

# User manual

**HSM-350 rotary tool  
with foot control**



Die Basis für ihr Labor

***Dear customer,***

Thank you for choosing a product from the Wassermann range. Wassermann dental equipment incorporates the highest standards of quality and the latest technology. In order to enjoy maximum performance and years of trouble-free operation, please read this user manual carefully before you start work, and operate the unit according to the recommended guidelines.

Please ensure that all persons operating the equipment have read and understood this user manual.

**Keep this user manual on hand for ready reference.**

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## 1 For your safety

### 1.1 Correct use of this product

This laboratory equipment is designed for working dental materials (stainless steels, plastics, ceramics, etc.) in dental laboratories using rotating tools.

### 1.2 Safety symbols used in this manual



#### **Warning!**

This is a warning of risk situations and dangers. Failure to observe this warning could be life-threatening. These warnings must be observed.



#### **Information!**

This symbol draws your attention to specific features, which must be observed.

### 1.3 Safety guidelines

Configuring and operating this equipment requires **precise knowledge** and **observance** of the instructions in this **user manual**. The equipment is designed only for its intended application.



**Servicing and repairs should be carried out only by authorised specialists.**

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**Make sure that the unit is connected to the correct mains voltage.**



**Danger! Do not touch the tool when it is rotating or coming to a stop!**  
**Be sure to follow the manufacturer's guidelines for the maximum permissible speed of the rotating tools used.**



**Take the following precautions before starting work:**

- **Wear eye protection**
- **Use a protective visor**

#### **1.4 Handpiece block**

This rotary tool features electronically controlled **overload protection**.

If an excessive load blocks the handpiece, the motor switches off automatically.

The handpiece stops if the chuck is open, and the electronics also cut out if the tool starts working accidentally.

#### **1.5 Responsibility for operation and damage**

The responsibility for operating the unit lies exclusively with the owner or user if the said unit is incorrectly serviced, maintained or altered by persons not employed by an accredited dealer or if the unit is used in a manner contrary to its specified purpose.

The unit must be maintained and operated in accordance with this user manual. Wassermann Dental-Maschinen GmbH is not responsible for damage arising from the **non-observance** of these instructions.

Guarantee and responsibility provisions contained in the sales and supply conditions of Wassermann Dental-Maschinen GmbH are not extended by these instructions.

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**Product responsibility lapses if the equipment is altered by unauthorized third parties or if non-original parts are installed. Use only original WASSERMANN replacement parts.**

## **1.6 Authorized users**

The owner of the equipment must ensure that any users have been provided with the user manual and that they have read and understood its contents before operating the equipment.



**Ensure that this user manual is accessible at all times and has been read and understood.**

## **2 Care and maintenance**

### **2.1 Maintenance**



**Always disconnect the power cable before undertaking cleaning or maintenance.**

**The model plate must always be legible and should not be removed.**

The equipment should be cleaned at regular intervals to ensure trouble-free operation. It requires only normal cleaning (sponge, damp cloth, mild detergent). Do not use chemical additives.

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## 2.2 Care



Remove external dirt from time to time with some form of cold cleaner.

Use only cold cleaners to avoid damaging the paintwork or removing the lettering.

Recommended: A151 universal cleaner.

## 2.3 Cleaning and/or changing the chuck

- Turn off the mains power.
- Open the chuck (see 5.4) and remove the tip by turning it manually to the left.



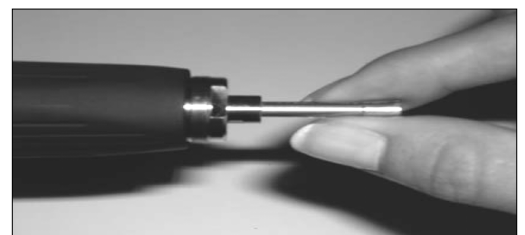
- Insert the chuck key fully in the chuck.
- Hold the shaft firmly with an adjustable wrench.
- Remove the chuck by turning the chuck key to the left.



- Use a brush to clean the shaft and then lubricate the chuck and the bore with two drops of oil each.



- Insert the chuck by hand.
- **Make sure** that the chuck mechanism is still open.



- Insert the chuck key in the chuck and hold the shaft firmly with a wrench.
  - Tighten the chuck up to the stop.
-

### 3 Use / Application

The HSM – 350 is designed for working with dental materials such as stainless steels, plastics, ceramics, etc. in dental laboratories using rotating tools.



#### **Warning!**

This tool is **not designed as medical** equipment.

It is **not to be used** on human beings.

The tool is not to be used in areas where special conditions apply (corrosive or potentially explosive atmospheres).

### 4 Before you start

#### **4.1 Unpacking / Transport**

- Open the cartons, remove the packing materials, and carefully lift out the instrument and accessories. Check that the accessories are correct.
- When transporting the unit, use appropriate packing materials to avoid accidental damage.



**Locate the user manual and read it carefully.**



**When unpacking, it is important to identify any accidental transport damage. If necessary, draw up an immediate status report.**

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## 4.2 Contents

### a) HSM-350 230 V

111100	Handpiece
111102	Cable HSM-350 / 500
111103	Handpiece holder
111150	Cleaning set
111899	Foot control and cable

### b) HSM-350 115 V

111100	Handpiece
111102	Cable HSM-350
111103	Handpiece holder
111150	Cleaning set
111893	Foot control and cable

## 5 Switch functions

### 5.1 Mains switch

The mains switch turns the controller ON/OFF.

When the unit is on, the mains switch lights **green**.

### 5.2 Clockwise/counter-clockwise rotation switch

This switch changes the direction of rotation of the handpiece. It is the grey switch in the top centre of unit. When the unit is rotating counter-clockwise, the light flashes yellow.

**Warning! Operate this switch only when the motor has stopped!**

### 5.3 Foot control for speed regulation

You use the foot control to increase the speed of the handpiece continuously up to 35,000 rpm.

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## 5.4 Changing rotating tools



**Rotating tools can only be changed when the motorised handpiece has stopped completely.**

**Dangerous!**

- Turn the handpiece casing to the right to open the chuck.
- Remove the rotating tool.
- Push in the new tool until you feel the stop.
- Turn the handpiece casing to the left – you will feel and hear it clicking into place.

**Warning! Always turn the handpiece casing up to the stop.**

## 6 Installation

### 6.1 *Installing the motor cable*

At the rear of the controller:

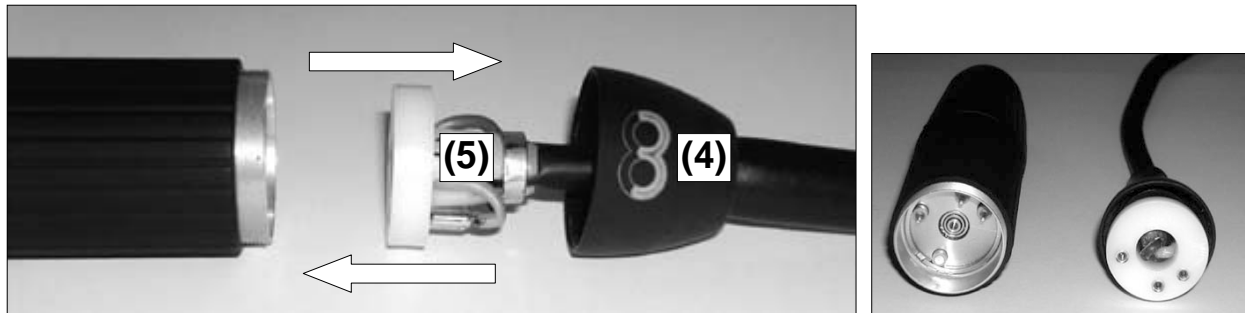
- Insert the motor cable (5-pole) into its socket and turn to the right.
- Connect the tool to the mains.

**The tool is now ready for operation.**

### 6.2 Removing and assembling the motorised handpiece

#### a) Removal

- Switch the unit off at the mains.
  - Undo the motor cable swivel nut from the handpiece casing.
  - Pull the cable plug out of the handpiece.
-



### b) Assembly

- Take the cable plug and insert it into the handpiece in the correct orientation.
- Tighten the motor cable swivel nut by turning it clockwise by hand.



Warning! Do not use pliers!

## 7 Start-up

- Check that the rotating tool has been inserted up to the stop.
- Turn **on** the mains switch; it will light **green**.
- Lightly press the foot control; the handpiece will rotate at its slowest speed.

## 8 Troubleshooting / Correcting errors

### 8.1 Faults

Faults	Likely cause	Likely solution
Motor does not run	Chuck not closed	Close chuck
	Overload	Turn unit off and allow to cool

If the above recommendations do not solve the problem, contact your dental depot or our Service department.

### 8.2 Technical data

#### a) HSM-350 230 V version

Voltage	220 – 240 V / 50 – 60 Hz
Max. power consumption -unit	160 W
Motor power output	95 W
Max. torque	5.5 Ncm
Fuse	T 1 A
Motor speed	2000 – 35.000 rpm
Duty cycle	<b>S6</b> 4min / 10 min
Height	90 mm
Width	206 mm
Depth	250 mm
Weight	3.30 kg

**b) HSM-350 115 V- Version**

Voltage	100 – 130 V / 50 – 60 Hz
Max. power consumption -unit	160 W
Motor power output	95 W
Max. torque	5.5 Ncm
Fuse	T 1 A
Motor speed	2000 – 35.000 min <sup>-1</sup>
Duty cycle	<b>S6</b> 4min / 10 min
Height	90 mm
Width	206 mm
Depth	250 mm
Weight	3.30 kg



**Noise emission ≤ 70db(A).**



**We reserve the right to make technical changes.**

**8.3 Spare parts**

<b>Spare parts</b>	
Item number	Description
111100	HSM-350 / 500 motorised handpiece
111103	Handpiece holder
111151	Cleaning oil
111152	Brush
111154	Adjustable wrench
111155	Chuck key for 2.35 mm Ø chuck
111156	Chuck key for 3 mm Ø chuck
111105	2.35 mm Ø chuck
111106	3 mm Ø chuck

#### **8.4 Repairs**

**Servicing or repairs to the unit must only be carried out by trained technicians.**

**Only original spares are to be used.**

**Responsibility for the product is voided if altered by unauthorised persons or if inappropriate components are installed.**

### **9 Warranty**

The warranty period for our equipment is 12 months. If faults occur within the warranty period, contact your dental depot or get in touch directly with our Service department.

Your rotary tool should only be operated in perfect condition. If faults occur which could harm operators or third parties, the unit should not be used until it has been fixed.

This warranty does not cover damage caused by improper use, external mechanical causes, transport damage or interference with the unit by unauthorized persons.

## 10 EC conformity certificate

**in accordance with 73/23/EWG (low-voltage guidelines) modified by 93/68/EWG and 89/336/EWG (EMV guidelines) and 89/392/EWG (Machinery guidelines), with modifications**

Manufacturer:	W A S S E R M A N N Dental-Maschinen GmbH Rudorffweg 15 - 17 D-21031 Hamburg	Product description:	Laboratory rotary tool for dental applications
Model:	HSM-350 laboratory rotary tool 230 V version HSM-350 laboratory rotary tool 115 V version	111999 111993	
Applicable standards:	EN 61010-1:1993 + A2:1995 EN 60335/2/54 03.97 EN 50081-1 + EN 50082-1		

Hiermit wird bestätigt, dass die oben bezeichnete Maschine den genannten EG-Richtlinien entspricht. Diese Erklärung wird ungültig, falls die Maschine ohne unsere Zustimmung verändert wird.

This is to confirm that the above mentioned machine complies with the described EC rules. This declaration becomes invalid if the machine is modified without our approval.

Cette machine est conforme aux normes en vigueur de la Communauté Européene. Cet avis est nul et non avenant si cette machine est modifiée sans notre accord.

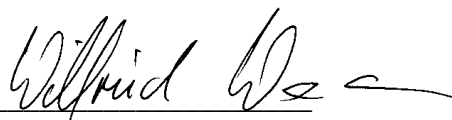
Esta máquina, anteriormente mencionada, cumple con los limites requeridos por el reglamento EC. Ahora bien, esta declaración quedará invalidada en caso de realizar modificaciones al aparato sin nuestra aprobación.

Hiermee wordt bevestigd dat bovengenoemde machine voldoet aan de voorgeschreven EU normen. Deze verklaring verliest geldigheid als er zonder onze uitdrukkelijke toestemming wijzigen aan de machine worden aangebracht.

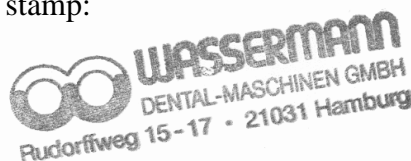
Place, date: Hamburg, 10 April 2003

Company stamp:

Signed: \_\_\_\_\_



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(Managing Director)





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