making work easy

Orthodontics in focus Clever solutions for everyday orthodontics





Renfert



Digital and analog model fabrication

From page 5

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.

Processing orthodontic appliances and splints

From page 17

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 22

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

Renfert Dental products that make work easier

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 ortho-dontists.

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.





How do you know what makes work easier?

making work easy

Easy work, clear direction.

Renfert products offer a wide range of advantages that users will appreciate every day for years to come. You can identify them quickly, for example using these six icons:







silent









tool included

easy

easy use

perfect view

W

compact



NEW! The Renfert CONNECT app. SIMPLE. SMART.

Make your daily work more convenient and efficient with the Renfert CONNECT app. Thanks to our app,

digital operation of your Wi-Fienabled 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.



≫8



call us Support +49 7731 8208-777



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

- SIMPLEX consisting of: SIMPLEX 3D filament printer, SIMPLEX sliceware, SIMPLEX print, SIMPLEX study model, Renfert CONNECT app.
- Process reliability thanks to filament monitoring system and automated troubleshooting.
- Intuitive touchscreen navigation.
- Safety thanks to closed building chamber, lockable door, and removable cover.
- Heatable print bed: optimal adhesion and simple cleaning.
- Simple handling thanks to removable print platform.
- 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 385 x 350 mm // 16 x 15.2 x 14"
Dimensions (W x H x D) (Device, exterior size)	415 x 635 x 500 mm // 16.3 x 25 x 19.7"
Diameter (Nozzle)	0,4 mm // 0.0016"
Diameter (Filament)	1,75 mm // 0.0689"

SIMPLEX with Wifi	No. 17350000
SIMPLEX	No. 17351000
Renfert CONNECT app	No. 12345678
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

Ordering information

Ø 1,75 mm // 0.0689"	800 g	No. 17350100
Ø 1,75 mm // 0.0689"	800 g	No. 17350200
Ø 1,75 mm // 0.0689"	800 g	No. 17350300
Ø 1,75 mm // 0.0689"	800 g	No. 17350600
	Ø 1,75 mm // 0.0689" Ø 1,75 mm // 0.0689"	Ø 1,75 mm // 0.0689" 800 g Ø 1,75 mm // 0.0689" 800 g

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*excluded: Zendura Clear Aligner & Retainer Material

NEW SIMPLEX model isolation

Separating agent for 3D printed filament models

SIMPLEX model isolation* is a model separating agent that is adapted for use with 3D printed filament models. With the ready to use separating agent, orthodontic appliances can be easily fabricated from dental resin on the printed model. An even, ultra-fine film of isolating agent is applied on the surface of the model using a brush. This results in a clear separation between the model and the dental resin. After polymerization, the workpiece can be easily removed from the model, maintaining all surface details.

Advantages

- Adapted for use with 3D printed filament models, designed for the isolation of models when producing removable orthodontic appliances.
- Also suitable for models fabricated using SLA/DLP printing processes.
- A single application is sufficient to obtain an optimal separation between the model and the workpiece.
- It can be completely removed with water and requires no steam cleaning, for easy, material-friendly application.

Details

- Does not contain substances that are harmful to health.
- Perfect isolation.
- Optimal, ultra-fine isolating film.
- Fully dissolvable with water.
- Gentle on material.

Making work easy

The separating agent developed for 3D printed filament models completes the digital orthodontic workflow. As with the entire SIMPLEX 3D filament printer system, high attention has been paid to convenient and safe application of the model separating agent. SIMPLEX model isolation is easy and quick to use.



With SIMPLEX model isolation objects can be easily fabricated from dental resin on the printed model

Ordering information

SIMPLEX model isolation, 80 g

No. 17350010

* Not for distribution in the USA



The advantages of filament printing in general and of the SIMPLEX 3D filament printer in particular

With this system, any orthodontic office or laboratory can enjoy a successful start with digital workflows – virtually at the touch of a button

SLA, DLP, or FDM/FFF: additive 3D printing is setting the pace in dentistry and is also becoming increasingly interesting for orthodontics. Not only is the technology becoming faster and more precise, the market for print materials is also continually evolving. But how can additive manufacturing benefit orthodontics? And what are the advantages of using filament printing to fabricate models? In this interview, Annett Kieschnick looks at the opportunities and possibilities that 3D printing can bring to orthodontic offices and orthodontic laboratories.



Annett Kieschnick Freelance specialist journalist, Berlin

Digital orthodontics today: how far have we come?

Digital technologies have enhanced the field of orthodontics for a number of years now. There has been an enormous surge in innovation in the area of intraoral scanners and they are now considered a game-changer in digital orthodontics. Thanks to direct digital data capture, the entire workflow can be mapped digitally. With digital models, users not only save time, resources, money, and space, they also benefit from precise planning and reproducibility. A model can be fabricated in the software with just a few clicks. The virtual model can then be evaluated in all planes. The software is used to analyze the patient situation and to plan treatment. Whatever the requirement – be it measuring tooth size and position or creating the setup – digital tools provide valuable support. Treatment scenarios can be easily simulated. The digital model can also be archived to save space, and retrieved later at any time by calling up the patient data.



The main application area of 3D filament printing is the fabrication of all kinds of orthodontic model.

How can a dataset be efficiently transformed into a physical model?

3D printing is becoming the method of choice for fabricating a physical model. Compared to milling, printing a model is less expensive. One disadvantage that is often mentioned is the additional post-processing effort (additional finishing) that is required with some printer technologies (DLP, SLA). That's why it makes sense to compare different 3D printing technologies and to choose the right technique for orthodontic purposes. With filament printing (FDM/FFF techniques), for example, there is no need for any post-processing such as washing or curing. At the same time, depending on the printing system, models printed from filament meet all the requirements of an orthodontic model.

Many orthodontists are not aware of the potential of digitization for their day-to-day work. Where do you see the advantages of digital orthodontic technology?

I don't believe that people don't see the potential of digitization in orthodontics. From my perspective, I think it's actually the initial outlay that is a challenge as well as the change it-

DIGITAL MODEL FABRICATION

self and the learning curve for the dental office team as a whole. Many digital processes are not billable either. Just the same, the advantages outweigh the drawbacks. Many of the benefits only become apparent when you work with digital technologies. Ultimately, it's not just a matter of replacing an analog step with a digital workflow - entire process chains are transformed. The resulting benefits are wide-ranging, and include digital archiving, treatment monitoring and documentation, greater accuracy, and less time required. Some orthodontic offices that use digital workflows now no longer need alginate at all, meaning that cleaning and disinfection of impression trays, for example, are no longer required. It is understandable that the initial outlay and the cost of training can dampen enthusiasm. Those who are unsure about the digital possibilities can inform themselves in detail by speaking to colleagues, for example, or through specialist groups, professional organizations, or the German Federal Ministry of Economic Affairs. Subsidies and low-cost loans or grants are available. Ultimately, digitization is another building block in state-of-the-art orthodontics and provides for greater treatment comfort

What are the differences between filament printing and the resin-based printing technique?

With both techniques, the model is built up layer by layer. Resin-based printing techniques (SLA, DLP) begin with a liquid photopolymer that is cured following exposure to light.

Alternatively, e.g., for orthodontic models, there are printers known as filament printers that use the fused filament fabrication (FFF) technique. In this case, the filament (thermoplastic resin in wire form) is heated and applied using an extruder; this can almost be compared to a hot glue gun. Both methods of fabrication have advantages and drawbacks. Many orthodontic offices and orthodontic laboratories choose filament printing, for example if they do not want to work with synthetic resins as they want to avoid additional hazardous materials and emission of fumes. With the SIMPLEX 3D filament printer system from Renfert, for example, the filaments that are used are

"The convenience of 'plug and print' impresses many users. Renfert has put its value proposition "making work easy" into practice here in a single piece of equipment."

mainly bioplastics that can be recycled and industrially composted without the need for complex processes. In this way, orthodontic offices and laboratories can print 3D items in an environmentally sustainable manner. Unlike other printing techniques, there is no hazardous waste. Filament printing does not require complex post-processing work either, as the printed items do not need to be cleaned or cured – meaning fewer work steps and fewer chemicals! Moreover, a resin printer is generally more expensive to buy than a filament printer. In other words, a filament printer can be an excellent alternative for fabricating orthodontic models.

Renfert has launched a 3D filament printer system on the market. 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 easy to use. No prior knowledge is required; you only need to press a button. SIMPLEX couldn't be simpler to install or use, making it ideal, especially for beginners.

What items 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 aligner models with a heat-resistant filament in white. Why are there specif-



ic parameters for each model? Because the diagnostic model should primarily have a clean, white appearance, while the wall thickness of the working model must be designed so 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 when printing with SIMPLEX? You can't compare the printing results achieved today with those of the first generation. Unlike the first generation, SIMPLEX offers an immense improvement in print quality with high dimensional accuracy. Someone with a resin printer might see that differently. However, the question should be: what quality do I need for day-to-day work in the dental office and laboratory and how much effort am I prepared to invest in it? The quality is perfect for orthodontic models. That's why SIMPLEX seems to be the ideal partner for everyday fabrication of models.

What are the economic advantages of filament printers?

As this printer essentially runs in the background and loading it or creation with the Model Creator are completed relatively quickly, it saves a lot of time compared to analog fabrication of models, particularly as no post-processing is required after printing either. However, it also saves material, as there is barely any rubbish or 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 using a filament printer is more cost-efficient, more sustainable, quieter, and cleaner.

What would you say to the argument that a filament printer is slower than a resin printer?

The argument that a resin printer is faster is irrelevant for many users. Printing runs in the background, also at night, so it doesn't really matter if it takes an hour less or more. If printing is carried out overnight, the completed models can be removed from the unit the next morning and work can continue again right away. Gloves are not required to clean the models or the print platform, and a light curing unit is not required either. In short: it's not the printing speed that counts but rather the overall workload - and this is lower with SIMPLEX. For an orthodontic office that prints four models a day, for example, a single filament printer would be more than enough. For that number of items, you don't need an expensive unit that coughs out 20 models in half an hour and then sits idle for the rest of the day.

What is so special about the newly developed slicer software?

To use a printer, you need to know what it's supposed to do. This requires that the data-based object (model) is read into the slicer software. For this purpose, the STL file created in advance in the CAD software is imported into the slicer software. The specific parameters are then set, e.g., material. This is not necessary with the optimized SIMPLEX sliceware. You only need to import the STL file into the slicer and to run the pre-installed



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

program. This special Renfert mode is what is so special about SIMPLEX, as all parameters are already pre-installed. That's what makes it so simple for beginners: SIMPLEX can be used without any prior knowledge. Thanks to Expert mode, where all parameters can be set individually, the system is also of interest to users who are experienced in 3D printing.

Do the SIMPLEX filaments have special characteristics?

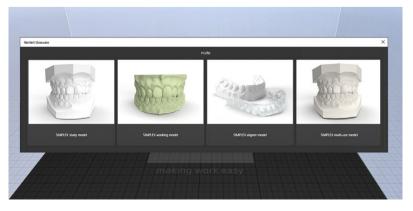
Renfert is a German manufacturer that only uses validated materials. One special characteristic, for example, is the heat-resistant material. Renfert is one of only a few manufacturers to offer a special filament that is adapted to the specific needs of aligner fabrication and the thermoforming technique*. There is no need for curing or post-processing. This means that any splint material with a thickness of up to 1 mm can be thermoformed without any difficulty. Less heat-resistant filaments already deform at a splint thickness of 0.3 mm. In addition, Renfert offers a filament with a high gypsum content that is therefore already billable in some German states.

*Exception: Zendura Clear Aligner & Retainer Material

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

Thanks to the convenient plug and print concept, this cost-efficient system consisting of hardware, slicer software, and material makes it easy to get started with digital orthodontics. In a nutshell, that means: no major effort, no large investments, and an automated, controllable, and valid process without time-consuming trial and error. You only need to select the program and the unit does what it's supposed to do: print a model. Essentially, you can get started with digital workflows at the touch of a button!

Thank you very much for these interesting insights into digital printing of orthodontic models!



SIMPLEX sliceware with pre-installed presets for orthodontic use.

Sources: DT Christian Born; Whitepaper "The future of efficient model fabrication in orthodontics"

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.



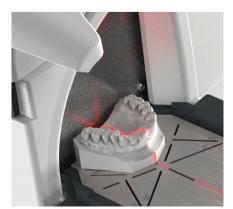


Taking wet trimming to a new level

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.

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.



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.

ANALOG MODEL FABRICATION

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 l	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 l	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

J	
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

Technical data

)-120 V
0/60 Hz
(120 V)
(120 V)
1.78 hp
1.34 hp
400 rpm
0.25 cfm
72.5 psi
// 1.42"
m // 9.2"
) x 16.2"
′~29 lbs

Ordering information

-	
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.

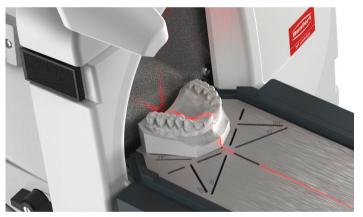
Details

- 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

Power consumption guide light	150 mW
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

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

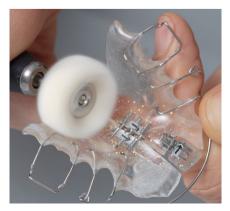
- Precise separating and grinding discs for all materials
- Fast high-gloss results thanks to pastes, polishers and brushes that are adapted to one another



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 convenience.





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.

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.



Ordering information

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

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.



Ordering information

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 buff, siliconized, 80 mm (3.15")

4 pieces No. 2090000

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.



Ordering information

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

Saphir	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.



2

Ordering information

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.

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

Ordering information

-	
SYMPRO, 100-240 V	No. 67001000
help:ex Cleaning agents	Page 24
More accessories	Page 27
	5

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CLEANING

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.

Тір

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			
Neutralization			
Form	Powder	Liquid	Liquid

Ordering information

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 27

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-toreach 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

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

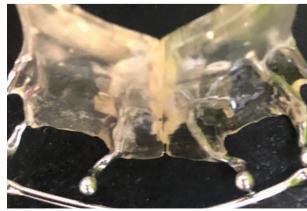
Photo: Anja Palm

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

NEW Easyclean MD

MDR compliant ultrasonic cleaning unit

The Easyclean MD ultrasonic cleaning unit is used for powerful cleaning or pre-cleaning* of medical devices such as e.g. abutments and dentures as well as instrumentation (*does not replace reprocessing in the automated washer disinfector). The MDR compliant unit (MDR = Medical Device Regulation) is the ideal solution for cleaning medical devices and equipment as easily as possible. Easyclean MD is intuitive to operate, offers several ultrasonic modes, and impresses with a modern design.

Advantages

- As a Class I medical device, Easyclean MD meets the requirements of the Medical Devices Regulation (EU) 2017/745.
- With five pre-configured ultrasonic modes, the right program can be activated for any situation.
- Intuitive operation facilitates effortless creation of custom programs.

Details

- Powerful cleaning.
- Smart feedback function.
- Ultrasonic frequency of 37 kHz.
- Configurable threshold temperature.

Тір

Despite its many options and considerable flexibility, Easyclean MD is incredibly "easy" to use. The user-friendly control panel features an easy-to-read, integrated display that provides information on important parameters such as the operating mode, duration, or temperature. Moreover, the unit signals when cleaning has come to an end, for example, or when the threshold temperature has been reached.

Technical data

Permissible mains voltage	220-240 V
Permissible mains frequency	50/60 Hz
Power consumption	320 W
Ultrasonic frequency	37 kHz
Ultrasonic effective power	120 W
Heating power	200 W
Dimensions (W x H x D) (Device, exterior size)	305 x 170 x 230 mm // 12 x 6.7 x 9.1"
Weight	~3,6 kg // ~8 lbs
Volume (Tank, max. volume)	2,71// 0.71 gal
Volume (Tank operating volume)	1,6 I // 0.42 gal





Application example: Cleaning of medical devices

Easyclean MD, 220-240 V	No. 18510000
GO-2011 speed plaster and alginate solvent, 2 l	No. 20120000
Further accessories	Page 27



Accessories

Cleaning devices

 SYMPRO mini-cup set	Hygienically reprocessable cup (for 4 single crowns or up to 4 unit bridges) for cleaning small objects in the SYMPRO denture cleaning unit. For SYMPRO, help:ex, temp:ex.	1 mini-cup incl. adap- ter ring and cleaning needles	No. 65000410
SYMPRO cleaning pins	The rotating pins heat up the cleaning solution. The pins are made of an acid-resistant alloy. For SYMPRO.	75 g (2.63 oz.)	No. 65000550
SYMPRO retrofit set	Retrofit set with disinfectable SYMPRO cleaning beaker. For SYMPRO.	1 cleaning beaker, 1 cleaning needles and 1 manual for hy- gienic preparation	No. 65000460
Plastic lid, gray	Quicker heating. Protects against evaporation and dust infiltration. For Easyclean MD.	1 piece	No. 18500001
Stainless steel cover	Cover for use with the cleaning jar or plastic cup with lid. For Easyclean MD.	1 piece	No. 18500002
Stainless steel basket	For storage of cleaning items. To protect the floor of the ultrasonic tank. For Easyclean MD.	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 MD.	1 piece	No. 18500004
Plastic acid bath insert	For acids and fluids not suitable for use in the stainless steel tank. For Easyclean MD.	1 piece	No. 18500005
Cleaning jar	For the use of additional cleaning liquids. For use in the stainless steel cover. 600 ml For Easyclean MD.	1 piece with lid and rubber band	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 MD.	1 piece	No. 18500007

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 extralarge service opening.
- Smart operation plus additional functions via app interface // Renfert CONNECT stick*.

*(optional accessory available from end of 2023. Limited country availability).

Details

- Continuous and effective cleaning performance thanks up to 2,000 W and 4.5 bar 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.











control



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 1550 W 1280 W
Pressure vessel volume	4 I // 1.06 gal
Volume (Recommended fill quantity)	2,8 // 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

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

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 extralarge service opening.
- Smart operation plus additional functions via app interface // Renfert CONNECT stick*.

*(optional accessory available from end of 2023. Limited country availability).

Details

- Continuous and effective cleaning performance thanks up to 2,000 W and 4.5 bar 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

5	
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 wall bracket	No. 18450200

CLEANING

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 | / 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

CLEANING

SILENT compact

Single workbench extraction





Dustex master plus

Dust extractor box







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.

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 l/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) 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	~2,6 I // ~0.69 gal

Ordering information

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

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.

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

Ordering information

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



making work easy

"making work easy" is our promise in everything we do. Renfert products are developed with your needs in mind. Everything we do follows one specific goal: to make your daily work a little bit easier.

That's what "making work easy" is all about - less stress, better results, more success.

Renfert

WORKFLOW GUARANTEE

3 year guarantee 10 year spare parts service Activity guarantee

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