Instructions for use

Translation of the original operating manual

WASSERMANN DENTAL-MASCHINEN

Die Basis für Ihr Labor

CE

HSM-100

Contents

Wassermann Symbols

WARNING!
(Risk of injury)

ATTENTION!
(to prevent damage occurring)

General explanations,
without risk to
persons or objects

Wassermann Service

Only for USA
Caution: Federal law restricts this device to sale by or on the order of a dentist, physician or any other practitioner licensed by the law of the state in which he or she practices to use or order the use of the device.

1. Introduction

For your safety and the safety of your team
These Instructions for use explain how to use your Wassermann product. However, we must also warn against possible hazardous situations. Your safety and the safety of your team are of paramount importance to us.

It is therefore essential to read the safety notes on Pages 8 to 9.

Intended use
The control unit is intended for rotating or machining use with all material processed in a dental laboratory, whereby the handpiece is guided by hand.

The control unit is not designed as a piece of **medical** equipment!
It is not permitted for use on patients!

Skilled application
The control unit is intended only for skilled application in the dental or medical field according to its purpose of use in compliance with the valid health and safety at work regulations, the valid accident prevention regulations as well as in compliance with these instructions for use. Non-compliance with these instructions or use of accessories and spare parts that are not approved by Wassermann invalidate all claims under warranty and any other claims.

Introduction

The HSM unit is in the condition as supplied by us

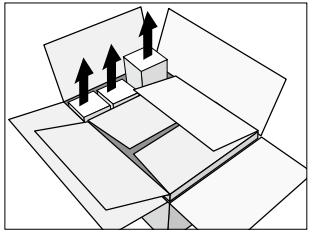
> safety checked
> carries the UL mark of quality
> suppressed in accordance with pertinent standards.

This declaration is not valid for unintended external or internal attachments and the like.

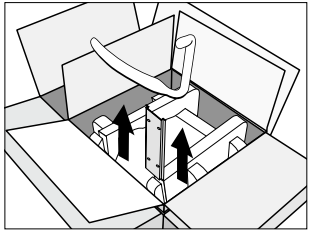
Responsibility of the manufacturer
Wassermann can only accept responsibility for the safety, reliability and performance of the HSM unit when there is compliance with the following directions:

> Consult Instructions for use
> The HSM unit has no components which can be repaired by the user. Assembly, modifications or repairs must only be undertaken by skilled personnel authorized by Wassermann.
> Unauthorised opening of the equipment invalidates all claims under warranty and any other claims.

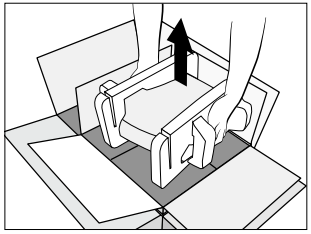
2. Unpacking



❶ Lift out the accessories carton.



❷ Knee control unit: Remove the holding plate and fitting for the blow out function.



❸ Lift out insert with control unit.

Wassermann packaging is environmentally friendly and can be disposed of through branch recycling companies.

However, we recommend that you keep the original packaging.

3. HSM equipment supplied with internal coolant supplying

Knee control unit	**Table control unit**	**Knee-, Table control unit**
Control unit: ❍ REF 111970 230 V ❍ REF 111972 115 V ❍ Operating controls LA-9D REF 111142 ❍ Fitting for blow out function REF 111118 ❍ Holding plate REF 111113 ❍ Tapping screws REF 111114	Control unit: ❍ REF 111971 230 V ❍ REF 111973 115 V ❍ Operating controls LA-9D REF 111142 ❍ Foot-operated starter L-NV REF 111119 ❍ Foot stand for control unit REF 111143	❍ Motor cable 1.8 m for LA-9 REF 111141 ❍ Hose for air supply REF 111115 ❍ Motor handpiece LA-9 (without motor cable) REF 111140 ❍ Handpiece holder REF 111103 optional: ❍ *Motor cable 1.8 m for LA-66 REF 111116* ❍ *Motor handpiece LA-66 (without motor cable) REF 111121* ❍ *Chuck key REF 111555* ❍ *Spanner REF 111541* ❍ *Service oil REF 111151* ❍ *Cleaning brush REF 111152* ❍ Mains cable REF 592013 (Europe) alternativ: ❍ Mains cable REF 111144 (USA)

4. Safety notes

Please ensure that you carry out the following instructions

> Only connect the HSM unit to a socket outlet with protective earthing.
> Never touch rotary instruments which are still rotating.
> Never touch the chuck mechanism / twist chuck of the motor handpiece while they are still running.
> Comply with the necessary protective measures such as the wearing of safety goggles, use of protective screens etc.

Use only suitable and serviceable tools

Use only good quality rotary tools which comply with EN ISO 1797-1. Ensure that you comply with the tool manufacturer's instructions with respect to maximum speed, maximum torque, forward and reverse movement!

Inappropriate use

Improper use, in addition to incorrect assembly, installation, modification or repairs of the HSM unit or noncompliance with our instructions invalidates all claims under warranty and any other claims.

The control unit it only permitted for use in confined spaces (indoor use)!

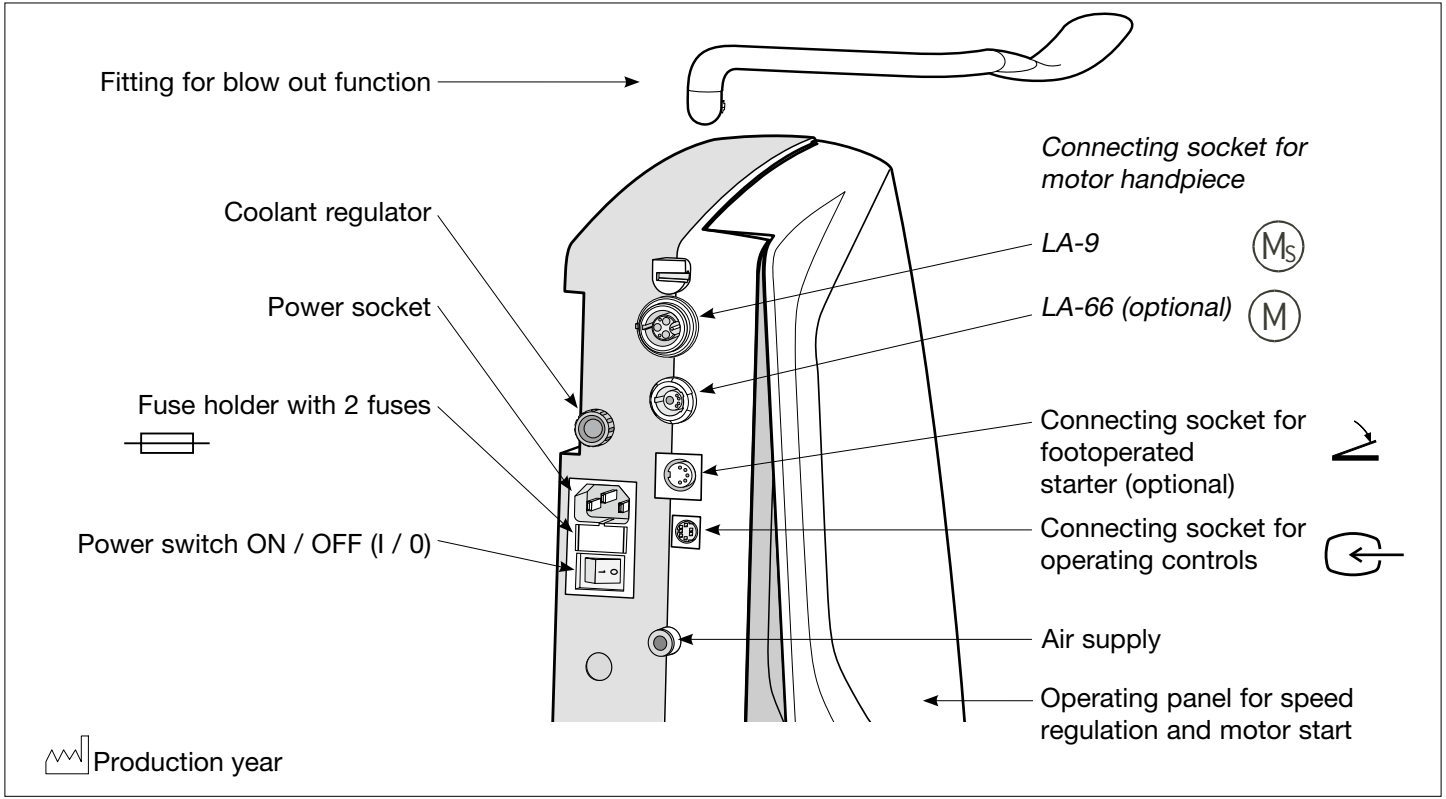
Safety notes

Danger zone
The control unit is not suitable for use in areas in which special conditions prevail (e.g. corrosive or explosive atmospheres).

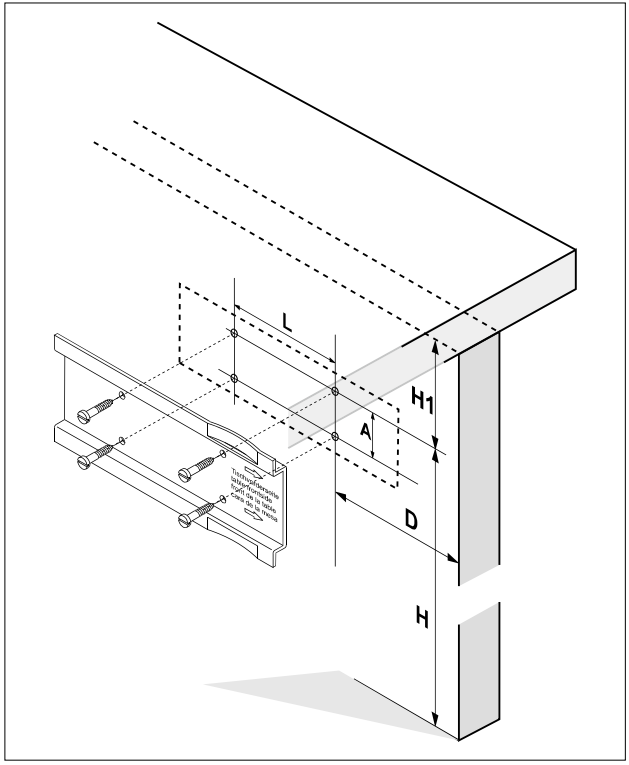
Power failure
In the event of a power failure or if the HSM unit is switched off, the last speed set is saved and re-activated on powerup.

Intermittent operating mode S6 (4min/10min) is the designation for continuous operation with intermittent loading. The recommended loading time is 4 minutes at a running time of 10 minutes.

5. Description of knee control unit



Knee control unit assembly



❶ Mark the screw holes with the enclosed drilling template or holding plate.

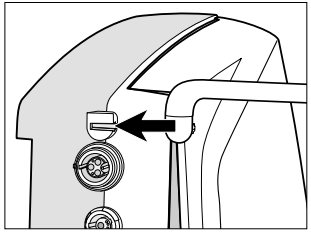
❷ Pre-drill 4 screw holes with ø 3 mm.

Note dimensions:

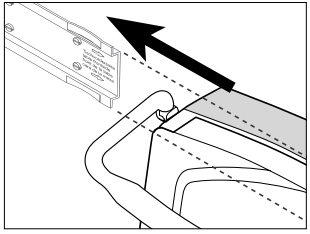
H = 550 to 600 mm
H1 = at least 90 mm
D = 125 mm (control unit with internal coolant supplying) measured from the front edge of the bench
L = 100 mm
A = 40 mm

Knee control unit operation

Before connect or disconnect mains cable, motor cable, operating controls, foot-operated starter (optional), air hose, switch off the control unit.

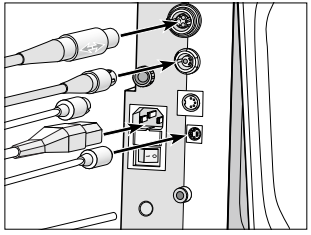


❶ Push in the fitting for the blow out function up to the limit stop.



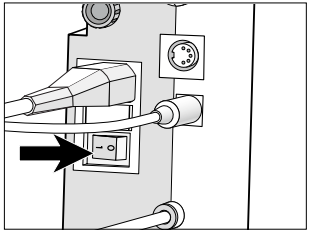
❸ Insert control unit up to the limit stop on the holding plate.

One drop of oil makes insertion easier.



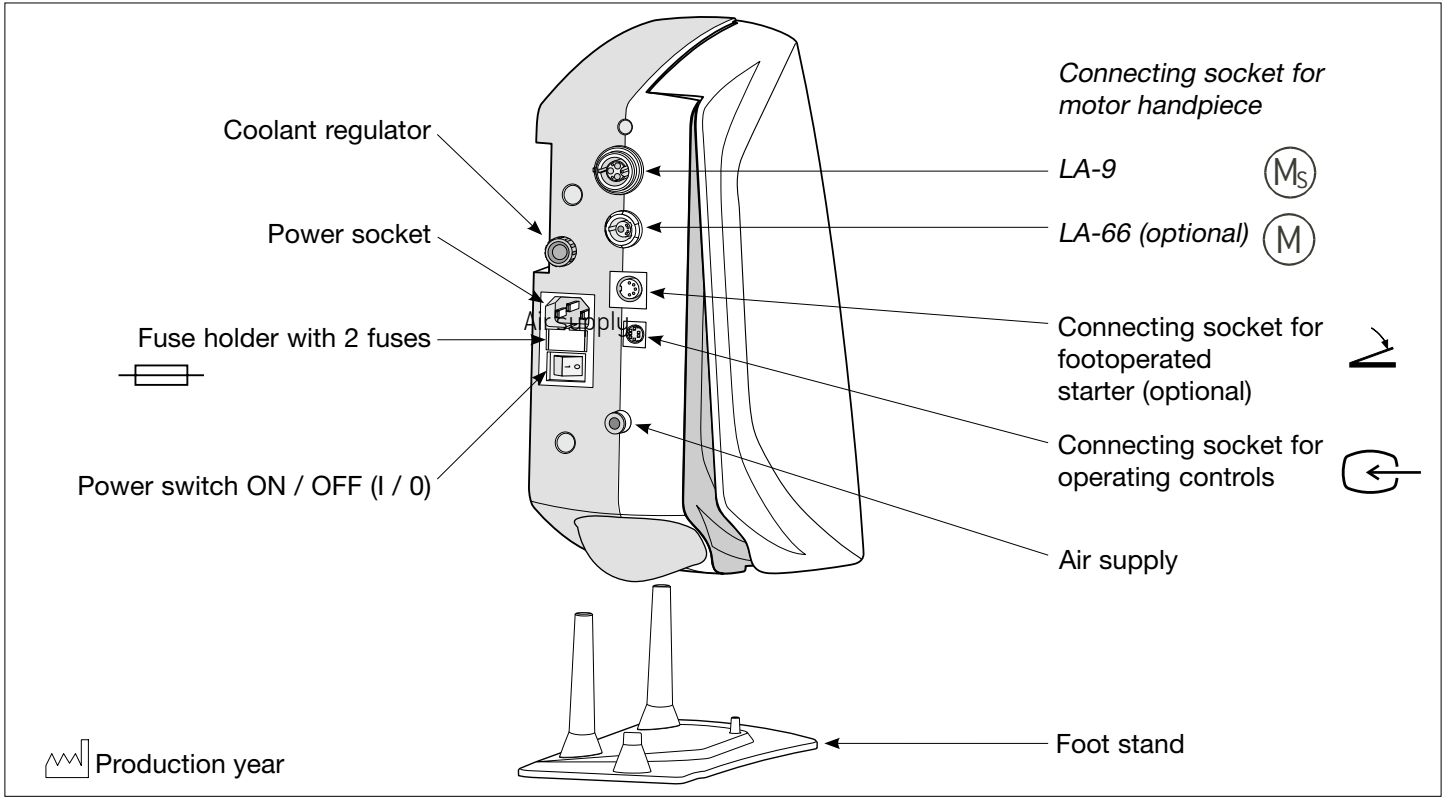
❷ Connect the motor cable, operating controls, foot-operated starter (optional), air hose (HSM-50) and mains cable.

Note the positioning!



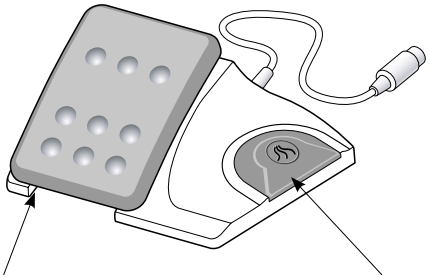
❹ Switch on control unit (I).

6. Description of table control unit with internal coolant supplying



Starting operation – Table control unit

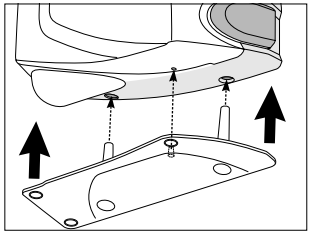
Foot-operated starter



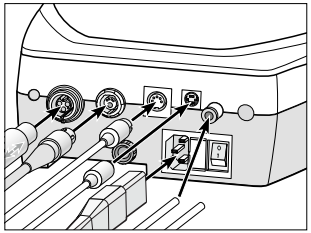
Pedal for speed regulation

Push buttons for blow out function

Before connect or disconnect mains cable, motor cable, operating controls, foot-operated starter, air hose, switch off the control unit.

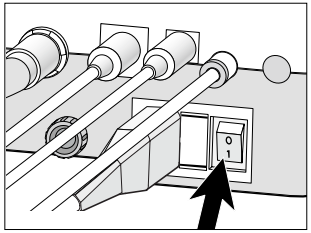


❶ Assemble the control unit onto the foot stand with compressed operating panel (control unit with internal coolant supplying).



❷ Connect the motor cable, operating controls, footoperated starter, air hose and mains cable.

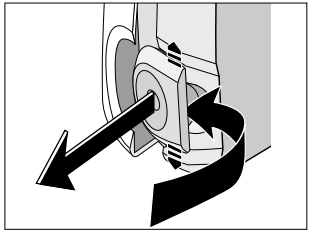
Note the positioning!



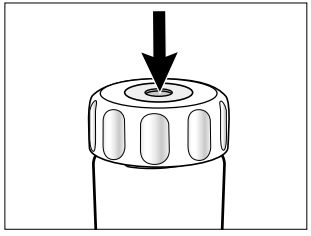
❸ Switch on control unit (I).

7. General starting operation – Filling of the coolant tank

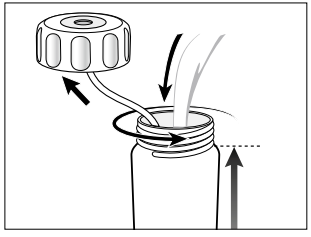
By ventilation at the first filling or if the coolant tank was emptied completely during work, it can coming to delays in coolant escaping.
Wassermann recommend the use of distilled water.



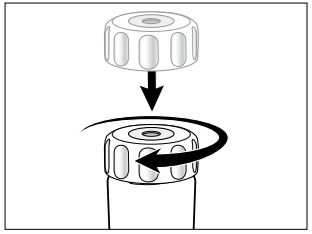
❶ Pull out the coolant tank.



❷ Ventilate the coolant tank by putting pressure on the valve.

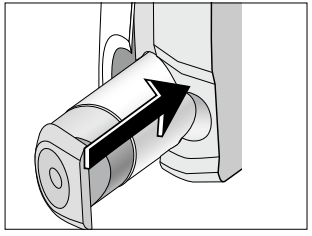


❸ Open the coolant tank and fill in the coolant.



❹ Close the coolant tank.

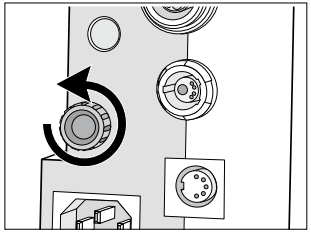
Pressure build-up in the coolant tank



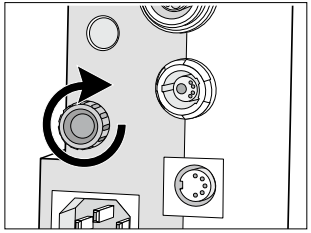
❺ Push in the coolant tank until it engages audibly.

Only insert a deaerated coolant tank.

General starting operation – Regulating coolant



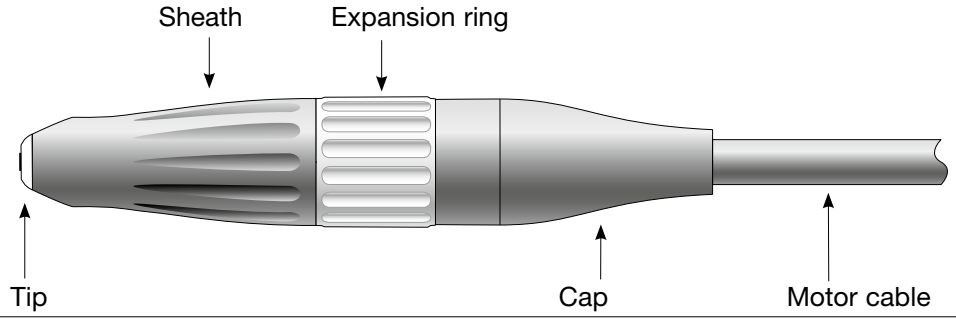
❶ Increase coolant.



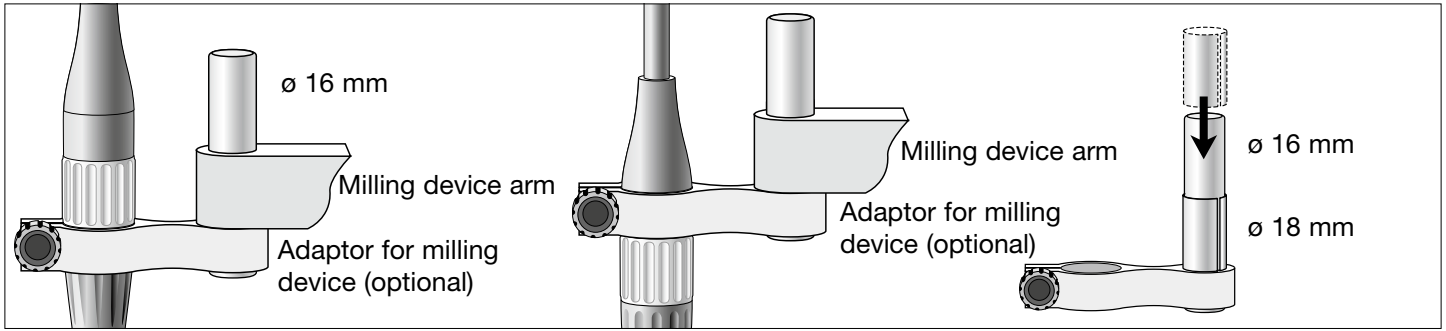
❷ Decrease coolant.

8. Description of the motor handpiece LA-9 / Adaptor for milling device (optional)

Motor handpiece LA-9

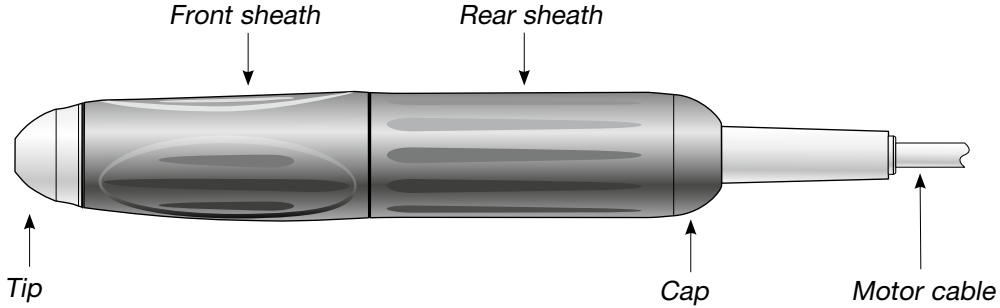


The milling device adaptor (optional) for the motor handpiece can be fastened above or below the expansion ring.
The milling device adaptor (optional) has a diameter of 16 or 18 mm on either side for use with different milling devices.



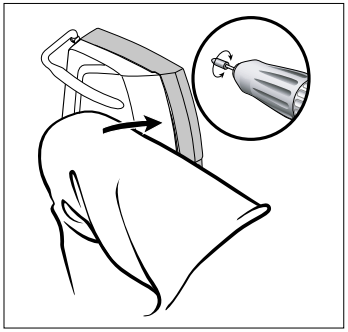
Description of the motor handpiece LA-66 (optional)

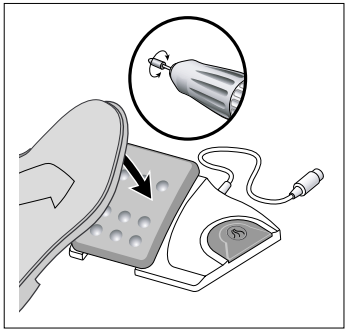
Motor handpieceLA-66 (optional)



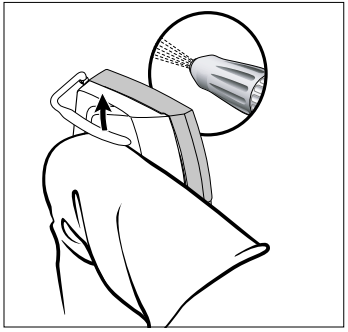
9. General operation – start motor handpiece / blow out function

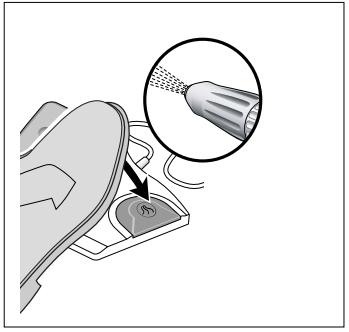
Start motor handpiece by pressing the knee control unit or the foot-operated starter.



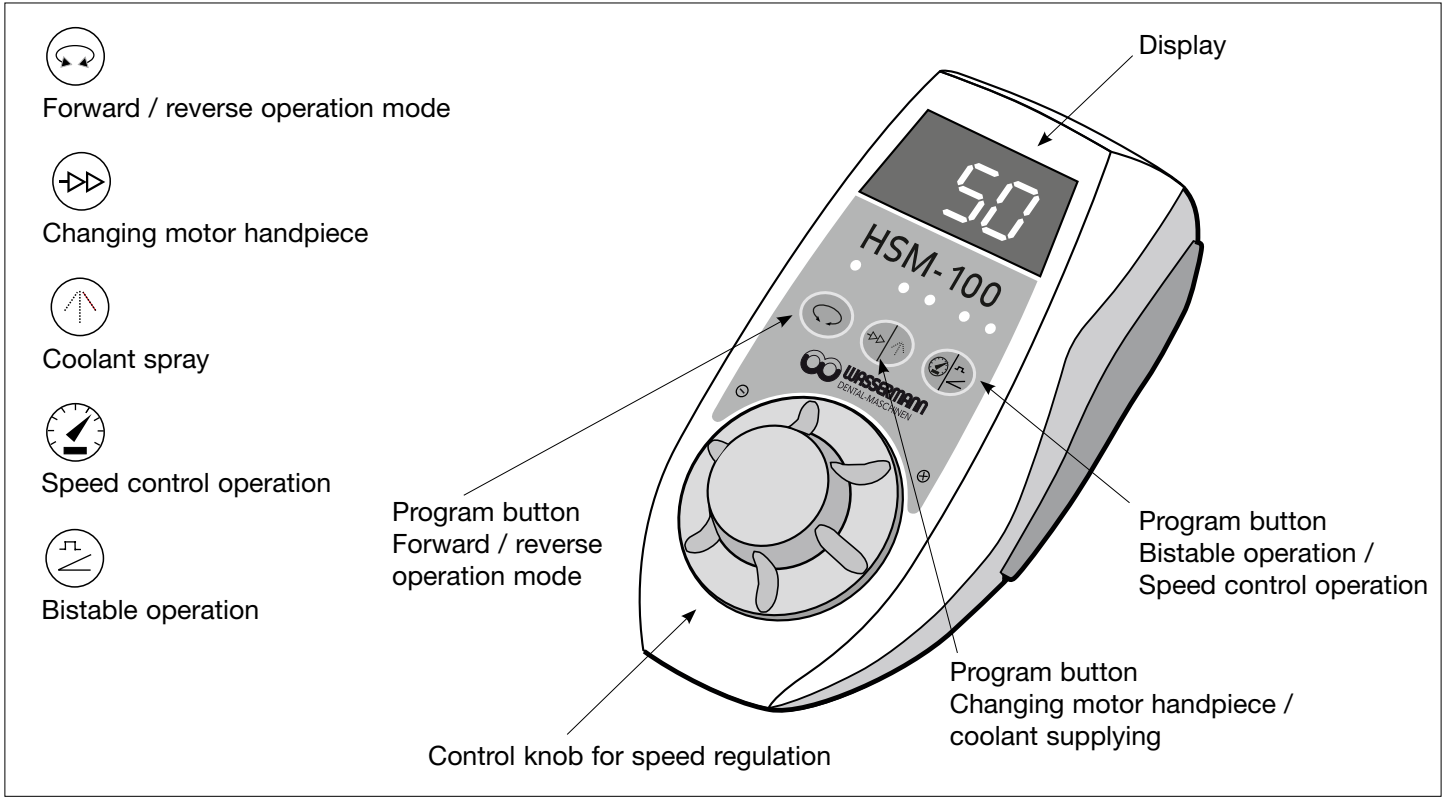


Activate the blow out function by constantly pressing the button or fitting.

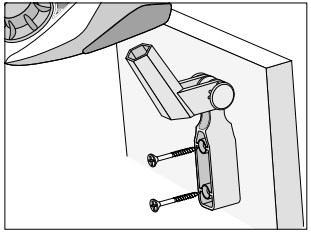


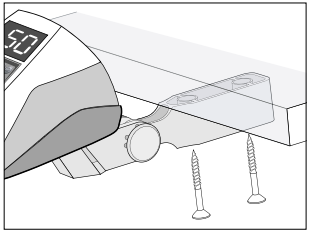


10. Description of operating controls

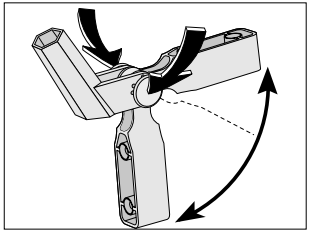


Description of the operating controls – Assemble support (optional)





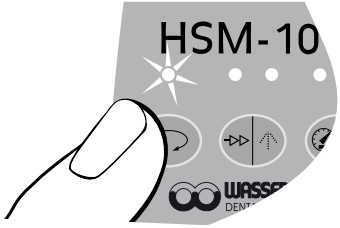
❶ Assemble the support (optional).

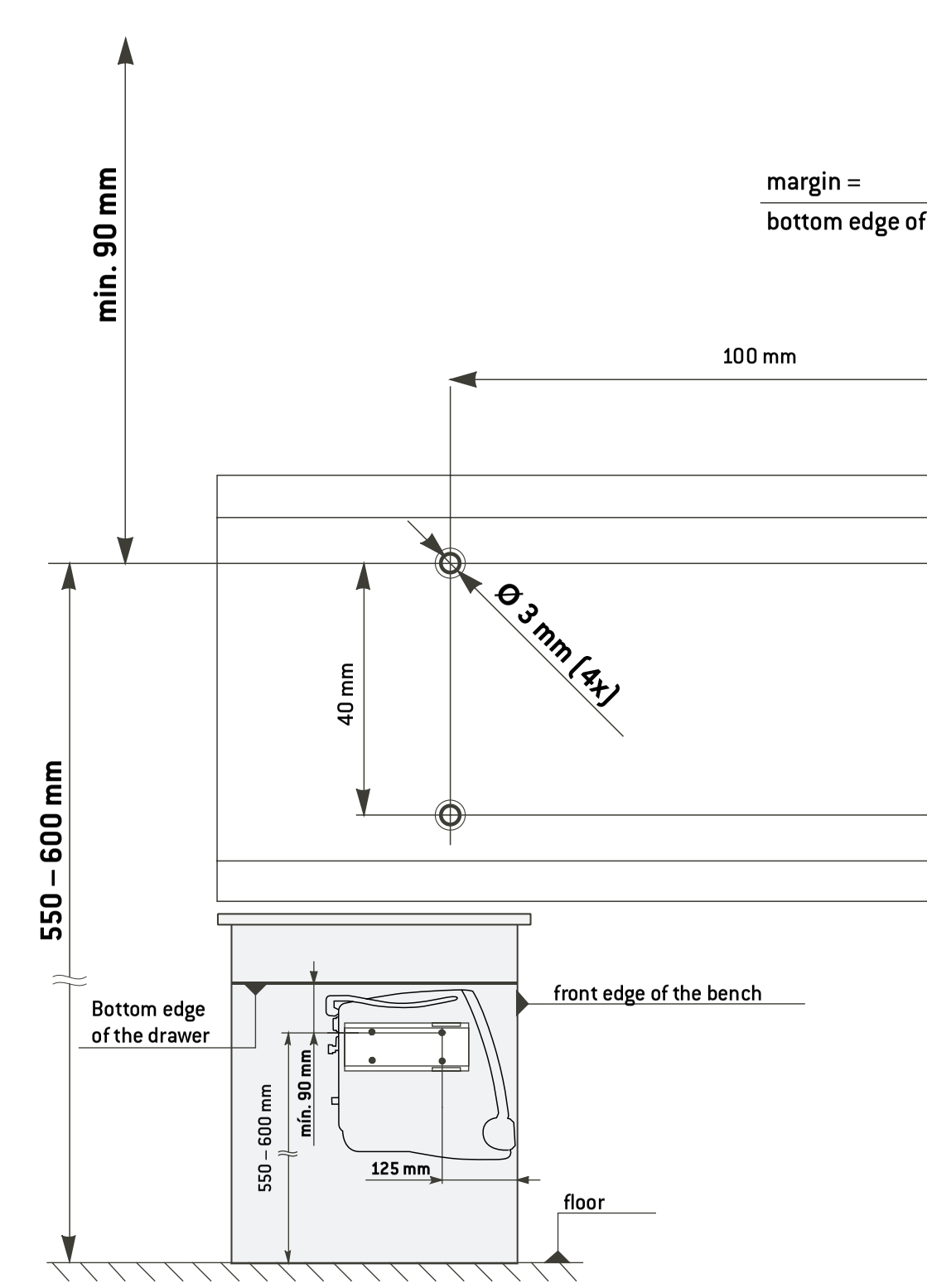


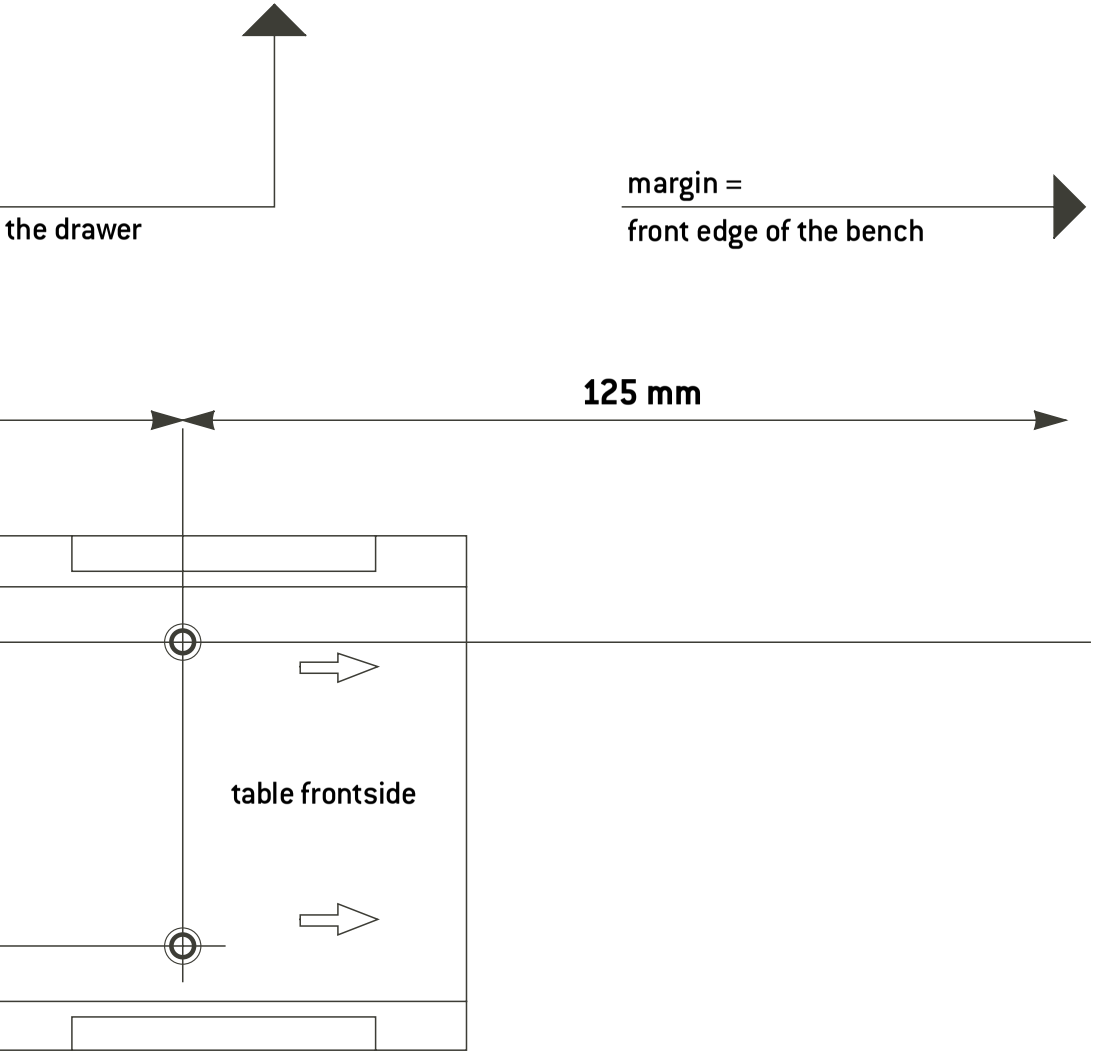
❷ The support can be moved into a variety of assembly positions by simultaneously pressing both buttons on the joint.

11. Operating controls – Reverse operation mode

You can switch between forward and reverse operation by pressing the program button. When switching to reverse operation, an audible signal sounds and the LED illuminates.




min. 90 mm
margin =
bottom edge of
100 mm
Ø 3 mm (4x)
40 mm
550 – 600 mm
Bottom edge
of the drawer
front edge of the bench
mín. 90 mm
550 – 600 mm
125 mm
floor

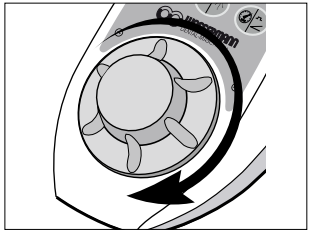


Drilling Template knee control unit

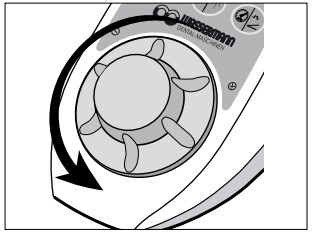
HSM-100 KT with tank

Operating controls – Changing the speed

By turning the PLUS / MINUS control knob, the values 5.000 – 80.000 rpm (LA-66 (optional) 1.000 – 40.000 rpm) are continuously increased / decreased.

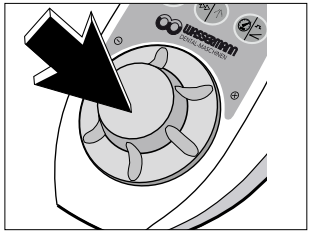


❶ Increase speed.

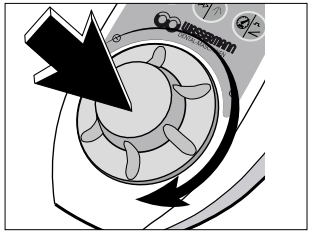


❷ Decrease speed.

Set the speeds from 80.000 – 100.000 rpm (LA-66 (optional) 40.000 – 50.000 rpm).



❶ Press the control knob.

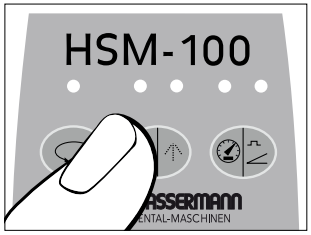


❷ Keep the control knob pressed down and turn it.

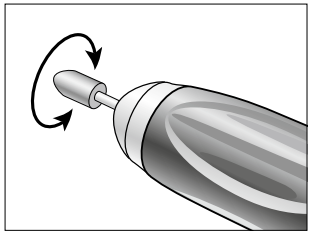
Pre-selected maximum speed must not be exceeded during motor start.

Operating controls – Changing motor handpiece / Coolant supplying

By deactivation of the program button it can be changed to motor handoiece LA-66 (optional).

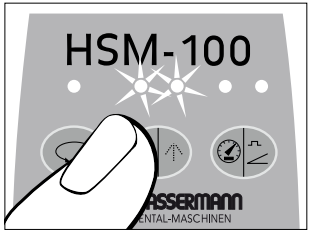


❶ Keep the program button pressed after approx. 2 seconds, an audible signal sounds.
No LED illuminates.

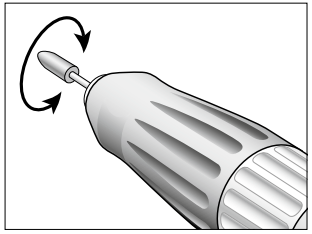


❷ Start motor handpiece by pressing the pedal or flap.

At the change on motor handpiece LA-9 the coolant spray becomes co-activated automatically.
Deactivating resp. activating the coolant spray: press program button x 1.



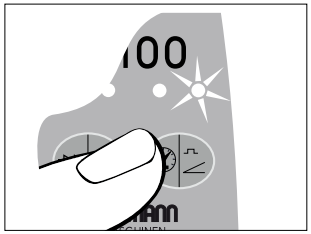
❶ Keep the program button pressed after approx. 2 seconds, an audible signal sounds.
Both LEDs illuminate.



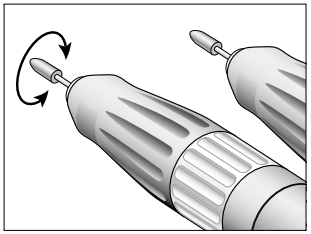
❷ Start motor handpiece by pressing the pedal or flap.

Operating controls – Bistable operation

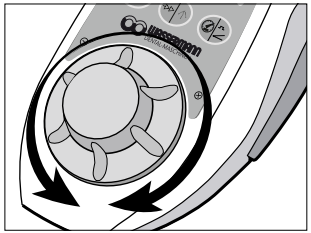
During bistable operation, the selected maximum speed is automatically reached during motor start.
he motor handpiece runs independently.
Deactivation of bistable operation: Press program button x 2.



❶ Press the button.
The LED illuminates.



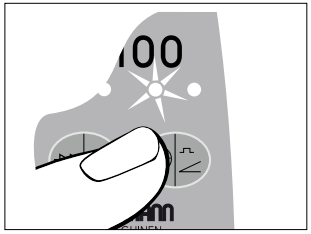
❸ Start or stop the motor handpiece by tapping the pedal or flap.



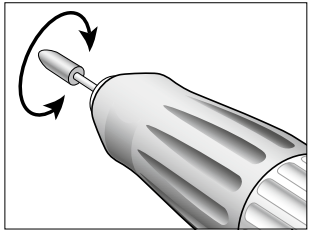
❷ Set the speed.

Operating controls – Speed control operation

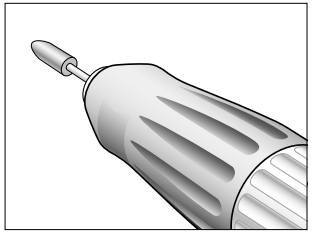
During speed control operation, the controlled speed is saved and automatically maintained.
The motor handpiece runs independently.
Deactivation of speed control operation: Press the program button x 1.



❶ Press the button x 2.
LED illuminates.



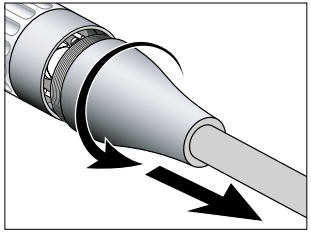
❷ Start the motor handpiece until the required speed is reached.
After approx. 2 seconds, an audible signal sounds and the required speed is saved.



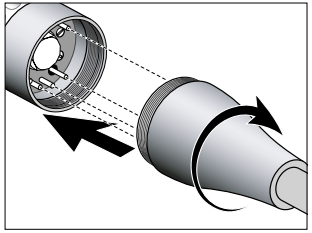
❸ Stop the motor handpiece by tapping the pedal or flap.

12. Removing and assembling the motor handpiece

LA-9



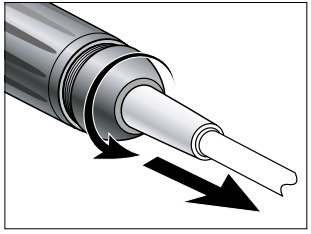
❶ Unscrew the cap.



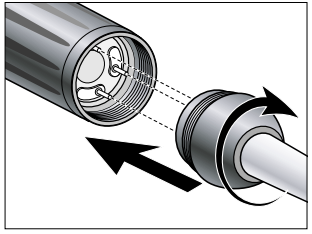
❷ Assemble and tighten the cap.

Note the positioning!

LA-66 (optional)



❶ *Unscrew the cap.*

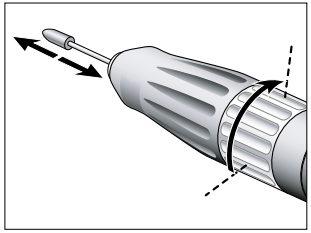


❷ *Assemble and tighten the cap.*

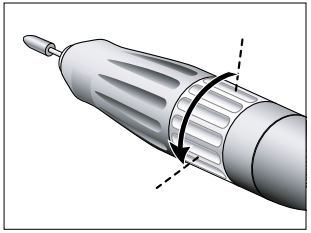
Note the positioning!

13. Change the rotary tool

LA-9

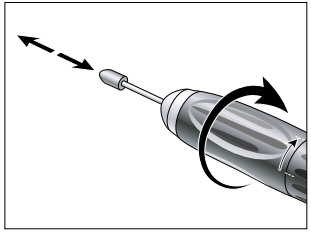


❶ Turn the expansion ring clockwise up to the limit stop. Push in the rotary tool up to the limit stop or remove.

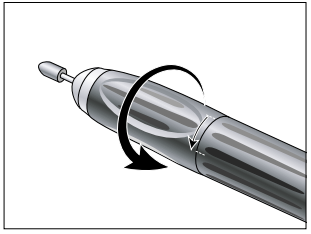


❷ Turn the expansion ring anticlockwise until it engages audibly.

LA-66 (optional)

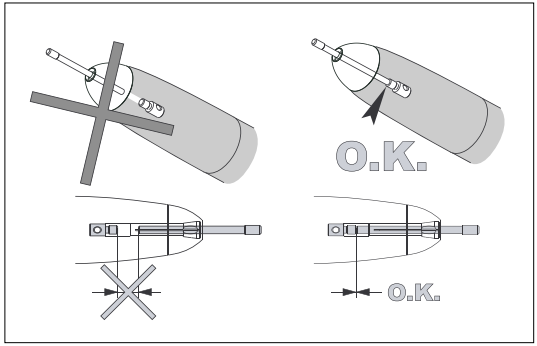


❶ *Turn the front sheath clockwise up to the limit stop. Push in the rotary tool up to the limit stop or remove.*



❷ *Turn the front sheath anticlockwise until it engages audibly.*

Change the rotary tool



When the chuck is open, the motor handpiece is blocked. In the event that the motor handpiece starts accidentally, the electronic system switches off.

Test run

> Start the motor handpiece.

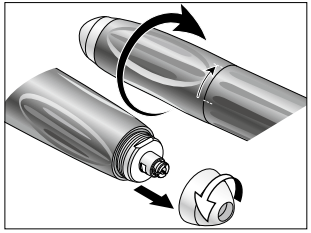
> If you observe problems (e.g. vibrations, unusual noise, overheating) contact your authorized service organization (see page 42).

14. Cleaning

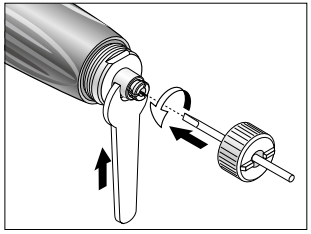
The cleaning of the HSM unit (control unit), motor handpiece, operating controls (optional), foot-operated starter (optional) can take place by means of a dry cloth.

15. Cleaning / changing the chuck LA-66 (optional)

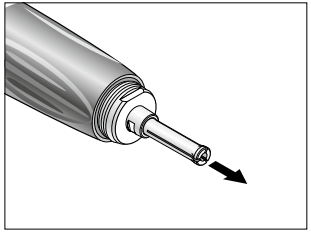
Chuck key, spanner, cleaning brush are located on the underside of the handpiece holder.



❶ *Turn the front sheath clockwise up to the limit stop.*
Unscrew the tip anti-clockwise.

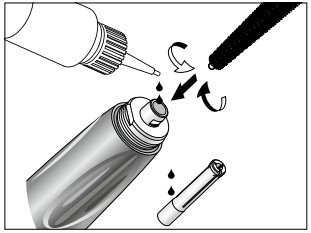


❷ *Insert the chuck key up to the limit stop in the chuck and unscrew anticlockwise.*
Hold the shaft firmly with the spanner.

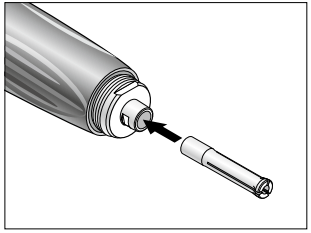


❸ *Remove the chuck.*

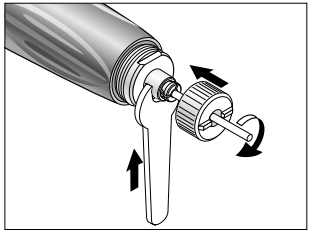
Cleaning / changing the chuck



❶ *Clean the inside and outside of the shaft using the cleaning brush.*
Apply 2 drops of oil into the hole in the shaft and outside of the chuck.



❷ *Insert the chuck.*



❸ *Insert the chuck key up to the limit stop in the chuck and screw clockwise.*
Hold the shaft firmly with the spanner.

16. Error messages (as shown on display)

Error Nr.	Description	Remedy
E00	Electronics overheating – safety shutdown	Switch off the equipment, allow equipment to cool for at least 10 minutes and then re-start
E01	Motor handpiece overloading – Drive blocked	Connect motor handpiece or close the chuck mechanism
E07	Foot-operated starter error, initialising	Switch off the equipment, re-start, do not activate the foot / knee control when switching on
E09	Foot-operated starter error, Speed regulator (foot / knee control unit) error	Switch off the equipment, check the connection of the foot control, restart
E19	Run limiting control	Switch off the equipment and re-start
E99	System failure	Switch off the equipment and re-start

If one of the error messages described above cannot be rectified by switching off the HSM unit and then switching it on again, the equipment must be checked by a service and repair organization authorized by Wassermann (see Page 42).

If a total failure of the equipment occurs caused by external circumstances, the equipment must be switched off and then on again.

17. Wassermann Accessories

Use only original Wassermann accessories / spare parts or accessories approved by Wassermann

111103	Handpiece holder
111122	Fuse T1,25L
111129	Fuse T2A
111141	Motor cable 1,8 m LA-9
111140	Motor handpiece LA-9 (without motor cable)
111119	Foot-operated starter L-NV
111124	Support for operating controls (optional)
111142	Operating controls LA-9D
111115	Hose for air supply
111145	Adaptor for milling device (optional)
111116	*Motor cable 1,8 m LA-66*
111121	*Motor handpiece LA-66 (without motor cable)*
111152	*Cleaning brush*
111541	*Spanner*
111151	*Service oil*
111555	*Chuck key ø 2,35 mm*
111556	*Chuck key ø 3 mm*
111105	*Chuck ø 2,35mm*
111106	*Chuck ø 3 mm*

18. Servicing

Repairs
If a defect occurs, always return all the equipment, due to the fact that with motor malfunctions, an inspection of the electronic controls is also necessary!

We recommend that only skilled personnel authorized by Wassermann should undertake this servicing and checking.

Returns
> Refer all questions to your authorized dental dealer or to one of our service organizations (see Page 42).
> Always return equipment in the original packaging!
> Do not coil the cable around the motor handpiece and do not twist or kink the motor cable! (Risk of damage)

19. Technical Data

HSM-100 with motor handpiece	**LA-9**	***LA-66 (optional)***
Mech. output power	30 W	*160 W*
Torque	0,7 Ncm	*7,8 Ncm*
Speed	5.000 – 100.000 Upm	*1.000 – 50.000 Upm*
Power input	200 W	
Supply voltage	100 – 130 VAC / 220 – 240 VAC	
Rated current	0,2 – 1,6 A / 0,1 – 0,8 A	
Supply fuse	250 V – T2A / 250 V – T1,25L	
Voltage tolerance	+/- 10 %	
Frequency	50 – 60 Hz	
Operating mode	S6 (4/10min) Continuous operation with intermittent loading	
Noise	< 55 dBA	
Vibration	< 2,5 m/s²	
Height / width / depth and weight with internal coolant supplying:		
Knee control unit	without lever: 306 / 128 / 317 mm, with lever: 306 / 187 / 340 mm and 6.0 kg	
Table control unit	317 / 116 / 317 mm and 6.3 kg	
Blown out air pressure (input)		*max. 6 bar (87 psi / 600 kPa)*
Chuck diameter	1,6 mm	*2,35 / 3,0 mm*
Bur concentricity accuracy	≤ 0,02 mm	

Technical Data

Physical characteristics	
Temperature in storage:	-40 °C (-40 °F) to +70 °C (+158 °F)
Air humidity in storage:	8 % to 80 % (relative), non-condensing
Temperature in operation:	+5 °C to +40 °C
Air humidity in operation:	maximum 80 % (relative) with a temperature of up to +31°C, decreasing arithmetically up to a maximum of 50 % (relative) with a temperature of up to +40°C
Pollution degree:	2
Overvoltage degree:	II
Altitude:	up to 2,000 m above sea level

20. Recycling and Disposal

Recycling
Wassermann considers that it has a special duty towards the environment. The HSM unit equipment along with its packaging has been designed to be as environmentally friendly as possible.

Disposal of the HSM unit (control unit), operating controls, foot-operated starter, motor handpiece
Follow your country-specific laws, directives, standards and guidelines for the disposal of used electrical devices.

Disposal of the packaging material
All packaging materials have been selected according to environmentally compatible and disposal aspects and can be recycled. Please send old packaging materials to the relevant collection and reprocessing system. In this way, you will contribute to the recycling of raw materials and the avoidance of waste.

Letter of indemnity

WASSERMANN
DENTAL-MASCHINEN
Die Basis für Ihr Labor

This Wassermann product has been manufactured with great care by highly qualified specialists. A wide variety of tests and controls guarantee faultless operation. Please note that claims under warranty can only be validated when all the directions in the Instructions for use have been followed.

As manufacturer, Wassermann is liable for material or manufacturing defects within a warranty period of 24 months from the date of purchase.

We accept no responsibility for damage caused by incorrect handling or by repairs carried out by third parties not authorized to do so by Wassermann!

Claims under warranty – accompanied by proof of purchase – must be sent to the vendor or to an authorized Wassermann service point. The provision of service under warranty extends neither the warranty period nor any other guarantee period.

24 months warranty

CE-Declaration of conformity

Wassermann Contacts

Wassermann Dental-Maschinen GmbH, Rudorffweg 15-17, D-21031 Hamburg, Germany,
Phone: +49 (0) 40 / 730 926 - 0, Fax: +49 (0) 40 / 730 37 24, info@wassermann-dental.com, www.wassermann-dental.co

Manufacturer

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