



# Sigma 3-18KS

# Sigma 3-18KHS



Benchtop centrifuge

- Refrigerated
- Refrigerated/heatable

With the new g-lock® rotor system





# Multitalent for high demands



**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 3-18 product series is the perfect choice for all users who set stringent demands on refrigerated benchtop centrifuges and prefer a wide variety of operating options.

Both the refrigerated version Sigma 3-18KS and the refrigerable and heatable version Sigma 3-18KHS enable RCF exceeding 30,000 x g and are very convenient to use thanks to the patented one-knob controller. Combined with the extensive portfolio of rotors and accessories, these universal centrifuges set standards for versatility and performance.

# Equal to every challenge

## Fast acceleration and short braking times

The Sigma 3-18KS and Sigma 3-18KHS centrifuges are designed for research tasks and routine procedures in laboratory operations. They are often used in hospitals, universities, industrial laboratories, and in the biotechnology and pharmaceutical sectors.

The refrigerated or actively heatable version Sigma 3-18KHS is popular amongst users for sedimentation of liquid media at relatively high temperatures, among other applications. Overall the Sigma 3-18KS and Sigma 3-18KHS offer many options that allow work processes in laboratory operations to be made more efficient, safer and more convenient. Thanks to their unique versatility and a broad range of fixed-angle and swing-out rotors, they also appeal to demanding users. With RCF above 30,000 x g for fixed-angle rotors and very

short acceleration and braking times, they offer a perfect combination of performance and productivity.

They also score with well-conceived features: Intuitive one-knob Spincontrol S controller and effective operation with illuminated buttons for start, stop and lid opening. Cycle counting, rotor identification, lid opening assisted by gas springs, and easy, effortless lid closing simplify everyday laboratory work and provide maximum safety.

Microcontroller based, speed up to 18,000 rpm, suitability for low-speed operation, choice of ten languages, and a comprehensive portfolio of accessories are just a few of the reasons for choosing the Sigma 3-18KS and Sigma 3-18KHS centrifuges.

### Sigma 3-18KS

- Universal benchtop centrifuge
- Speed range up to 18,000 rpm
- Maximum capacity: 4 x 400 ml
- User-friendly Spincontrol S controller
- Extra large TFT display
- 60 programs
- Progress indicator
- High-performance cooling
- Temperature setting range: -20 °C to +40°C
- Pre-cooling function "Rapid Temp"
- Rotor cooling also possible at standstill
- Low noise level
- Automatic rotor identification
- Zero-maintenance induction motor
- Motorised lid lock
- Automatic imbalance monitoring
- Rotor life monitoring for a high degree of safety
- Easily cleaned stainless steel drum
- Window in lid for external speed monitoring
- Produced in compliance with the latest national and international standards (e.g. EN 61010-2-020)



### Sigma 3-18KHS

All features of the Sigma 3-18KS, plus:

- Heatable refrigerated centrifuge
- Standstill cooling or heating
- Temperature setting range: -20 °C to +60 °C

# Revolutionary simplicity

## g-lock® rotor exchange without tools or buttons

The innovative g-lock rotor system from Sigma enables rotor exchange with no need for any tools or button pushing. Mounting and exchanging rotors could hardly be easier. The rotor is locked in place by centrifugal force after the centrifuge starts running, eliminating the need for screw mounting.

The new g-lock system makes rotor exchange effortless and is ideally suited to application scenarios that require working with more than one rotor. It minimises non-productive time and saves time and money.

Along with simplified and efficient handling, the system features exceptionally high safety. Improper or incorrect use is also prevented by the rotor identification system.

Furthermore, the g-lock system enables easy cleaning of the stainless steel chamber to help minimise contamination risks.

**g-lock**



With the g-lock system, no tools or buttons at all are necessary for rotor exchange.



More on the Web!

View our video to learn more about g-lock.

Scan the QR code or go directly to the web page:

[www.sigma-zentrifugen.de/  
en/g-lock](http://www.sigma-zentrifugen.de/en/g-lock)



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# Rotors and accessories

## Large selection and a multitude of applications

With an excellent balance of features and a large range of fixed-angle and swing-out rotors, the Sigma 3-18KS and Sigma 3-18KHS can be used for a wide variety of applications.

The extensive Sigma rotor portfolio also offers extremely high versatility. Particularly thanks to the high RCF capability with fixed-angle rotors, the centrifuges excel in high speed performance, resulting in a distinctly broader spectrum of applications compared to other centrifuge models of similar capacity.

As a special feature, Sigma can produce custom accessories upon request. The rotors and accessories are made from certified high-grade materials to withstand the most severe stresses.

The centrifuges can be supplied with the g-lock system or with the previous conventional rotor mounting system.

### Swing-out rotors starting on page 9

#### Swing-out rotor 11180

- Max. capacity: 4 x 400 ml
- Max. speed (3-18KS / 3-18KHS): 4,700 rpm
- Max. RCF (3-18KS / 3-18KHS): 4,248 x g
- Accessories in part with biosafe closure 
- Angle: 90°
- **NEW:** g-lock rotor 91124 



► p.9

#### Swing-out rotor 11135

- Max. capacity: 24 x 2 ml
- Max. speed (3-18KS / 3-18KHS): 14,000 rpm
- Max. RCF (3-18KS / 3-18KHS): 16,215 x g
- Angle: 90°



► p.20

#### Swing-out rotor 11133

- Max. capacity: 4 x 200 ml
- Max. speed (3-18KS / 3-18KHS): 5,500 rpm
- Max. RCF (3-18KS / 3-18KHS): 5,242 x g
- Angle: 90°
- **NEW:** g-lock rotor 91373 

► p.16



#### Drum rotor 11136

- Max. capacity: 60 x 2 ml
- Max. speed (3-18KS / 3-18KHS): 14,500 rpm
- Max. RCF (3-18KS / 3-18KHS): 16,454 x g
- Angle: 90°



► p.20

#### Swing-out rotor 11222

- Max. capacity: 6 microtiter plates
- Max. speed (3-18KS / 3-18KHS): 3,000 rpm
- Max. RCF (3-18KS / 3-18KHS): 1,218 x g
- Angle: 90°



► p.19

#### Swing-out rotor 11241

- Max. capacity: 8 microtiter plates
- Max. speed (3-18KS / 3-18KHS): 4,700 rpm
- Max. RCF (3-18KS / 3-18KHS): 3,285 x g
- Biosafe with cap 17108 
- Angle: 90°
- **NEW:** g-lock rotor 91551 

► p.19



## Fixed-angle rotors starting on page 21

|  |   |   |   |
|--|---|---|---|
| <p><b>Fixed-angle rotor 12115</b></p> <ul style="list-style-type: none"> <li>▪ Max. capacity: 96 x 0.2 ml conical</li> <li>▪ Max. speed (3-18KS / 3-18KHS): 16,400 rpm</li> <li>▪ Max. RCF (3-18KS / 3-18KHS): 29,468 x g</li> <li>▪ Angle: 45° (both rows)</li> </ul>   | <p>► p.21</p>    | <p><b>Fixed-angle rotor 12154</b></p> <ul style="list-style-type: none"> <li>▪ Max. capacity: 24 x 2 ml</li> <li>▪ Max. speed (3-18KS / 3-18KHS): 18,000 rpm</li> <li>▪ Max. RCF (3-18KS / 3-18KHS): 29,703 x g</li> <li>▪ Angle: 45°</li> <li>▪ <b>NEW:</b> g-lock rotor 91123 </li> </ul>  | <p>► p.21</p>    |
| <p><b>Fixed-angle rotor 12131</b></p> <ul style="list-style-type: none"> <li>▪ Max. capacity: 30 x 2 ml</li> <li>▪ Max. speed (3-18KS / 3-18KHS): 16,400 rpm</li> <li>▪ Max. RCF (3-18KS / 3-18KHS): 30,070 x g</li> <li>▪ Angle: 45°</li> </ul>   | <p>► p.22</p>    | <p><b>Fixed-angle rotor 12349</b></p> <ul style="list-style-type: none"> <li>▪ Max. capacity: 48 x 2 ml</li> <li>▪ Max. speed (3-18KS / 3-18KHS): 15,000 rpm</li> <li>▪ Max. RCF (3-18KS / 3-18KHS): 25,155 x g</li> <li>▪ Angle (upper / lower row): 25° / 53°</li> <li>▪ <b>NEW:</b> g-lock rotor 91520 </li> </ul>  | <p>► p.22</p>    |
| <p><b>Fixed-angle rotor 12182</b></p> <ul style="list-style-type: none"> <li>▪ Max. capacity: 12 x 5 ml conical</li> <li>▪ Max. speed (3-18KS / 3-18KHS): 17,500 rpm</li> <li>▪ Max. RCF (3-18KS / 3-18KHS): 28,761 x g</li> <li>▪ Biosafe with aluminium lid 17182 </li> <li>▪ Angle: 40°</li> </ul>  | <p>► p.23</p>   | <p><b>Fixed-angle rotor 12111</b></p> <ul style="list-style-type: none"> <li>▪ Max. capacity: 10 x 10 ml round-bottom</li> <li>▪ Max. speed (3-18KS / 3-18KHS): 18,000 rpm</li> <li>▪ Max. RCF (3-18KS / 3-18KHS): 27,530 x g</li> <li>▪ Angle: 35°</li> <li>▪ <b>NEW:</b> g-lock rotor 91527 </li> </ul>  | <p>► p.23</p>   |
| <p><b>Fixed-angle rotor 12157</b></p> <ul style="list-style-type: none"> <li>▪ Max. capacity: 20 x 10 ml round-bottom</li> <li>▪ Max. speed (3-18KS / 3-18KHS): 10,000 rpm</li> <li>▪ Max. RCF (3-18KS / 3-18KHS): 10,956 x g</li> <li>▪ Angle: 25°</li> </ul>   | <p>► p.24</p>  | <p><b>Fixed-angle rotor 12311</b></p> <ul style="list-style-type: none"> <li>▪ Max. capacity: 12 x 15 ml conical</li> <li>▪ Max. speed (3-18KS / 3-18KHS): 13,500 rpm</li> <li>▪ Max. RCF (3-18KS / 3-18KHS): 20,172 x g</li> <li>▪ Biosafe with aluminium lid 17935 </li> <li>▪ Angle: 25°</li> <li>▪ <b>NEW:</b> g-lock rotor 91534 </li> </ul> | <p>► p.24</p>  |
| <p><b>Fixed-angle rotor 12158</b></p> <ul style="list-style-type: none"> <li>▪ Max. capacity: 6 x 30 ml round-bottom</li> <li>▪ Max. speed (3-18KS / 3-18KHS): 18,000 rpm</li> <li>▪ Max. RCF (3-18KS / 3-18KHS): 28,616 x g</li> <li>▪ Angle: 29°</li> <li>▪ <b>NEW:</b> g-lock rotor 91365 </li> </ul>  | <p>► p.25</p>  | <p><b>Fixed-angle rotor 12150</b></p> <ul style="list-style-type: none"> <li>▪ Max. capacity: 6 x 50 ml round-bottom</li> <li>▪ Max. speed (3-18KS / 3-18KHS): 14,600 rpm</li> <li>▪ Max. RCF (3-18KS / 3-18KHS): 20,018 x g</li> <li>▪ Angle: 25°</li> <li>▪ <b>NEW:</b> g-lock rotor 91375 </li> </ul>   | <p>► p.25</p>  |
| <p><b>Fixed-angle rotor 12310</b></p> <ul style="list-style-type: none"> <li>▪ Max. capacity: 6 x 50 ml conical</li> <li>▪ Max. speed (3-18KS / 3-18KHS): 14,500 rpm</li> <li>▪ Max. RCF (3-18KS / 3-18KHS): 22,096 x g</li> <li>▪ Biosafe with aluminium lid 17934 </li> <li>▪ Angle: 25°</li> <li>▪ <b>NEW:</b> g-lock rotor 91377 </li> </ul> | <p>► p.26</p>  | <p><b>Fixed-angle rotor 12156</b></p> <ul style="list-style-type: none"> <li>▪ Max. capacity: 8 x 50 ml round-bottom</li> <li>▪ Max. speed (3-18KS / 3-18KHS): 13,800 rpm</li> <li>▪ Max. RCF (3-18KS / 3-18KHS): 20,440 x g</li> <li>▪ Angle: 25°</li> </ul>   | <p>► p.26</p>  |
| <p><b>Fixed-angle rotor 12155</b></p> <ul style="list-style-type: none"> <li>▪ Max. capacity: 4 x 94 ml round-bottom</li> <li>▪ Max. speed (3-18KS / 3-18KHS): 14,500 rpm</li> <li>▪ Max. RCF (3-18KS / 3-18KHS): 21,390 x g</li> <li>▪ Angle: 26°</li> <li>▪ <b>NEW:</b> g-lock rotor 91532 </li> </ul>  | <p>► p.27</p>  | <p><b>Fixed-angle rotor 12159</b></p> <ul style="list-style-type: none"> <li>▪ Max. capacity: 6 x 94 ml round-bottom</li> <li>▪ Max. speed (3-18KS / 3-18KHS): 11,400 rpm</li> <li>▪ Max. RCF (3-18KS / 3-18KHS): 14,239 x g</li> <li>▪ Angle: 25°</li> <li>▪ <b>NEW:</b> g-lock rotor 91119 </li> </ul>   | <p>► p.28</p>  |



## Swing-out rotor 11180

### Round bucket 13190 (1 set = 2 pcs.)

- Max. capacity: 4 x 400 ml
- Max. speed (3-18KS / 3-18KHS): 4,700 rpm
- Max. RCF (3-18KS / 3-18KHS): 4,248 x g
- Max. tube length in middle of bucket without / with cap: 142 / 125 mm
- Biosafe with cap 17190
- Tmin at maximum speed: <4°C
- Angle: 90°
- NEW:** g-lock rotor 91124



| Tube                                 |          |          |             |          |           |           |         |         |          |
|--------------------------------------|----------|----------|-------------|----------|-----------|-----------|---------|---------|----------|
| Rated capacity (filling volume) [ml] | 0.2      | 0.4      | 0.5         | 0.5      | 1.5       | 2         | 5       | 5       | 6 (5)    |
| Diameter x length [mm]               | 5.8 x 20 | 5.8 x 47 | 10.8 x 46.5 | 7.9 x 28 | 10.7 x 42 | 10.7 x 42 | 12 x 75 | 17 x 60 | 12 x 100 |
| Tube material                        | PP       | PE       | PP          | PP       | PP        | PP        | PS      | PPCO    | Glass    |
| Item no.                             | 15042    | 15014    | Paediatrics | 15005    | 15008     | 15040     | 15060   | —       | 15007    |
|                                      |          |          |             |          |           |           |         |         | 15027    |

| Adapter                     |               |               |         |          |  |             |           |         |             |
|-----------------------------|---------------|---------------|---------|----------|--|-------------|-----------|---------|-------------|
| for round bucket 13190      |               |               |         |          |  |             |           |         |             |
| Bore diameter x length [mm] | 6.3 x 18.5    | 6 x 45        | 11 x 32 | 8.1 x 29 |  | 11.1 x 38.5 | 12.8 x 57 | 17 x 52 | 12.8 x 77.5 |
| Tubes per adapter / rotor   | 20 / 80       | 20 / 80       | 16 / 64 | 24 / 96  |  | 20 / 80     | 25 / 100  | 10 / 40 | 16 / 64     |
| Centrifuging radius [mm]    | 166           | 168           | 164     | 168      |  | 171         | 169       | 169     | 170         |
| Item no.                    | 17353 & 13021 | 17353 & 13000 | 17361   | 17350    |  | 17353       | 17352     | 17210   | 17354       |

| Tube                                 |             |             |             |          |          |          |          |          |            |
|--------------------------------------|-------------|-------------|-------------|----------|----------|----------|----------|----------|------------|
| Rated capacity (filling volume) [ml] | 10          | 10          | 10          | 10       | 10       | 14       | 14       | 15 (13)  | 15         |
| 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 | 17 x 110 | 16.5 x 120 |
| Tube material                        | PF          | PC          | PPCO        | Glass    | Glass    | PS       | PP       | Glass    | PP         |
| Item no.                             | 15000       | 15010       | 15039       | 15015    | 15024    | 15020    | 15023    | 15022    | 15115      |

| Adapter                     |  |           |  |  |           |  |  |           |           |
|-----------------------------|--|-----------|--|--|-----------|--|--|-----------|-----------|
| for round bucket 13190      |  |           |  |  |           |  |  |           |           |
| Bore diameter x length [mm] |  | 16.5 x 58 |  |  | 17.5 x 58 |  |  | 17 x 78.5 | 17 x 78.5 |
| Tubes per adapter / rotor   |  | 12 / 48   |  |  | 12 / 48   |  |  | 5 / 20    | 9 / 36    |
| Centrifuging radius [mm]    |  | 170       |  |  | 170       |  |  | 171       | 171       |
| Item no.                    |  | 17355     |  |  | 17358     |  |  | 17345     | 17359*    |

\* Only possible without cap 17190

## Swing-out rotor 11180

### Round bucket 13190 (1 set = 2 pcs.)

- Max. capacity: 4 x 400 ml
- Max. speed (3-18KS / 3-18KHS): 4,700 rpm
- Max. RCF (3-18KS / 3-18KHS): 4,248 x g
- Max. tube length in middle of bucket without / with cap: 142 / 125 mm
- Biosafe with cap 17190 
- Tmin at maximum speed: <4°C
- Angle: 90°
- NEW: g-lock rotor 91124 



### Tube

|   |   |   |   |   |   |   |   |   |   |            |
|---|---|---|---|---|---|---|---|---|---|------------|
|  |  |  |  |  |  |  |  |  |  |            |
| Rated capacity (filling volume) [ml]  | 25  | 25  | 25  | 30 (26)   | 30 (26)   | 30 (28)   | 30  | 30  | 50 (38)   | 50 (43)    |
| Diameter x length [mm]  | 25 x 90   | 24 x 100  | 24 x 100  | 25.3 x 98   | 25.3 x 98   | 25.3 x 98   | 24 x 105  | 25 x 107  | 28.8 x 107  | 28.5 x 107 |
| Tube material   | PP  | Glass   | Glass   | PF  | PPCO  | PC  | Glass   | PP  | PPCO  | PF         |
| Item no.  | –   | 15025   | 15026   | 15029   | 15032   | 15030   | 15033   | –   | 15052   | 15051      |

### Adapter

|   |   |   |   |   |   |
|---|---|---|---|---|---|
|  |  |  |  |  |  |
| Bore diameter x length [mm]   | 25.5 x 56   |   | 25.5 x 77.5   |   |   |
| Tubes per adapter / rotor   | 5 / 20  |   | 5 / 20  |   |   |
| Centrifuging radius [mm]  | 168   |   | 170   |   |   |
| Item no.  | 17362   |   | 17370   |   |   |

### Tube

|   |   |   |   |   |   |   |   |   |          |
|---|---|---|---|---|---|---|---|---|----------|
|  |  |  |  |  |  |  |  |  |          |
| Rated capacity (filling volume) [ml]  | 50  | 50  | 50  | 50  | 50  | 50  | 50  | 85 (73)   | 85 (76)  |
| Diameter x length [mm]  | 28.5 x 101.5  | 34 x 100  | 34 x 100  | 34 x 100  | 35 x 100  | 29 x 117  | 29 x 117  | 38 x 112  | 38 x 112 |
| Tube material   | Stainless steel   | Glass   | PC  | Glass   | Glass   | PPCO  | PP  | PF  | PPCO     |
| Item no.  | 13055   | 15045   | 15049   | 15050   | 15056   | –   | 15151   | 15080   | 15076    |

### Adapter

|   |   |   |   |   |   |
|---|---|---|---|---|---|
|  |  |  |  |  |  |
| Bore diameter x length [mm]   | 29.5 x 77.5   |   | 35.5 x 77.5   |   |   |
| Tubes per adapter / rotor   | 4 / 16  |   | 3 / 12  |   |   |
| Centrifuging radius [mm]  | 170   |   | 170   |   |   |
| Item no.  | 17376   |   | 17375   |   |   |

\* Only possible without cap 17190

## Swing-out rotor 11180

### Round bucket 13190 (1 set = 2 pcs.)

- Max. capacity: 4 x 400 ml
- Max. speed (3-18KS / 3-18KHS): 4,700 rpm
- Max. RCF (3-18KS / 3-18KHS): 4,248 x g
- Max. tube length in middle of bucket without / with cap: 142 / 125 mm
- Biosafe with cap 17190
- Tmin at maximum speed: <4°C
- Angle: 90°
- NEW:** g-lock rotor 91124



| Tube                                 |                 |          |          |          |          |          |         |          |            |
|--------------------------------------|-----------------|----------|----------|----------|----------|----------|---------|----------|------------|
| Rated capacity (filling volume) [ml] | 94 (85)         | 94       | 100 (75) | 100 (90) | 100      | 100      | 150     | 150      | 175        |
| Diameter x length [mm]               | 38 x 103        | 38 x 110 | 44 x 100 | 44 x 100 | 44 x 100 | 45 x 100 | 51 x 99 | 56 x 113 | 62 x 139.2 |
| Tube material                        | Stainless steel | PC       | Glass    | Glass    | Glass    | PC       | PP      | Glass    | PP         |
| Item no.                             | 13085           | 15094    | 15078    | 15106    | 15100    | 15103    | 15125   | 15206    | —          |

### Adapter

|                             |  |           |  |             |  |  |           |         |            |
|-----------------------------|--|-----------|--|-------------|--|--|-----------|---------|------------|
| for round bucket 13190      |  |           |  |             |  |  |           |         |            |
| Bore diameter x length [mm] |  | 38.5 x 77 |  | 45.5 x 77.5 |  |  | 51.5 x 77 | 58 x 75 | 62.5 x 105 |
| Tubes per adapter / rotor   |  | 1 / 4     |  | 1 / 4       |  |  | 1 / 4     | 1 / 4   | 1 / 4      |
| Centrifuging radius [mm]    |  | 169       |  | 170         |  |  | 169       | 167     | 172        |
| Item no.                    |  | 17385     |  | 17390*      |  |  | 17395     | 17401** | 17393***   |
|                             |  |           |  |             |  |  |           |         | 17402***   |

| Tube                                 |           |           |          |          |            |            |
|--------------------------------------|-----------|-----------|----------|----------|------------|------------|
| Rated capacity (filling volume) [ml] | 200 (168) | 200 (170) | 200      | 225      | 250 (232)  | 250 (232)  |
| Diameter x length [mm]               | 56 x 112  | 56 x 112  | 61 x 130 | 61 x 137 | 61.4 x 122 | 61.4 x 122 |
| Tube material                        | PPCO      | Glass     | PP       | PP       | PF         | PPCO       |
| Item no.                             | 15202     | 15201     | —        | —        | 15247      | 15249      |
|                                      |           |           |          |          |            | 15401      |

| Adapter                     |           |         |            |          |           |         |
|-----------------------------|-----------|---------|------------|----------|-----------|---------|
| for round bucket 13190      |           |         |            |          |           |         |
| Bore diameter x length [mm] | 57.5 x 77 | 58 x 75 | 62.5 x 105 | 61 x 104 | 62.5 x 80 | 86 x 97 |
| Tubes per adapter / rotor   | 1 / 4     | 1 / 4   | 1 / 4      | 1 / 4    | 1 / 4     | — / 4   |
| Centrifuging radius [mm]    | 169       | 167     | 172        | 172      | 172       | 172     |
| Item no.                    | 17400     | 17401** | 17393***   | 17402*** | 17347     | —       |

## Swing-out rotor 11180

### Round bucket 13190 (1 set = 2 pcs.)

- Max. capacity: 4 x 400 ml
- Max. speed (3-18KS / 3-18KHS): 4,700 rpm
- Max. RCF (3-18KS / 3-18KHS): 4,248 x g
- Max. tube length in middle of bucket without / with cap: 142 / 125 mm
- Biosafe with cap 17190
- Tmin at maximum speed: <4°C
- Angle: 90°
- NEW:** g-lock rotor 91124



## Swing-out rotor 11180

### Carrier bucket 13194 (1 set = 2 pcs.)

- Max. capacity: 16 x 50 ml
- Max. speed (3-18KS / 3-18KHS): 4,700 rpm
- Max. RCF (3-18KS / 3-18KHS): 4,149 x g
- Max. tube length in middle of bucket: 139 mm
- Tmin at maximum speed: <4°C
- Angle: 90°
- NEW:** g-lock rotor 91124



### Blood and urine tubes

|                                      |           |               |               |               |               |               |          |                |          |          |
|--------------------------------------|-----------|---------------|---------------|---------------|---------------|---------------|----------|----------------|----------|----------|
|                                      |           |               |               |               |               |               |          |                |          |          |
| Rated capacity (filling volume) [ml] | 1.1 – 1.4 | 2.7 – 5       | 4 – 6         | 1.8 – 7       | 1.6 – 6       | 4 – 10        | 9.5 – 10 | 6 – 10         | 9 – 10   | 8        |
| Diameter x length with lid [mm]      | 8 x 82    | 11 x 82 – 108 | 13 x 81 – 106 | 13 x 81 – 107 | 13 x 81 – 106 | 15 x 91 – 118 | 15 x 106 | 16 x 106 – 107 | 16 x 108 | 16 x 131 |
| Tube material                        | PP        | PP            | PET           | PET           | PP            | PP            | PET      | PET            | PP       | Glass    |
| Item no.                             | –         | –             | –             | –             | –             | –             | –        | –              | –        | –        |

### Adapter

|                             |           |           |           |           |           |
|-----------------------------|-----------|-----------|-----------|-----------|-----------|
| for round bucket 13190      |           |           |           |           |           |
| Bore diameter x length [mm] | 12.8 x 57 | 13.8 x 57 | 17.5 x 58 | 17.5 x 58 | 17.5 x 58 |
| Tubes per adapter / rotor   | 25 / 100  | 17 / 68   | 12 / 48   | 12 / 48   | 3 / 12    |
| Centrifuging radius [mm]    | 169       | 169       | 170       | 170       | 170       |
| Item no.                    | 17352     | 17356     | 17358     | 17358     | 17358*    |

### Tube

|                                      |            |         |          |          |          |
|--------------------------------------|------------|---------|----------|----------|----------|
|                                      |            |         |          |          |          |
| Rated capacity (filling volume) [ml] | 15         | 25      | 30       | 50       | 50       |
| Diameter x length [mm]               | 16.5 x 120 | 25 x 90 | 25 x 107 | 29 x 117 | 29 x 117 |
| Tube material                        | PP         | PP      | PP       | PP       | PP       |
| Item no.                             | 15115      | –       | –        | 15151    | –        |

### Adapter

|                             |         |           |             |           |           |
|-----------------------------|---------|-----------|-------------|-----------|-----------|
| for hexagonal bucket 13194  |         |           |             |           |           |
| Bore diameter x length [mm] | 17 x 79 | 25.5 x 70 | 29.5 x 78.5 | 29.5 x 80 | 29.5 x 80 |
| Tubes per adapter / rotor   | 10 / 40 | 4 / 16    | 4 / 16      | 4 / 16    | 4 / 16    |
| Centrifuging radius [mm]    | 167     | 158       | 167         | 168       | 168       |
| Item no.                    | 18311   | 18313     | 18310       | 18309     | 18309     |

## Swing-out rotor 11180

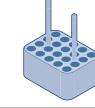
### Rectangular bucket 13180 (1 set = 2 pcs.)

- Max. capacity: 4 x 200 ml
- Max. speed (3-18KS / 3-18KHS): 4,700 rpm
- Max. RCF (3-18KS / 3-18KHS): 4,223 x g
- Max. tube length in middle of bucket without / with cap: 141 / 124 mm
- Hermetically closable with cap 17112
- T<sub>min</sub> at maximum speed: <4°C
- Angle: 90°
- NEW:** g-lock rotor 91124 



| Tube                                 |  |  |  |  |  |  |  |  |  |  |
|--------------------------------------|---|---|---|---|---|--|---|---|---|---|
| Rated capacity (filling volume) [ml] | 0.2   | 0.4   | 0.5   | 1.5   | 2   | 5  | 5   | 6 (5)   | 7   | 10  |
| Diameter x length [mm]               | 5.8 x 20  | 5.8 x 47  | 7.9 x 28  | 10.7 x 42   | 10.7 x 42   | 12 x 75  | 17 x 60   | 12 x 100  | 12 x 100  | 16.1 x 81.1   |
| Tube material                        | PP  | PE  | PP  | PP  | PP  | PS   | PPCO  | Glass   | Glass   | PF  |
| Item no.                             | 15042   | 15014   | 15005   | 15008   | 15040   | 15060  | —   | 15007   | 15027   | 15000   |

### Adapter

|                              |   |   |   |   |   |  |   |   |
|------------------------------|---|---|---|---|---|--|---|---|
| for rectangular bucket 13180 |  |  |  |  |  |  |  |  |
| Bore diameter x length [mm]  | 6.3 x 18.5  | 6 x 45  | 8 x 45  | 11.1 x 38   | 12.5 x 51   | 17 x 52  | 12.5 x 72   | 17.2 x 46   |
| Tubes per adapter / rotor    | 20 / 80   | 20 / 80   | 20 / 80   | 20 / 80   | 20 / 80   | 6 / 24   | 20 / 80   | 12 / 48   |
| Centrifuging radius [mm]     | 166   | 168   | 168   | 170   | 166   | 168  | 166   | 166   |
| Item no.                     | 18002 & 13021   | 18002 & 13000   | 18002 & 13002   | 18002   | 18005*  | 18006  | 18007*  | 18010*  |

| Tube                                 |  |  |  |  |  |  |  |  |         |
|--------------------------------------|---|---|---|---|---|---|---|---|---------|
| Rated capacity (filling volume) [ml] | 10  | 10  | 10  | 10  | 14  | 14  | 15 (13)   | 15  | 25      |
| Diameter x length [mm]               | 16.1 x 81.1   | 16.1 x 81.1   | 16 x 100  | 16 x 100  | 17 x 100  | 17 x 100  | 17 x 110  | 16.5 x 120  | 25 x 90 |
| Tube material                        | PC  | PPCO  | Glass   | Glass   | PS  | PP  | Glass   | PP  | PP      |
| Item no.                             | 15010   | 15039   | 15015   | 15024   | 15020   | 15023   | 15022   | 15115   | —       |

### Adapter

|                              |   |   |   |   |   |   |           |
|------------------------------|---|---|---|---|---|---|-----------|
| for rectangular bucket 13180 |  |  |  |  |  |  |           |
| Bore diameter x length [mm]  | 17.2 x 46   |   | 17.2 x 75   |   | 17 x 72.5   | 17 x 72.5   | 25.5 x 61 |
| Tubes per adapter / rotor    | 12 / 48   |   | 12 / 48   |   | 4 / 16  | 7 / 28  | 4 / 16    |
| Centrifuging radius [mm]     | 166   |   | 166   |   | 170   | 170   | 167       |
| Item no.                     | 18010*  |   | 18015*  |   | 18016   | 18018**   | 18022     |

\* Including rubber cushion 16909; \*\* Only possible without cap 17112

## Swing-out rotor 11180

### Rectangular bucket 13180 (1 set = 2 pcs.)

- Max. capacity: 4 x 200 ml
- Max. speed (3-18KS / 3-18KHS): 4,700 rpm
- Max. RCF (3-18KS / 3-18KHS): 4,223 x g
- Max. tube length in middle of bucket without / with cap: 141 / 124 mm
- Hermetically closable with cap 17112
- Tmin at maximum speed: <4°C
- Angle: 90°
- **NEW:** g-lock rotor 91124 



### Tube

|   |   |   |   |   |   |   |   |   |   |                 |
|---|---|---|---|---|---|---|---|---|---|-----------------|
|  |  |  |  |  |  |  |  |  |  |                 |
| Rated capacity (filling volume) [ml]  | 25  | 25  | 30 (26)   | 30 (26)   | 30 (28)   | 30  | 30  | 50 (38)   | 50 (43)   | 50              |
| Diameter x length [mm]  | 24 x 100  | 24 x 100  | 25.3 x 98   | 25.3 x 98   | 25.3 x 98   | 24 x 105  | 25 x 107  | 28.5 x 107  | 28.8 x 107  | 28.5 x 101.5    |
| Tube material   | Glass   | Glass   | PF  | PPCO  | PC  | Glass   | PP  | PPCO  | PF  | Stainless steel |
| Item no.  | 15025   | 15026   | 15029   | 15032   | 15030   | 15033   | -   | 15052   | 15051   | 13055           |

### Adapter

|   |   |   |  |   |   |
|---|---|---|--|---|---|
|  |  |  |  |  |  |
| Bore diameter x length [mm]   | 24.5 x 70   | 25.5 x 71   | 24.5 x 70  | 25.5 x 61   | 29.5 x 71   |
| Tubes per adapter / rotor   | 5 / 20  | 5 / 20  | 5 / 20   | 4 / 16  | 2 / 8   |
| Centrifuging radius [mm]  | 166   | 168   | 166  | 167   | 168   |
| Item no.  | 18025*  | 18030   | 18025*   | 18022   | 18051   |

### Tube

|   |   |   |   |   |   |   |   |   |   |       |
|---|---|---|---|---|---|---|---|---|---|-------|
|  |  |  |  |  |  |  |  |  |  |       |
| Rated capacity (filling volume) [ml]  | 50  | 50  | 50  | 50  | 50  | 85 (73)   | 85 (76)   | 94 (85)   | 94  |       |
| Diameter x length [mm]  | 34 x 100  | 34 x 100  | 35 x 100  | 34 x 100  | 29 x 117  | 29 x 117  | 38 x 112  | 38 x 112  | 38 x 103  |       |
| Tube material   | Glass   | Glass   | Glass   | PC  | PP  | PP  | PF  | PPCO  | Stainless steel   |       |
| Item no.  | 15045   | 15050   | 15056   | 15049   | -   | 15151   | 15080   | 15076   | 13085   | 15094 |

### Adapter

|   |   |   |   |
|---|---|---|---|
|  |  |  |  |
| Bore diameter x length [mm]   | 35.5 x 68   | 30 x 74   | 29.5 x 72.5   |
| Tubes per adapter / rotor   | 2 / 8   | 2 / 8   | 2 / 8   |
| Centrifuging radius [mm]  | 162   | 171   | 169.5   |
| Item no.  | 18050**   | 18053   | 18052   |

\* Including rubber cushion 16906; \*\* Including rubber cushion 16907

## Swing-out rotor 11180

### Rectangular bucket 13180 (1 set = 2 pcs.)

- Max. capacity: 4 x 200 ml
- Max. speed (3-18KS / 3-18KHS): 4,700 rpm
- Max. RCF (3-18KS / 3-18KHS): 4,223 x g
- Max. tube length in middle of bucket without / with cap: 141 / 124 mm
- Hermetically closable with cap 17112
- Tmin at maximum speed: <4°C
- Angle: 90°
- NEW:** g-lock rotor 91124 



### Tube

|   |   |   |   |   |   |
|---|---|---|---|---|---|
|  |  |  |  |  |  |
| Rated capacity (filling volume) [ml]  | 100 (75)  | 100 (90)  | 100   | 100   | 150   |
| Diameter x length [mm]  | 44 x 100  | 44 x 100  | 44 x 100  | 45 x 100  | 51 x 99   |
| Tube material   | Glass   | Glass   | Glass   | PC  | PP  |
| Item no.  | 15078   | 15106   | 15100   | 15103   | 15125   |
| Item no.  | 15202   |   |   |   |   |

### Adapter

|   |   |   |  |
|---|---|---|--|
|  |  |  |  |
| Bore diameter x length [mm]   | 46 x 65.5   | 51.5 x 71   | 57 x 34  |
| Tubes per adapter / rotor   | 1 / 4   | 1 / 4   | 1 / 4  |
| Centrifuging radius [mm]  | 165   | 168   | 166  |
| Item no.  | 18100*  | 18125   | 18200  |

### Blood and urine tubes

|   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|
|  |  |  |  |  |  |  |  |  |  |
| Rated capacity (filling volume) [ml]  | 1.1 – 1.4   | 2.7 – 5   | 4 – 6   | 1.8 – 7   | 1.6 – 6   | 4 – 10  | 9.5 – 10  | 6 – 10  | 9 – 10  |
| Diameter x length with closure [mm]   | 8 x 82  | 11 x 82 – 108   | 13 x 81 – 106   | 13 x 81 – 107   | 13 x 81 – 106   | 15 x 91 – 118   | 15 x 106  | 16 x 106 – 107  | 16 x 108  |
| Tube material   | PP  | PP  | PET   | PET   | PP  | PP  | PET   | PET   | PP  |
| Item no.  | –   | –   | –   | –   | –   | –   | –   | –   | –   |
| Item no.  | –   | –   | –   | –   | –   | –   | –   | –   | –   |

### Adapter

|   |   |   |   |   |   |
|---|---|---|---|---|---|
|  |  |  |  |  |  |
| Bore diameter x length [mm]   | 12.5 x 51   | 14 x 58   | 17.2 x 46   | 17.5 x 57   | 17.5 x 57   |
| Tubes per adapter / rotor   | 20 / 80   | 12 / 48   | 12 / 48   | 11 / 44   | 7 / 28  |
| Centrifuging radius [mm]  | 166   | 164   | 166   | 168   | 168   |
| Item no.  | 18005**   | 18012   | 18010**   | 18020   | 18020***  |

\* Including rubber cushion 16908; \*\* Including rubber cushion 16909; \*\*\* Observe loading

## Swing-out rotor 11133

### Round bucket 13104 (1 set = 2 pcs.)

- Max. capacity: 4 x 200 ml
- Max. speed (3-18KS / 3-18KHS): 5,500 rpm
- Max. RCF (3-18KS / 3-18KHS): 5,242 x g
- Max. tube length in middle of bucket without / with cap: 126 / 118 mm
- Hermetically closable with aluminium cap 17109 or polysulphone cap 17111
- Tmin at maximum speed: <4°C
- Angle: 90°
- **NEW:** g-lock rotor 91373



### Tube

| Rated capacity (filling volume) [ml] | 0.2      | 0.4      | 0.5      | 1.5       | 2         | 5       | 6 (5)    | 7        | 10          | 10          |
|--------------------------------------|----------|----------|----------|-----------|-----------|---------|----------|----------|-------------|-------------|
| Diameter x length [mm]               | 5.8 x 20 | 5.8 x 47 | 7.9 x 28 | 10.7 x 42 | 10.7 x 42 | 12 x 75 | 12 x 100 | 12 x 100 | 16.1 x 81.1 | 16.1 x 81.1 |
| Tube material                        | PP       | PE       | PP       | PP        | PP        | PS      | Glass    | Glass    | PF          | PC          |
| Item no.                             | 15042    | 15014    | 15005    | 15008     | 15040     | 15060   | 15007    | 15027    | 15000       | 15010       |

### Adapter

|                             |               |               |               |             |           |           |           |           |           |           |
|-----------------------------|---------------|---------------|---------------|-------------|-----------|-----------|-----------|-----------|-----------|-----------|
| for round bucket 13104      |               |               |               |             |           |           |           |           |           |           |
| Bore diameter x length [mm] | 6.3 x 18.5    | 6 x 45        | 8 x 45        | 11.1 x 38.5 | 12.5 x 51 | 12.5 x 80 | 12.5 x 80 | 12.5 x 80 | 17 x 50.3 | 17 x 50.3 |
| Tubes per adapter / rotor   | 12 / 48       | 12 / 48       | 12 / 48       | 12 / 48     | 12 / 48   | 12 / 48   | 12 / 48   | 12 / 48   | 6 / 24    | 6 / 24    |
| Centrifuging radius [mm]    | 146           | 148           | 148           | 153         | 150       | 150       | 150       | 150       | 150       | 150       |
| Item no.                    | 17008 & 13021 | 17008 & 13000 | 17008 & 13002 | 17008       | 17006     | 17007     | 17007     | 17007     | 17012     | 17012     |

### Tube

| Rated capacity (filling volume) [ml] | 10          | 10       | 10       | 14       | 14       | 15         | 25      | 25       | 25       | 30       |
|--------------------------------------|-------------|----------|----------|----------|----------|------------|---------|----------|----------|----------|
| Diameter x length [mm]               | 16.1 x 81.1 | 16 x 100 | 16 x 100 | 17 x 100 | 17 x 100 | 16.5 x 120 | 25 x 90 | 24 x 100 | 24 x 100 | 24 x 105 |
| Tube material                        | PPCO        | Glass    | Glass    | PP       | PS       | PP         | PP      | Glass    | Glass    | Glass    |
| Item no.                             | 15039       | 15015    | 15024    | 15023    | 15020    | 15115      | -       | 15025    | 15026    | 15033    |

### Adapter

|                             |           |           |           |           |           |           |           |           |             |             |
|-----------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-------------|-------------|
| for round bucket 13104      |           |           |           |           |           |           |           |           |             |             |
| Bore diameter x length [mm] | 17 x 50.3 | 17 x 79.7 | 25.5 x 58 | 25.5 x 58 | 24.5 x 79.6 | 24.5 x 79.6 |
| Tubes per adapter / rotor   | 6 / 24    | 7 / 28    | 7 / 28    | 7 / 28    | 7 / 28    | 7 / 28    | 3 / 12    | 1 / 4     | 2 / 8       | 2 / 8       |
| Centrifuging radius [mm]    | 150       | 150       | 150       | 150       | 150       | 150       | 153       | 153       | 150         | 150         |
| Item no.                    | 17012     | 17015     | 17015     | 17015     | 17015     | 17015     | 17019*    | 17032     | 17025       | 17025       |

\* Only possible without cap 17109 or 17111

## Swing-out rotor 11133

### Round bucket 13104 (1 set = 2 pcs.)

- Max. capacity: 4 x 200 ml
- Max. speed (3-18KS / 3-18KHS): 5,500 rpm
- Max. RCF (3-18KS / 3-18KHS): 5,242 x g
- Max. tube length in middle of bucket without / with cap: 126 / 118 mm
- Hermetically closable with aluminium cap 17109 or polysulphone cap 17111
- T<sub>min</sub> at maximum speed: <4°C
- Angle: 90°
- NEW:** g-lock rotor 91373 



### Tube

|                                      |   |   |   |   |   |   |   |   |
|--------------------------------------|---|---|---|---|---|---|---|---|
|                                      |  |  |  |  |  |  |  |  |
| Rated capacity (filling volume) [ml] | 30 (26)   | 30 (26)   | 30 (28)   | 30  | 50 (38)   | 50 (43)   | 50  | 50  |
| Diameter x length [mm]               | 25.3 x 98   | 25.3 x 98   | 25.3 x 98   | 25 x 107  | 28.5 x 107  | 28.8 x 107  | 28.5 x 101.5  | 34 x 100  |
| Tube material                        | PF  | PPCO  | PC  | PP  | PPCO  | PF  | Stainless steel   | Glass   |
| Item no.                             | 15029   | 15032   | 15030   | —   | 15052   | 15051   | 13055   | 15045   |
| 15050                                | 15056   |   |   |   |   |   |   |   |

### Adapter

|                             |   |   |   |  |   |
|-----------------------------|---|---|---|--|---|
| for round bucket 13104      |  |  |  |  |  |
| Bore diameter x length [mm] |   | 25.5 x 78   | 25.5 x 58   | 30 x 77.3  | 35.5 x 80   |
| Tubes per adapter / rotor   |   | 2 / 8   | 1 / 4   | 1 / 4  | 1 / 4   |
| Centrifuging radius [mm]    |   | 153   | 153   | 152  | 150   |
| Item no.                    |   | 17030   | 17032   | 17052  | 17050*  |

### Tube

|                                      |   |   |   |   |   |   |  |   |   |
|--------------------------------------|---|---|---|---|---|---|--|---|---|
|                                      |  |  |  |  |  |  |  |  |  |
| Rated capacity (filling volume) [ml] | 50  | 50  | 50  | 85 (73)   | 85 (76)   | 94 (85)   | 94   | 100 (75)  | 100 (90)  |
| Diameter x length [mm]               | 34 x 100  | 29 x 117  | 29 x 117  | 38 x 112  | 38 x 112  | 38 x 103  | 38 x 110   | 44 x 100  | 44 x 100  |
| Tube material                        | PC  | PP  | PP  | PPCO  | PF  | Stainless steel   | PC   | Glass   | Glass   |
| Item no.                             | 15049   | —   | 15151   | 15076   | 15080   | 13085   | 15094  | 15078   | 15106   |
| 15100                                |   |   |   |   |   |   |  |   |   |

### Adapter

|                             |   |   |   |   |   |   |
|-----------------------------|---|---|---|---|---|---|
| for round bucket 13104      |  |  |  |  |  |  |
| Bore diameter x length [mm] | 35.5 x 80   | 29.5 x 80   | 29.5 x 78.5   |   | 39 x 76.6   | 46 x 76.6   |
| Tubes per adapter / rotor   | 1 / 4   | 1 / 4   | 1 / 4   |   | 1 / 4   | 1 / 4   |
| Centrifuging radius [mm]    | 150   | 155   | 154   |   | 147   | 147   |
| Item no.                    | 17050*  | 17048   | 17049   |   | 17085*  | 17100*  |

## Swing-out rotor 11133

### Round bucket 13104 (1 set = 2 pcs.)

- Max. capacity: 4 x 200 ml
- Max. speed (3-18KS / 3-18KHS): 5,500 rpm
- Max. RCF (3-18KS / 3-18KHS): 5,242 x g
- Max. tube length in middle of bucket without / with cap: 126 / 118 mm
- Hermetically closable with aluminium cap 17109 or polysulphone cap 17111
- Tmin at maximum speed: <4°C
- Angle: 90°
- NEW: g-lock rotor 91373 



### Tube

|                                      |  |  |  |
|--------------------------------------|---|---|---|
| Rated capacity (filling volume) [ml] | 100   | 150   | 200 (168)   |
| Diameter x length [mm]               | 45 x 100  | 51 x 99   | 56 x 112  |
| Tube material                        | PC  | PP  | PPCO  |
| Item no.                             | 15103   | 15125   | 15202   |

### Adapter

| for round bucket<br>13104   |  |  |  |
|-----------------------------|---|---|---|
| Bore diameter x length [mm] | 46 x 76.6   | 51.4 x 80   | 57 x 98   |
| Tubes per adapter / rotor   | 1 / 4   | 1 / 4   | - / 4   |
| Centrifuging radius [mm]    | 147   | 155   | 155   |
| Item no.                    | 17100*  | 17125   | -   |

### Blood and urine tubes

|                                      |  |  |  |  |  |  |  |  |  |
|--------------------------------------|---|---|---|---|---|---|---|---|---|
| Rated capacity (filling volume) [ml] | 1.1 – 1.4   | 2.7 – 5   | 4 – 6   | 1.8 – 7   | 1.6 – 6   | 7.5 – 10  | 6 – 10  | 4 – 5.5   | 9 – 10  |
| Diameter x length with closure [mm]  | 8 x 82  | 11 x 82 – 108   | 13 x 81 – 106   | 13 x 81 – 107   | 13 x 81 – 106   | 15 x 106 – 108  | 16 x 106 – 107  | 15 x 91   | 16 x 108  |
| Tube material                        | PP  | PP  | PET   | PET   | PP  | PP  | PET   | PET   | PP  |
| Item no.                             | -   | -   | -   | -   | -   | -   | -   | -   | -   |

### Adapter

| for round bucket<br>13104   |  |  |  |  |  |  |  |
|-----------------------------|---|---|---|---|---|---|---|
| Bore diameter x length [mm] | 12.5 x 51   |   | 13.8 x 57   |   | 17 x 79.7   |   | 17 x 50.3   |
| Tubes per adapter / rotor   | 12 / 48   |   | 7 / 28  |   | 7 / 28  |   | 6 / 24  |
| Centrifuging radius [mm]    | 150   |   | 152   |   | 150   |   | 150   |
| Item no.                    | 17006   |   | 17027   |   | 17015   |   | 17012   |
|                             |   |   |   |   |   |   | 17018   |

## Swing-out rotor 11222

with 1 set (quantity 2) rectangular buckets 13222

- Max. plate height: 56 mm
- Max. speed (3-18KS / 3-18KHS): 3,000 rpm
- Max. RCF (3-18KS / 3-18KHS): 1,218 x g
- Max. load per carrier: 337 g
- Tmin at maximum speed: <4°C
- Angle: 90°



## Swing-out rotor 11241

with 1 set (quantity 2) rectangular buckets 13241, caps 17108 and plate holder 17982

- Max. plate height without / with cap: 66 / 55 mm
- Max. speed (3-18KS / 3-18KHS): 4,700 rpm
- Max. RCF (3-18KS / 3-18KHS): 3,285 x g
- Max. load per carrier: 320 g
- Biosafe with cap 17108
- Tmin at maximum speed: <4°C
- Angle: 90°
- **NEW:** g-lock rotor 91551



### Plate



### Description

|                | MTP<br>(without lid) | MTP<br>(with lid) | DWP             | PCR plate<br>96-fold |
|----------------|----------------------|-------------------|-----------------|----------------------|
| W x D x H [mm] | 128 x 86 x 15        | 128 x 86 x 17.5   | 128 x 86 x 44.5 | 128 x 86 x 20        |

### Adapter

for  
rectangular  
bucket  
13222



Bore diameter x length [mm]

|                          | 6 | 6 | 2   | 4 |
|--------------------------|---|---|-----|---|
| Plates per rotor         |   |   |     |   |
| Centrifuging radius [mm] |   |   | 121 |   |

Item no.

### Plate



### Description

|                | MTP<br>(without lid) | MTP<br>(with lid) | DWP             | PCR plate<br>96-fold |
|----------------|----------------------|-------------------|-----------------|----------------------|
| W x D x H [mm] | 128 x 86 x 15        | 128 x 86 x 17.5   | 128 x 86 x 44.5 | 128 x 86 x 20        |

### Adapter

for  
rectangular  
bucket  
13241



Bore diameter x length [mm]

|                                       | 8 / 6 | 6 / 6 | 2 / 2 | 6 / 4 |
|---------------------------------------|-------|-------|-------|-------|
| Plates per rotor (without / with cap) |       |       |       |       |
| Centrifuging radius [mm]              |       |       | 133   |       |

Item no.



## Swing-out rotor 11135

with 3 sets (quantity 6) carrier bucket 13124  
and aluminium lid 17879

- Max. capacity: 24 x 2 ml
- Max. speed (3-18KS / 3-18KHS): 14,000 rpm
- Max. RCF (3-18KS / 3-18KHS): 16,215 x g
- Hermetically closable with aluminium lid 17879
- Tmin at maximum speed: <4°C
- Angle: 90°



## Drum rotor 11136

with aluminium lid 17898

- Max. capacity: 60 x 2 ml
- Max. speed (3-18KS / 3-18KHS): 14,500 rpm
- Max. RCF (3-18KS / 3-18KHS): 16,454 x g
- Hermetically closable with aluminium lid 17898
- Max. speed for 4°C: 14,200 rpm
- Angle: 90°



### Tube

|                                      |          |          |          |             |           |           |
|--------------------------------------|----------|----------|----------|-------------|-----------|-----------|
|                                      | 0.2      | 0.4      | 0.5      | 0.5         | 1.5       | 2         |
| Rated capacity (filling volume) [ml] |          |          |          |             |           |           |
| 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

|                             |            |        |        |             |
|-----------------------------|------------|--------|--------|-------------|
|                             |            |        |        |             |
| Bore diameter x length [mm] | 6.3 x 18.5 | 6 x 45 | 8 x 45 | 11.1 x 29.5 |
| Tubes per adapter / rotor   | 1 / 24     | 1 / 24 | 1 / 24 | 1 / 12*     |
| Centrifuging radius [mm]    | 70         | 72     | 72     | 65          |
| Item no.                    | 13021      | 13000  | 13002  | 13074       |

### Tube

|                                      |          |            |          |          |           |
|--------------------------------------|----------|------------|----------|----------|-----------|
|                                      |          |            |          |          |           |
| Rated capacity (filling volume) [ml] | 0.2      | 0.2        | 0.4      | 0.5      | 1.5       |
| Diameter x length [mm]               | 5.8 x 20 | —          | 5.8 x 47 | 7.9 x 28 | 10.7 x 42 |
| Tube material                        | PP       | —          | PE       | PP       | PP        |
| Item no.                             | 15042    | PCR strips | 15014    | 15005    | 15008     |
| Item no.                             | 15040    |            |          |          |           |

### Adapter

|                             |          |                |          |          |           |
|-----------------------------|----------|----------------|----------|----------|-----------|
|                             |          |                |          |          |           |
| Bore diameter x length [mm] | 6.2 x 17 | 6.2 x 17       | 6 x 46   | 8.1 x 21 | 11.2 x 39 |
| Tubes per adapter / rotor   | 32 / 192 | 4 x 8 / 24 x 8 | 20 / 120 | 10 / 60  | 10 / 60   |
| Centrifuging radius [mm]    | 48       | 48             | 70       | 52       | 70        |
| Item no.                    | 14021    | 14021          | 14000    | 14020    | 14002     |

## Fixed-angle rotor 12115

### with aluminium lid 17875

- Max. capacity: 96 x 0.2 ml conical
- Max. speed (3-18KS / 3-18KHS): 16,400 rpm
- Max. RCF outer row (3-18KS / 3-18KHS): 29,468 x g
- Max. RCF inner row (3-18KS / 3-18KHS): 24,958 x g
- Hermetically closable with aluminium lid 17875
- Max. speed for 4°C: 13,400 rpm
- Angle: 18° (both rows)



## Fixed-angle rotor 12154

### with aluminium lid 17829

- Max. capacity: 24 x 2 ml
- Max. speed (3-18KS / 3-18KHS): 18,000 rpm
- Max. RCF (3-18KS / 3-18KHS): 29,703 x g
- Hermetically closable with aluminium lid 17829
- Max. speed for 4°C: 17,000 rpm
- Angle: 45°
- **NEW:** g-lock rotor 91123



### 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



Bore diameter x length [mm]

|            |            |
|------------|------------|
| 6.3 x 15.5 | 6.3 x 16.5 |
|------------|------------|

Tubes per adapter / rotor

|    |        |
|----|--------|
| 96 | 12 x 8 |
|----|--------|

Centrifuging radius outer / inner row [mm]

|         |         |
|---------|---------|
| 98 / 83 | 98 / 83 |
|---------|---------|

Item no.

|   |   |
|---|---|
| — | — |
|---|---|

### 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



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 [mm]

|    |    |    |    |    |
|----|----|----|----|----|
| 78 | 80 | 80 | 73 | 82 |
|----|----|----|----|----|

Item no.

|       |       |       |        |   |
|-------|-------|-------|--------|---|
| 13021 | 13000 | 13002 | 13074* | — |
|-------|-------|-------|--------|---|

## Fixed-angle rotor 12131

### with aluminium lid 17848

- Max. capacity: 30 x 2 ml
- Max. speed (3-18KS / 3-18KHS): 16,400 rpm
- Max. RCF (3-18KS / 3-18KHS): 30,070 x g
- Hermetically closable with aluminium lid 17848
- Max. speed for 4°C: 13,500 rpm
- Angle: 45°



## Fixed-angle rotor 12349

### with aluminium lid 17349

- Max. capacity: 48 x 2 ml
- Max. speed (3-18KS / 3-18KHS): 15,000 rpm
- Max. RCF (3-18KS / 3-18KHS): 25,115 x g
- Hermetically closable with aluminium lid 17349
- Max. speed for 4°C: 13,000 rpm
- Angle (outer / inner row): 25° / 53°
- **NEW:** g-lock rotor 91520



### 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<br>fixed-angle rotor<br>12131 |            |        |        |             |             |  |
| 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 / 30     | 1 / 30 | 1 / 30 | 1 / 30      | – / 30      |  |
| Centrifuging radius [mm]          | 96         | 98     | 98     | 91          | 100         |  |
| Item no.                          | 13021      | 13000  | 13002  | 13074*      | –           |  |

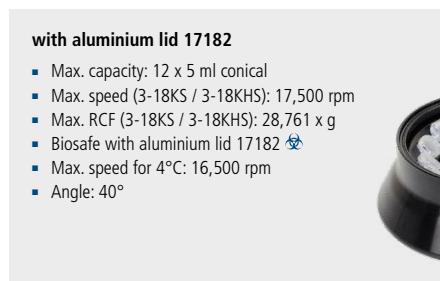
### Tube

|                                      |          |          |          |             |           |           |
|--------------------------------------|----------|----------|----------|-------------|-----------|-----------|
|                                      |          |          |          |             |           |           |
| 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     |

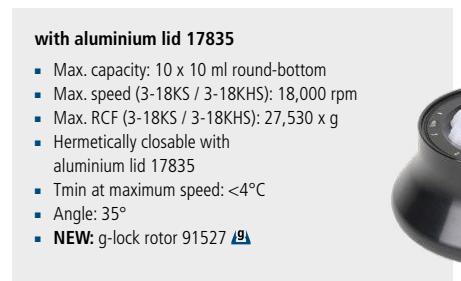
### Adapter

|  |            |         |         |             |             |  |
|--|------------|---------|---------|-------------|-------------|--|
| for<br>fixed-angle rotor<br>12349          |            |         |         |             |             |  |
| 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 / 48     | 1 / 48  | 1 / 48  | 1 / 48      | – / 48      |  |
| Centrifuging radius outer / inner row [mm] | 96 / 96    | 98 / 98 | 98 / 98 | 91 / 91     | 100 / 100   |  |
| Item no.                                   | 13021      | 13000   | 13002   | 13074*      | –           |  |

## Fixed-angle rotor 12182



## Fixed-angle rotor 12111



**Tube**

|                                      | 1.5       | 1.5–1.8   | 1.5       | 2         | 5       |
|--------------------------------------|-----------|-----------|-----------|-----------|---------|
| Rated capacity (filling volume) [ml] | 1.5       | 1.5–1.8   | 1.5       | 2         | 5       |
| Diameter x length [mm]               | 11.7 x 34 | 12.3 x 49 | 10.7 x 42 | 10.7 x 42 | 17 x 60 |
| Tube material                        | Glass     | PP        | PP        | PP        | PPCO    |
| Item no.                             | HPLC      | Cryo tube | 15008     | 15040     | –       |

**Adapter**

for fixed-angle rotor 12182

| Bore diameter x length [mm] | 12.5 x 28 | 12.7 x 32 | 11.1 x 38.5 | 17 x 52 |
|-----------------------------|-----------|-----------|-------------|---------|
| Tubes per adapter / rotor   | 1 / 12    | 1 / 12    | 1 / 12      | – / 12  |
| Centrifuging radius [mm]    | 57        | 61        | 69          | 84      |
| Item no.                    | 14081     | 14080*    | 14082       | –       |

**Tube**

|                                      | 10          | 10          | 10          |
|--------------------------------------|-------------|-------------|-------------|
| Rated capacity (filling volume) [ml] | 10          | 10          | 10          |
| Diameter x length [mm]               | 16.1 x 81.1 | 16.1 x 81.1 | 16.1 x 81.1 |
| Tube material                        | PF          | PC          | PPCO        |
| Item no.                             | 15000       | 15010       | 15039       |

**Adapter**

for fixed-angle rotor 12111

| Bore diameter x length [mm] | 16.3 x 69 |
|-----------------------------|-----------|
| Tubes per adapter / rotor   | – / 10    |
| Centrifuging radius [mm]    | 76        |
| Item no.                    | –         |

## Fixed-angle rotor 12157

### with aluminium lid 17841

- Max. capacity: 20 x 10 ml round-bottom
- Max. speed (3-18KS / 3-18KHS): 10,000 rpm
- Max. RCF (3-18KS / 3-18KHS): 10,956 x g
- Hermetically closable with aluminium lid 17841
- Tmin at maximum speed: <4°C
- Angle: 25°



## Fixed-angle rotor 12311

### with aluminium lid 17935

- Max. capacity: 12 x 15 ml conical
- Max. speed (3-18KS / 3-18KHS): 13,500 rpm
- Max. RCF (3-18KS / 3-18KHS): 20,172 x g
- Biosafe with aluminium lid 17935
- Max. speed for 4°C: 13,200 rpm
- Angle: 25°
- NEW: g-lock rotor 91534



### Tube



|                                      |             |             |             |
|--------------------------------------|-------------|-------------|-------------|
| Rated capacity (filling volume) [ml] | 10          | 10          | 10          |
| Diameter x length [mm]               | 16.1 x 81.1 | 16.1 x 81.1 | 16.1 x 81.1 |
| Tube material                        | PF          | PC          | PPCO        |
| Item no.                             | 15000       | 15010       | 15039       |

### Adapter

for  
fixed-angle rotor  
12157



|                             |           |
|-----------------------------|-----------|
| Bore diameter x length [mm] | 16.3 x 69 |
| Tubes per adapter / rotor   | - / 20    |
| Centrifuging radius [mm]    | 98        |
| Item no.                    | -         |

### Tube



|                                      |            |
|--------------------------------------|------------|
| Rated capacity (filling volume) [ml] | 15         |
| Diameter x length [mm]               | 16.5 x 120 |
| Tube material                        | PP         |
| Item no.                             | 15115      |

### Adapter

for  
fixed-angle rotor  
12311



|                             |            |
|-----------------------------|------------|
| Bore diameter x length [mm] | 17.5 x 106 |
| Tubes per adapter / rotor   | - / 12     |
| Centrifuging radius [mm]    | 99         |
| Item no.                    | -          |

# Cleanroom

## Robust and resistant



An extremely resistant cleanroom coating is available from Sigma for all aluminium buckets and rotors. This coating provides reliable corrosion protection for accessories, especially where aggressive chemicals are used. The cleanroom coating can even withstand

exposure to sodium hydroxide and hydrochloric acid. The surfaces are also food-grade (FDA certified) and can easily be cleaned without residues.

Cleanroom  
coating  
Available for all  
accessories

## Fixed-angle rotor 12158

### with aluminium lid 17842

- Max. capacity: 6 x 30 ml round-bottom
- Max. speed (3-18KS / 3-18KHS): 18,000 rpm
- Max. RCF (3-18KS / 3-18KHS): 28,616 x g
- Hermetically closable with aluminium lid 17842
- Max. speed for 4°C: 17,300 rpm
- Angle: 29°
- **NEW:** g-lock rotor 91365 



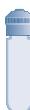
## Fixed-angle rotor 12150

### with aluminium lid 17837

- Max. capacity: 6 x 50 ml round-bottom
- Max. speed (3-18KS / 3-18KHS): 14,600 rpm
- Max. RCF (3-18KS / 3-18KHS): 20,018 x g
- Hermetically closable with aluminium lid 17837
- T<sub>min</sub> at maximum speed: <4°C
- Angle: 25°
- **NEW:** g-lock rotor 91375 



### Tube



Rated capacity (filling volume) [ml]

|                        | 10          | 10          | 10          | 30 (26)   | 30 (26)   | 30 (28)   |
|------------------------|-------------|-------------|-------------|-----------|-----------|-----------|
| Diameter x length [mm] | 16.1 x 81.1 | 16.1 x 81.1 | 16.1 x 81.1 | 25.3 x 98 | 25.3 x 98 | 25.3 x 98 |
| Tube material          | PF          | PC          | PPCO        | PF        | PPCO      | PC        |
| Item no.               | 15000       | 15010       | 15039       | 15029     | 15032     | 15030     |

### Adapter



Bore diameter x length [mm]

|                           | 16.5 x 70 | 25.7 x 82.5 |
|---------------------------|-----------|-------------|
| Tubes per adapter / rotor | 1 / 6     | - / 6       |
| Centrifuging radius [mm]  | 69        | 79          |
| Item no.                  | 13059     | -           |

### Tube



Rated capacity (filling volume) [ml]

|                        | 10          | 10          | 14       | 15         | 30 (26)   | 30 (28)   | 30         | 50 (38)    | 50 (43)    | 50              |
|------------------------|-------------|-------------|----------|------------|-----------|-----------|------------|------------|------------|-----------------|
| Diameter x length [mm] | 16.1 x 81.1 | 16.1 x 81.1 | 17 x 100 | 17.5 x 106 | 25.3 x 98 | 25.3 x 98 | 23.6 x 106 | 28.8 x 107 | 28.5 x 107 | 28.5 x 101.5    |
| Tube material          | PF          | PPCO        | PP       | HS glass   | PPCO      | PC        | HS glass   | PPCO       | PF         | Stainless steel |
| Item no.               | 15000       | 15039       | 15023    | 15085      | 15032     | 15030     | 15086      | 15052      | 15051      | 13055           |

### Adapter



Bore diameter x length [mm]

|                           | 16.2 x 65 | 17 x 88 | 18 x 90 | 25.6 x 75 | 24.5 x 93 | 29 x 98 |
|---------------------------|-----------|---------|---------|-----------|-----------|---------|
| Tubes per adapter / rotor | 1 / 6     | 1 / 6   | 1 / 6   | 1 / 6     | 1 / 6     | - / 6   |
| Centrifuging radius [mm]  | 52        | 79      | 79      | 69        | 82        | 84      |
| Item no.                  | 13087     | 13062   | 16018   | 13086     | 16030     | -       |

## Fixed-angle rotor 12310

### with aluminium lid 17934

- Max. capacity: 6 x 50 ml conical
- Max. speed (3-18KS / 3-18KHS): 14,500 rpm
- Max. RCF (3-18KS / 3-18KHS): 22,096 x g
- Biosafe with aluminium lid 17934
- Max. speed for 4°C: 14,200 rpm
- Angle: 25°
- **NEW:** g-lock rotor 91377



## Fixed-angle rotor 12156

### with aluminium lid 17840

- Max. capacity: 8 x 50 ml round-bottom
- Max. speed (3-18KS / 3-18KHS): 13,800 rpm
- Max. RCF (3-18KS / 3-18KHS): 20,440 x g
- Hermetically closable with aluminium lid 17840
- T<sub>min</sub> at maximum speed: <4°C
- Angle: 25°



### Tube

|                                      |            |         |          |            |            |          |
|--------------------------------------|------------|---------|----------|------------|------------|----------|
|                                      |            |         |          |            |            |          |
| Rated capacity (filling volume) [ml] | 15         | 25      | 30       | 50 (38)    | 50 (43)    | 50       |
| Diameter x length [mm]               | 16.5 x 120 | 25 x 90 | 25 x 107 | 28.8 x 107 | 28.5 x 107 | 29 x 117 |
| Tube material                        | PP         | PP      | PP       | PPCO       | PF         | PP       |
| Item no.                             | 15115      | -       | -        | 15052      | 15051      | 15151    |

### Adapter

|                                   |          |           |         |          |  |
|-----------------------------------|----------|-----------|---------|----------|--|
| for<br>fixed-angle rotor<br>12310 |          |           |         |          |  |
| Bore diameter x length [mm]       | 17 x 107 | 25.5 x 71 | 30 x 91 | 30 x 101 |  |
| Tubes per adapter / rotor         | 1 / 6    | 1 / 6     | 1 / 6   | - / 6    |  |
| Centrifuging radius [mm]          | 93       | 71        | 84      | 94       |  |
| Item no.                          | 13060    | 13064     | 13079   | -        |  |

### Tube

|                                      |             |             |          |            |           |           |            |            |            |                 |
|--------------------------------------|-------------|-------------|----------|------------|-----------|-----------|------------|------------|------------|-----------------|
|                                      |             |             |          |            |           |           |            |            |            |                 |
| Rated capacity (filling volume) [ml] | 10          | 10          | 14       | 15         | 30 (26)   | 30 (28)   | 30         | 50 (38)    | 50 (43)    | 50              |
| Diameter x length [mm]               | 16.1 x 81.1 | 16.1 x 81.1 | 17 x 100 | 17.5 x 106 | 25.3 x 98 | 25.3 x 98 | 23.6 x 106 | 28.8 x 107 | 28.5 x 107 | 28.5 x 101.5    |
| Tube material                        | PF          | PPCO        | PP       | HS glass   | PPCO      | PC        | HS glass   | PPCO       | PF         | Stainless steel |
| Item no.                             | 15000       | 15039       | 15023    | 15085      | 15032     | 15030     | 15086      | 15052      | 15051      | 13055           |

### Adapter

|                                   |           |         |         |           |           |  |         |
|-----------------------------------|-----------|---------|---------|-----------|-----------|--|---------|
| for<br>fixed-angle rotor<br>12156 |           |         |         |           |           |  |         |
| Bore diameter x length [mm]       | 16.2 x 65 | 17 x 88 | 18 x 90 | 25.6 x 75 | 24.5 x 93 |  | 29 x 98 |
| Tubes per adapter / rotor         | 1 / 8     | 1 / 8   | 1 / 8   | 1 / 8     | 1 / 8     |  | - / 8   |
| Centrifuging radius [mm]          | 64        | 91      | 91      | 81        | 94        |  | 96      |
| Item no.                          | 13087     | 13062   | 16018   | 13086     | 16030     |  | -       |

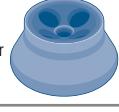
## Fixed-angle rotor 12155

### with aluminium lid 17839

- Max. capacity: 4 x 94 ml round-bottom
- Max. speed (3-18KS / 3-18KHS): 14,500 rpm
- Max. RCF (3-18KS / 3-18KHS): 21,390 x g
- Hermetically closable with aluminium lid 17839
- Tmin at maximum speed: <4°C
- Angle: 26°
- **NEW:** g-lock rotor 91532 



| Tube                                 |    |    |   |    |    |    |
|--------------------------------------|---|---|---|---|---|---|
| Rated capacity (filling volume) [ml] | 10  | 10  | 10  | 14  | 14  | 15  |
| Diameter x length [mm]               | 16.1 x 81.1   | 16.1 x 81.1   | 16.1 x 81.1   | 17 x 100  | 17 x 100  | 17.5 x 106  |
| Tube material                        | PF  | PC  | PPCO  | PS  | PP  | HS glass  |
| Item no.                             | 15000   | 15010   | 15039   | 15020   | 15023   | 15085   |
| <b>Adapter</b>                       |  |  |  |  |  |  |
| for fixed-angle rotor 12155          |   |   |   |   |   |   |
| Bore diameter x length [mm]          | 16.2 x 71   |   | 18 x 87   |   | 17 x 107  | 24.5 x 88   |
| Tubes per adapter / rotor            | 2 / 8   |   | 1 / 4   |   | 1 / 4   | 1 / 4   |
| Centrifuging radius [mm]             | 62  |   | 83  |   | 90  | 84  |
| Item no.                             | 13084   |   | 16019   |   | 13081*  | 16031   |
|                                      |   |   |   |   |   | 13083   |

| Tube                                 |  |  |  |  |  |  |  |  |  |  |
|--------------------------------------|---|---|---|---|---|--|---|---|---|---|
| Rated capacity (filling volume) [ml] | 30 (28)   | 30  | 50 (38)   | 50 (43)   | 50  | 50   | 85 (73)   | 85 (76)   | 94 (85)   | 94  |
| Diameter x length [mm]               | 25.3 x 98   | 23.6 x 106  | 28.8 x 107  | 28.5 x 107  | 28.5 x 101.5  | 29.5 x 117   | 38 x 112  | 38 x 112  | 38 x 103  | 38 x 110  |
| Tube material                        | PC  | HS glass  | PPCO  | PF  | Stainless steel   | PP   | PF  | PPCO  | Stainless steel   | PC  |
| Item no.                             | 15030   | 15086   | 15052   | 15051   | 13055   | 15151  | 15080   | 15076   | 13085   | 15094   |
| <b>Adapter</b>                       |  |  |  |  |  |  |   |   |   |   |
| for fixed-angle rotor 12155          |   |   |   |   |   |  |   |   |   |   |
| Bore diameter x length [mm]          | 26 x 83   | 24.5 x 88   | 29 x 97   |   | 30 x 100  |  |   |   | 38.3 x 91   |   |
| Tubes per adapter / rotor            | 1 / 4   | 1 / 4   |   | 1 / 4   |   | 1 / 4  |   |   | - / 4   |   |
| Centrifuging radius [mm]             | 74  | 84  |   | 88  |   | 91   |   |   | 91  |   |
| Item no.                             | 13083   | 16031   |   | 13082   |   | 13080*   |   |   | -   |   |

\* Only possible without rotor lid 17839

## Fixed-angle rotor 12159

### with aluminium lid 17843

- Max. capacity: 6 x 94 ml round-bottom
- Max. speed (3-18KS / 3-18KHS): 11,400 rpm
- Max. RCF (3-18KS / 3-18KHS): 14,239 x g
- Hermetically closable with aluminium lid 17843
- Tmin at maximum speed: <4°C
- Angle: 25°
- **NEW:** g-lock rotor 91119 



### Tube

|                                      |   |   |   |   |   |   |   |   |   |   |
|--------------------------------------|---|---|---|---|---|---|---|---|---|---|
|                                      |  |  |  |  |  |  |  |  |  |  |
| Rated capacity (filling volume) [ml] | 10  | 10  | 10  | 14  | 14  | 15  | 15  | 25  | 30 (26)   | 30 (26)   |
| Diameter x length [mm]               | 16.1 x 81.1   | 16.1 x 81.1   | 16.1 x 81.1   | 17 x 100  | 17 x 100  | 17.5 x 106  | 16.5 x 120  | 24 x 100  | 25.3 x 98   | 25.3 x 98   |
| Tube material                        | PF  | PC  | PPCO  | PS  | PP  | HS glass  | PP  | Glass   | PF  | PPCO  |
| Item no.                             | 15000   | 15010   | 15039   | 15020   | 15023   | 15085   | 15115   | 15025   | 15029   | 15032   |

### Adapter



|                             |   |   |   |   |   |
|-----------------------------|---|---|---|---|---|
|                             |  |  |  |  |  |
| Bore diameter x length [mm] | 16.2 x 71   | 18 x 87   | 17 x 107  | 24.5 x 88   | 26 x 83   |
| Tubes per adapter / rotor   | 2 / 12  | 1 / 6   | 1 / 6   | 1 / 6   | 1 / 6   |
| Centrifuging radius [mm]    | 69  | 90  | 97  | 91  | 81  |
| Item no.                    | 13084   | 16019   | 13081   | 16031   | 13083   |

### Tube

|                                      |   |   |   |   |   |  |   |   |   |   |
|--------------------------------------|---|---|---|---|---|--|---|---|---|---|
|                                      |  |  |  |  |  |  |  |  |  |  |
| Rated capacity (filling volume) [ml] | 30 (28)   | 30  | 50 (38)   | 50 (43)   | 50  | 50   | 85 (73)   | 85 (76)   | 94 (85)   | 94  |
| Diameter x length [mm]               | 25.3 x 98   | 23.6 x 106  | 28.8 x 107  | 28.5 x 107  | 28.5 x 101.5  | 29.5 x 117   | 38 x 112  | 38 x 112  | 38 x 103  | 38 x 110  |
| Tube material                        | PC  | HS glass  | PPCO  | PF  | Stainless steel   | PP   | PF  | PPCO  | Stainless steel   | PC  |
| Item no.                             | 15030   | 15086   | 15052   | 15051   | 13055   | 15151  | 15080   | 15076   | 13085   | 15094   |

### Adapter



|                             |   |   |   |  |  |           |
|-----------------------------|---|---|---|--|--|-----------|
|                             |  |  |  |  |  |           |
| Bore diameter x length [mm] | 26 x 83   | 24.5 x 88   | 29 x 97   | 30 x 100   |  | 38.3 x 91 |
| Tubes per adapter / rotor   | 1 / 6   | 1 / 6   | 1 / 6   | 1 / 6  |  | - / 6     |
| Centrifuging radius [mm]    | 81  | 91  | 95  | 98   |  | 98        |
| Item no.                    | 13083   | 16031   | 13082   | 13080  |  | -         |

# 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.

|   | <b>Polycarbonate<br/>(PC)</b>                  | <b>Polyvinyl fluoride<br/>(PF)</b>                                  | <b>Polystyrene<br/>(PS)</b> | <b>Polyethylene<br/>(PE)</b> | <b>Polypropylene<br/>(PP)</b> |
|---|--|---|-----------------------------|------------------------------|-------------------------------|
| <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 |                             |                              |                               |

|   | <b>PP copolymer<br/>(PPCO)</b> | <b>Glass</b>                                   | <b>High-speed glass<br/>(HS glass)</b>         | <b>Stainless steel</b> |
|---|--------------------------------|--|--|------------------------|
| <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 |                        |

SIGMA



# Spincontrol S controller

## Intuitive operation and many options

The patented one-knob Spincontrol S controller sets standards in control technology for laboratory centrifuges. All parameters, such as speed, RCF or temperature, are set using the multifunction knob and can even be altered during operation. Illuminated buttons for starting, stopping and lid opening facilitate access to these functions.

Along with manual parameter configuration, previously entered programs can be selected via shortcuts. 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. All setpoint and actual values are constantly shown on the clearly organised display.

The countless features leave nothing to be desired: time after target speed reached, capacity for 60 programs, password protection to prevent unintentional alteration of operating parameters, and the rotor cycle counter are just a few of the highlights that make the Spincontrol S controller a highly versatile system that is ready to meet the laboratory requirements of the future.

This premium controller from Sigma supports internal quality management functions as well as external communication with a laboratory information management system (LIMS). That way the Spincontrol S supports traceable professional reporting.

**Spincontrol S**  
Get more information.  
View our video:  
[www.sigma-zentrifugen.de/en/v/spincontrol](http://www.sigma-zentrifugen.de/en/v/spincontrol)

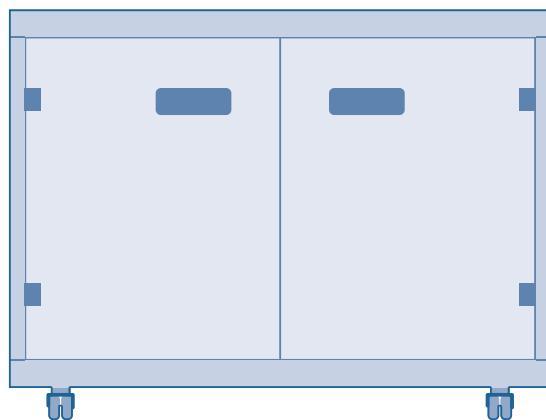


|   |  |
|---|--|
| Display   | TFT                                    |
| Message window  | +                                      |
| Constant display of setpoints and actual values               | +                                      |
| Languages   | DE, GB, PT, FR, ES, RU, HU, IT, SE, CN |
| Timer (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 bar  | +                                      |
| 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                                     |
| Free run-out  | +                                      |
| Automatic lid opening at end of run, switchable               | +, +                                   |
| Start delay (clotting time) adjustable/switchable             | +, +                                   |
| Standstill cooling; switchable                                | +, +                                   |
| Standstill heating; switchable*                               | +, +                                   |
| Pre-cooling function "Rapid Temp"                             | +                                      |
| 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/cm³                          | +                                      |
| Lockable controller with password protection                  | +                                      |
| Microprocessor control  | +                                      |

\* Only for Sigma 3-18KHS

# Centrifuge tables

Sigma centrifuge tables are available in six different sizes. Matched to the corresponding centrifuge dimensions, they combine convenient work height with an optimally calculated footprint. The tables are made from coated sheet steel and are equipped with a storage compartment (with two doors) and a convenient pull-out shelf. Lockable castors allow the centrifuge tables to be easily moved and positioned in the laboratory.



## Centrifuge table 17920

For Sigma 2-16KL  
W x H x D [mm]: 600 x 501 x 550

## Centrifuge table 17922

For Sigma 6-16S  
W x H x D [mm]: 581 x 481 x 684

## Centrifuge table 17926

For Sigma 3-16KL, 3-18KS, 4-16KS  
W x H x D [mm]: 650 x 501 x 647

## Centrifuge table 17921

For Sigma 6-16KS  
W x H x D [mm]: 790 x 515 x 684

## Centrifuge table 17923

For Sigma 3-30KS  
W x H x D [mm]: 570 x 481 x 616

## Centrifuge table 17927

For Sigma 3-16L, 4-5L, 4-16S  
W x H x D [mm]: 490 x 497 x 647

# Premium quality

## Made in Germany

The Sigma 3-18KS and Sigma 3-18KHS 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.

|  | <b>Sigma 3-18KS</b> | <b>Sigma 3-18KHS</b> |
|--|---------------------|----------------------|
| <b>Max. capacity [ml]</b>                            |                     |                      |
| Swing-out rotor                                      | 4 x 400             | 4 x 400              |
| Fixed-angle rotor                                    | 6 x 94              | 6 x 94               |
| <b>Max. RCF</b>                                      |                     |                      |
|  | 30,070              | 30,070               |
| <b>Maximum speed [rpm]</b>                           |                     |                      |
|  | 18,000              | 18,000               |
| <b>Minimum speed [rpm]</b>                           |                     |                      |
|  | 100                 | 100                  |
| <b>Noise level at maximum speed (approx) [dB(A)]</b> |                     |                      |
| Fixed-angle rotor 12154                              | ≤ 55                | ≤ 55                 |
| Swing-out rotor 11180 with bucket 13190              | ≤ 60                | ≤ 60                 |
| <b>Max. acceleration time [s]</b>                    |                     |                      |
| Fixed-angle rotor 12154                              | ≤ 29                | ≤ 29                 |
| Swing-out rotor 11180 with bucket 13190              | ≤ 18                | ≤ 18                 |
| <b>Max. braking time [s]</b>                         |                     |                      |
| Fixed-angle rotor 12154                              | ≤ 47                | ≤ 47                 |
| Swing-out rotor 11180 with bucket 13190              | ≤ 21                | ≤ 21                 |
| <b>Temperature adjustment range [°C]</b>             | -20 – +40           | -20 – +60            |
| <b>Power consumption [W]</b>                         | 1,010               | 1,010                |
| <b>Height x width x depth [mm]</b>                   | 355 x 630 x 600     | 355 x 630 x 600      |
| <b>Height with open lid [mm]</b>                     | 785                 | 785                  |
| <b>Weight without rotor [kg]</b>                     | 78                  | 78                   |

**Sigma 3-18KS** centrifuge  
 220–240 V, 50/60 Hz (item no. 10370)  
 208 V, 60 Hz (item no. 10371)  
 200 V, 50/60 Hz (item no. 10372)  
 120 V, 60 Hz (item no. 10373)

|  | <b>Sigma 3-18KS</b> | <b>Sigma 3-18KHS</b> |
|--|---------------------|----------------------|
| <b>Max. capacity [ml]</b>                            |                     |                      |
| Swing-out rotor                                      | 4 x 400             | 4 x 400              |
| Fixed-angle rotor                                    | 6 x 94              | 6 x 94               |
| <b>Max. RCF</b>                                      |                     |                      |
|  | 30,070              | 30,070               |
| <b>Maximum speed [rpm]</b>                           |                     |                      |
|  | 18,000              | 18,000               |
| <b>Minimum speed [rpm]</b>                           |                     |                      |
|  | 100                 | 100                  |
| <b>Noise level at maximum speed (approx) [dB(A)]</b> |                     |                      |
| Fixed-angle rotor 12154                              | ≤ 55                | ≤ 55                 |
| Swing-out rotor 11180 with bucket 13190              | ≤ 60                | ≤ 60                 |
| <b>Max. acceleration time [s]</b>                    |                     |                      |
| Fixed-angle rotor 12154                              | ≤ 29                | ≤ 29                 |
| Swing-out rotor 11180 with bucket 13190              | ≤ 18                | ≤ 18                 |
| <b>Max. braking time [s]</b>                         |                     |                      |
| Fixed-angle rotor 12154                              | ≤ 47                | ≤ 47                 |
| Swing-out rotor 11180 with bucket 13190              | ≤ 21                | ≤ 21                 |
| <b>Temperature adjustment range [°C]</b>             | -20 – +40           | -20 – +60            |
| <b>Power consumption [W]</b>                         | 1,010               | 1,010                |
| <b>Height x width x depth [mm]</b>                   | 355 x 630 x 600     | 355 x 630 x 600      |
| <b>Height with open lid [mm]</b>                     | 785                 | 785                  |
| <b>Weight without rotor [kg]</b>                     | 78                  | 78                   |

**Sigma 3-18KHS** centrifuge  
 220–240 V, 50/60 Hz (item no. 10374)

**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)

### 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)



# 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
- WW 20,627 x g

**Floor-standing centrifuge**  
**Sigma 8KS**

- |    |               |
|----|---------------|
| █  | 12 x 1,000 ml |
| ▷  | 5,100 rpm     |
| WW | 8,578 x g     |
- 
- |    |              |
|----|--------------|
| █  | 6 x 1,000 ml |
| ▷  | 10,500 rpm   |
| WW | 20,461 x g   |



**Benchtop centrifuge**  
**Sigma 2-7**

- █ 4 x 100 ml
- ▷ 4,000 rpm
- WW 2,540 x g
  
- █ 30 x 15 ml
- ▷ 4,000 rpm
- WW 2,486 x g



**Benchtop centrifuge**  
**Sigma 3-30KS**

- |    |            |
|----|------------|
| █  | 4 x 100 ml |
| ▷  | 5,000 rpm  |
| WW | 3,969 x g  |
- 
- |    |            |
|----|------------|
| █  | 6 x 94 ml  |
| ▷  | 30,000 rpm |
| WW | 70,121 x g |



**Robot centrifuge**  
**Sigma 4-5KRL**

- █ 100 x 15 ml
- ▷ 4,700 rpm
- WW 4,470 x g

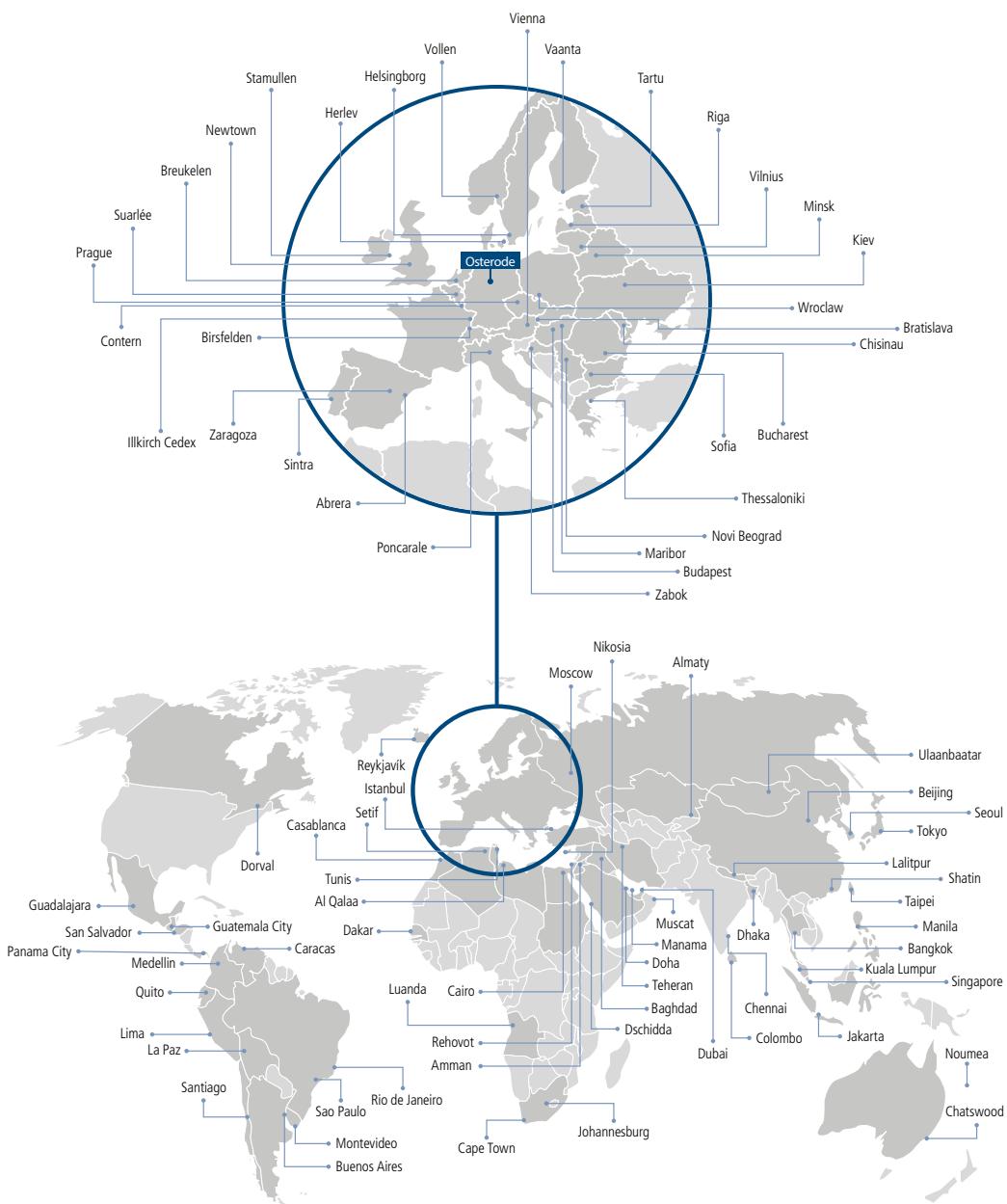
## Legend

- |    |               |   |                   |
|----|---------------|---|-------------------|
| █  | Max. capacity | ▷ | Swing-out rotor   |
| ▷  | Max. speed    | █ | Fixed-angle rotor |
| WW | Max. RCF      |   |                   |

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



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