turns more than heads

SIGMA

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Sigma 1-14
Sigma 1-14K

Microcentrifuge

- **Unrefrigerated**
- **Refrigerated**

www.sigma-zentrifugen.de

The most compact centrifuge in its class

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.

Small, quiet and powerful – the Sigma 1-14 series is the perfect choice in a wide variety of applications. The balance of performance, ease of use and compact size makes the Sigma 1-14 and the refrigerated version Sigma 1-14K the most popular microcentrifuges in their class. These devices are often used in microbiology applications such as DNA, RNA and protein isolation, clinical chemistry, and university research laboratories.

Microcentrifuge with macro features

Powerful, compact and versatile

The Sigma 1-14 series is equipped with the clearly organised and intuitive Spincontrol Basic controller. Users appreciate the large function keys, clear display and memory capacity for up to ten programs. Another special feature is the motorised lid lock, which makes closing the lid completely effortless.

The powerful drive enables RCF up to 16,602 x g even with a full load (24 x 2 ml). Two pairs of acceleration and braking curves help users optimise their separation processes. That prevents unintentional stirring up of sensitive samples.

Even at maximum speed, the centrifuge is pleasantly quiet with an operating noise level less than 49 dB(A) with the Sigma 1-14K or 54 dB(A) with the air-cooled Sigma 1-14 (measured with fixed-angle rotor 12094).

The Sigma 1-14K refrigerated version has a high-performance, precisely adjustable cooling system with a temperature range from -10 °C to +40 °C. The pre-cooling function allows the centrifuge chamber and accessories to be precooled to a defined temperature. That assures optimal protection of samples against heating.

Video
Watch our video for more information:

Sigma 1-14

- Compact microcentrifuge
- Speed range up to 14,800 rpm
- Maximum capacity: 24 x 2 ml
- Convenient control
- Clearly organised display
- Short acceleration and braking times
- Low noise level
- Zero-maintenance motor
- Motorised lid lock
- Window in lid for external speed monitoring
- Overspeed monitoring
- Manufactured according to the latest national and international standards (e.g. EN 61010-2-020)

Sigma 1-14K

All features of the Sigma 1-14, plus:

- Speed range up to 15,000 rpm
- Ten programs
- High-performance cooling
- Temperature setting range: -10°C to +40°C
- Durable, easy-care stainless steel chamber
- Rapid Temp quick cooling program
- Pre-cooling program
- Guaranteed ≤ +4°C at maximum speed with all rotors

Rotors and accessories

Large selection of rotors and capacities

The popular Sigma 1-14 and Sigma 1-14K can be used with many different rotors for a wide variety of applications.

They can hold 0.2 – 2 ml microliter tubes, paediatric test tubes or spin column kits (minipreps). The six-position swing-out rotor 11128 is ideal for phase separation applications. Sigma gives customers a choice of polypropylene and aluminium rotors.

Due to their better thermal conductivity, aluminium rotors are recommended for use in refrigerated centrifuges, while polypropylene (PP) rotors have better chemical resistance and are less prone to corrosion.

Sigma offers a wide range of rotors, and if desired can also produce custom accessories tailored to customer needs.

▸ p. 6

Swing-out rotor 11128 (1-14K)

- Max. capacity: 6 x 2 ml
- Max. speed (1-14K): 15,000 rpm
- Max. RCF (1-14K): 16,099 x g
- Angle: 90°

▸ p. 6

Fixed-angle rotor 12096 for PCR strips

- Max. capacity: 16 x 0.2 ml PCR tubes
- Max. speed (1-14 / 1-14K): 14,800 / 15,000 rpm
- Max. RCF (1-14 / 1-14K): 11,755 / 12,074 x g
- Angle: 45°

▸ p. 7

Fixed-angle rotor 12082

- Max. capacity: 12 x 2 ml
- Max. speed (1-14 / 1-14K): 14,800 / 15,000 rpm
- Max. RCF (1-14 / 1-14K): 15,183 / 15,596 x g
- Angle: 45°

▸ p. 7

Fixed-angle rotor 12092

- Max. capacity: 12 x 2 ml
- Max. speed (1-14 / 1-14K): 14,800 / 15,000 rpm
- Max. RCF (1-14 / 1-14K): 15,183 / 15,596 x g
- Angle: 45°

▸ p. 8

Fixed-angle rotor 12097 for spin column kits

- Max. capacity: 12 x 2 ml
- Max. speed (1-14 / 1-14K): 14,800 / 15,000 rpm
- Max. RCF (1-14 / 1-14K): 15,183 / 15,596 x g
- Angle: 45°

▸ p. 9

Fixed-angle rotor 12084

- Max. capacity: 24 x 2 ml
- Max. speed (1-14 / 1-14K): 14,800 / 15,000 rpm
- Max. RCF (1-14 / 1-14K): 16,163 / 16,602 x g
- Angle (outer / inner): 32° / 53°

▸ p. 10

Fixed-angle rotor 12094

- Max. capacity: 24 x 2 ml
- Max. speed (1-14 / 1-14K): 14,800 / 15,000 rpm
- Max. RCF (1-14 / 1-14K): 16,163 / 16,602 x g
- Angle (outer / inner): 32° / 53°

Swing-out rotor 11128 (1-14K)

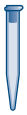
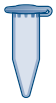
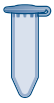
with 6 buckets 13128

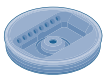
- Max. capacity: 6 x 2 ml
- Max. speed (1-14K): 15,000 rpm
- Max. RCF (1-14K): 16,099 x g
- Tmin at maximum speed: <4°C
- Angle: 90°

Fixed-angle rotor 12096

Polypropylene fixed-angle rotor with lid 17882

- Max. capacity: 16 x 0.2 ml PCR tubes
- Max. speed (1-14 / 1-14K): 14,800 / 15,000 rpm
- Max. RCF (1-14 / 1-14K): 11,755 / 12,074 x g
- Closable with polysulphone lid 17882
- Tmin at maximum speed: <4°C
- Angle: 45°

Tube						
Rated capacity (filling volume) [ml]	0.2	0.4	0.5	0.5	1.5	2
Diameter x length [mm]	5.8 x 20	5.8 x 47	7.9 x 28	10.8 x 47.6	10.7 x 42	10.7 x 42
Tube material	PP	PE	PP	PP	PP	PP
Item no.	15042	15014	15005	Paediatrics	15008	15040
Adapter						
for bucket 13128						
Bore diameter x length [mm]	6.3 x 18.5	6 x 45	8.1 x 45	11.1 x 29.5	11.1 x 38.5	
Tubes per adapter / rotor	1 / 6	1 / 6	1 / 6	1 / 6	– / 6	
Centrifuging radius [mm]	60	62	62	55	64	
Item no.	13021	13000	13002	13074*	–	

Tube		
Rated capacity (filling volume) [ml]	0.2	0.2
Diameter x length [mm]	5.8 x 20	–
Tube material	PP	–
Item no.	15042	PCR strips
Adapter		
for fixed-angle rotor 12096 		
Bore diameter x length [mm]	6.3 x 16.5	6.3 x 16.5
Tubes per rotor	16	2 x 8
Centrifuging radius [mm]	48	48
Item no.	–	–

* Only partial loading possible in some cases, depending on choice of paediatric tubes

Fixed-angle rotor 12082

Aluminium fixed-angle rotor with lid 17882

- Max. capacity: 12 x 2 ml
- Max. speed (1-14 / 1-14K): 14,800 / 15,000 rpm
- Max. RCF (1-14 / 1-14K): 15,183 / 15,596 x g
- Sealable with polysulphone lid 17882
- Tmin at maximum speed: <4°C
- Angle: 45°

Fixed-angle rotor 12092

Polypropylene fixed-angle rotor with lid 17882

- Max. capacity: 12 x 2 ml
- Max. speed (1-14 / 1-14K): 14,800 / 15,000 rpm
- Max. RCF (1-14 / 1-14K): 15,183 / 15,596 x g
- Tmin at maximum speed: <4°C
- Angle: 45°

Tube						
Rated capacity (filling volume) [ml]	0.2	0.4	0.5	0.5	1.5	2
Diameter x length [mm]	5.8 x 20	5.8 x 47	7.9 x 28	10.8 x 47.6	10.7 x 42	10.7 x 42
Tube material	PP	PE	PP	PP	PP	PP
Item no.	15042	15014	15005	Paediatrics	15008	15040
Adapter						
for fixed-angle rotor 12082						
Bore diameter x length [mm]	6.3 x 18.5	6 x 45	8 x 45	11.1 x 29.5	11.1 x 38.5	
Tubes per adapter / rotor	1 / 12	1 / 12	1 / 12	1 / 12	– / 12	
Centrifuging radius [mm]	58	60	60	53	62	
Item no.	13021	13000	13002	13074*	–	

Tube						
Rated capacity (filling volume) [ml]	0.2	0.4	0.5	0.5	1.5	2
Diameter x length [mm]	5.8 x 20	5.8 x 47	7.9 x 28	10.8 x 47.6	10.7 x 42	10.7 x 42
Tube material	PP	PE	PP	PP	PP	PP
Item no.	15042	15014	15005	Paediatrics	15008	15040
Adapter						
for fixed-angle rotor 12092						
Bore diameter x length [mm]	6.3 x 18.5	6 x 45	8 x 45	11.1 x 29.5	11.1 x 38.5	
Tubes per adapter / rotor	1 / 12	1 / 12	1 / 12	1 / 12	– / 12	
Centrifuging radius [mm]	58	60	60	53	62	
Item no.	13021	13000	13002	13074*	–	

* Only partial loading possible in some cases, depending on choice of paediatric tubes

Sigma 1-14 series Video.
More information about our-microcentrifuges Sigma 1-14.

Fixed-angle rotor 12097

Polypropylene fixed-angle rotor for reaction tubes with filter (spin column kits) with lid 17933

- Max. capacity: 12 x 2 ml
- Max. speed (1-14 / 1-14K): 14,800 / 15,000 rpm
- Max. RCF (1-14 / 1-14K): 15,183 / 15,596 x g
- Sealable with polysulphone lid 17933
- Tmin at maximum speed: <4°C
- Angle: 45°

Fixed-angle rotor 12084

Aluminium fixed-angle rotor with lid 17882

- Max. capacity: 24 x 2 ml
- Max. speed (1-14 / 1-14K): 14,800 / 15,000 rpm
- Max. RCF (1-14 / 1-14K): 16,163 / 16,602 x g
- Sealable with polysulphone lid 17882
- Tmin at maximum speed: <4°C
- Angle (outer / inner): 32° / 53°

Tube								
Rated capacity (filling volume) [ml]	0.2	0.4	0.5	0.5	1.5	1.5	2	2
Diameter x length [mm]	5.8 x 20	5.8 x 47	7.9 x 28	10.8 x 47.6	10.7 x 42	10.7 x 42	10.7 x 42	10.7 x 42
Tube material	PP	PE	PP	PP	PP	PP	PP	PP
Item no.	15042	15014	15005	Paediatrics	15008	–	15040	–
Adapter for fixed-angle rotor 12097								
Bore diameter x length [mm]	6.3 x 18.5	6 x 45	8 x 45	11.1 x 29.5	11.1 x 38.5			
Tubes per adapter / rotor	1 / 12	1 / 12	1 / 12	1 / 12	– / 12			
Centrifuging radius [mm]	58	60	60	53	62			
Item no.	13021	13000	13002	13074	–			

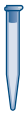
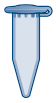
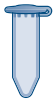
Tube						
Rated capacity (filling volume) [ml]	0.2	0.4	0.5	0.5	1.5	2
Diameter x length [mm]	5.8 x 20	5.8 x 47	7.9 x 28	10.8 x 47.6	10.7 x 42	10.7 x 42
Tube material	PP	PE	PP	PP	PP	PP
Item no.	15042	15014	15005	Paediatrics	15008	15040
Adapter for fixed-angle rotor 12084						
Bore diameter x length [mm]	6.3 x 18.5	6 x 45	8 x 45	11.1 x 29.5	11.1 x 38.5	
Tubes per adapter / rotor	1 / 24	1 / 24	1 / 24	1 / 24	– / 24	
Centrifuging radius (outer/inner) [mm]	62 / 62	64 / 64	64 / 64	57 / 57	66 / 66	
Item no.	13021	13000	13002	13074*	–	

* Only partial loading possible in some cases, depending on choice of paediatric tubes

Fixed-angle rotor 12094

Polypropylene fixed-angle rotor with lid 17882

- Max. capacity: 24 x 2 ml
- Max. speed (1-14 / 1-14K): 14,800 / 15,000 rpm
- Max. RCF (1-14 / 1-14K): 16,163 / 16,602 x g
- Sealable with polysulphone lid 17882
- Tmin at maximum speed: <4°C
- Angle (outer / inner): 32° / 53°

Tube						
Rated capacity (filling volume) [ml]	0.2	0.4	0.5	0.5	1.5	2
Diameter x length [mm]	5.8 x 20	5.8 x 47	7.9 x 28	10.8 x 47.6	10.7 x 42	10.7 x 42
Tube material	PP	PE	PP	PP	PP	PP
Item no.	15042	15014	15005	Paediatrics	15008	15040
Adapter						
for fixed-angle rotor 12094						
Bore diameter x length [mm]	6.3 x 18.5	6 x 45	8 x 45	11.1 x 29.5	11.1 x 38.5	
Tubes per adapter / rotor	1 / 24	1 / 24	1 / 24	1 / 24	– / 24	
Centrifuging radius (outer/inner) [mm]	62 / 62	64 / 64	64 / 64	57 / 57	66 / 66	
Item no.	13021	13000	13002	13074*	–	

* Only partial loading possible in some cases, depending on choice of paediatric tubes

Material properties

Guideline for optimal tube selection

Due to the many factors that influence material properties, this overview is only intended as a general recommendation. There is no guarantee of the stated properties. Users should therefore carefully test materials for suitability under specific application conditions. Tubes should be discarded as soon as they show any sign of material fatigue.

	Polycarbonate (PC)	Polyvinyl fluoride (PF)	Polystyrene (PS)	Polyethylene (PE)	Polypropylene (PP)
Autoclave resistant	Yes	Yes	No	No	Yes
Elasticity	Not elastic	Not elastic	Not elastic	Good	Not elastic
Transparency	Transparent	Translucent	Transparent	Translucent	Translucent
Microwave resistant	Moderate	Yes	No	Limited	Moderate
Chemical resistance					
Weak acids	Yes	Yes	Yes	Yes	Yes
Strong acids	No	Yes	Limited	Yes	Yes
Alcohols and alkalis	No	Yes	Yes	Yes	Yes
Salts	Limited	Yes	Limited	Yes	Yes
Note:	Frequent autoclaving leads to loss of strength	Tubes should be completely filled and closed for use at maximum RCF			

	PP copolymer (PPCO)	Glass	High-speed glass (HS glass)	Stainless steel
Autoclave resistant	Yes	Yes	Yes	Yes
Elasticity	Moderate	Not elastic	Not elastic	Not elastic
Transparency	Translucent	Transparent	Transparent	Opaque
Microwave resistant	Moderate	Yes	Yes	No
Chemical resistance				
Weak acids	Yes	Yes	Yes	Limited
Strong acids	Yes	Yes	Yes	Limited
Alcohols and alkalis	Yes	Yes	Yes	Yes
Salts	Yes	Yes	Yes	Limited
Note:		Max. RCF for all glass tubes approx. 4,000 x g	High-speed glass for maximum RCF of 13,100 x g	

Spincontrol Basic

Advanced control, intuitive operation

Spincontrol Basic is a programmable and user-friendly control unit with a clearly organised and intuitive user interface that simplifies everyday tasks in the lab. Operating parameters are entered using centrally arranged arrow buttons, and parameter settings can be changed during operation.

The Sigma 1-14K can hold up to ten programs – a unique feature in its class. These user-modifiable programs can store standard routines for retrieval at any time. That makes the control unit ideal for facilities where tubes with different operating parameters must be centrifuged. Quick access to stored programs facilitates enhanced process reliability and quality of analytical results.

The high-performance cooling system provides precise control over the range of -10 °C to +40 °C with fine adjustment in 1 °C increments. Along with the pre-cooling function, the Sigma 1-14K features standstill cooling.

Two pairs of acceleration and braking curves help to optimise separation processes. Short or pulsed runs are also possible by pressing and holding the Start/Stop button.

Display	LCD
Speed/RCF display	+
Timer (s; min:s)	10 – 99:59
Short run, Continuous run	+ , +
Time increment [s]	1
Speed increment [rpm]	100
Temperature increment [°C]	1*
RCF increment [x g]	10
Programs	10*
Acceleration curves	2 (fast, soft)
Braking curves	2 (fast, soft)
Standstill cooling	+*
Pre-cooling program	+*
Microprocessor control	+

* Only Sigma 1-14K

Premium quality

Made in Germany

The Sigma 1-14 and Sigma 1-14K meet the highest technical requirements of laboratory standards. Developed and produced at our facility in Osterode, Germany, they are high-performance, durable and energy-efficient quality products and conform 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 ensure reliability and optimise system availability.

	Sigma 1-14	Sigma 1-14K
Max. capacity [ml]		
Swing-out rotor	–	6 x 2
Fixed-angle rotor	24 x 2	24 x 2
Max. RCF	16,163	16,602
Maximum speed [rpm]	14,800	15,000
Minimum speed [rpm]	200	200
Noise level at maximum speed (approx.) [dB(A)]		
Fixed-angle rotor 12094	≤ 54	≤ 49
Swing-out rotor 11128 with bucket 13128	–	≤ 50
Max. acceleration time [s]		
Fixed-angle rotor 12094	≤ 15	≤ 16
Swing-out rotor 11128 with bucket 13128	–	≤ 18
Max. braking time [s]		
Fixed-angle rotor 12094	≤ 12	≤ 18
Swing-out rotor 11128 with bucket 13128	–	≤ 25
Temperature adjustment range [°C]	–	-10 – +40
Power consumption [W]	95	230
Height x width x depth [mm]	176 x 266 x 212	236 x 273 x 515
Height with open lid [mm]	310	404
Weight without rotor [kg]	6	19
Refrigerant		R513a

Service Sigma
For maintenance and repairs please contact our Service department at:

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 1-14 centrifuge
220 – 240 V, 50/60 Hz (item no. 10014)
100 – 120 V, 50/60 Hz (item no. 10015)

Sigma 1-14K centrifuge
220 – 240 V, 50/60 Hz (item no. 10020)
100 – 120 V, 50/60 Hz (item no. 10021)

WEEE-Reg.-Nr. DE 76714077

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 range 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

Floorstanding 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

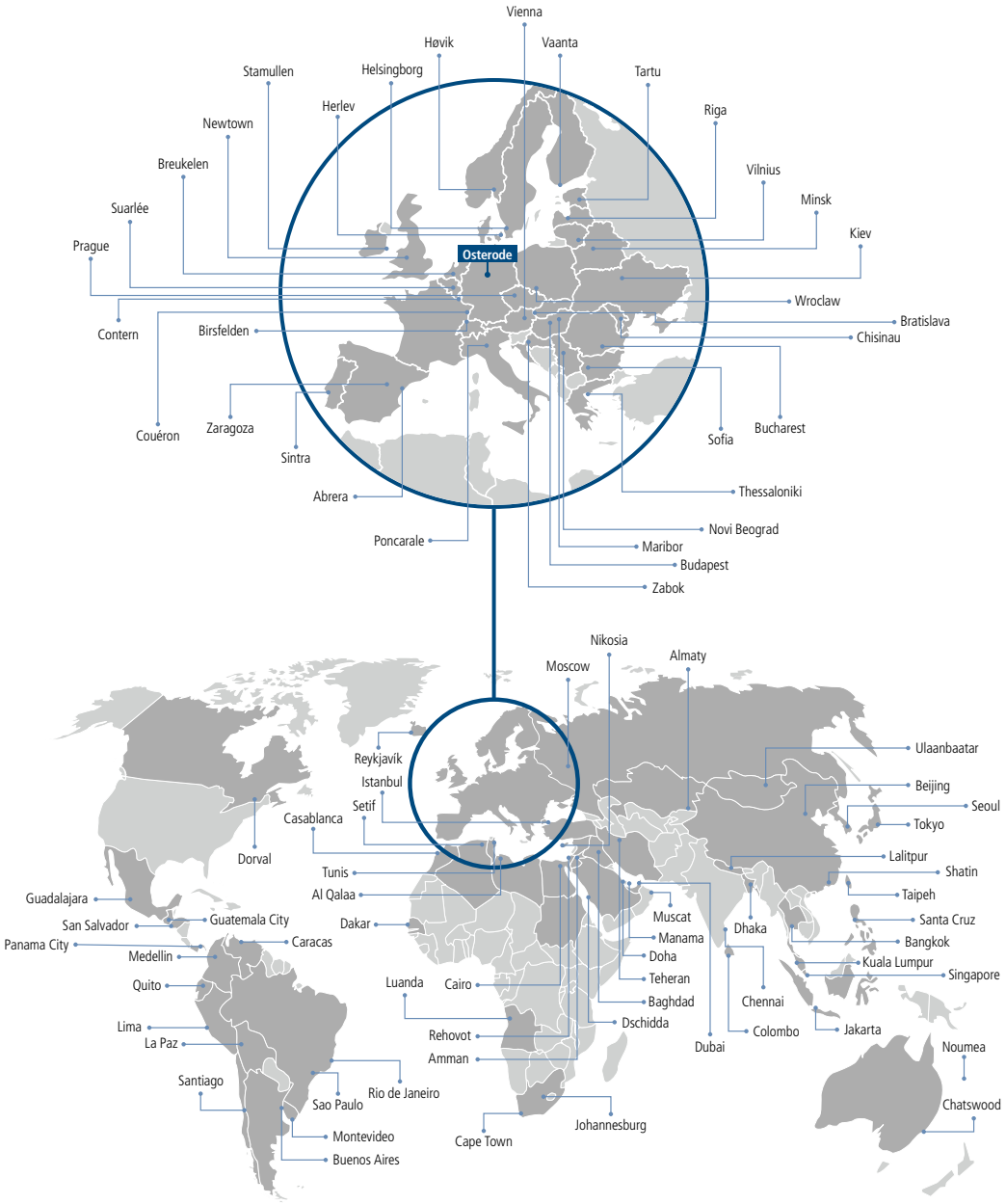
Legend

- 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

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