Orthodontics in focus

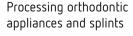
Clever solutions for everyday orthodontics





Digital and analog model fabrication

Digital or traditional? It's great when you have the choice, yet the result is still always the same: precise, reproducible, with a process you can count on.



The better the polish, the better the result. Our instruments and materials are your reliable companions on the way to high-quality results.

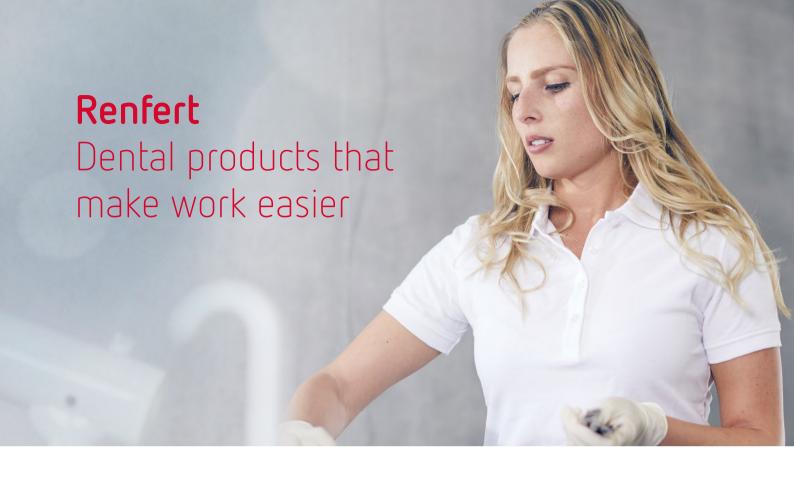
Cleaning

From page 21

From page 5

From page 16

We save you time: Cleaning orthodontic appliances and splints at the touch of a button — our products can do it.



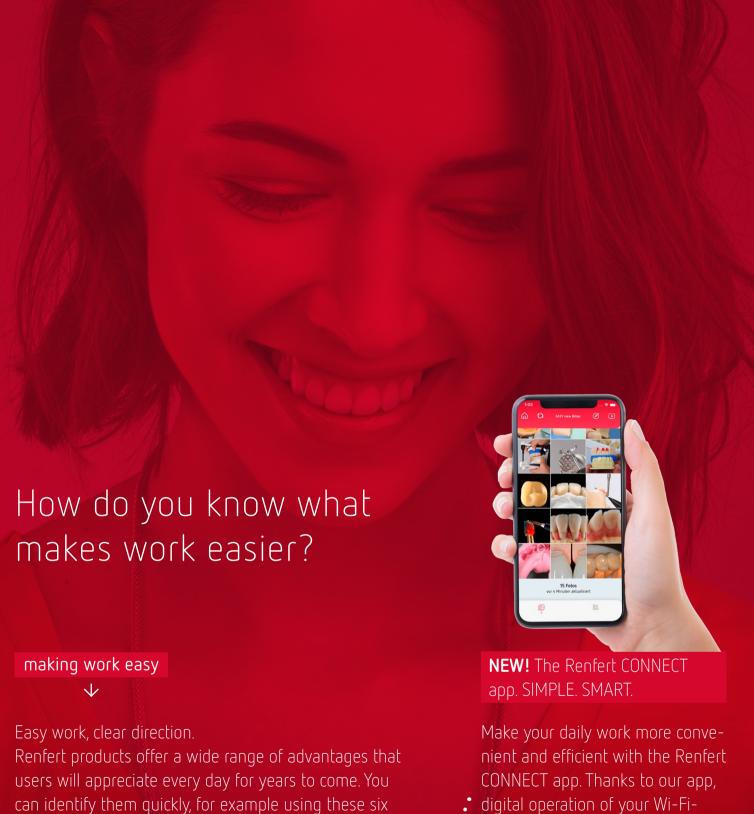
The dental industry has been our home for almost a century. We have been developing and manufacturing high-quality equipment, instruments and materials for dental laboratories and dental offices since 1925. Our goal: To create products that simplify, not complicate, the working life of dental technicians, dentists and orthodontists.

That's why all of our products are consistently developed in line with our motto "making work easy". The result is simple and intuitive products for which we are renowned and appreciated. Our products might differ, but they all have one thing in common: they are practical, reliable and extremely durable.

All of this is handled by our owner-managed company's around 200 employees at our site in Hilzingen near Lake Constance. From here we supply specialist dealers in more than 120 countries worldwide.







can identify them quickly, for example using these six icons:





easy use



silent



perfect view



compact

enabled Renfert equipment has never been easier.



smart control

Renfert

WORKFLOW GUARANTEE

3 year guarantee — 10 year spare parts service Activity guarantee —

3 year guarantee*

All Renfert laboratory equipment comes with a three year guarantee. If a problem does occur, you still have the comforting reassurance that Renfert will find a solution as part of the guarantee. This builds trust.

*Wear parts excluded

10 year spare parts guarantee

All Renfert products are extremely durable. That's why we are also ready with spare parts. Renfert guarantees that original spare parts will be available for every unit for a period of at least ten years after purchase. This provides peace of mind.

Operational guarantee

Renfert service is exceptionally efficient. In cooperation with Renfert dealers and certified service partners, a strong, competent and passionate team is ready worldwide to do whatever it takes to keep any downtime in the laboratory to a minimum. This enables profitability.



In addition to the Customer Success Program, we also include a free, comprehensive support package with every Renfert unit purchased. Because in the end, only one thing matters: that you're satisfied, as quickly as possible.

Direct link to 24/7/365 support



Trust is based on knowing that you always have a contact person.











Support +49 7731 8208-777



support@renfert.com



making work easy

Digital model fabrication

This is what makes work easier

- Precise and easy printing of 3D models with plug and print
- Preset orthodontic printing parameters for perfect results
- Special filaments for all orthodontic requirements
- 100 % free from irritants
- No post-processing (no cleaning, no curing)





Printing models - it's that simple

Would you like to be able to print models too, without any previous experience? No presets, no time-consuming determination of correct parameters. Plug and print instead of trial and error. With the SIMPLEX 3D filament printer system for dental applications, and corresponding software with all relevant presets, printing precise orthodontic models is, above all, simple, intuitive and reliable.



Special filaments: state of the art

At Renfert, state of the art means a perfect fit. In other words, process reliability when printing thanks to material that is adapted precisely to the indication and the printer. You save time because the usual post-processing steps are simply no longer required. And you're doing the environment and your health a favor too — our special filaments do not produce any harmful vapors. What's more, with our competitive pricing, quality doesn't have to be expensive.

NEW SIMPLEX

3D filament printer

SIMPLEX is a 3D filament printer for dental applications. With the slicer software designed specifically for dental use, you can easily and reliably use plug and print to print models that are also not harmful to health.

The SIMPLEX 3D filament printer system covers every aspect of orthodontic model fabrication. With its high dimensional accuracy, the SIMPLEX 3D filament printer ensures consistent, reproducible results. The 3D models produced do not require any post-processing.

Advantages

- Easy to use thanks to "Plug and Print" concept.
- Precise results thanks to a layer resolution up to 50 μm.
- Pleasant working environment with a low level of noise (≤ 49 dB).

Details

- Process reliability thanks to a filament monitoring system and automated troubleshooting.
- Intuitive touchscreen navigation.
- Safety thanks to a closed build chamber, lockable door, and removable cover.
- Heatable print bed: optimal adhesion and simple cleaning.
- SIMPLEX consisting of: SIMPLEX 3D filament printer, SIMPLEX sliceware, SIMPLEX print, SIMPLEX study model, Renfert CONNECT app.
- Wi-Fi (currently EU and USA) for print control.





SIMPLEX sliceware with pre-installed presets for orthodontic use

Technical data

Use	Fused Filament Fabrication (FFF)
Permissible mains voltage	90-264 V
Permissible mains frequency	50/60 Hz
Temperature range (Nozzle)	180-260 °C // 356-500 °F
Temperature range (Print bed)	50-110 °C // 122-230 °F
Layer resolution	≥50 µm
Number of extruders	Single
Type of extruder	All-Metal Hotend
Printing speed	50-200 mm/s
Position precision	4 x 4 x 2 μm
Weight (empty)	~16,3 kg // ~35.94 lbs
Dimensions (W x H x D) (Build volume)	250 x 200 x 200 mm // 10 x 8 x 8"
Dimensions (W x H x D) (Housing)	406 x 350 x 385 mm // 16 x 14 x 15.2"
Dimensions (W x H x D) (Device, exterior size)	415 x 500 x 635 mm // 16.3 x 19.7 x 25"
Diameter (Nozzle)	0,4 mm // 0.0016"
Diameter (Filament)	1,75 mm // 0.0689"

SIMPLEX with Wi-Fi	No. 17350000
SIMPLEX (Wi-Fi deactivated)	No. 17351000
SIMPLEX filaments	Page 7



NEW SIMPLEX filaments

Filament for orthodontic model fabrication

The special, high-quality filaments are suitable for the specific requirements of dentistry: they have excellent mechanical and physical properties and are not harmful to health. The high consistency and dimensional accuracy of the filaments enable detailed print quality. You are provided with a specific filament selection designed for the respective area of application.

Advantages

- A high standard of work with high quality materials.
- Process reliability in your work with a selection of filaments adapted to the indication area and printer.
- Fast and safe fabrication of 3D models no post-processing, no cleaning, no curing.

Details

- 100% free from irritants no harmful vapors during the printing process.
- Biofilament is recyclable and industrially biodegradable.
- Excellent mechanical and physical printing properties such as layer and print bed adhesion.
- High-quality printing with a stable process and detailed print result thanks to a uniform diameter (1.75 mm / 0.0689 ") and roundness along the entire length of the filament.

SIMPLEX study model

The "SIMPLEX study model" biofilament offers highly detailed reproduction and sharpness for precise planning and diagnostic models.

SIMPLEX working model

The "SIMPLEX working model" biofilament is designed for the digital fabrication of working models and offers highly detailed reproduction.

SIMPLEX aligner model

The special "SIMPLEX aligner model" filament is adapted to the specific requirements of aligner fabrication and the thermoforming technique*. No post-processing, no annealing required.

SIMPLEX multi-use model

The "SIMPLEX multi-use model" biofilament provides a natural surface effect thanks to its high hard-gypsum content. For precise planning and diagnostic models.





Designed for complete model fabrication for orthodontic applications

SIMPLEX study model, white	Ø 1,75 mm // 0.0689"	800 g	No. 17350100
SIMPLEX working model, viridian green	Ø 1,75 mm // 0.0689"	800 g	No. 17350200
SIMPLEX aligner model, plaster white	Ø 1,75 mm // 0.0689"	800 g	No. 17350300
SIMPLEX multi-use model, white	Ø 1,75 mm // 0.0689"	800 g	No. 17350600

^{*}excluded: Zendura Clear Aligner & Retainer Material



Orthodontic technician Christian Born explains the advantages of filament printing in general and of SIMPLEX in particular

With this system, any orthodontic lab can enter the digital world successfully – virtually at the touch of a button

Be it SLA, DLP, or FDM/FFF: additive 3D printing is considered a trend-setter in dentistry and is also becoming increasingly interesting for orthodontics. Besides the fact that equipment is becoming faster and more precise all the time, the market for materials is also constantly evolving. But what are the benefits of additive manufacturing for an orthodontic lab? And what advantages does the fabrication of models using filament printing offer? We spoke to dental technician Christian Born about the opportunities and possibilities of additive 3D printing for an orthodontic lab and about the new SIMPLEX all-in-one system by Renfert, which the orthodontic dental technology specialist from Berlin helped to develop.



Christian Born Orthodontic technician from Berlin

Mr. Born, you are a specialist in orthodontic technology. What digital technology do you use in your specialist laboratory?

I have been running a commercial laboratory specializing in orthodontic appliances for nine years now. I have been interested in digital technologies for quite a while; it all started with a model scanner, and then I invested in aligner/3D computer software. I only switched to a fully digital workflow with an additive 3D printer two years ago. After researching thoroughly, I decided on filament printing. With eight printers and seven employees at present, I actually employ more machines than technicians in my lab (chuckles). However, the advantages of filament printing have impressed not only me but also my customers: digital manufacturing currently accounts for a very high percentage of the work in my lab. In short: I practically went from 0 to 100 two years ago and have never regretted my decision for a second.



The main application area for the 3D filament printer is the fabrication of any type of orthodontic model.

Many orthodontists seem to feel blindsided by modern technologies rather than viewing them as an opportunity. What are the advantages of digital orthodontic technology in your opinion? The fact that many of my colleagues do not see digitization as an opportunity is surely due to the initial outlay and the fact that many things are not billable. Nevertheless, in my opinion, the pros still outweigh the cons - pros that I hadn't recognized as such beforehand either by the way: I have a digital archiving system, documentation, increased precision, and save an enormous amount of time. Plus, I can work in a way that is gentler on materials and I no longer need alginate, which also means that cleaning and disinfection and also post-processing are no longer required.

Those still unsure about the digital possibilities should first inform themselves comprehensively — be it via social media channels, professional organizations, or even the German Federal Ministry of Economic Affairs. There are now plenty of subsidies and low-cost loans or grants available there. Plus, it's not about questioning your profession as a dental technician and starting

something completely new: digitization is simply another building block in modern orthodontic dental technology.

Where do you see the differences between filament printing, which is not yet well established, and the resin-based printing process?

The processes are so different that it is not really possible to compare them each has its own advantages and disadvantages. I decided on filament printing for a number of reasons: for example, I don't want to work with synthetic resins - we already have plenty of hazardous substances, environmental aspects, and vapors to deal with in the lab. This is not the case with filament printing, as I can utilize renewable resources such as biodegradable cornstarch and sugar cane. I can also use recycled plastic or gypsum particles and print almost everything without residue, which is another advantage. As such, unlike with other types of printers, there is no hazardous waste. There is also no post-processing work required, as the printed objects do not need to be cleaned and cured that means fewer work steps and fewer chemicals! Moreover, a resin printer is far more expensive to buy than a filament printer.

Renfert has launched a 3D filament printer system on to the market, and you were involved in the development of SIMPLEX. What is so special about it?

The key is "Plug and Print". SIMPLEX is the first all-in-one dental system that comprises a modified FFF printer, dental slicer software, and adapted materials, and is also very easy to use. No prior knowledge is required; you only need to press the button. No other dental manufacturer has this kind of all-inclusive package in their portfolio. SIMPLEX is truly simple in terms of its installation and usability, making it ideal for use by beginners in particular.

What objects can be printed with the system?

There are currently four preset parameters: for the fabrication of planning and diagnostic models in white PLA, for working models in viridian green PLA, for planning and diagnostic models with gypsum-filled filament, and for

"I was completely won over by the convenient "plug and print" system. Renfert has put its "making work easy" value proposition into practice in this



aligner models with a heat-resistant filament in white. Why are there specific parameters for each model? Because the diagnostic model should primarily have a nice white appearance, while the wall thickness of the working model must be designed in such a way that it can also withstand 2.5 bar in the pressure pot. The thermoformed aligner model, in contrast, must be heat-resistant.

The print quality of the first generation of filament printers left quite a lot to be desired. How would you rate the results with SIMPLEX?

You can't compare the printing results achieved today with those of the first generation. Unlike those systems, SIM-PLEX offers an immense improvement in print quality with high dimensional accuracy. Someone with a resin printer might see that differently. However, the question should rather be: what quality do I need for everyday laboratory work and how much effort am I prepared to put into it? The quality is just right for the fabrication of orthodontic models, so SIMPLEX is therefore the ideal companion for me in my day-to-day work.

What economic advantage does the filament printer offer you?

As it runs in the background and loading it or creation with the Model Creator is completed relatively quickly, I save an awful lot of working time compared to analog fabrication of models, also because no post-processing is required after printing. However, I also save material, as there is barely any rubbish and waste. At the same time, the manufacturing costs are lower

compared to the fabrication of gypsum models and there is also less noise too. All in all, the fabrication of models in our lab has become more cost-efficient, more sustainable, quieter, and cleaner.

What about follow-up costs?

There are hardly any. Every now and again a nozzle needs replacing, the rods need lubricating, or the unit needs to be serviced, but those are all negligible costs — they maybe add up to €100 per year.

How would you refute the argument that a filament printer is slower than a resin printer?

The argument that a resin printer is faster is irrelevant for me. Printing runs in the background in our lab, also at night, so it doesn't really matter if it takes one hour less or more. When I print over night, I come into the lab in the morning, take the finished models out of the unit and continue working right away. I don't need to put on gloves to clean the models or the print platform, and I don't need a light curing unit either. If the filament printer needs two hours for a model, I can get started directly. In short: it's not the printing speed that counts but rather the overall workload - and that is far lower with SIMPLEX.

As I run a commercial lab, we sometimes have up to 20 models a day. That's why I have my eight printers that I can reload over and over again. For a dental lab that only needs four orthodontic models a day, for example, a single filament printer would be more than enough. For that many objects, I don't need an ex-

pensive unit that coughs out 20 models after half an hour and then sits idle for the rest of the day.

How many models can you produce with one print job?

Lots of colleagues ask me that. When I then say that I only print four models at once even though I could produce more, I almost always get the disappointed response: "Is that all? I know colleagues who print 20 models at once!" Yes, but I would rather remain flexible. If anything were to go wrong with the printing, then all 20 models would be faulty or broken! That's why I usually don't print more than four models.

What is so special about the newly developed slicer software?

To use a printer, you need to know what it's supposed to do. For that, I need to load my object or model into my slicer software. That means importing my closed STL file into the slicer software. Then I need to set the specific parameters precisely and specify what material should be used. These steps are not necessary with the optimized SIMPLEX sliceware. All that's left to do is to import the closed STL file into the slicer and run the pre-installed program. This special Renfert mode is what is so unique about SIMPLEX, as there is no slicer software currently on the dental market where all the parameters are pre-installed. That is what makes it so simple, particularly for beginners: SIM-PLEX can be used without any prior knowledge. However, thanks to Expert mode, where all of the parameters can be set individually, it is also interesting for experienced dental technicians with prior knowledge.



Printer, software, filaments: The specially coordinated system of three components is what makes SIMPLEX such a simple option for orthodontic applications.

Do the SIMPLEX filaments also have special features?

First of all, Renfert is a German manufacturer that uses validated materials. One special feature is the heat-resistant material, which is not yet available in this form on the market. Renfert is the only manufacturer to offer a special filament that is adapted to the specific requirements of aligner fabrication and the thermoforming technique*. There is no need for curing or post-processing. This means that any splint material with a thickness of up to 1 mm (0.04")can be thermoformed without any problems. Less heat-resistant filaments already deform at a splint thickness of 0.3 mm (0.01"). In addition, Renfert offers a filament with a high gypsum content that is already billable in some German states.

*excluded: Zendura Clear Aligner & Retainer Material

One final question: how would you rate SIMPLEX in a nutshell?

Thanks to the convenient plug and print concept, the cost-efficient system consisting of hardware, slicer software, and material makes it easy for any orthodontic laboratory to enter the digital world. In a nutshell, that means: no major effort, no large investments, no significant environmental impact, and an automated, controllable, and valid process without time-consuming trial and error. I select the program, press the button, and the system does what it is supposed to — entry into the digital world virtually at the touch of a button!

Mr. Born, thank you very much for those interesting insights into the world of digital orthodontic technology.



SIMPLEX sliceware with pre-installed presets for orthodontic use

Analog model fabrication

This is what makes work easier

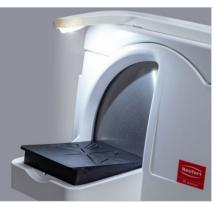
- Homogeneous, bubble-free and reproducible mixing results with any material
- Lighting of the trimming area
- Trimming is cheaper thanks to aqua stop
- Easy, tool-free cleaning
- Precise bite-oriented trimming using an intuitive template





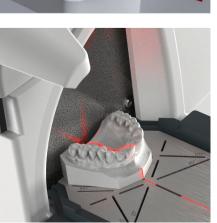
The preliminary work determines the result

When both plaster and alginate are mixed reliably and bubbles are reduced, when the material can flow without bubbles — then the prerequisites for optimal and reproducible results have been achieved. Renfert's Twister vacuum mixing units and Vibrax vibrator do a first-class job here.



Taking wet trimming to a new level

Optimal, bright lighting when you need it, stopping water when none is required – with sophisticated features, the MT premium trimmer is in a class of its own and makes your work even easier.



Trimmer upgrade for orthodontic requirements

Fast and precise bite-oriented trimming of orthodontic models requires special tools. The ORTHO guide transforms the MT premium and MT3 into special trimmers for orthodontic requirements — for results that meet the particular needs of orthodontics.



Trimming – then what?

When you trim, you'll always need to clean up afterwards. So it's good when this is as easy as possible: thanks to tool-free components that are not only easy to remove, but all easy to clean too. It's also essential that everything is reliably leak-tight after reassembly — just like Renfert trimmers.

Twister

Vacuum mixing unit









High torque vacuum mixing unit with a diaphragm pump for the vacuum and base mixing functions.

Advantages

- Reliable processing of large quantities thanks to high torque.
- Easy and fast entry of mixing parameters using a large, brightly-lit display.
- Fewer bubbles thanks to adjustable vacuum (from 70% to 100%).

Details

 Can be used flexibly for alginate impression materials and all duplicating and model materials used in dental technology.

Technical data

Permissible mains voltage	100-240 V
Permissible mains frequency	50/60 Hz
Power consumption	180 W
Vacuum pump capacity	16 I/min // 0.56 cfm
Max. vacuum	≈-890 mbar // ≈-12.9 psi
Bowl pressure abs.	≈80 mbar // ≈1.16 psi
Vacuum reduction	70-100 %
Rotational speed	100-450 rpm
Dimensions (W x H x D) (wall unit)	152 x 285 x 235 mm // 6.0 x 11.2 x 9.3"
Dimensions (W x H x D) (with stand)	230 x 640 x 295 mm // 9.0 x 25.2 x 11.6"
Weight (without bowl)	~5,2 kg // ~11.5 lbs

Ordering information

Twister, 220-240 V	No. 18260000
Twister, 100-120 V	No. 18261000
GO 2011 speed plaster and alginate solvent, 2 I	No. 20120000

Twister venturi

Vacuum mixing unit







High torque vacuum mixing unit with Venturi vacuum technology and base mixing functions.

Advantages

- Reliable processing of large quantities thanks to high torque.
- Easy and fast entry of mixing parameters using a large, brightly-lit display.
- Fewer bubbles thanks to adjustable vacuum (from 80% to 100%).

Details

 Can be used flexibly for alginate impression materials and all duplicating and model materials used in dental technology.

Technical data

Permissible mains voltage	100-240 V
Permissible mains frequency	50/60 Hz
Power consumption	180 W
Min./ max. connection pressure external	4,5–6 bar // 65–87 psi
Max. vacuum	≈-890 mbar // ≈-12.9 psi
Bowl pressure abs.	≈80 mbar // ≈1.16 psi
Vacuum reduction	80 % 100 %
Air consumption	28 I/min // 0.99 cfm
Rotational speed	100-450 rpm
Dimensions (W x H x D) (wall unit)	152 x 320 x 235 mm // 6.0 x 12.6 x 9.3"
Dimensions (W x H x D) (with stand)	230 x 640 x 295 mm // 9.0 x 25.2 x 11.6"
Weight (without bowl)	~4 kg // ~8.8 lbs

Twister venturi, 220-240 V	No. 18270000
Twister venturi, 100-120 V	No. 18271000
GO 2011 speed plaster and alginate solvent, 2 I	No. 20120000



Vibrax

Vibrator

The extremely broad vibration spectrum optimally processes any material. The functionally sophisticated handling enables convenient use even under difficult conditions.

Advantages

- Bubble-free flow behavior using two wave ranges each with 4 levels of intensity.
- Low vibration transmission to the workbench thanks to vibration-free housing.
- Long service life thanks to the maintenance-free vibration magnet.

Details

- Easy adaptation of the intensity using the large lever switch with only one finger.
- Extremely quiet, ensuring a pleasant working environment.
- Saves time thanks to elements that can be cleaned quickly.
- Tilt-resistant and extremely stable even when high pressure is applied to the edges.
- Thanks to the soft tray rest, the impression tray remains in position.

Optional accessories

Vibrating sphere ensures uniform flow behavior when pouring impression trays.





Ideal for a bubble-free model

Technical data

Permissible mains voltage	230 V 120 V 100 V 220 V
Permissible mains frequency	50 Hz 60 Hz
Power consumption	185 VA (230 V) 170 VA (120 V)
	190 VA (100 V) 170 VA (220 V)
Mains input fuse	2 x 1.6 A (T)
Frequency	100 Hz (50 Hz)
Dimensions (W x H x D)	275 x 140 x 220 mm // 10.8 x 5.5 x 8.7"
Weight	~6,4 kg // ~14.1 lbs

Vibrax, 230 V / 50 Hz	No. 18300000
Vibrax, 120 V / 60 Hz	No. 18301000
Vibrax, 100 V / 50 Hz	No. 18302000
Vibrax, 100 V / 60 Hz	No. 18303000
Vibrax, 220 V / 60 Hz	No. 18304000
Vibrating sphere, 1 piece	No. 18300001



NEW MT premium

Wet trimmer with a work light and aqua stop

Taking wet trimming to a new level: With sophisticated features that are perfect for everyday work, the MT premium trimmer is in a class of its own.

Advantages

- Efficient and precise wet trimming of dental plaster models.
- Fatigue-free work thanks to the integrated work light.
- Cheaper to run while using minimal resources thanks to aqua stop.
- Quick adjustment of the trimmer table angle using the handy tilt mechanism (90°/98°).

Details

- Easy and fast cleaning with tool-free removal of the trimmer table, door, and spray tube.
- Clean, interference-free work thanks to optimal sealing.

Further details

- Exceptionally powerful motor for outstanding surface removal even with harder types of plaster.
- Easy guidance of the plaster model with the aid of slotted angle lines on the trimmer table.
- Optimum view of the model due to a 10° inclination of the unit.
- Uniform coverage by the optimally positioned spray tube prevents clogging of the trimmer disc.







Optimal lighting of the work area

٦	е	C	h	ni	C	al	C	la	ta

Permissible mains voltage	220-240 V 100-120 V
Permissible mains frequency	50/60 Hz
Power consumption	1300 W (230 V) 1325 W (120 V)
	1.74 hp (230 V) 1.78 hp (120 V)
Motor performance (P1)	1300 W // 1.74 hp 1.78 hp
Motor performance (P2)	900 W // 1.21 hp 1.34 hp
Rotational speed	2880 – 3400 rpm
Water consumption max.	7 1/min // 0.25 cfm
Water pressure min. / max.	1-5 bar // 14.5-72.5 psi
Ø (Connection piece for drain hose)	36 mm // 1.42"
Ø (Trimmer disc)	234 mm // 9.2"
Dimensions (W x H x D)	305 x 330 x 410 mm // 12.0 x 13.0 x 16.2"
Weight (without trimmer disc)	~13,2 kg // ~29 lbs

Ordering information

Available soon

MT premium incl. Klettfix trimmer disc, 220–240 V	No. 18070000
MT premium incl. Marathon trimmer disc, 220–240 V	No. 18070500
MT premium incl. Klettfix trimmer disc, 100-120 V	No. 18071000
MT premium incl. Marathon trimmer disc, 100-120 V	No. 18071500



NEW ORTHO guide

Retrofit set for orthodontic extension for MT premium or MT3

The ORTHO guide transforms MT premium and MT3 into special trimmers for orthodontic requirements.

Advantages

- Fast and precise bite oriented trimming of orthodontic models using an intuitive template and a special trimmer table.
- Greater precision and optimal alignment of the median palatine raphe thanks to a guide light (MT premium only).
- Exact milling of the tuber plane of the upper jaw model.
- Fabrication of exact three-dimensional oriented jaw models that take all cephalometric planes into consideration.

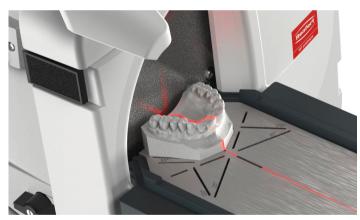
Details

- Thanks to the special guidance concept, the template is not permanently installed in the unit and can therefore be easily removed without tools.
- Easy, fast, and tool-free cleaning of all components.
- Step-by-step instructions with upper and lower jaw reference models (also suitable for process documentation).

Further details

 The subsequent assembly does not require specialist staff and can easily be carried out by users themselves.





Exact alignment of the median palatine raphe (MT premium only)

Technical data

Dimensions (W x H x D)	25 x 42 x 115 mm // 1 x 1,7 x 4,5"
Weight	~40 g // ~1.4 oz
Laser Class	1

Ordering information

Available soon

ORTHO guide Set MT premium (with guide light)	No. 18070100
ORTHO guide Set MT3 (without guide light)	No. 18080100



Processing orthodontic appliances

and splints

This is what makes work easier

- Precise separating and grinding discs for all materials
- Fast high-gloss results thanks to pastes, polishers and brushes that are adapted to one another





The tool defines the result

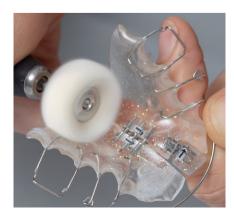
It doesn't matter how good your skills are if you use the wrong tools. That's why Renfert has developed instruments and materials that do exactly what they should: Help you achieve optimum results - with precision, performance and conve-



Separated – and grinded

A lot is expected of separating and grinding discs: they should be thin and flexible, yet stable at the same time. They should not generate too much heat, so as not to stress the material. But they should still precisely separate without compromising grinding power.

Sounds like a paradox? We don't think so. Renfert's diamond-coated separating and grinding discs are also reinforced with fiberglass for long-lasting durability. That's good for your wallet, too.



A glowing finish

No matter how precisely an item has been fabricated - manually or by machine - it must be finished with a proper polish. A smoother surface means more gloss and fewer deposits. The brushes, polishers and pastes from Renfert are professionals in this field, and optimally adapted to one another and to the respective material to give your work the high-gloss finish it deserves.

Dynex

Separating discs

Flexible and robust, double-fiberglass-reinforced separating discs for precious and non-precious metal as well as model cast alloys.

Drain 970592



Advantages

- Efficient separation and precise processing.
- Process safety thanks to outstanding cutting performance.
- Gentle on material thanks to extremely low thermal impact.

Ordering information

Dynex, 22 x 0,3 mm (0.87 x 0.01")	20 pieces	No. 570322
Dynex, 22 x 0,5 mm (0.87 x 0.02")	20 pieces	No. 570522

Silicone polishers

Polisher

For pre-polishing metal and resin.

Advantages

- No streaks.
- Ideal for the transition between metal and resin.



Ordering information

Silicone polishers, 22 x 32 mm (0.87 x 0.13")	100 pieces	No. 860000

Bison

Polishing brush

This unique mixture of bristles ensures a vibrant and quick high-gloss polish on alloys, ceramics and resin.

Advantages

- Long service-life thanks to dense, firm bristle arrangement.
- Excellent take-up of polishing pastes.



Bison, 14 mm (0.55")	25 pieces	No. 7631000
Bison, 14 mm (0.55")	100 pieces	No. 7631100
Bison, 18 mm (0.71")	25 pieces	No. 7661000
Bison, 18 mm (0.71")	100 pieces	No. 7661100

Goat hair brush

Polishing brush

For polishing precious metal and acrylic surfaces.

Advantages

• Good take-up of polishing paste for an excellent polishing result.



Ordering information

Goat hair brush, 19 mm (0.75")	12 pieces	No. 2040000
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Cotton buff

Polisher

For high-gloss polishing of dental materials using a handpiece.

Advantages

- Optimum take-up of polishing paste, no sticking.
- Long service life.



Ordering information

Cotton buff, 22 mm (0.87")	12 pieces	No. 2051000

Slim

Polishing brush

The Slim polishing brush is particularly suited to polishing interdental spaces and resin surfaces.

Advantages

- Slim brush for precise work with the lathe.
- Soft bristles prevent significant abrasion.
- Spaces between the bristles provide a cooling effect.



Slim, 44 mm (1.73")	12 pieces	No. 7881000
Slim, 44 mm (1.73")	100 pieces	No. 7882000



Linen buff, siliconized

For pre-polishing resin surfaces with a damp pumice stone.

Advantages

- Creates silk-matt surfaces.
- No lint thanks to rubber coating.
- Optimum polishing, even in deep areas of the palate.



Ordering information

Linen huff siliconized 80 mm (3.15")	/ nieces	No 2090000
Linen hiift siliconized XII mm (3.15")	4 nieces	No 20190000

Pleated buff, nettle cloth

For high-gloss polishing of large resin surfaces.

Advantages

- No fluff as material is cut at an angle.
- Faster polishing thanks to the cooling effect of the folds.



Pleated buff, nettle cloth, 100 mm (3.94")	Nettle cloth, 4 pieces	No. 2100002

Opal L

High-gloss polishing paste

White high-gloss polishing paste for all resins, for polishing using a handpiece.

Advantages

- Quickly smoothens the surface without altering the structure.
- Quick polishing effect.



Ordering information

(Opal L	35 g (1.23 oz.)	No. 5200001

Saphir

High-gloss polishing paste

High-gloss polishing paste for precious metals and cobalt-chrome alloys.

Advantages

- Special formulation with high-quality raw materials.
- Universal use on all alloys.
- Optimum polishing effect with Polisoft pre-polisher and Bison brush.



Ordering information

Sapnir	Approx. 250 g (8.75 oz.)	No. 5150000

Universal polishing paste

High-gloss polishing paste

Paste for high-gloss polishing of all resins.

Advantages

- Hard polishing paste for mirror-smooth surfaces.
- Very economical.
- Fine-grained consistency.



Universal polishing paste	6 x approx, 200 g (7.0 oz.)	No. 5131000



Cleaning

This is what makes work easier

- Sustainable and fast cleaning
- Proven material compatibility
- MDR-compliant cleaning
- Simple and reliable use
- Time saved for the team in the dental office and for patients
- Easy disposal thanks to neutralization (plaque p)
- Consistent and effective cleaning with the especially durable POWER steamers





Professional cleaning of orthodontic restorations

If splints and orthodontic appliances show heavy deposits, there are two options: clean them manually or replace them. Both are time-consuming and, in the case of replacement, not particularly sustainable either. The SYMPRO cleaning system respects the environment and your time by simply doing the cleaning for you — at the touch of a button.



Systematic cleaning that's MDR-compliant

Be it splints or orthodontic appliances: With the SYMPRO cleaning system, cleaning can be carried out with ease in your dental office — and it's MDR-compliant, too. SYMPRO and the special help:ex cleaning liquids are perfectly adapted to one another. And material compatibility? It goes without saying that this has been tested, too.



Easy disposal

The help:ex plaque p cleaning liquid makes things easy for you: instead of complicated and expensive disposal, it can be neutralized in the SYMPRO unit for easy disposal. This protects the environment too.



Great protection for a long life

The heating element is the heart of every steam cleaning unit — nothing works without it. So it makes sense that it must be protected as far as possible against continuous wear and tear. That's also why the heating element of the Renfert POWER steamers 1 & 2 is cast inside the floor of the boiler. In this way, water, limescale and the chemicals used during cleaning cannot damage it.

NEW SYMPRO

Denture cleaning unit

Compact denture cleaning unit especially suitable for cleaning removable dental restorations, orthodontic appliances and splints.

Advantages

- Customer retention with a prophylaxis service for denture wearers.
- Process reliability validated, hygienic reprocessing of system components.
- Patient satisfaction externally tested material compatibility with standard dental materials.

Details

- Positive effect on the patient's overall health due to reqular denture cleaning.
- Saves a lot of time compared to manual methods thanks to the effective and automated cleaning process.
- Optimized pin geometry for cleaning that is both gentle and effective.
- Excellent cleaning performance thanks to optimal bowl inclination.
- Fast cleaning of temporary restorations by combining the SYMPRO mini cup and temp:ex temporary cement remover.

Making work easy

A system concept you can count on! Effective help:ex cleaning agents are available for cleaning with the SYMPRO denture cleaning unit.





Before and after cleaning with SYMPRO and help:ex (Photos: Anja Palm)

Technical data

Permissible mains voltage	100-240 V
Permissible mains frequency	50/60 Hz
Power consumption	90 VA
Cleaning intensity	low / medium / high
Dimensions (W x H x D)	150 x 240 x 280 mm // 5.91 x 9.45 x 11.02"
Weight (without bowl)	~3 kg // ~6.6 lbs

SYMPRO, 100-240 V	No. 67001000
help:ex Cleaning agents	Page 23
More accessories	Page 31







NEW help:ex

Cleaning agents

Effective cleaning agents are available for cleaning with the SYMPRO denture cleaning unit. They are all safe to use due to proven material compatibility with the most common dental materials.

Advantages

- Easy and effective removal of hard and soft deposits on prosthetic restorations, orthodontic appliances and splints, with proven material compatibility.
- Efficient cleaning with ready-to-use liquids that are specially adapted to individual stains.
- Eco-friendly use with powder in portioned sachets and a corresponding neutralizer.

Easy neutralization and disposal

The cleaning powder help:ex plaque p can be easily disposed of by proven neutralization of the cleaning liquid in the SYM-PRO denture cleaning unit.





System solution comprising a unit and corresponding cleaning agents



Easy disposal through neutralization of help:ex plaque p (Please observe local instructions for disposal)

Overview

	help:ex plaque p	help:ex plaque f	help:ex discolor f
Plaque, tartar	•	•	
Coffee, tea, tobacco tar			
Typical contamination	•		
Heavy contamination			•
NEW Neutralization	•		
Form	Powder	Liquid	Liquid

help:ex plaque f	4 x 1 l (4 x 0.26 gal)	No. 67000100
help:ex plaque p	20 x 20 g cleaning powder + 20 x 4.5 g neutralizer	No. 67000000
help:ex discolor f	1 I (0.26 gal)	No. 67000200
More accessories		Page 31

A great idea for orthodontic appliances: In-office cleaning with SYMPRO

How do patients clean their removable orthodontic appliances? And is that cleaning always efficient? According to a scientific survey¹ of 450 randomly selected orthodontists, patients primarily clean their orthodontic appliances mechanically with a toothbrush and water (99.8%). 37.1% of the patients told practitioners that they also use chemical cleaning aids such as cleaning tabs for dentures or brackets; 30.5% of the patients surveyed use diluted acetic acid or citric acid as a cleaning additive.



Dr. Anja Palm, Orthodontics specialist from Radolfzell, Germany

With rather superficial basic cleaning of this kind, our experience shows that patients find it difficult to clean hard-to-reach threaded parts or transitions between the resin base and metal anchors properly. That's why we think it makes sense to offer additional in-office cleaning. For our dental office, the use of the SYMPRO cleaning unit has not just become standard practice, it is also profitable.

The advantage: In contrast to ultrasonic cleaning tanks, actively moving cleaning pins are used here in addition to the cleaning liquid. As a result, significantly better results are achieved in a shorter time. After the chemical-mechanical cleaning process, the appliances still have to be thoroughly cleaned of residual liquid and needle residues. However, hard and soft deposit residues no longer have to be removed, because they are in fact completely eliminated in the SYM-PRO system.

Cleaning of orthodontic appliances by patients¹



37.1
Cleaning tabs

30.5
Acetic acid or citric acid

Fig. 1: Hardened deposits on the object before cleaning.

Photo: Anja Palm

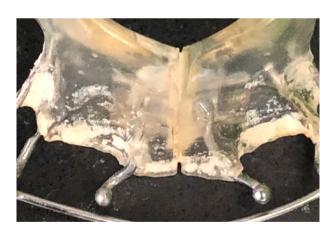
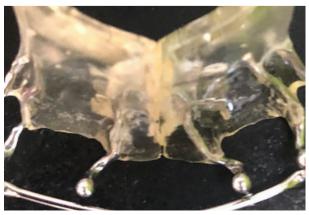


Fig. 2: Object once it had been fully cleaned.

Photo: Anja Palm



¹J. Eichenauer et al.: Cleaning removable orthodontic appliances: a survey. J Orofac Orthop, October 2011

Easyclean

Ultrasonic cleaning unit

Ultrasonic cleaning unit with an optimized sound frequency for intensive and gentle cleaning.

Advantages

- Excellent cleaning results using the optimally adapted high-performance ultrasonic transducer system (37 kHz).
- Quick, optimal cleaning performance thanks to degassing of the cleaning liquid (degas function).
- Uniform cleaning intensity for large items based on permanent displacement of the pressure wave peaks (sweep function).

Details

 Adjustable heating in 5°C increments (heat range 30 – 80°C/ 86 – 176°F).

Recommendation: GO 2011 speed

Suitable for cleaning different instruments and aids quickly and thoroughly in only 50% of the time compared to conventional plaster and alginate solvents.





GO 2011 speed plaster and alginate solvent. Using undiluted at $40-50^{\circ}\text{C}$ ($104-122^{\circ}\text{F}$) speeds up the cleaning process.

Technical data

Permissible mains voltage	220-240 V 120 V 100 V
Permissible mains frequency	50/60 Hz
Power consumption	280 W
Ultrasonic frequency	37 kHz
Ultrasonic effective power	80 W
Heating power	200 W
Dimensions (W x H x D) (Tank, inner dimensions)	240 x 100 x 137 mm // 9.5 x 3.9 x 5.4"
Dimensions (W x H x D) (Device, exterior size)	300 x 214 x 179 mm // 11.8 x 8.4 x 7.1"
Weight	~3,3 kg // ~7.3 lbs
Volume (Tank, max. volume)	2,75 I // 0.73 gal
Volume (Tank operation volume)	1 9 L // 0 5 nal

Easyclean, 220-240 V	No. 18500000
Easyclean, 120 V	No. 18501000
Easyclean, 100 V	No. 18502000
GO 2011 speed plaster and alginate solvent	20120000
More accessories	Page 31



NEW POWER steamer 2

Steam cleaning unit with automatic filling

The new, powerful POWER steamer 2 sets new standards in reliability and durability and impresses with its outstanding cleaning performance. Any kind of typical soiling can be easily and effectively removed. Using the mains water connection and integrated pump, the pressure tank is filled automatically and ensures availability of steam at all times.

Advantages

- Particularly durable heating system the heating element is cast inside the floor of the boiler to protect it against water, limescale, and the chemicals used during cleaning.
- High functional reliability and dependability thanks to a real-time calcification indicator.
- Simple cleaning of the pressure tank thanks to an extra-large service opening.
- Smart operation plus additional functions via the AppReady stick (optional accessory, available at the end of 2022)*.
- *Renfert CONNECT is not available in all regions.

Details

- Continuous and effective cleaning thanks to up to 2000 W and 4.5 bar (65.3 psi) working pressure in combination with innovative steam nozzle technology.
- Availability of steam at all times even during heavy-duty continuous use – thanks to automatic filling using the mains water connection and integrated pump.
- Optimal control through display of the current working pressure using a manometer.
- Significant reduction in workload when rinsing, cleaning, and descaling the pressure tank thanks to an effective rinsing program.





Protected heating element

Technical data

Permissible mains voltage	220-240 V 120 V 100 V
Permissible mains frequency	50/60 Hz
Power consumption	2000 W 1280 W 1550 W
Pressure vessel volume	4 I // 1.06 gal
Volume (Recommended fill quantity)	2,81// 0.74 gal
Volume (Maximum fill quantity)	3 I // 0.79 gal
Working pressure	4,5 bar // 65.3 psi
Connection pressure	1–5 bar // 14.5–72.5 psi
Dimensions (W x H x D)	370 x 422 x 350 mm // 14.6 x 16.6 x 13.8"
Weight	~10,1 kg // ~22.3 lbs

POWER steamer 2, 230 V	No. 18460000
POWER steamer 2, 120 V	No. 18461000
POWER steamer 2, 100 V	No. 18462000
POWER steamer descaler	No. 18450100
POWER steamer water softener	No. 18460100
POWER steamer wall bracket	No. 18450200
Renfert CONNECT stick	No. 24100000



NEW POWER steamer 1

Steam cleaning unit for manual filling

The new, powerful POWER steamer 1 sets new standards in reliability and durability and impresses with its outstanding cleaning performance. Any kind of typical soiling can be easily and effectively removed. The location can be selected flexibly thanks to manual filling.

Advantages

- Particularly durable heating system the heating element is cast inside the floor of the boiler to protect it against water, limescale, and the chemicals used during cleaning.
- High functional reliability and dependability thanks to a real-time calcification indicator.
- Simple cleaning of the pressure tank thanks to an extra-large service opening.
- Smart operation plus additional functions via the AppReady stick (optional accessory, available at the end of 2022)*.
- *Renfert CONNECT is not available in all regions.

Details

- Continuous and effective cleaning performance thanks to 2000 W and 4.5 bar (65.3 psi) working pressure in combination with innovative steam nozzle technology.
- Flexible location selection thanks to manual filling.
- Safe and convenient steam cleaning thanks to an ergonomic handpiece (the housing safely dissipates electrostatic charge).
- Easy filling of water and descaling solution thanks to handy, hopper-shaped fillers.
- Wall mounting possible using an optional wall bracket.





Extra large service opening

Technical data

Permissible mains voltage	220-240 V 120 V 100 V
Permissible mains frequency	50/60 Hz
Power consumption	2000 W 1550 W 1280 W
Pressure vessel volume	4 I // 1.06 gal
Volume (Recommended fill quantity)	2,8 I // 0.74 gal
Volume (Maximum fill quantity)	3 I // 0.79 gal
Working pressure	4,5 bar // 65.3 psi
Dimensions (W x H x D)	370 x 422 x 350 mm // 14.6 x 16.6 x 13.8"
Weight (empty)	~9,5 kg // ~20.9 lbs
Dimensions (W x H x D)	370 x 422 x 350 mm

POWER steamer 1, 230 V	No. 18450000
POWER steamer 1, 120 V	No. 18451000
POWER steamer 1, 100 V	No. 18452000
POWER steamer descaler	No. 18450100
POWER steamer water softener	No. 18460100
POWER steamer wall bracket	No. 18450200
Renfert CONNECT stick	No. 24100000

Basic eco

Fine sandblasting unit

Compact, fine sandblasting unit with 1 or 2 sandblasting tanks.

Advantages

- Cost-effective operation thanks to special mixing chamber technology (Venturi principle).
- Precise sandblasting thanks to excellent lighting of the sandblasting chamber with LED technology.
- Sufficient freedom of movement in the sandblasting chamber (10 I / 2.64 gal).

Details

- Tool-free extension to 2 tanks.
- Renfert offers suitable extraction units as required accessories.

Recommendation: Cobra abrasives

This abrasive is comprised of one of the hardest materials: aluminum oxide (Al₂O₃). For cleaning, we recommend a grit size of 25-70 μ m. For conditioning, a grit size of 50-110 μ m is recommended.





Pin-point accurate and cost-effective sandblasting. Above: Renfert focused jet, below: focused jet of a competitor

Technical data

Permissible mains voltage	220-240 V 120 V 100 V
Permissible mains frequency	50/60 Hz
Working pressure	1–6 bar // 14.5–87 psi
Max. connection pressure	6-8 bar // 87-116 psi
Air consumption	98 I/min (6 bar) // 3.46 cfm (87 psi)
Intensity of lighting	4800 lx
Lamp power	9 W
Dimensions (W x H x D)	350 x 275 x 400 mm // 13.8 x 10.8 x 15.7"
Tank capacity	1000 ml // 34 fl.oz.
Number of tanks	1-2
Blasting chamber volume	10 I // 2.64 gal
Weight (empty, 2-tanks)	~5,5 kg // ~12.1 lbs
Weight (empty, 1-tank)	~4,4 kg // ~9.7 lbs

Basic eco, 25-70µm, 230 V		No. 29491050
Basic eco, 25-70µm, 120 V		No. 29493050
Basic eco 25-70µm, 100 V		No. 29495050
Cobra, 50µm abrasive Al₂O₃	5 kg canister (11.04 lbs.)	No. 15941205



SILENT compact

Single workbench extraction

Compact, bag-free extraction unit with automatic filter cleaning and long-lasting collector motor.

Advantages

- No follow-up costs due to bag-free dust collection.
- Low operating noise of max. 55 dB (A).
- 3x longer service life when compared to conventional collector motors (1000 operating hours guaranteed).

Details

- Convenient operation of the automatic switch-on function with a key combination.
- Work without interruption thanks to a simple motor change that can be completed within minutes.









Bag-free system with automatic filter cleaning.

Technical data

Permissible mains voltage	220-240 V 120 V 100 V
Permissible mains frequency	50/60 Hz
Suction turbine power	490 W (230 V) 480 W (120 V) 480 W (100 V)
Volume flow (max.)	2500 I/min // 1.47 ft³/s
Max. depression	219 hPa // 3.2 psi
Filter quality	Class M according to EN 60335-2-69
Max. permitted connected load of the plug-in socket	1350 W (230 V) 480 W (120 V) 320 W (100 V)
Number of suction hoses	1
Sound pressure level (LpA) (at max. volume flow	r) 55 dB (A)
Weight (empty)	~13,2 kg // ~29.1 lbs
Dimensions (W x H x D)	245 x 440 x 500 mm // 9.6 x 17.3 x 19.7"
Ø suction fittings interior	35 mm // 1.38"
Ø suction fittings exterior	40 mm // 1.57"
Fill level dust collector	~2.61//~0.69 gal

SILENT compact, 220-240 V	No. 29340000
SILENT compact, 120 V	No. 29341000
SILENT compact, 100 V	No. 29341500

Dustex master plus

Dust extractor box

The non-tip and non-slip Dustex master plus extractor box protects against splinters, dust and fumes. A clever ergonomic shape and height-adjustable arm rests enable work to be carried out comfortably and freely.

Advantages

- Clear view due to suction effect directly at the object.
- Maximum freedom of movement thanks to a large inner volume (17 I / 4.5 gal).
- PerfectView: Innovative LED technology for outstanding contour and detail recognition.

Details

- Work can be carried out comfortably thanks to large arm inlets.
- Bright, built-in lighting (4800 Lux).
- High level of safety thanks to laminated protective screen with silicone coating.
- Versatile use thanks to compact, stable, and light-weight powder-coated housing.
- Wooden tray, made of hard beech wood.





In the case of particularly large amounts of dust, the Dustex master plus dust extractor box keeps the workbench clean.

Technical data

Permissible mains voltage	220-240 V 100-120 V
Permissible mains frequency	50/60 Hz
Lamp power	16 W
Weight	5 kg // 11 lbs
Dimensions (W x H x D)	380 x 285 x 400 mm // 15.0 x 11.2 x 15.8"
Ø suction fittings interior	35 mm // 1.38"
Ø suction fittings exterior	40 mm // 1.57"
Working chamber (volume)	17 I // 4.5 gal

Dustex master plus, 220-240 V	No. 26260105
Dustex master plus, 100-120 V	No. 26261105
Magnifying glass with holder, 1 piece	No. 26260300



Accessories

Cleaning

	SYMPRO Mini-cup set	Hygienically reprocessable bowl (for 4 single crowns or up to 4 unit bridges) for cleaning small objects in the SYMPRO denture cleaning unit, incl. adapter ring and cleaning pins. For SYMPRO, help:ex, temp:ex	Set	No. 65000410
The state of the s	SYMPRO Cleaning pins	The rotating pins heat up the cleaning bath to approx. 45°C (113°F), which accelerates the chemical reaction. The pins are made of an acid-resistant alloy. They are cut precisely at right angles and also designed for maximum efficiency and durability. For SYMPRO	75 g (2.63 oz.)	No. 65000550
	SYMPRO Retrofit set	Retrofit set with disinfectable SYMPRO cleaning bowl. For SYMPRO	1 cleaning bowl, 1 set of cleaning pins and 1 manual for hygienic reprocessing	No. 65000460
	Plastic lid	Quicker heating. Protects against evaporation and dust infiltration. For Easyclean	1 piece, gray	No. 18500001
	Stainless steel cover	Cover for use with the cleaning jar or plastic cup with lid. For Easyclean	1 piece	No. 18500002
	Stainless steel basket	For storage of cleaning items. To protect the floor of the ultrasonic tank. For Easyclean	1 piece	No. 18500003
	Stainless steel immersion basket	For cleaning small and very delicate items. For use with the stainless steel cover or with the cleaning jar. For Easyclean	1 piece	No. 18500004
	Plastic acid bath insert	For acids and fluids not suitable for use in the stainless steel tank. For Easyclean	1 piece	No. 18500005
	Cleaning jar	For the use of additional cleaning liquids. For use in the stainless steel cover. 600 ml For Easyclean	With a lid and rubber ring, 1 piece	No. 18500006
	Plastic cup with lid	Ideal for cleaning smaller items and working with acids. Can be also used in conjunction with the stainless steel cover. For Easyclean	1 piece	No. 18500007





making work easy

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It's our firm belief: Equipment, tools and materials have just one purpose — to make your work easier. During daily cleaning of prostheses, restorations and other items, this means less manual work, for example, while achieving excellent results.

If time consuming work can be transformed so you have time for other tasks, that's what we call "making work easy".



WORKFLOW GUARANTEE

3 year guarantee 10 year spare parts service Activity guarantee

www.renfert.com

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