

Sigma 8KBS



Blood bank centrifuge
• Refrigerated



 **SIGMA**

13860
Becher Nr. 5
satz Nr. 1

5
Max. load 6x4500g

Ideal for blood banks



Sigma is a leading international manufacturer of laboratory centrifuges for diverse sectors, including biotechnology, pharmaceutical, medical and environment analysis. Laboratories, institutions and companies everywhere in the world have been relying on premium Sigma quality – Made in Germany – for more than 40 years. The company stands for innovative products and development of durable, energy-efficient and especially user-friendly devices.

The Sigma 8KBS is a refrigerated floor-standing centrifuge specifically developed for deployment in blood banks and transfusion facilities.

With a maximum capacity of 12 x 1.000 ml or 12 blood bag systems per run, it enables efficient processing of large specimen volumes. The device delivers reliably excellent and reproducible sedimentation results thanks to its very smooth running.

Along with its outstanding specifications, the Sigma 8KBS features impressive energy efficiency and perfectly matched accessories. Intuitive operation and the ergonomic loading height of just 88 cm simplify daily work in the lab and make the Sigma 8KBS one of the most popular blood bank centrifuges on the market.

Application oriented

High performance, intuitive operation and very high efficiency

Many users worldwide cherish the Sigma 8KBS as an efficient, high performance blood bank centrifuge. With maximum RCF up to 8,578 x g, patented one-knob controller, automatic rotor identification and ergonomic sideways lid opening, it is the ideal device for intensive daily use.

The powerful drive system enables excellent acceleration and braking times. Separation runs and results can be optimized with 30 pairs of braking and acceleration curves, some of which are individually programmable. The high imbalance tolerance of the Sigma 8KBS additionally ensures very smooth running with all rotors and at all speeds.

The Sigma 8KBS is among the most compact centrifuges of its class and is pleasantly quiet. With a noise level of 54 dB(A)*, it is one of the quietest blood bank centrifuges in the market, making for a pleasant work atmosphere in the lab.

The high-performance cooling system can be adjusted precisely over a temperature range from -20°C to +40°C. The Rapid Temp function enables fast temperature adjustments of the centrifuge chamber and accessories to a defined temperature, which is particularly significant for working with chilled blood blood bags. Precooling from 20 °C to 4 °C takes only 16 minutes, helping to minimise operating times and electricity costs. In the other direction, fast heating is also possible. Heating from 4 °C to 20 °C takes 11 minutes.

Sigma 8KBS

- Compact refrigerated blood bank centrifuge
- Maximum RCF: 8,578 x g
- Maximum capacity: 12 x 1,000 ml or 12 blood bags
- Ergonomic 88 cm loading height
- User-friendly Spincontrol S controller
- Extra large TFT display
- 60 programs
- Rapid Temp program
- Fast cooling (from 20 °C to 4 °C in just 16 minutes)
- Temperature setting range: -20 °C to +40 °C
- Rotor cooling also possible at standstill
- Low noise level ≤ 54 dB(A)*
- Automatic rotor identification
- Zero-maintenance induction motor
- 30 pairs of braking and acceleration profiles
- Motorised lid locking
- Automatic imbalance monitoring
- Rotor life monitoring for high safety
- Easily cleaned stainless steel chamber
- Window in lid for external speed monitoring
- Manufactured according to the latest national and international standards (e.g. EN 61010-2-020)



Options

- Water cooling for superior cooling efficiency and minimum noise level
- Sigma Datasuite: data communication system with barcode scanner

* With rotor 11805 at maximum speed (compressor not running)



Rotors and accessories

Versatile configurations for blood banks and hospitals

A broad range of swing-out rotors, buckets, adapters and accessories are available for the Sigma 8KBS. Both six-position swing-out rotors feature impressive flexibility. Along with blood bags, they can hold all commonly used tubes for clinical applications as well as bottles up to 1,500 ml.

A new family of adapters has been developed specifically for blood banks and transfusion facilities. They are made from high-performance materials for outstanding lifetime and feature a smooth, durable, anti-sticking surface. Handling for loading and unloading has thus been

significantly simplified. Users are impressed by the integrated handle and the high rim for optimal support of blood bags and tubes.

The adapters are designed for universal use and can hold all customary commercial blood bag systems. Along with bags for platelet concentrates or buffy coats, they accommodate all commonly used 450 ml, 500 ml and 750 ml blood bags with filters.

The range of accessories is rounded out by taring weights, balance inserts and centrifuging aids.

Swing-out rotors with windshield starting on page 8

Swing-out rotor 11805 Blood bag bucket 13860

- Max. capacity: 12 x 750 ml blood bag systems
- Max. speed: 4,100 rpm
- Max. RCF: 5,394 x g
- Angle: 90°

► p. 8



Swing-out rotor 11805 with round bucket 13850

- Max. capacity: 6 x 1,500 ml
- Max. speed: 5,100 rpm
- Max. RCF: 8,578 x g
- Angle: 90°

For detailed information on accessories, see the Sigma 8KS brochure.



Swing-out rotors without windshield starting on page 8

Swing-out rotor 11806 with blood bag bucket 13860

- Max. capacity: 12 x 750 ml blood bag systems
- Max. speed: 3,700 rpm
- Max. RCF: 4,393 x g
- Angle: 90°

► p. 8



Swing-out rotor 11806 with round bucket 13850

- Max. capacity: 6 x 1,500 ml
- Max. speed: 3,700 rpm
- Max. RCF: 4,515 x g
- Angle: 90°

For detailed information on accessories, see the Sigma 8KS brochure.



Swing-out rotor 11806 with dual bucket 13855

- Max. capacity: 12 x 1,000 ml
- Max. speed: 3,300 rpm
- Max. RCF: 3,579 x g
- Angle: 90°

For detailed information on accessories, see the Sigma 8KS brochure.



Energy-efficient and quiet

Saves money and reduces noise emissions

One of the unique features of the Sigma 8KBS is the option of using a swing-out rotor with or without a windshield. A rotor without a windshield has advantages for handling, while the version with a windshield is distinctly more energy efficient and enables higher RCFs.

Energy savings exceeding 63% can be achieved with a closed windshield due to the lower drag. It also reduces heat transfer to the lab environment as well as running noise levels. The lower air turbulence results in energy savings of up to 25 %.

With rotor 11805 at 4,000 x g and 20°C specimen temperature, the energy consumption is only 0.37 kWh for a widely used procedure for buffy coat extraction (running time 10 minutes).

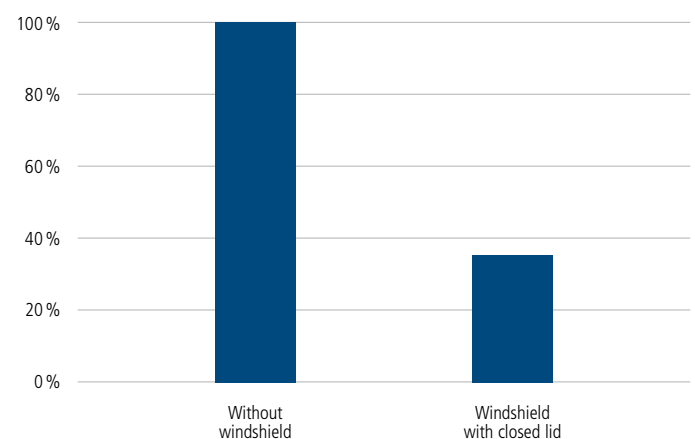
Additional economy functions of the Sigma 8KBS

- Effective cooling: precooling from 20 °C to 4 °C in just 16 minutes
- Cooling shut off when centrifuge lid is opened
- Automatic display dimming after an extended time with no operator action

Thanks to the low-noise design of the Sigma 8KBS and the optional use of rotor 11805 with a windshield, the noise level at maximum speed with the compressor switched off is just 54 dB(A). With the cooling system running, the value rises to 57 dB(A).

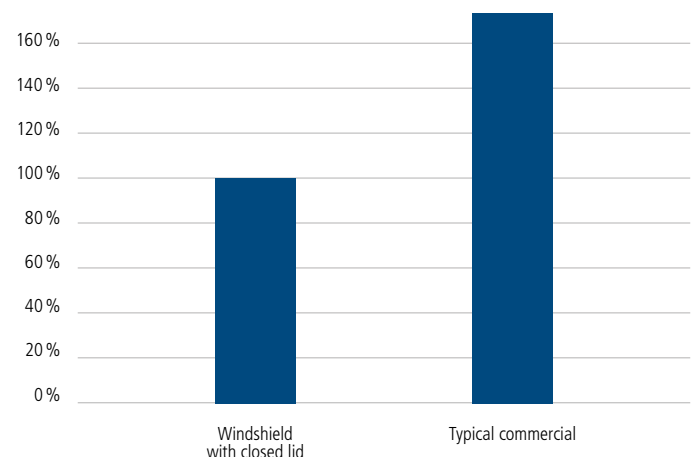
Compared to the typical commercial value of 62 dB(A), this difference of 8 or 5 dB(A) corresponds to a reduction of the perceived noise level by 74 % or 41 %, respectively.

Energy savings from use of windshield rotor



Measured with Sigma 8KBS with rotor 11805 and bucket 13860 at 3,700 rpm and 20°C temperature.

Relative perceived noise level*



* A 10 dB(A) increase is perceived as a doubling of the loudness.

Swing-out rotor 11805

Bucket 13860
for blood bag adapters 13867–13870

- Max. capacity: 12 x 750 ml blood bag systems
- Max. speed: 4,100 rpm
- Max. RCF: 5,394 x g
- Tmin at maximum speed: <4°C
- Angle: 90°



Swing-out rotor 11806

Bucket 13860
for blood bag adapters 13867–13870

- Max. capacity: 12 x 750 ml blood bag systems
- Max. speed: 3,700 rpm
- Max. RCF: 4,393 x g
- Tmin at maximum speed: <4°C
- Angle: 90°



Tube					
Capacity [ml]	250	300	450	500	500750
Blood bag system	Platelet concentrate or buffy coat bag	Single	Triple	Dual	QuadSingle
Item no.	–	–	–	–	––
Adapter					
for bucket 13860					
Blood bag systems per rotor	12		12	12	12
Nominal capacity [ml]	650		800	900	1100
Centrifuging radius [mm]	287		287	287	287
Item no.	13869*		13868*	13870*	13867*

* Including one set of balance weights 17768



The adapters have detachable coloured clips for easy distinction.

Accessories

Centrifugation of blood bags

Balance weights 17768

For use with unbalanced bucket loading. Including a template for easy size identification and the following weights for fine taring: 3 x 10 g, 3 x 5 g, 3 x 3 g, and 6 x 1 g



Balance inserts

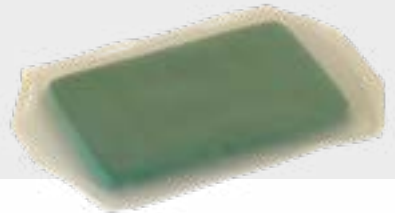
Various balance inserts are available for working with an odd number of blood bags. The included counterweights – 17754 (100 g) and 17753 (50 g) – can be used to compensate for weight differences.



- Balance insert 17769 for adapter 13867
- Balance insert 17772 for adapter 13868
- Balance insert 17773 for adapter 13870

Centrifuging aid 17750

For optimal fixation of small or partially filled blood bags.



Sigma Datasuite

Data documentation system

The Sigma 8KBS blood bank centrifuge can optionally be equipped with the data documentation system Sigma Datasuite by LabCraft. This system enables continuous monitoring and documentation of all data and events arising during centrifugation.

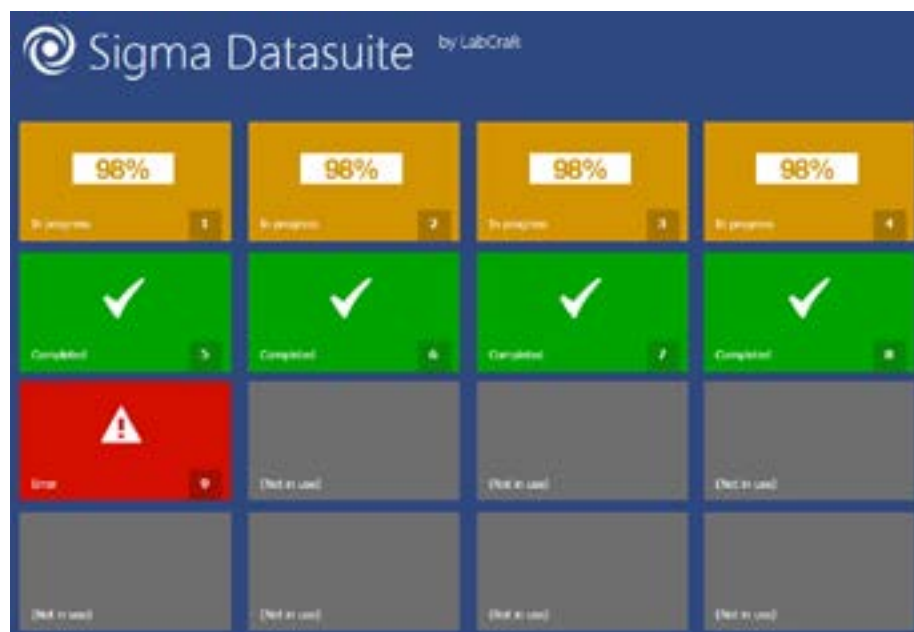
Process data from up to 16 centrifuges can be logged. Along with the individually selectable running parameters, staff IDs and donation ID labels can be queried in accordance with ISBT 128. Data output for external quality management is provided via the integrated RS232 interface in either CSV or text format, depending on the configured

setting. Export to an existing LabCraft SQL database or another LIMS/BECS system is optionally possible.

Sigma Datasuite runs on a normal Windows PC, so it can easily be used at a packing station or other location. The included barcode scanner can be connected to either the Sigma 8KBS or the PC (Datasuite V3). The Spincontrol S controller detects and corrects faulty or double-scanned barcodes. Bidirectional communication of the RS232 interface allows all programs and running parameters of the centrifuges to be modified via the PC.



The overview screen shows the progress of up to 16 centrifuges and indicates significant events. Normal completion and error messages (if any) are displayed and documented in a log file. The overview screen can also be duplicated on a second monitor providing permanent real-time information.



For each connected centrifuge, detailed information can be displayed by clicking on the corresponding tile of the overview screen. The display then shows all relevant data for the individual centrifugation run.

Item numbers

17941

Sigma Datasuite Instrument Licence

17944

Serial communication interface 2x RS232 and barcode reader

17945

Sigma Datasuite Lab Licence

17942

Edge port for RS232 to USB, for two or more centrifuges

Spincontrol S controller

Intuitive operation and many options

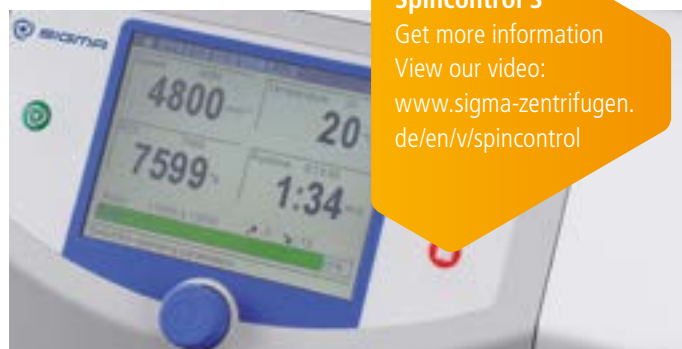
The patented one-knob Spincontrol S controller sets standards in control technology for laboratory and blood bank centrifuges. All parameter settings or modifications, such as speed, RCF or temperature, are performed using the centrally positioned multifunction knob.

Along with manual settings, previously entered programs can be selected using a shortcut. These programs can be assigned alphanumeric names to enhance process reliability and simplify operation. Another practical feature is the progress bar that visualises program status and can be seen at a distance. The countless features leave nothing to be desired: capacity for 60 programs, password protection against unintentional alteration of run parameters, rotor cycle counter. Those are just a few of the features that make Sigma Spincontrol S a highly flexible system.

To meet the strict safety and security requirements of blood banks and transfusion facilities, the Spincontrol S has numerous quality management functions. Integrated run monitoring supervises program sequences and informs users of the separation run status.

Communication with an existing laboratory information and management system (LIMS) is optionally possible. All process data – run parameters, donation ID and staff ID, etc. – can be continuously monitored and recorded. Furthermore, the Spincontrol S computes the integral of the RCF over the centrifugation run and provides the resulting value in the documentation.

Display	TFT
Message window	+
Constant display of setpoints and actual values	+
Languages	DE, GB, PT, FR, ES, RU, HU, IT, SE, CN
Timer (s; h:min)	10 – 99:59
Timer tracks time after setpoint speed is reached; switchable	+, +
Time increment [s]	60; 1
Short run, Continuous run	+, +
Speed increment [rpm]	100; 1
Temperature increment [°C]	1
RCF increment [x g]	10; 1
Progress indicator	+
Programs	60
User-definable program name (alphanumeric)	+
Program list, preview of all parameters	+, +
Linear acceleration curves	10
Quadratic acceleration curves	10
User-definable acceleration curves	10
Linear braking curves	10
Quadratic braking curves	10
User-definable braking curves	10
Brakeless spin-out	+
Automatic lid opening at end of run, switchable	+, +
Start delay (clotting time) adjustable/switchable	+, +
Standstill cooling; switchable	+, +
Rapid Temp program	+
Temperature deviation monitoring, settable	+
Audible signal, switchable	+, +
Visual standstill indication	+
Centrifuge cycle count	+
Rotor cycle monitoring	+
Rotor end-of-life warning	+
Configurable for liquids > 1.2 g/cm ³	+
Lockable controller with password protection	+
Microprocessor control	+



Spincontrol S

Get more information
View our video:
www.sigma-zentrifugen.de/en/v/spincontrol

Premium quality

Made in Germany

The Sigma 8KBS meets the highest technical requirements for laboratory centrifuges. Developed and produced at our facility in Osterode, Germany, it is a high-performance, durable and energy-efficient quality product and conforms to the latest safety, emissions and environmental standards. Sigma guarantees the availability of spare parts and wearing parts for at least 10 years.

Furthermore, you benefit from our extensive services portfolio, including commissioning, maintenance, device calibration and more. Our qualified service technicians are ready to provide professional maintenance and repair as well as loaner devices if necessary. All support services are designed to maintain reliability and optimise system availability.

Sigma 8KBS	
Max. capacity [ml]	
Swing-out rotor	12 x 1,000
Max. RCF	8,578
Maximum speed [rpm]	5,100
Minimum speed [rpm]	100
Noise level at maximum speed (approximate) [dB(A)]	
Swing-out rotor 11805 with bucket 13860	≤ 57
Max. acceleration time [s]	
Swing-out rotor 11805 with bucket 13860	≤ 49
Max. braking time [s]	
Swing-out rotor 11805 with bucket 13860	≤ 87
Temperature adjustment range [°C]	-20 – +40
Power consumption [W]	6,500
Height x width x depth [mm]	980 x 810 x 910
Height with open lid [mm]	1,690
Weight without rotor [kg]	450
Refrigerant	R452A
Filling quantity [kg] / Max. permissible pressure [bar]	2.280 / 28
CO ₂ equivalent [t]	4.879

Sigma Service

For maintenance and repairs please contact our Service department at www.sigma-zentrifugen.de/en/service

Calibration

Documented proof of compliance with essential technical parameters.

Speed or run time (item no. 17713)
 Speed and run time (item no. 17714)
 Speed, run time, temperature (item no. 17715)

Device qualification (IQOQ)

This comprehensive device qualification includes installation qualification and metrological checking of all functional parameters with a rotor.

IQOQ documents (item no. 170000)
 IQOQ on site (upon request)

Sigma 8KBS centrifuge packages

Sigma 8KBS, 3 x 400 V, 50 Hz incl. centrifuge Sigma 8KBS (10635), rotor 11805, 6 buckets 13860 and 6 blood bag adapters (options: 13867, 13868, 13869 or 13870)	(item no. 10954)
Sigma 8KBS, 3 x 220 V, 60 Hz incl. centrifuge Sigma 8KBS (10636), rotor 11805, 6 buckets 13860 and 6 blood bag adapters (options: 13867, 13868, 13869 or 13870)	(item no. 10955)
Sigma 8KBS, 3 x 400 V, 50 Hz, water cooling incl. centrifuge Sigma 8KBS watercooled, rotor 11805, 6 buckets 13860 and 6 blood bag adapters (options: 13867, 13868, 13869 or 13870)	(upon request)



Product portfolio

Sigma offers a broad product portfolio with more than 25 laboratory centrifuges. They can be combined with an extensive range of fixed-angle and swing-out rotors and a large variety of accessories to obtain the right device configuration for every application.



Microcentrifuge
Sigma 1-16

-  36 x 2 ml
-  15,000 rpm
-  20,627 x g

Floor-standing centrifuge
Sigma 8KS

-  12 x 1,000 ml
-  5,100 rpm
-  8,578 x g

-  6 x 1,000 ml
-  10,500 rpm
-  20,461 x g



Benchtop centrifuge
Sigma 2-7

-  4 x 100 ml
-  4,000 rpm
-  2,540 x g

-  30 x 15 ml
-  4,000 rpm
-  2,486 x g



Benchtop centrifuge
Sigma 3-30KS

-  4 x 100 ml
-  5,000 rpm
-  3,969 x g

-  6 x 94 ml
-  30,000 rpm
-  70,121 x g



Robot centrifuge
Sigma 4-5KRL

-  100 x 15 ml
-  4,700 rpm
-  4,470 x g

Legend

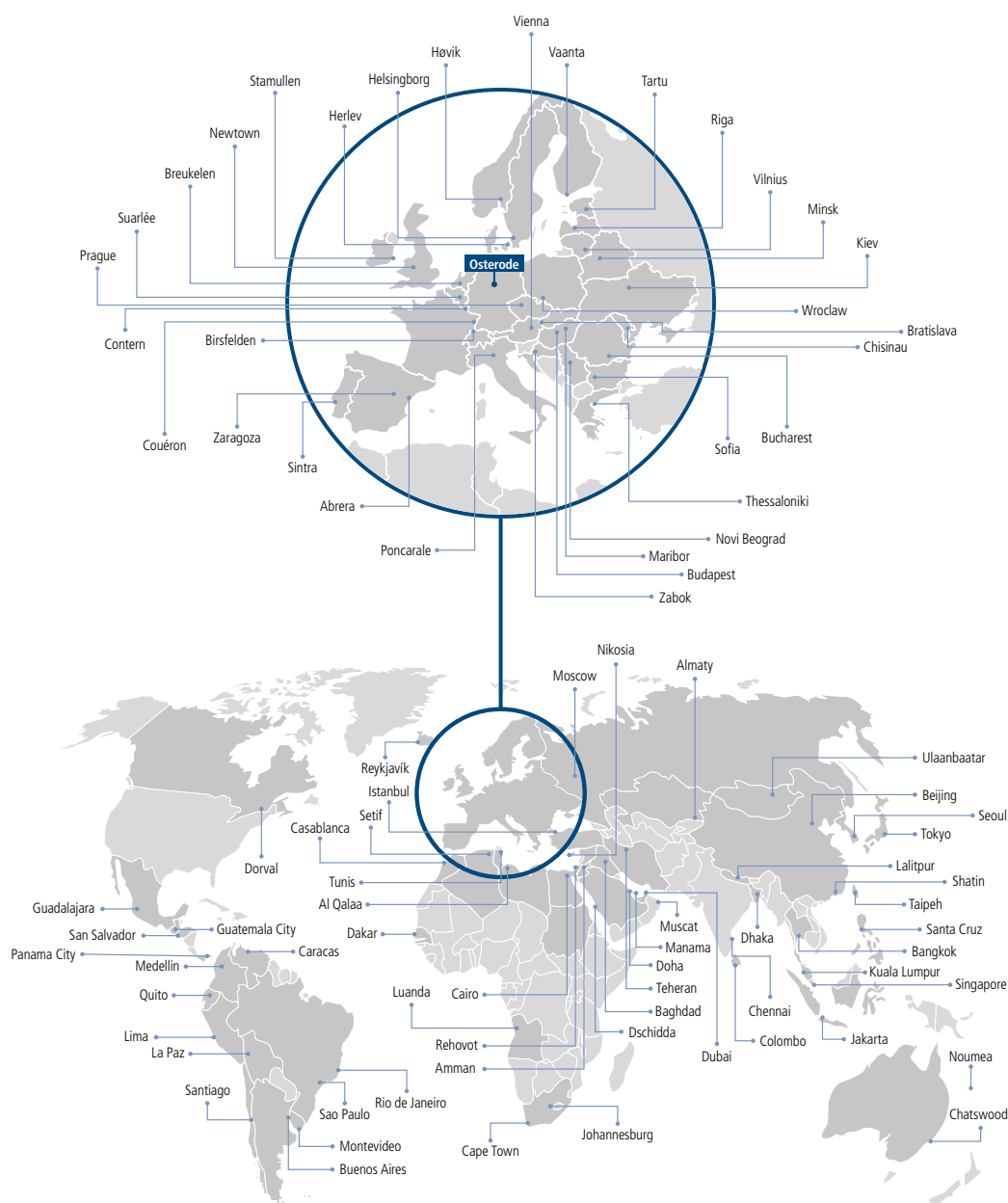
-  Max. capacity
-  Max. speed
-  Max. RCF

-  Swing-out rotor
-  Fixed-angle rotor

Global service

For local product security

Our trained service partners in over 100 countries ensure consistently high quality in accordance with national regulations. Our specialists can also be engaged quickly around the world, either remotely or on site in person.



Selected locations of our representatives.

An overview of all representatives with detailed contact information can be found at www.sigma-zentrifugen.de/en/sales-partners/



Sigma Laborzentrifugen GmbH

An der Unteren Söse 50

37520 Osterode am Harz

Tel. +49 (0) 55 22 / 50 07-0

Fax +49 (0) 55 22 / 50 07-12

info@sigma-zentrifugen.de

www.sigma-zentrifugen.de