

# Suction Systems for dental surgeries – perfect suction power from Dürr Dental

Powerful wet- and dry suction units



COMPRESSED AIR  
SUCTION  
IMAGING  
DENTAL CARE  
HYGIENE

# Dürr Dental – top quality with the seal of quality “Made in Germany”

The name Dürr Dental stands for progress and innovation in dentistry. And so it has been for many decades. As a leader of innovation, the company sets standards through its developments and offers the right product for every need.



## You can rely on Dürr Dental

In the fields of compressed air, suction, imaging, dental care, and hygiene Dürr Dental supplies numerous tailored system solutions the quality of which is appreciated by dentists all around the world. Many standards are based on the company's innovations. In 1955 Dürr Dental developed the first mobile suction pump to improve work economics. In 1964, the company launched a suction system that made it possible to treat patients in a supine position for the first time in Europe. One year later, the first oil-free compressor for dentistry was developed by the firm.

Dürr Dental is setting new standards. Today, the company's foremost aim is the same as it always has been, – to provide top quality at all times. For this reason, nearly all of Dürr Dental's production takes place in Germany.



Suction systems by Dürr Dental really make a difference! The range of V- and VS Suction Units for the practice surgery enables up to four operators to work simultaneously.



VS stands for “vacuum generation” and “separation”. The wet suction systems combine aspiration and separation centrally on a transport drive in a VS suction unit.



Special solutions like the VSA 300 S are ideally suited for a single treatment station. Also ideal is the mobile suction unit Variosuc or VC 45.



In the case of dry air suction systems, the separation function is integrated into the treatment units. Only dry air reaches the V Suction Unit.



Using both, Orotol® plus and MD 555 cleaner together will protect all suction unit components – including the pipe system! against deposits, contamination, and incrustation.



DürrConnect is a comprehensive range of numerous connection elements that facilitate the installation of V and VS suction units.

# The aspiration of germ-laden spray mist

What is taken for granted today was a real sensation in the 1960s:

The treatment of patients in a supine position. This only became possible once Dürr Dental developed its systematic suction method.



## High suction power for safe treatment

Suction systems have to meet extremely high requirements. Despite ongoing exposure to waste water, blood, saliva, dentine, and various filling materials (e.g. plastic, ceramic, and precious metals), they must produce their full suction power at all times. Without aspiration, an aerosol cloud would spread throughout the entire treatment room as a result of the cool spray of modern, fast-running instruments. This aerosol cloud contains germs, bacteria, and viruses. The resulting risk of infection is efficiently reduced through this systematic suction technology with a suction power of around 300 l/min. The suction power is generated by the suction unit – the driving force of the suction system.

The suction systems of market leader Dürr Dental deliver top performance when it comes to suction power. Thanks to their robust design, they have an extremely long service life while reducing maintenance efforts. Investing in a Dürr Dental suction system really pays off – not only through the facilitation of daily treatment but also because such systems reduce operating and maintenance costs.



The modular Dürr Dental Comfort hose manifold, shown here with the saliva ejector, Universal Cannula III, and a syringe element

# Finding the right suction system

Whether your surgery has one or several treatment rooms, Dürer Dental has the solution you need.

The power of the suction systems is based on a factor of 300, which represents a suction power of 300 l/min on the large suction cannula. For example, the V 600 has the power of two operator workstations working at the same time.

## Wet Suction System

VS = vacuum-generating suction unit with integrated separation



VS 1200 S Suction Unit

VSA = vacuum-generating suction unit with integrated separation and amalgam separator



VSA 300 S Suction Unit

## Dry Suction System

V = separation in treatment unit, dry airways to suction unit



V 1200 S Suction Unit

## Special solutions

VC 45 = Surgical Suction Unit  
Ideal for blood, dentine, and bone residue



VC 45 Surgical Suction Unit

Variosuc = Mobile System  
With or without amalgam separator



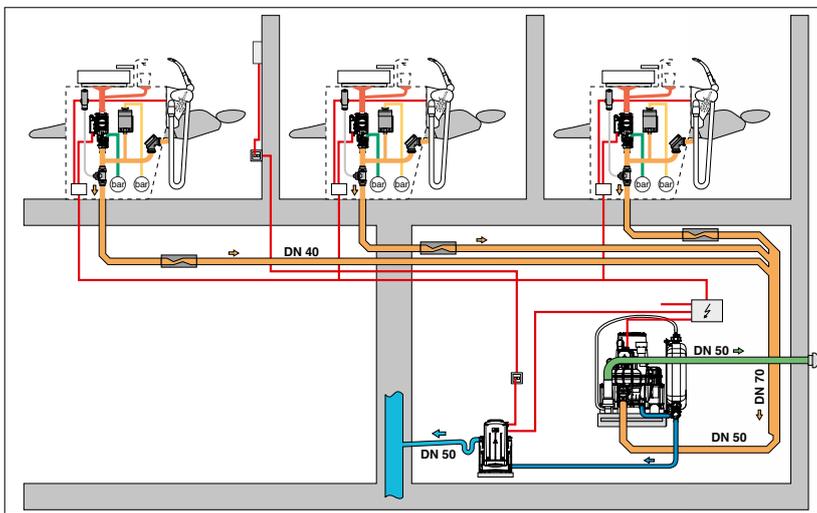
Variosuc Mobile System

# Suction units by Dürr Dental – for that little bit extra

The work processes and available space of each dental surgery are unique. When developing suction systems, Dürr Dental always takes this uniqueness into account. Over the course of years, this results in system solutions that leave nothing to be desired.

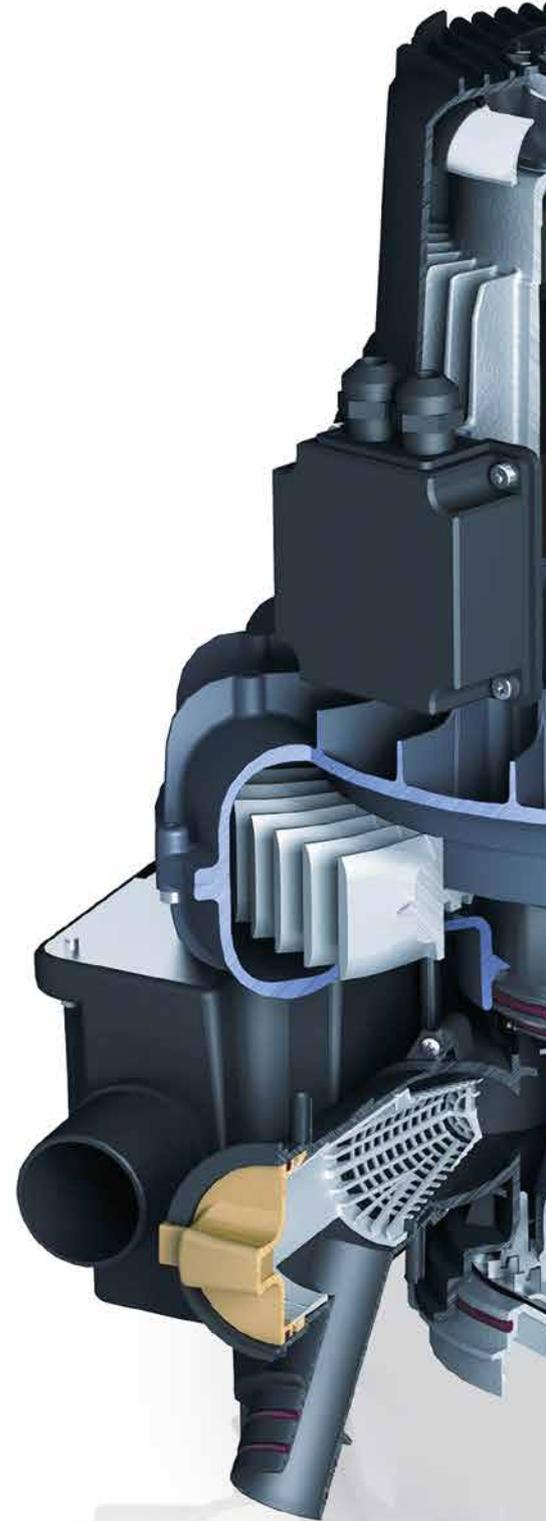
## Discover the difference!

The surgery suction unit range can meet the requirements of up to six treatment rooms and – depending on the model – allows simultaneous work by up to four operators. However, when it comes to the needs of a particular surgery, the required power and number of rooms and operators are not the only important issues. In addition, technical matters relating to the architecture, structure, and facilities need to be taken into account. Suction systems by Dürr Dental can be installed easily and flexibly – in a basement, adjoining room, or in the treatment room itself.



Example installation: Dry VS 900 S Suction System, placed in a basement

-  Spittoon discharge pipe
-  Secretion-carrying suction line
-  Dry suction line/exhaust air line
-  Drain line



### Cost-effective and compact

In the case of VS Suction Units, aspiration and separation are combined centrally on one drive shaft. This is cost-effective and saves space.

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### Corrosion protection thanks to galvanic coating

The housing components and high-precision runners are made from coated aluminium or highly corrosion-resistant plastic.

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### Exceptionally quiet

The aerodynamic turbine wheels and integrated sound suppressors ensure low-noise operation.

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### Regulating and cooling

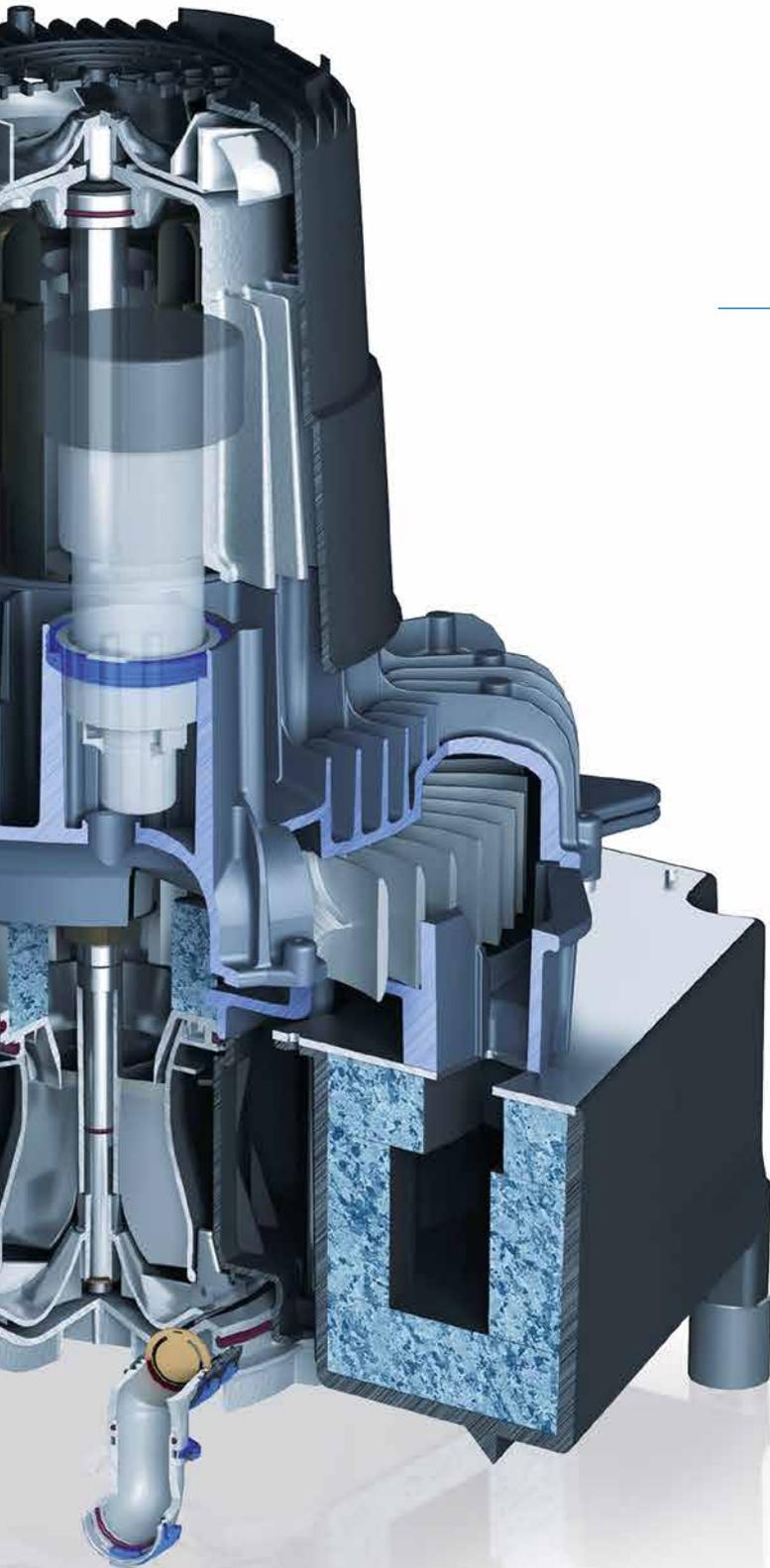
The integrated auxiliary air valve regulates the suction power and ensures sufficient internal cooling.

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### Integrated humidity protection

In order to protect against condensed water, all dry V suction units are fitted with a condensate separator.

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# The wet VS Suction Systems

Dürr Dental provides the right suction solution for every surgery.

When it comes to the remodelling or modernization of a dental surgery, VS combination suction units can be used even in difficult installation conditions.

## Powerful and cost-effective

“VS” stands for the combination of vacuum generation and separation. VS suction units are called wet systems because the entire suction and separation function is combined centrally in a VS suction unit on one drive shaft. This allows significant savings to be made. For example, there is no need for separate separation machines on the Dental Units and some of the operating costs of traditional systems – such as water ring pumps – are no longer relevant.

Dürr Dental VS Suction Systems are power packs that you can rely on. They can aspirate large quantities of liquids and serve up to four operators at the same time without interruption. Thanks to the integrated two-stage separation system, the aspiration of secretions and blood foam into the turbine space is reliably prevented. The drive of the combination suction unit runs smoothly and without vibration and is extremely reliable. All important functional elements have corrosion protection finish, which contribute to their extraordinary long service lives.



VS 300 S

Treatment chairs: 1-2

Simultaneous operators: 1



VS 600

Treatment chairs: 2-3

Simultaneous operators: 2



VS 900 S

Treatment chairs: 3-5

Simultaneous operators: 3



## Perfect pipe system cleaning and hygiene

Central installation in a dental surgery with several treatment rooms places great demands on the cleaning and hygiene of the pipe system. With this in mind, Dürr Dental has developed the "tidal wave". This is a flow accelerator. It collects the waste water from the spittoon so that it can then be aspirated in flushes by the central suction unit. As a result, the suction unit independently eliminates the risk of deposits, unpleasant odours, and hygiene relevant situations.



Thanks to the installation frame, the Dürr Dental flow accelerator is easily accessible in the base



VS 1200 S

Treatment chairs: 4-6

Simultaneous operators: 4

### This is what counts:

- Corrosion protection thanks to galvanic coatings on housing parts and runners
- High-quality, robust drive motors
- Reliable continuous operation
- Shared drive for separation and vacuum generation functions, making the systems extremely cost-effective and reliable with low space requirements
- High foam tolerance thanks to innovative two-stage separation system
- High suction power within seconds
- Independent elimination of deposits through use of flow accelerator

# Special and mobile solutions

VSA 300 S, VC 45, and Variosuc

## VSA 300 S – three components in one unit

Taking all requirements of a suction system into account, the suction unit needs to separate the air/secretion solids mix and to separate the amalgam particles and collect them in a collector vessel. And it should do all this as economically and ecologically as possible. This sounds like a major system with corresponding costs. The VSA technology allows Dürr Dental to run all three components – the suction motor, separation unit, and amalgam separator – in one system unit and on one shaft in as little space as possible – in the form of the VSA 300 S.



The VSA 300 S is really easy to install in a basement room, a room adjoining the surgery, or in the treatment room itself

### This is what counts:

- 3-in-1 technology, all on one shaft
- Cost-effective, environmentally friendly system
- Automatic fill level control
- Flexible installation options



## VC 45 – the surgical suction unit for implantology and OMF surgery

The VC 45 surgical suction unit ensures smooth surgical operations. The device performs quietly but impressively and meets the high requirements of implantology, oral surgery, and OMF surgery. With its powerful and robust membrane pump and container system, the device accurately removes large quantities of blood and gum, dentine, and bone residue. The continuous move adjustable VC 45 surgical suction unit works with a suction volume of 45 l/min and a constant vacuum of up to 910 mbar.



The multi-use secretion containers are made from high-quality plastic and can be autoclaved. Alternatively, disposable containers are available.

### This is what counts:

- Uninterrupted, ergonomic work
- Accurate removal of large quantities of blood and tissue, dentine, and bone residue
- Simple and hygienic elimination of secretions

## Variosuc – the mobile suction unit

The Variosuc VS and VSA variants impress users with their compact design, ease of use, and flexibility. With the Variosuc system, the high standards of Dürr Dental suction systems can be maintained even in exceptional circumstances. Once connected up to the socket output, the mobile appliance is ready for use immediately and can be flexibly used at your dental surgery.

### This is what counts:

- Easy to operate and flexible
- Simply connect to the socket outlet and it's ready for use straight away
- Impressive VS and VSA variants

# The dry V Suction Systems

Sophisticated technology with convincing suction power.

High-quality, robust drive motors, reliable continuous operation, great suction power within seconds, and flexible installation options.

## Amazing power

The dry air suction systems by Dürr Dental are extremely powerful yet run really quietly. The V suction units are called dry systems because the aspirated substances are quickly guided into a separation/amalgam elimination unit. These components are integrated into the Dental Unit. Only dry air reaches the suction unit.

Seven to eight hours of continuous operation are not unusual. This places high demands on the technology. Dürr Dental V suction machines fulfil these requirements tirelessly. The contact-free, rotating turbine wheels generate the required vacuum and flow rate (suction power). A reliable electric motor enables non-stop operation. To reliably protect against condensed water, all models are fitted with a condensate separator as standard.



V 300 S

Treatment chairs: 1-2

Simultaneous operators: 1



V 600

Treatment chairs: 2-3

Simultaneous operators: 2



V 900 S

Treatment chairs: 3-5

Simultaneous operators: 3



### This is what counts:

- High-quality, robust drive motors
- Reliable continuous operation
- High-quality condensate separator to protect the unit from condensate
- Runners made from corrosion-resistant plastic (V 300 S, V 600) or coated aluminium (V 900 S, V 1200 S)
- High suction power within seconds



V 1200 S  
Treatment chairs: 4-6  
Simultaneous operators: 4



V 2400  
Treatment chairs: Up to 14  
Simultaneous operators: 8



A wide range of accessories is available for each of the V suction units. A condensate separator is fitted as standard on all models.

# The unbeatable double act to keep your suction unit in top form

Around half of all suction units suffer from restricted performance due to deposits and blockages.

This is because most units are disinfected but are not cleaned as well. This results in substances such as blood, secretions, tooth material, filling materials, and prophylaxis powder forming a dense sludge. Consequently, blockages occur in the suction unit, causing a drop in power and – in the worst case scenario – complete standstill.



## Orotol® plus Suction unit disinfection

Foam-free, high-yield concentrated liquid for the simultaneous disinfection, deodorization, cleaning, and maintenance of all suction units and amalgam separators.

- For suction systems, recommended by leading suction unit manufacturers
- No germ resistance development
- Proven material compatibility
- Maintains the value of the suction unit
- Loosens and disinfects bio-film and prevents sludge (blood and proteins)
- Lasting action
- Wide range of effectiveness

## MD 555 cleaner Special cleaner

Foam-free concentrated liquid for dental suction units and amalgam separators.

- Strong cleaning power to eliminate spray powder deposits
- Loosens incrustations and sludge formed from lime and prophylaxis powder (descaling agent)
- Ideal in combination with Orotol® plus or Orotol ultra
- Effective combination of organic acids and foam-free surfactants

## The solution from Dürr Dental: Orotol® plus and MD 555 cleaner

Orotol® plus and MD 555 cleaner work together to protect all suction unit components – including the pipe system! Against deposits, contamination, and incrustation. If used regularly, they can prevent a drop in performance and lengthen the life of the suction unit.



### Without Orotol® plus and MD 555 cleaner



Deposit container,  
sludged up



Centrifuge drum has  
restricted performance  
due to build-up of sludge



Centrifuge housing,  
incrustated - total failure  
of suction unit



### With Orotol® plus and MD 555 cleaner



Deposit container,  
no sludge



Centrifuge drum  
runs cleanly and  
without sludge



Centrifuge housing -  
no incrustation possible

# DürrConnect - the intelligent connection system

Dürr Dental suction units have an intelligent design.

This makes them easier and more flexible to install.

However, each surgery differs in some particularities.

The solution: DürrConnect.

## Professional service technicians place their trust in DürrConnect

With DürrConnect, Dürr Dental has compiled a comprehensive range of accessories for the V and VS combination suction units in order to facilitate the installation of the suction units and ensure that each system performs well and without problems. The DürrConnect system set is an installation case with more than 120 connection elements (more than 160 in the special version). Hose connectors, distributors, valves, transition pieces, and numerous other elements in different variants ensure safe connections at all times.



# The technology at a glance

VS suction units	VS 300 S	VSA 300 S <sup>6</sup>	VS 600	VS 600	VS 900 S	VS 900 S	VS 1200 S
<b>Voltage (V)</b>	230 (1~)	230 (1~)	230 (1~)	400 (3~)	230 (1~)	400 (3~)	400 (3~)
<b>Frequency (Hz)</b>	50-60	50	50	50-60	50	50	50
<b>Electrical output (kW)</b>	0.58-0.8 <sup>1</sup>	0.58	1.1	1-1.42 <sup>1</sup>	1.68	1.97	2.0
<b>Current consumption (A)</b>	2.9-3.7 <sup>1</sup>	2.9	5.0	1.8-4.0 <sup>1</sup>	7.4	6.3/3.6	3.8
<b>Vacuum mbar (hPa)</b>	180	180	170 (NLV) <sup>2</sup>	170 (NLV) <sup>2</sup>	170 (NLV) <sup>2</sup>	170 (NLV) <sup>2</sup>	170 (NLV) <sup>2</sup>
<b>Number of operators</b>	1	1	2	2	3	3	4
<b>Number of rooms at 60 % at same time</b>	1-2	1	3	3	5	5	6 <sup>5</sup>
<b>Max. flow rate (l/min)</b>	4	5	10	10	16	16	24
<b>Dimensions without housing (H x W x D cm)</b>	37 x 31 x 31	48 x 31 x 31	50 x 42 x 41	50 x 42 x 41	52 x 41 x 42	52 x 41 x 42	52 x 41 x 42
<b>With housing (H x W x D cm)</b>	51 x 36 x 36	51 x 36 x 36	65 x 49 x 53	65 x 49 x 53	55 x 49 x 53	55 x 49 x 53	55 x 49 x 53
<b>Weight without housing (kg)</b>	12,5	14	25	25	34	33	33
<b>With housing (kg)</b>	20	21.5	45	45	54	52	52
<b>Noise level<sup>3</sup> without housing [dB(A)]</b>	Approx. 63-65 <sup>1</sup>	Approx. 63	Approx. 63	Approx. 63-68 <sup>1</sup>	Approx. 65	Approx. 65	Approx. 66
<b>With housing [dB(A)]</b>	Approx. 54-56 <sup>1</sup>	Approx. 54	Approx. 55	Approx. 55-59 <sup>1</sup>	Approx. 58	Approx. 58	Approx. 59
<b>Separation efficiency (%)<sup>4</sup></b>	With CA 1: 97.9	97.5	With CA 4: 98.9	With CA 4: 98.9	With CA 4: 98.9	With CA 4: 98.9	With CA 4: 98.9
<b>Quality mark</b>	Z 64.1-20	Z 64.1-15	Z 64.1-22	Z 64.1-22	Z 64.1-22	Z 64.1-22	Z 64.1-22

<sup>1</sup> The value ranges result from the power frequency 50-60 Hz. <sup>2</sup> AAV = auxiliary air valve. <sup>3</sup> The noise level depends on the installation room. In a reverberant room (e.g. tiled walls) the noise level may be higher. <sup>4</sup> Separation rates measured by the TÜV [technical monitoring authority] Essen in accordance with the German standard test at maximum rate of fluid flow. <sup>5</sup> For up to 5 rooms, one CA 4 is required; for 6 rooms, two CA 4s are required. The total water flow for one CA 4 may not exceed 16 l/min! <sup>6</sup> Effective volume of collector vessel = approx. 150 cm<sup>3</sup>, replacement interval of 6-9 months

Suction unit	VC 45
<b>Voltage (V)</b>	230 (1~)
<b>Frequency (Hz)</b>	50/60
<b>Electric power (kW)</b>	0.138
<b>Current consumption (A)</b>	0.6
<b>Rate of flow (l/min)</b>	45
<b>Vacuum (mbar) at sea level</b>	910
<b>Volume of secretion tank (l)</b>	1.5/3.0 2.0 disposable
<b>Dimensions without cart (H x W x D cm)</b>	33 x 24 x 36
<b>Dimensions with cart (H x W x D cm)</b>	101 x 36 x 44
<b>Weight without cart (kg)</b>	6.7
<b>Weight with cart (kg)</b>	12.5
<b>Noise level [dB(A)]</b>	48

Variosuc	VS 300 S	VSA 300 S
<b>Voltage (V)</b>	230 (1~)	230 (1~)
<b>Frequency (Hz)</b>	50-60	50-60
<b>Electric power (kW)</b>	0.58-0.8	0.58
<b>Current consumption (A)</b>	2.9-3.7	2.9
<b>Vacuum (mbar) at sea level</b>	180	180
<b>Effective volume of waste water collection vessel (l)</b>	1	3
<b>Number of operators</b>	1	1
<b>Max. rate of flow (l/min)</b>	4	5
<b>Effective volume of collector vessel (cm<sup>3</sup>)</b>	-	Approx. 150
<b>Replacement interval (months)</b>	-	6-9
<b>Dimensions (H x W x D cm)</b>	92 x 36 x 60	92 x 36 x 60
<b>Weight (kg)</b>	32	32
<b>Noise level<sup>1</sup> [dB(A)]</b>	Approx. 54-56	Approx. 54
<b>Separation efficiency (%)<sup>2</sup></b>	-	97.5
<b>Quality mark</b>	-	Z 64.1-15

<sup>1</sup> The noise level depends on the installation room. In a reverberant room (e.g. tiled walls) the noise level may be higher. <sup>2</sup> Separation rates measured by the TÜV [technical monitoring authority] Essen in accordance with the German standard test at maximum rate of fluid flow.

V suction unit	V 300 S	V 600	V 600	V 900 S	V 900 S	V 1200 S	V 2400
<b>Voltage (V)</b>	230 (1~)	230 (1~)	400 (3~)	230 (1~)	400 (3~)	400 (3~)	400 (3~)
<b>Frequency (Hz)</b>	50-60	50	50-60	50	50	50	50
<b>Electrical output (kW)</b>	0.58-0.8 <sup>1</sup>	1.10	1.00-1.42 <sup>1</sup>	1.68	1.97	2.0	3,3
<b>Current consumption (A)</b>	2.9-3.7 <sup>1</sup>	5.0	1.8-4.0 <sup>1</sup>	7.4	3.6	3.8	5,6
<b>Vacuum mbar (hPa)</b>	180	170 (AAV) <sup>2</sup>	170 (AAV) <sup>2</sup>	170 (AAV) <sup>2</sup>	170 (AAV) <sup>2</sup>	170 (AAV) <sup>2</sup>	160 (NLV) <sup>2</sup>
<b>Number of operators</b>	1	2	2	3	3	4	8
<b>Number of rooms at 60% at same time</b>	1-2	3	3	5	5	6	12
<b>Dimensions (H x W x D) without condensate separator</b>	37 x 31 x 31	50 x 42 x 41	50 x 42 x 41	52 x 41 x 42	52 x 41 x 42	52 x 41 x 42	-
<b>With condensate separator</b>	43 x 38 x 43	57 x 62 x 41	57 x 62 x 41	57 x 62 x 42	57 x 62 x 42	57 x 62 x 42	115 x 90 x 48
<b>With housing</b>	51 x 36 x 36	50 x 49 x 53	50 x 49 x 53	55 x 49 x 53	55 x 49 x 53	55 x 49 x 53	-
<b>Weight without housing (kg)</b>	12.5	25	25	34	33	33	65
<b>With housing (kg)</b>	20	33	33	43	43	43	-
<b>Noise level<sup>3</sup> without housing [dB(A)]</b>	Approx. 63-65 <sup>1</sup>	Approx. 63	Approx. 63-68 <sup>1</sup>	Approx. 65	Approx. 65	Approx. 66	Approx. 70
<b>With housing [dB(A)]</b>	Approx. 54-56 <sup>1</sup>	Approx. 55	Approx. 55-59 <sup>1</sup>	Approx. 58	Approx. 58	Approx. 59	-

<sup>1</sup> The value ranges result from the power frequency 50-60 Hz. <sup>2</sup> AAV = auxiliary air valve <sup>3</sup> The noise level depends on the installation room. In a reverberant room (e.g. tiled walls) the noise level may be higher.

# Accessories for optimum solutions



1 Wall mounting bracket

2 Console for floor-mounted installation

3 24 V~ controller for VS 600, VS 900 S,  
and VS 1200 S

4 Exhaust air bacterial filter for  
VS 300 S and VSA 300 S

5 Bacterial Filter

6 Silencer

7 Remote display for amalgam separator

8 Spittoon valve  
(already integrated into many units)

9 24 V~/~ place selection valve

10 Rinsing Unit II

11 Flow accelerator

12 Auxiliary air nozzle for VS 300 S,  
VSA 300 S, VS 600, VS 900 S,  
and VS 1200 S