

MTplus

No.1803-0000 /-0500 /-4000 /-4500 /-5000 /-5500

Bedienungsanleitung

Instruction manual • Mode d'emploi • Istruzioni d'uso

Instrucciones para el servicio

Инструкция по эксплуатации

取扱説明書 • 사용 설명서



MTplus Plaster Trimmer

No.1803-0000 /-0500 /-4000 /-4500 /-5000 /-5500

ENGLISH

1. Introduction

We are pleased with your decision to purchase an *MTplus*. The trimmer sets new standards with regard to function, performance, safety, and design. Please note the following information.

2. Application Area

The *MTplus* is a model trimmer designed for use in dental technology operations to grind plaster models. It can be employed as either a wet or dry trimmer.

2.1 Ambient Conditions

(in accordance with DIN EN 61010-1)

The *MTplus* may only be operated:

- Indoors;
- Up to an altitude of 2,000 m [6,500 ft] above sea level;
- At an ambient temperature of 5 - 40°C [41 - 104°F] *;
- At a maximum relative humidity of 80% at 31°C [87.8°F], decreasing linearly to 50% relative humidity at 40°C [104°F] *;
- With a mains power supply where current fluctuations do not exceed 10% of the nominal value;
- Under level 2 contamination conditions;
- Under overvoltage category II conditions.

*) Between 5 – 30°C [41 - 86°F], the unit can be operated at a relative humidity of up to 80%. At temperatures between 31 - 40°C [87.8 - 104°F], the humidity must decrease proportionally in order to ensure operational readiness (e.g., at 35°C [95°F] = 65% humidity; at 40°C [104°F] = 50% humidity). The unit may not be operated at temperatures above 40°C [104°F].



3. Safety Information

Please observe all applicable accident prevention regulations together with the following safety notes when trimming:

MTplus is an electrical appliance with a danger potential. This appliance may be connected / used only by authorized and qualified persons after checking its conformity with respect to the national norms.

- Never reach into the grinding wheel while the unit is connected to the power supply. Inadvertently starting the unit can result in injury!
- Always keep long hair, loose or wide sleeves or other clothing away from the trimmer. Hair or clothing can be pulled into and wrapped up on the grinding wheel, resulting in injury!

- The unit is designed solely for grinding plaster models. Cancer causing dusts are released when trimming investment material.
- Never open the front cover while the motor is running. The motor safety shutoff will not stop the grinding wheel immediately.
- Only open the front cover after the grinding wheel has come to a complete stop.
- Always wear protective eyewear when grinding.
- Do not reach into the grinding wheel while it is turning.
- Do not work without the model table installed and locked („click“). Small parts or fingers can be drawn into the trimmer, resulting in serious injury.
- Remove the trimmer table only after the grinding wheel has come to a complete stop and the front cover is opened.
- Operate the equipment only under supervision

Additional notes for dry trimming:

- The extraction must be selected to match the dust being generated (if necessary, consult the responsible professional organization).
- Operating the unit can result in a very high noise level >>> always wear ear protection.

3.1 Liability Exclusion

Renfert GmbH shall be absolved from all claims for damages or warranty if:

- The product is employed for any purposes other than those cited in the operating instructions;
- The product is altered in any way other than those alterations described in the operating instructions;
- The product is repaired by other than an authorized facility or if any but Renfert OEM parts are employed;
- The product continues to be employed, despite obvious safety faults.

4. Commissioning / Operation

First, check to make sure that your mains power corresponds with the power requirements given on the trimmer nameplate.

The type of usage wet- (see pt. 4.1 and 4.2) or dry-trimming (see pt. 4.1 and 4.3) must be determined prior to use.

4.1 Mounting the Trimmer Disc

Please refer to the trimmer disc instructions (resp. to pt. 5.1 in this instructions) for the mounting procedure.

Range of application of the discs:

- *Klettfix* for wet trimming
- *Marathon* for wet or dry trimming
- *Infinity* for wet trimming

4.2 Wet Trimming

1. Set the unit up near the water source / drain, with a plaster trap (Fig. 1).
2. Connect the drain hose to the trimmer (Fig. 2).
Turn the drain hose on the connecting branch counter clockwise and fix with a hose clamp (Fig. 2b)!
3. Position the trimmer hose in the drain (Fig. 3a/3b).
4. Connect the water hose to the trimmer (Fig. 4a/4b). **Observe the necessary water pressure (see pt. 8 / technical specifications)!**
5. Connect the water hose to a water supply with a shutoff tap (Fig. 5).
6. Open the water supply (Fig. 6a) and check for leaks (Fig. 6b).
7. Plug the power cord into the wall outlet (Fig. 7).
8. Switch the unit on (Fig. 8).
9. Adjust the water flowrate (Fig. 9).

Attention: the water inlet is closed on delivery.

The *MTplus* is now ready for use as a **wet trimmer**.

General information concerning wet trimming:

- An adequate water flow is important, particularly when trimming with diamond-coated discs. Overheating will damage the disc.
- The water supply shutoff tap should be turned off during longer work interruptions or overnight.

4.3 Dry Trimming

- 1a. Connect the trimmer to an **external extractor** (Fig. 10 illustrates an example using a Renfert extraction hose and coupling).

Attention!

100V / 120V units in combination with dust extractors should be separately connected to the mains in order to avoid an overcharging of the extractor and of the electric network (do not use the automatic start-up!). If the electric network is protected by fuse of only 15 A, it is necessary to connect the trimmer and the extractor to separately protected electric circuits.

Recommended dust extractors:

see: Accessories, Extraction units etc.

- 1b. Connect the trimmer to the **central extraction** (Fig. 10 illustrates an example using a Renfert extraction hose and coupling).

Recommended accessories:

see: Accessories, Extraction units etc.

2. Open the front cover (Fig. 11).
3. Remove the rinse tube (Fig. 12).
4. Close the opening with the blind plug (**completely impress it**) from the hardware set (Fig. 13).

5. Close the front cover (Fig. 11).

- 6a. For extraction **with** automatic start-up:

- Connect the trimmer power cord to the extractor (Fig. 14).
- Set the extractor up for automatic operation.

- 6b. For extraction **without** automatic start-up:

- Plug the trimmer power cord into the wall outlet (Fig. 7).
- Switch on the *MTplus* (Fig. 8), switch the extractor on automatic use.

The *MTplus* is now ready for use as a **dry trimmer**.

4.4 Conversion from Wet to Dry Operation

1. Disconnect the unit from the power supply (Fig. 7).
2. Shut off the water supply (Fig. 6a).
3. Remove the water hose (Fig. 4a/4b).
4. Remove the drain hose (Fig. 2).
5. If necessary, remove the unit from the wet area and **allow to dry completely**.
All remaining moisture must be blown off with compressed air!
6. Remove the trimmer disc (see pt. 5.1, steps 4 to 7).
7. Clean the area behind the flange first with a wet and then with a dry cloth (Fig. 25a). Moreover blow off with compressed air (Fig. 25b).
8. Once the unit is dry, proceed as described in Section 4.3.

Partially diamond-coated trimmer discs should be used for dry operation.

Recommended trimming disc:

see: Accessories, Trimming discs - for wet and dry trimming

4.5 Conversion from Dry to Wet Operation

1. Disconnect the unit from the power supply (Fig. 7 or 14).
2. Remove the extractor hose (Fig. 10).
3. Remove the trimmer disc (see pt. 5.1, steps 4-7).
4. Using a brush, thoroughly clean the front cover and the inside of the housing with an extractor and a brush (Fig. 26).
5. Remove the blind plug. Should it be difficult, you can use the Allen key (Fig. 16).
6. Mount the trimmer disc (see instructions for trimmer discs).
7. Install the rinse tube (Fig. 12).
8. Then, proceed as described in Section 4.2.

4.6 Recommendation for dry or wet trimming

- Dry trimming is not allowed when the *MTplus* is equipped for wet trimming.
- Wet trimming is not allowed when the *MTplus* is equipped for dry trimming.
- Not observing the prior instructions will result in plaster residue mixing with water and hardening to a difficult to remove crust. Such residues parti-

cularly on the back of the trimmer disc can lead to imbalance.

4.7 Grinding Angle Adjustment (89°-99°)

1. Loosen the knurled nut (Fig. 17).
2. Adjust the grinding angle with the adjusting screw (Fig. 18).
- 2a. Adjust the grinding angle roughly with the adjusting screw (Fig. 18).
If the adjusting screw is turned to the **top**, the angle between model table and trimmer disc is of 89°. If the adjusting screw is completely turned **out**, the angle between model table and trimmer disc is of 99°.
- 2b. Adjustment of the model table roughly with the adjusting screw (Fig. 18). The lower border of the model table should coincide with the upper border of the model-table support (Fig. 19 + 20).
- 2c. Fine adjustment of the model table at 90° with the adjusting screw (Fig. 18) and set square out of the hardware set (Fig. 21).
3. Retighten the knurled nut (Fig. 17).

4.8 Operation / Trimming

Using both hands, securely set the model on the trimmer table and press it against the disc (Fig. 22).

5. Cleaning / Maintenance

Attention: A raising of plaster dust in aerodynamic dead areas when dry trimming is normal and has no negative influence on the function or grinding power of the MTplus.

1. Disconnect the unit from the power supply (Fig. 7 or 14).
2. If necessary, shut off the water supply (Fig. 6).
3. Open and unhook the front cover (Fig. 11 + 23).
- 4a. **For wet trimmer:** If necessary, remove the table (Fig. 30 + 40) and clean with a brush under running water (Fig. 24).
Do not remove the grinding table if the front cover is closed otherwise the trimmer disc will be damaged!
- 4b. **For dry trimmer:** Clean using a vacuum and brush (Fig. 26). Clean the drain tube and tube connection (Fig. 27).
5. Reinstall and close the front cover (Fig. 23 + 11).

5.1 Trimmer Disc Replacement

1. Switch the unit off (Fig. 8).
2. Disconnect the unit from the power supply (Fig. 7 or 14).
3. If necessary, shut off the water supply (Fig. 6a).
4. Open the front cover (Fig. 11).
5. If necessary, remove the rinse tube (Fig. 12).
6. Remove the SW4 Allen key from its holder (Fig. 28).
7. Remove the thread cover, loosen the centring screw, and remove the disc (Fig. 31 + 29).
8. If necessary, clean the flange (refer to Section 5.2).

9. Place a new disc on the lock pin (Fig. 30).
10. Retighten the centring screw with the Allen key (Fig. 29).
11. Place the thread cover back on the centring screw (Fig. 31).
12. Return the Allen key to its holder (Fig. 28).
13. If necessary, replace the rinse tube (Fig. 12).
14. Close the front cover (Fig. 11).
15. If necessary, open the water supply (Fig. 6a).
16. Plug the power cord into the wall outlet (Fig. 7 or 14).

5.2 Flange Replacement / Cleaning

1. Remove the disc (refer to Section 6.1, steps 1-7).
2. Have the pulling screw and Allen key at hand >>> see tool kit enclosed (Fig. 32).
3. Screw the pulling screw into the flange (Fig. 33) >>> **The flange may not be removed by hand. Always use the pulling screw to remove the flange!**
4. Remove the flange (Fig. 34).
5. Remove the pulling screw from the flange.
6. Clean the flange and the inside of the housing >>> **do not damage the seals!**
Recommended for cleaning:
see: Accessories
7. Lightly coat the motor shaft and seal with Vaseline.
8. Replace the flange >>> **Note the engagement groove** (Fig. 35).
9. Replace the flange by hand on the shaft (Fig. 36).
10. Reinstall the grinding disc (refer to Section 5.1, steps 9-16).

5.3 Spray Tube Replacement / Cleaning (Wet Trimmer)

1. Remove the rinse tube (refer to Section 5.1, steps 1-5).
2. Remove the gaskets (Fig. 37).
3. Allow the rinse tube to soak in decalcifying agent overnight (Fig. 38).
4. Reinstall the gaskets and coat them lightly with Vaseline (Fig. 37).
5. Replace the rinse tube (Fig. 12).
6. Close the front cover (Fig. 11).
7. If necessary, open the water supply (Fig. 6a).
8. Plug the power cord into the wall outlet (Fig. 7 or 14).

5.4 Grinding Table Replacement / Cleaning

1. Switch the unit off (Fig. 8).
2. Disconnect the unit from the power supply (Fig. 7 or 14).
3. Open the front cover (Fig. 11).
Do not remove the grinding table if the front cover is closed otherwise the trimmer disc will be damaged!
4. Unlatch and remove the grinding table (Fig. 39 + 40).

5. Remove the front cover (Fig. 23).
6. Clean the grinding table and front cover with a brush under running water (Fig. 24).
7. Replace and close the front cover (Fig. 23 + 11).
8. Reinstall the grinding table (Fig. 40).
Make sure the retainers are completely free of all plaster residue! Make sure the work table is properly seated on the front cover!
9. Plug the power cord into the wall outlet (Fig. 7 or 14).

5.5 Switch Cover Replacement

1. Loosen the fastening screws (Fig. 41).
2. Remove the switch cover and replace it with a new one (Art. No. 90003-5788).
3. Retighten the fastening screws.
>>> The MTplus may not be operated with a defective switch cover!

6. Spare Parts

Please refer to the included spare parts list for the numbers of replacement and spare parts.

7. Warranty

Provided the unit is properly used, Renfert **warrants** all parts of the *MTplus* for a **period of 3 years**. In case of any claims for warranty original dealers' invoice is required. Components subject to natural wear (e.g., trimmer discs) are excluded from this warranty.

The warranty is voided in case of improper use, failure to observe the operating, cleaning, maintenance, and connection instructions, in case of independent repairs or repairs by unauthorized personnel, if spare parts from other manufacturers are employed, or in case of unusual influences or influences not in compliance with the utilization instructions. Warranty service shall not extend the original warranty.

8. Technical Specifications

Mains voltage:	220 V / 50 Hz 120 V / 60 Hz 100 V / 50-60 Hz
Power consumption:	1,300 W / 1,7433 hp (230 V) 1,500 W / 2,0115 hp (120 V) 1,200 W / 1,6092 hp (100 V)
Water consumption, max.:	9 l/min.
Necessary water pressure:	min. 1 bar at ca. 6 l/min.
Speed:	2,820 rpm (230 V, 50 Hz) 3,420 rpm (120 V, 60 Hz) 2,870 / 3450 rpm (100 V, 50/60 Hz)
Connection piece diameters for external extraction:	36 mm
Dimensions (WxHxD):	298 x 318 x 412 mm
Trimmer disc dimensions:	Ø 234 mm
Weight:	13.5 kg
Sound pressure level accord. to DIN 45635-01-KL3, measured under full load:	Lp(A) = 74 dB(A) K = 4 dB

9. Standard Delivery

- 1 *MTplus*
- 1 Inlet tube
- 1 Drain tube
- 1 Tool set
- 1 Hardware set
- 1 Set of instructions, with spare parts list
- 1 *Marathon* trimmer disc, only on
Art.No. 1803-0500, -4500 and -5500

10. Delivery Versions

No. 1803-0000	<i>MTplus</i> , 230 V / 50 Hz
No. 1803-0500	<i>MTplus</i> , 230 V / 50Hz, incl. <i>Marathon</i> trimmer disc
No. 1803-4000	<i>MTplus</i> , 120 V / 60 Hz
No. 1803-4500	<i>MTplus</i> , 120 V / 60Hz, incl. <i>Marathon</i> trimmer disc
No. 1803-5000	<i>MTplus</i> , 100 V / 50-60 Hz
No. 1803-5500	<i>MTplus</i> , 100 V / 50-60Hz, incl. <i>Marathon</i> trimmer disc

11. Disposal

When disposing this device correctly, significant parts of it can be reused or recycled. Also, this is a substantial contribution in protecting the environment and the natural resources.

All devices identified by the following symbol:



MAY NOT be disposed of as residential waste.

The unit must be disposed of by an authorized recycling operation.

11.1 Special Information for German Customers

This device may not be returned to municipal waste collection points.

Devices brought into market after August 13th, 2005 will be taken back by Renfert and disposed correctly. For more information regarding proper disposal or return options, please refer to the following Internet site:

www.renfert.com

12. Accessories (not included)

No.2011-0000	GO-2011, plaster solvent
<u>Trimming discs - for wet trimming only:</u>	
No. 1803-1000	<u>Basic kit:</u> 5 <i>Klettfix</i> silicon carbide trimmer discs (3 x corn 80, 2 x corn 120) + support disc
No. 1803-1100	<u>Refill kit:</u> 5 <i>Klettfix</i> silicon carbide trimmer discs, corn 80
No. 1803-1200	<u>Refill kit:</u> 5 <i>Klettfix</i> silicon carbide trimmer discs, corn 120

No. 1803-3000 1 *Infinity* trimmer disc,
diamond-coated

Trimming discs - for wet and dry-trimming:

No. 1803-2000 1 *Marathon* trimmer disc, partially
diamond-coated

Extraction units etc.:

Silent

No. 2921-0000 Silent, 230 V, 50 Hz
No. 2921-1000 Silent, 120 V, 60 Hz
No. 2921-2000 Silent, 100 V, 50/60 Hz
No. 2921-0002 Dust bag set (5 bags)
No. 2921-0003 Muffler set, 2 mufflers
No. 15-0823 Suction hose (by the metre)
No. 900034305 Hose fitting adapter
No. 933334240 Suction hose
No. 900034314 Y-junction

Vortex

No. 2924-3000 *Vortex compact 2L*, 230 V
No. 2924-4000 *Vortex compact 2L*, 120 V
No. 2928-0000 *Vortex compact EC 2L*, 230 V
No. 92924-0003 5 filter bags
No. 92924-0005 1 cloth filter
No. 92923-0001 3 m suction hose with elastic coupling
No. 92923-0010 1 elastic coupling only, Ø 36 mm
No. 2-0973 1 90° plastic elbow for drain tube

13. Troubleshooting Guide

Fault	Possible cause	Corrective action
Device fails to start.	<ul style="list-style-type: none">• Power supply not established.• Mains fuse faulty.• Front cover not properly closed.• Motor overheated.	<ul style="list-style-type: none">• Check the mains power supply.• Check the mains fuse.• Close the front cover (Fig. 11).• Allow the motor to cool down, then restart at the main power switch.
Trimmer disc wobbles.	<ul style="list-style-type: none">• Disc is not lying flush on the flange.• Disc not tightened sufficiently.	<ul style="list-style-type: none">• Reinstall the disc according to the directions. Pay attention that the disc is mounted exactly on the lock pin (Fig. 30).• Remove all deposits from the back of the disc and from the stopping face of the flange.• Hand-tighten the disc (Fig. 29).
Excessive noise while the trimmer disc is running.	<ul style="list-style-type: none">• Disc not adequately tightened.	<ul style="list-style-type: none">• Hand-tighten the disc (Fig. 29), or reinstall, as required (Sec. 5.1).
Trimmer table wobbling.	<ul style="list-style-type: none">• Trimmer table incorrectly installed.	<ul style="list-style-type: none">• Reinstall the table according to the directions (Fig. 40).

Wet Trimming:

Fault	Possible cause	Corrective action
Disc buildup.	<ul style="list-style-type: none"> Water volume incorrectly adjusted at the device. Water supply not fully open. Spray tube plugged. Inlet strainer plugged. Inlet water pressure too low. 	<ul style="list-style-type: none"> Increase the water volume at the trimmer (Fig. 9). Open the water supply (Fig. 6). Clean/decalcify the spray tube (Sec. 5.3). Remove the strainer with pliers and clean / decalcify it. The diameter of the inlet pipe is too small resp. too many users are connected to a small pipe >>> Check if water pressure is at least 1 bar (ask your plumber). If necessary the water pressure can artificially increased by a domestic water work (electric pump and pressure tank). Ask your plumber.
Water sprays out of the grinding opening.	<ul style="list-style-type: none"> Too much water. Water drainage impeded. 	<ul style="list-style-type: none"> Reduce the water volume at the trimmer (Fig. 9). Check/properly lay out drain tube >>> slope (Fig. 3a + 3b).
No rinse water.	<ul style="list-style-type: none"> Water connection not properly established. Spray tube soiled / calcified. 	<ul style="list-style-type: none"> Check the water connection (Sec. 4.2 steps 4-6). Clean/decalcify the spray tube (Sec. 5.3).
Water is dripping out between the front door and the housing.	<ul style="list-style-type: none"> Gypsum powder order plaster grains on the sealing surface. 	<ul style="list-style-type: none"> Clean the sealing surface and the sealing ring.

Dry Trimming:

Fault	Possible cause	Corrective action
Disc buildup.	<ul style="list-style-type: none"> Models are too wet. Plaster has a high plastic content. 	<ul style="list-style-type: none"> Clean the disc with a brush under running water or with plaster solvent (Renfert GO-2011 Art. No. 2011-0000).
Excessive dust being blown out of the grinding opening.	<ul style="list-style-type: none"> Extraction not switched on. Insufficient suction. Extractor or dust bag full. Extractor hose blocked. 	<ul style="list-style-type: none"> Switch the extraction on. Increase the suction. Replace the dust bag. Check/clean the hose.







