Clinic Suction Units

V 6000, V 9000, V 12000, V 15000, V 18000

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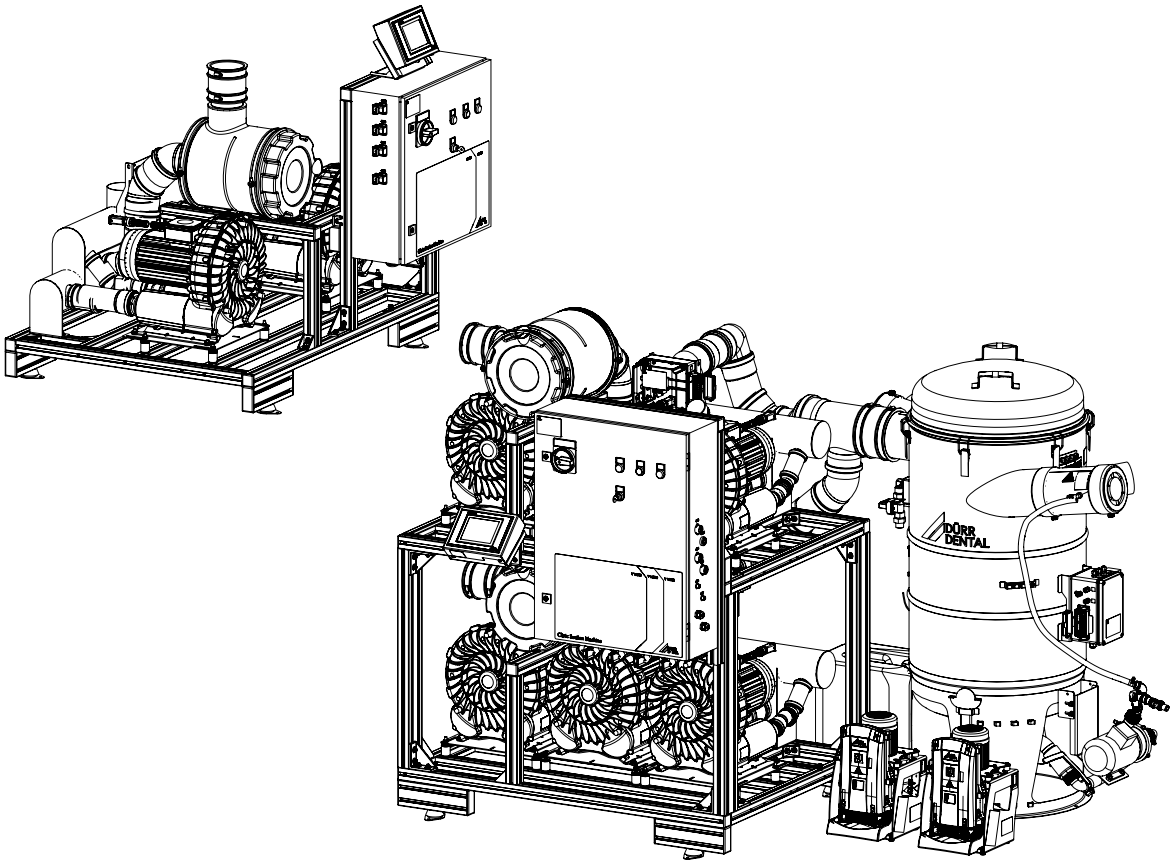

Operating Instructions for Dry and Semi-dry Suction Systems

CE 0297

1806100005L40

DÜRR DENTAL

2019/12

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Important information

1 About this document

These installation and operating instructions form part of the unit.

If the instructions and information in these operating instructions are not followed, Dürr Dental will not be able to offer any warranty or assume any liability for the safe operation and the safe functioning of the device.

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The German version of the installation and operating instructions is the original manual. All other languages are translation of the original manual.
These installation and operating instructions apply to:
V 6000
Order number: 1802-51; 1802100051
V 9000
Order number: 1803-51; 1803100051
V 12000
Order number: 1804-51
V 15000
Order number: 1805-51
V 18000
Order number: 1806-51

1.1 Warnings and symbols

Warnings

The warnings in this document are intended to draw your attention to possible injury to persons or damage to machinery.
The following warning symbols are used:


General warning symbol


Warning – risk of dangerous electric voltages


Warning - automatic start-up of the unit


Biohazard warning


Warning – hot surfaces

The warnings are structured as follows:


SIGNAL WORD
Description of the type and source of danger
Here you will find the possible consequences of ignoring the warning
Follow these measures to avoid the danger.

The signal word differentiates between four levels of danger:
– **DANGER**
Immediate danger of severe injury or death
– **WARNING**
Possible danger of severe injury or death
– **CAUTION**
Risk of minor injuries
– **NOTICE**
Risk of extensive material/property damage

Other symbols
These symbols are used in the document and on or in the unit:


Note, e.g. specific instructions regarding efficient and cost-effective use of the unit.


Please read all of the accompanying documents.


Wear protective gloves


Wear ear protectors


Dispose of properly in accordance with EU Directive 2012/19/EU (WEEE)

CE labelling with the number of the notified body

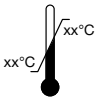

Off

On


Air


Water

Humidity limits



Ambient temperature

Order number

Serial number

Medical device

Health Industry Bar Code (HIBC)


Manufacturer

1.2 Copyright information

2 Safety

Dürr Dental has developed and designed the unit in such a way that dangers are effectively ruled out if the unit is used in accordance with the Intended Use.
Despite this, the following residual risks can remain:
– Personal injury due to incorrect use/misuse
– Personal injury due to mechanical effects
– Personal injury due to electric shock
– Personal injury due to radiation
– Personal injury due to fire
– Personal injury due to thermal effects to skin
– Personal injury due to lack of hygiene, e.g. infection

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2.1 Intended Purpose

The suction unit provides the dental treatment unit with vacuum and volume flow.

2.2 Intended Use

Working in combination with the suction unit with treatment unit, suction handpiece and cannula, the media used in dental treatments (e.g. water, saliva, dentine and amalgam) are removed by suction for disposal.
A semi-dry suction system always requires a central separation unit to ensure separation of the air and fluid/solid particles upstream of the suction unit.
A dry suction system always requires a separation container to ensure separation of the air and fluid/solid particles upstream of the suction unit.
In addition, a condensation separator needs to be installed upstream of the vacuum inlet of the suction unit to collect any condensate that accumulates in the pipe system and direct it outwards.
This unit is technically suitable for the suction of nitrous oxide (laughing gas).
However, when assembling a system for suction 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 suction 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.

2.3 Improper Use

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

› Do not use this device to aspirate flammable or explosive mixtures.
› Do not use the unit as a vacuum cleaner.
› Do not use chemicals containing chlorine or foaming chemicals.
› Operation in operating theatres of explosive areas is not permissible.
› The suction unit must not be set up in the patient environment (with a radius of 1.5m).

2.4 General safety notes

› Always comply with the specifications of all guidelines, laws, and other rules and regulations applicable at the site of operation for the operation of this unit.
› Check the function and condition of the unit prior to every use.
› Do not convert or modify the unit.
› Observe the operating instructions.
› Make the Installation and Operating Instructions available to the person operating the device at all times.
› Wear ear protectors when performing any work involving start-up (e.g. commissioning, maintenance work).

2.5 Specialist personnel

Handling

Unit operating personnel must ensure safe and correct handling based on their training and knowledge.

› Instruct or have every operator instructed in handling the unit.

The following groups are not permitted to operate or use a commercially operated unit:

– People without the necessary experience and knowledge
– People with reduced physical, sensory or mental capabilities
– Children

Installation and repairs

› All installation, resetting, alteration, extension and repair work must be carried out either by Dürr Dental personnel or by a suitably qualified person approved by Dürr Dental.
› Ensure that all electrical connections are made by a suitably qualified electrical engineer.

2.6 Duty to report serious incidents

The operator/patient is required to report any serious incident that occurs in connection with the device to the manufacturer and to the competent authority of the Member State in which the operator and/or patient is established/resident.

2.7 Protection from electric shock

› Comply with all the relevant electrical safety regulations when working on the unit.
› Replace any damaged cables or plugs immediately.

2.8 Only use original parts

› Use only those accessories and optional accessories specified or approved by Dürr Dental.
› Only use only original wear parts and replacement parts.

Dürr Dental accepts no liability for damage resulting from the use of non-approved accessories, optional accessories, or the use of non-original wear parts or replacement parts. The use of non-approved accessories, optional accessories or non-genuine wear parts / replacement parts (e.g. mains cable) can have a negative effect in terms of electrical safety and EMC.

2.9 Transport

WARNING
Infection due to contaminated unit
› Disinfect the unit before transport.
› Close all media connections.

The original packaging provides optimum protection for the unit during transportation.

Dürr Dental will not accept any responsibility or liability for damage occurring during transport due to the use of the incorrect packaging, even where the unit is still under guarantee.

› Only transport the unit in its original packaging.
› Keep the packing materials out of the reach of children.

2.10 Disposal

The unit must be disposed of properly. Within the European Union, the unit must be disposed of in accordance with EU Directive 2012/19/EU (WEEE).

WARNING
Infection due to contaminated unit
› Disinfect the device prior to disposal.
› Close all media connections.

› Uncontaminated parts (e.g. electronics, plastic and metal parts etc.) should be disposed of in accordance with the local waste disposal regulations.
› If you have any questions about correct disposal, please contact Dürr Dental or your dental trade supplier.

An overview of the waste keys for Dürr Dental products can be found in the download area at www.duerrdental.com (document no. P007100155).

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3 Scope of delivery

The scope of delivery and accessories depends on the particular model type of the unit and the suction system used (dry or semi-dry). Information about this can be found in the planning and installation documents or on the delivery note of the system.

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

V 6000 clinic suction system with two suction units 1802-51
*V 6000 clinic suction system with two suction units * 1802100051*
V 9000 clinic suction system with three suction units 1803-51
*V 9000 clinic suction system with three suction units * 1803100051*
V 12000 clinic suction system with four suction units 1804-51
V 15000 clinic suction system with five suction units 1805-51
V 18000 clinic suction system with six suction units 1806-51

– Control unit
– Operating instructions
– Planning and Installation

** can be expanded to V 18000*

The following items are required for operation of the device, depending on the application:

Dry:

Condensation separator for V 6000, V 9000. 1802-01
Condensation separator for V 12000, V 15000, V 18000 1804-01

Semi-dry:

Central separation vessel with waste water pump and vessel rinse set 0704-60
Central separation vessel with waste water pump and vessel rinse/disinfection set 0704-64
Connection expansion set for connection of a second vessel 0704-491-54

3.1 Optional items

The following optional items can be used with the unit:

Vessel rinse/disinfection set 0704-492-51
Noise reduction hood for V 6000, V 9000. 1802-150-51
Noise reduction hood for V 12000, V 15000, V 18000 1804-150-51
Display panel for clinic systems 5922-520-51
Power unit for the display panel 9000-150-54
Switch (8-way) with integrated power supply unit 5922-521-51
Clinic visualisation gateway 5922-610-50
Amalgam separatorCA 4, 50 Hz. 7805-100-50
Amalgam separatorCA 4, 60 Hz. 7805-200-60

3.2 Consumables

Orotol Plus 30 l vessel (in combination with a central separation vessel) CDS110P9599

3.3 Wear parts and replacement parts

The following wear parts need to be changed at regular intervals (refer to the "Maintenance" section):

Suction unit for retrofitting 1803-490-51
Cartridge for bacteria filter 0705-991-05

Information about replacement parts can be found in the Spare Parts Catalogue at www.duerrdental.net

4 Technical data

4.1 V 6000

Type		1802-51 1802100051	
Workplaces GF 100% / 60%		20 / 30	25 / 40
Flow rate p = 0 mbar/hPa p = -160 mbar/hPa	 l/min l/min	 7000 4500	 9000 6000
Electrical data			
Voltage	V	400/3/N/PE AC	
Mains frequency	Hz	50	60
Current consumption	A	12.1	14.1
Motor protection switch settings	A	2 x 6.3	2 x 7
Mains fuses [1]	A	16	20
Type of protection		IP 20	
Protection class		I	
[1] The lowest tripping level for the mains fuses can be calculated by multiplying the number of suction units with the value set at the motor protection switch			
Connections			
Vacuum connection		DN 110	
Exhaust air connection		DN 110	
Waste water connection (DürrConnect)		Ø 20	
General data			
Duty cycle	%	100	
Dimensions (H x W x D): 1802-51 with noise reduction hood [1]	 cm cm	 115 x 130 x 130 [2] 115 x 140 x 125	
Dimensions (H x W x D): 1802100051 with noise reduction hood [1]	 cm cm	 180 x 130 x 130 [2] 210 x 140 x 125	
Additional space required: Front and sides: Rear	 cm cm	 100 50	
Weight, approx. 1802-51 1802100051	 kg kg	 175 199	
Noise level [3] with noise reduction hood	dB(A) dB(A)	72 58	74 61 [4]
[1] The control unit is not attached to the frame of the suction unit in cases where a noise reduction hood is fitted. [2] Incl. control unit [3] In accordance with ISO 3746 [4] Additional auxiliary air valves are required.			
Classification			
Medical product class		IIa	

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4.2 V 9000

Type		1803-51	1803100051
Workplaces GF 100% / 60%		30 / 50	37 / 60
Flow rate p = 0 mbar/hPa p = -160 mbar/hPa	 l/min l/min	 10500 6600	 13500 9000
Electrical data			
Voltage	V	400/3/N/PE AC	
Mains frequency	Hz	50	60
Current consumption	A	16.6	19.6
Motor protection switch settings	A	3 x 6.3	3 x 7
Mains fuses [1]	A	20	25
Type of protection		IP 20	
Protection class		I	
[1] The lowest tripping level for the mains fuses can be calculated by multiplying the number of suction units with the value set at the motor protection switch			
Connections			
Vacuum connection		DN 110	
Exhaust air connection		DN 110	
Waste water connection (DürrConnect)		Ø 20	
General data			
Duty cycle	%	100	
Dimensions (H x W x D): 1803-51 with noise reduction hood [1]	 cm cm	 115 x 130 x 130 [2] 115 x 140 x 125	
Dimensions (H x W x D): 1803100051 with noise reduction hood [1]	 cm cm	 180 x 130 x 130 [2] 210 x 140 x 125	
Additional space required: Front and sides: Rear	 cm cm	 100 50	
Weight, approx. 1803-51 1803100051	 kg kg	 215 248	
Noise level [3] with noise reduction hood	dB(A) dB(A)	74 63	75 66 [4]
[1] The control unit is not attached to the frame of the suction unit in cases where a noise reduction hood is fitted. [2] Incl. control unit [3] In accordance with ISO 3746 [4] Additional auxiliary air valves are required.			
Classification			
Medical product class		IIa	

4.3 V 12000

Type		1804-51	
Workplaces GF 100% / 60%		40 / 70	50 / 80
Flow rate p = 0 mbar/hPa p = -160 mbar/hPa	 l/min l/min	 14000 9000	 18000 12000

Electrical data			
Voltage	V	400/3/N/PE AC	
Mains frequency	Hz	50	60
Current consumption	A	21.1	25.1
Motor protection switch settings	A	4 x 6.3	4 x 7
Mains fuses [1]	A	25	32
Type of protection		IP 20	
Protection class		I	

[1] The lowest tripping level for the mains fuses can be calculated by multiplying the number of suction units with the value set at the motor protection switch

Connections	
Vacuum connection	2x DN 110
Exhaust air connection	2x DN 110
Waste water connection (DürrConnect)	Ø 20

General data			
Duty cycle	%	100	
Dimensions (H x W x D) with noise reduction hood [1]	cm cm	180 x 130 x 130 [2] 210 x 140 x 125	
Additional space required: Front and sides: Rear	 cm cm	 100 50	
Weight, approx.	kg	335	
Noise level [3] with noise reduction hood [4]	dB(A) dB(A)	74 61	76 62 [4]

[1] The control unit is not attached to the frame of the suction unit in cases where a noise reduction hood is fitted.
[2] Incl. control unit
[3] In accordance with ISO 3746
[4] Additional auxiliary air valves are required.

Classification	
Medical product class	IIa

4.4 V 15000

Type		1805-51	
Workplaces GF 100% / 60%		50 / 80	62 / 100
Flow rate p = 0 mbar/hPa p = -160 mbar/hPa	 l/min l/min	 17500 11100	 22500 15000

Electrical data			
Voltage	V	400/3/N/PE AC	
Mains frequency	Hz	50	60
Current consumption	A	25.6	30.6
Motor protection switch settings	A	5 x 6.3	5 x 7
Mains fuses [1]	A	32	32
Type of protection		IP 20	
Protection class		I	

[1] The lowest tripping level for the mains fuses can be calculated by multiplying the number of suction units with the value set at the motor protection switch

Connections	
Vacuum connection	2x DN 110
Exhaust air connection	2x DN 110
Waste water connection (DürrConnect)	Ø 20

General data			
Duty cycle	%	100	
Dimensions (H x W x D) with noise reduction hood [1]	cm cm	180 x 130 x 130 [2] 210 x 140 x 125	
Additional space required: Front and sides: Rear	 cm cm	 100 50	
Weight, approx.	kg	375	
Noise level [3] with noise reduction hood	dB(A) dB(A)	76 63	77 65 [4]

[1] The control unit is not attached to the frame of the suction unit in cases where a noise reduction hood is fitted.
[2] Incl. control unit
[3] In accordance with ISO 3746
[4] Additional auxiliary air valves are required.

Classification	
Medical product class	IIa

4.5 V 18000

Type		1806-51	
Workplaces GF 100% / 60%		60 / 100	75 / 120
Flow rate p = 0 mbar/hPa p = -160 mbar/hPa	 l/min l/min	 21000 13200	 27000 18000

Electrical data			
Voltage	V	400/3/N/PE AC	
Mains frequency	Hz	50	60
Current consumption	A	30.1	36.1
Motor protection switch settings	A	6 x 6.3	6 x 7
Mains fuses [1]	A	40	40
Type of protection		IP 20	
Protection class		I	

[1] The lowest tripping level for the mains fuses can be calculated by multiplying the number of suction units with the value set at the motor protection switch

Connections	
Vacuum connection	2x DN 110
Exhaust air connection	2x DN 110
Waste water connection (DürrConnect)	Ø 20

General data			
Duty cycle	%	100	
Dimensions (H x W x D) with noise reduction hood [1]	cm cm	180 x 130 x 130 [2] 210 x 140 x 125	
Additional space required: Front and sides: Rear	 cm cm	 100 50	
Weight, approx.	kg	415	
Noise level [3] with noise reduction hood	dB(A) dB(A)	76 65	78 68 [4]

[1] The control unit is not attached to the frame of the suction unit in cases where a noise reduction hood is fitted.
[2] Incl. control unit
[3] In accordance with ISO 3746
[4] Additional auxiliary air valves are required.

Classification	
Medical product class	IIa

4.6 Central separation unit

Type		0704-60 0704-64
Max. pressure	mbar/hPa	-200
Volume capacity, approx.	l	300
Vessel material: Steel designation Material number Material designation		 X2CrNiMo17-12-2 1.4404 AISI 316L
Dimensions (ø / H)	cm	65 / 145
Weight, approx.	kg	108
Connections: 2x inlet 1x outlet to suction unit Waste water / drain Fresh water Water pressure	 mm mm mm bar	 DN 110 DN 160 25 / DN 40 GU 3/4" 3 - 5
Float sensor: Protective low voltage Switching current	 V AC A	 24 6
Waste water pump: Voltage Current consumption Output Type of protection	 V A W	 230 2.8 370 IP 54

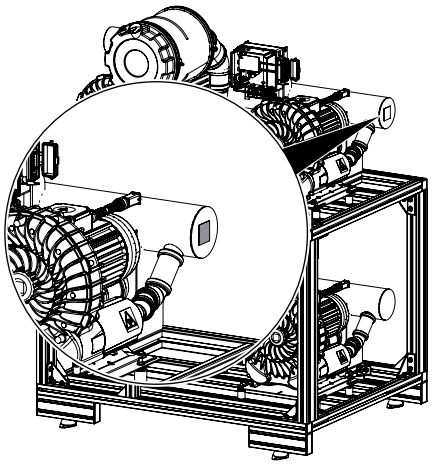
4.7 Ambient conditions

Ambient conditions during storage and transport		
Temperature	°C	-10 to +60
Relative humidity	%	< 95

Ambient conditions during operation		
Temperature	°C	+10 to +40
Relative humidity	%	< 70

4.8 Type plate

The type plate of the unit is located on the side on the manifold.



4.9 Evaluation of conformity

This unit has been subjected to a conformity assessment procedure in accordance with the current relevant European Union guidelines. This unit conforms to all relevant requirements.

5 Functional description

Clinic suction units (1) are designed for use in combination with dry or semi-dry suction systems. This means that **a separation stage** must be provided **before the air enters** the clinic suction unit. During this separation, the aspirated fluids are separated from the air content.
On **dry suction systems** the separation takes place at every treatment unit (e.g. using an integrated Dürr Dental CS 1 or CAS 1).
For **semi-dry suction systems** the separation takes place via a central separation unit, to which multiple treatment units can be connected.
During patient treatment fluids (saliva and blood) or even larger particles (amalgam, dentine, plastic particles) are aspirated and drawn into the cannula. Therefore a fine filter is usually installed in the vicinity of the treatment unit in order to hold back the larger particles.
One or two condensation separators (7) should be fitted In front of the clinic suction unit depending on the model (for dry air suction systems only as accessories). The model type with two condensation separators needs a collector pipe (10) installed before the condensation separators. The condensation separators hold back water, which accumulates due to the temperature gradient in the pipes, in order to protect the clinic suction unit from damage.
Clinic suction units operate on the side channel principle and are driven by robust three-phase current motors.
As the exhaust air from the suction unit contains bacteria and germs, we recommend that the exhaust air pipes are routed to the roof and then to the outside. In addition, a bacteria filter for the exhaust air (2) is also integrated for hygienic reasons. After approx. 3500 operating hours, a message will appear on the display panel (6) of the control unit (4) requesting a change of the filter cartridge in the exhaust air bacteria filter.
The clinic suction unit is fitted with a programmable controller (PLC). This is integrated in the control unit and which utilises a pressure sensor to switch the individual suction units on or off as required to provide smooth and even suction power.
During aspiration of fluids from the patient's mouth with a rate of flow of approx. 3000 l/min. (approx. 10 treatment units), **one** suction unit is in operation. Depending on the level of vacuum, mechanical auxiliary air valves (3) and an electrically controlled valve open and additional air flows in. This prevents the suction power from rising too high. The auxiliary air also exerts a cooling effect on the clinic suction unit.
If the vacuum falls below a certain level due to a rising number of operators using the system then a further suction unit will switch on and there may be several **suction units** operating at the same time. In addition, mechanically regulated auxiliary air valves control the required intake air. A nonreturn valve on the exhaust air side of each suction unit prevents air from entering the turbine of an idle suction unit, which would otherwise lead to a loss of suction performance.
The PLC controller is equipped with an intelligent selector switch function, which continually changes the order in which the suction units are actuated depending on the number of operating hours a unit has been working. This ensures that the different suction units are operated for the same length of time.
In the condensation separator (dry air suction systems only) there is a level sensor (8). When the level reaches max. level, it outputs a signal to switch on the condensation pump (9) and empty the condensation separator.
If the condensation separator is not emptied, a red warning light will show on the control unit 60 seconds after the max. level is exceeded. As soon as the problem has been corrected a button can be pressed to reset the red warning light.

Clinic suction units in combination with a central separation unit as a semi-dry suction system.
The central separation unit (11) has up to 2 inlets and a connection to the clinic suction unit. The tangential inlet openings allow a rate of flow of up to 18000 l/min. Up to 100 treatment units can be connected to a central separation vessel, while maintaining a useful simultaneous factor of 60%.
Up to **50 treatment units** can be connected to **each inlet** (at 60% SF) of the central separation vessel. If there are more than 50 treatment units we recommend distributing them between both inlets in order to provide an even rate of flow.
3 float switches are distributed at different heights in the central separation unit. A float switch will activate the waste water pump (12) if the fluid level reaches approx. 50%. The pump transports the fluid out of the central separation vessel to the waste water drain or to the amalgam separator (16).
A safety switch-off is activated at a level of approx. 75% when the 2nd float switch engages, i.e. the suction units remain switched off until the fluid level has fallen. Pressing the yellow button on the control unit cancels the safety switch-off.
The 3rd float switch is used when the control unit is defective and the clinic suction unit needs to be operated in **emergency mode**.
When the level of fluid in the central separation vessel reaches 75% in emergency mode, the unit is immediately switched off to prevent the risk of excessive suction of fluids.
The aspirated air and fluid mixture is directed over a coarse filter at the inlet connection of the central separation vessel and then tangentially fed to the collector. Solid particles greater than 3 mm in size are held back by the coarse filter. The aspirated air and fluid mixture is separated in the central separation vessel. The air (on vacuum side) will pass through the turbine of the suction units and then escape as exhaust air through the exhaust air filter to the outside.

The fluids (blood, saliva, amalgam etc.) are propelled by the waste water pump against the system vacuum through a non-return valve and the flow control valve to the waste water drainage system or to an amalgam separator.
The non-return valve serves to ensure that no vacuum can be built up to the amalgam separators.
The flow reducers restrict the waste water flow to max. 16 l/min per amalgam separator. This is the maximum amount that the amalgam separator operating at a separation efficiency of ≥ 95% can cope with.
The amalgam separator switches on or off automatically depending on the level of fluids being transported.
A container rinse (13) with water or water plus Orotol is integrated in the central separation vessel. The water inflow valve is opened every 24 hours for a period of 3 minutes by the control unit of the clinic suction unit.
After 2 minutes the Orotolvalve (14) also opens so that Orotol Plus is added to the water for approx. 1minute. This keeps the central separation collector and the connected amalgam separator as hygienically clean as possible.

When connecting a water rinse the local rules and regulations on water supplies must be observed (e.g. free incline, pipe separation).

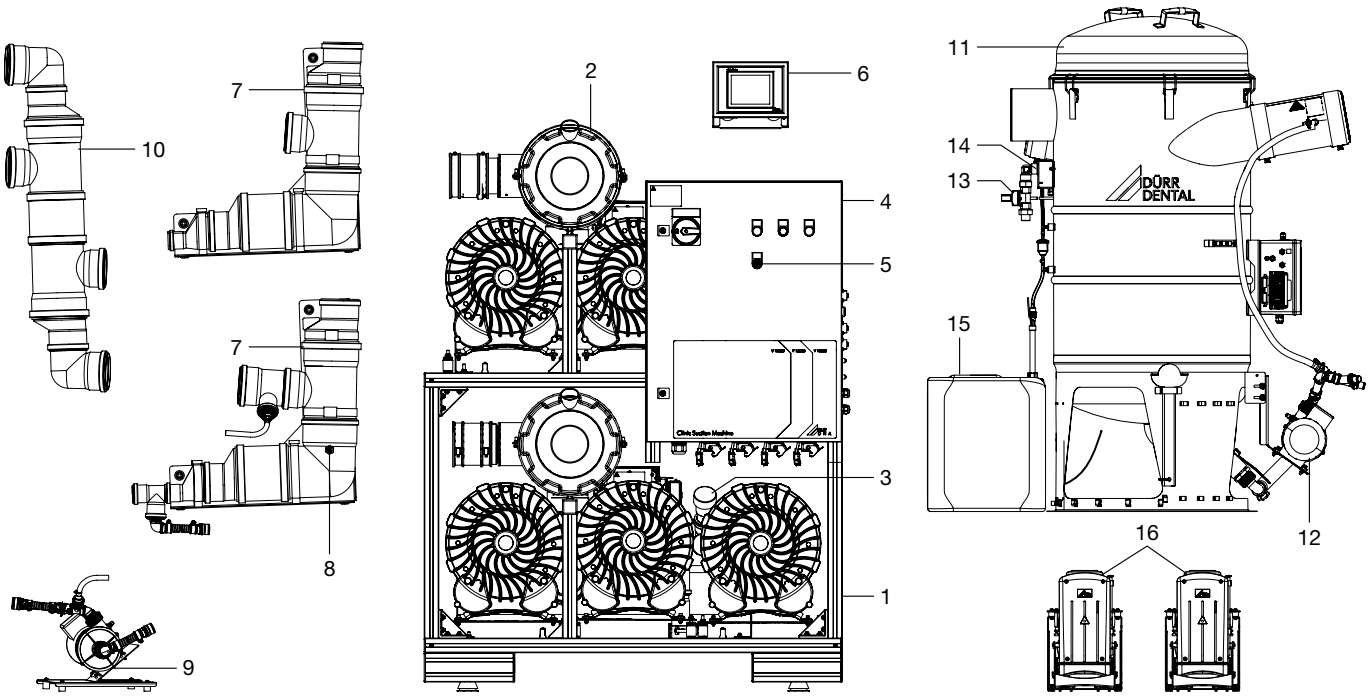
The 30 l Orotolvessel (15) is equipped with a suction tube with a float sensor that sends a signal to the PLC controller when the Orotolvessel is empty and needs to be changed.
If the control unit fails, it is possible to switch to **emergency mode** using the key-operated switch (5). Two positions can be chosen using the key-operated switch:

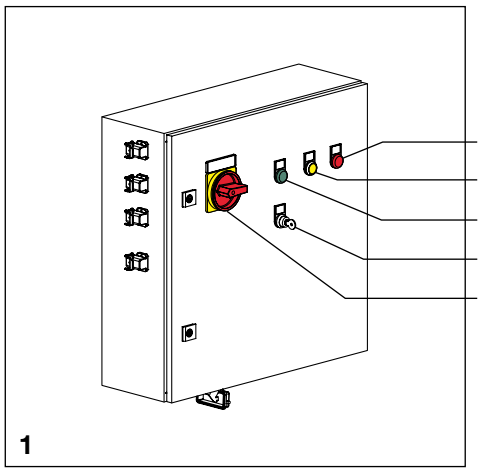
0 - Normal operation
I - Emergency mode

In emergency mode, only one suction unit and the auxiliary air valve are activated. This means the number of treatment units that can be used simultaneously is limited. In this operating mode the vacuum is only limited mechanically via the auxiliary air valve, which can lead to an excessive build-up of vacuum.

Key:

1	Clinic suction unit
2	Exhaust air filter
3	Auxiliary air valve
4	Control unit
5	Key-operated switch
6	Display panel
7	Condensation separator
8	Float sensor
9	Condensation pump
10	Manifold
11	Central separation vessel
12	Waste water pump
13	Collector rinse
14	Orotolvalve
15	Orotolvessel
16	Amalgam separator





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Usage

6 Operation and display on the control unit

1 Main power switch
The main power switch is used to switch the complete system on or off

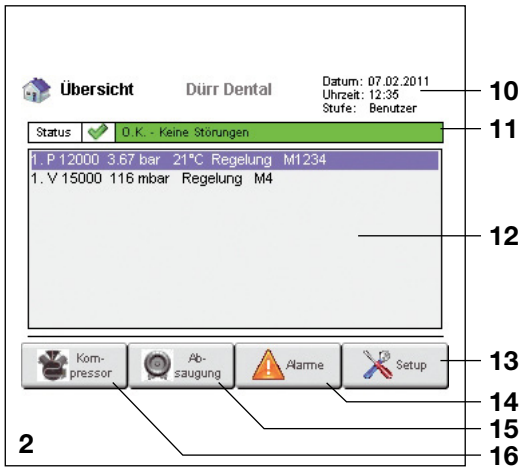
2 Key-operated switch
The key-operated switch is used to change the unit over to emergency mode in the event of a system fault (refer also to the Functional Description).

3 The green LED lights up when the unit is "Ready for operation".

4 Press the yellow key to cancel the fault display on the unit.

5 The red LED lights up if there is a fault with the unit.

7 Operation and display on the display panel



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Once you switch on the display panel – and after a short wait – the **Overview** menu appears. From the various submenus you can return to the main menu via the **Home** button.

10 Display of the date, time and logged-on user status.

11 Status LED for all connected systems.

12 Display window with list of connected systems and display of operating states.

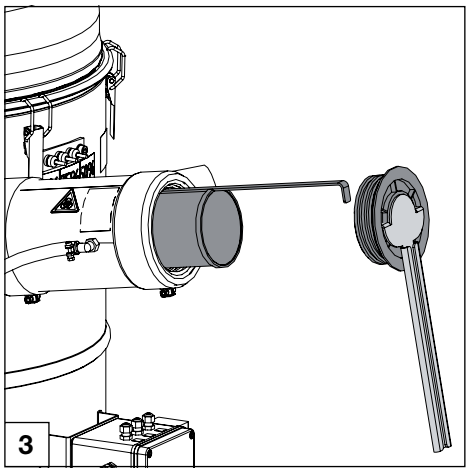
13 **Setup** button for opening the setup menu.

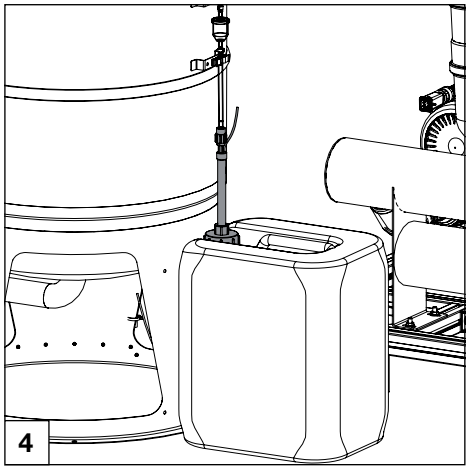
14 **Alarms** button for viewing active alarm messages.

15 **Aspiration** button for querying the status of the connected suction systems.

16 **Compressor** button for querying the status of the connected compressor systems

Further information about admin and operation of the system via the display panel can be found in the instructions enclosed with the display panel.


3


4

8 Central separation unit

8.1 Cleaning the coarse filter

To prevent any risk of infection, always wear protective equipment (e.g. liquid-tight protective gloves, protective goggles, face mask).

Take out and clean the coarse filter 1x per month. Use the supplied tool to do this.

› Loosen the filter lid with the tool and unscrew.

› Pull out the filter for cleaning.

8.2 Replacing the Orotolvessel

The Orotolvessel is sufficient for approx. 6 months.

Vessel empty:
The status LED on the display panel changes colour and the following text appears: "Warning – A fault has occurred". The reason for the warning is displayed in the "Alarm" user level, e.g. "Filling level in Orotol vessel too low, station 1: V1".

Proceed as follows:

› Unscrew the lid of the empty vessel.

› Carefully take out the intake manifold.

› Insert the intake manifold into the full vessel and screw it tight.

8.3 Replace the amalgam collecting container

To prevent any risk of infection, always wear protective equipment (e.g. liquid-tight protective gloves, protective goggles, face mask).

Amalgam collecting container full:
The Indication on the display panel changes to the alarm level and the following text appears: "Alarm – A fault has occurred". The reason for the alarm is displayed in the user level, e.g. "Fault – amalgam separator, separation container, station 1: V1".

Proceed as follows:

› Unplug the amalgam separator.

› Change the collecting container.

› Plug in the amalgam separator.

› Acknowledge the fault message.

Further information about changing the amalgam collecting container can be found in the operating instructions that are enclosed with the amalgam separator.

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9 Maintenance for Service Technicians

All maintenance work must be performed by a qualified expert or by one of our Service Technicians. Points 10 - 13 depend on the particular type of suction system used and may therefore not always be necessary.

To prevent any risk of infection, always wear protective equipment (e.g. liquid-tight protective gloves, protective goggles, face mask).

To prevent the risk of hearing damage, always wear ear defenders when working on noisy units.

Maintenance work	Maintenance interval	Order number
1. Check noise reducer, change if necessary	12 months	0705-481-50
2. Check nonreturn valves on exhaust air side of the clinic suction units, change if necessary	12 months	0705-405-00
3. Measurement of rate of flow at largest suction hose: 250-330 l/min	12 months	Rate of flow measuring device 0700-060-50
4. Change filter cartridge of exhaust air filter (number of hours on control unit display panel)	3,500 hours	0705-991-05

WARNING
Risk of infection due to bacteria present in the exhaust air filter
› Wear protective gloves and a face mask when changing the filter.

5. Function check of vacuum control Activation of units	12 months	
6. Check operating hours on display panel	12 months	
7. Check mechanical operation of auxiliary air valve	12 months	7130-060-00
8. Check electrical operation of auxiliary air valve	12 months	7560-500-70
9. Check condensation separator	12 months	Level switch 9000-139-12E
10. Clean float switch in central separation vessel (50%/75%), replace if necessary	12 months	9000-139-19

WARNING
Risk of infection due to bacteria present in the central separation vessel
› Always wear protective gloves and a face mask when working on the unit.

11. Check the float switch in the Orotolvessel	12 months	0704-493-00

WARNING
Risk of infection due to bacteria present in the central separation vessel
› Always wear protective gloves and a face mask when working on the unit.

12. Check water valve on the central separation vessel	12 months	9000-303-78
13. Check the Orotolvalve on the central separation vessel	12 months	9000-303-89

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