

## Sigma 1-7



Benchtop centrifuge



# Powerhouse for a small volume of samples



**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 – those are the hallmarks of the Sigma 1-7. This new small centrifuge is excellently suited to the separation of blood or urine samples. The compact size makes it ideal for medical practices, veterinarians and small laboratories. It can also be put to good use for environmental analysis and in various educational institutions, such as schools or universities. The perfectly matched fixed-angle rotor of the Sigma 1-7 is well suited to the demands and requirements of small to medium volumes of samples. This laboratory centrifuge additionally features high RCF capability as well as sturdy, high-quality finishing.

# Best in class

## Powerful, low-vibration and quiet

The Sigma 1-7 small centrifuge can do more than similar devices in its class. It is the only one in its segment that supports up to ten programs. That allows routine operations to be stored and work processes to be optimised.

Another unique feature is the motorised lid lock for convenient, effortless closing. Automatic lid opening at the end of the run can also be configured if so desired. That makes it easy to see when the process is finished, even from a distance. In operation the Sigma 1-7 generates extremely low vibrations and is pleasantly quiet.

The Sigma 1-7 has an all-purpose fixed-angle rotor that can hold many different types of conventional blood tubes for in vitro

diagnostics (IVD) as well as round-bottom tubes up to 15 ml. With a maximum RCF of 6,153 x g, separation times can be reduced dramatically – a crucial factor for time-critical applications such as emergency laboratories where fast diagnosis is vitally important for patients. The short acceleration and braking times of 13 and 11 seconds, respectively, make results available in next to no time.

The compact design, intuitive operation and high performance make it a popular tool in small and medium-size laboratories. High-quality finishing and sturdy components ensure safe work.

### Sigma 1-7

- Small centrifuge for a small volume of samples
- Speed range up to 8,000 rpm
- Maximum capacity: 6 x 15 ml
- Maximum RCF: 6,153 x g
- Simple and convenient Spincontrol Basic controller
- Clearly organised display
- Compact, space-saving device
- Ten programs
- Low noise level
- Short acceleration and braking times
- Low temperature rise in continuous operation
- Motorised lid lock
- Automatic lid unlocking
- Zero-maintenance motor
- Two acceleration and braking curves
- Window in lid for external speed monitoring
- Produced in compliance with the latest national and international standards (e.g. EN 61010-2-020)







# Universal fixed-angle rotor












## Fixed-angle rotor 91429

### Polypropylene fixed-angle rotor

- Max. capacity: 6 x 15 ml
- Max. speed: 8,000 rpm
- Max. RCF: 6,153 x g
- Angle: 38°









### Blood and urine tubes

|                                      |  |  |  |  |  |  |  |  |  |  |  |
|--------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Rated capacity (filling volume) [ml] | 1.1–1.4                                                                           | 2.7–5                                                                             | 1.6–5.6                                                                           | 2.6–5.3                                                                           | 6                                                                                 | 4–7                                                                               | 4–5.5                                                                             | 7.5–10                                                                              | 6–10                                                                                | 9–10                                                                                |                                                                                     |
| Diameter x length with lid [mm]      | 8 x 82                                                                            | 11 x 82–108                                                                       | 13 x 91–106                                                                       | 13 x 81–83                                                                        | 13 x 106                                                                          | 13 x 106–107                                                                      | 15 x 91                                                                           | 15 x 106–108                                                                        | 16 x 106–107                                                                        | 16 x 108                                                                            |                                                                                     |
| Tube material                        | PP                                                                                | PP                                                                                | PP                                                                                | PP                                                                                | PP                                                                                | PP                                                                                | PP                                                                                | PP                                                                                  | PP                                                                                  | PP                                                                                  |                                                                                     |
| Item no.                             | –                                                                                 | –                                                                                 | –                                                                                 | –                                                                                 | –                                                                                 | –                                                                                 | –                                                                                 | –                                                                                   | –                                                                                   | –                                                                                   | –                                                                                   |





### Adapter

for  
fixed-angle rotor  
91429



|                             |  |  |  |  |  |  |
|-----------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Bore diameter x length [mm] | 17 x 65                                                                             | 17 x 85                                                                             | 17 x 65                                                                             | 17 x 85                                                                             | 17 x 65                                                                               | 17 x 85                                                                               |
| Tubes per adapter / rotor   | 1 / 6                                                                               | – / 6                                                                               | 1 / 6                                                                               | – / 6                                                                               | 1 / 6                                                                                 | – / 6                                                                                 |
| Centrifuging radius [mm]    | 66                                                                                  | 86                                                                                  | 66                                                                                  | 86                                                                                  | 66                                                                                    | 86                                                                                    |
| Item no.                    | 13075                                                                               | –                                                                                   | 13075                                                                               | –                                                                                   | 13075                                                                                 | –                                                                                     |

### Tube

|                                      |  |  |  |  |          |          |          |
|--------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|----------|----------|----------|
| Rated capacity (filling volume) [ml] | 10                                                                                  | 10                                                                                  | 10                                                                                  | 10                                                                                    | 10       | 14       | 14       |
| Diameter x length [mm]               | 16.1 x 81.1                                                                         | 16.1 x 81.1                                                                         | 16.1 x 81.1                                                                         | 16 x 100                                                                              | 16 x 100 | 17 x 100 | 17 x 100 |
| Tube material                        | PF                                                                                  | PC                                                                                  | PPCO                                                                                | Glass                                                                                 | Glass    | PP       | PS       |
| Item no.                             | 15000                                                                               | 15010                                                                               | 15039                                                                               | 15015                                                                                 | 15024    | 15023    | 15020    |

### Adapter

for  
fixed-angle rotor  
91429



|                             |  |  |
|-----------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Bore diameter x length [mm] | 17 x 65                                                                             | 17 x 85                                                                             |
| Tubes per adapter / rotor   | 1 / 6                                                                               | – / 6                                                                               |
| Centrifuging radius [mm]    | 66                                                                                  | 86                                                                                  |
| Item no.                    | 13075                                                                               | –                                                                                   |

# 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) |
|-------------------------------------------|------------------------------------------------|---------------------------------------------------------------------|------------------|-------------------|--------------------|
| <b>Autoclave resistant</b>                | Yes                                            | Yes                                                                 | No               | No                | Yes                |
| <b>Elasticity</b>                         | Not elastic                                    | Not elastic                                                         | Not elastic      | Good              | Not elastic        |
| <b>Transparency</b>                       | Transparent                                    | Translucent                                                         | Transparent      | Translucent       | Translucent        |
| <b>Recommended temperature range [°C]</b> |                                                |                                                                     |                  |                   |                    |
| Embrittlement temperature [°C]            | ≤ -20                                          | ≤ -20                                                               | ≤ -10            | ≤ -20             | ≤ -20              |
| Max. working temperature [°C]             | ≥ +125                                         | ≥ +125                                                              | ≥ +80            | ≥ +90             | ≥ +125             |
| <b>Microwave resistant</b>                | Moderate                                       | Yes                                                                 | No               | Limited           | Moderate           |
| <b>Chemical resistance</b>                |                                                |                                                                     |                  |                   |                    |
| 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                |
| <b>Note:</b>                              | 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 |
|-------------------------------------------|---------------------|------------------------------------------------|------------------------------------------------|-----------------|
| <b>Autoclave resistant</b>                | Yes                 | Yes                                            | Yes                                            | Yes             |
| <b>Elasticity</b>                         | Moderate            | Not elastic                                    | Not elastic                                    | Not elastic     |
| <b>Transparency</b>                       | Translucent         | Transparent                                    | Transparent                                    | Opaque          |
| <b>Recommended temperature range [°C]</b> |                     |                                                |                                                |                 |
| Embrittlement temperature [°C]            | ≤ -20               | ≤ -20                                          | ≤ -20                                          | ≤ -20           |
| Max. working temperature [°C]             | ≥ +125              | ≥ +200                                         | ≥ +200                                         | ≥ +200          |
| <b>Microwave resistant</b>                | Moderate            | Yes                                            | Yes                                            | No              |
| <b>Chemical resistance</b>                |                     |                                                |                                                |                 |
| Weak acids                                | Yes                 | Yes                                            | Yes                                            | Limited         |
| Strong acids                              | Yes                 | Yes                                            | Yes                                            | Limited         |
| Alcohols and alkalis                      | Yes                 | Yes                                            | Yes                                            | Yes             |
| Salts                                     | Yes                 | Yes                                            | Yes                                            | Limited         |
| <b>Note:</b>                              |                     | 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. A convenient feature is the user-configurable automatic lid opening at the end of the run.

Spincontrol Basic 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 institutions where tubes with different operating parameters must be centrifuged. Quick access to stored programs facilitates enhanced process reliability and quality of analytical results.

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; h:min)                                | 10 – 99:59     |
| Short run, Continuous run                       | +, +           |
| Time increment [s]                              | 1              |
| Speed increment [rpm]                           | 100            |
| RCF increment [x g]                             | 10             |
| Programs                                        | 10             |
| Acceleration curves                             | 2 (fast, soft) |
| Braking curves                                  | 2 (fast, soft) |
| Automatic lid opening at end of run, switchable | +, +           |
| Microprocessor control                          | +              |








# 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

# Premium quality

## Made in Germany

The Sigma 1-7 centrifuge meets the highest technical requirements and laboratory standards. 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 ensure reliability and optimise system availability.

### Sigma Service

For maintenance and repairs please contact our Service department at [www.sigma-zentrifugen.de/en/service](http://www.sigma-zentrifugen.de/en/service)

### Sigma 1-7

|                                                           |                 |
|-----------------------------------------------------------|-----------------|
| <b>Max. capacity [ml]</b>                                 |                 |
| fixed-angle rotor                                         | 6 x 15          |
| <b>Max. RCF</b>                                           | 6,153           |
| <b>Maximum speed [rpm]</b>                                | 8,000           |
| <b>Minimum speed [rpm]</b>                                | 200             |
| <b>Noise level at maximum speed (approximate) [dB(A)]</b> |                 |
| Fixed-angle rotor 91429                                   | 58              |
| <b>Max. acceleration time [s]</b>                         |                 |
| Fixed-angle rotor 91429                                   | 13              |
| <b>Max. braking time [s]</b>                              |                 |
| Fixed-angle rotor 91429                                   | 11              |
| <b>Power consumption [W]</b>                              | 55              |
| <b>Height x width x depth [mm]</b>                        | 271 x 310 x 418 |
| <b>Height with open lid [mm]</b>                          | 527             |
| <b>Weight without rotor [kg]</b>                          | 13              |

### 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 package for:

Unrefrigerated centrifuges (item no. 17710)  
 Refrigerated centrifuges (item no. 17711)  
 An additional rotor (item no. 17712)

### Sigma 1-7 centrifuge

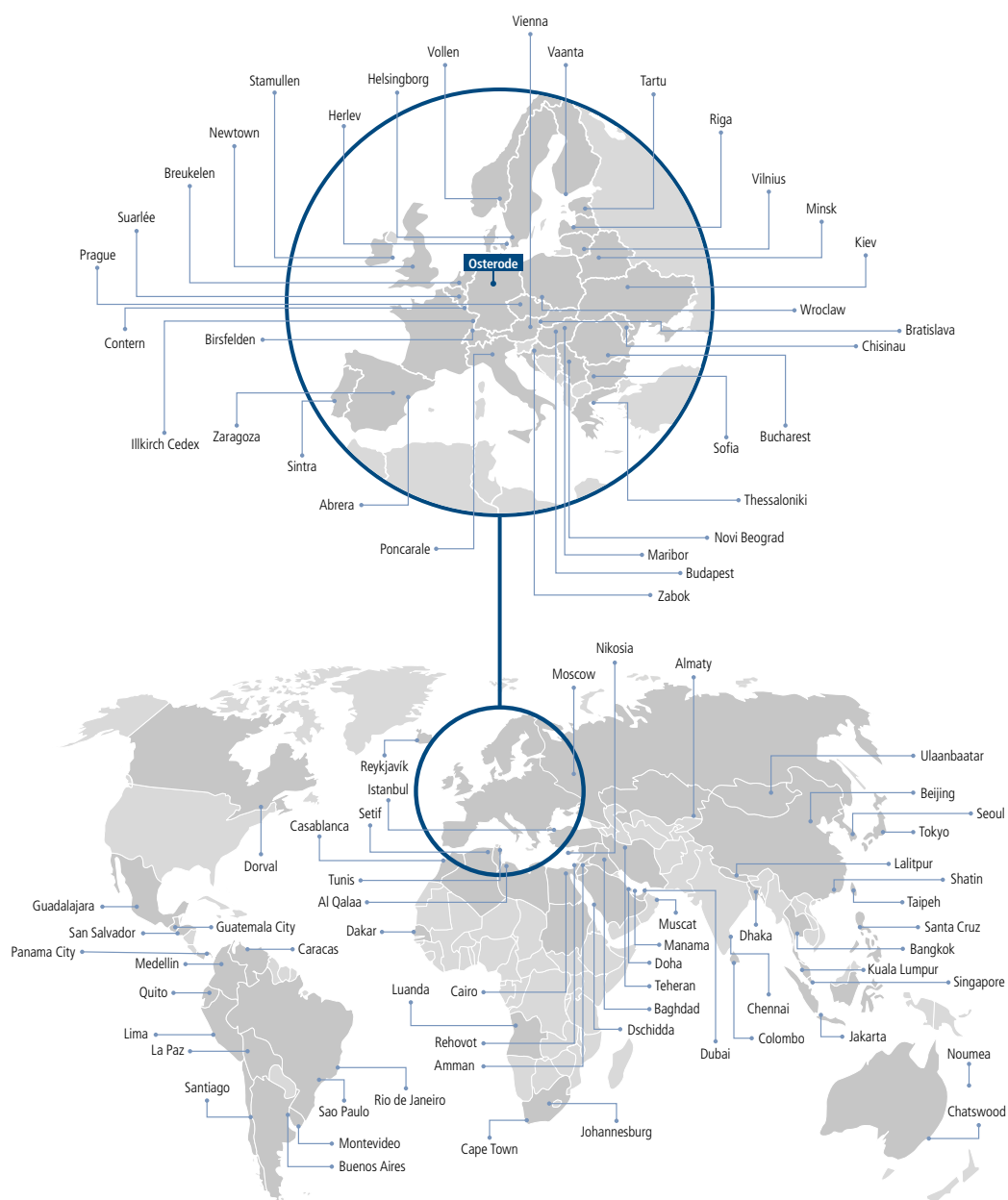
220–240 V, 50/60 Hz (item no. 10022)



# 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](http://www.sigma-zentrifugen.de)



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