

**88**  
*dent*



**Milling machine**  
**Mill**

[www.88dent.com](http://www.88dent.com)



**88**  
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MADE IN ITALY



Dental milling machine

# 88Mill Edition

88Mill Edition 4-axis milling machine with automatic tool changer, compact size, suitable for the milling Zirconium, test and temporary PMMA, Nano composites, Cr-Co, polyurethane and wax elements.

Thanks to a high-frequency spindle, great precision is achieved with very fast processing times. Includes dedicated CAM software.





Dental milling machine

# 88Mill Edition

## Specifications:

### Basic system:

- Dimensions: ( L / W / H): approx. 400 x 385 x 410 mm
- Weight: approx. 45 kg
- 4-axis mechanism
- Axis of rotation A: 360 ° system  
Harmonic-Drive®
- Working chamber: Working chamber lighting
- Permissible ambient temperature / humidity:
- Ambient temperature (storage / transport):  
between -20°C and 60°C
- Ambient temperature (operation):  
between 10 ° C and 32 ° C
- Relative air humidity: max. 80%, non-condensing

### External compressed air supply is required

- Air pressure (min./max.): 6 bar / 8 bar
- Recommended air pressure: approx. 6 bar
- Air consumption: approx. 50 l / min at 6 bar, 80 l / min at 8 bar
- Air purity according to ISO 8573-1: 2010

### External air extraction system required

- Minimum extraction capacity: 2,000 l / min at 200 hPa
- The machine constantly monitors the extraction capacity

### Spindle SF 170P

- Asynchronous spindle with speeds up to 60,000 rpm
- Rated power in continuous operation (S1): 170 W
- Rated power in continuous continuous operation (S6): 200 W
- Peak power (Pmax): 240 W
- Hybrid ceramic ball bearings
- 2-row ball bearings
- Pneumatic spindle with Ø 3 mm collet
- Air tightness control

### Disc holder bracket

- For mounting discs with "C" grippers  
min. / max. disc diameter: 98.5 mm / 98.8 mm
- Maximum disc height: 30 mm

### Tooling storage

- Maximum tools in the tool block: 7
- Maximum tool length: 35 mm
- Automatic tool change with compressed air monitoring
- Automatic tool length measurement and tool breakage monitoring via measuring button

### Connections

- Pneumatic connection: 6 mm plug-in fitting
- Power supply connection: 100 - 240 V AC, 50/60 Hz with T6.3A L250V glass fuse
- USB port
- Connection for automatic ignition control of the suction unit
- Hose connection (Ø 45 mm) for suction unit

### Millable materials (dry only)

- Pmma, Wax, Zirconium, Composites, CoCr





Dental milling machine

# 88MillFive

88MillFive is a five-axis dental milling machine that works simultaneously with movement simultaneous and automatic tool change with 16 positions

Thanks to the second rotating axis (B axis) with a maximum rotation range of  $\pm 30$  degrees, undercuts can be milled without any difficulty.

In addition to the additional fifth axis, 88MillFive differs from the 88Mill model mainly by its new synchronous spindle, even more powerful and more precise, and for automatic tool change with 16 positions. In addition to the tools required from time to time, the tool changer can be equipped with replacement tools. In this way you can continue to work without interruption, even when a tool wears out or it breaks.

In order to create a solid base for extremely precise 5-axis mechanics, the machine is built from a single solid piece of sheet metal. This makes it extremely stable and space-saving.

In addition, vibrations are reduced and the mechanics are optimally protected.

The machine is prepared for connection to the wet milling option.

There are liquid nozzles already mounted on the spindle so that the coolant can reach directly to the tip of the tool. This allows materials such as glass ceramic to be processed.





Dental milling machine

# 88MillFive

## Specifications:

- 5 axes working simultaneously.
- Compact design, dimensions 490 x 445 x 540 mm  
Weight about 75 kg.
- Protection of the danger zone during the machining process by means of an automatic locking device in the front cover
- Protection of the mechanics against dust and splinters and less wear and maintenance costs due to the integrated air lock concept of the working area.
- Underpressure sensor to monitor air extraction.
- Powerful and precise spindle with cone cleaning and 4-layer hybrid ceramic bearings with a rated output of 300 W under continuous load.
- Fixing device for universal discs with a diameter of 98 mm and a thickness of 10 to 30 mm
- High-quality automation thanks to the automatic tool changer for up to 16 tools - several discs can be milled in sequence without having to change the tools used.
- The use of diamond tools is possible thanks to a measuring instrument with pressure key
- Maximum precision guaranteed by automatic measurement and axis compensation
- Controller with optional Ethernet interface.
- Capable of processing wax, plastics, zirconium oxide, nanocomposites up to non-precious cobalt-chrome based alloys.
- Wet milling option for glass ceramic by means of an external pump that manages the coolant.
- Maximum flexibility in terms of applications and materials
- Can be used worldwide thanks to the 90 - 240 V and 50 - 60 Hz switching power supply.
- Easy to use with 88CAM software with Direct-Mill function even without previous milling knowledge.
- On request the machine can also be controlled by external CAM software





Dental milling machine

# 88MillFive

## Specifications:

### Basic system

- Dimensions: ( L / W / H): 490 x 445 x 540 mm
- Weight: approx. 75 kg
- 5-axis mechanism
- Axis of rotation A: 360 °
- Axis of rotation B:  $\pm 30$  °

### Working chamber

- Work chamber lighting

### Permissible ambient temperature / humidity:

- Ambient temperature (storage / transport): between 20 ° C and 60 ° C
- Ambient temperature (operation): between 10 ° C and 32 ° C
- Relative air humidity: max. 80%, non-condensing

### External compressed air supply is required

- Air pressure (min./max.): 6 bar / 8 bar
- Recommended air pressure: approx. 6 bar
- Air consumption: approx. 80 l / min at 6 bar
- Air purity according to ISO 8573-1: 2010

### External air extraction system required

- Minimum extraction capacity: 2,500 l / min at 220 hPa
- The machine constantly monitors the extraction capacity

### Spindle SFS 300P

- Synchronous spindle with speeds up to 60,000 rpm
- Rated power in continuous operation (S1): 300 W

- Peak power (Pmax): 600 W
- 3 nozzles per liquid
- Hybrid ceramic ball bearings
- 4-row ball bearings
- Pneumatic spindle with  $\varnothing 3$  mm collet
- Cone cleaning
- Air tightness control

### Disc holder bracket

- For mounting discs with ring and clamping screws
- Min. / max. disc diameter: 98.5 mm / 98.8 mm
- Maximum disc height: 30 mm
- Preparation for block holder bracket
- Prepared for premilled clamping

### Tooling Storage

- Maximum tools in the machine: 16
- Maximum tool length: 40 mm
- Automatic tool change with compressed air monitoring
- Automatic tool length measurement and tool breakage monitoring via measuring button

### Optional liquid cooling system for wet processing

- External module with pump and filters
- Cooling liquid: emulsion 1:19 (5% solution) pH value 9.5
- Flow sensor, for monitoring the coolant circuit

### Connections

- Pneumatic connection: 6 mm plug-in fitting
- Power supply connection: 100 - 240 V AC, 50/60 Hz with T6.3A L250V glass fuse
- USB port
- Connection for automatic ignition control of the suction unit
- Liquid connection: 6 mm plug-in fitting
- Hose connection ( $\varnothing 45$  mm) for suction unit



Dental milling machine

# 88MillFive S

## Axis rotation $\pm 35^\circ$ :

The B-axis, thanks to the wide range of rotation, allows to eliminate most undercuts, making the machine ideal for the production of models, surgical guides and implantology.

## 5 simultaneous working axes:

In addition to the three linear axes in x,y, and z, the machine is equipped with two rotary axes that allow a wide range of machining operations.

## Massive frame in a single cast aluminium:

A single cast aluminium frame, closed on 5 sides, absorbs vibrations and ensures high stability of the whole machine.

In addition, the use of reinforced linear guides and stainless steel endless screws (Harmonic Drive) increases the rigidity of the axis system to achieve perfect milling results.

## Automatic loader for 16 tools:

In addition to the tools used for machining, there is the possibility of equipping the machine with other tools so that you don't have to stop and replace them when one is out of use.

The haptics measurement function allows the use of diamond tools.

## Sophisticated mechanism of protection:

All machine components are protected by a specific "air concept" system, which allows air to circulate inside the milling chamber so that milling residues never come into contact with sensitive machine components.







Dental milling machine

# 88MillFive S



**Possibility to use discs with thickness up to 40mm:**

The machine allows the milling of different materials: wax discs and blocks, plastic, plaster, zirconium and composite models and also creo.

**Powerful and high-precision electrospindle:**

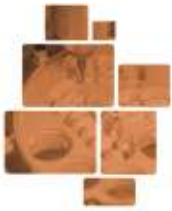
4 hybrid ceramic ball bearings and a continuous output of 300W with extremely balanced torque.

**Practical drawer for accessories:**

Tools and discs are always at hand. The drawer can also contain a tool holder with 30 slots, which can be administered by the CAM software.







Dental milling machine

# 88MillFive S

## Main features:

- Dry processing machine
- Plastic, wax, zirconium, composites, CoCr
- 5 axes: 3 linear and 2 rotary (360° and  $\pm 35^\circ$ )
- Dimensions (W/H/D) : approx. 450 x 630 x 530 mm
- Weight: approx. 91 kg
- Collets for discs from: 0 - 98.5 mm with pitch and height of 10 - 40 mm
- Manual disc change
- Loader for automatic change of 16 tools, with haptic measurement
- Certification according to ANSI/UL 61010-1

## Supply content:

- Milling Machine 88Mill Five S
- Complete set of cables
- Emergency key for door opening frontal
- Spindle maintenance kit
- 1.5 Nm torque wrench for fixing albums
- Calibration set (digital micrometer, 3 test disks and test tool) and measuring pins

- USB dongle
- Compressed air reducer with connection from 6 mm
- 2 spare tires for tool magazine and 2.8 mm drill bit for drilling
- Instruction manual
- CAM and CNC software
- In accessory drawer with integrated ATB tool holder

## Accessories and Options:

- Automatic vacuum cleaner control unit
- Set of cutters with 30 ATB toolholder positions
- Block holder adapter





Dental milling machine

# 88MillFive S

## Main features:

### Basic system

- Dimensions: (L / W / H):
- Base support: approx. 375 x 260 mm
- Fully enclosed machine: approx. 450 x 545 x 630 mm
- Fully open machine: approx. 450 x 695 x 680 mm
- Weight: approx. 91 kg
- 5-axis mechanism
- Axis of rotation A: 360 °
- Axis of rotation B: ± 35 °

### Working chamber

- Working chamber lighting with different colours to indicate machine status

### Permissible ambient temperature / humidity:

- Ambient temperature (storage / transport): between 20 ° C and 60 ° C
- Ambient temperature (operation): between 10 ° C and 32 ° C
- Relative air humidity: max. 80%, non-condensing

### External compressed air supply is required

- Air pressure (min./max.): 6 bar / 8 bar
- Recommended air pressure: approx. 7 bar
- Air consumption: approx. 40 l / min at 6 bar, 50 l / min at 8 bar
- Air purity according to ISO 8573-1: 2010

### External air extraction system required

- Minimum extraction capacity: 2,500 l / min at 220 hPa
- The machine constantly monitors the extraction capacity

### Spindle SFK 300P

- Synchronous spindle with speeds up to 60,000 rpm
- Rated power in continuous operation (S1): 300 W

- Rated power in continuous continuous operation (S6): 450 W
- Peak power (Pmax): 500 W
- Hybrid ceramic ball bearings
- 4-row ball bearings
- Pneumatic chuck with Ø 3 mm collet
- Cone cleaning
- Air tightness control

### Disc holder bracket

- For mounting discs with ring and clamping screws
- min. / max. disc diameter: 98.5 mm / 98.8 mm
- Maximum disc height: 40 mm
- Preparation for door bracket blocks
- Prepared for premilled clamping

### Tooling storage

- Maximum tools in the machine: 16
- Maximum tool length: 40 mm
- Automatic tool change with compressed air monitoring
- Automatic tool length measurement and tool breakage monitoring via measuring button

### Connections

- Pneumatic connection: 6 mm plug-in fitting
- Power supply connection: 100 - 240 V AC, 50/60 Hz with T6.3A L250V glass fuse
- USB port
- Connection for automatic ignition control of the suction unit
- Hose connection (Ø 45 mm) for suction unit

### Millable materials (dry only):

- Pmma, Wax, Zirconium, Composites, CoCr, premilled CoCr, Composite blocks





Dental milling machine

# 88Kappa5+

## The best of dry milling

The continuous development of our dental machines allows us to satisfy the needs of the market continuously creating perfect solutions for our customers.

The new 88Kappa5+ is equipped with the revolutionary DirectDiscTechnology.

Thanks to this tool-less clamping system, the machine can be loaded with material more quickly and simply.

An integrated ionizer to neutralize the static charge of acrylic particles and improved air circulation in the working area significantly reduces the time needed to clean the machine.

But that's not all and to surprise you, an integrated camera and RJ45 Ethernet port has been introduced to increase the stability and flexibility of the machine installation and connection.

Last but not least, the 88Kappa5+ is distinguished by its new bracket that will allow you to load disks with ease and security.

Like the previous version, the 88Kappa5+ is able to process the hardest materials, such as cobalt chrome, guaranteeing high precision and reliability for all machining operations.





## Dental milling machine

# 88Kappa5+

### Main features:

#### Basic system

- Dimensions: (L / W / H):
- Base support: approx. 375 x 260 mm
- Fully enclosed machine: approx. 450 x 545 x 630 mm
- Fully open machine: approx. 450 x 695 x 680 mm
- Weight: approx. 91 kg
- 5-axis mechanism
- Axis of rotation A: 360 °
- Axis of rotation B:  $\pm 35$  °

#### Working room

- Working chamber lighting with different colours to indicate machine status
- Webcams for video broadcasts to customer service

#### Permissible ambient temperature / humidity:

- Ambient temperature (storage / transport): between 20°C and 60°C
- Ambient temperature (operation): between 10 °C and 32 °C
- Relative air humidity: max. 80%, non-condensing

#### External compressed air supply is required

- Air pressure (min./max.): 6 bar / 8 bar
- Recommended air pressure: approx. 7 bar
- Air consumption: approx. 50 l / min at 6 bar, 64 l / min at 8 bar (ionizer deactivated)
- Air consumption: approx. 80 l / min at 6 bar, 102 l / min at 8 bar (ionizer activated)
- Air purity according to ISO 8573-1: 2010

#### External air extraction system required

- Minimum extraction capacity: 2,500 l / min at 220 hPa
- The machine constantly monitors the extraction capacity

#### Spindle SFK 300P

- Synchronous spindle with speeds up to 60,000 rpm
- Rated power in continuous operation (S1): 300 W
- Rated power in continuous continuous operation (S6): 450 W
- Peak power (Pmax): 500 W
- Hybrid ceramic ball bearings
- 4-row ball bearings
- Pneumatic chuck with  $\varnothing$  3 mm collet

- Cone cleaning
- Air tightness control

#### Disc holder bracket

- For mounting discs without clamping screws
- Min. / max. disc diameter: 98.5 mm / 98.8 mm
- Maximum disc height: 40 mm
- Min. / max. disc height: 9.8 mm / 10.5 mm
- Preparation for block holder bracket
- Prepared for premilled clamping

#### Tooling storage

- Maximum tools in the machine: 16
- Maximum tool length: 40 mm
- Automatic tool change with compressed air monitoring
- Automatic tool length measurement and tool breakage monitoring via measuring button

#### Ionizer

- To remove electrical processing debris for easy cleaning
- 2 ionization nozzles
- Optional deactivation / activation via software

#### Connections

- Pneumatic connection: 6 mm plug-in fitting
- Power supply connection: 100 - 240 V AC, 50/60 Hz with T6.3A L250V glass fuse
- Ethernet port RJ-45 speed: 10BASE / 100BASE-TX / 1000BASE-T (auto detection)
- Connection for automatic ignition control of the suction unit
- Hose connection ( $\varnothing$  45 mm) for suction units

#### Millable materials (dry only):

- Pmma, Wax, Zirconium, Composites, CoCr, premilled CoCr, Composite blocks





Dental milling machine

# 88Zeta4

Precise. Fast. Independent. Economical.



## Maximum precision

- Milling and sanding in ultra HD
- Solid industrial quality
- Repetition accuracy of 3 µm



## Complete independence

- 30 block materials from 12 manufacturers - increasing trend
- > 140 prefabricated titanium and CoCr abutments from 11 manufacturers
- Validation for all common scanners and CAD software
- Integrated PC with touchscreen and WLAN - no lap top/tablet required
- Integrated compressor - no external compressed air supply required



## Very fast processing

- Restorations in less than 10 minutes
- Block clamping in 2 seconds
- High frequency electric spindle 100,000 rpm



## High economy

- Pure water - no additives required
- Easy to set up, easy to use
- 24-month warranty for maximum carefreeness
- The ideal integration of vhf house: long-life precision tools at competitive prices





## Dental milling machine

# 88Zeta4

### Main features:

#### Basic system

- Dimensions: (L / W / H):  
Base support: approx. 400 x 305 mm  
Machine completely closed:  
approx. 471 x 522 x 507 mm  
Machine fully open:  
approx. 471 x 737 x 608 mm
- Weight: approx. 66 kg
- 4-axis mechanism
- Axis of rotation A: from + 190° to -10°

#### Work chamber:

- Working chamber lighting with different colors to indicate the status of the machine
  - Webcams for video broadcasts to customer service
  - Integrated compressor for compressed air production
- Permissible ambient temperature / humidity:
- Ambient temperature (storage / transport):  
between -20°C and 60°C
  - Ambient temperature (operation):  
between 10 ° C and 32 ° C
  - Relative air humidity: max. 80%, non-condensing

#### Spindle SFZ 170P

- Asynchronous spindle with speeds up to 100,000 rpm
- Rated power in continuous operation (S1):  
170 W
- Rated power in continuous continuous operation (S6): 220 W
- Peak power (Pmax): 340 W
- Hybrid ceramic ball bearings
- 2-row ball bearings
- Pneumatic spindle with Ø 3 mm gripper
- Air tightness control

#### Block holder

- Assembly of blocks with automatic penumatic clamping
- Maximum number of blocks per job: 1
- Maximum block dimensions: 40 x 20 x 20 mm (W / D / H)
- Optional premilled support

#### Tooling storage

- Removable (5 tool blocks divided by materials supplied)
- Maximum tools in the tool block: 6
- Maximum tool length: 35 mm
- Automatic tool change with compressed air monitoring
- Automatic tool length measurement and tool breakage monitoring via measuring button
- Material assignment by color-coding of the tool block

- Automatic tool block recognition

#### Liquid cooling system for wet processing

- Cooling liquid: potable water
- Integrated coolant tank
- Maximum coolant quantity: 2 l
- Integrated removable filter
- Dishwasher safe
- Flow sensor for monitoring coolant flow

#### Connections

- Power supply connection: 100 - 240 V AC, 50/60 Hz with T6.3A L250V glass fuse
- RJ-45 Network Port
- Speed: 10BASE / 100BASE-TX / 1000BASE-T (automatic detection)

#### Internal CAM computer

- Processor: Intel® Atom™ E3950 - 4 cores - 1.60-2.00 GHz
- RAM: 8 GB DDR3L-SDRAM
- Graphics: GPU: Intel® HD Graphics 505
- Display Interface: HDMI 1.4b up to 3840 x 2160 at 30 - Hz1
- USB 2.0 interface with WiFi device
- Wi-Fi Standard: IEEE 802.11 ac
- Data Rate: 802.11 ac: downlink up to 867 Mbps, uplink up to 867 Mbps (20/40 MHz)  
802.11 a / b / g / n / ac: downlink up to 300 Mbps, uplink up to 300 Mbps (20/40 MHz)
- Encryption: 64-bit WEP - 128-bit WEP - WPA2-PSK - WPA-PSK
- Operating frequency: 2.4 GHz / 5 GHz

#### Millable materials (blocks only):

Disilicates, Pmma, Wax, Zirconium, Composites, premilled CoCr/Titanium.





Dental milling machine

# 88Kappa5+

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Thanks to this tool-less clamping system, the machine can be loaded with material more quickly and simply.

An integrated ionizer to neutralize the static charge of acrylic particles and improved air circulation in the working area significantly reduces the time needed to clean the machine.

But that's not all and to surprise you, an integrated camera and RJ45 Ethernet port has been introduced to increase the stability and flexibility of the machine installation and connection.

Last but not least, the 88Kappa5+ is distinguished by its new bracket that will allow you to load disks with ease and security.

Like the previous version, the 88Kappa5+ is able to process the hardest materials, such as cobalt chrome, guaranteeing high precision and reliability for all machining operations.





## Dental milling machine

# 88Kappa5+

### Main features:

#### Basic system

- Dimensions: (L / W / H):
- Base support: approx. 375 x 260 mm
- Fully enclosed machine: approx. 450 x 545 x 630 mm
- Fully open machine: approx. 450 x 695 x 680 mm
- Weight: approx. 91 kg
- 5-axis mechanism
- Axis of rotation A: 360 °
- Axis of rotation B:  $\pm 35^\circ$

#### Working room

- Working chamber lighting with different colours to indicate machine status
- Webcams for video broadcasts to customer service

#### Permissible ambient temperature / humidity:

- Ambient temperature (storage / transport): between 20°C and 60°C
- Ambient temperature (operation): between 10 °C and 32 °C
- Relative air humidity: max. 80%, non-condensing

#### External compressed air supply is required

- Air pressure (min./max.): 6 bar / 8 bar
- Recommended air pressure: approx. 7 bar
- Air consumption: approx. 50 l / min at 6 bar, 64 l / min at 8 bar (ionizer deactivated)
- Air consumption: approx. 80 l / min at 6 bar, 102 l / min at 8 bar (ionizer activated)
- Air purity according to ISO 8573-1: 2010

#### External air extraction system required

- Minimum extraction capacity: 2,500 l / min at 220 hPa
- The machine constantly monitors the extraction capacity

#### Spindle SFK 300P

- Synchronous spindle with speeds up to 60,000 rpm
- Rated power in continuous operation (S1): 300 W
- Rated power in continuous continuous operation (S6): 450 W
- Peak power (Pmax): 500 W
- Hybrid ceramic ball bearings
- 4-row ball bearings
- Pneumatic chuck with  $\varnothing 3$  mm collet

- Cone cleaning
- Air tightness control

#### Disc holder bracket

- For mounting discs without clamping screws
- Min. / max. disc diameter: 98.5 mm / 98.8 mm
- Maximum disc height: 40 mm
- Min. / max. disc height: 9.8 mm / 10.5 mm
- Preparation for block holder bracket
- Prepared for premilled clamping

#### Tooling storage

- Maximum tools in the machine: 16
- Maximum tool length: 40 mm
- Automatic tool change with compressed air monitoring
- Automatic tool length measurement and tool breakage monitoring via measuring button

#### Ionizer

- To remove electrical processing debris for easy cleaning
- 2 ionization nozzles
- Optional deactivation / activation via software

#### Connections

- Pneumatic connection: 6 mm plug-in fitting
- Power supply connection: 100 - 240 V AC, 50/60 Hz with T6.3A L250V glass fuse
- Ethernet port RJ-45 speed: 10BASE / 100BASE-TX / 1000BASE-T (auto detection)
- Connection for automatic ignition control of the suction unit
- Hose connection ( $\varnothing 45$  mm) for suction units

#### Millable materials (dry only):

- Pmma, Wax, Zirconium, Composites, CoCr, premilled CoCr, Composite blocks





filiere responsabile per oro e platinoidi  
dalla fonte al consumatore

**88**<sup>®</sup>  
*dent*

E' un marchio

**8853**<sup>Spa</sup>

**8853 Spa**

**Sede commerciale - Uffici amministrativi - Stabilimento**

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Azienda con sistema di qualità certificato  
secondo le norme UNI EN ISO 9001:2008 e UNI CEI EN ISO 13485:2012

