

Trimmer
HSS-88



SERVICE MANUAL

Dear customer,

Thank you for choosing a product from the Wassermann range. Wassermann Dental-Maschinen 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 service manual carefully before you connect this device and start work, and operate the device according to the recommended guidelines. The operation safety and the functionality of this device can only be guaranteed if you follow both the general safety guidelines and the applying laws to prevent accidents as well as the precautions given in this service manual. We are not liable for any damages which occur due to inappropriate usage or faulty operation of this device.



Make sure that anyone using this device has read and understood this service manual.

Keep this service manual in a safe place where it can be referred to as required at any time.



The unit complies with the relevant EU guidelines.



The unit is subject to the EU guidelines 2012/19/EU (WEEE Directive).

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1 Features

- versatile, powerful wet trimmer
- can be used with all Wassermann discs and orthodontic attachments
- multiple expansion options
- the grinding attachment KMS can be delivered also on swiss- and EOS-version
- high speed - 3000 min⁻¹
- very powerful, maintenance-free motor, splash protected according to IP 54
- sturdy, oxidation-free bench with longitudinal slots and side openings – no water spills
- supplied with solenoid valve for automatic water supply
- powerful disc and internal rinsing
- easy to open using rear handle
- large work section 13.5 x 10.5 cm

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 has to be observed.



Information!

This symbol draws your attention to specific features that has to be observed.

3 Safety Guidelines

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



WARNING:

- Servicing and repairs should be carried out only by authorised specialists.
- Before you carry out any cleaning or maintenance work, disconnect the power plug and prevent the motor from restarting accidentally. You should also disconnect the water line.
- Always wear protective goggles before working on the grinding disc.
- Electric motors have dangerous, high-voltage rotating parts. Incorrect usage or inadequate maintenance could endanger personnel and equipment.
- Any work on the motor should be carried out only by qualified service personnel.
- Allow the condensers time to discharge before opening the unit.
- When working on the unit, wear close-fitting clothing and roll sleeves inward only. Do not wear gloves.
- Wear a hair net (or similar) if you have long hair.
- Do not wear rings, chains, bangles or similar jewelry when working with the **HSS-88**.
- Turn off the tap overnight and at weekends.



Make sure that the equipment is connected to the correct power source.

3.1 Potential Dangers



Risk of injury: **The trimmer's rotating parts and the grinding disc are dangerous.**

4 Responsibility for Operation or Damage

The responsibility for operating the device lies exclusively with the owner or user if said device is incorrectly serviced, maintained or altered by persons not employed by an authorised dealer or if the device is used in a manner contrary to its specified purpose. The unit has to be maintained and operated in accordance with this service manual. Wassermann Dental-Maschinen GmbH is not responsible for damage arising from the **nonobservance** of these instructions.

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



Responsibility for the product becomes void if alterations are made to it by third parties or if non-approved parts are installed. Only original WASSERMANN parts should be used. If any damage results from the installation of a non-approved disc, responsibility lies with the person installing that spare disc.

If diamond grinding discs are used, serious wear will result from grinding embedded materials and metals. We will be in no way responsible in this case.

5 Application

The **HSS-88** plaster model trimmer is used in dental laboratories and is designed only for grinding (trimming) plaster models.

To prevent damage to the trimmer and/or to the grinding disc, it has to be used only with plaster. Otherwise, the grinding disc will quickly lose its sharpness and cutting speed.

Only use the device for this type of application.

6 Before Starting

6.1 Transport

Before transporting the unit, ensure that it has been unplugged from the power socket. Make sure that it is packed correctly in order to avoid accidental damage.



Be sure to check for any transport damage when unpacking the goods. Note down any damage if found.

6.2 Storage

If the unit is to be stored, even for a short time, its location can have a significant effect on its operation. The location should be dry, well-ventilated and free of vibrations. It is important for the unit to be seated on a wooden base and to be kept at a constant temperature. The unit must not be stored or set up in the open air. If the unit is to be stored for an extended period, protect it from moisture and dust.

7 Installation/ Start-up

7.1 Installation

Open the box, remove the packing materials, and carefully lift out the device and accessories. Check the included accessories.



Before start-up, be sure the device reaches room temperature.

7.2 Location

Because the trimmer operates only with water, we recommend you install it close to a tap. The best place is right next to a washbasin. A further variation is to set up the trimmer on a console* in the basin itself (*available as accessory).



The device has to stand horizontally on a steady and even surface.



Do not install the unit outdoors or in places without proper ventilation.



Install the device in a place where it will not block the working area and the functionality (take the dimensions into account). When you set up the unit, make sure that the grinding disc is accessible and that the unit is close to a plaster separator.



Before starting the unit, connect up the following:

To install the **rinsing water connector**, you'll need a pressure hose with woven liner measuring 0.5 inch (13 mm) in diameter, and for the **drain**, a plastic hose 1 inch (25 mm) in diameter. When installing the drain hose, make sure that the hose end hangs freely in the plaster separator and not beneath the surface of the water.

7.3 Rinsing Water Hose



Before the woven hose is connected to the device, please turn on the tap for a little moment, so that any dirt in the water line is flushed out. Otherwise, correct water supply to the unit may be affected.

Subsequently locate the ***rinsing water hose*** (thinner hose with woven insert) between the tap and the hose connector on the trimmer. This connector is underneath the unit. Lay it carefully on its side to connect the hose, making sure not to damage the paint. Use the clamps already on the hose to connect it, tightening them securely.

There should be a stopcock between the tap and the feed hose so the hose is not under continuous pressure when the trimmer is not being used.



Retighten the hose clamps about 2 days after installation.

Be sure to turn off the tap overnight and at the weekend.

7.4 Drain Hose

The drain hose must be laid out such that water can never back up in the trimmer. This would cause the water to spray out through the grinding disc opening. Always arrange the hose in a smooth bend (not kinked) and with a permanent drop of at least 1 cm per metre.



The end of the drain hose must be above the water level of a plaster separator.

The hose end must not be immersed in water.

If necessary, shorten the hose or change the drain angle at the trimmer end by turning the drain-hose connection.

In its standard configuration, the drain-hose connection is *angled* off to the right. However, it can also be aligned *vertically* to the right, and this is recommended in difficult drain situations.


In that case, use a sealing cap instead of the drain connection.

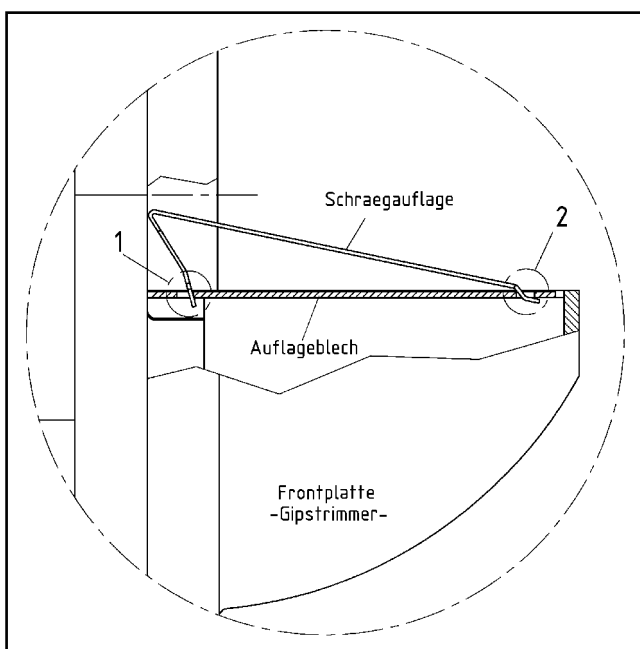
Finally, insert the power plug into the socket, making sure that the mains and the unit operate on the same voltage.

8 Mounting

8.1 Installing the Angled Mount

If required, the angled mount is just clamped in position on the **HSS-88**. Please observe the following instructions.

 **Ensure that the mount is placed correctly in position. It should be installed in accordance with the following diagram.**



When installing the angled mount, ensure that positions 1 and 2 are correctly located on the base.

Schraegaufgabe – angled mount

Auflageblech – base

Frontplatte – front plate

Gipstrimmer – plaster trimmer


9 Supports


Aside from the item described in “8.1 Installing the angled mount”, the **HSS-88** plaster trimmer does not require any other support mechanisms.

10 Operation

10.1 General Operating Instructions

All instructions for using the unit, whether in verbal or written form, are based on our own experience and experimentation and can only be regarded as guidelines.

 After switching on the unit, wait a few seconds for the motor to come up to speed. The full power of the motor can then be used. Never work the units to the point that the motor labours to keep turning. This could result in overloading and motor damage.


 Only for units with a **bellows switch!**
Reset is effected in two steps:
Step 1: Switch rocker into OFF position.
Step 2: Reset circuit breaker. Main switch into ON position.

If the power supply is interrupted, the switch will go into centre position in order to prevent an uncontrolled operation of the motor when the power supply is restored.

10.2 Water Regulation

The water supply is regulated at the tap. The amount of water is sufficient when the disc remains more or less its original colour during grinding.

Grinding requires only light pressure and slight left and right movement of the cast.

 It goes without saying that only completely set plaster casts should be ground. Soft plaster could lead to blockages, especially in the hoses.

11 Troubleshooting

Fault	Cause	Solution
Water spurting from work area	Water pressure too high	Adjust water pressure at tap (see “10.2 Water regulation”)
	Drain hose extended with a smaller diameter hose	Ensure that the drain hose diameter is 1 inch (25.4 mm)
	Drain hose kinked	Ensure that the drain hose does not have any kinks in it
	End of drain hose located below level of plaster cast mount	Ensure that the hose end is located above mount level
	Angle of drain hose too shallow	Ensure that there is a fall of at least 1 cm per metre
	Radius (bend) of drain hose too small	Ensure that the drain hose radius is as even as possible
	Pipe bend (causing water back-up) where it meets drain hose	The bend must be enlarged to at least 40 mm diameter
Water supply is affected	Pollution in front of the sieve in the inflow support (below the device at the solenoid valve)	Disassemble supply hose, remove dirt with the help of torch light, tweezers and vacuum cleaner
No water supply, no clicking noise (from the solenoid valve) when switching on the unit	Solenoid valve defective	Please contact a service department for changing the solenoid valve (Item no. 162071)
Motor does not run	Only for units with a bellows switch: If the power supply is interrupted, the switch will go into centre position	Reset is effected in two steps: Step 1: Switch rocker into OFF position. Step 2: Reset circuit breaker. Main switch into ON position.



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

12 Care and Maintenance

12.1 Cleaning



Before cleaning or servicing the unit, ensure that it is disconnected from the mains power and cannot be switched on again accidentally.

Keep the unit well away from water supply.

Open the unit only after the disc has come to a complete stop.

The identification plate has always to be kept in easily legible condition and has not to be removed.



Remove external dirt (plaster leach) from time to time with a damp cloth.

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

The equipment should be cleaned at regular intervals to ensure trouble-free operation.

It requires only normal cleaning (sponge, damp cloth, mild detergent) and no further chemical additives.

12.2 Maintenance

The **HSS-88** plaster-cast grinder is a low-maintenance unit. However, when opening the disc chamber for cleaning or to change the disc, be sure to clean the sealing surfaces and re-coat them with water-insoluble grease.

As a safety measure, check regularly that the hose retainers and water-supply hoses are firmly anchored.

12.3 Repairs



Servicing or repairs to the unit has only to be carried out by qualified technicians. Only original spare parts are to be used. Responsibility for the product is voided if unauthorised persons alter it or if inappropriate components are installed.

12.4 Spare Parts

If necessary please contact our service hotline phone.

12.5 Service Hotline 0049 (0)40 730 926 -20/ -24

12.6 Spare Grinding Discs

Spare grinding discs are always supplied with a tube of grease for sealing the disc chamber - Spare diamond grinding discs are always supplied with an extractor for the old disc in addition.



Installing a spare disc on an existing disc mounted in the unit, regardless of its origin or model type, is strictly prohibited by Wassermann.



Warning!

The use of diamond grinding discs to grind embedded material and metals will result in excessive wear on the blade. We assume no responsibility if this occurs.



When using spare discs, be sure to follow the instructions supplied when changing discs.

12.7 Scope of Delivery/ Accessories

HSS-88 incl. grinding disc	Item no.:
incl. diamond grinding disc	168998
incl. Dia-Quick grinding disc (partly diamonded)	168996
incl. corundum grinding disc	168999
incl. foil grinding disc	168991

Incl. in delivery	Item no.:
Inclined support	168037
Supply hose, 1 m	320006
Discharge hose, 1 m	320017

Accessories	Item no.:
Spare diamond grinding disc incl. puller and grease	168063
Spare Dia-Quick grinding disc (partly diamonded), incl. grease	162063
Spare corundum grinding disc, incl. puller and grease	168024
Spare foil grinding disc, fine, 1Set = 4 pieces, incl. grease	162013
Spare foil grinding disc, fine, 1Set = 4 pieces, incl. grease	162023
Conversion kit, Dia-Quick and foil grinding disc	168071
Pressind tool to roughen corundum grinding disc	710001
Sealing grease for trimmer, 25 ml	629002
Puller for grinding disc change	164026
Orthodontic accessories for producing 3D orthodontic models	
Orthodontic model table KMS according to Begg	168140
Laser light guide for model table, cpl.	168120
Orthodontic template for the upper jaw (to grind the lower jaw/tuber level)	164034

The orthodontic grinding table KMS can be delivered also in Swiss and EOS version.


12.8 Grinding Disc Overhaul

If, after some time, the surface of the corundum grinding disc becomes smooth or has developed grooves, the disc may need to be ground back or roughened using a surface grinder. If necessary, used corundum discs can be returned to the factory for refurbishing.



If a surface grinder is used, be sure to follow its user's manual and safety instructions.

12.9 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 equipment 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.

13 Technical Data

HSS-88 without grinding disc	Item no.: 168997
Voltage	220–240 V / 50/60 Hz
Power consumption	4.6 A
Output	1000 W
W x H x D	330 x 335 x 410 mm
Weight	19.8 kg
Sound level	≤ 70 dB (A)
Speed	3000 min ⁻¹
Duty	S6 - 40 %
Table dimensions projecting	120 mm

Other voltages on request.

Noise transmission measured within a circumference of 1 metre around and 1.6 metres above the unit was 69 db (A), averaged over 50% idling, 30% mid-load and 20% full load. This level was determined in accordance with DIN 45635 Part 1.

 Technical changes reserved.

14 Disposing of the Unit

The unit has to be disposed by an authorized recycling operation. The selected company has to be informed of all possibly health-hazardous residues in the unit.

14.1 Information on Disposal for Countries within the EU



To conserve and protect the environment, prevent environmental pollution and improve the recycling of raw materials, the European Commission adopted a directive that requires the manufacturer to accept the return of electrical and electronic units for proper disposal or recycling.

Within the European Union units with this symbol should not therefore be disposed of in unsorted domestic waste.

For more information regarding proper disposal please apply at your local authority.

15 EU Declaration of Conformity

in accordance with 2014/35/EU (Low Voltage Directive) and 2014/30/EU (Electromagnetic Compatibility Directive) and 2006/42/EC (Machinery Directive) and 2011/65/EU (RoHS Directive)

Manufacturer:	W A S S E R M A N N Dental-Maschinen GmbH Rudorffweg 15-17 21031 Hamburg Germany	Product description:	Trimmer for dental applications
Model:	HSS-88 incl. diamond grinding disc HSS-88 incl. Dia-Quick grinding disc HSS-88 incl. corundum grinding disc HSS-88 incl. foil grinding disc HSS-88 without grinding disc		Item no.168998 Item no.168996 Item no.168999 Item no.168991 Item no.168997
Applicable standards:	DIN EN 61010-1 DIN EN 61000-6-3 DIN EN 61000-6-1 DIN 45635-1 DIN EN 60335-1		

Hiermit wird bestätigt, dass die oben bezeichnete Maschine den genannten EU-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 EU guidelines. This declaration becomes invalid if the machine is modified without our approval.

Cette machine est conforme aux normes en vigueur d'Union européenne. Cet avis est nul et non avenant si cette machine est modifiée sans notre accord.

Esta máquina, anteriormente mencionada, cumple con los límites requeridos por el reglamento UE. 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, 2021-06-29

Company stamp :

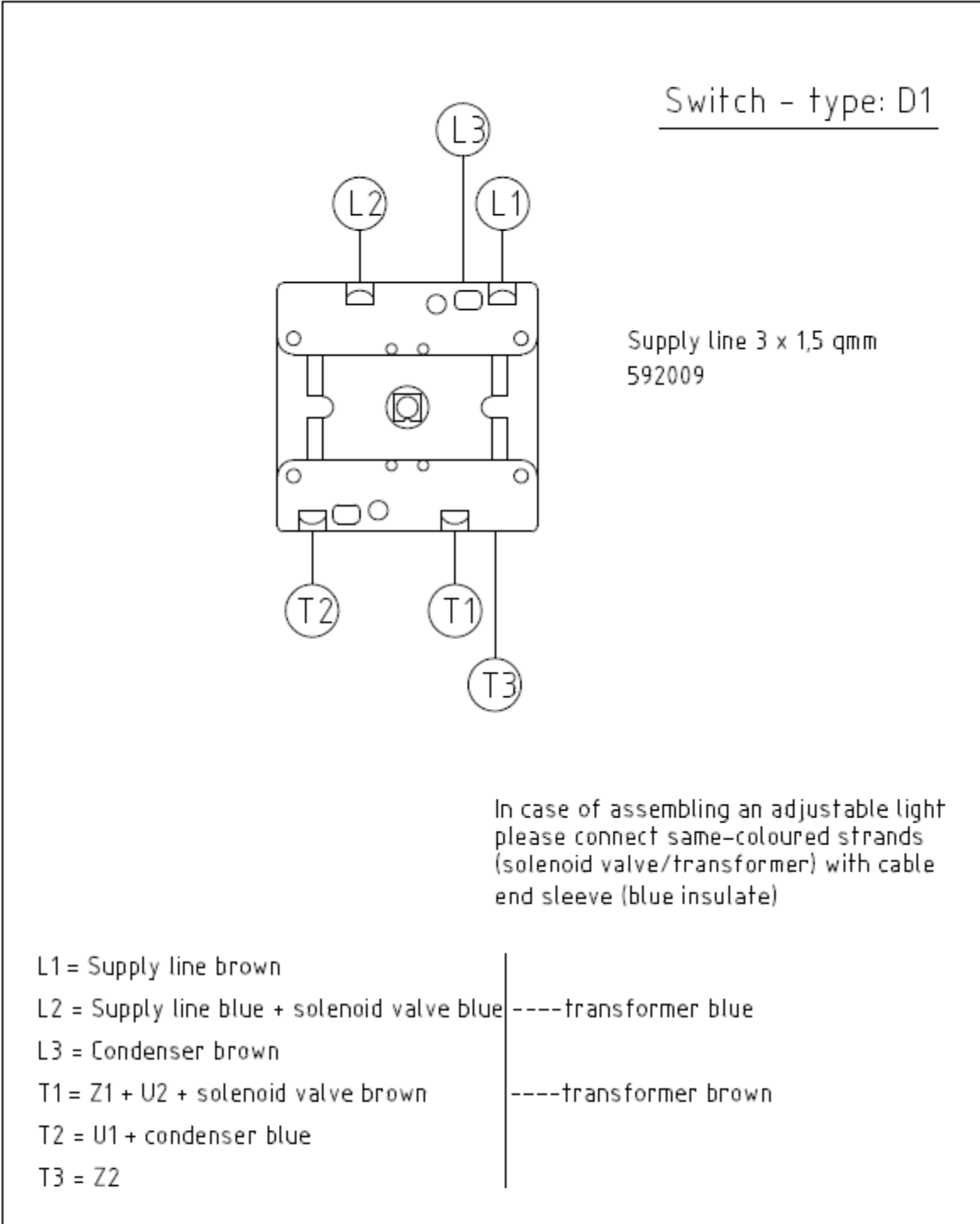


Signature: _____
Sven Wassermann
(Managing Director)



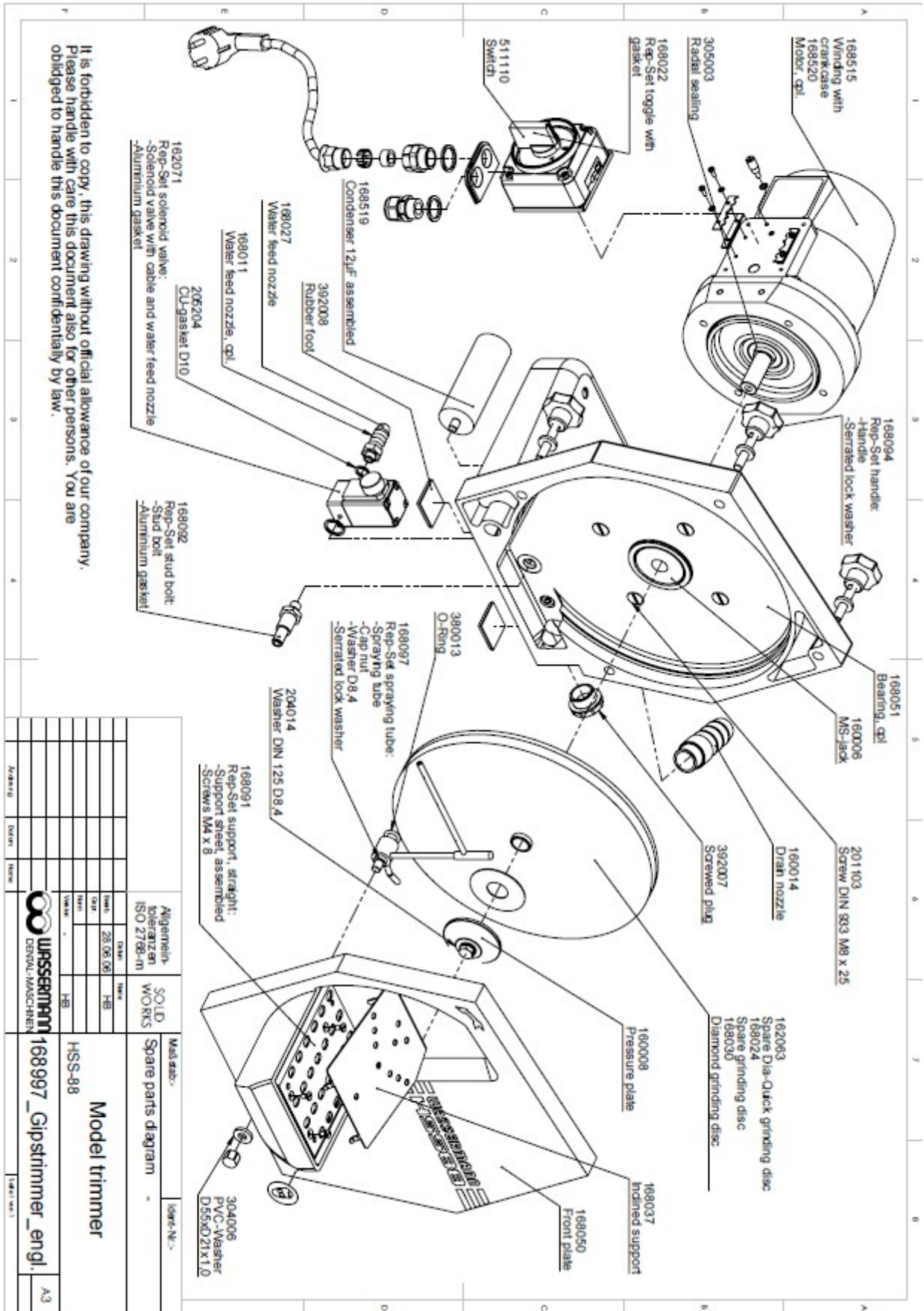
WASSERMANN
DENTAL-MASCHINEN GMBH
Rudorffweg 15-17 · 21031 Hamburg

16 Wiring Diagram



				Allgemein- toleranzen DIN 7168-m	CAD	Maßstab	ID.NR.	
				94	Datum	Name		
				Bearb	01.07.	KRO		
				Gepr.				
				Norm				
				Version	2	TH		
	Zg. aktualisiert	22.01.99	KR	WASSERMANN DENTAL-MASCHINEN GMBH				
*	Aend. storniert	13.01.97	HB					
	Anschluss geeen.	18.12.96	HB					
Zust.	Aenderung	Datum	Name	zg\HSS88-2__engl				Blatt
								Bl.

17 Spare Part Diagram



It is forbidden to copy, this drawing without official allowance of our company.
Please handle with care this document also for other persons. You are
obliged to handle this document confidentially by law.

Allgemein- toleranz ISO 2768-m		SOLID WORKS		Mod. ref.:		Spare parts diagram		Spare N.°:	
max	min	max	min						
±0.1	±0.05	±0.05	±0.02	HSS-88		Model trimmer		168997_Gipstrimmer_engl.	
 WASSERMANN DEWAL-MASCHINEN				A3					

Notes:



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