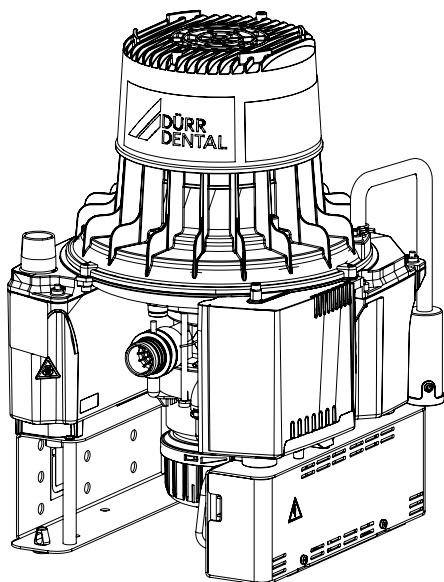


Dürr Dental VSA 300 S

EN



Installation and Operating Instructions

CE 0297

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 DÜRR
DENTAL

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Important information

1. General

1.1 Conformity assessment

This product has been tested for conformity to the Guidelines 93/42/EEC of the European Union and has been found to satisfy all criteria of these guidelines.

1.2 General notes

- These Installation and Operating Instructions form an integral part of the unit. They must be kept close to the unit at all times for the operator. Careful observance of these Installation and Operating Instructions is a prerequisite for use of the unit for the intended purpose and for its correct operation; new personnel must be properly trained and instructed in its use. These Installation and Operating Instructions must be handed over to any subsequent owner or operator of this unit.
- Operator safety and trouble-free operation of the unit can only be ensured if original equipment parts are used. In addition, only accessories that are specifically mentioned in the Installation and Operating Instructions or that have been authorised by Dürr Dental may be used. If other accessories are used with this unit, Dürr Dental cannot guarantee that it will work safely or correctly. No liability will be accepted for resulting damages.
- Dürr Dental is only responsible for the equipment with regard to safety, reliability and proper functioning if the installation, readjustments, changes or modifications, upgrades and repairs have been carried out by Dürr Dental or an agency authorised by Dürr Dental and if the equipment is used in conformity with the Installation and Operating Instructions.
- The Installation and Operating Instructions correspond to the particular model of the unit and the state of technology at the time when it was first placed on the market. All circuits, processes, names, software and devices quoted are protected under industrial property rights.

- The translation of these Installation and Operating Instructions has been carried out in good faith. However, we accept no liability arising from an incorrect translation. The German version of the Installation and Operating Instructions, which is included, always takes priority.

- Any reprinting of the Installation and Operating Instructions, in whole or in part, is only permitted with written approval from Dürr Dental.
- Retain the packaging for possible return of the product to the manufacturers. **Ensure that the packaging is kept out of the reach of children.** Only the original packaging provides the best possible protection during transport of the unit.

In the event that the product needs to be returned to the manufacturer during the guarantee period, Dürr Dental accepts no responsibility for any damage that occurs during transport as a result of the use of defective packaging.

1.3 Notes on the medical product

- This product is a technical medical device and, as such, may only be operated by such persons who, as a result of training or experience, can be confidently expected to operate it correctly.

1.4 Notes on EMC for medical products

With medical products, special precautions need to be taken in terms of electromagnetic compatibility (EMC).

Notes on EMC of products for medical applications can be found in "Information about EMC in accordance with EN60601-1-2 for devices from Dürr Dental", which is available to download from our website at www.duerrdental.com in the Download section for Technical Documentation

1.5 Proper intended usage

The Combination Suction Unit VSA 300 S is a vacuum generator with integrated separation and amalgam removal. The suction performance achieved by this unit is sufficient for one treatment station.

The VSA 300 S is designed to be installed in or added to all treatment stations in dental surgeries and clinics where amalgam will be encountered. The VSA 300 S fulfills both the regulations concerning waste water in Germany as well as the international DIN EN ISO 11143 regulations of the EU.

The separation efficiency exceeds 95% at a rate of flow of approx. 5 l/min.

The amalgam sludge is collected in a holding tank in the VSA 300 S. Depending on the amount accumulated, the collector vessel will need to be replaced every 6-9 months.

Correct usage of the device also involves following the Installation and Operating Instructions and adhering to the conditions concerning set-up, operation and maintenance.

Installation within other medical supply equipment:

Where applicable, the requirements for medical products have been taken into account in the development and construction of the suction machine. As a result, this device is suitable for installation within medical supply equipment.

Where this device is installed within other medical supply equipment, the installation and assembly must meet all of the requirements of Directive 93/42 EEC and the relevant standards. This unit is technically suitable for the aspiration of nitrous oxide (laughing gas). However, when assembling a system for aspiration of nitrous oxide, it is important to ensure that the other components in the system are also suitable for this purpose. Those responsible for setting up the system must assess this and approve and release the system for the aspiration of nitrous oxide.



Operation with nitrous oxide is only permitted if the exhaust air is transported from the unit to the outside of the building.

1.6 Improper usage

- Do not use this device to aspirate inflammable or explosive gas mixtures.
- The units are not suitable for use as vacuum cleaners.

Any other usage or usage beyond this scope is deemed to be improper. The manufacturer accepts no liability for damages resulting from this. In these cases the user/operator will bear the sole risk.



This device must NOT be used in operating theatres.

1.7 Use of additional/auxiliary units

- Units must only be connected to each other or to parts of installations if it can be ensured that the safety of the patients, operators and staff and the surroundings is not affected in any way as a result. Where it is not immediately obvious from the equipment data that units can be safely connected, the operator has a duty to ascertain that such connection can in no way affect the safety of operators, patients or other staff by asking the manufacturer or a fully qualified and competent expert.

2. Safety

2.1 General safety notes

This device has been designed and constructed by Dürr Dental in such a way that the possibility of any risks arising during correct and proper use is largely ruled out. Nonetheless, we feel it is our duty to mention the following safety measures in order to eliminate any possible remaining dangers.

- When operating the device, observe all local rules and regulations.
Converting or modifying the device in any way is strictly prohibited. Dürr Dental offers no guarantees and accepts no liability for units that have been converted or modified. In the interests of trouble-free and safe operation, the owner and operator are responsible for ensuring compliance with these regulations and definitions.
- Installation must be carried out by a qualified expert.
- Before every use, the operator must check that the device is functionally safe and in good working order.
- The operator must be familiar with the operation of the device.
- This product is not designed for operation in an areas with an explosive or combustible environment. Explosive atmospheres can form in areas where flammable anaesthetic materials, skin cleansers, oxygen and skin disinfectants are present.
- The suction unit is technically suitable for the aspiration of nitrous oxide (laughing gas). However, when assembling a system for aspiration of nitrous oxide, it is important to ensure that the other components in the system are also suitable for this purpose. Those responsible for setting up the system must assess this and approve and release the system for the aspiration of nitrous oxide.

2.2 Notes on electrical safety

- Before connecting the device, always check that the values stated on the device for the supply voltage and mains frequency match those of the mains power supply.
- Before initial start up, all equipment and supply lines must be checked for signs of damage. Damaged supply lines and connections must be replaced immediately.
- Never touch the patient and unshielded plug connections on the device at the same time.
- When working on or with the device, always observe the applicable electrical safety procedures.

3. Warnings and symbols

The following terminology and symbols are used in these Installation and Operating Instructions to denote particularly important information:



Restrictions and regulations concerning the prevention of personal injury or extensive damage.



Special information relating to efficient and cost-effective use of the device or other information.



Warning – risk of dangerous electric voltages



Warning - hot surfaces



Warning – risk of automatic start-up



Biohazard warning



For the protection of operating personnel protective gloves must be worn when working with or on this device



Order no./Model no.



Serial no.



Observe the operating instructions



Manufacturer

4. Overview



The parts listed as special accessories are **not** included as standard parts with the device but can be ordered separately.

4.1 Scope of delivery

The following items are included in the scope of delivery (possible variations due to country-specific requirements and/or import regulations):

VSA 300 S 230 V AC, 50 Hz 7125-01/002

VSA 300 S 230 V AC, 50 Hz

with integrated rinsing unit 7125-03/002

VSA 300 S 230 V AC, 60 Hz 7125-04/002

– Pipe connection set only for VSA 300 S with rinsing unit

– Suction hose LW 30, grey

– Hose LW 20

– Hose LW 30, aluminium

– Recycling box

– Installation and Operating Instructions

– Operating manual / set of connecting parts

– OroCup

4.2 Special accessories

Noise reducing hood 7122-200-00

Bacterial filter with accessories . . . 7120-143-00

Rinsing unit 7100-250-50

Recycling box 7110-033-00

Rinsing unit conversion set for model 7125-01 / 7125-04 7100-120-51

5. Technical data

5.1 Suction Unit VSA 300 S

Type 7125		-01 / -03	-04
Voltage	V	230 / 1	230 / 1
Mains frequency	Hz	50	60
Current consumption	A	2.9	304
Starting current, approx.	A	9	
Power output	W	580	770
Speed	rpm	2750	3120
Max. fluid flow rate	l/min	5	5
Unimpeded flow rate	l/min	670	770
Pressure at V=0, approx.	hPa	-170 – -195	-190 – -210
Max. number of workplaces		1	
Usable volume of collector vessel, approx.	ccm	150	
Replacement interval	Months	6 - 9	
Weight, approx.	kg	14	
Dimensions (H x W x D)	cm	48 x 31 x 31	
Noise level*			
without housing	dB(A), ± 1.5	63	
with housing	dB(A), ± 1.5	54	
Duty cycle		S1 (100%)	
Type of protection		IP 21	
Protection class		I	
Vacuum connection		DürrConnect Special (hose ø 30 mm, internal)	
Exhaust air connection		DürrConnect Special (hose ø 30 mm, internal, aluminium)	
Waste water connection		DürrConnect System (hose ø 20 mm, internal)	
Protective low voltage	V	24 ~	
Output	VA	4	
Switching contact in treatment unit		24 V AC / 10 mA	

* In accordance with EN ISO 1680 "Airborne acoustical noise"; measured in a room with sound damping.

In rooms with reverberating sound characteristics higher values may be obtained.

5.2 Ambient conditions



Ambient and environmental conditions must be taken into account. Do not operate the unit in damp or wet conditions.

Storage and transport

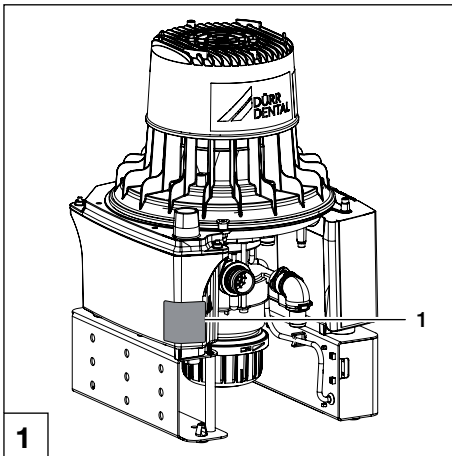
Temperature: -15°C to +60°C

Rel. humidity: max. 95%

Operation

Temperature: +10°C to +40°C

Rel. humidity: max. 70%



5.3 Model identification plate

The model identification plate is located on the noise reducing hood

1 Model identification plate

6. Functional description

6.1 Operation

The Combination Suction Unit VSA 300 S is designed for the continuous production of vacuum to provide suction when drilling and grinding etc. with subsequent separation of the suction air and amalgam separation from the waste water of the treatment unit.

The VSA 300 S motor is switched on via a switch in the hose manifold and a suction unit relay in the treatment unit.

While passing through the inlet connection, the sucked up waste water/air mixture is accelerated and tangentially fed to the cyclone separator. With the aid of specially formed guides the mixture is set into a spiral motion in the cyclone separator. The resulting centrifugal force spins the drawn up particles against the outer wall. The air is continuously separated from the waste water and escapes via the spinning rotor to the suction unit.

A rotor driven by the motor provides the second stage of separation and ensures that no waste water or blood foam is allowed to enter the suction unit.

The waste water that is supplied to the separation chamber is continuously fed to the centrifuge, where the amalgam particles are removed. The fluid extracted via the centrifuge is fed through the waste water valve and the outlet connection into the central drainage system.

Under the centrifuge there is an interchangeable collector vessel into which the separated amalgam particles fall once the motor is switched off. A sensor checks the fill level in the collector vessel, and when it is full a signal is sent to the display panel to indicate that the collector vessel needs to be replaced. Depending on the type of work carried out and the amount of amalgam arising, the collector vessel should be changed approx. every 6-9 months. A secure twist cap makes the replacement and closing of the collector vessel easier.

A pump that is connected to the centrifuge keeps the fluid level constant in the collector vessel. This prevents accidental spilling when replacing the collector vessel.

Once the suction elements are placed back in the hose manifold and no more waste water drains from the spittoon, the centrifuge is switched off after a short delay. The motor brakes when the centrifuge is switched off. As a result the water ring, which is spinning due to

inertia, flushes the separated particles out of the centrifuge downwards towards the collector vessel.

6.2 Spittoon connections

If a spittoon is fitted, the amalgam-contaminated waste water must also be treated using an amalgam separator. This can also be performed using the VSA 300 S, provided that a special valve is installed between the spittoon waste water pipe and the VSA 300 S inlet connections. This valve must be fitted with a contact that is connected in parallel to the switching contacts of the hose manifold unit, and in addition it must also fulfill the following criteria: the valve must close the spittoon waste water outlet while using the suction elements to ensure that no suction noises are emitted at the spittoon. This valve should only open when water is provided through the spittoon unit. An additional function of the valve, when water drains from the spittoon, is to start up and then to switch off the VSA 300 S so that the accumulated water is transported to the centrifuge and the amalgam can be separated. The valve must be closed when no current is present.

6.3 Fill level measurement

The fill level in the collector vessel is checked via a monitoring sensor every time the main power switch is switched on.

If the machine is not disconnected from the mains this test is automatically repeated approx. every 24 hours.

A solenoid switch triggers the level monitoring process, whereby the sensor sinks due to gravity. A light barrier checks the level and displays a warning on the display panel if the level is 95% or higher.

When the collector vessel is 95% full of amalgam sludge, a yellow LED lights up continuously on the display panel in addition to the green LED. In addition, there will be an audible signal which can be turned off by pressing the service key. The device is then again ready for operation. The yellow LED will remain on as a reminder. Every time the unit is switched on at the main power switch the level display procedure is repeated, and there is a daily reminder that the amalgam collector needs to be replaced.

When the level reaches 100% the green LED goes out. Instead there is a permanent yellow LED together with a flashing orange LED and the audible signal. The audible signal can no longer be switched off and the VSA 300 S is no

longer functional until a fresh amalgam collector has been inserted. After the collector has been replaced the green LED appears and the unit is once again ready for use

6.4 Operating problems

If the VSA 300 S is not ready for use because of a technical defect then a fault report will be activated. In this case the orange "FAULT" display flashes on the display panel. There is also an audible signal, which can be switched off by pressing the service key.

If the motor is defective, the "FAULT" display is triggered via a low pressure switch, or if no collector vessel is used it is triggered by a microswitch in the mounting for the collector vessel.

If the orange LED indicates a "FAULT" on the display panel, you can manually start the VSA 300 S by pressing the service key (for at least 2 seconds).

If, after pressing the service key several times, the fault report keeps reappearing, or the VSA 300 S will not start when the service key is pressed, there is a technical defect.



Installation

7. Setup

7.1 Installation/setup room

- The room temperature must not be below + 10°C or above + 40°C.
The relative humidity must not exceed 70%.
- Installation in a purpose-built room, e.g. in a boiler room, must be checked beforehand with local building regulations.
- Installation in wet rooms is not permitted.
- Inlet and outlet ventilation openings must be provided if the unit is to be installed in a cabinet or in a machine room.



If the ventilation is insufficient a fan will need to be installed, and adequate slots must be provided to ensure a supply of cold air to the unit.

7.2 Setup options

- On same floor as the surgery.
- In a ventilated cabinet (e.g. Dürre PTS 105/195).
- In a Dürre noise reducing hood as an extension of the treatment unit via the floor socket.
- On a floor below the treatment unit.



Where installation of the VSA 300 S is in a basement or similar room, the unit must be placed on a base or be fixed to the wall at a minimum height of 30 cm above the floor.

7.3 Rinsing unit

If no spittoon is fitted in the treatment unit or no rinsing unit is present, it is absolutely essential that a rinsing unit is installed in the VSA 300 S. In addition, for surgical procedures and for procedures using airflow a rinsing unit must always be installed in the treatment unit to supply a small amount of water to the system during aspiration. Any secretions present will thus be diluted and can be transported away more easily.

7.4 Pipe materials



The following must NOT be used: Acrylonitrile butadiene styrene (ABS) and styrene copolymer blends (e.g. SAN+PVC).

Only the following pipe materials may be used:

Vacuum-tight HT-waste water pipes made of polypropylene (PP), chlorinated polyvinyl chloride (PVC-C), unplasticized polyvinyl chloride (PVC-U) or polyethylene (PE).

7.5 Hose materials



The following materials must NOT be used: Hose materials that are not resistant to dental disinfectants and chemicals, rubber hoses or fully-PVC hoses that are not sufficiently flexible.

Only flexible PVC hoses with spiral reinforcement or equivalent hoses may be used as hoses for waste water systems and suction lines.



As all plastic hoses are subject to deterioration with age, they must be checked and inspected frequently and replaced when necessary. When replacing a suction unit, we recommend replacing the connecting hoses at the same time.

7.6 Hose and pipe installation

- **Waste water connections** must be executed in accordance with local and national building regulations.



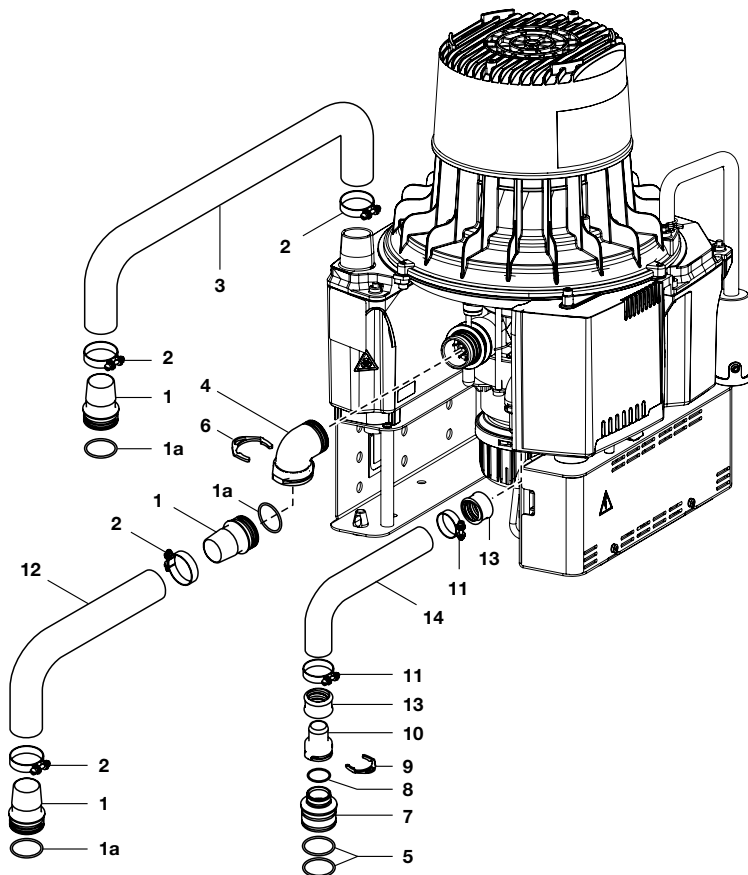
The connection between the pipe system and the suction unit connection should be kept as short as possible and laid as straight as possible (i.e. without bends) using the flexible hose supplied. This will prevent vibrations from being transmitted to the pipe system.

- The **exhaust air line** should be routed from the unit to the outside of the building.
- For reasons of hygiene, we recommend the installation of an exhaust air filter in the exhaust air line.

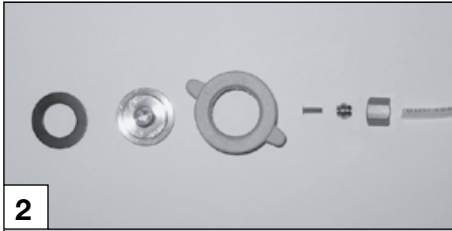
8. Hose connections



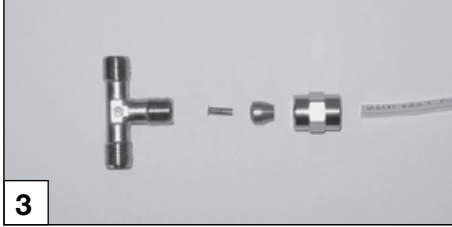
The connection set-up shown here is just one of many possible layouts and may need to be varied to suit the conditions on site.



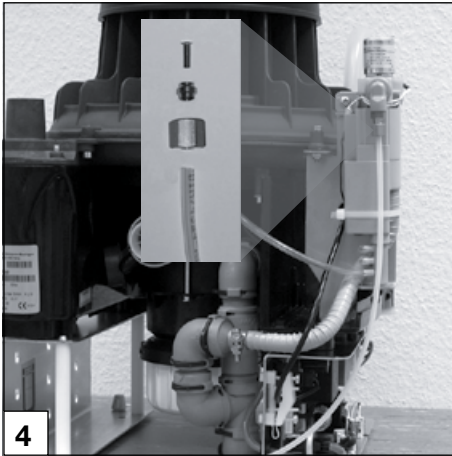
- 1 Connector 30/36
- 1a O-ring 30 x 2
- 2 Hose clip \varnothing 30 mm
- 3 Waste air pipe (aluminium) \varnothing 30 mm (inside)
- 4 Angle connector piece DN 30
- 5 O-ring 30 x 2
- 6 Ring clamp
- 7 Connector \varnothing 36 mm (outside)
- 8 O-ring 20 x 2.0
- 9 Ring clamp
- 10 Hose sleeve \varnothing 20 mm
- 11 Hose clip \varnothing 28 mm
- 12 Suction hose \varnothing 30 mm (inside)
- 13 Hose bushing
- 14 Waste water pipe \varnothing 20 mm (inside)



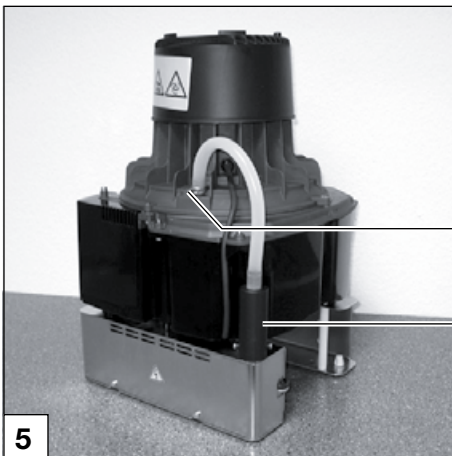
2



3



4



5

9. Rinsing unit water connections



Only for model 7125-03/002 with integrated rinsing unit

The water connections can be made in a number of ways:

- Directly to a water tap with a R 3/4" connection.
- Via a T-piece to a Tecalan water hose with a diameter of 4 mm or 6 mm.

Securely screw the Tecalan hose with sleeve piece, double-tapered ring connector and locking nut onto the water intake valve of the rinsing unit.



Check the water pressure for the rinsing unit. The water pressure should be between 2 and 4 bar.

Pressure below 2 bar is too low to ensure reliable operation. If the pressure exceeds 4 bar a pressure reducer will need to be installed upstream.

After installation of the suction unit perform a function test on the rinsing unit.

10. Auxiliary air nozzle

The auxiliary air nozzle (8) has two primary functions:

- The auxiliary air nozzle is used to supply additional cold air to the unit.
- With the aid of an adjusting screw (9) in the turbine housing, the max. vacuum pressure of the unit can be set during installation.



The adjusting screw is secured with thread locking compound and must not be adjusted.

11. Electrical connections

The power supply equipment must be designed and set up in accordance with the national regulations and standards for practice rooms and clinics.

Electrical connection to the mains power supply must be carried out using an all pole disconnect switch (all-pole switch or circuit breaker) with at least 3 mm contact opening width.

Circuit protection: LS switch 16 A, characteristics B according to EN 60898



Electrical connection to the mains supply voltage using a standard safety plug or CCE-type plug is not permitted

11.1 Information about connecting cables

230 V connection cables (permanently connected to the mains power supply):

NYM-J 3 x 1.5 mm²

230 V connection cables (flexible connection to the mains power supply)

The connection between the control box and the suction unit or between the device power supply socket and the suction unit should be made using PVC sheathed cables:

H05 VV-F 3G1.5 mm²

or rubber cables:

H05 RN-F 3G 1.5 mm² / H05 RR-F 3G 1.5 mm²

24 V control line, for VSA 300 S

Protective low voltage for:

- Hose manifold
- Station selection valve
- Spittoon valve

Flexible routing: PVC data cable LiYY 3 x 0.5 mm²

11.2 VSA 300 S connection with control unit

1/N/PE AC 230 V, with control unit integrated in a soundproof housing.

X1 Rinsing unit

X2 Output voltage 24V and switching contact to suction unit in the treatment unit

X3 / X13 Display panel



Only one display panel can be connected - to either X3 or X13

X4 Sediment sensor light barriers

X5 Sediment sensor lifting magnet

X6 Collector vessel safety switch

X7 Motor connection

X8 Mains power supply

F1 Main fuse

F2 Fuse for braking

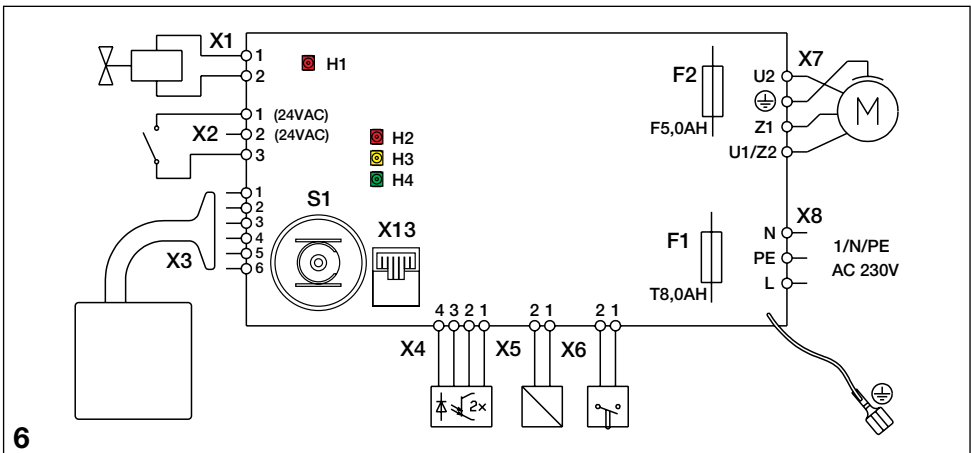
S1 Pressure switch for motor monitoring

H1 Rinsing unit

H2 Red display (same as display panel)

H3 Yellow display (same as display panel)

H4 Green display (same as display panel)



11.3 Display panel

If you are operating the VSA 300 S with the DÜRR housing then the display panel is installed in the cover of the housing. However, if it is installed in e.g. a low fitting cupboard then the display panel needs to be positioned somewhere it can be easily seen by the operating staff.

12. Commissioning and first start-up



The suction unit must NOT be operated without the coarse filter, as otherwise larger objects such as broken tooth fragments or fillings could cause damage or malfunctions.

- Check that the coarse filters (e.g. in the spittoon) are in place.
- Turn on the unit power switch or the main surgery switch.
- Check the unit to make sure it is leak-tight and working correctly.
- Carry out the appropriate electrical safety checks in accordance with the local legal requirements and document the results, e.g. in the service log book.



In many countries technical medical products and electrical devices are subject to regular checks at set intervals. The owner must be instructed accordingly.

13. Service program

A service program can be used in order to check various functions of the VSA 300 S. The individual program steps are:

- Display panel test (1)
- Sediment level test (2)
- Motor start and motor braking with pressure switch function (3)
- Input and output signals (4)
- Adjusting the period of delayed running (5)

Press the service key twice to switch to the next program step. Press the service key once to repeat the current program step. An audible signal also sounds when the service key is pressed.

13.1 Start / Stop

To start up the service program press the service key on the display panel and then switch on the power supply to the VSA 300 S. As soon as a signal is heard then the service button can be released. The three LEDs light up on the display panel (display panel test) and the service program is active.

Exit the service program (Stop = display off) by switching off the power supply to the VSA 300 S.

13.2 Display panel test (1)

The display test, which commences as soon as the service program is active, tests the LEDs of the display panel. All three LEDs must come on. There is also an audible signal, which can be switched off by pressing the service button.

13.3 Sediment level test (2)

The sediment level test can be used to check the function of the sediment level control and the function of the LEDs.

Every time the service key is pressed the sediment sensor drops down. If a **test collector vessel** is used, the different levels can be scanned and made visible on the Display Panel.

13.4 Motor start – motor braking with pressure switch function (3)

The drive motor starts up and is automatically braked after the required period of delayed running.

If the service key is pressed during this period of delayed running then the motor is braked immediately. (Refer also to the section on setting the period of delayed running below)

This procedure can be repeated by pressing the service key 1x again.

This program step is also used to check the running of the motor using a low pressure switch.

The LEDs will go from orange to green on acceleration and from green to orange during slow-down.

ORANGE LED:

No vacuum or vacuum too low (motor is at a standstill or accelerating/slowing down)

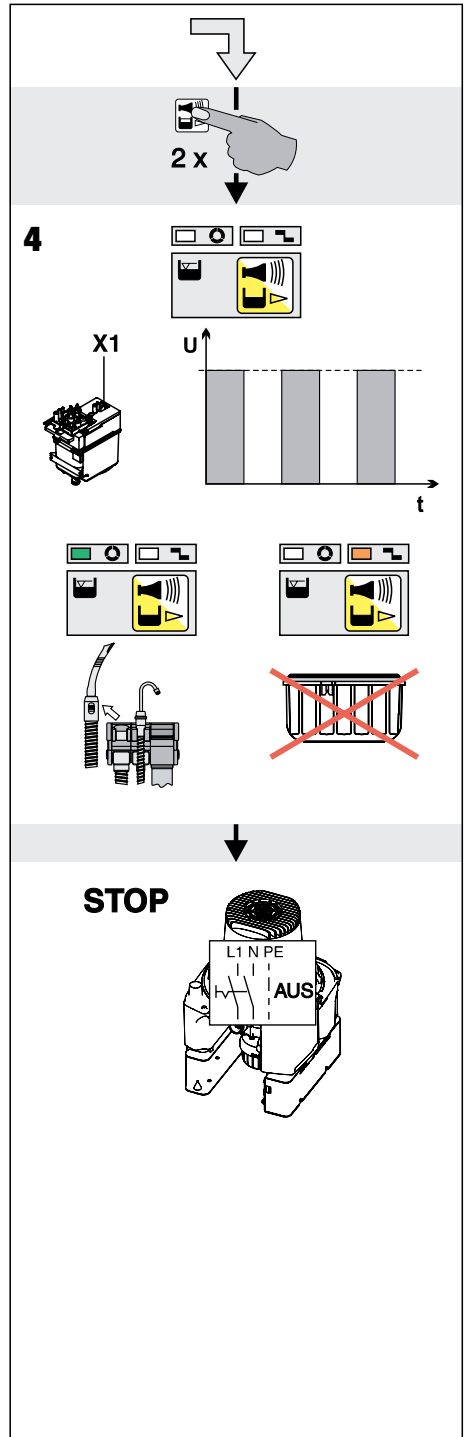
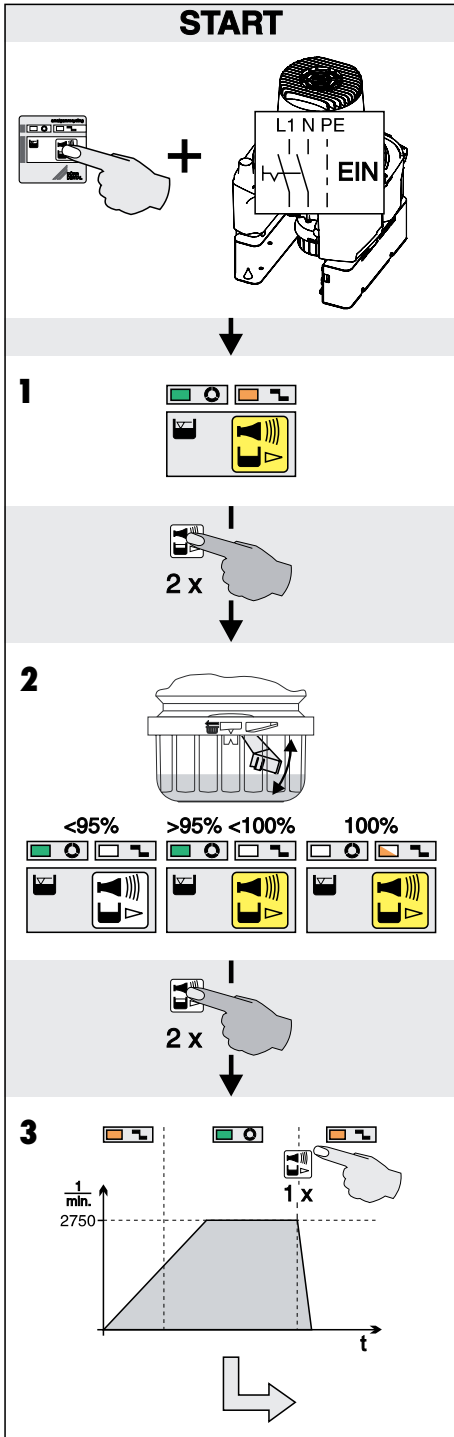
GREEN LED:

Vacuum is present (motor is running)

13.5 Input and output signals (4)

After this program point has been activated, the yellow LED flashes and then a cycled DC voltage (approx. 22-30 V) can be measured at the connection for the rinsing unit (X1).

- If the suction hose is removed from the hose manifold causes the green LED will also light up.
- Removal of the collector vessel causes the orange display to come on.



EN

14. Annual check

14.1 LEDs of the display panel

- Switch off the mains supply.
- Remove the collector vessel, position the test collector vessel, close and set to a fill level of 95%.
- Switch on the mains supply. The sediment sensor is initialised.
- After the sediment level has been checked, the 95% level (green LED, yellow LED and melody signal) will appear on the display panel.
- Press the service key. The audible signal will cease, the green and yellow LEDs remain lit.

If there is no sound from the sediment sensor, check the sensor and replace it if necessary.

- Switch off the mains supply.
- Set the test collector vessel to a level of 100%.
- Switch on the mains supply. The sediment sensor is initialised.
- After the level monitoring procedure, a level of 100% will be displayed on the panel (orange LED flashes, yellow LED on and audible signal)
The flashing orange LED and audible signal cannot be switched off by pressing the service button.

14.2 Aspiration

- Remove the suction element. The unit starts up.
- Insert the hose. After approx. 12 seconds the unit must switch off.

If the brake does not work, check the connections and re-measure the voltage. If no fault can be found, de-energise the unit, switch it back on again and check the suction function again. If the problem is still present, check the fuse F2 (F 5.0 AH) in the electronics and replace if necessary.

14.3 Visual inspection

- Check the connections, hoses and unit for leaks and repair as required.
- Record all test results in the Operating Handbook.

15. Check that the unit is in good working order after 5 years

In accordance with the German Waste Water Regulations, appendix 50 (Dental Treatment), section 2.2.5, a check must be carried out at least every 5 years to verify that the VSA 300 S is in good working order.

- Remove the collector vessel. When you do this the orange LED on the display panel should flash and an audible signal should be heard.
- Insert the test collector vessel.
- Press the service key on the display panel (the green LED lights up to show that the unit is ready for operation)
- Suck up approximately 1 l water.
- After the unit has switched itself off, remove the collector vessel and pour the collected water into a measuring beaker.

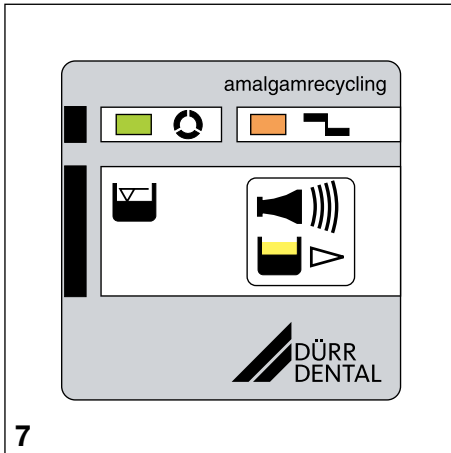
If the content exceeds 70 ml:

The unit is in good working order

If less than 70 ml is collected, clean the centrifuge drum and check the operation of the device.



Usage






16. LEDs

16.1 Ready for operation




 GREEN LED is on

16.2 Collector vessel is 95% full

 GREEN LED is on,
 YELLOW LED is on and
 there is an audible signal

- When the fill level is 95% the audible signal can be turned off by pressing the service button. The GREEN "Ready" LED then comes on and the VSA 300 S is ready for operation.
- The yellow LED lights as a reminder that the collector vessel needs to be replaced

16.3 Collector vessel is 100% full

 YELLOW LED is on,
 ORANGE LED flashes and
 there is an audible signal




- When the level is 100% the audible signal and the orange LED can no longer be switched off using the service button.
- The unit is not "READY FOR OPERATION" again until the collector vessel has been replaced

16.4 "Collector vessel not in position" display

 ORANGE LED flashes and
 Audible signal

- A brief press of the service key will switch off the audible signal, but the orange LED will continue to flash.
- The unit is "READY FOR OPERATION" again once the collector vessel has been inserted

16.5 Motor fault




-  ORANGE LED and
-  GREEN LED flash alternately
-  Audible signal



Occurs on start up of unit.

- A brief press of the service key will switch off the audible signal, but the LEDs will continue to flash. The unit is still ready for operation.
- Call a service technician.

16.6 Braking monitoring message

-  ORANGE LED and
-  GREEN LED flash alternately
-  Audible signal



Occurs during motor braking.

- A brief press of the service key will switch off the audible signal, but the LEDs will continue to flash. If this occurs on a number of consecutive days then the unit should be checked by a Service Technician because the braking performance will be insufficient.

17. Cleaning and disinfection of the suction unit



Do not use any foaming agents, e.g. household cleaning agents, instrument disinfecting agents or abrasive cleaners.



Do not use any agents containing chlorine or any solvents such as acetone. These agents can damage the materials. Guarantee claims may become invalid as a result.

After every treatment

For reasons of hygiene and to ensure correct operation, a glass of cold water should be aspirated through both the larger and the smaller suction hoses – even if only the saliva extractor has been used for aspiration.



Suction through the large suction hose causes a large amount of air to be drawn up (~300 l/min), thereby considerably increasing the cleaning effect.

Before the lunch break and at the end of the day

The suction unit should be carefully cleaned and disinfected via aspiration of a suitable cleaning and disinfecting agent approved by Dürr Dental (e.g. OROTOL Ultra or OROTOL Plus).

Further information can be found in the Operating Instructions "Disinfection and Cleaning of Suction Units", order number 9000-605-10/.. and in the brochure "Cleaning Instructions for Contaminated Suction Units", order number P007-235-01.

1x weekly

If the local water is particularly hard, we recommend using Dürr MD 555 specialised cleaner for suction units once a week, preferably before the midday break.

1x weekly

Clean and disinfect the surfaces of the separator housing using an appropriate disinfectant and cleaning agent as recommended by the manufacturer.

18. Replacing the amalgam collector vessel

Depending on the amounts accumulated the amalgam collector vessel will need to be replaced 1-2 times per year. As soon as the yellow and the orange LEDs on the display panel light up and the audible signal is heard then the collector vessel should be replaced.

- Switch off the main power switch of the treatment unit.
- Take the empty collector vessel from the box and unscrew the lid.



In order to prevent the risk of infections, always wear water-proof gloves. (VBG 103 §5 and §7)

- Hold the full collector vessel of the VSA 300 S from below, turn it in the direction of the arrow and take it off downwards.

If the collector is removed while the unit is still switched on, the orange LED flashes and an audible signal is heard. This can be switched off by pressing the service key. After replacement of the collector vessel press the service key again, this switches off the orange LED and the unit is "READY FOR OPERATION" again.

- Pour disinfectant into the collector vessel. Refer to the operating instructions, order number 9000-461-18.
- Close the full collector vessel with the lid. Observe carefully all markings on the cover and on the collector vessel itself. When the lid is closed correctly they should lie opposite each other.
- Place the closed collector vessel in the transport carton. Close this securely with adhesive tape so that it cannot be accidentally opened.
- Place an empty collector vessel from below into the VSA 300 S and turn in the direction of the arrow until it engages tightly.
- Switch on the main power switch on the treatment unit. The green LED on the display should now indicate "READY FOR OPERATION" again.



Replacement of the collector vessel must be documented in the Operating Handbook (order number 9000-605-72).

18.1 Disposal of the collecting vessel

- In order to ensure proper transportation of the full collector vessels they must be collected by a specialist surgery disposal service. Shipment by mail is not permitted.
- Only original Dürr Dental collector vessels specially designed for the the amalgam separator may be used.



Amalgam collectors are designed to be used only once and must not be reused.

If a collector is reused there is no guarantee that it will close securely. This can lead to the leakage of contaminated fluids or amalgam sludge during transport.

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19. Maintenance

- Depending on the amounts accumulated the amalgam collector vessel will need to be replaced 1-2 times per year.



In order to prevent the risk of infections, always wear water-proof gloves. (VBG 103 §5 and §7)

- Have the function of the waste valve checked annually by a Service Technician and replace it if necessary.
- We recommend that the bacterial filter should be replaced one a year.



Disposal

20. Unit disposal



The machine could possibly be contaminated. Inform the waste management company about this so that they can take all necessary safety precautions.



Non-contaminated plastic parts of the suction unit can be sent for recycling.

The installed control unit, electronic PCB and components should be disposed of as electronic waste. The remaining metal parts (e.g. turbine housing) can be disposed of as metal waste. Close all connections when returning the device, e.g. to your dealer's depot or to Dürr Dental.

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