Supreme suction power

DÜRR V SUCTION SYSTEMS FOR THE DENTAL PRACTICE

Dürr dry suction systems with suction machines V 300 S – 1200

V suction machines

Separating systems
Aspiration of spray mist

HYGIENIC AND ERGONOMIC APPROACH TO PREPARATION

High quality dental treatment

Today it’s regarded as a matter of course but in the Sixties it was looked on a minor revolution: carrying out treatment with the patient in a supine position. An effective suction system is a prerequisite for the continuous, ergonomic and infection-proof treatment of the recumbent patient by the dentist who is seated.

Where this method of operation is being used, the suction system must guarantee an unimpeded view of the operating area at all times. At the same time the continuous suction action saves the dentist and patient from any disruptions caused by the swallowing reflexes.

Dürr Dental recognized the dental benefits of a suction system at an early stage and pioneered this innovation. The entire system was built up step by step. Today the range of Dürr suction systems extends from the cannula, manifolds and hoses as well as automatic separators and amalgam separators through to the suction machines themselves and all accessories.

Without suction the infectious aerosol cloud produced by the cooling spray of modern high-speed instruments would spread throughout the entire treatment room.

Current studies have confirmed that the amount of aerosol breathed in by practice staff can be as high as 0.12 µl within 15 minutes. The aerosol cloud lasts for up to 30 minutes especially after scaling and this represents a great risk of infection particularly to the next patient as well.
High suction performance at every treatment chair

Spray preparations force an aerosol cloud out of the patient’s mouth which precipitates throughout the treatment room. The suction technology efficiently reduces the resulting risk of infections.

With a suction power of 300 l/min, the cannula reliably aspirates this spray mist.

Both dental and surgical treatment would be inconceivable without a suction system: blood and pus would not only obscure the view of the operating area but would also represent a further risk of infection.

Everything under control

The manifold area is the responsibility of the assistant. An individual approach is called for here, the equipment to be used varying according to the main field of work, personal suction techniques and handling habits. This is why Dürr hose holders are of modular design allowing up to five different variants.

The low-noise Dürr universal cannulas, the surgical cannula, a saliva ejector or many other instruments can be used here. The Dürr Comfort, Selective and Economy suction manifolds are distinguished not only by their versatility but also by their ergonomically shaped handpieces with ball joints and rotating connector pieces, to give two examples.
The high and dry of high performance

DÜRR V SUCTION SYSTEMS: PROVEN THROUGHOUT THE WORLD

The suction machine. The driving force behind the suction system. Reason enough to take a closer look at its performance and system requirements.
It’s the output that matters

The suction system is of extreme importance in dental surgeries. Its high performance facilitates dental treatment to the teeth, mouth and jaw. It must always provide full suction power despite having to contend with a permanent load of waste water, blood, saliva, dentine and a variety of filling materials (e.g. plastic, ceramic, amalgam, precious metals).

The new generation of V suction machines from Dürr Dental powers “dry” suction systems based on the following principles: Short transport distances for the aspirated substances, separation or collection integrated into the treatment unit and dry, clean air channels to the suction machine. In general terms Dürr Dental dry suction systems are characterized principally by their exceptionally fast build up of power, robustness and reliability during continuous operation and as well as flexibility of installation.

A custom-made program

Whilst maintaining continuity in technical developments, Dürr Dental has continued to ensure that its suction systems always focus on the individuality of the practice and the treatment team. This has led to the development over many years of a range of suction systems to meet every demand. Whether stand-alone units, central suction systems or equipping complete clinics - Dürr Dental can offer the matching suction system.

Innumerable dental practices, clinics and universities throughout the world have been equipped with Dürr suction systems. And a great number of all new treatment units are already fitted with Dürr components at the factory. This brochure focuses on the range of suction systems for large and small dental practices. A separate range is available catering for the requirements of large clinics.

Salient features of Dürr V suction systems

- High-quality, robust motors
- Reliability in continuous operation
- Impellers made of coated aluminium (V 900, V 1200) or extremely corrosion-resistant plastic composite (V 300 S, V 600)
- High suction performance within seconds
- Flexible installation possibilities
- High-quality condensate separator (always contained in standard accessory) to protect the machine from condensate conducted during aspiration
Innovation without noise

THE NEW GENERATION OF SMALL AND EFFICIENT SEPARATING SYSTEMS

The new generation in new attire – CA 1, CAS 1, CS 1

CA 1 Amalgam-Separator
CAS 1 Combi-Separator
CAS 1, CS 1 and CA 1 can be used externally in the housing.
CS 1 Combi-Sepomatic
Air – secretions – solids
The cannula in the assistant’s hand aspirates the mixture of liquid secretion and solid particles. This is passed by the shortest path to the automatic separator, separated and channeled into the drain. The solid and liquid constituents are separated from the airflow in the centrifugal chamber and are continuously extracted. The dry suction air flows through the pipes to the V suction machine. This means that no deposits can form to clog the pipes, thereby reducing efficiency.

CS 1 – a small and compact separator
The latest generation of CS 1 Combi-Sepematics has a powerful motor enabling the suction system to process high volumes of fluid for hours at a time. The two-stage separator effectively prevents blood foam from being carried along during aspiration, thus protecting the dry suction machine connected at the back. Where surgical treatment is being carried out or with frequent use of powder jet devices, a rinsing unit can be connected to increase operational reliability. The small quantity of water continuously supplied by the unit dilutes the blood and prevents particle deposits.

The installation of the CS 1 Combi-Sepomatic is very flexible since the required position selection valve can be installed independently in the spittoon or even at the floor box.

Separation is a statutory requirement
The treatment of defective or unsightly amalgam fillings is part of routine dental work. In the course of this treatment the ablated particles find their way into the aspirated secretions and this is where systems are needed to separate the amalgam. The ISO standards define the minimum European requirements for amalgam separators. In Germany this is regulated by the extensive construction and test principles of the German Institute for Structural Engineering (DIBT), Berlin.

Separator and amalgam separator in one unit – CAS 1
Small, compact, quiet and even easier to install, the new CAS 1 Combi-Seperator combines air-water separation and amalgam separation. It is accommodated easily into many type dental units. Leading manufacturers incorporate the CAS 1 as a function asset enhancing their dental units. The two-stage system with cyclone separator and dynamic separation turbine achieves a much higher separation capacity than conventional technology. The amalgam separator is on the same shaft as the air-water separator but not directly connected to it, thus saving the use of a spittoon valve.

The amalgam centrifuge is self-cleaning and attains a proven separation rate of almost 98%. Cushioned hose connections guarantee low-noise, vibration-free operation. Where an additional rinsing unit is connected, the permanent film of water formed prevents particle deposits and blood coagulation. This also significantly improves the hygienic condition of the overall suction system.

Amalgam separation right by the dentist’s chair – CA 1
The CA 1 with a self-cleaning amalgam centrifuge in a practical housing can be used for equipping a single treatment room with an amalgam separator. It boasts an impressive separation rate of almost 98 %, as measured by the DIBT, Berlin. The robust construction, which is largely similar to that of the CAS 1 Combi-Separator, and the consequent absence of electronic conductivity sensors, make this appliance a reliable component of the suction system.
A superb program of impressive suction power

DRY SUCTION MACHINES FOR ONE TO FOUR TREATMENT CHAIRS

V 900/V 600
V 300 S
V 600
V 900
V 1200
Tremendously powerful

Extreme demands are placed on the suction machines with 7 to 8 hours’ continuous operation being no exception today. This calls for machines that are maintenance-free with almost silent running qualities. It also requires a maximum degree of care, precision and quality control during the construction and production processes.

Dürr V suction machines fully meet these requirements: the non-contact rotating blades of the turbines create the required vacuum and volume flow (suction power). The turbine housings are environmentally sealed. A reliable electric motor ensures non-stop operation. The condensate separator gives a high measure of protection against the ingress of condensate water.

The perfect choice for every practice

Dürr Dental can offer every output class from a standalone machine, right through to supplying a multiple room surgery or a clinic. The well structured range comprises the following models: V 300 S, V 600, V 900 and V 1200. The performance of the individual units can be easily calculated by using the factor 300. For example, the V 900 meets the current performance requirements of three treatment chairs being used simultaneously.

However, an important additional deciding factor when choosing a suction system is whether the installation will meet the future requirements of the practice arising from extending the practice or increased performance requirements. In this respect the use of the next higher V suction machine may in individual cases be the ideal solution.

### Table:

<table>
<thead>
<tr>
<th>No. of treatment rooms in the practice</th>
<th>Max. no. of treatment chairs in simultan. use</th>
<th>Possible solution for the practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 – 2</td>
<td>1</td>
<td>V 300 S</td>
</tr>
<tr>
<td>2 – 3</td>
<td>2</td>
<td>V 600</td>
</tr>
<tr>
<td>3 – 5</td>
<td>3</td>
<td>V 900</td>
</tr>
<tr>
<td>4 – 6</td>
<td>4</td>
<td>V 1200</td>
</tr>
</tbody>
</table>

Extensive range of accessories available for every V machine. All models are fitted with a condensate separator. The examples shown are V 600 and V 900.
Examples of installations with central suction systems

**V 600 – V 1200**

Dürr V suction machines can be installed almost anywhere: in the basement, in an adjoining room on the same floor as the practice or even on a floor above.

Examples of installations with **V 300 S**

As regards installation possibilities the V 300 S can be easily adapted to suit the conditions of the practice. Installation can be carried out easily in the basement, an adjoining room or even right in the treatment room.
Hygiene and maintenance of the suction system

DISINFECTION AND CLEANING OF SUCTION SYSTEMS WITH OROTOL®

Protects against infection and protects your investment as well

A comprehensive system program should be designed with the future in mind, an approach fully reflected in the specially developed Dürr care products for technical equipment.

The suction system has a whole host of tasks to tackle. Large amounts of saliva, blood or filling materials are a constant source of contamination with bacteria, fungi and viruses and this is a problem that cannot simply be wiped away. Moreover, calcium deposits or discoloration caused by plaque dye tablets mean that the spit-toon and the suction system require thorough cleaning. Consequently, the disinfection, cleaning and care of this equipment is a matter that must be taken very seriously.

For many years the name Orotol® has been synonymous with the disinfection and cleaning of suction systems. Orotol®, both in its powder concentrate (Orotol® Ultra) and liquid form (Orotol® Plus), has established itself globally as one of the leading brands. And with good reason since Orotol® products fully meet the system demands and with their comprehensive spectrum of activity have been DGHM* listed! Using these products with their exceptional cleaning power, foam-free solution, environmentally compatible composition and pleasant smell becomes quite simply part of everyday routine.

The broad range of products which also includes care systems, spittoon cleaners and special cleaners offers the ideal solution for all practice situations. So you will always be certain that your dental equipment is completely hygienic and at the same time you will know that your investment is being protected over the long-term.

- Full suction power
- Maximum protection against infection
- Avoidance of odors
- Long-term maintenance of value

*German Association of Hygiene and Microbiology
Functional accessories for a perfect installation

Dürr Dental has put together a comprehensive range of accessories for the V suction systems. These accessories facilitate installation and promote highly efficient and problem-free operation.

High-Tech in very tight spaces

Combining suction and compressed air in a single energy centre is a fascinating idea. The unit containing the technology to provide both these resources has been constructed vertically rather than horizontally, thus saving expensive floor space in the practice. The Dürr Power Tower Silence proves that this level of performance can be accommodated in about half a square meter of floor space. A special brochure contains more information about the fascinating subject of optimizing the utilization of space.

Dürr Power Tower Silence – the unique modular cabinet system with noise dampening for the practice’s power units.
Dry V solutions for practices from Dürr
The practical design of Dürr’s suction systems facilitates flexible installation. Nevertheless, each practice requires a customized solution. That is why the requirements always need to be analyzed, planned and executed with precision. This involves not just deciding the level of performance required and the number of rooms and treatment chairs, but also taking full account of the architectural, structural and technical installation conditions. The installation advisers and service technicians at your local depot have received comprehensive training from Dürr Dental. You can draw on their know-how and many years of installation experience at the planning stage to resolve any questions you may have, for example, about connections to your treatment units, the accessories required or relevant statutory regulations. In this brochure you will find a selection of typical solutions. At the same time the range is so wide that quite specific variants can be realized even with unusual installation conditions.
The technology at a glance

### Dürr V Suction Systems

### V Suction Machines

<table>
<thead>
<tr>
<th>Model</th>
<th>Voltage (V)</th>
<th>Frequency (Hz)</th>
<th>Electrical Power (kW)</th>
<th>Current Consumption (A)</th>
<th>Vacuum mbar (hPa)</th>
<th>No. of Treatment Chairs</th>
<th>No. of Treatment Rooms at 60% Simultaneous Use</th>
<th>Dimensions (HxWxD, cm)</th>
<th>Weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>V 300 S 7119-01</td>
<td>230 (1–)</td>
<td>50 – 60</td>
<td>0.58 – 0.8</td>
<td>2.9 – 3.7</td>
<td>180</td>
<td>1</td>
<td>37 x 31 x 31</td>
<td>12.5</td>
<td></td>
</tr>
<tr>
<td>V 600 7127-01</td>
<td>230 (1–)</td>
<td>50</td>
<td>1.10</td>
<td>5.0</td>
<td>170 (BPV)</td>
<td>2</td>
<td>43 x 38 x 43</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>V 600 7127-02</td>
<td>400 (3–)</td>
<td>50 – 60</td>
<td>1.00 – 1.42</td>
<td>1.8 – 2.3</td>
<td>170 (BPV)</td>
<td>3</td>
<td>50 x 42 x 41</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>V 900 7130-01</td>
<td>230 (1–)</td>
<td>50</td>
<td>1.48</td>
<td>6.5</td>
<td>170 (BPV)</td>
<td>3</td>
<td>50 x 42 x 41</td>
<td>35</td>
<td></td>
</tr>
<tr>
<td>V 900 7130-02</td>
<td>400 (3–)</td>
<td>50</td>
<td>1.52</td>
<td>2.5</td>
<td>170 (BPV)</td>
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<td>50 x 42 x 41</td>
<td>35</td>
<td></td>
</tr>
<tr>
<td>V 1200 0730-01</td>
<td>400 (3–)</td>
<td>50</td>
<td>1.50</td>
<td>3.2</td>
<td>160 (BPV)</td>
<td>4</td>
<td>57 x 49 x 53</td>
<td>33</td>
<td></td>
</tr>
</tbody>
</table>

1. The band widths of the values result from the power frequency 50 – 60 Hz.
2. BPV = by-pass valve
3. The noise level depends on the installation room. In a reverberant room (e.g. tiled walls) the noise level may be higher.
4. Separation rates measured by the TÜV [technical monitoring authority] Essen in accordance with the German standard test at maximum rate of fluid flow.

### C Separating Systems

<table>
<thead>
<tr>
<th>Model</th>
<th>Voltage (V)</th>
<th>Frequency (Hz)</th>
<th>Electrical Power (W)</th>
<th>Max. Rate of Fluid Flow (l/min)</th>
<th>Dimensions (HxWxD, cm)</th>
<th>Weight (kg)</th>
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</thead>
<tbody>
<tr>
<td>CS 1 7117-70</td>
<td>24</td>
<td>50 – 60</td>
<td>60</td>
<td>2</td>
<td>12.5 x 15 x 12</td>
<td>1.4</td>
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<td>CAS 1 7117-20</td>
<td>24</td>
<td>50 – 60</td>
<td>60</td>
<td>4</td>
<td>25.5 x 15.1 x 11</td>
<td>2.7</td>
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<tr>
<td>CA 1 7117-80</td>
<td>24</td>
<td>50 – 60</td>
<td>60</td>
<td>4</td>
<td>25.5 x 15.1 x 11</td>
<td>2.7</td>
</tr>
</tbody>
</table>

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