



IRON CORE i5 PRO

Digital Technology Improves Life



Heavy-Duty, Light Operation

The 5-Axis Dental Milling Center Built for
Demanding Metal Milling



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Metal Milling, Made Stable—and Easy to Run

IRON CORE i5 PRO is UP3D's 5-axis dental metal milling platform—built for labs and in-house labs that want stable output, repeatable quality, and a workflow that's easy to run day to day.

Designed for both dry and wet milling, i5 PRO stays consistent through extended runs and heavy-load metal cases—thanks to a rigid machine architecture, a high-torque water-cooled spindle, and integrated cooling management that helps keep cutting behavior steady.

Why IRON CORE i5 PRO

- BUILT FOR STABILITY**
Rigid architecture and protected components help keep performance consistent over time.
- POWER FOR DEMANDING METAL MILLING**
High-torque spindle with integrated cooling supports long shifts and heavy-load cases.
- REPEATABLE RESULTS, LESS REWORK**
Stable motion control and dual-side fixture support help reduce vibration and remakes.
- EASY TO RUN, EASY TO SUPPORT**
15" touchscreen with UPCNC3+UPCAM delivers a guided workflow and faster onboarding.



Long-Term Stability

Built to Hold

Stability and durability are what make metal milling predictable. With IRON CORE i5 PRO, milling behavior stays consistent—so fit becomes easier to control, even when workloads get heavy.



One-piece Cast-Iron Frame

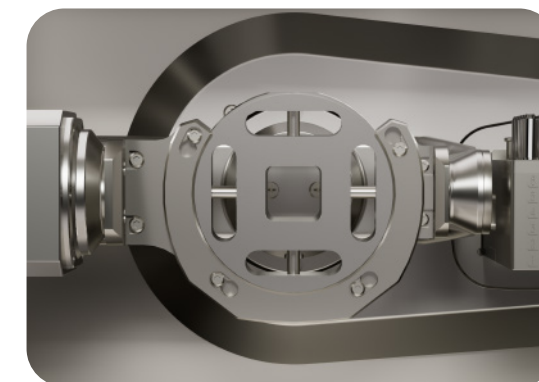
Rigid, vibration-damping Foundation

Compared with cast aluminum structures commonly used in compact mills, cast iron typically provides higher mass and damping, helping absorb cutting vibration and reduce chatter. This supports more stable geometry during long-hour, heavy-load metal milling. The result is cleaner surfaces and a fit that is easier to control.

Dual-side Support Clamping Structure

Secure holding, steadier cuts

Dual-side support reduces cantilever effects and helps keep the workpiece firmly held when milling forces rise. With less micro-movement, geometry stays more consistent, helping reduce adjustment work on implant bars and angled abutments.



2.5kW Water-Cooled Spindle

Consistent torque under heavy loads

High power and torque reserve help keep spindle behavior stable when tool engagement changes during metal mills. Water cooling supports tighter thermal control, helping reduce drift for more consistent results over long runs.



Full-Coverage Silicone Sealing

Helps block dust and liquid intrusion

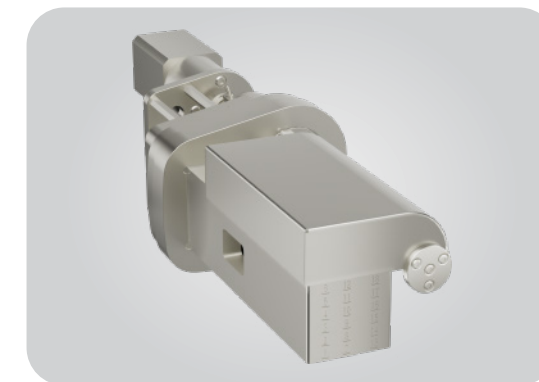
The sealing design helps prevent dust and coolant from entering sensitive internal areas. With key components better protected, contamination-related disturbances are reduced, supporting steadier day-to-day operation over time.



Flip-cover Tool Magazine Protection

Cleaner tool area, easier access

The flip-cover design helps keep chips, dust and moisture away from the tool magazine, supporting more reliable tool handling. It also reduces unnecessary exposure when tools are not being accessed, helping lower maintenance interruptions over time.



Detail-Driven Accuracy

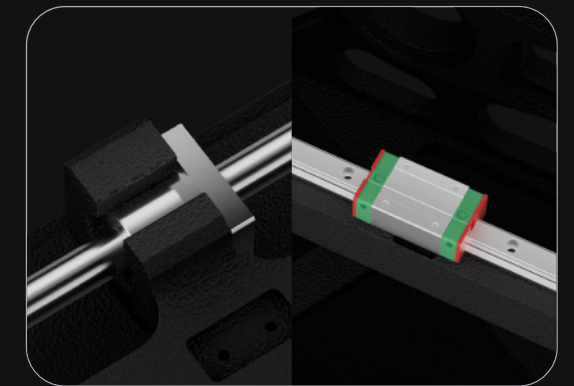
Made for Fit

Precision is not one feature—it's a chain. IRON CORE i5 PRO combines a high-accuracy motion platform with UP3D's intelligent servo control and fine-detail milling strategies, so tool paths stay true and small features stay clean.

High-Precision Motion System

P-grade guides, C3 ball screws

Built with P-grade precision-ground linear guides and C3-grade ball screws, with harmonic drives supporting high torsional stiffness on the rotary axes. This motion foundation helps keep positioning repeatable and rotation stable. You get cleaner geometry and a fit that's easier to control.



Unique Smart Servo

High-precision control, made easier

The i5 PRO's Smart Servo system helps minimize vibration during milling, applying real-time compensation for micro-level motion deviations. The result: cleaner toolpaths and more consistent precision. Less time fine-tuning, more time delivering with confidence.



90° Vertical Milling with Customized Milling Strategy

Sharper anatomy, less handwork

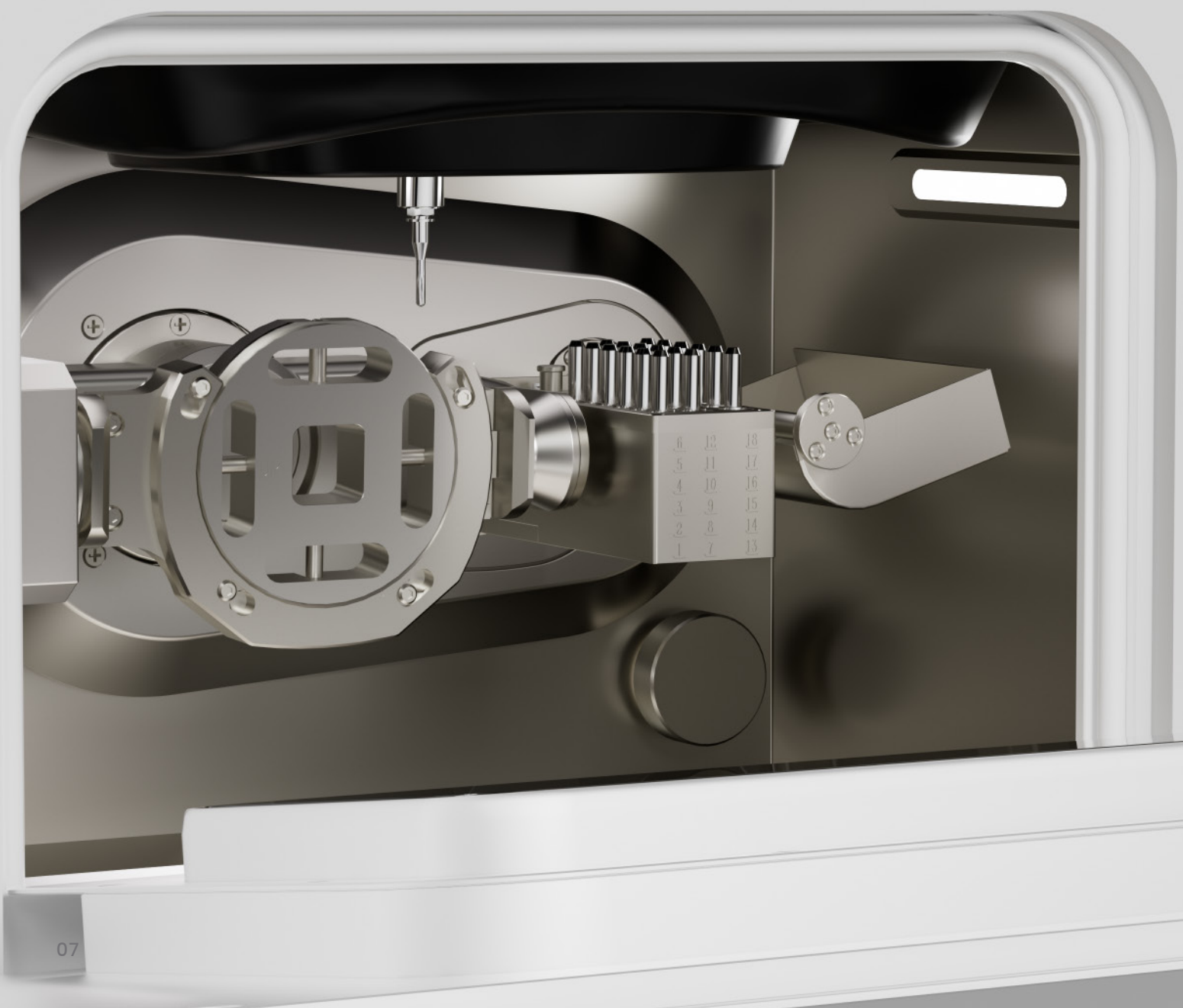
Bring labial and buccal details out more naturally—with less manual finishing. 90° vertical milling improves tool access, and fine-detail strategies with dedicated tools help capture texture and deep-area features without over-milling.



Informed Smart Control

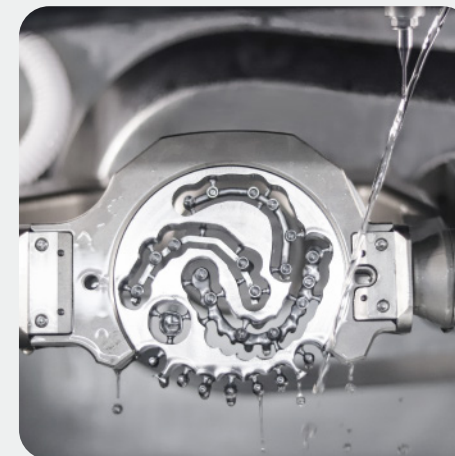
See Issues Early

Metal milling doesn't need guesswork. IRON CORE i5 PRO brings visual process visibility, smart coolant and thermal checks, and remote monitoring into one workflow—so you can spot risks earlier, respond faster, and keep production running with fewer surprises.



1 Built-in HD Camera See the mill in real time

The built-in HD camera gives you a clear live view of the milling process. When something looks off, you can check it immediately instead of waiting for a finished part to reveal the issue. It also makes remote troubleshooting and support more efficient—helping reduce downtime.



2 Smart Coolant and Thermal Monitoring Alerts before problems escalate

Coolant flow monitoring and level warnings help you catch supply issues early, while water-cooling linkage checks and temperature compensation support more stable thermal behavior during long runs. Instead of discovering a problem after the job, you get actionable signals during the process—so intervention is faster and waste is easier to avoid.



3 MillMind Remote Monitoring Stay connected from anywhere

MillMind keeps you connected to i5 PRO from your phone or tablet. Check real-time status, receive smart alerts, and track tool life—so you can plan around jobs instead of being tied to the machine. It's a practical way to stay in control across shifts and reduce unnecessary stops.

Guided Operation

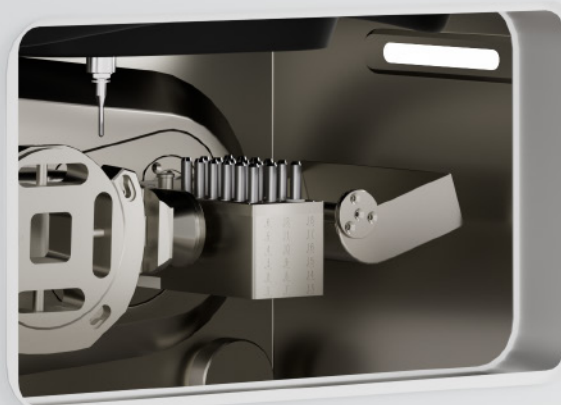
Learn it Fast

Daily control is where productivity is won or lost. On i5 PRO, core tasks like job setup, calibration, tool checks and recovery are presented as a clear, guided flow—built around a large onboard touchscreen and UP3D's self-developed UPCNC3. The result is fewer mis-steps, quicker handovers, and a smoother day-to-day milling routine.

15-inch Touchscreen Panel

Tablet-like ease,
clearer navigation

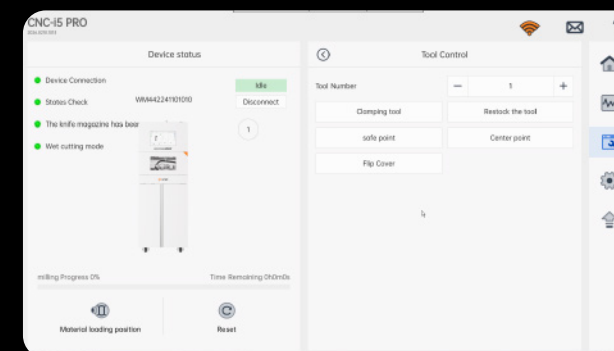
The large HD touch display keeps key functions easy to find and quick to access. Responsive touch helps reduce mis-taps, and the expanded view lets you see more of the workflow without constant zooming—supporting faster setup and smoother operation.



UPCNC3

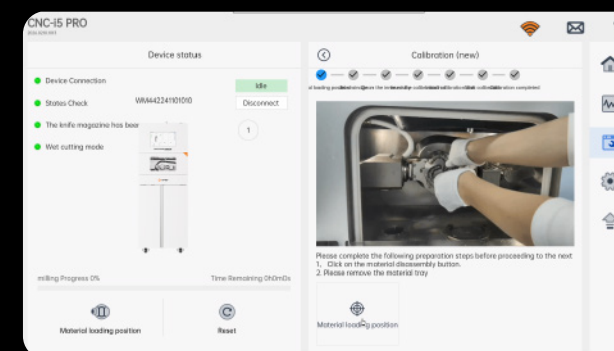
Simplified CNC, Short Learning Curve

UPCNC3 turns complex CNC routines into a guided, visual workflow—so operators can run the core process with fewer hidden steps and less trial-and-error. With a short learning curve, teams can typically complete basic operation and routine maintenance after a 3–4 hour onboarding session.



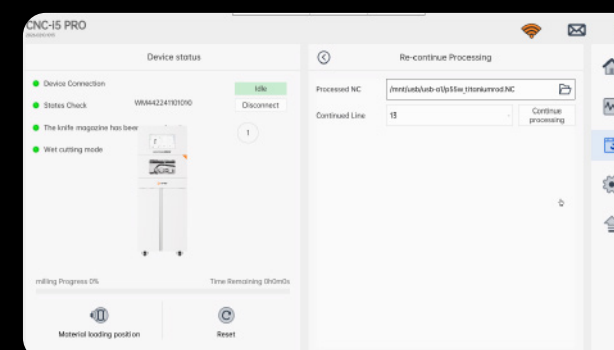
TOOL LIFE MONITORING

Tracks tool usage and wear trends to support planned replacement and steadier output.



ONE-CLICK AUTO CALIBRATION

Guided calibration helps maintain tool and spindle accuracy without manual setup complexity.



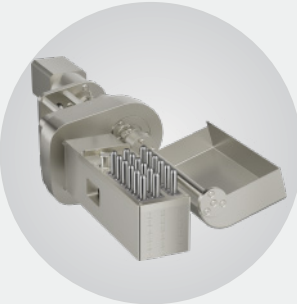
RESUME FROM BREAKPOINT

Restart interrupted jobs from the saved point to reduce rework, waste and downtime.

Service-Friendly Design

Safe, Simple, Organized

A 'friendly design' is not about looks—it's about uptime, safety, and how quickly your team can access, service, and restore the machine to full operation. i5 PRO is structured for clear access and safer daily routines, with built-in modules and practical details that help reduce interruptions and simplify maintenance.



18-tool Automatic Tool Changer
Ready for mixed jobs

The 18-tool ATC supports multi-step metal workflows without frequent manual intervention. It helps keep production moving and reduces interruptions caused by repeated tool handling.



Built-in Accessory Drawer
Tools within reach

A built-in drawer keeps tools and adapters organized and ready to hand—so you spend less time searching during changeovers.



Emergency Stop Button
Instant stop, safer recovery

The emergency stop is positioned for fast reach in critical situations. It helps operators react immediately and supports safer handling during unexpected events or troubleshooting.



Safety Interlock Door
Open the door, milling stops

A door interlock is designed to stop operation when the chamber door is opened during running status. This helps reduce risk during daily use and makes on-site checks safer.



Integrated Cooling System
Less setup, easier upkeep

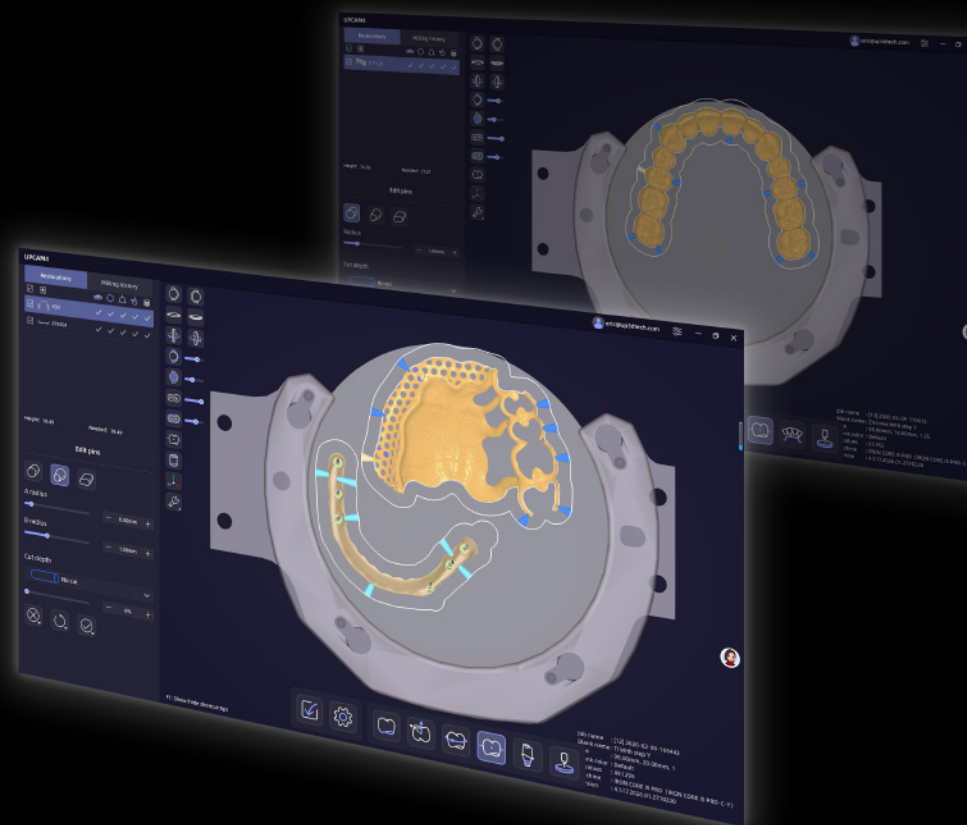
The built-in coolant tank and chiller remove the need for external cooling equipment. Integrated circulation supports stable spindle temperature control, while simplifying installation and day-to-day maintenance.



UPCAM

Smart Nesting, Perfect Results

UPCAM is UP3D's self-developed smart dental nesting software. It streamlines your production with automated restoration placement, pin assignment, and toolpath generation – all through a clean, intuitive interface.



| GUIDED, VISUAL WORKFLOW

Clear steps and on-screen logic help standardize how jobs are prepared—less guesswork, fewer do-overs.

| FAST TOOLPATH GENERATION

Single-unit toolpath in ~2 minutes, keeping daily production moving without long waiting time.

| AUTOMATIC NESTING, LESS RE-POSITIONING

Smart placement reduces unnecessary orientation work and helps maintain stable milling behavior.

| SIMULATION & RISK PREVIEW

Preview toolpaths and spot potential issues before milling—improving success rate and reducing waste.

| UPCAM GLOBAL LICENSE

One license model for global use—no extra annual fees.

UPCAM Implant Module

Implant Workflows Optimized for i5 PRO Titanium Milling



Built-in mainstream implant libraries with advanced implant editing tools.



One-click implant replacement to handle case changes quickly.



High-success auto alignment, plus manual mode when needed.



Interface-feature recognition for controlled, fine machining on common interfaces.



Maximum Versatility

One i5 PRO. More of Your Daily Case Mix

IRON CORE i5 PRO is designed to cover more of that daily case mix on one platform. With dedicated holders for discs, blocks, and titanium rods, you can take on different job types without changing machines or rebuilding your setup. For most day-to-day output, i5 PRO supports efficient dry production; and when a process requires controlled cooling, a wet configuration is available—so more of your orders stay on one consistent system.

● FREEDOM IN MATERIALS & APPLICATIONS

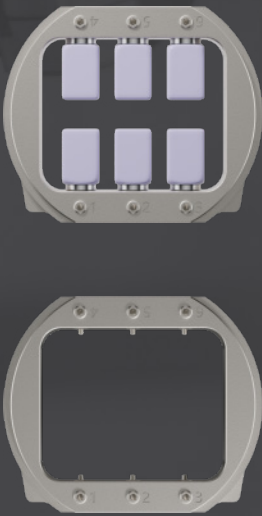
GLASS CERAMICS	PMMA	Coping	Full Crown	Full-Coverage Bridge	Screw-Retained Crown
PEEK	COMPOSITE RESIN	Inlay & Onlay	Veneer	Post & Core	RPD Framework
WAX	TITANIUM DISC	Implant Bridge	Full Denture	Bite Splint	Superstructure Over Bars
TITANIUM ROD	ZIRCONIA	Cosmetic Aligner	Model	Custom Abutment	Bar

HOLDERS THAT EXPAND WHAT YOU CAN PRODUCE



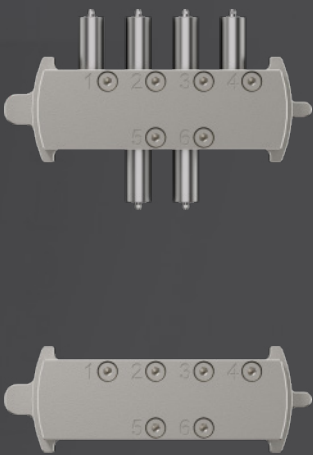
C-CLAMP DISC HOLDER

Fast, secure disc clamping for routine milling workflows.



BK-1 BLOCK HOLDER

Stable block positioning for batch production—up to 6 units in one run.



TK ABUTMENT HOLDER (6-POSITION)

Purpose-built titanium rod holding for precise custom abutment workflows.

UP3D Lab Solution

All-In-One Intelligent Workflow
Empowering Labs of All Sizes

UP3D Lab Solution connects the key steps of lab production—from scanning and design to CAM and milling—into one streamlined digital ecosystem.

So your team spends less time switching systems and troubleshooting, and more time delivering consistent, high-quality results.

When you're ready to bring metal in-house, IRON CORE i5 PRO fits into the same workflow to expand capability without disrupting your process.

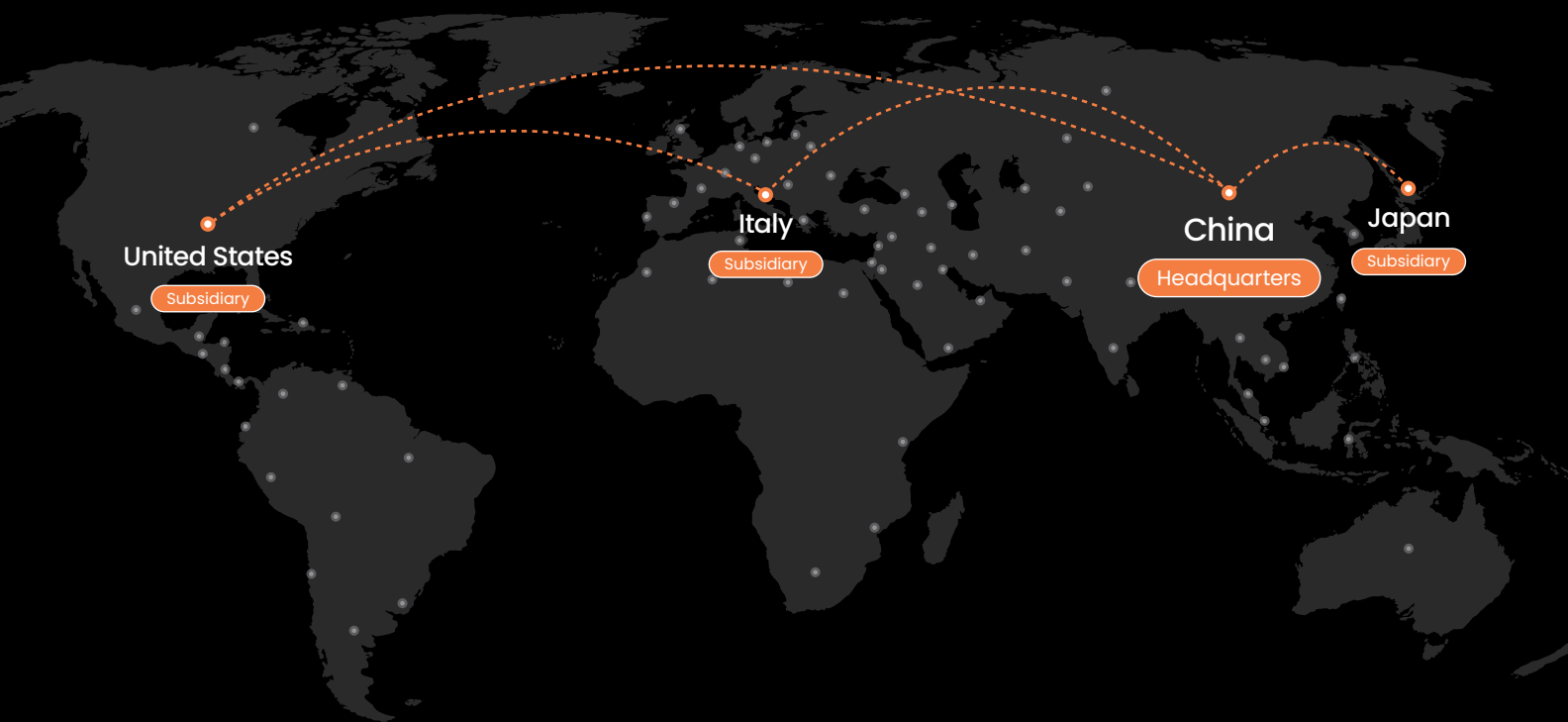


Cutters and Grinders

Applicable Material	Specification	Diameter	Cutters
Titanium	R1.5*16*6*50 (Ball-End Bur)	3.0mm (50mm)	
Titanium	R1*12*6*50 (Ball-End Bur)	2.0mm (50mm)	
Titanium	R0.75*12*6*50 (Ball-End Bur)	1.5mm (50mm)	
Titanium	R0.5*8*6*50 (Ball-End Bur)	1.0mm (50mm)	
Titanium	D1.5 R0.1*16*6*50 (Bull-Nose Bur)	1.5mm (50mm)	
Titanium	D1.5 R0.1*8*6*50 (Bull-Nose Bur)	1.5mm (50mm)	
Titanium	D2.0 R0.2*12*6*50 (Bull-Nose Bur)	2.0mm (50mm)	
Titanium	R0.75*12*6*50 (Flat-End Bur)	1.5mm (50mm)	
Titanium	R1.0*10*6*50 (Flat-End Bur)	2.0mm (50mm)	
Titanium	R0.5*6*6*50 (Flat-End Bur)	1.0mm (50mm)	
Titanium	R0.25*4*6*50 (Flat-End Bur)	0.5mm (50mm)	
Titanium	R0.25*4*6*50 (Ball-End Bur)	0.5mm (50mm)	
Resin / Wax	R1.0*16*6*50	3.0mm (50mm)	
Resin / Wax	R0.5*16*6*50	1.0mm (50mm)	
Resin / Wax	R0.3*14*6*50	0.6mm (50mm)	
Glass Ceramics / Composite Resin Blocks	R1.25*16*6*50	2.5mm (50mm)	
Glass Ceramics / Composite Resin Blocks	R0.5*10*6*50	1.0mm (50mm)	
Glass Ceramics / Composite Resin Blocks	R0.3*8*6*50	0.6mm (50mm)	
Zirconia	R1.0*16*6*50 (Ball-End Bur)	2.0mm (50mm)	
Zirconia	R0.5*16*6*50 (Ball-End Bur)	1.0mm (50mm)	
Zirconia	R0.3*14*6*50 (Ball-End Bur)	0.6mm (50mm)	

Technical Specifications

General	
Fields of application	Dry or wet machining
Materials	Glass ceramics, PMMA, PEEK, Composite resin, Wax, Titanium disc, Pre-milled blank, Zirconia
Material Specifications	Block: 40*20*20mm (Max) Disc: 98.5mm 10~30mm
Indications	Anatomical crowns, Anatomical bridges, screw-retained crowns, inlays, onlays, veneers, custom abutments, bars, angled abutments, implant-supported frameworks, etc.
Base System	
Construction	Machine bed made of solid cast iron body
Number of axes	5-axis
Rotary axes (A/B)	A-axis:±360° B-axis:±30°
Lighting	LED lighting inside the working chamber
Power	5.5 KW
Spindle	
General	High-frequency electric spindle, pneumatic tool change
Speed	60,000 rpm (max)
Tool holding	Φ6.0mm
Power (max)	2.5 KW
Automation	
Tool change	Tool magazine for 18 tools, length measurement and tool breakage monitoring via precision measuring key
Connection Requirements	
Voltage	220 VAC 50~60Hz
Compressed air	0.6-0.9MPa 80L/min
Data	Wi-fi, USB, Ethernet port
Environmental conditions	
Operating temperature	10 °C ~ 35 °C
Air moisture	Below 80% (relative), non-condensing
Dimensions and weights	
Dimensions	Length*Width*Height = 660*680*1750 (mm)
Weight	480 kg
Scope of delivery	
CAM Software	UPCAM, Millbox



UP3D

The Team Behind **IRON CORE i5 PRO**

Founded in 2014, UP3D is a global leader in providing full digital dental solutions. It is also the first Chinese company to independently develop dental CAD software.

Since its establishment, UP3D has focused on the research, development, and manufacturing of dental CAD/CAM software and hardware systems, aiming to lead the global digital dental ecosystem.

Today, UP3D offers a fully intelligent production system for both dental labs and clinics—combining proprietary hardware and software to support diverse clinical workflows and drive digital dental innovation.

11,000+

Equipment installations worldwide

120+

Countries and regions served

120+

R&D engineers

35%+

High investment in R&D

Built for Global Delivery Backed by Local Service

UP3D backs i5 PRO with a global service infrastructure designed for stable supply and dependable long-term operation. Through regional warehousing, localized teams, and coordinated technical resources, we keep delivery, onboarding, and ongoing support consistent across markets.



Regional Warehousing & Local Delivery

With regional warehousing, you're closer to available stock and local fulfillment—helping reduce waiting time and keep planning more predictable.



Local Support Coverage in Key Markets

You can reach regional teams for technical support, training guidance, and customer care—so help isn't stuck behind time zones or long escalation chains.



Subsidiaries Enable Local Operations

UP3D subsidiaries in the United States, Italy, and Japan strengthen local coordination for warehousing, delivery, and support—so you get a more responsive experience on the ground.



Marketing Materials & Global Events

UP3D provides ready-to-use marketing materials and joins major international exhibitions and events—so your market sees real presence, and you have tools to communicate value clearly.