

Service manual

HSS-ZA Combi-trimmer

plaster model trimmer

with left-side polishing motor



Figure: HSS-ZA Combi-trimmer

WASSERMANN
DENTAL-MASCHINEN



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 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.

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1 For your safety

1.1 Correct use of this product

HSS-ZA plaster model trimmer is used in dental laboratories and is designed **exclusively** for grinding (trimming) and polishing plaster models.

To prevent damage to the trimmer and/or to the blade, it must be used **only** with plaster.

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 should be noted.

1.3 Safety guidelines



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 eye protection when working on grinding wheels.



Electric motors have dangerous electrically conducting and rotating parts when in use. They can cause damage to health and property if operated incorrectly, used for other than their intended purpose or inadequately serviced.



Only qualified specialists should carry out work on the motor.

Condensers must be allowed to discharge completely before you open the unit.

Never switch from level “II” (high speed) directly to level “I” (low speed). Always select setting “0” (wait for wheel to stop) before making the speed change.

When working on the unit, wear close-fitting garments and roll sleeves inwards only. Do not wear gloves.

- **If you have long hair, wear some form of protection such as a hair net.**





When working with the HSS-ZA, do not wear rings, chains, bracelets or similar jewellery.



Be sure to shut off the tap at night and over the weekend.

1.4 Potential dangers



The tip of the brush spindle could cause injury.

The trimmer's rotating parts and the grinding blade are dangerous.

1.5 Your service manual

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.

1.6 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 service 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.



Product responsibility lapses if the equipment is altered by third parties or if non-original parts are installed. Use only original Wassermann replacement parts. If damage occurs after a “foreign wheel” has been installed, responsibility lies with the person who installed said replacement wheel.

1.7 Authorized users

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



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

2 Care and maintenance

2.1 Maintenance



Before you carry out any cleaning or maintenance work, disconnect the power plug and prevent the motor from restarting accidentally.

Be sure to disconnect the water supply when carrying out this work.

Do not open the unit until the grinding wheel has come to a complete stop.

The HSS-ZA plaster model trimmer does not require any maintenance. However, if you open the wheel chamber for cleaning or to change the wheel, be sure to clean the sealing surfaces and coat them with a new application of water-insoluble grease (*Top 2000*).

For safety reasons, you should regularly check that the clamps on the water hose are tight.

Ensure that the bore of the removal nut for the brush spindle stays clean. Check the bore for dirt from time to time and clean if necessary. The brush spindle should be removed and the bore of the nut cleaned, especially after polishing with pumice.

2.2 Care



When mounting the brush spindle and the motor shaft (taper), always make sure that the brush spindle taper itself is clean and free of grease.

3 Use/Application

The HSS-ZA trimmer is used for grinding (trimming) plaster models and can also be used for polishing.

***** Use this equipment only for its intended purpose! *****

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 service manual and read it carefully.

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

4.2 Contents/Accessories

HSS-ZA including Dia-Quick grinding disc	Item no.: 161996
HSS-ZA including foil grinding disc	Item no.: 161997
Included in delivery	Item no.:
Inclined support	168037
Supply hose 1m	320006
Discharge hose 1m	320017
Brush spindle left	152025
Accessories	Item no.:
Polishing trough with extractor nozzle	143130
Polishing trough without extractor nozzle	143140
Polishing trough base complete	161115
Brush spindle left	152025
Brush spindle left (long version)	152044
Sealing grease for trimmer , 25 ml	629002
Puller for grinding disc change	164026

4.3 Set-up and storage

- When you set up the unit, make sure that the polisher side and the grinding wheel are accessible.
- You will need the high-pressure hose with the woven insert and a diameter of 1/2 inch (13 mm) when installing the *rinsing water hose*. You use the plastic hose with a diameter of 1 inch (25 mm) for the *drain hose*.
- When it comes to functional safety, the location of the trimmer is very important, even if it is only to be stored there for a short period. The location should be dry, well ventilated and free of vibration. An even temperature and a wooden base are desirable. **The trimmer must not be set up or stored out of doors.**



Warning!!!

The trimmer must be at room temperature before you start it.

5 Operation

5.1 Technical data

Voltage*	220–240 V / 50/60 Hz
Power consumption	3.5 A
Output	750 W
W x H x D	300 x 315 x 480 mm
Weight	19.6 kg
Sound level	≤ 70 dB(A)
Speed	1500 / 3000 min ⁻¹
Duty	S6 - 40 %
Table dimensions projecting	120 mm
Spindle height	170 mm
Depth with spindle	525 mm

*Other voltages upon enquiry



We reserve the right to make technical changes.

The noise emission measured in a 1-metre circle around the unit and 1.6 metres high at an average 50% idling, 30% average load and 20% full load was 69 dB(A). This was determined in accordance with DIN 45635 Part 1.



After you switch the trimmer on, wait a few seconds for the motor to come up to speed. Only then can you use its full power. Never push on the models so hard that the motor labours. This could overload it and cause possible damage.

5.2 *Water regulation*

The water supply is regulated at the tap. The flow of water is sufficient if the grinding wheel is close to its natural colour when grinding.

Grind using **only light pressure**, while moving the model slightly to the left and right.



You should, of course, always work with fully set plaster models, as wet plaster can cause blockages, especially in drain hoses.

5.3 *Brush spindle*

Use only **original brush spindles** as replacement parts as the spindle diameter must match the bore of the protective sleeve (removal nut), while leaving room for cleaning.



You turn the removal nut to the left when undoing and pushing off the brush spindle.

The brush spindle has a cross hole to make mounting and demounting brushes or polishing wheels easier. You insert a pin or suitable tool to hold the spindle and then simply screw the brush or polishing wheel in or out.



6 Installation

6.1 Location

Because the trimmer operates exclusively with water, we recommend you install it close to a tap, preferably at a washbasin.

6.2 Rinsing water hose

Locate the *rinsing water hose* (thinner hose with woven insert) between the tap and the hose connector on the trimmer. This connector is at the rear, under the motor. 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.



Tighten the hose clamps again about 2 days after installation.

The tap must be turned off at night and over the weekend.

6.3 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 wheel 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 catcher.

The hose end must not be immersed in the water.

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.

7 Assembly

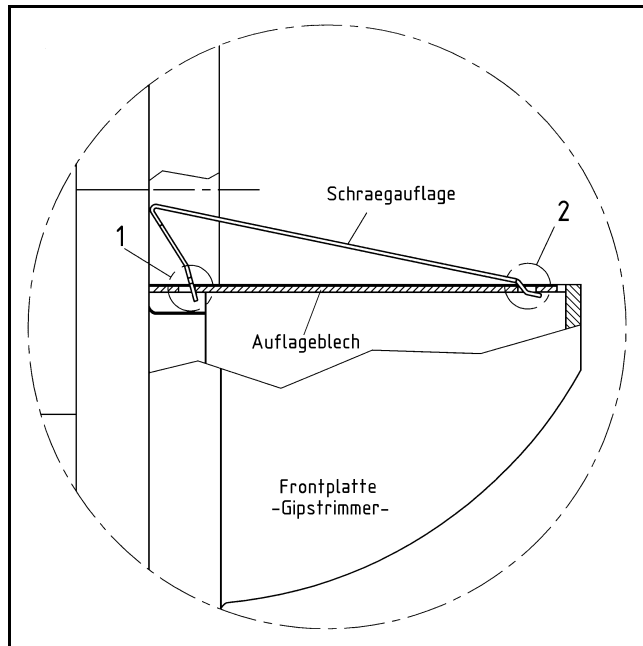
7.1 Installing the angled mount

The angled mount is inserted as required in the HSS-ZA support plate. Please follow the guidelines below.



When working with the angled mount, make sure that it has been installed correctly. It should be installed as shown in the diagram below.





Make sure that items 1 and 2 are inserted correctly in the support plate.

7.2 Installing the brush spindle

If the HSS-ZA is to be used as a polisher, you will need to install the brush spindle. First remove the nut and then use a cloth to degrease (remove corrosion protection) the shaft (taper), before screwing the nut on again.

Next clean the large bore of the brush spindle (inner taper) with compressed air so it is free of dirt and grime. Now install the brush spindle.

Tap the brush spindle **lightly** with a rubber or plastic hammer to seat it firmly on the tip.



Tap the spindle lightly or you could damage the ball bearings. This could void the warranty.

The brush spindle must run true when the motor is on. If it does not, sit the spindle at an angle on the taper. Repeat the installation procedure after first cleaning the bore and motor shaft again.

8 Supports

The HSS-ZA plaster trimmer does not need any other support than the one described in 7.1 *Installing the angled mount*.

9 Maintenance

9.1 Servicing

For details of maintenance, see 2.1 *Maintenance*. Otherwise, the trimmer does not require any special maintenance.

9.2 Troubleshooting

Fault	Likely cause	Likely solution
Water spray at wheel opening	Water supply set too high	Reduce water pressure at tap or ball valve (see 5.2 <i>Water regulation</i>)
	Drain hose has been lengthened with a <i>thinner</i> hose	Make sure that the diameter of the drain hose is 1 inch (25.4 mm)
	Drain hose is kinked	Make sure the hose is laid out without <i>kinks</i>
	Hose end is under the surface of the water in the plaster catcher	Make sure that the hose end is above the surface of the water
	The fall of the hose is insufficient	Ensure that the fall is at least 1 cm per metre
	The radius of the hose is too small	Ensure that the hose is laid out as straight as possible
	There is a tube bend in the hose (causing blow-back)	The bend must be increased to at least D = 40 mm



If the above suggestions do not fix the problem, contact your dental depot or our Service Department.

9.3 Foil grinding wheels

These wheels can be turned around and remounted after one side has been used up, thus allowing you to continue working. This increases wheel life considerably.

9.4 Spare grinding discs

Replacement wheels are always supplied with a tube of grease for sealing the wheel chamber.



We strongly advise against installing a replacement wheel on top of an already installed wheel, regardless of its origin and type.



Warning!

If diamond wheels are used, you will experience extreme wheel wear when grinding embedding materials and metals. We assume no responsibility for this.



When using a replacement wheel, follow the instructions provided for changing wheels.

9.5 Item no. of spare grinding discs

Spare Dia-Quick grinding disc, partly diamonded, including grease	162063
Spare foil grinding disc, 1 set = 4 pieces, including grease	162013
Spare foil grinding disc, fine, 1 set = 4 pieces, including grease	162023

10 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 plaster model trimmer 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.

11 EC conformity certificate

in accordance with 2006/95/EG (low-voltage guidelines) and 2004/108/EG (EMV guidelines) and 2006/42/EG (Machinery guidelines)

Manufacturer: W A S S E R M A N N Product description: Plaster model
Dental-Maschinen GmbH trimmer for dental
Rudorffweg 15 - 17 applications
D-21031 Hamburg

Model: HSS-ZA incl. Dia-Quick grinding disc (161 996)
 HSS-ZA incl. foil grinding disc (161 997)

Applicable DIN EN 61010-1
standards: 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 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.

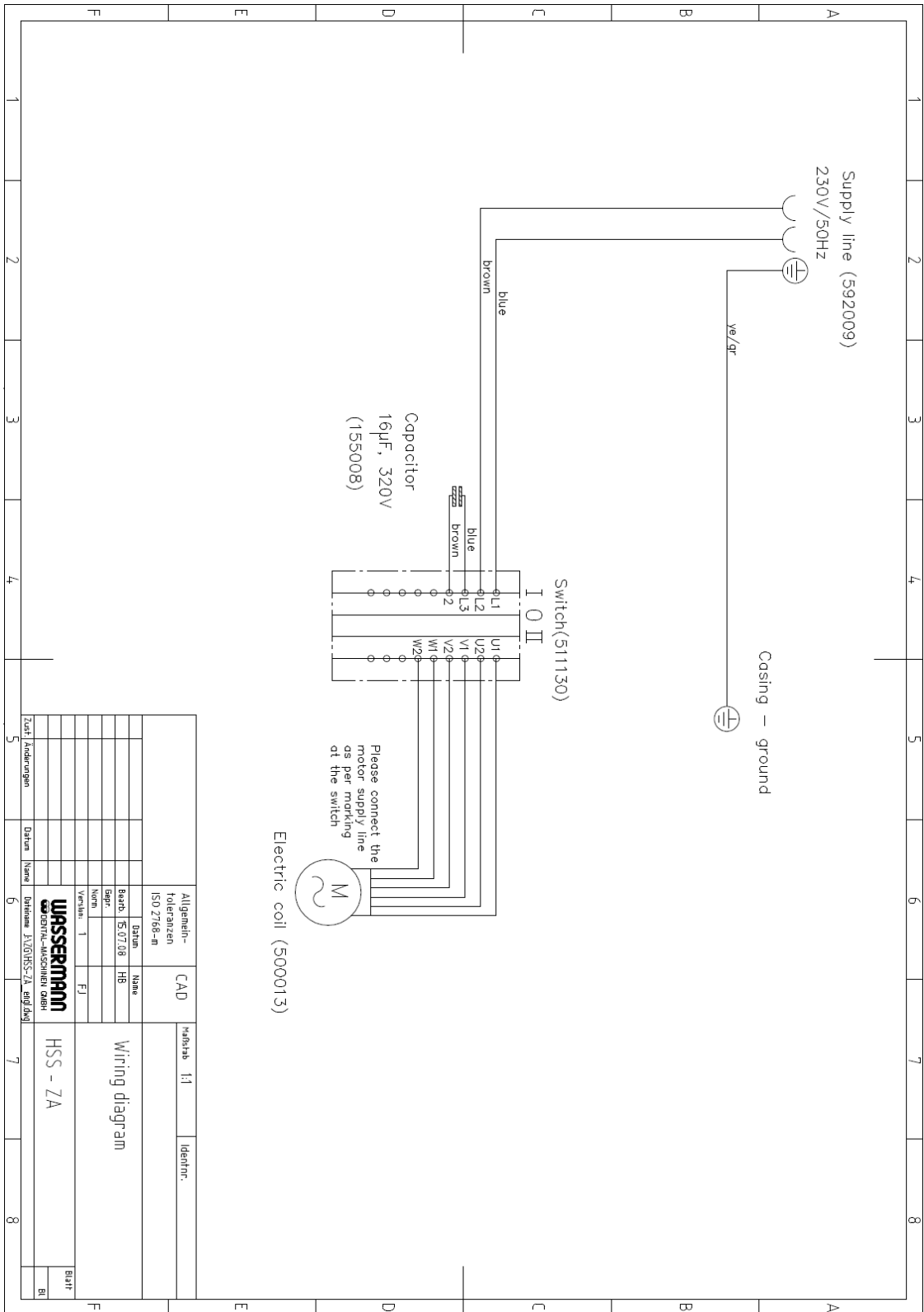
Place, date: Hamburg, 22.02.13

Company stamp:

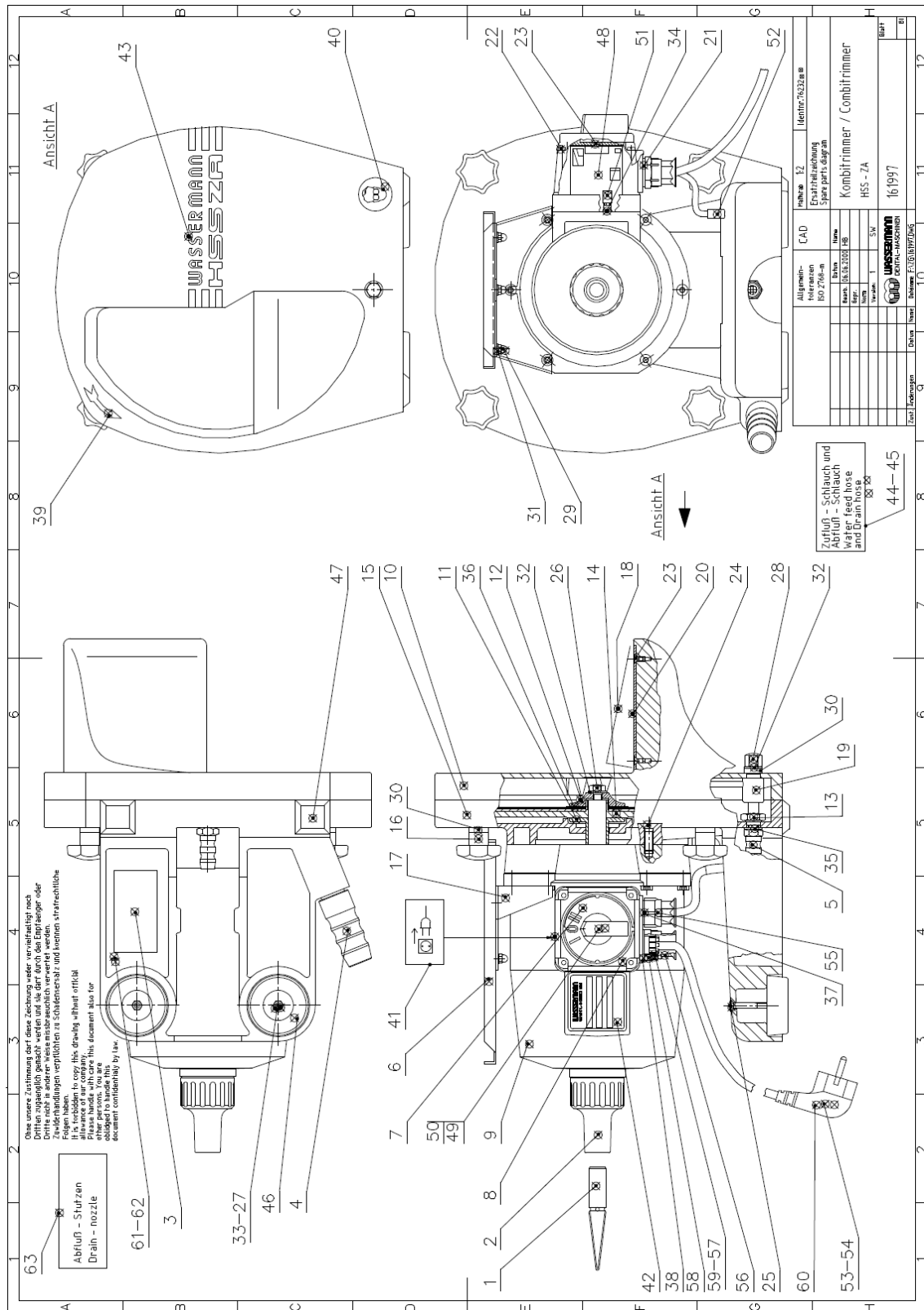
Signed: 
 Wilfried Wassermann
 (Managing Director)


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

12 Wiring diagram



13 Spare part diagram



fd.Nr.	Menge	Zeichn. Nr.	Beschreibung	Material
1	1	152025	Brush spindle, left	
2	1	153007	Screw nut, left side	
3	1	155008	Capacitor, cpl.	
4	1	160014	Drain nozzle for HSS	
5	1	160022	Water feed nozzle, cpl.	
6	1	161105	Storage area	
7	1	161107	Setting plate I – 0 – II	
8	1	161108	Switch cap, arranged	
9	1	161112	Motor	
10	1	162001	Front plate	
11	1	162004	MS-jack	
12	1	162005	Pressure plate	
13	1	162007	Stud	
14	1	162010	Grinding foil support	
15	1	162016	Bearing assembled with stand	
16	4	162033	Handle HSS-AZ	
17	1	164023	Storage angle	
18	1	168037	Inclined support	
19	1	168058	Spraying tube	
20	1	168106	Cloth plate	
21	1	168108	Cable bushing	
22	4	200073	Screw DIN 84 M4 x 60	VA
23	8	201009	Screw DIN 963 M4 x 8	VA
24	4	201019	Screw DIN 963 M8 x 25	VA
25	2	201051	Screw DIN 964 M5x 40	Ms Ni
26	1	201103	Screw DIN 933 M8 x 25	VA
27	2	202002	Screw nut DIN 934 M5	VA
28	1	202101	Cap nut DIN 917 M8	VA
29	3	202111	Cap nut DIN 1587 M4	VA
30	5	204001	Washer D8,4	PVC
31	3	204004	Washer DIN 125 A4,3	VA
32	2	204014	Washer DIN 125 D8,4	VA
33	2	204019	Washer DIN 9021 D5,3	VA
34	1	204037	Serrated lock washer DIN 6798 J4,3	VA
35	1	205205	Aluminium gasket DIN 7803 A - D16	
36	1	304006	PVC washer D55 x D21 x 1,0	
37	1	304210	Gasket Pg 11	
38	1	304211	Gasket Pg 13,5	
39	1	310003	Rotating direction arrow left -black-	
40	1	310004	Sticker „Wear safety goggles“	
41	1	310009	Sticker „Disconnect power plug“	
42	1	310035	Type plate foil 52 x 52 neutral	
43	1	310044	Script name plate – WASSERMANN – HSS-ZA	
44	1	320006	Water feed hose ½ inch	-1 Meter-
45	1	320017	Drain hose 1 inch	-1 Meter-
46	2	392005	Pad D52 - H19	
47	2	392008	Pad 32 x 32 H6 SW	
48	1	511130	Switch for WP-Ex Motor I – 0 – II	
49	1	511132	Gasket washer for motor switch	

fd.Nr.	Menge	Zeichn. Nr.	Beschreibung	Material
50	1	511133	Toggle control for motor switch	
51	1	580004	Grounding clamp DF	
52	1	580005	Tension relief HV 2101	
53	1	581039	Cable end sleeve 1,50qmm	
54	2	581052	Cable end sleeve 1,5qmm black iso.	
55	1	584001	Cable connexion POZB 11	
56	1	584004	Jackscrew TZP 11	
57	1	584005	Clamp cage without gasket KK11	
58	1	584007	Beneficatio type Red 13/11	
59	1	584018	Rubber gasket for clamp cage KK11	
60	1	592009	Plastics connector 3x 1,5qmm	
61	1	633001	Pottant E8704 white	108g
62	1	633002	Accelerator W	32g
63	1	671009	Poly pouch 100 x 200 x 0,05	
64	1	673082	Packing HSS-ZA	

Notes:









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