleash Dental Creativity

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UP3D

UP3D is a high tech company and the few companies in the world that are capable of developing a full dental CAD/CAM solution including software and hardware, from scanning, designing, to milling.

UP3D remains dedicated to our customers' requirements for training and support as well as for innovative, high-quality products that perform reliably. We have native technical support to deal with any after-sales problems to ensure that you can use our products happily.

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Becoming the Global Leader in an Exceptional Digital Dental Ecosystem

120+

Countries and regions served

11,000+

Equipment installations worldwide

200+

R&D engineers

35%+

High investment in R&D

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A Smarter, More Hassle-Free Partner for Dental Laboratory

P53 - The P53 Five-Axis Intelligent Dental Milling Machine is a state-of-the-art dry milling device, developed by UP3D, that seamlessly integrates an intelligent control system with a unified structure. This integration, coupled with dust-proof slides, the custom BK-1 clamp, and 90° precision milling technology, delivers an efficient and accurate machining experience. The C-clamp design and UPCNC software further optimize material utilization, while smart LED strips and the power-resume function ensure convenient operation and exceptional performance. By injecting intelligent capabilities into dental prosthesis production, the P53 aims to significantly support the scalable manufacturing of dental laboratories.



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Dust-Proof Slide Design

Enhanced Lifespan

Innovatively restructured with dust-proof slide technology, it effectively isolates dust, reduces maintenance needs, and significantly prolongs the machine's lifespan. Enjoy a more efficient and durable machining experience.



Custom BK-1 Clamp

Efficient Material Switching

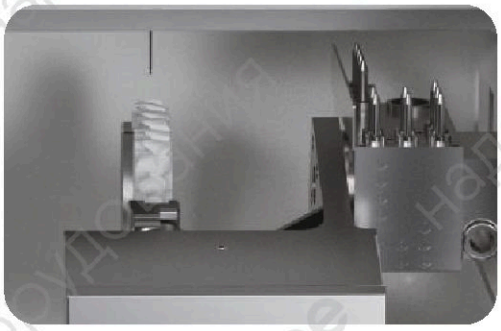
Featuring the custom BK-1 clamp, it enables rapid switching between disc and multi-size block materials in seconds, optimizing production efficiency and meeting diverse restoration needs.



90° Precision Milling

Efficient and Realistic Restoration

The Intelligent five-axis synchronous technology supports 90° vertical aesthetic processing. Combined with a 0.3mm micro-carving milling cutter, it integrates precise milling with efficient, realistic restoration to ensure high-quality outcomes.



Smart Remote Operation

Boosting Productivity and Efficiency

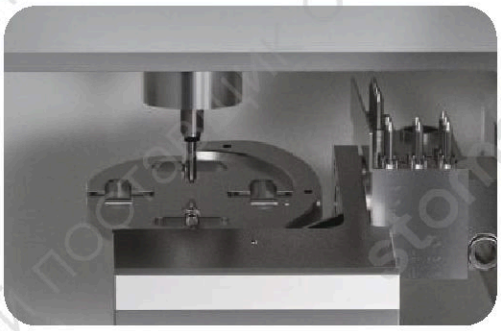
Remote control through Millmind software, along with smart milling reminders and tool life monitoring, effectively supervising production status and significantly boosts production efficiency.



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One-Click Automatic Calibration
High Precision and Stability

With one-click smart calibration, it simplifies operations and automatically optimizes accuracy, ensuring the machine's precision and stability, reducing milling errors, saving materials, and enhancing efficiency.



01.C-Clamp Innovation
Optimized Material Utilization

The innovative C-clamp design provides expanded space for buccal side milling of restorations, significantly improving material layout and edge utilization to ensure efficient use of materials.

02.Smart LED Display Strip
Progress at a Glance

The external LED strip synchronizes in real-time with the device to display processing progress, effectively reducing the need for manual checks and enhancing production efficiency.

03.CNC Multi-Machine Control
Efficient Resource Utilization

A single CNC software can control multiple machines, monitoring the processing status of several devices in real-time, saving desktop space and computer resources.





04.Tool Life Display
Ensuring Normal Production

Integrated with UPCAM to automatically calculate tool wear, planning the usage cycle of the tool wisely to reduce the risk of porcelain breakage and processing failures.

05.Resume from Breakpoint
Significantly Enhanced Efficiency

The software can automatically continue milling from the last interrupted step, avoiding repeated milling and improving work efficiency by at least 80%.

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Technical Specifications

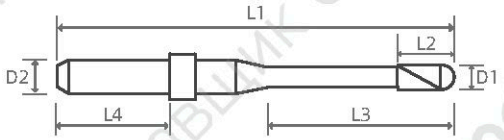
	P53
Dimensions	443.5×718×628.5 mm
Weight	87Kg
Input Voltage	AC 100-240V
Maximum Power	1.1KW
Spindle Power	0.35KW (max)
Number of Axes	Five-axis simultaneous
Milling Range	X/Y/Z:167/200/90mm, A:±30°B:±360°
Milling Type	Dry milling
Max Spindle Speed	40,000rpm
Max Feed Rate	3000mm/min
Tools Quantity	11
Tool Change Method	Automatic (air pressure > 0.5MPa)
Spindle Cooling	Compressed air (air pressure 0.15~0.20MPa)
Materials	Zirconia, wax, PMMA, PEEK, cobalt-chromium soft metal, composites
Milling Time	Coping: Zirconia 10 minutes, Wax 4.5 minutes
	Full crown: Zirconia 13 minutes, Wax 5.5 minutes
Material Size	Discs: height 10-30mm, diameter 98mm
	Blocks up to 40×20×20mm
Spindle Clamping Diameter	Φ4.0mm
CAM Support	UPCAM, Millbox
Data Transmission	Network interface

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Applicable Materials



ZIRCONIA (ZrO2)

Tool Name	Tool Type	Tool Coating	D1 (mm)	D2 (mm)	L3 (mm)	L4 (mm)	L1 (mm)
Zirconia DC Burs	double tooth radius cutter	diamond	2.0	4.0	16.0	18.0	50.0
Zirconia DC Burs	double tooth radius cutter	diamond	1.0	4.0	16.0	18.0	50.0
Zirconia DC Burs	double tooth radius cutter	diamond	0.6	4.0	8.0	18.0	50.0
Zirconia DC Burs	double tooth radius cutter	diamond	0.3	4.0	4.0	18.0	50.0
Zirconia DLC Burs	double tooth radius cutter	+	2.0	4.0	16.0	18.0	50.0
Zirconia DLC Burs	double tooth radius cutter	+	1.0	4.0	16.0	18.0	50.0
Zirconia DLC Burs	double tooth radius cutter	+	0.6	4.0	8.0	18.0	50.0
Zirconia DLC Burs	double tooth radius cutter	+	0.3	4.0	4.0	18.0	50.0
Zirconia DLC Flat Burs	double tooth Flat radius cutter	+	1.0	4.0	16.0	18.0	50.0
Zirconia DC Burs Extended	double tooth radius cutter Extended	diamond	2.0	4.0	20.0	18.0	50.0
Zirconia DC Burs Extended	double tooth radius cutter Extended	diamond	1.0	4.0	20.0	18.0	50.0
Zirconia DLC Burs Extended	double tooth radius cutter Extended	+	0.6	4.0	14.0	18.0	50.0

WAX AND PLASTICS (PMMA)

Tool Name	Tool Type	Tool Coating	D1 (mm)	D2 (mm)	L3 (mm)	L4 (mm)	L1 (mm)
PMMA/Wax single flute Burs	single tooth radius cutter	-	2.0	4.0	16.0	18.0	50.0
PMMA/Wax single flute Burs	single tooth radius cutter	-	1.0	4.0	16.0	18.0	50.0
PMMA/Wax single flute Burs	single tooth radius cutter	-	0.6	4.0	8.0	18.0	50.0

COMPOSITES

Tool Name	Tool Type	Tool Coating	D1 (mm)	D2 (mm)	L3 (mm)	L4 (mm)	L1 (mm)
Composite DC Burs	double tooth radius cutter	diamond	2.0	4.0	16.0	13.0	40.0
Composite DC Burs	double tooth radius cutter	diamond	1.0	4.0	16.0	13.0	40.0
Composite DC Burs	double tooth radius cutter	diamond	0.6	4.0	8.0	13.0	40.0

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Restoration Types/Materials

	 Zirconia	 PMMA	 PEEK	 Composite Resin
 Coping/Full Crown	✓	✓	✓	✓
 Three-Unit Bridge	✓	✓	✓	✓
 Inlay/Onlay	✓			✓
 Veneers	✓			✓
 Screw-Retained Crown	✓	✓		✓
 Custom Abutment	✓		✓	
 Thimble Bar	✓		✓	
 Partial Denture Frameworks	✓	✓	✓	
 Superstructures Over Bars	✓	✓		
 Full Dentures		✓		
 Full Dentures without Teeth		✓		
 Bite Splint		✓		

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