

BE **RIGHT ON**, WITH **riton**.

Partner with RITON to transform your dental laboratory with advanced metal additive manufacturing.

**Contact us:**

**Phone** +86-20-81509265  
**Mail** [marketing@riton3d.com](mailto:marketing@riton3d.com)  
**Web** [www.riton3d.com](http://www.riton3d.com)

**Follow us on social media:**

   Riton 3D / Riton 3D Dental  
  Riton 3D

**RITON ADDITIVE TECHNOLOGY CO., LTD.**

Building B, Hainan Industrial Zone, Huadi Avenue South, Liwan District, Guangzhou

# Dental Metal 3D Printing Solutions

Powering Digital Manufacturing for Modern Dental Laboratories

- **High Precision**
- **Efficient Production**
- **Reliable Performance**



# Advancing Dental Manufacturing Through Intelligent Technology

**RITON** is dedicated to helping dental laboratories adopt efficient digital manufacturing.

By combining high-performance metal 3D printing systems with optimized production workflows, we enable laboratories to simplify processes, increase productivity, and deliver reliable results.

## About **RITON**

RITON Additive Technology specializes in the development of metal additive manufacturing systems for dental laboratories.

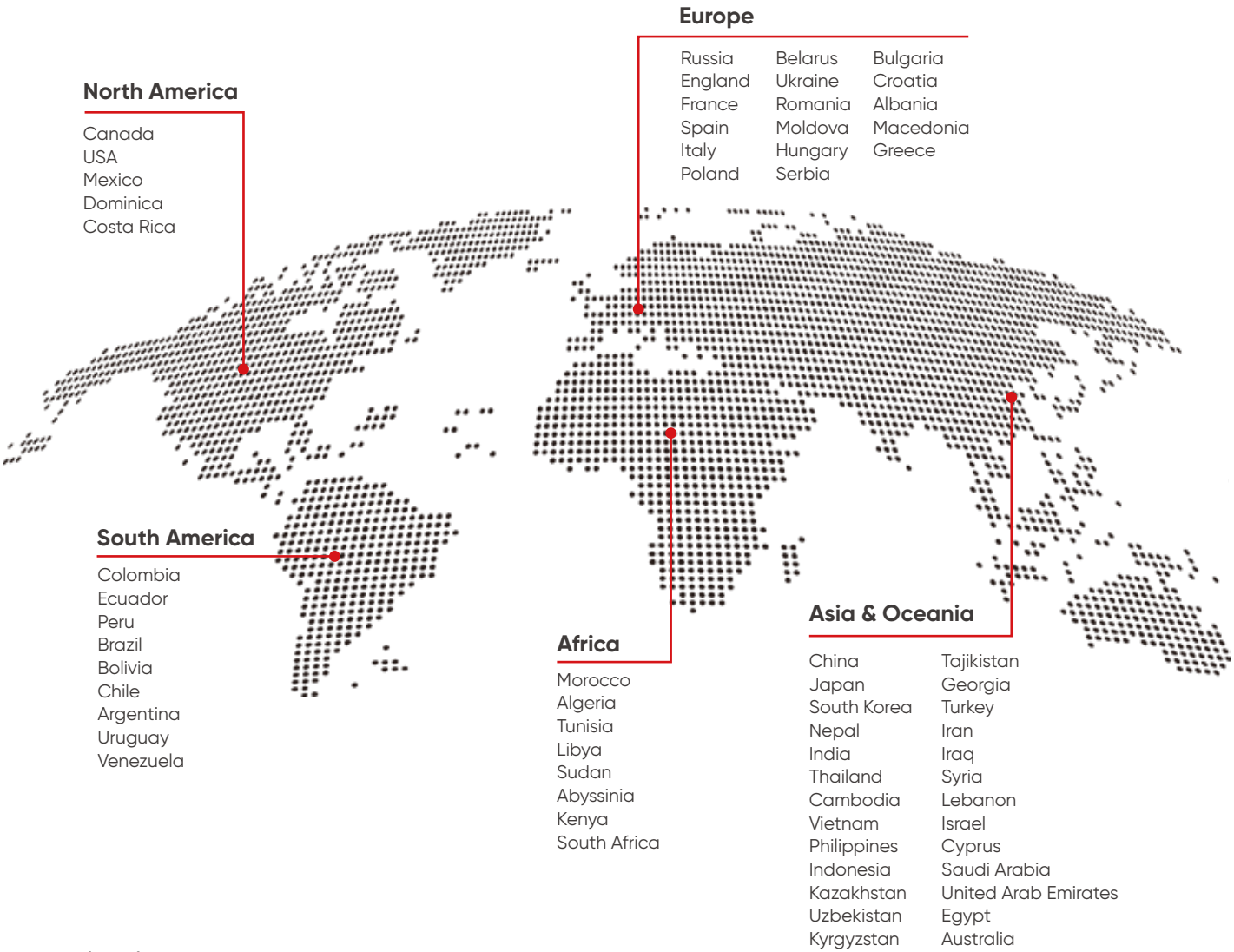
Built on deep expertise in laser systems and precision engineering, RITON provides integrated solutions that support the transition from traditional production methods to modern digital manufacturing.

Today, RITON technologies support dental laboratories and production centers around the world.



# Trusted by Dental Professionals Worldwide

RITON solutions are used by dental laboratories across multiple regions. Our global presence continues to grow as more laboratories adopt digital manufacturing technologies to improve efficiency and production quality.



# Digital Manufacturing Workflow

From Design to Finished Dental Applications

RITON provides a streamlined digital workflow that connects every stage of dental manufacturing—from data preparation to final production.

## Typical Production Process



# Complete Dental 3D Printing Ecosystem

**RITON** offers a comprehensive ecosystem designed to support the entire dental metal additive manufacturing process.

From printing systems to powder management and post-processing solutions, our technologies work together to ensure stable, efficient, and repeatable production.

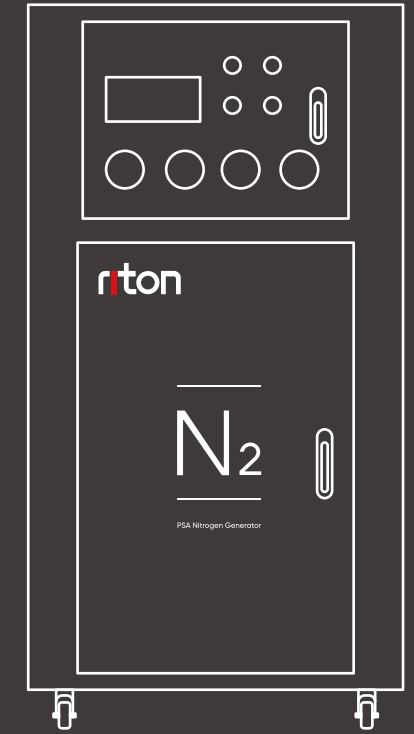


## Metal 3D Printing Systems

RITON metal printers are engineered specifically for dental production.

They deliver precise laser melting performance, stable printing conditions, and intuitive system operation.

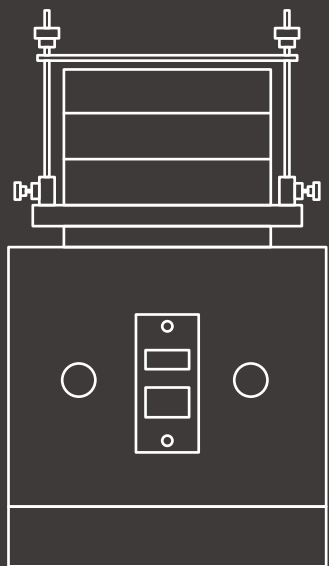
These systems enable laboratories to produce high-precision restorations with consistent quality and improved productivity.



## Nitrogen Generation System

The nitrogen generator supplies high-purity nitrogen to the printing chamber, maintaining a controlled atmosphere during the printing process.

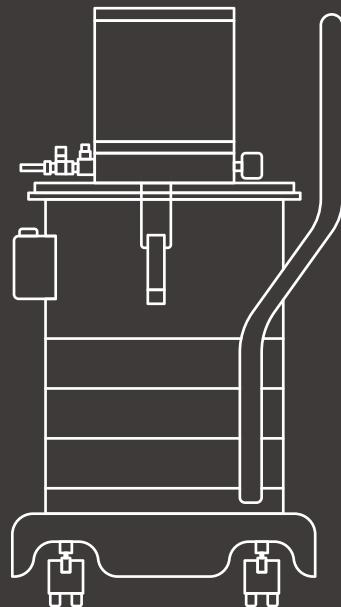
This reduces oxygen levels and protects metal materials from oxidation.



## Powder Sieving System

The sieving unit maintains consistent powder quality by removing agglomerates and contaminants after each printing cycle.

This helps ensure stable printing performance and efficient powder reuse.



## Powder Cleaning and Recovery

The powder recovery system enables safe and efficient cleaning of residual powder after printing.

An explosion-protected vacuum system ensures safe handling of fine metal powders in laboratory environments.

# MLAB

## Desktop Dental Metal Printer

A compact metal 3D printer designed for laboratories entering digital production.

Its space-saving structure and user-friendly interface allow easy integration into dental laboratory environments.

### Technical Parameters

|                               |                                                   |
|-------------------------------|---------------------------------------------------|
| Laser Source                  | Single-fiber laser                                |
| Laser Power                   | 250 W                                             |
| Maximum Scanning Speed        | 11200 mm/s                                        |
| Build Volume                  | Ø100 x 90 mm (including build plate)              |
| Layer Thickness               | 20-60 µm                                          |
| Protective Gas                | Nitrogen or Argon                                 |
| Printing Materials            | CoCr / Titanium                                   |
| Machine Weight                | 150 kg                                            |
| Machine Dimensions            | 610 x 615 x 890 mm                                |
| Circulation System Dimensions | 410 x 620 x 840 mm                                |
| Input Voltage                 | 220 V / 50 Hz / 3 kW                              |
| Installation Environment      | Temp 15°C - 35°C,<br>Humidity ≤ 95%, No vibration |

### Ideal for:

- Small laboratories
- Entry-level production
- Research and development



# M-150 Series

Flexible Production Solutions  
for Dental Manufacturing

The RITON M-150 Series is designed to meet diverse production requirements in dental metal additive manufacturing.

Three configurations for different production needs:

- **M-150** – Stable entry-level production
- **M-150Pro** – Dual powder system for material flexibility
- **M-150D** – Dual-laser system for higher productivity

M-150Pro and M-150D support an optional external circulation system for optimized powder management.

## Technical Parameters

| Model                 | M-150                                          | M-150Pro          | M-150D           |
|-----------------------|------------------------------------------------|-------------------|------------------|
| Laser Source          | Single Fiber laser                             |                   | Dual Fiber laser |
| Power of Single Laser | 500 W                                          |                   |                  |
| Laser Wavelength      | 1.064 μm                                       |                   |                  |
| Melting Speed         | ≤14000 mm/s                                    |                   |                  |
| Melting Area          | Ø150 x 140 mm (including build plate)          |                   |                  |
| Melting Thickness     | 20–60 μm                                       |                   |                  |
| Protective Gas        | Nitrogen or Argon                              |                   |                  |
| Power Supply          | 220 V/50 Hz/3 kW                               |                   | 220 V/50 Hz/4 kW |
| Machine Weight        | 500 kg                                         | 560 kg            | 520 kg           |
| Machine Dimensions    | 780 x 950 x 1660 mm                            |                   |                  |
| Environment Request   | Temp 15°C – 35°C, Humidity ≤ 95%, No vibration |                   |                  |
| Melting Materials     | CoCr / Titanium                                | CoCr and Titanium | CoCr / Titanium  |



Riton-Metal 3D Printing Systems

# M-200D

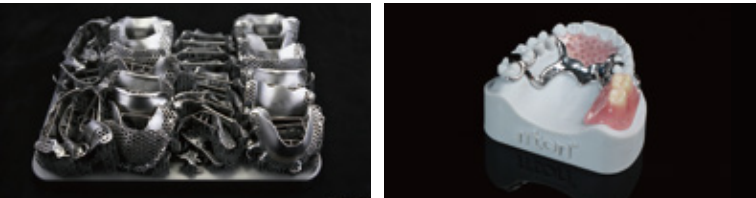
High-Capacity Production System

The M-200D is designed for laboratories requiring higher production capacity.

Its expanded build platform enables multiple restorations to be produced simultaneously, significantly improving productivity.

## Technical Parameters

|                          |                                                   |
|--------------------------|---------------------------------------------------|
| Laser Source             | Dual Fiber Laser                                  |
| Power of Single Laser    | 500 W                                             |
| Laser Wavelength         | 1.064 μm                                          |
| Melting Speed            | ≤14000 mm/s                                       |
| Build Volume             | 220 x 150 x 140 mm (including build plate)        |
| Melting Thickness        | 20–60 μm                                          |
| Protective Gas           | Nitrogen/Argon                                    |
| Power Supply             | 220 V / 50 Hz / 4 kW                              |
| Machine Weight           | 680 kg                                            |
| Machine Dimensions       | 1000 x 1650 x 750 mm                              |
| Melting Materials        | CoCr / Titanium                                   |
| Installation Environment | Temp 15°C – 35°C,<br>Humidity ≤ 95%, No vibration |



Riton-Metal 3D Printing Systems



**RITON** metal printing systems support a wide range of dental restorations with high precision and repeatability.

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### **Orthodontic Appliances**

Rapid Palatal Expander (RPE)

Orthodontic Components



### **Removable Partial Dentures**

RPD Frameworks



### **Crown & Bridge**

Metal Copings

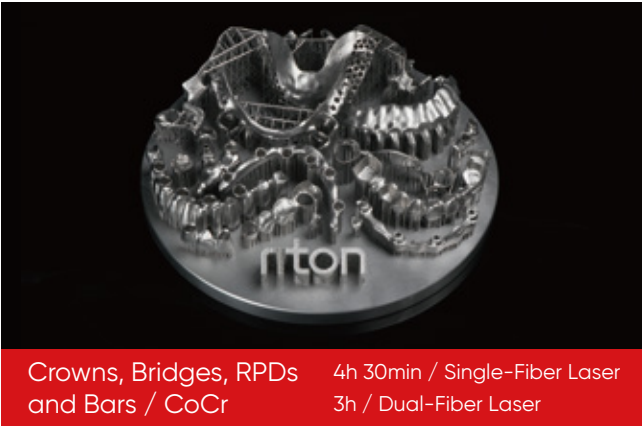
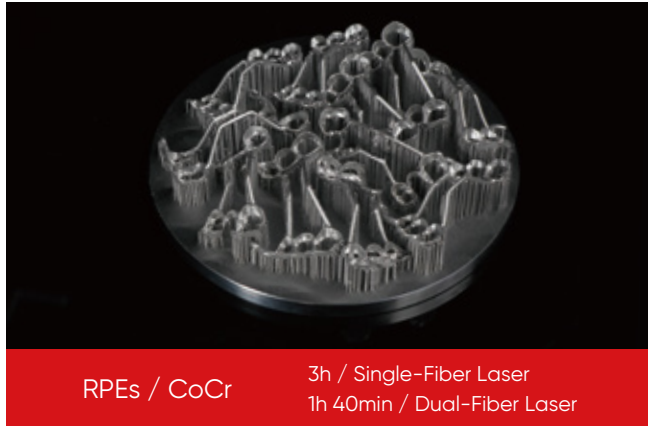
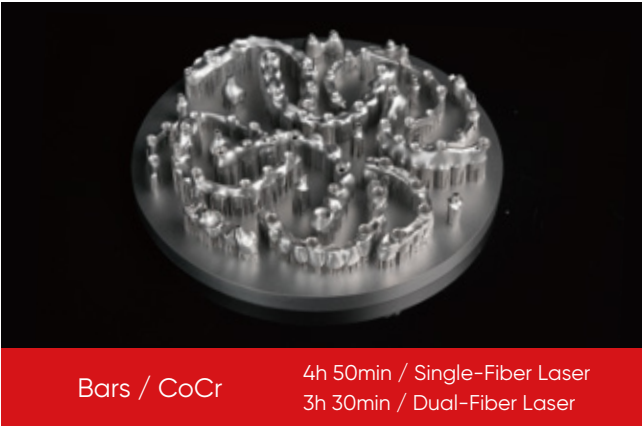
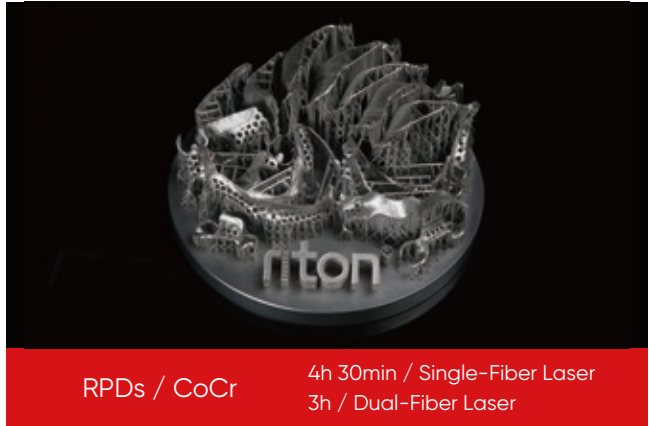
Bridge Frameworks



### **Implant Restorations**

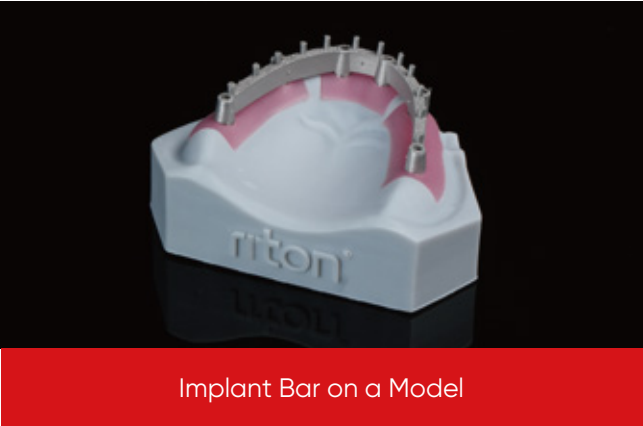
Implant Bars

Implant-Supported Structures



RITON metal printing systems allow laboratories to produce complex dental restorations with consistent accuracy.

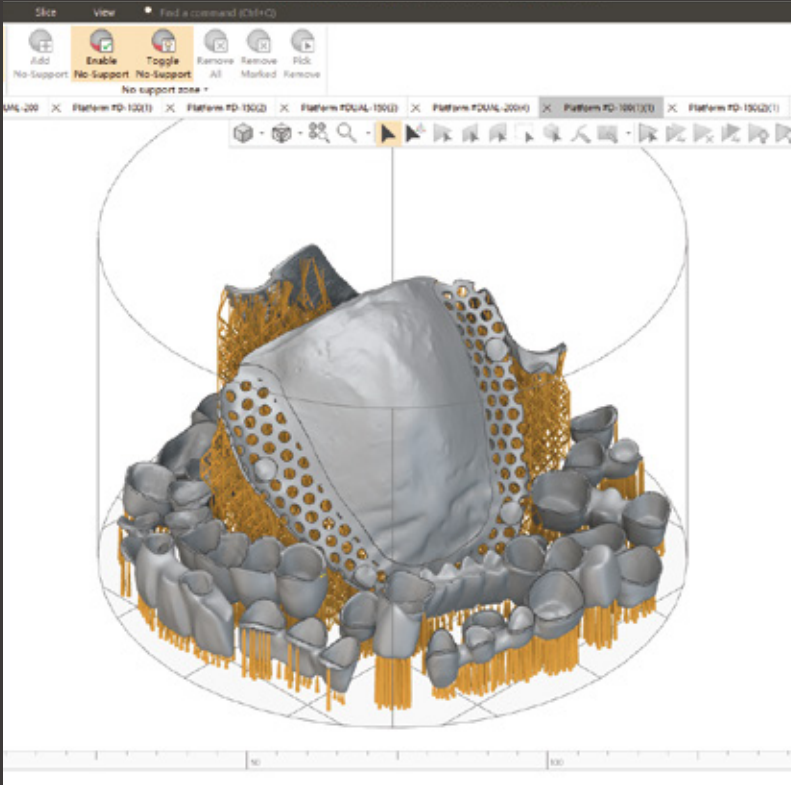
Efficient batch production and stable printing performance help laboratories maintain high productivity while ensuring reliable manufacturing results.



Riton systems provide the precision, repeatability, and reliability required for modern dental production.

# Efficient build preparation is essential for maximizing productivity.

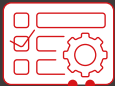
Advanced software tools enable technicians to:



**Optimize  
Part Nesting**



**Automatically  
Generate Supports**



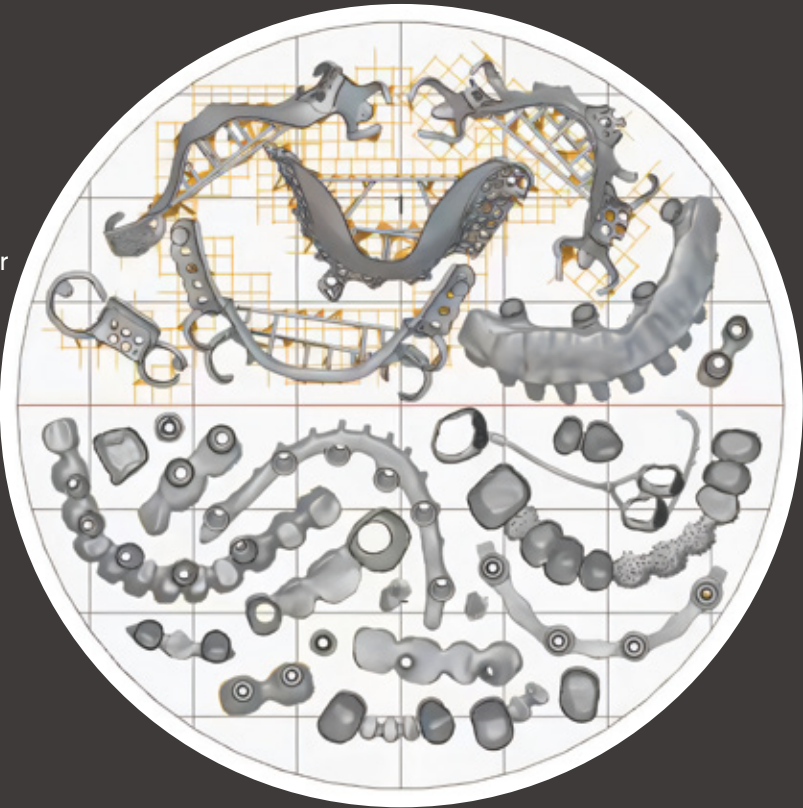
**Configure  
Printing Strategies**



**Improve  
Build Platform Utilization**

# Project Report: Crowns+RPDs-150

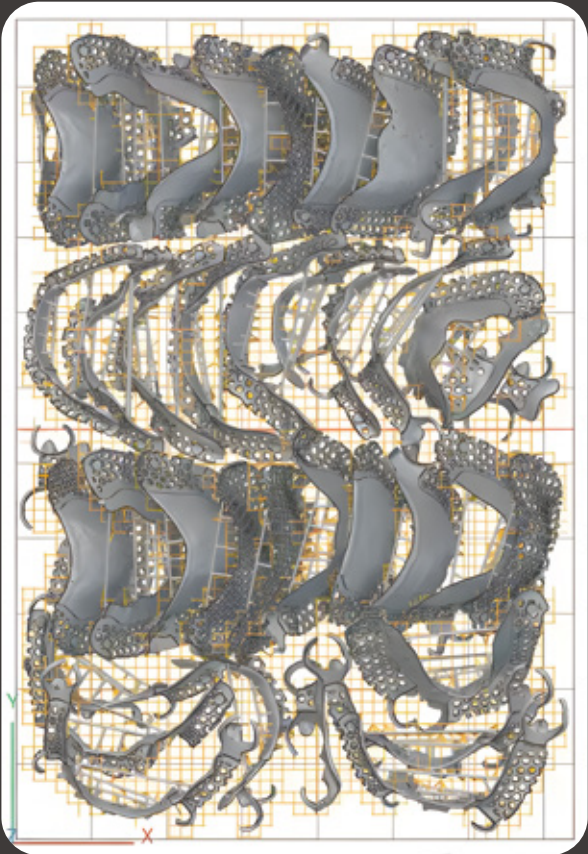
|                       |                                                       |
|-----------------------|-------------------------------------------------------|
| Job Created:          | 04-01-2026 10:20:36                                   |
| Printer:              | M-150 Series                                          |
| Number of Models:     | 26                                                    |
| Powder Lot Number:    | CCW260202001                                          |
| Printing Time:        | 4 h/Dual-Fiber Laser<br>5 h 50 min/Single-Fiber Laser |
| Printing Height:      | 33.33 mm                                              |
| Volume of All Models: | 39317.273 mm <sup>3</sup>                             |
| Material:             | CoCr                                                  |
| Material Usage:       | 340 g                                                 |
| Material Costs:       | 68 USD                                                |
| Energy Consumption:   | 3 kWh                                                 |
| Energy Costs:         | 2.4 USD                                               |
| Gas Consumption:      | 50 W                                                  |
| Gas Costs:            | 0.04 USD                                              |
| Total Job Costs:      | 70.44 USD                                             |



# Project Report:

## RPDs–full–200D

|                       |                           |
|-----------------------|---------------------------|
| Job Created:          | 04-01-2026 16:46:41       |
| Printer:              | M-200D                    |
| Number of Models:     | 40                        |
| Powder Lot Number:    | CCW260202001              |
| Printing Time:        | 7 h                       |
| Printing Height:      | 52.9 mm                   |
| Volume of All Models: | 86455.867 mm <sup>3</sup> |
| Material:             | CoCr                      |
| Material Usage:       | 740 g                     |
| Material Costs:       | 148 USD                   |
| Energy Consumption:   | 4.5 kWh                   |
| Energy Costs:         | 6.3 USD                   |
| Gas Consumption:      | 50 W                      |
| Gas Costs:            | 0.07 USD                  |
| Total Job Costs:      | 154.37 USD                |



# Combining Additive and Subtractive Technologies

Hybrid manufacturing integrates the design freedom of metal 3D printing with the precision of CNC milling. RITON systems can be integrated with milling workflows, enabling laboratories to refine critical surfaces and functional areas after printing. This hybrid approach allows laboratories to maintain both high productivity and superior dimensional accuracy.

## Key Advantages Higher Precision

Critical surfaces such as implant connections or contact areas can be precisely machined after printing.

## Reduced Manual Finishing

Targeted milling minimizes manual post-processing and improves production consistency.

## Flexible Production Workflow

Hybrid manufacturing integrates smoothly into existing dental CAD/CAM environments.



# Integrated Production Support

RITON supporting equipment is engineered to enhance every stage of the metal 3D printing process:

These systems support

- **Powder Preparation** – Ensuring consistent particle quality for stable printing.
- **Powder Handling** – Safe collection and recycling of metal powders.
- **Atmosphere Control** – Maintaining low oxygen levels during printing.
- **Part Processing** – Supporting downstream operations with efficiency.

This integrated approach helps laboratories reduce variability, improve safety, and achieve repeatable production results.

Together with RITON metal 3D printing systems, they create a reliable and fully integrated production environment.



**RXT-3000L**  
Nitrogen Generator

**Technical Parameters**

|                         |                     |                          |                  |
|-------------------------|---------------------|--------------------------|------------------|
| Power Supply            | 220 V / 50 Hz       | Nitrogen Purity & Output | 99.999% ≈ 2 m³/h |
| Power Consumption       | 50 W                |                          | 99.99% ≈ 3 m³/h  |
| Weight                  | 70 kg               |                          | 99.9% ≈ 5 m³/h   |
| Dimensions              | 700 x 600 x 1350 mm |                          |                  |
| Compressed Air Pressure | 0.6 – 1 MPa         |                          |                  |
| Air Compressor Capacity | ≥ 400 L/min         |                          |                  |



**RT-200**  
Powder Sieving System

**Technical Parameters**

|                        |                                                        |                |                     |
|------------------------|--------------------------------------------------------|----------------|---------------------|
| Sieve Diameter         | Ø200 mm/Ø100 mm/Ø75 mm                                 | Rotation Speed | 1440 rpm            |
| Number of Sieve Layers | 1–10 layers (including lid),<br>recommended 1–5 layers | Dimensions     | 400 x 300 x 300 mm  |
| Batch Capacity         | ≤ 200 g                                                | Weight         | 30 kg               |
| Vibration Amplitude    | 1 – 5 mm                                               | Motion Type    | Circular Motion     |
| Excitation Force       | 3 kN                                                   | Timer Range    | 0.01 – 99.59 min    |
| Motor Power            | 0.125 kW                                               | Noise Level    | ≤ 50 dB             |
| Power Supply           | 220 V / 50 Hz                                          | Material       | 304 Stainless Steel |



## RT-1000

Quartz Tube Furnace

### Technical Parameters

|                      |               |
|----------------------|---------------|
| Power Supply         | 220 V / 50 Hz |
| Power                | 5 kW          |
| Maximum Temperature  | 1000°C        |
| Heating Rate         | ≤ 70°C/min    |
| Temperature Accuracy | ±1°C          |
| Heating Element      | Heating Tube  |
| Thermocouple Type    | Type K        |
| Chamber Size         | Ø200 x 300 mm |



## RT-900/RT-100

Plasma Polishing Machine

### Technical Parameters

|                       |                                                  |                               |
|-----------------------|--------------------------------------------------|-------------------------------|
| Model                 | RT-900                                           | RT-100                        |
| Application Materials | CoCr Alloy / Titanium Alloy ( Different Models ) |                               |
| Cooling System        | Air Cooling                                      |                               |
| Voltage               | 220 V                                            | 220 V                         |
| Machine Dimension     | 520 x 746 x 833 mm                               | 810 x 500 x 850 mm            |
| Machine Weight        | 32 kg                                            | 65 kg                         |
| Power                 | AC220 V / 50-60 Hz / 2.9 kW                      | AC220 V / 50-60 Hz / 4.5 kW   |
| Large Tank Volume     | 24 L                                             | 12.7 L                        |
| Production Capacity   | 3 pcs                                            | Titanium: 3 pcs CoCr: 4-5 pcs |



## DLY-145W1

Mini Sawing Machine

### Technical Parameters

|                     |                     |
|---------------------|---------------------|
| Power Supply        | 220 V / 50 Hz       |
| Power               | 680 W               |
| Weight              | 18 kg               |
| Blade Specification | 13 x 0.65 x 1500 mm |



## AX1030E

Vacuum Cleaner

### Technical Parameters

|                    |                      |                       |                    |
|--------------------|----------------------|-----------------------|--------------------|
| Type Of Drive      | Pneumatic            | Air Source Pressure   | 0.5-0.8 MPa        |
| Capacity           | 30 L (Single Barrel) | Gas Consumption       | 0.4 m³/min         |
| Filter Area        | 10800 cm²            | Tracheal Requirements | 8 x 12 mm          |
| Filter Area _2     | 6480 cm²             | Tracheal Length       | 5 m                |
| Filtering Accuracy | 0.3 µm               | Suction Diameter      | 32 mm              |
| Air Flow Rate      | 280 m³/h             | Filter Cleaning Mode  | Manual Cleaning    |
| Vacuum Suction     | 280 mbar             | Product Size          | 430 x 450 x 800 mm |
| Noise              | 53 dB                |                       |                    |