

# Compressed air systems for surgeries and laboratories – oil-free, dry, hygienic

Compressors with membrane drying unit



COMPRESSED AIR  
SUCTION  
IMAGING  
DENTAL CARE  
HYGIENE

# Performance and Air Quality – For over half a century

Compressed air systems by Dürr Dental have been serving surgeries and clinics around the world reliably for over 50 years. The quality of performance and air – oil-free, dry, hygienic – puts them in a leading position on the market.

Dürr Dental has been supplying leading technology in compressed air systems for over 50 years. Just the sight of our units expresses the extraordinary quality and the technical design has set world-wide standards. In 1965, Dürr Dental developed the first completely oil-free compressor for dental medicine. This innovation became the technological standard. Now, the highly efficient membrane drying unit is just one more example of many demonstrating the unwaning spirit of innovation within Dürr Dental.

## This is what counts:

- Over 50 years of experience
- Inventor of oil-free dental compressors
- Antibacterial inner tank coating
- Up to 3 year guarantee
- 100% continuous operation possible
- Latest air drying technology with membrane technology
- High-quality "Made in Germany"
- With the Duo Tandem Med generates compressed air in medical quality



## Compressors Program

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For any size of surgery and any requirement, Dürr Dental has just the compressor in the program – from the compact Duo to the Quattro Tandem for up to 10 workstations.

## Duo Tandem Med

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The Duo Tandem Med generates compressed air in medicinal quality – for the highest demands in implant technology and surgical treatment.

## Tandem Concept

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Compressors in the Tandem version offer especially excellent compatibility for the future and reliability. These have a modular construction in case of surgery expansions.

## Membrane drying unit

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The innovative membrane technology of Dürr Dental compressors provides drying at the highest level – including continuous service availability.

## Inner tank coating

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The inside of the tanks of Dürr Dental compressors are coated with a special antibacterial material, which ensures safety and fights corrosion.

## Accessories and service

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From the housing to the filter system, Dürr Dental offers sensible compressor accessories for all requirements.

# Quality inspires confidence – Leading edge technology for the heart of the surgery



In order to guarantee the highest degree of quality, the family business Dürr Dental manufactures almost exclusively in Germany. All products of the ISO-certified company are subject to strict production standards and are controlled from beginning to end. The employees of Dürr Dental also add to the quality with competence, friendliness and creativity.

## Hidden Performance

A good compressor performs its task in the background, while the surgical team concentrates on the treatment. From the machine room it supplies the air/water jets, the turbine, the air abrasion unit and the control of the treatment units. The compressor should therefore never run out of air – for reliable constant surgical operation.

## Dental compressed air for the highest requirements

Dental compressed air must be hygienic. The moisture content must therefore be reduced to a minimum and any contamination caused by oil or solid particles must be completely eliminated. This would endanger the service life of high-quality dental materials as well as the functionality of sensitive instruments. The hygienic and aseptic conditions specified by the patients must be met.

The membrane drying system on the compressor prevents a moist environment becoming a breeding ground for bacteria. The dryer not only ensures constant dryness but also guarantees continuous performance with no regeneration times. The lower pressure dew point guarantees good, taste- and odour-less compressed air.

## Robust and reliable – designed for continuous operation

In choosing a compressor, reliability is a top priority. The modern motor concept of Dürr Dental meets all requirements in this regard and is designed for continuous operation. The high quality system components provide for the highest degree of precision and running smoothness. This means that the compressor is not only quieter but it will have a longer life.



Air contaminated by water, oil and particles are not suitable for dental treatments



### This is what counts:

- High quality standards
- Longevity
- Compressed air for the highest requirements
- Designed for continuous operation
- Quality taste- and odour-free compressed air

# The Right Measure of Compressed Air for Every Surgery

## Decision based on performance

Choosing a compressor mainly depends on the required performance reserves and therefore on the size of the surgery and the number of workstations. Dürr Dental provides models for every performance requirement - from compact compressors for beginners to high-power compressors for the clinic. Since the requirement for compressed air grows with a surgery expansion, the program also includes models that can be expanded accordingly. Dürr Dental and the dental trade provide extensive consultation on the right compressed air solution. You can also do a rough estimation of your performance requirements: Approximately 50 l/min is required per air turbine.



## Duo

The classic of the compact compressors with a 2-cylinder V-motor and a 20 litre tank. For maximum 2 workstations.



## Trio

The economical high-power compressor. With 3 cylinders and a 50 litre tank, it has sufficient reserves for 3 workstations.



## Quattro

The powerful 4-cylinder compressor with a 50 litre tank for up to 4 workstations.





### This is what counts:

- Expandable with the tandem principle
- High-power compressors for large surgeries, clinics and dental laboratories
- Special solution for implant technology and surgical treatment (Duo Tandem Med)
- Compressor selection for 2 to 10 workstations

### Duo Tandem

The flexible solution for growing performance requirements. With its 50 litre tank, it will work for 2 workstations (1 motor) or 4 workstations (2 motor).



### Quattro Tandem

Second to none in power for dental laboratories and large surgeries with a 90 litre tank, either with 1 or 2 motors - for up to 10 workstations.



### Duo Tandem Med

The specialist for implant technology and surgical treatment. With a 90 litre tank for 3 workstations.



# Duo Tandem Med – Compressed Air of Medicinal Quality

The Duo Tandem Med generates compressed air in medical quality, especially for the high requirements in implant technology and surgical treatment. Residual water content, pressure dew point as well as particle and oil content corresponding with the European specifications for "Air for medical application".

Implant surgery requires dry compressed air of absolute hygienic quality. This is achieved by the Duo Tandem Med utilising the new membrane technology and an innovative filter system. With two robust motors and two membrane dryers, the compressor offers excellent reliability in continuous operation and with a constant, even air quality and 100% availability.

An antibacterial inner tank coating with nano-silver particles provides for still more hygienic safety and prevents corrosion.

A pressure dew point of  $-27\text{ °C}$  at 7 bar tank pressure guarantees the extremely low residual water content of  $\leq 67\text{ ppm}$  specified in the pharmaceuticals act.





Two already integrated sterile filters with a micron-rating of 0.01  $\mu\text{m}$  exclude the possibility of additional contamination with microorganisms.

Two robust, long-life motors ensure the highest degree of reliability in continuous operation.

Two membrane drying units provide for constant air quality.

# The Tandem Concept



## A solution with the option for more

Dürre Dental compressors in the Tandem version offer especially excellent compatibility for the future and reliability. The ability to design modular systems makes these flexible solutions with the option for even more. The basic version of the Duo Tandem has one motor for supplying 2 workstations reliably with compressed air. The tank of the compressor is dimensioned so that it can handle 2 motors however. When expanding the surgery, add a motor, which doubles the performances reserves to 4 workstations. The maximum of performance is achieved with the Quattro Tandem with 2 motors – for up to 10 workstations.



# The Membrane Drying System – Patented technology by Dürr Dental

## Continuous performance availability with membrane drying unit

All Dürr Dental compressors work with innovative membrane drying, offering an unbeatable advantage: Continuous performance availability. Since the drying process is based on diffusion through layers of membrane fibres, the standard steps in regeneration in normal drying processes are not required. The membrane drying unit generates constant dry compressed air with a pressure dew point of  $\leq 5\text{ °C}$  at  $40\text{ °C}$  ambient temperature. This eliminates the possibility of condensation building up in the lines under normal conditions.

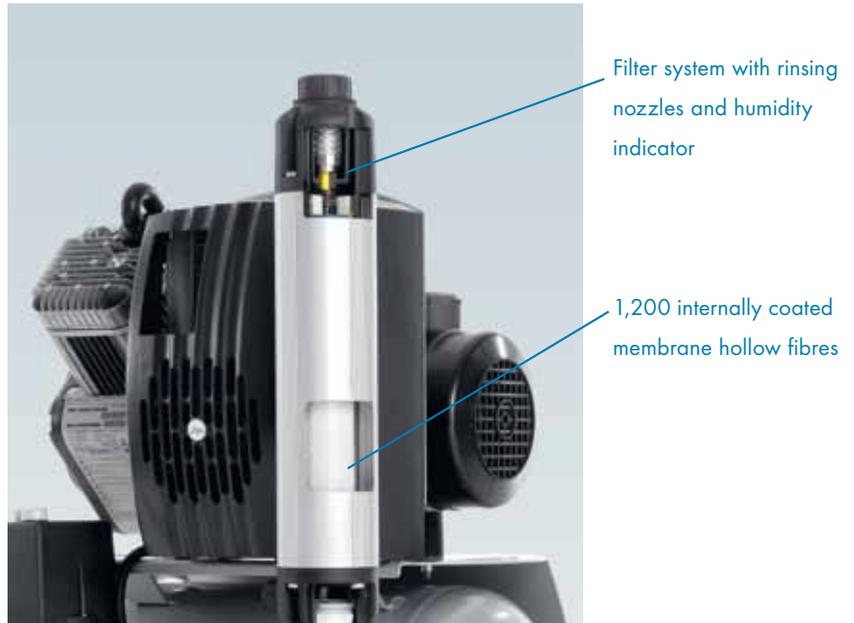
Since the membrane drying unit prevents the existence of a damp environment, microorganisms are deprived of a breeding ground. To remove the smallest particle from the air, the compressors are equipped with fine filters. The annual change is the only service measure required on the otherwise completely maintenance-free drying unit. As an option, a sterile filter is available, which totally excludes any additional contamination by microorganisms.

Summary: Unlike the standard drying procedures in the dental trade, the pressure dew point of  $\leq 5\text{ °C}$  remains constant at  $40\text{ °C}$ . The danger of condensed water build-up in the tank and in the air lines is therefore non-existent.

The Tandem concept by Dürr Dental:

The Duo Tandem with one motor for 2 workstations.

Modular design with two motors for up to 4 workstations.



## This is what counts:

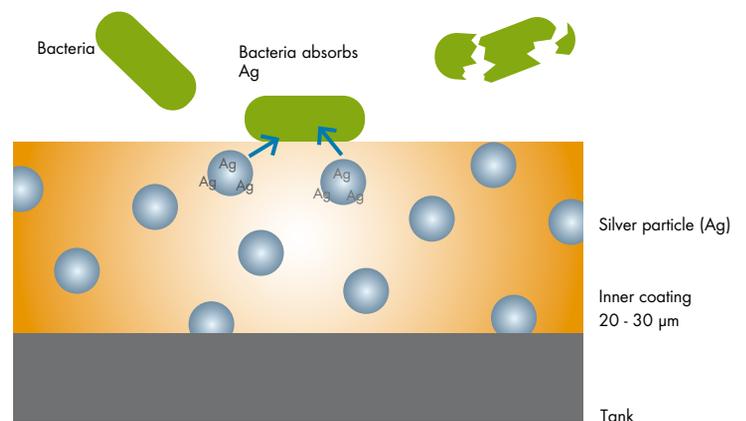
- Continuous performance availability, no regeneration times
- Constant compressed air dryness
- Sterile filters also protect against germs (available as an option)
- Pressure dew point of  $\leq 5\text{ °C}$  at  $40\text{ °C}$  ambient temperature
- Maintenance-free, only annual filter change

# Even more safety from infections with nano-technology



## Antibacterial inner tank coating

Bacteria always holds a certain potential for danger and can lead to infections in unfavourable cases. The inside of the tanks of Dürr Dental compressors are therefore coated with a special antibacterial material, which is used in household appliances as well as in industrial applications. The germreducing effect of the fine coating is now being used in refrigerators, textiles and on light-switches and plug-ins. Silver particles in the nano-range block enzymes that keep the bacterial energy metabolism going. In the tanks of Dürr Dental compressors, the antibacterial coating provides for still more safety and also prevents corrosion.



# Accessories and service

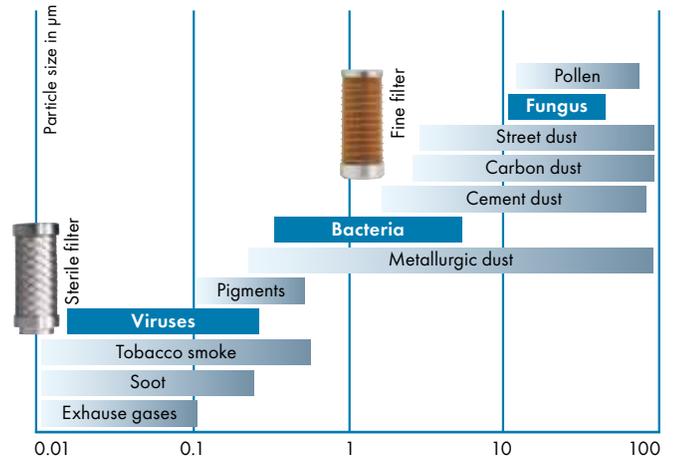
Besides sensible accessories and an innovative filter system, Dürr Dental also offers an extension to the warranty of up to 3 years after sending in an installation log.



## Sterile filter to be retrofitted

Integrated in the membrane drying unit, the Dürr Dental sterile filter maximises the quality of generated compressed air. Thanks to a filter micron-rating of 0.01 µm, the sterile filter holds back viruses as well as fungus and bacteria. The contamination from microorganisms is stopped reliably. This protects the sensitive, air-driven instruments and offers maximum safety for the physician, the surgical team and the patient, especially for implant and surgical operations.

The sterile filter is available for all Dürr Dental compressors with drying unit. Thanks to the excellent particle-absorption capabilities, it has an especially long service life. The fine filter can be replaced at any time.



Dürr Dental Sterile Filters have a filter micron-rating of 0.01 µm

- 1 1 Pressure reducer
- 2 2 Sterile filter
- 3 3 Fine filter
- 4 4 Sinter filter
- 5 5 Intake filter
- 6 6 Sound-suppression housing



Besides compressors for surgery and the laboratory, Dürr Dental also offers tailor-made clinic solutions for several hundred treatment units. More information in this regard can be found in our clinic brochure or under [www.duerr.de/kliniken](http://www.duerr.de/kliniken).

# The technology at a glance – Dürr Dental Compressors

Model	Duo	Duo Tandem 1 Motor	Duo Tandem 2 Motors	Trio
Displacement (l/min)	140/150	140/150	280/300	250
Output at 5 bar <sup>1)</sup> (l/min) <sup>2)</sup>	105/120	105/120	210/240	160
Tank capacity (l)	20	50	50	50
Pressure range <sup>3)</sup> (bar)	6 - 7.8	6 - 7.8	6 - 7.8	6 - 7.8
Cylinder	2	2	4	3
Noise level <sup>4)</sup> [dB(A)]	Approx. 66/69	Approx. 68/70	Approx. 69/74	Approx. 69
Noise level in the cabinet <sup>4)</sup> [dB(A)]	Approx. 55/61	Approx. 54	Approx. 54	Approx. 54
Voltage (V)	230 (1~)/400 (3~)	400 (3~)	400 (3~)	230 (1~)
Frequency (Hz)	50/60	50/60	50/60	50
Dimensions (H x W x D cm)	70 x 49 x 46	76 x 79 x 52	76 x 79 x 52	76 x 74 x 52
Weight (kg)	47	64	90	70

Model	Quattro	Quattro Tandem 1 Motor	Quattro Tandem 2 Motors	Duo Tandem Med
Displacement (l/min)	320/365	320/365	640/730	140
Output at 5 bar <sup>1)</sup> (l/min) <sup>2)</sup>	215/240	215/240	430/480	147 - 162 at 7 bar
Tank capacity (l)	50	90	90	90
Pressure range <sup>3)</sup> (bar)	6 - 7.8	6.5 - 8.5	6.5 - 8.5	6.5 - 8.5
Cylinder	4	4	8	4
Noise level <sup>4)</sup> [dB(A)]	Approx. 70/75	Approx. 70/73	Approx. 74/77	Approx. 72 at 7 bar
Noise level in the cabinet <sup>4)</sup> [dB(A)]	Approx. 54	-	-	-
Voltage (V)	400 (3~)	400 (3~)	400 (3~)	400 (3~)
Frequency (Hz)	50/60	50/60	50/60	50
Dimensions (H x W x D cm)	76 x 74 x 52	76 x 102 x 62	76 x 102 x 62	87 x 100 x 65
Weight (kg)	82	98	143	113

<sup>1)</sup> The discharge flow with dry air <sup>2)</sup> Power bandwidth results from the mains frequency 50/60 Hz <sup>3)</sup> A pressure reducer is available as an option <sup>4)</sup> Average values at 5 bar