

TOP  
SPIN



**Centrifuges Product Catalogue**

# LABOMODERNE

**Hettich**

ZENTRIFUGEN

**LABOMODERNE**

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# Contents

4	Company
8	Service
9	Certificates and registrations
10	Features of the centrifuges
12	Model variants for special requirements
13	Centrifugation
14	Which tubes are suitable to which centrifuges?
16	Control panels
	Small centrifuges:
20	<b>HANDZENTRIFUGE</b>
21	<b>EBA 20 / EBA 20 S</b>
24	<b>EBA 270</b>
26	<b>EBA 21</b>
	Hematocrit centrifuge:
32	<b>HAEMATOKRIT 210</b>
34	Rolling cabinets
	Microlitre centrifuges:
36	<b>MIKRO 120</b>
38	<b>MIKRO 200 / 200 R</b>
41	<b>MIKRO 220 / 220 R</b>
	Benchtop centrifuges:
48	<b>ROTOFIX 32 A</b>
58	<b>UNIVERSAL 320 / 320 R</b>
72	<b>ROTINA 380 / 380 R</b>
86	<b>ROTINA 420 / 420 R</b>
98	<b>ROTANTA 460 / 460 R</b>
	<b>ROTANTA 460 RC / 460 RF</b>
	Floorstanding centrifuges:
124	<b>ROTANTA 460 Robotic</b>
126	<b>ROTIXA 50 S / 50 RS</b>
137	<b>ROTO SILENTA 630 RS</b>
	Automatic cell washing system:
147	<b>ROTOLAVIT</b>
	Special-purpose centrifuge:
149	<b>ROTOFIX 46 / 46 H</b>
	Special accessories:
152	<b>PRESSOMAT</b>
154	HettInfo
156	Cyto accessories
160	<b>HettCube incubators and cooled incubators</b>
161	Symbols and abbreviations
162	Available tubes

# Company

*Andr. Hettich*  
*Metallwaren- und Werkzeug-Fabrik.*  
\* Tullnaden \*  
*A. Hettich*

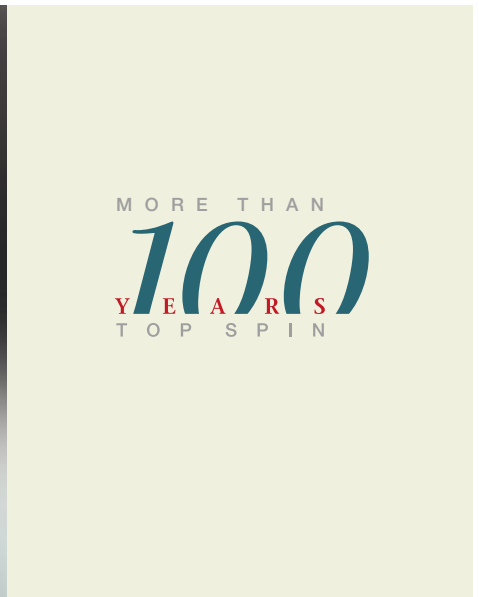


## Yesterday, today and tomorrow

The Andreas Hettich company's success story began in 1904 with the manufacturing of medical instruments. Under challenging conditions, with a well developed sense of market need and a bold spirit, Andreas Hettich set the company on course.

The first centrifuges were developed and received with breakthrough success. The company then dedicated its efforts exclusively to the manufacturing and development of centrifuges finely tuned to user needs.

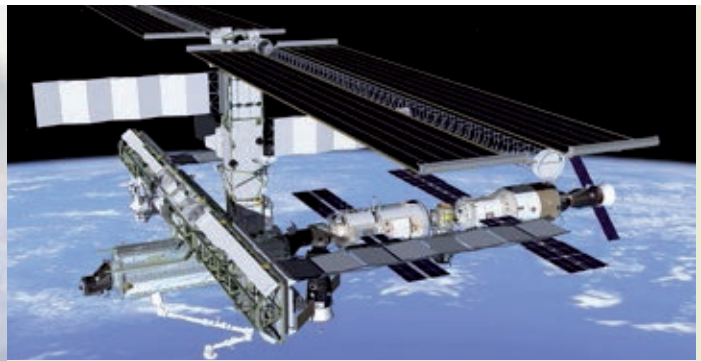
Patented accessories  
for centrifuging directly  
on slides



Over a span of close to 50 years, between 1956 and 2005, Günter Eberle led the company's development. With his entrepreneurial vision, he was able to bridge technological advancement and user needs – again and again. The more than 200 patents received speak for themselves.

Today, the company is one of the leading manufacturers of laboratory centrifuges worldwide.

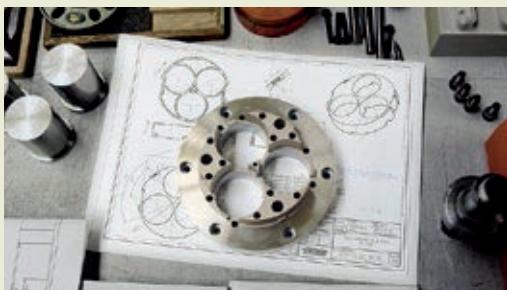
With pioneering and innovative business management and consistent quality assurance, Horst and Klaus-Günter Eberle look after consolidation and continuous expansion of their market position.



### Finely tuned precision and customer-oriented innovation

Hettich centrifuges are known for their reliable functionality, and for their fast and easy operation. At Hettich, all departments are involved in new product development from day one onwards. The open exchange of ideas and suggestions not only supports team spirit, it is also very productive. It promotes high-level motivation and commitment on the part of the whole team. Motivation that is clearly reflected in trend-setting product quality.

Impressive examples of this include the presentation of the first microprocessor-controlled centrifuges at AICHEM 1976, and the development of the first robot-operated centrifuges with PC-control and rotor positioning in the nineties. A Hettich centrifuge is even employed in the International Space Station ISS.



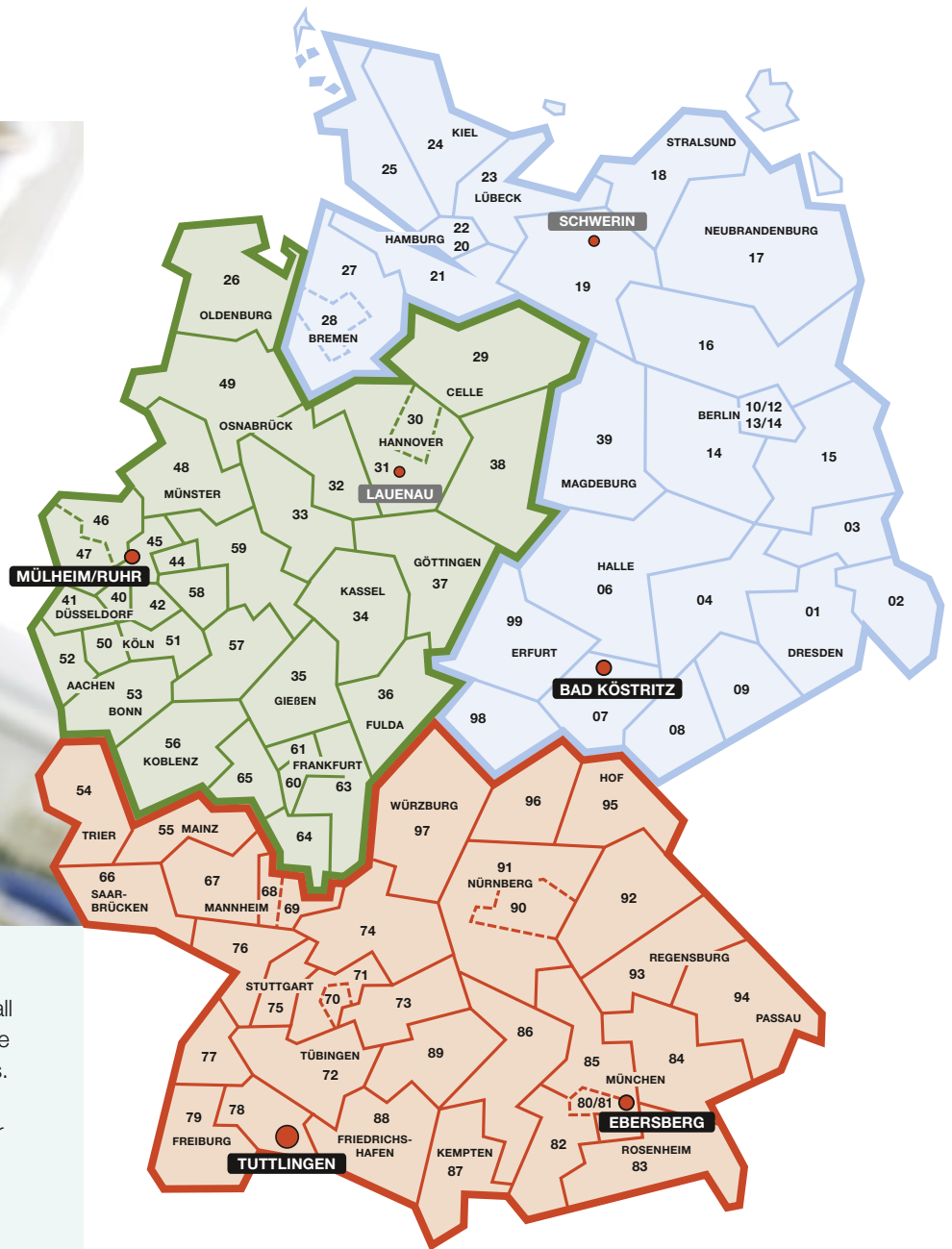


### **Responsive, attentive and dynamic**

Real customer benefits are always in the foreground of product development. Individual customer needs which are not directly covered by the current product range are addressed with customised solutions.

A 26-person sales and support team across Germany ensures service, maintenance, and specialised consulting and advice on location. Via its subsidiaries abroad, Andreas Hettich GmbH & Co.KG distributes its products in several European countries, the USA, and the Asia-Pacific region. Centrifuges from Hettich, however, are used all over the world. In many countries and on all continents, the company works closely with authorised distributors to ensure the highest quality of local service and support.

# Service



A customer service network covers all of Germany, divided into three service territories, each with 2 service offices. Our product specialists can be reached either directly or through our head office in Tuttlingen. We do our best to guarantee 24-hour service in Germany on working days.

You can access technical support by calling **+49 (0)7461 705 - 1185** or **+49 (0)7461 705 - 1109**.

The service department can also be reached directly by e-mail at **service@hettichlab.com**

You will find information on Hettich partners in your country at **www.hettichlab.com**

**■ Service head office**

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19053 Schwerin  
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Fax: +49 (0)3 85 / 5 21 96 71

# Certificates and registrations

Hettich products are distinguished by the highest quality and the most modern technology. Centrifuges and accessories are developed in collaboration with users from the fields of medicine, chemistry, research and industry, and they are always adapted to the latest requirements, in a continuous process.

Hettich centrifuges comply with all relevant EU standards in effect. All stages from design to end-product are continuously subjected to the strictest controls. Evidence is provided by national and international test marks such as IEC 61010 or the CE conformity. The ISO 9001, ISO 13485 and ISO 14001 certificates accredited to the company bear witness to the extreme care and responsibility Hettich puts into the manufacturing of centrifuges and their accessories. This is why Hettich centrifuges are known for safety and reliability all over the world.



Marks of conformity for the use of Hettich centrifuges in the US and Canada, on request.



## QUALITY & SAFETY

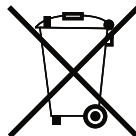
IvD stands for **In-vitro Diagnostics**. Hettich centrifuges conform to IvD standards, i.e. they comply with the European IvD guideline's requirements (98/79/EC) and guarantee a standardised level of quality and safety. Please see §15 "Data Storage" of our General Terms and Conditions regarding the traceability of Hettich products.



Under Rule 3 in the Classification section of Annex IX to the EU Directive 93/42/EEC, centrifuges used for the manufacture of blood products for transfusion purposes require approval as Class IIa medical products. Hettich holds this approval for the ROTO SILENTA 630 RS, ROTIXA 50 S / RS and ROTANTA 460 line of centrifuges, as shown by declaration of conformity No. 3654DE414090721 in accordance with Annex V to Directive 93/42/EEC.



General lab equipment



## NON-POLLUTING WASTE DISPOSAL

Since 1.1.2006, Hettich has been registered in Germany under **WEEE Reg. No. DE 92954423** with the Elektro-Altgeraete Register<sup>1)</sup> - Foundation for the implementation of the 2002/96/EC directive (ElektroG<sup>2)</sup>), regarding the disposal of electrical and electronic equipment in the EU. With the symbol of the crossed-out bin, it is made clear that centrifuges may not be disposed of with household waste. The disposal regulations in the individual EU countries can vary. Please ask your supplier, if necessary. In this context, we refer to § 14 "Acceptance of returns / obligation to dispose of the goods" of the General Terms and Conditions.

<sup>1)</sup> Register of old electronic equipment  
<sup>2)</sup> Electrical and Electronic Equipment Act

# Features of the centrifuges

	metal housing	plastic housing	metal lid	plastic lid	viewing port in the lid	lid locking and holding	one-hand lid lock	twist lock	powered lid-locking	lid dropping protection	emergency lid lock release
<b>EBA 20</b>		●		●	●	●	●				●
<b>EBA 20 S</b>		●		●	●	●	●				●
<b>EBA 270</b>		●	●		●	●	●				●
<b>EBA 21</b>	●		●		●	●		●		●	●
<b>HAEMATOKRIT 210</b>	●		●		●	●		●		●	●
<b>MIKRO 120</b>		●		●	●	●	●				●
<b>MIKRO 200</b>	●		●		●	●	●		●	●	●
<b>MIKRO 200 R</b>	●		●		●	●	●		●	●	●
<b>MIKRO 220</b>	●		●		●	●	●		●	●	●
<b>MIKRO 220 R</b>	●		●		●	●	●		●	●	●
<b>ROTOFIX 32 A</b>	●		●		●	●	●			●	●
<b>UNIVERSAL 320</b>	●		●		●	●	●		●	●	●
<b>UNIVERSAL 320 R</b>	●		●		●	●	●		●	●	●
<b>ROTINA 380</b>	●		●		●	●	●		●	●	●
<b>ROTINA 380 R</b>	●		●		●	●	●		●	●	●
<b>ROTINA 420</b>	●		●		●	●	●		●	●	●
<b>ROTINA 420 R</b>	●		●		●	●	●		●	●	●
<b>ROTANTA 460/460 R</b>	●		●		●	●	●		●	●	●
<b>ROTANTA 460 RC/460 RF</b>	●		●		●	●	●		●	●	●
<b>ROTANTA 460 Robotic</b>	●		●		●	●		●	●	●	●
<b>ROTIXA 50 S</b>	●		●		●	●		●		●	●
<b>ROTIXA 50 RS</b>	●		●		●	●		●		●	●
<b>ROTO SILENTA 630 RS</b>	●		●		●	●	●		●	●	●
<b>ROTO LAVIT</b>	●		●		●	●	●			●	●
<b>ROTOFIX 46</b>	●		●		●	●		●		●	●
<b>ROTOFIX 46 H</b>	●		●		●	●		●		●	●

	stainless steel chamber	air cooling	cooling (-20 °C to +40 °C)	heating	automatic rotor recognition	brushless drive	control panel	error display	imbalance detection	data report system (option)	automated	also available in 115 V / 60 Hz	
		●					E	●				●	<b>EBA 20</b>
		●				●	E	●	●			●	<b>EBA 20 S</b>
	●	●				●	E	●	●			●	<b>EBA 270</b>
	●	●			●	●	N	●	●			●	<b>EBA 21</b>
	●	●				●	E	●	●			●	<b>HAEMATOKRIT 210</b>
		●				●	E	●	●			●	<b>MIKRO 120</b>
	●	●				●	N plus	●	●			●	<b>MIKRO 200</b>
	●		● <sup>#)</sup>			●	N plus	●	●			●	<b>MIKRO 200 R</b>
	●	●			●	●	N plus	●	●			●	<b>MIKRO 220</b>
	●		●		●	●	N plus	●	●			●	<b>MIKRO 220 R</b>
	●	●			●	●	E	●	●			●	<b>ROTOFIX 32 A</b>
	●	●			●	●	N plus	●	●			●	<b>UNIVERSAL 320</b>
	●		●		●	●	N plus	●	●			●	<b>UNIVERSAL 320 R</b>
	●	●			●	●	C	●	●			●	<b>ROTINA 380</b>
	●		●		●	●	C	●	●			●	<b>ROTINA 380 R</b>
	●	●			●	●	C	●	●			●	<b>ROTINA 420</b>
	●		●		●	●	C	●	●			●	<b>ROTINA 420 R</b>
	●	●	● <sup>460 R</sup>		●	●	C	●	●			●	<b>ROTANTA 460/460 R</b>
	●		●		●	●	C	●	●			●	<b>ROTANTA 460 RC/460 RF</b>
	●		●		●	●	C	●	●		●	●	<b>ROTANTA 460 Robotic</b>
	●	●			●	●	S	●	●	●			<b>ROTIXA 50 S</b>
	●		●		●	●	S	●	●	●			<b>ROTIXA 50 RS</b>
	●		●		●	●	S	●	●	●			<b>ROTO SILENTA 630 RS</b>
		●				●	W	●	●			●	<b>ROTOLAVIT</b>
	●	●			●	●	N plus	●	●			●	<b>ROTOFIX 46</b>
	●			● <sup>**)</sup>	●	●	N plus	●	●			●	<b>ROTOFIX 46 H</b>

#) Adjustable temperature range MIKRO 200 R: -10 °C to +40 °C

\*\*) Heating up to +90 °C

# Model variants for special requirements

The following variants of the refrigerated models UNIVERSAL 320 R, ROTINA 380 R, ROTINA 420 R, ROTANTA 460 R, ROTIXA 50 RS and ROTO SILENTA 630 RS are available:

- **Variants with connection for nitrogen (N<sub>2</sub>) flushing:**

For centrifugation of reactive substances or substances which are unstable in aerial oxygen. If required, customers should install an oxygen concentration monitor.

- **Heating/cooling variants (H/C):**

For applications demanding temperatures above 40 °C, such as mineral oil testing according to ASTM, material endurance tests, etc.

The heating/cooling variants of the UNIVERSAL 320 R feature no cooling unit and no built-in heater.

An external refrigerated/heating circulator must be provided by the customer. Depending on the circulator performance, the centrifuge is able to heat/refrigerate in a range from 0 °C to +90 °C.

The floorstanding ROTO SILENTA 630 RS and ROTIXA 50 RS centrifuges are also available as variants with internal cooling unit or for connection to external cooling units, and as GMP versions.

Model	Variant	Power supply*	Frequency	Cat. No.
<b>UNIVERSAL 320 R</b>	N <sub>2</sub> flushing	200–240 V	50 Hz	1406-20
		240 V	60 Hz	
<b>UNIVERSAL 320 R</b>	N <sub>2</sub> flushing	115–127 V	60 Hz	1406-21
<b>UNIVERSAL 320 R</b>	H/C to +90 °C	200–240 V	50–60 Hz	1406-50
<b>UNIVERSAL 320 R</b>	H/C to +90 °C	100–127 V	50–60 Hz	1406-51
<b>UNIVERSAL 320 R</b>	H/C to +90 °C plus N <sub>2</sub> flushing	200–240 V	50–60 Hz	1406-70
<b>UNIVERSAL 320 R</b>	H/C to +90 °C plus N <sub>2</sub> flushing	100–127 V	50–60 Hz	1406-71
<b>ROTINA 380 R</b>	H/C to +90 °C	200–240 V	50–60 Hz	1706-50
<b>ROTINA 420 R</b>	N <sub>2</sub> flushing	200–240 V	50 Hz	4706-20
<b>ROTINA 420 R</b>	H/C to +90 °C	200–240 V	50 Hz	4706-50
<b>ROTANTA 460 R</b>	N <sub>2</sub> flushing	200–240 V	50 Hz	5660-20
<b>ROTANTA 460 R</b>	H/C to +90 °C	200–240 V	50 Hz	5660-50
<b>ROTANTA 460 R</b>	H/C to +90 °C	100–127 V	60 Hz	5660-51
		100 V	50 Hz	
<b>ROTANTA 460 R</b>	H/C to +90 °C plus N <sub>2</sub> flushing	200–240 V	50 Hz	5660-70
<b>ROTANTA 460 RC</b>	H/C to +90 °C	200–240 V	50 Hz	5670-50
<b>ROTANTA 460 RF</b>	H/C to +90 °C	200–240 V	50 Hz	5675-50
<b>ROTIXA 50 RS</b>	N <sub>2</sub> flushing	220–240 V	50–60 Hz	4910-20
<b>ROTIXA 50 RS</b>	H/C to +60 °C	220–240 V	50–60 Hz	4910-50
<b>ROTIXA 50 RS</b>	GMP, external cooling unit	208–240 V	50–60 Hz	4910-90
<b>ROTIXA 50 RS</b>	GMP, internal cooling unit with water-cooled condenser	220–240 V	50–60 Hz	4910-96
<b>ROTO SILENTA 630 RS</b>	N <sub>2</sub> flushing	400 V 3~ +N	50–60 Hz	5005-20
<b>ROTO SILENTA 630 RS</b>	H/C to +90 °C	400 V 3~ +N	50–60 Hz	5005-50
<b>ROTO SILENTA 630 RS</b>	brine cooling	400 V 3~ +N	50–60 Hz	5005-60
<b>ROTO SILENTA 630 RS</b>	GMP, internal cooling unit with water-cooled condenser	400 V 3~ +N	50–60 Hz	5005-80
<b>ROTO SILENTA 630 RS</b>	GMP, external cooling unit	400 V 3~ +N	50–60 Hz	5005-90

\*) Other voltages on request.

# Centrifugation

Centrifuges generate centrifugal forces which are many times stronger than the pull of the earth's gravity. They separate suspended particles in liquids, or separate liquids of differing densities from each other. By centrifugation, sedimentation occurs much more rapidly than by the natural force of gravity.

A range of different rotors are available for the various applications. In laboratory centrifuges the principal rotors used are

- angle rotors and
- swing-out rotors.

Both rotor types have their specific advantages.



## THE ANGLE ROTOR

Fixed-angle rotors are used primarily in the higher speed range. Their relatively low drag means high speeds are attained. The oblique angling of the tubes shortens the overall distance the particles have to travel, thereby additionally speeding up the sedimentation process.



## THE SWING-OUT ROTOR

During centrifugation, the tubes are swung horizontal. In the process, the sediment is deposited in the middle of the tube bottom, phase limits are formed horizontally. If higher capacities are required in the mid speed range, swing-out rotors are used. The wide variety of accessories is a further feature of these rotors.

## CALCULATING CENTRIFUGAL FORCE





































































































The performance of a centrifuge is often specified as the maximum rotor speed. However, the speed provides only an approximation of the force actually acting on the centrifuged material and causing the mixtures to be separated. This force is termed the relative centrifugal force (RCF). The non-unit-specific numerical value indicates the multiple by which the centrifugal force exceeds the acceleration due to gravity 'g'. The formula for calculating RCF is:

$$RCF = (n/1000)^2 \times r \times 11,18$$

n = revolutions per minute (RPM)  
r = radius in cm

This means that a doubling of the radius results in a doubling of the RCF; a doubling of the speed results in a quadrupling of the RCF. Centrifuge performance should therefore always be compared by way of the RCF value instead of rpm.

# Which tubes are suitable to which centrifuges?

<b>HANDZENTRIFUGE</b>	 max. 15 ml	 15 ml							
<b>EBA 20 / EBA 20 S</b>	 max. 15 ml	 15 ml							
<b>EBA 270</b>	 max. 15 ml								
<b>EBA 21</b>	 max. 50 ml	 max. 50 ml		 max. 50 ml					
<b>HAEMATOKRIT 210</b>									
<b>MIKRO 120</b>									
<b>MIKRO 200 / 200 R</b>								  	 
<b>MIKRO 220 / 220 R</b>	 max. 50 ml	 max. 50 ml		 max. 50 ml				  	 
<b>ROTOFIX 32 A</b>	 max. 100 ml	 max. 50 ml	 max. 50 ml	 max. 85 ml					
<b>UNIVERSAL 320 / 320 R</b>	 max. 100 ml	 max. 50 ml	 max. 50 ml	 max. 85 ml				  	
<b>ROTINA 380 / 380 R</b>	 max. 250 ml	 max. 50 ml	 max. 50 ml	 max. 94 ml	 max. 290 ml		 max. 225 ml	  	
<b>ROTINA 420 / 420 R</b>	 max. 250 ml	 max. 50 ml	 max. 50 ml	 max. 94 ml	 max. 600 ml		 max. 225 ml	  	
<b>ROTANTA 460 / 460 R</b>	 max. 250 ml	 max. 50 ml	 max. 50 ml	 max. 94 ml	 max. 750 ml		 max. 500 ml	  	
<b>ROTANTA 460 RC / 460 RF</b>	 max. 250 ml	 max. 50 ml	 max. 50 ml	 max. 94 ml	 max. 250 ml			  	
<b>ROTANTA 460 Robotic</b>	 max. 250 ml	 max. 50 ml	 max. 50 ml	 max. 94 ml	 max. 250 ml			  	
<b>ROTIXA 50 S / 50 RS</b>	 max. 250 ml	 max. 50 ml	 max. 50 ml	 max. 94 ml	 max. 1,000 ml		 max. 500 ml	  	
<b>ROTO SILENTA 630 RS</b>	 max. 100 ml	 max. 50 ml	 max. 50 ml	 10 ml	 max. 1,000 ml	 2,000 ml	 max. 500 ml		
<b>ROTOLAVIT</b>	 5 ml								
<b>ROTOFIX 46 / 46 H</b>	 max. 250 ml	 max. 50 ml	 max. 50 ml	 10 ml	 max. 290 ml				



# Control panels

The state-of-the-art control panels from Hettich are easy to operate and specifically tailored to users' needs. Entry of the parameters is fast, precise and convenient by way of an adjuster knob and / or selector keys on a foil keypad. The intuitive display shows the actual values in digital format while the centrifuge is running.



EBA 20, EBA 20 S, EBA 270, MIKRO 120 and HAEMATOKRIT 210



ROTOFIX 32 A

## THE E CONTROL PANEL

The E(economy) control panel is fitted in the EBA 20, EBA 20 S, EBA 270, MIKRO 120, HAEMATOKRIT 210 and ROTOFIX 32 A models. The required centrifugation parameters can be entered quickly and easily on the user-friendly keypad:

### DISPLAY

**RPM** Speed indication. Entry in increments of 100.  
**t** Time indication. Entry in minutes, max. 99 min.

### KEYPAD

- ▲ Increases the relevant value.
- ▼ Decreases the relevant value.
- ▲▲▲ **IMPULS** For short centrifugation steps.
- ☐ Opens the lid (EBA 20, EBA 20 S, EBA 270 and MIKRO 120 only).
- START** Starts centrifugation.
- STOP** Stops centrifugation manually.
- RCF** Switches from RPM to RCF display (ROTOFIX 32 A only).



## THE N CONTROL PANEL

The EBA 21 centrifuge model features the N(ormal) control panel. The N control panel has more functions than the E control panel.

### DISPLAY

- PROG** Program number. Three programmable memories are available.
- >RCF<** Relative centrifugal force.
- RPM** Speed indication. Entry in increments of 10.
- t/min** Centrifugation time (max. 99 min : 59 sec).

### KEYPAD



- ◀ Guides the user through the menu options.
- ▲ Increases the relevant value.
- ▼ Decreases the relevant value.
- IMPULS** For short centrifugation steps.
- START** Starts centrifugation.
- STOP** Stops centrifugation manually.
- PROG** Stores the program.
- RCF** Switches from RPM to RCF display. Entry of the RCF in increments of 10. Entry of the centrifuging radius in mm.
- ⤿ Entry of the run-up time in ramps 1–9
- ⤿ Entry of the run-down time in ramps 1–9
- An LED lights up:
  - ◉ in the event of imbalance,
  - ◉ as long as the rotor is rotating,
  - ◉ when the lid can be opened on completion of the program.





## THE N PLUS CONTROL PANEL

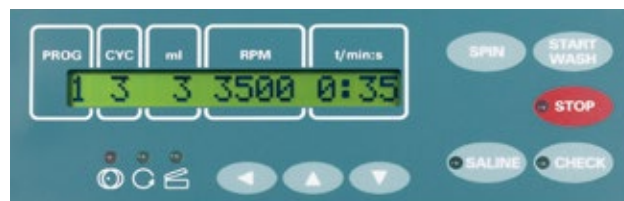
The MIKRO 200 / 200 R, MIKRO 220 / 220 R, UNIVERSAL 320 / 320 R and ROTOFIX 46 / 46 H models are quick and easy to operate using this variant of the N control panel. The parameters are selected with the SELECT key. An adjuster knob is used to set the values, and the settings are stored by pressing the Start/Impulse key.

### DISPLAY

P	Program number. Four (MIKRO 200 / 200 R) or 10 (MIKRO 220 / 220 R, UNIVERSAL 320 / 320 R, ROTOFIX 46 / 46 H) programmable memories are available.
T/°C	Temperature of refrigerated and heatable centrifuges. The temperature of the refrigerated models is infinitely variable between -20 °C and +40 °C (MIKRO 220 R, UNIVERSAL 320 R) or between -10 °C and +40 °C (MIKRO 200 R). Model ROTOFIX 46 H can be heated up to +90 °C.
RCF	Relative centrifugal force.
RPM	Speed indication. Entry in increments of 10.
t/min	Centrifugation time (max. 99 min : 59 sec).
	Entry of the acceleration ramp 1–9
	Entry of the braking ramp 1–9

### KEYPAD

	Pre-cools the rotor chamber (MIKRO 200 R, MIKRO 220 R and UNIVERSAL 320 R) to the required temperature.
	Heats the rotor chamber of the ROTOFIX 46 H to the required temperature.
RCF	Switches from RPM to RCF display. Entry of the RCF in increments of 10. Input of rotor radius in mm in RCF mode.
SELECT	Guides the user through the menu options.
START IMPULS	Starts centrifugation. For short centrifugation steps.
STOP OPEN	Stops centrifugation manually. Opens the lid at standstill.









## THE W CONTROL PANEL

The W control panel is used to program the special functions of the cell washer ROTOLAVIT.

### DISPLAY

PROG	Program number. Five programmable memories are available.
CYC	Washing cycles. A maximum of nine washing cycles can be entered.
ml	Volume of saline solution per tube (max. 5 ml).
RPM	Speed indication. Entry in increments of 10.
t/min:s	Centrifugation time (max. 9 min : 59 sec).

### KEYPAD


	Guides the user through the menu options.
	Increases the relevant value.
	Decreases the relevant value.
START WASH	Starts washing, the production of a suspension or the cleaning program, adopts the selected parameters.
SPIN	Starts additional centrifugations, e.g. Coombs centrifugation.
STOP	Stops centrifugation or washing manually.
SALINE	<ul style="list-style-type: none"> <li>· Activates the fill volume calibrator.</li> <li>· Charges the system with washing liquid during the cleaning program.</li> </ul>
CHECK	Stops the process at any desired point to enable visual inspection of the particular process.
	An LED lights up:
	· in the event of imbalance,
	· as long as the rotor is rotating,
	· when the lid can be opened on completion of the program.




## THE C CONTROL PANEL

The advanced C control panel significantly facilitates the daily laboratory routine. Parameter selection is done via the use of symbol keys. Values are set with the control knob, and recorded by pressing the START key. The temperature in the refrigerated ROTINA 380 R, ROTINA 420 R, ROTANTA 460 R and ROTANTA 460 Robotic centrifuges can be set in either Celsius (°C) or Fahrenheit (°F) degrees.

### DISPLAY AND PARAMETER INPUT

<b>PROG</b>	Entry and recall of the program number. 98 programs can be stored.
<b>T/°C</b>	Entry of the temperature from -20 °C to +40 °C or -4 °F to +104 °F in increments of 1 with refrigerated models.
	Entry of the run-up time in ramps 1-9 or in min : sec. Entry of the run-down time in ramps R 1-9 and B 1-9 or in min : sec. Also unbraked run-down or a brake force cut-off speed can be selected.
<b>RCF</b>	Entry of the relative centrifugal force in increments of 1. Entry of the centrifuging radius (RAD) in mm.
<b>RPM</b>	Entry of the speed in increments of 10.
<b>TIME</b>	Entry of the centrifugation time (max. 99 h : 59 min : 59 sec) or continuous operation.

### KEYPAD

<b>START</b>	Starts centrifugation. Starts short centrifugation. Stores entries and changes.
	Starts pre-cooling program <b>PREC</b> .
<b>STOP</b>	Stops centrifugation manually.
<b>OPEN</b>	Opens the lid at standstill.

Centrifuges with C control panel permit the centrifugation time to be switched from „at start“ (commencing upon start) to „at speed“ (start when the set speed has been reached).

### OPTIONS

**PROGRAM INTERLOCKING:** to combine several centrifugation runs.






## THE S CONTROL PANEL

This special-class control panel is standard with the ROTIXA 50 S / 50 RS and ROTO SILENTA 630 RS floorstanding centrifuges.

### DISPLAY

<b>PROG-Nr</b>	Program number. 89 programmable memories are available.
<b>T/°C</b>	Temperature of refrigerated centrifuges.
<b>PROFIL</b>	Run-up and run-down profile.
<b>n/min<sup>-1</sup></b>	Speed indication.
<b>t/min:sec</b>	Centrifugation time (max. 999 min : 59 sec).

### KEYPAD

<b>STO</b>	Stores the program.
<b>RCL</b>	Calls up the selected program.
<b>PROG</b>	Selects the program menu.
	Entry of the temperature from -20 °C to +40 °C in increments of 1 °C with refrigerated centrifuges. Entry of the rotor radius in mm in RCF mode.
<b>RCF</b>	Switches from RPM to RCF display. Entry of the RCF in increments of 1.
	Entry of the run-up time in ramps 1-9 or in min:sec.
	Entry of the run-down time in ramps R 1-9 and B 1-9 or in min : sec. Also unbraked run-down or a brake force cut-off speed can be selected.
<b>J RCF</b>	The integral over the RCF indicates the overall RCF acting on the centrifuged material during the running time so far.
<b>n</b>	Entry of the speed in increments of 10.
<b>t</b>	Entry of the centrifugation time (max. 999 min : 59 sec) or continuous operation.
<b>START</b>	Starts centrifugation.
<b>STOP</b>	Stops centrifugation manually.

### OPTIONS

**PROGRAM INTERLOCKING:** to combine several centrifugation runs.

**DATA REPORT SYSTEM:** For detailed information on this subject, please refer to the HettInfo section on pages 154-155.

# Small Centrifuges



SMALL CENTRIFUGES

HANDZENTRIFUGE

EBA 20 / EBA 20 S

EBA 270

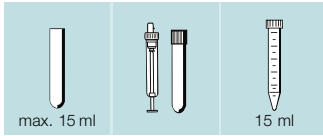
EBA 21

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# HANDZENTRIFUGE



The manually operated centrifuge is maintenance-free and independent of an external power supply

This convenient centrifuge can be easily clamped to a bench or table, and operated without electricity. Its self-lubricating gear makes it virtually maintenance-free.

It can be operated with two different rotors.

With rotor No. **1014**, conical 15 ml tubes (Cat. No. 0515, non-graduated or No. 0516, graduated) can be accelerated to 1,298 RCF.

Rotor No. **1025** also accommodates a variety of other commercial tubes (also with round bottom) up to 15 ml. The tubes may have a max. length of 125 mm and a max. diameter of 17 mm.



## Rotor, 4-place

↘ 90°

max. capacity 4 x 15 ml (conical only)  
max. RPM (speed) 3,000 min<sup>-1</sup>  
max. RCF 1,298

**Cat. No. 1014**

## Rotor, 4-place

↘ 50°

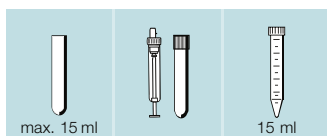
max. capacity 4 x 15 ml  
max. RPM (speed) 3,000 min<sup>-1</sup>  
max. RCF 1,077

**Cat. No. 1025**

## HANDZENTRIFUGE

<b>Manual centrifuge, without rotor</b>	
Dimensions (HxWxD)	285 x 140 x 175 mm
Weight	approx. 0.9 kg
<b>Cat. No.</b>	<b>1011</b>

# EBA 20 / EBA 20 S



## Small and practical centrifuges for small sample volumes

The EBA 20 and EBA 20 S are fitted as standard with an angle rotor for 8 tubes up to a volume of 15 ml. The EBA 20 attains a max. RCF of 3,461 and is the ideal choice for a medical practice. The more powerful EBA 20 S generates a max. RCF of 6,153 and is suitable for emergency laboratories where every minute counts. Its higher speeds reduce centrifugation time such that plasma with a low platelet content is available for analysis after just a few minutes.



EBA 20

### TECHNOLOGY

#### EBA 20

#### EBA 20 S

#### Small centrifuge, with rotor

Power supply <sup>*)</sup>	208–240 V 1 ~	100–127 V 1 ~	200–240 V 1 ~	100–127 V 1 ~
Frequency	50–60 Hz			
Consumption	65 VA	70 VA	130 VA	180 VA
Emission, Immunity	EN / IEC 61326-1, class B	FCC class B	EN / IEC 61326-1, class B	FCC class B

Max. capacity	8 x 15 ml			
Max. RPM	6,000 min <sup>-1</sup>		8,000 min <sup>-1</sup>	
Max. RCF	3,461		6,153	
Running time	1 – 99 min, ∞ continuous run, short cycle mode (impulse key)			

Dimensions (HxWxD)	216 x 231 x 292 mm			
Weight	approx. 4 kg		approx. 6 kg	

<b>Cat. No.</b>	<b>2002</b>	<b>2002-01</b>	<b>2080</b>	<b>2080-01</b>
-----------------	-------------	----------------	-------------	----------------

<sup>\*)</sup> Other voltages on request.

## Angle rotor EBA 20/ EBA 20 S, 8-place, for commercial tubes up to 15 ml:



8x15 ml tubes



4x15 ml tubes with screw cap



















4x8 ml blood collection tubes











8x9-10 ml blood collection tubes

∠ 33°

n = 6,000 min<sup>-1</sup> / 8,000 min<sup>-1</sup>  
max. RCF 3,461 / 6,153

capacity in ml	4	5	6	15	1.1-1.4	2.6-3.4	2.7-3	4.5-5	4.9	7.5-8.5	9-10	10
Ø x L in mm	10x88	12x75	12x82	17x100	8x66	13x65	11x66	11x92	13x90	15x92	16x92	15x102
<b>Cat. No.</b>	-	<b>0553<sup>2)</sup></b>	<b>0501<sup>2)</sup></b>	<b>0518<sup>2)</sup></b>	<b>blood collection/urine tubes</b>							
 rotor incl.												
		 <sup>14)</sup>			 <sup>14)</sup>							
<b>Cat. No.</b>	<b>6305</b>	<b>1054-A</b>	-		<b>1054-A</b>			-				
boring Ø x L in mm	11.5x67.5	13.5x60	17.7x88		13.5x60			17.7x88				
tubes per rotor	8											
max. RCF <sup>2)</sup> EBA 20	2,817	2,697	3,461		2,697			3,461				
max. RCF <sup>2)</sup> EBA 20 S	5,009	4,794	6,153		4,794			6,153				
radius in mm	70	67	86		67			86				
run-up in sec	26/23											
run-down in sec, braked	37/40											

capacity in ml	1.6-5	4-7	8	8.5-10	15
Ø x L in mm	13x75	13x100	16x125	16x100	17x120
<b>Cat. No.</b>	<b>blood collection/urine tubes</b>				<b>0509</b>
 rotor incl.					
	 <sup>14)</sup>				
<b>Cat. No.</b>	<b>1054-A</b>	<b>1058</b>	-		
boring Ø x L in mm	13.5x60	13.5x79	17.7x88		
tubes per rotor	8	8	4	8	4
max. RCF <sup>2)</sup> EBA 20	2,697	3,461			
max. RCF <sup>2)</sup> EBA 20 S	4,794	6,153			
radius in mm	67	86			
run-up in sec	26/23				
run-down in sec, braked	37/40				

<sup>2)</sup> Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote <sup>2)</sup> is 4,000.

<sup>14)</sup> For the EBA 20 only! Model EBA 20 S is supplied as standard with an adapter for these tubes.

**More for the lab**

We have applied our many years of experience in the field of lab technology to other quality products. For example:



**Hettich**

FREEZER

## FREEZER

# Ultra-low temperature chest and upright models

Constant: Safe and secure storage in an optimal environment



**Secure, energy-saving, flexible:**

You require safe, secure storage for your valuable samples. Tissue specimens, DNA, RNA, protein preparations and similar substances need to be stored in such a way as to ensure they are well preserved. With a constant temperature of **up to - 86 °C**, Hettich freezers offer the optimal environment for your sensitive samples.



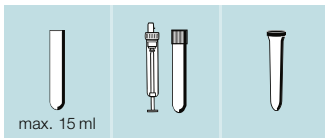
Please ask for our detailed brochure.

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# EBA 270



## Optimal sample preparation starts in the medical practice


The EBA 270 is a small centrifuge with a swing-out rotor especially designed for use in medical practices. It accepts common blood or urine tubes up to a volume of 15 ml and accelerates them to a maximum speed of 4,000 min<sup>-1</sup>. This corresponds to a RCF of 2,254.

It delivers optimal separation results and a horizontal layer of the separating gel that is identical to that achieved with a large centrifuge. Samples are therefore optimally prepared for analysis.



## TECHNOLOGY

### EBA 270

Small centrifuge, with rotor	
Power supply <sup>*)</sup>	200–240 V 1 ~      100–127 V 1 ~
Frequency	50–60 Hz
Consumption	130 VA      125 VA
Emission, Immunity	EN / IEC 61326-1, class B      FCC class B
 Max. capacity	6 x 15 ml
Max. RPM (speed)	4,000 min <sup>-1</sup>
Max. RCF	2,254
Running time	1 – 99 min, ∞ continuous run, short cycle mode (impulse key)
Dimensions (HxWxD)	239x326x389 mm
Weight	approx. 14 kg
<b>Cat. No.</b>	<b>2300      2300-01</b>

<sup>\*)</sup> Other voltages on request.

EBA 270

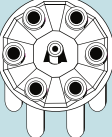





























**Swing-out rotor, 6-place (incl.)**



↗ 90°

illustrated with blood collection tubes

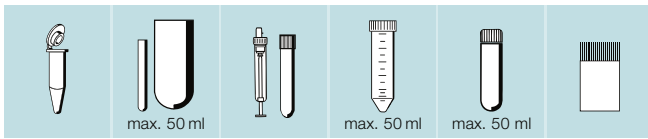
n = 4,000 min<sup>-1</sup>  
max. RCF 2,254

capacity in ml	4	5	6	15	1.1-1.4	2.6-3.4	2.7-3	4-5.5	4.5-5	4.9	7.5-8.5	9-10	10	1.6-5	4-7	4-7	8.5-10	12	
Ø x L in mm	10x88	12x75	12x82	17x100	8x66	13x65	11x66	15x75	11x92	13x90	15x92	16x92	15x102	13x75	13x100	16x75	16x100	17x102	
Cat. No.	-	0553 <sup>2)</sup>	0501 <sup>2)</sup>	0518 <sup>2)</sup>	blood collection / urine tubes														
 rotor and carriers incl.																			
																			
Cat. No.	<b>2331</b>	<b>2333</b>	<b>2331</b>	<b>2333</b>	<b>2331</b>						<b>2333</b>	<b>2331</b>	<b>2333</b>	<b>2331</b>					
boring Ø x L in mm	17.5x80	17.5x55	17.5x80	17.5x55	17.5x80						17.5x55	17.5x80	17.5x55	17.5x80					
tubes per rotor	6																		
max. RCF <sup>2)</sup>	2,254	1,807	2,254	1,807	2,254						1,807	2,254	1,807	2,254					
radius in mm	126	101	126	101	126						101	126	101	126					
run-up in sec	10																		
run-down in sec	21																		

EBA 270

<sup>2)</sup> Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote <sup>2)</sup> is 4,000.

# EBA 21



## Maximum performance in microlitre centrifugation coupled with reliability for routine laboratory tasks


The EBA 21 is powerful and versatile not only in microlitre centrifugation. Equipped with a variable, maintenance-free frequency drive, this centrifuge generates a max. RCF of 25,718 at a speed of 18,000 min<sup>-1</sup>.

With its wide range of rotors, the EBA 21 can easily meet all demands placed on a small, high-performance centrifuge.



## TECHNOLOGY

## EBA 21

Small centrifuge, without rotor			
Power supply*)		220–240 V 1 ~	110–127 V 1 ~
Frequency		50–60 Hz	
Consumption		500 VA	550 VA
Emission, Immunity		EN / IEC 61326-1, class B	FCC class B
 Max. capacity		6x50 ml	
Max. RPM (speed)		18,000 min <sup>-1</sup>	
Max. RCF		25,718	
Running time		1 sec – 99 min : 59 sec, ∞ continuous run, short cycle mode (impulse key)	
Dimensions (HxWxD)		247x275x330 mm	
Weight		approx. 11 kg	
<b>Cat. No.</b>		<b>1004</b>	<b>1004-01</b>

\*) Other voltages on request.

**Angle rotor, 6-place**
**Angle rotor, 12-place**

 $\angle 35^\circ$ 

























 n = 6,000 min<sup>-1</sup>  
 max. RCF 4,025





















**Cat. No. 1116**

 $\angle 35^\circ$ 

 n = 6,000 min<sup>-1</sup>  
 max. RCF 4,146

**Cat. No. 1416**

capacity in ml	7	15	25	50	9-10	10	1.6-5	4-7	15	50	30	50
Ø x L in mm	12x100	17x100	24x100	34x100	16x92	15x102	13x75	13x100	17x120	29x115	26x95	29x107
<b>Cat. No.</b>	<b>0578<sup>2)</sup></b>	<b>0518<sup>2)</sup></b>	<b>0519<sup>2)</sup></b>	<b>0521<sup>2)</sup></b>	<b>blood collection / urine tubes</b>				<b>0509</b>	<b>0513</b>	<b>0545</b>	<b>0546</b>
 <b>rotor</b> Cat. No. <b>1116</b>												
												
<b>Cat. No.</b>	<b>1632</b>	<b>1635</b>	<b>1633</b>	-	<b>1635</b>				<b>1631</b>	<b>1641</b>	<b>1633</b>	<b>1634</b>
boring Ø x L in mm	13x92	17.5x95	26x88	35x96	17.5x95				17x98	30x98	26x88	29x95
tubes per rotor	18	6			6				6	3	6	
max. RCF <sup>2)</sup>	3,944	3,783	3,703	4,025	3,783		2,978	3,783	3,824	3,824	3,703	3,904
radius in mm	98	94	92	100	94		74	94	95	95	92	97
run-up in sec	23											
run-down in sec, braked	27											

capacity in ml	5	15	1.1-1.4	2.6-3.4	2.7-3	4.5-5	4.9	7.5-8.5	9-10	10	1.6-5	4-7	8	8.5-10	15
Ø x L in mm	12x75	17x100	8x66	13x65	11x66	11x92	13x90	15x92	16x92	15x102	13x75	13x100	16x125	16x100	17x120
<b>Cat. No.</b>	<b>0553<sup>2)</sup></b>	<b>0518<sup>2)</sup></b>	<b>blood collection/urine tubes</b>										<b>0509</b>		
 <b>rotor</b> Cat. No. <b>1416</b>															
															
<b>Cat. No.</b>	<b>1054-A</b>	-	<b>1054-A</b>			-					<b>1054-A</b>	<b>1058</b>	-		
boring Ø x L in mm	13.5x60	17.7x88	13.5x60			17.7x88					13.5x60	13.5x79	17.7x88		
tubes per rotor	12	12	12			12					12	12	6	12	6
max. RCF <sup>2)</sup>	3,300	4,146	3,300			4,146					3,300	4,146			
radius in mm	82	103	82			103					82	103			
run-up in sec	18														
run-down in sec, braked	23														

<sup>2)</sup> Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote <sup>2)</sup> is 4,000.

### Angle rotor, 12-place

### Angle rotor, 24-place

### Angle rotor, 30-place



↘ 45°

n = 18,000 min<sup>-1</sup>  
max. RCF 25,718

**Cat. No. 1022-A**



↘ 40°

n = 15,000 min<sup>-1</sup>  
max. RCF 21,382

**Cat. No. 1024-A**



↘ 45°

n = 14,000 min<sup>-1</sup>  
max. RCF 21,255

**Cat. No. 1089-A**

with bio-containment<sup>5)</sup>

capacity in ml	0.2	0.4	0.5	0.8	1.5	2.0
Ø x L in mm	6x18	6x45	8x30	8x45	11x38	
<b>Cat. No.</b>	-			<b>2078</b>	<b>0536</b>	
<b>rotor</b> Cat. No. <b>1022-A</b>						
<b>Cat. No.</b>	<b>2024</b>	<b>2023</b>	<b>2031<sup>7)</sup></b>	-		
boring Ø x L in mm	6x40		8x40		10.2x19 11.2x39.5	
tubes per rotor	12					
max. RCF <sup>2)</sup>	25,718					
radius in mm	71					
run-up in sec	16					
run-down in sec, braked	19					

capacity in ml	0.2	0.4	0.5	0.8	1.5	2.0
Ø x L in mm	6x18	6x45	8x30	8x45	11x38	
<b>Cat. No.</b>	-			<b>2078</b>	<b>0536</b>	
<b>rotor</b> Cat. No. <b>1024-A</b>						
<b>Cat. No.</b>	<b>2024</b>	<b>2023</b>	<b>2031<sup>7)</sup></b>	-		
boring Ø x L in mm	6x40		8x40		10.2x19 11.2x41.1	
tubes per rotor	24					
max. RCF <sup>2)</sup>	21,382					
radius in mm	85					
run-up in sec	30					
run-down in sec, braked	31					

capacity in ml	0.2	0.4	0.5	0.8	1.5	2.0
Ø x L in mm	6x18	6x45	8x30	8x45	11x38	
<b>Cat. No.</b>	-			<b>2078</b>	<b>0536</b>	
<b>rotor</b> Cat. No. <b>1089-A</b>						
<b>Cat. No.</b>	<b>2024</b>	<b>2023</b>	<b>2031<sup>7)</sup></b>	-		
boring Ø x L in mm	6x40		8x40		10.2x19 11.2x40.9	
tubes per rotor	30					
max. RCF <sup>2)</sup>	21,255					
radius in mm	97					
run-up in sec	40					
run-down in sec, braked	40					

#### Optional for rotor 1024-A



lid **Cat. No. 2425**  
with bio-containment<sup>5)</sup>,  
autoclavable



lid **Cat. No. 2423**  
with bio-containment<sup>5)</sup>,  
autoclavable,  
phenol-resistant

<sup>2)</sup> Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote <sup>2)</sup> is 4,000.

**Angle rotor, 12-place**



∠ 35°

n = 5,000 min<sup>-1</sup>  
max. RCF 2,879

**Cat. No. 1118**

**Swing-out rotor, 8-place**



∠ 55°  
(with carrier 1127)  
∠ 60°  
(with carrier 1122)

n = 5,000 min<sup>-1</sup>  
max. RCF 2,991

**Cat. No. (without carriers) 1114**





**Swing-out rotor, 6-place**











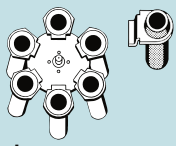














∠ 40°

n = 5,000 min<sup>-1</sup>  
max. RCF 2,711

**Cat. No. (without carriers) 1115**

capacity in ml	5	6	7
Ø x L in mm	12x75	12 x 82	12x100
<b>Cat. No.</b>	<b>0553<sup>2)</sup></b>	<b>0501<sup>2)</sup></b>	<b>0578<sup>2)</sup></b>
 <b>rotor</b> Cat. No. <b>1118</b>			
<b>Cat. No.</b>	-		
boring Ø x L in mm	12x66		
tubes per rotor	12		
max. RCF <sup>2)</sup>	2,879		
radius in mm	103		
run-up in sec	10		
run-down in sec, braked	13		

capacity in ml	5	10	2.6-3.4	2.7-3	4-5.5	1.6-5	4-7
Ø x L in mm	12x75	17x70	13x65	11x66	15x75	13x75	16x75
<b>Cat. No.</b>	<b>0553<sup>2)</sup></b>	<b>2079</b>	<b>blood collection tubes</b>				
 <b>rotor</b> Cat. No. <b>1114</b>							
<b>Cat. No.</b>	<b>1127</b>	<b>1122</b>	<b>1127</b>	<b>1122</b>	<b>1127</b>	<b>1122</b>	<b>1122</b>
boring Ø x L in mm	13.2x53	17.5x53	13.2x53	17.5x53	13.2x53	17.5x53	17.5x53
tubes per rotor	8						
max. RCF <sup>2)</sup>	2,963	2,991	2,963	2,991	2,963	2,991	2,991
radius in mm	106	107	106	107	106	107	107
run-up in sec	9						
run-down in sec, braked	14						

capacity in ml	5	6	10	15	1.1-1.4	2.6-3.4	2.7-3	4-5.5	4.9	7.5-8.5	9-10	1.6-5	4-7	8.5-10
Ø x L in mm	12x75	12 x 82	17x70	17x100	8x66	13x65	11x66	15x75	13x90	15x92	16x92	13x75	16x75	16x100
<b>Cat. No.</b>	<b>0553<sup>2)</sup></b>	<b>0501<sup>2)</sup></b>	<b>2079</b>	<b>0518<sup>2)</sup></b>	<b>blood collection /urine tubes</b>									
 <b>rotor</b> Cat. No. <b>1115</b>														
<b>Cat. No.</b>	<b>1054-A</b>	<b>2x0716</b>	-	<b>1054-A</b>	-						<b>1054-A</b>	<b>0716</b>	-	
boring Ø x L in mm	13.5x60	17.5x79		13.5x60			17.5x79				13.5x60	17.5x79		
tubes per rotor	6													
max. RCF <sup>2)</sup>	2,068	2,376	2,711	2,068			2,711				2,068	2,543	2,711	
radius in mm	74	85	97	74			97				74	91	97	
run-up in sec	8													
run-down in sec, braked	12													

<sup>5)</sup> Tested by the TÜV in conformity with DIN EN 61010, section 2-020.

<sup>7)</sup> For centrifugation at high speeds, we recommend to use form-fitting, phenol-resistant adapters 2031.

### Swing-out rotor, 8-place

### Swing-out rotor, 12-place

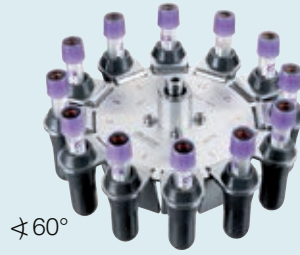
### Hematocrit rotor, 24-place



↗ 90°

n = 5,000 min<sup>-1</sup>  
max. RCF 2,879

**Cat. No.** (without carriers) **1120**



↗ 60°


















n = 5,000 min<sup>-1</sup>  
max. RCF 2,963







**Cat. No.** (without carriers) **1126**


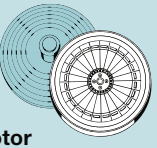


n = 15,000 min<sup>-1</sup>  
max. RCF 21,382

**Cat. No.** **1450**

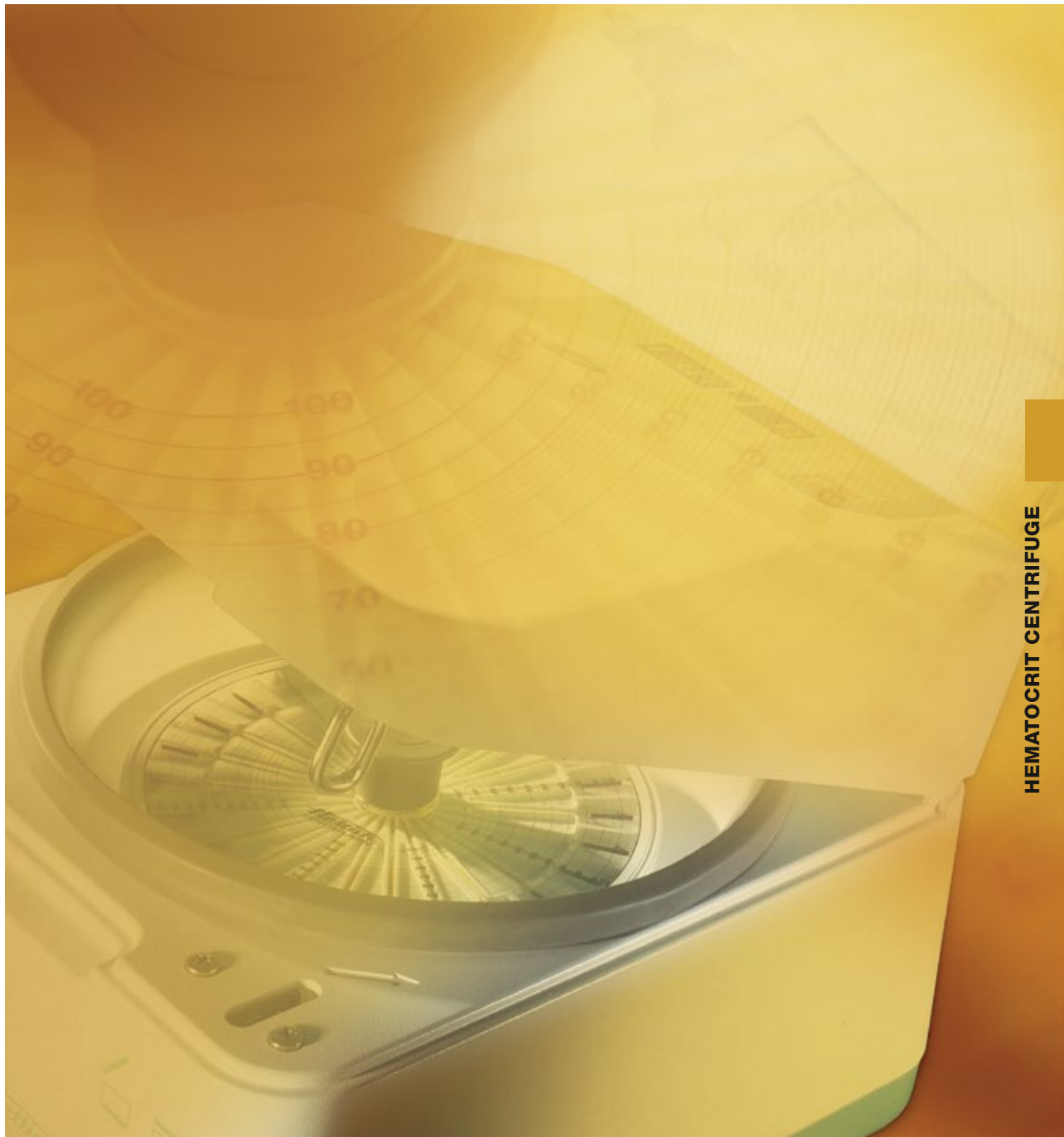
capacity in ml	5	6	10	2.6–3.4	2.7–3	4–5.5	1.6–5	4–7
Ø x L in mm	12x75	12x82	17x70	13x65	11x66	15x75	13x75	16x75
<b>Cat. No.</b>	<b>0553<sup>2)</sup></b>	<b>0501<sup>2)</sup></b>	<b>2079</b>	<b>blood collection tubes</b>				
 <b>rotor</b> Cat. No. <b>1120</b>								
								
<b>Cat. No.</b>	<b>1131</b>	<b>1132</b>	<b>1131</b>	<b>1132</b>	<b>1131</b>	<b>1132</b>	<b>1131</b>	<b>1132</b>
boring Ø x L in mm	13x53	17.5x53	13x53	17.5x53	13x53	17.5x53	13x53	17.5x53
tubes per rotor	8							
max. RCF <sup>2)</sup>	2,879							
radius in mm	103							
run-up in sec	8							
run-down in sec, braked	12							

capacity in ml	5	2.6–3.4	2.7–3	1.6–5
Ø x L in mm	12x75	13x65	11x66	13x75
<b>Cat. No.</b>	<b>0553<sup>2)</sup></b>	<b>blood collection tubes</b>		
 <b>rotor</b> Cat. No. <b>1126</b>				
				
<b>Cat. No.</b>	<b>1127</b>			
boring Ø x L in mm	13.2x53			
tubes per rotor	12			
max. RCF <sup>2)</sup>	2,963			
radius in mm	106			
run-up in sec	10			
run-down in sec, braked	15			

standard capillaries, heparinised	basic	self-sealing and mylar-coated
<b>Cat. No.</b>	<b>2074</b>	<b>1071</b>
lid as evaluation disk incl.		
 <b>rotor</b> Cat. No. <b>1450</b>	sealing putty	
	<b>Cat. No.</b>	<b>2077</b>
boring Ø x L in mm	-	
capillaries per rotor	24	
max. RCF <sup>2)</sup>	21,382	
radius in mm	85	
run-up in sec	8	
run-down in sec, braked	12	

<sup>2)</sup> Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote <sup>2)</sup> is 4,000.

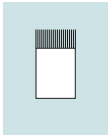
# Hematocrit Centrifuge



HEMATOCRIT CENTRIFUGE

HAEMATOKRIT 210

# HAEMATOKRIT 210



## With this centrifuge, safety is top priority


Hematocrit determination with standard capillaries is carried out with 24-place rotor No. 2076. Each capillary is secured within its own chamber and supported by a holding tray. This holding tray serves to contain glass shards and any leakage should a tube break. It is easy to clean and disposable in the case of glass breakage. The rotor 2076's lid is cover and evaluation disk in one. Capillaries, to be used for quantitative buffy coat analysis are centrifuged in 20-place rotor No. 2056 prior to further analysis.



HAEMATOKRIT 210

## TECHNOLOGY

## HAEMATOKRIT 210

Hematocrit centrifuge, without rotor	
Power supply <sup>*)</sup>	208–240 V 1 ~      100–127 V 1 ~
Frequency	50–60 Hz
Consumption	250 VA      220 VA
Emission, Immunity	EN / IEC 61326-1, class B      FCC class B
 Max. capacity	20 / 24 capillaries
Max. RPM (speed)	13,000 min <sup>-1</sup>
Max. RCF	16,060
Running time	1 – 99 min, ∞ continuous run, short cycle mode (impulse key)
Dimensions (HxWxD)	247x275x330 mm
Weight	approx. 10 kg
<b>Cat. No.</b>	<b>2104</b> <b>2104-01</b>

<sup>\*)</sup> Other voltages on request.

**Hematocrit rotor, 24-place**

**Disk rotor, 20-place, for buffy coat analysis**




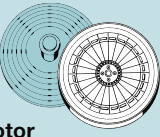
n = 13,000 min<sup>-1</sup>  
max. RCF 16,060


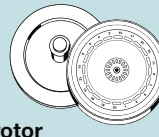
**Cat. No. 2076**



n = 13,000 min<sup>-1</sup>  
max. RCF 16,060

**Cat. No. 2056<sup>12)</sup>**

standard capillaries, heparinised	basic	self-sealing and mylar-coated
<b>Cat. No.</b>	<b>2074</b>	<b>1071</b>
lid as evaluation disk incl.		
 <b>rotor</b> Cat. No. <b>2076</b>	sealing putty	
<b>Cat. No.</b>	<b>2077</b>	<b>-</b>
boring Ø x L in mm	-	
capillaries per rotor	24	
max. RCF	16,060	
radius in mm	85	
run-up in sec	9	
run-down in sec, braked	16	

capillaries	for quantitative buffy coat analysis
<b>Cat. No.</b>	<b>-</b>
lid incl.	
 <b>rotor</b> Cat. No. <b>2056<sup>12)</sup></b>	
<b>Cat. No.</b>	<b>-</b>
boring Ø x L in mm	-
capillaries per rotor	20
max. RCF	16,060
radius in mm	85
run-up in sec	9
run-down in sec, braked	16



The holding trays in rotor 2076 are easy to clean and disposable in the case of glass breakage.

**Cat. No. E1400** (24 trays)

<sup>12)</sup> not suited for standard capillaries

## More for the lab

Rolling cabinets for Hettich centrifuges free up space on the laboratory bench and give you greater flexibility.



## Rolling Cabinets

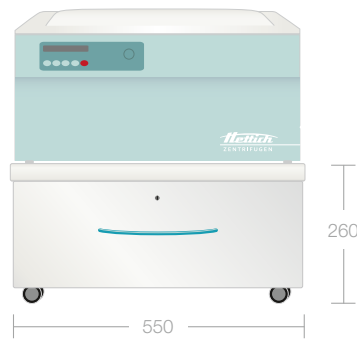
All rolling cabinets are of sturdy design and feature castors and two locks. Any vibrations of the centrifuge are safely compensated for.

Rolling cabinets with Cat. No. 4612-K and 4613-K are suited for the models:

- ROTOFIX 32 A
- UNIVERSAL 320/320 R
- ROTINA 380/380 R
- ROTINA 420
- ROTANTA 460
- ROTOFIX 46/46 H

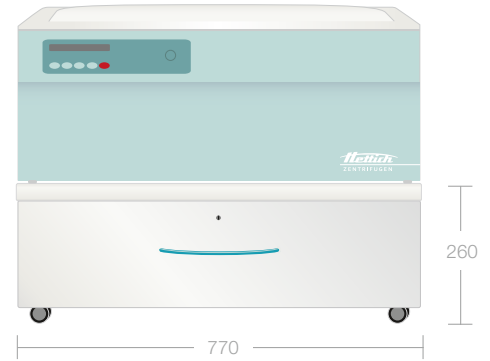
Rolling cabinets with Cat. No. 4614-K and 4615-A are suited for the models:

- ROTINA 420 R
- ROTANTA 460 R



Low and narrow,  
with one drawer.  
Depth 650 mm

**Cat. No. 4612-K**



Low and wide,  
with one drawer.  
Depth 650 mm

**Cat. No. 4614-K**



High and narrow,  
with two drawers.  
Depth 650 mm

**Cat. No. 4613-K**



High and wide,  
with two drawers.  
Depth 650 mm

**Cat. No. 4615-A**

# Microlitre Centrifuges



MICROLITRE CENTRIFUGES

MIKRO 120

MIKRO 200/200 R

MIKRO 220/220 R

**LABOMODERNE**

[www.labomoderne.com](http://www.labomoderne.com) - [info@labomoderne.com](mailto:info@labomoderne.com)

Tél. 01 42 50 50 50

# MIKRO 120




## High-performance centrifuge with a small footprint.

The MIKRO 120 separates microlitre samples quickly and reliably thanks to its 24-place rotor and its lid which is aerosol-proof, autoclavable and phenol-resistant.



## TECHNOLOGY

## MIKRO 120

TECHNOLOGY		MIKRO 120	
<b>Microlitre centrifuge, without rotor</b>			
Power supply <sup>*)</sup>	208 – 240 V 1 ~	100 – 127 V 1 ~	
Frequency	50 – 60 Hz		
Consumption	230 VA		
Emission, Immunity	EN / IEC 61326-1, class B	FCC class B	
 Max. capacity	24 x 1.5/2.0 ml		
Max. RPM (speed)	14,000 min <sup>-1</sup>		
Max. RCF	18,626		
Running time	1 – 99 min, ∞ continuous run, short cycle mode (impulse key)		
Dimensions (HxWxD)	199 x 231 x 292 mm		
Weight	approx. 7 kg		
<b>Cat. No.</b>	<b>1204</b>	<b>1204-01</b>	

<sup>\*)</sup> Other voltages on request.

**Angle rotor, 24-place**



↗ 40°

n = 14,000 min<sup>-1</sup>  
max. RCF 18,626

with bio-containment<sup>5)</sup>,  
autoclavable, phenol-resistant

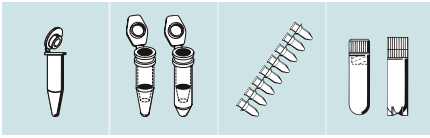
**Cat. No. 1242**

capacity in ml	0.2	0.4	0.5	0.8	1.5	2.0
Ø x L in mm	6 x 18	6 x 45	8 x 30	8 x 45	11 x 38	11 x 38
<b>Cat. No.</b>	-	-	-	-	<b>2078</b>	<b>0536</b>
lid with bio-containment <sup>5)</sup> incl.						
<b>rotor</b> Cat. No. <b>1242</b>						
<b>Cat. No.</b>	<b>2024</b>	<b>2023</b>	<b>2031<sup>7)</sup></b>	-		
boring Ø x L in mm	6 x 40	8 x 40	10.2 x 19	11.2 x 41.1		
tubes per rotor	24					
max. RCF	18,626					
radius in mm	85					
run-up in sec	21					
run-down in sec, braked	24					

<sup>5)</sup> Tested by the TÜV in conformity with DIN EN 61010, section 2-020.

<sup>7)</sup> For centrifugation at high speeds, we recommend to use form-fitting, phenol-resistant adapters 2031.

# MIKRO 200/200 R




These microlitre centrifuges rank among the fastest in their class

Not only are they fast, the MIKRO 200 R also refrigerates quickly: down to +4 °C in 10 to 15 minutes with the Fast Cool function. Highly reliable refrigeration ensures that even thermo-sensitive samples are centrifuged gently.



MIKRO 200

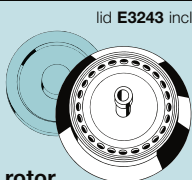



## TECHNOLOGY





	MIKRO 200		MIKRO 200 R	
	classic		cooled	
Microlitre centrifuge, without rotor				
Power supply <sup>*)</sup>	200 – 240 V 1 ~	100 – 127 V 1 ~	200 – 240 V 1 ~	100 – 127 V 1 ~
Frequency	50 – 60 Hz		50 Hz	50 – 60 Hz
Consumption	240 VA	270 VA	450 VA	630 VA
Emission, Immunity	EN / IEC 61326-1, class B	FCC class B	EN / IEC 61326-1, class B	FCC class B
 Max. capacity	30 x 1.5 / 2.0 ml			
Max. RPM (speed)	15,000 min <sup>-1</sup>			
Max. RCF	21,382			
Running time	1 sec – 99 min : 59 sec, ∞ continuous run, short cycle mode (impulse key)			
Dimensions (HxWxD)	260 x 275 x 344 mm		260 x 281 x 553 mm	
Weight	approx. 11.5 kg		approx. 28 kg	
<b>Refrigeration</b>				
Temperature control, infinitely variable	-		from -10 to +40 °C	
Cat. No.	2400	2400-01	2405	2405-01

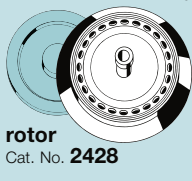




<sup>\*)</sup> Other voltages on request.

Angle rotor, 24-place	Angle rotor, 24-place	Angle rotor, 30-place
		
∠40°	∠45°	∠52,5° (inner row) ∠40° (outer row)
n = 15,000 min <sup>-1</sup> max. RCF 21,382	n = 15,000 min <sup>-1</sup> max. RCF 21,382	n = 15,000 min <sup>-1</sup> max. RCF 20,627
<b>Cat. No. 2424-B</b>	<b>Cat. No. 2428</b>	<b>Cat. No. 2427-A</b>

with bio-containment<sup>5)</sup>,  
autoclavable,  
phenol-resistant

capacity in ml	0.2	0.4	0.5	0.8	1.5	2.0
∅ x L in mm	6 x 18	6 x 45	8 x 30	8 x 45	11 x 38	
<b>Cat. No.</b>	-	-	-	-	<b>2078</b>	<b>0536</b>
lid E3243 incl.						
<b>rotor</b> Cat. No. <b>2424-B</b>						
<b>Cat. No.</b>	<b>2024</b>		<b>2023</b>		<b>2031<sup>7)</sup></b>	
boring ∅ x L in mm	6 x 40		8 x 40		10.2 x 19   11.2 x 42.6	
tubes per rotor	24					
max. RCF	21,382					
radius in mm	85					
run-up in sec	20					
run-down in sec, braked	28					
temperature in °C <sup>1)</sup>	+ 4					

capacity in ml	0.2	0.4	0.5	0.8	1.5	2.0
∅ x L in mm	6x18	6x45	8x30	8x45	11x38	
<b>Cat. No.</b>	-				<b>2078</b>	<b>0536</b>
lid E3243 incl.						
<b>rotor</b> Cat. No. <b>2427-A</b>						
<b>Cat. No.</b>	<b>2024</b>		<b>2023</b>		<b>2031<sup>7)</sup></b>	
boring ∅ x L in mm	6x40		8x40		10.2x19   11.2x41.3	
tubes per rotor	30					
max. RCF	20,627					
radius in mm	82					
run-up in sec	22					
run-down in sec, braked	30					
temperature in °C <sup>1)</sup>	+ 4					

capacity in ml	0.2	0.4	0.5	0.8	1.5	2.0	1.5	2.0
∅ x L in mm	6 x 18	6 x 45	8 x 30	8 x 45	11 x 38		11 x 38	
<b>Cat. No.</b>	-	-	-	-	<b>2078</b>	<b>0536</b>	<b>micro spin columns</b>	
lid with bio-containment <sup>5)</sup> incl.								
<b>rotor</b> Cat. No. <b>2428</b>								
<b>Cat. No.</b>	<b>2024</b>		<b>2023</b>		<b>2031<sup>7)</sup></b>		<b>2031<sup>7)</sup></b>	
boring ∅ x L in mm	6 x 40		8 x 40		10.2 x 19   11.2 x 42.6		10.2 x 19   11.2 x 42.6	
tubes per rotor	24							
max. RCF	21,382							
radius in mm	85							
run-up in sec	20							
run-down in sec, braked	28							
temperature in °C <sup>1)</sup>	+ 4							

1) Lowest attainable temperature in precooled refrigerated centrifuges at max. speed. Lower temperatures can be attained by reducing the speed.  
5) Tested by the TÜV in conformity with DIN EN 61010, section 2-020.  
7) For centrifugation at high speeds, we recommend to use form-fitting, phenol-resistant adapters 2031.

**Angle rotor, 30-place**

**Angle rotor, 20-place, for cryo tubes**

**Angle rotor, 4-place, for PCR strips**



↗ 45°

n = 15,000 min<sup>-1</sup>  
max. RCF 20,376

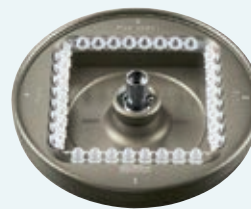
**Cat. No. 2430-B**



↗ 40°

n = 15,000 min<sup>-1</sup>  
max. RCF 21,130

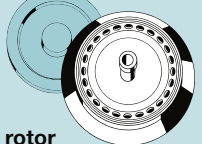

**Cat. No. 2426-B**

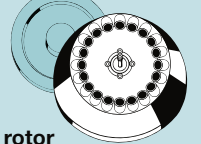






↗ 45°

n = 15,000 min<sup>-1</sup>  
max. RCF 14,338

**Cat. No. 2418-A**

capacity in ml	0.5
Ø x L in mm	8 x 30
<b>Cat. No.</b>	-
lid E3243 incl.	
	
<b>rotor</b> Cat. No. <b>2430-B</b>	
<b>Cat. No.</b>	-
boring Ø x L in mm	8.1 x 30.3
tubes per rotor	30
max. RCF	20,376
radius in mm	81
run-up in sec	19
run-down in sec, braked	28
temperature in °C <sup>1)</sup>	+4

capacity in ml	1.8
Ø x L in mm	-
<b>Cat. No.</b>	<b>cryo tubes</b>
lid E3243 incl.	
	
<b>rotor</b> Cat. No. <b>2426-B</b>	
<b>Cat. No.</b>	-
boring Ø x L in mm	12.5 x 36
tubes per rotor	20
max. RCF	21,130
radius in mm	84
run-up in sec	19
run-down in sec, braked	28
temperature in °C <sup>1)</sup>	+4

capacity in ml	0.2	0.2
Ø x L in mm	6 x 18	-
<b>Cat. No.</b>	-	<b>PCR strips</b>
lid E3243 incl.		
		
<b>rotor</b> Cat. No. <b>2418-A</b>		
<b>Cat. No.</b>	-	
boring Ø x L in mm	6.5 x 15.5	
tubes per rotor	32	4 x 8
max. RCF	14,338	
radius in mm	57	
run-up in sec	19	
run-down in sec, braked	28	
temperature in °C <sup>1)</sup>	+4	

Optional for rotor 2424-B, 2426-B, 2427-A and 2430-B



lid **Cat. No. 2425**  
with bio-containment<sup>5)</sup>,  
autoclavable



lid **Cat. No. 2423**  
with bio-containment<sup>5)</sup>,  
autoclavable,  
phenol-resistant

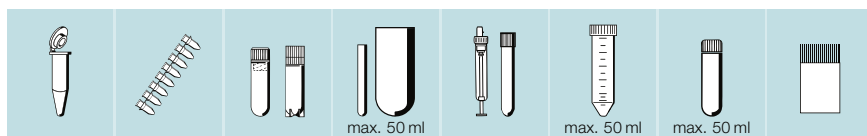
Optional for rotor 2418-A



lid **Cat. No. E3243**

<sup>1)</sup> Lowest attainable temperature in precooled refrigerated centrifuges at max. speed. Lower temperatures can be attained by reducing the speed.  
<sup>5)</sup> Tested by the TÜV in conformity with DIN EN 61010, section 2-020.

# MIKRO 220/220 R



## Powerful microlitre specialists

MIKRO 220 and 220 R are powerful, compact benchtop centrifuges for processing microlitre tubes of 0.2 ml to 2.0 ml. The refrigerated MIKRO 220 R also accepts standard tubes up to a volume of 50 ml. Thanks to its performance, capacity and efficient cooling, the MIKRO 220 R is ideally suited for DNA and RNA extraction.



## TECHNOLOGY

TECHNOLOGY	MIKRO 220		MIKRO 220 R	
	classic		cooled	
Microlitre centrifuge, without rotor				
Power supply*)	200 – 240 V 1 ~	100 – 127 V 1 ~	200 – 240 V 1 ~	100 – 127 V 1 ~
Frequency	50 – 60 Hz		50 Hz	60 Hz
Consumption	510 VA		850 VA	950 VA
Emission, Immunity	EN / IEC 61326-1, class B	FCC class B	EN / IEC 61326-1, class B	FCC class B
Max. capacity	60x 1.5 / 2.0 ml			
Max. capacity	48x 1.5 / 2.0 ml		48x 1.5 / 2.0 ml, 6x 50 ml	
Max. RPM (speed)	18,000 min <sup>-1</sup>			
Max. RCF	31,514			
Running time	1 sec – 99 min : 59 sec, ∞ continuous run, short cycle mode (impulse key)			
Dimensions (HxWxD)	313 x 330 x 420 mm		313 x 330 x 650 mm	
Weight	approx. 21 kg		approx. 42 kg	
<b>Refrigeration</b>				
Temperature control, infinitely variable	-		from -20 to +40 °C	
Cat. No.	2200	2200-01	2205	2205-01

\*) Other voltages on request.

### Angle rotor, 12-place



↘45°

n = 18,000 min<sup>-1</sup>  
max. RCF 25,718

**Cat. No. 2218-A**

### Angle rotor, 24-place



↘45°

n = 18,000 min<sup>-1</sup>  
max. RCF 31,514

**Cat. No. 1195-A**

with bio-containment<sup>5)</sup>

### Angle rotor, 30-place



↘45°

n = 14,000 min<sup>-1</sup>  
max. RCF 21,255

**Cat. No. 1189-A**

with bio-containment<sup>5)</sup>

capacity in ml	0.2	0.4	0.5	0.8	1.5	2.0
Ø x L in mm	6x18	6x45	8x30	8x45	11x38	
<b>Cat. No.</b>	-				<b>2078</b>	<b>0536</b>
lid incl.						
<b>rotor</b> Cat. No. <b>2218-A</b>						
<b>Cat. No.</b>	<b>2024</b>	<b>2023</b>	<b>2031<sup>7)</sup></b>	-		
boring Ø x L in mm	6x40	8x40	10.2x19	11.2x41		
tubes per rotor	12					
max. RCF	25,718					
radius in mm	71					
run-up in sec	11					
run-down in sec, braked	10					
temperature in °C <sup>1)</sup>	-5					

capacity in ml	0.2	0.4	0.5	0.8	1.5	2.0
Ø x L in mm	6x18	6x45	8x30	8x45	11x38	
<b>Cat. No.</b>	-				<b>2078</b>	<b>0536</b>
lid with bio-containment <sup>5)</sup> incl.						
<b>rotor</b> Cat. No. <b>1195-A</b>						
<b>Cat. No.</b>	<b>2024</b>	<b>2023</b>	<b>2031<sup>7)</sup></b>	-		
boring Ø x L in mm	6x40	8x40	10.2x19	11.2x40.8		
tubes per rotor	24					
max. RCF	31,514					
radius in mm	87					
run-up in sec	26					
run-down in sec, braked	23					
temperature in °C <sup>1)</sup>	+3					

capacity in ml	0.2	0.4	0.5	0.8	1.5	2.0
Ø x L in mm	6x18	6x45	8x30	8x45	11x38	
<b>Cat. No.</b>	-				<b>2078</b>	<b>0536</b>
lid with bio-containment <sup>5)</sup> incl.						
<b>rotor</b> Cat. No. <b>1189-A</b>						
<b>Cat. No.</b>	<b>2024</b>	<b>2023</b>	<b>2031<sup>7)</sup></b>	-		
boring Ø x L in mm	6x40	8x40	10.2x19	11.2x40.9		
tubes per rotor	30					
max. RCF	21,255					
radius in mm	97					
run-up in sec	20					
run-down in sec, braked	22					
temperature in °C <sup>1)</sup>	+3					

<sup>1)</sup> Lowest attainable temperature in precooled refrigerated centrifuges at max. speed. Lower temperatures can be attained by reducing the speed.

<sup>5)</sup> Tested by the TÜV in conformity with DIN EN 61010, section 2-020.

<sup>7)</sup> For centrifugation at high speeds, we recommend to use form-fitting, phenol-resistant adapters 2031. The capacity of rotor 1158-L is reduced to 40 tubes when these adapters will be used.

**Angle rotor, 48-place, 2-row**

**Angle rotor, 20-place, for cryo tubes**

**Swing-out rotor, 24-place**



±45°

n = 14,000 min<sup>-1</sup> with bio-containment<sup>5)</sup>  
max. RCF outer 21,255/inner 18,845

**Cat. No. 1158-L**



±40°

n = 14,000 min<sup>-1</sup>  
max. RCF 18,407

**Cat. No. 2219-A**



±90°

n = 13,000 min<sup>-1</sup> with bio-containment<sup>5)</sup>  
max. RCF 18,516

**Cat. No. 1154-L**

capacity in ml	0.2	0.4	0.5	0.8	1.5	2.0
Ø x L in mm	6x18	6x45	8x30	8x45	11x38	
<b>Cat. No.</b>	-			<b>2078</b>	<b>0536</b>	
lid with bio-containment <sup>5)</sup> incl.						
<b>rotor</b> Cat. No. <b>1158-L</b>						
<b>Cat. No.</b>	<b>2024</b>	<b>2023</b>	<b>2031</b> <sup>7)</sup>	-		
boring Ø x L in mm	6x40		8x40		10.2x19	
tubes per rotor	48					
max. RCF outer/inner	21,255 / 18,845					
radius in mm outer/inner	97 / 86					
run-up in sec	21					
run-down in sec, braked	22					
temperature in °C <sup>1)</sup>	-4					

capacity in ml	0.2	0.4	0.5	0.8	1.5	2.0
Ø x L in mm	6x18	6x45	8x30	8x45	11x38	
<b>Cat. No.</b>	-			<b>2078</b>	<b>0536</b>	
lid 2425 <sup>5)</sup> incl.						
<b>rotor</b> Cat. No. <b>1154-L</b>						
<b>Cat. No.</b>	<b>2024</b>	<b>2023</b>	<b>2031</b> <sup>7)</sup>	-		
boring Ø x L in mm	6x40		8x40		10.2x19	
tubes per rotor	24					
max. RCF	18,516					
radius in mm	98					
run-up in sec	25					
run-down in sec, braked	26					
temperature in °C <sup>1)</sup>	+1					

**Optional for rotor 2219-A**



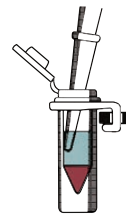
lid **Cat. No. 2425**  
with bio-containment<sup>5)</sup>, autoclavable

**Optional for rotor 2219-A and 1154-L**



lid **Cat. No. 2423**  
with bio-containment<sup>5)</sup>, autoclavable, phenol-resistant

capacity in ml	1.8
Ø x L in mm	-
<b>Cat. No.</b>	<b>cryo tubes</b>
lid <b>E3243</b> incl.	
<b>rotor</b> Cat. No. <b>2219-A</b>	
<b>Cat. No.</b>	-
boring Ø x L in mm	12.5 x 36
tubes per rotor	20
max. RCF	18,407
radius in mm	84
run-up in sec	21
run-down in sec, braked	21
temperature in °C <sup>1)</sup>	-9



Centrifugation in the swing-out rotor makes the pellet collect exactly in the tip of the tubes. This facilitates analysis and further processing.

### Drum rotor, 6-place



n = 13,000 min<sup>-1</sup>  
max. RCF 14,171

**Cat. No. 1161**

### Angle rotor, 6-place, for PCR strips



↘ 45°

n = 14,000 min<sup>-1</sup>  
max. RCF 18,845

lid (optional)  
Cat. No. **1162**

**Cat. No. (without lid) 1160**

### Hematocrit rotor, 24-place



n = 15,000 min<sup>-1</sup>  
max. RCF 21,382

**Cat. No. 1023**

capacity in ml	0.2	0.4	0.5	0.8	1.5	2.0
Ø x L in mm	6x18	6x45	8x30	8x45	11x38	
<b>Cat. No.</b>	-				<b>2078</b>	<b>0536</b>
lid incl.						
<b>rotor</b> Cat. No. <b>1161</b>						
<b>Cat. No.</b>	<b>1378</b>		<b>1379</b>		<b>1377</b>	
boring Ø x L in mm	6x40		8.4x43		10.8x37	
tubes per rotor	192		126		60	
max. RCF	14,171					
radius in mm	75					
run-up in sec	17					
run-down in sec, braked	18					
temperature in °C <sup>1)</sup>	-3					

capacity in ml	0.2	0.2
Ø x L in mm	6 x 18	-
<b>Cat. No.</b>	-	<b>PCR strips</b>
<b>rotor</b> Cat. No. <b>1160</b>		
<b>Cat. No.</b>	-	
boring Ø x L in mm	6.5 x 15.5	
tubes per rotor	48	6 x 8
max. RCF	18,845	
radius in mm	86	
run-up in sec	20	
run-down in sec, braked	22	
temperature in °C <sup>1)</sup>	-4	

standard capillaries, heparinised	basic	self-sealing and mylar-coated
<b>Cat. No.</b>	<b>2074</b>	<b>1071</b>
lid as evaluation disk incl.		
<b>rotor</b> Cat. No. <b>1023</b>	sealing putty	
<b>Cat. No.</b>	<b>2077</b>	-
boring Ø x L in mm	-	
capillaries per rotor	24	
max. RCF	21,382	
radius in mm	85	
run-up in sec	11	
run-down in sec, braked	12	
temperature in °C <sup>1)</sup>	-11	

Whether hematocrit determination or the preparation of samples for bilirubin analysis, the MIKRO 220/220 R centrifuges perform strongly.





















As a special feature, the hematocrit rotor is segmented into 24 chambers, each chamber containing one capillary only. In case a capillary breaks or leaks, fragments and leaked blood stay in the chamber and will not affect other capillaries. The lid of the rotor is evaluation disk and cover in one. Its advantage: The hematocrit value can be determined fast and conveniently right after centrifugation.




















<sup>1)</sup> Lowest attainable temperature in precooled refrigerated centrifuges at max. speed. Lower temperatures can be attained by reducing the speed.  
<sup>2)</sup> Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote <sup>2)</sup> is 4,000.

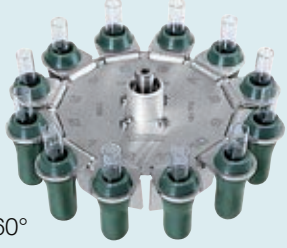

	Angle rotor, 6-place	Angle rotor, 12-place
<b>Accessories for MIKRO 220 R only:</b>  The following rotors can only be operated in the refrigerated MIKRO 220 R.		
	↘ 35°	↘ 35°
	n = 6,000 min <sup>-1</sup> max. RCF 4,025	n = 6,000 min <sup>-1</sup> max. RCF 4,146
	<b>Cat. No. 1016</b>	<b>Cat. No. 1015</b>







By also accepting rotors for tubes up to 50 ml, the refrigerated MIKRO 220 R enables an extended range of applications.


















With the robust angle rotors even large volumes can be centrifuged at high speeds.

capacity in ml	7	15	25	50	9-10	10	15	50	30	50
Ø x L in mm	12x100	17x100	24x100	34x100	16x92	15x102	17x120	29x115	26x95	29x107
<b>Cat. No.</b>	<b>0578<sup>2)</sup></b>	<b>0518<sup>2)</sup></b>	<b>0519<sup>2)</sup></b>	<b>0521<sup>2)</sup></b>	blood collection/urine tubes		<b>0509</b>	<b>0513</b>	<b>0545</b>	<b>0546</b>
 <b>rotor</b> Cat. No. <b>1016</b>										
										
<b>Cat. No.</b>	<b>1632</b>	<b>1635</b>	<b>1633</b>	-	<b>1635</b>		<b>1631</b>	<b>1641</b>	<b>1633</b>	<b>1634</b>
boring Ø x L in mm	13x92	17.5x95	26x88	35x96	17.5x95		17x98	30x98	26x88	29x95
tubes per rotor	18	6			6		6	3	6	
max. RCF <sup>2)</sup>	3,944	3,783	3,703	4,025	3,783		3,824	3,824	3,703	3,904
radius in mm	98	94	92	100	94		95	95	92	97
run-up in sec	14									
run-down in sec, braked	17									
temperature in °C <sup>1)</sup>	-20									

capacity in ml	5	15	1.1-1.4	2.6-3.4	2.7-3	4.5-5	4.9	7.5-8.5	9-10	10	1.6-5	4-7	8.5-10	15
Ø x L in mm	12x75	17x100	8x66	13x65	11x66	11x92	13x90	15x92	16x92	15x102	13x75	13x100	16x100	17x120
<b>Cat. No.</b>	<b>0553<sup>2)</sup></b>	<b>0518<sup>2)</sup></b>	blood collection/urine tubes										<b>0509</b>	
 <b>rotor</b> Cat. No. <b>1015</b>														
														
<b>Cat. No.</b>	<b>1054-A</b>	-	<b>1054-A</b>								<b>1054-A</b>	<b>1058</b>	-	-
boring Ø x L in mm	13.5x60	17.7x88	13.5x60					17.7x88			13.5x60	13.5x79	17.7x88	17.7x88
tubes per rotor	12	12	12					12			12	12	12	6
max. RCF <sup>2)</sup>	3,300	4,146	3,300					4,146			3,300	4,146		
radius in mm	82	103	82					103			82	103		
run-up in sec	14													
run-down in sec, braked	16													
temperature in °C <sup>1)</sup>	-20													

	Swing-out rotor, 12-place	Swing-out rotor, 8-place
<b>Accessories for MIKRO 220 R only:</b>  The following rotors can only be operated in the refrigerated MIKRO 220 R.	 ∠ 60° n = 5,000 min <sup>-1</sup> max. RCF 2,963	 ∠ 90° n = 5,000 min <sup>-1</sup> max. RCF 2,879
	<b>Cat. No. (without carriers) 2226</b>	<b>Cat. No. (without carriers) 1020</b>

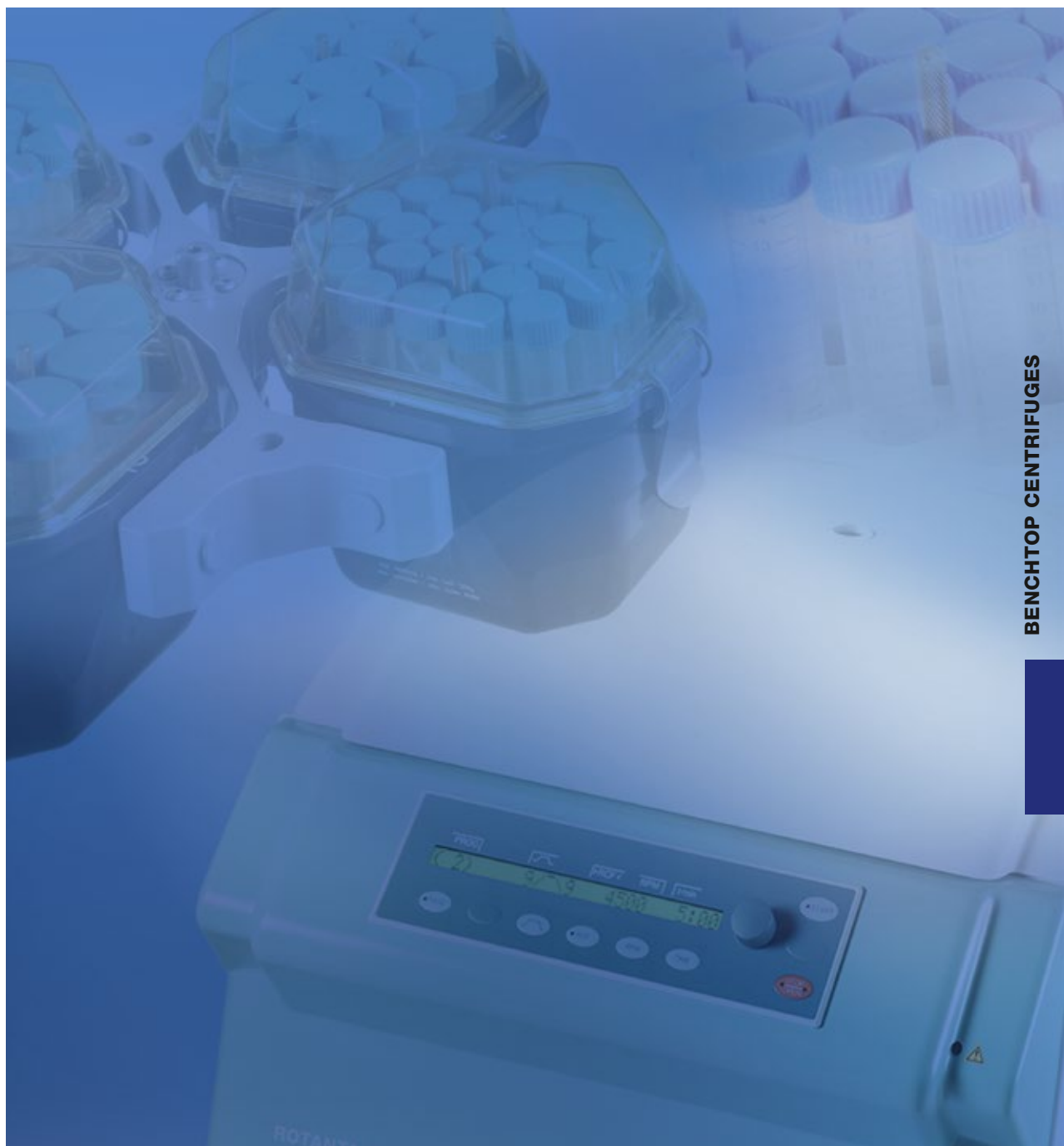
capacity in ml	5	2.6–3.4	2.7–3	1.6–5
∅ x L in mm	12x75	13x65	11x66	13x75
<b>Cat. No.</b>	<b>0553<sup>2)</sup> blood collection tubes</b>			
 <b>rotor</b> Cat. No. <b>2226</b>				
				
<b>Cat. No.</b>	<b>1127</b>			
boring ∅ x L in mm	13.2x53			
tubes per rotor	12			
max. RCF <sup>2)</sup>	2,963			
radius in mm	106			
run-up in sec	10			
run-down in sec, braked	10			
temperature in °C <sup>1)</sup>	-20			

capacity in ml	5	6	10	2.6–3.4	2.7–3	4–5.5	1.6–5	4–7
∅ x L in mm	12x75	12x82	17x70	13x65	11x66	15x75	13x75	16x75
<b>Cat. No.</b>	<b>0553<sup>2)</sup></b>	<b>0501<sup>2)</sup></b>	<b>2079</b>	<b>blood collection tubes</b>				
 <b>rotor</b> Cat. No. <b>1020</b>								
								
<b>Cat. No.</b>	<b>1131</b>	<b>1132</b>	<b>1131</b>	<b>1131</b>	<b>1132</b>	<b>1131</b>	<b>1131</b>	<b>1132</b>
boring ∅ x L in mm	13x53	17.5x53	13x53	17.5x53	13x53	13x53	17.5x53	17.5x53
tubes per rotor	8							
max. RCF <sup>2)</sup>	2,879							
radius in mm	103							
run-up in sec	10							
run-down in sec, braked	10							
temperature in °C <sup>1)</sup>	-20							

<sup>1)</sup> Lowest attainable temperature in precooled refrigerated centrifuges at max. speed. Lower temperatures can be attained by reducing the speed.

<sup>2)</sup> Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote <sup>2)</sup> is 4,000.

# Benchtop Centrifuges



BENCHTOP CENTRIFUGES

**ROTOFIX 32 A**

**UNIVERSAL 320/320 R**

**ROTINA 380/380 R**

**ROTINA 420/420 R**

**ROTANTA 460/460 R**

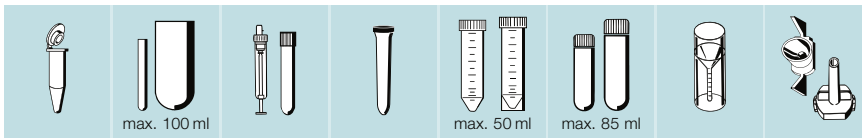
**ROTANTA 460 RC/460 RF**

**LABOMODERNE**

[www.labomoderne.com](http://www.labomoderne.com) - [info@labomoderne.com](mailto:info@labomoderne.com)

Tél. 01 42 50 50 50

# ROTOFIX 32 A





**Rugged, versatile and indispensable for routine laboratory tasks in doctors' practices and small hospitals**

Not only is the ROTOFIX 32 A ideally equipped for tasks in clinical chemistry, it can also play a vital role in cytology. This versatile centrifuge can handle a lot more than medical applications. With its wide variety of accessories, the ROTOFIX 32 A can be also used for the preparation of samples in industrial and research laboratories. Tubes that are suitable for chrome bath testing are also available.

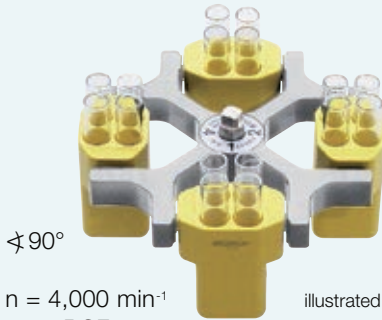


## TECHNOLOGY

## ROTOFIX 32 A

Benchtop centrifuge, without rotor	
Power supply*)	208 – 240 V 1 ~      100 – 127 V 1 ~
Frequency	50 – 60 Hz
Consumption	300 VA
Emission, Immunity	EN / IEC 61326-1, class B      FCC class B
 Max. capacity	4 x 100 ml / 32 x 15 ml
 Max. RPM (speed)	6,000 min <sup>-1</sup>
Max. RCF	4,226
Running time	1 – 99 min, ∞ continuous run, short cycle mode (impulse key)
Dimensions (HxWxD)	257 x 366 x 430 mm
Weight	approx. 23 kg
<b>Cat. No.</b>	<b>1206</b> <b>1206-01</b>

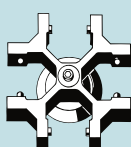














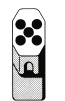
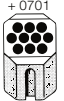
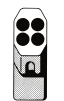
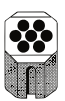

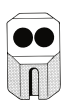
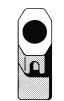

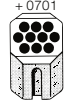
\*) Other voltages on request.

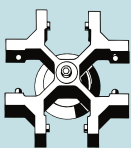








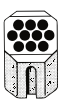

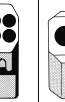
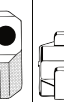


**Swing-out rotor, 4-place**

 $\pm 90^\circ$ 

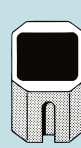








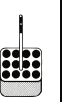

 n = 4,000 min<sup>-1</sup>  
 max. RCF 2,665

illustrated with carriers 1369

**Cat. No.** (without carriers) **1624**

capacity in ml	5	6	7	9	15	20	25	45	50	1.1–1.4	2.6–3.4		
Ø x L in mm	12 x 75	12 x 82	12 x 100	14 x 100	17 x 100	21 x 100	24 x 100	31 x 100	34 x 100	8 x 66	13 x 65		
<b>Cat. No.</b>	<b>0553<sup>2)</sup></b>	<b>0501<sup>2)</sup></b>	<b>0578<sup>2)</sup></b>	<b>0500<sup>2)</sup></b>	<b>0518<sup>2)</sup></b>	-	<b>0519<sup>2)</sup></b>	-	<b>0521<sup>2)</sup></b>	<b>blood/urine tubes</b>			
 <b>rotor</b> Cat. No. <b>1624</b>													
													
<b>Cat. No.</b>	<b>1369-91</b>	<b>1372</b>	<b>1369-92</b>	<b>1370</b>	<b>1741</b>	<b>1369</b>	<b>1742</b>	<b>1346</b>	<b>1745</b>	<b>1345</b>	<b>1746</b>	<b>1741</b>	<b>1742</b>
boring Ø x L in mm	11.5 x 64.4	13.5 x 65	11.5 x 71.5	14.6 x 74	14.6 x 78	17.6 x 74	17.6 x 78	21.5 x 74	26 x 78	32 x 74	35 x 78	14.6 x 78	17.6 x 78
tubes per rotor	16	68	16	20	40	16	28	8	4	40	28	40	28
max. RCF <sup>2)</sup>	2,057	2,164	2,308	2,415	2,308	2,451	2,361	2,451	2,361	2,451	2,415	2,415	2,325
radius in mm	115	121	129	135	129	137	132	137	132	137	135	130	130
run-up in sec	22												
run-down in sec, braked	25												

capacity in ml	4–5.5	4.9	1.6–5	4–7	8.5–10	30	suspensions for cyto accessories
Ø x L in mm	15 x 75	13 x 90	13 x 75	16 x 75	16 x 100	26 x 95	
<b>Cat. No.</b>	<b>blood collection/urine tubes</b>					<b>0545</b>	<b>cyto chambers<sup>23)</sup></b>
 <b>rotor</b> Cat. No. <b>1624</b>							
							
<b>Cat. No.</b>	<b>1742</b>	<b>1741</b>	<b>1742</b>	<b>1369</b>	<b>1745</b>	<b>1660</b>	<b>1680</b>
boring Ø x L in mm	17.6 x 78	14.6 x 78	17.6 x 78	17.6 x 74	26 x 78	-	-
tubes per rotor	28	40	28	16	8	4	4
max. RCF <sup>2)</sup>	2,325	2,451	2,325	2,308	2,451	1,646	1,467
radius in mm	130	137	130	129	137	92	82
run-up in sec	22						
run-down in sec, braked	25						

capacity in ml	1.5	2.0	1	3	4
Ø x L in mm	11 x 38		6 x 45	10 x 60	12 x 60
<b>Cat. No.</b>	<b>2078</b>	<b>0536</b>	<b>Rhesus</b>	-	-
 <b>carrier</b> Cat. No. <b>1366</b>					
					
<b>Cat. No.</b>	<b>5277</b>	<b>1357</b>	<b>1327</b>	<b>1326</b>	
boring Ø x L in mm	11.5 x 38	6.5 x 23	10.5 x 23	12.5 x 44	
tubes per rotor	36	120	48		
max. RCF <sup>2)</sup>	1,968	1,950	1,932		
radius in mm	110	109	108		
run-up in sec	22				
run-down in sec, braked	25				

<sup>2)</sup> Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote <sup>2)</sup> is 4,000.  
<sup>23)</sup> Please ask for our detailed cyto brochure.



illustrated with carriers 1481 and lids 1492  
with bio-containment<sup>5)</sup>

**Swing-out rotor Cat. No. (without carriers) 1624**

capacity in ml	1.5	2.0	1	3	5/6/7	9	15	25	50	94	100	1.1–1.4	2.7–5	2.6–4.9	4–8.5	
Ø x L in mm	11 x 38		6 x 45	10 x 60	12 x 75/82/100		14 x 100	17 x 100	24 x 100	34 x 100	38 x 102	44 x 100	8 x 66	11 x 66/92	13 x 65/90	15 x 75/92
<b>Cat. No.</b>	<b>2078</b>	<b>0536</b>	<b>Rhesus</b>	-	<b>0553<sup>2)</sup>/0501<sup>2)</sup>/0578<sup>2)</sup></b>		<b>0500<sup>2)</sup></b>	<b>0518<sup>2)</sup></b>	<b>0519<sup>2)</sup></b>	<b>0521<sup>2)</sup></b>	<b>0549</b>	<b>0526<sup>2)</sup></b>	<b>blood/urine tubes</b>			
lid with bio-containment <sup>5)</sup> Cat. No. 1492																
<b>carrier</b> Cat. No. 1481																
<b>Cat. No.</b>	<b>1351</b>	<b>1339</b>	<b>1343</b>	<b>1383</b>	<b>1329</b>	<b>1330</b>	<b>1331</b>	<b>1396</b>	<b>0761</b>	<b>1457</b>	<b>1383</b>	<b>1459</b>				
boring Ø x L in mm	11.2 x 38		6.5 x 34	10.5 x 43	13.4 x 48		17.6 x 91	25.2 x 87	35.2 x 87	38.5 x 92	45.9 x 98	9 x 47	13.4 x 48		15.6 x 47	
tubes per rotor	20		108	36	20		16	4				28	20		16	
max. RCF <sup>2)</sup>	2,451		2,594	2,630	2,558		2,540	2,433	2,415	2,612	2,558	2,576	2,558		2,576	
radius in mm	137		145	147	143		142	136	135	146	143	144	143		144	
run-up in sec	22															
run-down in sec, braked	25															

capacity in ml	9–10	10	1.6–7	4–10	15	50	12	25	30	50	10	30	50	85	30
Ø x L in mm	16 x 92	15 x 102	13 x 75/100	16 x 75/100	17 x 120	29 x 115	17 x 100	25 x 90	25 x 110	29 x 115	16 x 80	26 x 95	29 x 107	38 x 106	44 x 105
<b>Cat. No.</b>	<b>blood collection/urine tubes</b>				<b>0509</b>	<b>0513</b>	-	-	-	-	-	<b>0545</b>	<b>0546</b>	<b>0547</b>	<b>0534<sup>6)</sup></b>
lid with bio-containment <sup>5)</sup> Cat. No. 1492															
<b>carrier</b> Cat. No. 1481															
<b>Cat. No.</b>	<b>1329</b>	<b>1329<sup>4)</sup></b>	<b>1383</b>	<b>1348</b>	<b>1347</b>	<b>1384</b>	<b>6311</b>	<b>1363</b>	<b>1365</b>	<b>6318</b>	<b>1348</b>	<b>4417</b>	<b>4416</b>	<b>1396</b>	<b>0765</b>
boring Ø x L in mm	17.6 x 91		13.4 x 48	16.5 x 56	17 x 90	30 x 90	17 x 80	26 x 72	26 x 80	29.5 x 80	16.5 x 56	26 x 83	29 x 93	38.5 x 92	45.9 x 98
tubes per rotor	16		20	16	4				16				4		
max. RCF <sup>2)</sup>	2,540	2,665	2,558	2,522	2,665		2,343	2,665		2,522	2,451	2,630	2,612	2,540	
radius in mm	142	149	143	141	149		131	149		141	137	147	146	142	
run-up in sec	22														
run-down in sec, braked	25														

<sup>2)</sup> Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote <sup>2)</sup> is 4,000.  
<sup>4)</sup> Please remove the inserts.

**Swing-out rotor, 4-place**



↗ 90°

n = 4,000 min<sup>-1</sup>  
max. RCF 2,630

illustrated with carriers 1490 and lids 1492  
with bio-containment<sup>5)</sup>

**Cat. No.** (without carriers) **1324**

capacity in ml	1.5	2.0	1	3	4	5	6	7	9	15	25	50	94	100
Ø x L in mm	11x38		6x45	10x60	10x88	12x75	12x82	12x100	14x100	17x100	24x100	34x100	38x102	44x100
<b>Cat. No.</b>	<b>2078</b>	<b>0536</b>	<b>Rhesus</b>	-	-	<b>0553<sup>2)</sup></b>	<b>0501<sup>2)</sup></b>	<b>0578<sup>2)</sup></b>	<b>0500<sup>2)</sup></b>	<b>0518<sup>2)</sup></b>	<b>0519<sup>2)</sup></b>	<b>0521<sup>2)</sup></b>	<b>0549</b>	<b>0526<sup>2)</sup></b>
lid with bio-containment <sup>5)</sup> Cat. No. 1492														
<b>carrier</b> Cat. No. 1490														
<b>Cat. No.</b>	<b>1351</b>	<b>1339</b>	<b>1343</b>	<b>1383</b>	<b>1329</b>	<b>1330</b>	<b>1331</b>	<b>1396</b>	<b>0761</b>	<b>0761</b>	<b>0761</b>	<b>0761</b>	<b>0761</b>	<b>0761</b>
boring Ø x L in mm	11.2x38	6.5x34	10.5x43	13.4x48	17.6x91	25.2x87	35.2x87	38.5x92	45.9x100.5					
tubes per rotor	20	108	36	20	16	4								
max. RCF <sup>2)</sup>	2,415	2,558	2,594	2,522	2,504	2,397	2,379	2,576	2,522					
radius in mm	135	143	145	141	140	134	133	144	141					
run-up in sec	27													
run-down in sec, braked	30													

capacity in ml	1.1-1.4	2.6-3.4	4.9	2.7-3	4.5-5	4-5.5	7.5-8.5	9-10	10	1.6-5	4-7	4-7	8.5-10
Ø x L in mm	8x66	13x65	13x90	11x66	11x92	15x75	15x92	16x92	15x102	13x75	13x100	16x75	16x100
<b>Cat. No.</b>	<b>blood collection/urine tubes</b>												
lid with bio-containment <sup>5)</sup> Cat. No. 1492													
<b>carrier</b> Cat. No. 1490													
<b>Cat. No.</b>	<b>1457</b>	<b>1383</b>	<b>1459</b>	<b>1329</b>	<b>1329<sup>4)</sup></b>	<b>1383</b>	<b>1348</b>	<b>1348</b>	<b>1348</b>	<b>1348</b>	<b>1348</b>	<b>1348</b>	<b>1348</b>
boring Ø x L in mm	9x47	13.4x48	15.6x47	17.6x91	13.4x48	16.5x56							
tubes per rotor	28	20	16	20	16								
max. RCF <sup>2)</sup>	2,540	2,522	2,540	2,504	2,630	2,522	2,486						
radius in mm	142	141	142	140	147	141	139						
run-up in sec	27												
run-down in sec, braked	30												

<sup>5)</sup> Tested by the TÜV in conformity with DIN EN 61010, section 2-020.










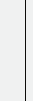




























<sup>6)</sup> A rubber stopper for closing the tube is available under Cat. No. 0535.





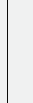





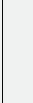

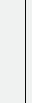

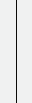













The tube may not be centrifuged with the stopper. The stopper only serves to close the tube for agitating or mixing.



illustrated with carriers 1398

### Swing-out rotor 1324

capacity in ml	15	30	50	12	25	30	50	10	30	50	85	30	
Ø x L in mm	17 x 120	25 x 110	29 x 115	17 x 100	25 x 90	25 x 110	29 x 115	16 x 80	26 x 95	29 x 107	38 x 106	44 x 105	
<b>Cat. No.</b>	<b>0509</b>	-	<b>0513</b>	-	-	-	-	-	<b>0545</b>	<b>0546</b>	<b>0547</b>	<b>0534<sup>6)</sup></b>	
lid with bio-containment <sup>5)</sup> Cat. No. 1492 													
													
<b>carrier</b> Cat. No. 1490 													
<b>Cat. No.</b>	<b>1347</b>	<b>1356</b>	<b>1365</b>	<b>1384</b>	<b>6311</b>	<b>1363</b>	<b>1365</b>	<b>6318</b>	<b>1348</b>	<b>4417</b>	<b>4416</b>	<b>1396</b>	<b>0765</b>
boring Ø x L in mm	17 x 90	17 x 107	26 x 80	30 x 90	17 x 80	26 x 72	26 x 80	29.5 x 80	16.5 x 56	26 x 83	29 x 93	38.5 x 92	45.9 x 100.5
tubes per rotor	4	12	4				4		16	4			
max. RCF <sup>2)</sup>	2,630	2,630		2,308		2,630		2,486	2,415	2,594	2,576	2,504	
radius in mm	147	147		129		147		139	135	145	144	140	
run-up in sec	27												
run-down in sec, braked	30												

capacity in ml	5	6	7	9	15	2.6-3.4	2.7-3	4-5.5	4.5-5	4.9	9-10	10	1.6-5	4-7	4-7	12	
Ø x L in mm	12 x 75	12 x 82	12 x 100	14 x 100	17 x 100	13 x 65	11 x 66	15 x 75	11 x 92	13 x 90	16 x 92	15 x 102	13 x 75	13 x 100	16 x 75	17 x 102	
<b>Cat. No.</b>	<b>0553<sup>2)</sup></b>	<b>0501<sup>2)</sup></b>	<b>0578<sup>2)</sup></b>	<b>0500<sup>2)</sup></b>	<b>0518<sup>2)</sup></b>	<b>blood collection/urine tubes</b>											
 <b>carrier</b> Cat. No. 1398																	
																	
<b>Cat. No.</b>	<b>1486</b>	<b>1482A</b>	<b>1486</b>	<b>1482A</b>	<b>1486</b>	<b>1482A</b>	<b>1486</b>	<b>1482A</b>	<b>1486</b>	<b>1482A</b>	<b>1486</b>	<b>1482A</b>	<b>1486</b>	<b>1482A</b>	<b>1487</b>		
boring Ø x L in mm	13.4 x 57.5		17.5 x 81		13.4 x 57.5		17.5 x 81		13.4 x 57.5		17.5 x 81		13.4 x 57.5		17.5 x 81	17.5 x 74	
tubes per rotor	20		16		20		16		20		16		20		16	12	
max. RCF <sup>2)</sup>	2,486		2,522		2,486		2,272		2,486		2,522		2,486		2,397	2,451	
radius in mm	139		141		139		127		139		141		139		134	137	
run-up in sec	27																
run-down in sec, braked	30																

<sup>2)</sup> Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote <sup>2)</sup> is 4,000.

<sup>3)</sup> When using these tubes, bucket 1490 cannot be closed with lid 1492.

<sup>4)</sup> Please remove the inserts.

**Swing-out rotor, 6-place**

**Swing-out rotor, 8-place**



±90°

n = 4,000 min<sup>-1</sup>  
max. RCF 2,701












±90°





n = 4,000 min<sup>-1</sup>  
max. RCF 2,415






























**Swing-out rotor 1324**

**Cat. No. (with carriers) 1619**

**Cat. No. (without carriers) 1611**

capacity in ml	15	50	12	50
Ø x L in mm	17x120	29x115	17x100	29x115
<b>Cat. No.</b>	<b>0509</b>	<b>0513</b>	-	-
 <b>carrier</b> Cat. No. <b>1398</b>				
				
<b>Cat. No.</b>	<b>1483A</b>	<b>1484</b>	<b>1482A</b>	<b>1484<sup>4)</sup></b>
boring Ø x L in mm	17x100	30x98	17.5x81	30x98
tubes per rotor	16	4	16	4
max. RCF <sup>2)</sup>	2,612	2,576	2,522	2,576
radius in mm	146	144	141	144
run-up in sec	27			
run-down in sec, braked	30			

capacity in ml	15	50
Ø x L in mm	17x120	29x115
<b>Cat. No.</b>	<b>0509</b>	<b>0513</b>
 <b>rotor</b> Cat. No. <b>1619</b>		
		
<b>Cat. No.</b>	<b>1462-A</b>	-
boring Ø x L in mm	17 x 84	30x87.5
tubes per rotor	6	
max. RCF <sup>2)</sup>	2,701	
radius in mm	151	
run-up in sec	22	
run-down in sec, braked	25	

capacity in ml	5	6	7	10	15	2.6-3.4	2.7-3	4-5.5	4.5-5	7.5-8.5	1.6-5	4-7	4-7	8.5-10	
Ø x L in mm	12x75	12x82	12x100	17x70	13x100	17x100	13x65	11x66	15x75	11x92	15x92	13x75	13x100	16x75	16x100
<b>Cat. No.</b>	<b>0553<sup>2)</sup></b>	<b>0501<sup>2)</sup></b>	<b>0578<sup>2)</sup></b>	<b>2079</b>	-	<b>0518<sup>2)</sup></b>	<b>blood collection/urine tubes</b>								
 <b>rotor</b> Cat. No. <b>1611</b>															
															
<b>Cat. No.</b>	<b>1131</b>	<b>1643</b>	<b>1132</b>	<b>1643</b>	<b>1644</b>	<b>1131</b>	<b>1132</b>	<b>1643</b>	<b>1644</b>	<b>1131</b>	<b>1643</b>	<b>1132</b>	<b>1644</b>		
boring Ø x L in mm	13 x 53	13.2x 81	17.5 x 53	13.2x 81	17.5 x 81	13 x 53	17.5 x 53	13.2 x 81	17.5 x 81	13 x 53	13.2 x 81	17.5 x 53	17.5 x 81		
tubes per rotor	8														
max. RCF <sup>2)</sup>	1,914	2,415	1,914	2,415	1,914	2,415	1,914	2,415	1,914	2,415	1,914	2,415	1,914	2,415	
radius in mm	107	135	107	135	107	135	107	135	107	135	107	135	107	135	
run-up in sec	22														
run-down in sec, braked	25														

<sup>5)</sup> Tested by the TÜV in conformity with DIN EN 61010, section 2-020.

<sup>6)</sup> A rubber stopper for closing the tube is available under Cat. No. 0535.

The tube may not be centrifuged with the stopper. The stopper only serves to close the tube for agitating or mixing.

### Swing-out rotor, 8-place

### Swing-out rotor, 12-place

### Angle rotor, 8-place



∠ 45°

n = 4,000 min<sup>-1</sup>  
max. RCF 2,469

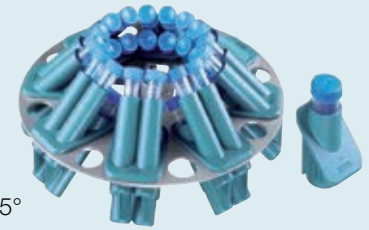
**Cat. No. (with carriers) 1617**



∠ 55° (with carriers 1127)  
∠ 60° (with carriers 1122)  
∠ 80° (with carriers 1621)

n = 4,000 min<sup>-1</sup>  
max. RCF 2,683

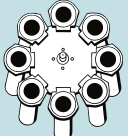


**Cat. No. (without carriers) 1628**






























∠ 45°

n = 4,000 min<sup>-1</sup>  
max. RCF 2,612

**Cat. No. (without adapters) 1418**

capacity in ml	15	50
∅ x L in mm	17x120	29x115
<b>Cat. No.</b>	<b>0509</b>	<b>0513</b>
 <b>rotor</b> Cat. No. <b>1617</b>	 	
<b>Cat. No.</b>	<b>1462-A</b>	-
boring ∅ x L in mm	17 x 84	30x94.5
tubes per rotor	8	
max. RCF <sup>2)</sup>	2,469	
radius in mm	138	
run-up in sec	22	
run-down in sec, braked	25	

capacity in ml	5	10	15	2.6-3.4	2.7-3	4-5.5	7.5-8.5	1.6-5	4-7	8.5-10
∅ x L in mm	12x75	17x70	17x100	13x65	11x66	15x75	15x92	13x75	16x75	16x100
<b>Cat. No.</b>	<b>0553<sup>2)</sup></b>	<b>2079</b>	<b>0518<sup>2)</sup></b>	<b>blood collection/urine tubes</b>						
 <b>rotor</b> Cat. No. <b>1628</b>										
<b>Cat. No.</b>	<b>1127</b>	<b>1122</b>	<b>1621</b>	<b>1127</b>	<b>1122</b>	<b>1621</b>	<b>1127</b>	<b>1122</b>	<b>1621</b>	<b>1621</b>
boring ∅ x L in mm	13.2 x 53	17.5 x 53	17.5 x 79	13.2 x 53		17.5 x 53		17.5 x 79		13.2 x 53
tubes per rotor	12									
max. RCF <sup>2)</sup>	2,236	2,254	2,683	2,236		2,254		2,683		2,236
radius in mm	125	126	150	125		126		150		125
run-up in sec	22									
run-down in sec, braked	25									

capacity in ml	5	15	1.1-1.4	2.6-3.4	2.7-3	9-10	1.6-5	4-7	8.5-10	12	15	50	12	50	50	
∅ x L in mm	12x75	17x100	8x66	13x65	11x66	16x92	13x75	13x100	16x100	17x102	17x120	29x115	17x100	29x115	29x107	
<b>Cat. No.</b>	<b>0553<sup>2)</sup></b>	<b>0518<sup>2)</sup></b>	<b>blood collection/urine tubes</b>									<b>0509</b>	<b>0513</b>	-	-	<b>0546</b>
 <b>rotor</b> Cat. No. <b>1418</b>																
<b>Cat. No.</b>	<b>1467</b>	<b>1467</b>	<b>1467</b>			<b>1467</b>			<b>1467</b>			<b>1468</b>	<b>1467</b>	<b>1468</b>		
boring ∅ x L in mm	17.4x91	17.4x91	17.4x91			17.4x91			17.4x91			30.2x92	17.4 x 91	30.2 x 92		
tubes per rotor	32	32	32			32			32			8	32	8		
max. RCF <sup>2)</sup>	2,182	2,540	2,182			2,540	2,182	2,612	2,540			2,594	2,486	2,540	2,486	
radius in mm	122	142	122			142	122	146	142			145	139	142	139	
run-up in sec	30															
run-down in sec, braked	31															

<sup>2)</sup> Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote <sup>2)</sup> is 4,000.

















**Angle rotor, 12-place**











↙ 35°

n = 6,000 min<sup>-1</sup>  
max. RCF 4,146

**Cat. No. 1613**

capacity in ml	4	5	6	15	1.1–1.4	2.6–3.4	2.7–3	4.5–5	4.9	7.5–8.5	9–10	10
Ø x L in mm	10x88	12x75	12x82	17x100	8x66	13x65	11x66	11x92	13x90	15x92	16x92	15x102
<b>Cat. No.</b>	-	<b>0553<sup>2)</sup></b>	<b>0501<sup>2)</sup></b>	<b>0518<sup>2)</sup></b>	<b>blood collection/urine tubes</b>							
 <b>rotor</b> Cat. No. <b>1613</b>												
												
<b>Cat. No.</b>	<b>6305</b>	<b>1054-A</b>	-		<b>1054-A</b>			-				
boring Ø x L in mm	11.5x67.5	13.5x60	17.7x88		13.5x60			17.7x88				
tubes per rotor	12											
max. RCF <sup>2)</sup>	3,502	3,300	4,146		3,300			4,146				
radius in mm	87	82	103		82			103				
run-up in sec	13											
run-down in sec, braked	15											

capacity in ml	1.6–5	4–7	8	8.5–10	15
Ø x L in mm	13x75	13x100	16x125	16x100	17 x 120
<b>Cat. No.</b>	<b>blood collection/urine tubes</b>				<b>0509</b>
 <b>rotor</b> Cat. No. <b>1613</b>					
					
<b>Cat. No.</b>	<b>1054-A</b>	<b>1058</b>	-		
boring Ø x L in mm	13.5x60	13.5x79	17.7x88		
tubes per rotor	12	12	6	12	6
max. RCF <sup>2)</sup>	3,300	4,146			
radius in mm	82	103			
run-up in sec	13				
run-down in sec, braked	15				

















## Angle rotor, 6-place

















↘ 35°

n = 6,000 min<sup>-1</sup>  
max. RCF 4,226

**Cat. No. 1620A**

capacity in ml	1.5	2.0	3	15	50	75	94	7.5–8.5	9–10	10	8.5–10	
Ø x L in mm	11 x 38		10 x 60	17 x 100	34 x 100	35 x 105	38 x 102	15 x 92	16 x 92	15 x 102	16 x 100	
<b>Cat. No.</b>	<b>2078</b>	<b>0536</b>	-	<b>0518<sup>2)</sup></b>	<b>0521<sup>2)</sup></b>	<b>0548</b>	<b>0549</b>	<b>blood/urine tubes</b>				
 <b>rotor</b> Cat. No. <b>1620A</b>												
												
<b>Cat. No.</b>	<b>1449</b>			<b>1451</b>	<b>1463</b>	-		<b>1451</b>				
boring Ø x L in mm	11.4 x 39			17.5 x 92	35 x 89		38.6 x 90.2	17.5 x 92				
tubes per rotor	24			6	6		6	6				
max. RCF <sup>2)</sup>	4,105			3,904	4,146		4,226	3,904				
radius in mm	102			97	103		105	97				
run-up in sec	19											
run-down in sec, braked	22											

capacity in ml	15	50		10	30	50	85
Ø x L in mm	17 x 120	29 x 115		16 x 80	26 x 95	29 x 107	38 x 106
<b>Cat. No.</b>	<b>0509</b>	<b>0513</b>		-	<b>0545</b>	<b>0546</b>	<b>0547</b>
 <b>rotor</b> Cat. No. <b>1620A</b>							
							
<b>Cat. No.</b>	<b>1466</b>	<b>1454</b>	<b>1646<sup>3)</sup></b>	<b>1448</b>	<b>1447</b>	<b>1446</b>	-
boring Ø x L in mm	17 x 106	29.8 x 97	-	16.5 x 74	26 x 85	29 x 92	38.6 x 90.2
tubes per rotor	6	3	6	12	6		
max. RCF <sup>2)</sup>	3,985	3,985	3,985	3,904	3,824	4,025	4,226
radius in mm	99			97	95	100	105
run-up in sec	19						
run-down in sec, braked	22						

<sup>2)</sup> Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote <sup>2)</sup> is 4,000.

<sup>3)</sup> 6-place adapter set for conical 50 ml tubes with screw cap.

## Cyto rotors

The 4-place rotor **No. 1624** is best suited for laboratories not exclusively involved with cytological examinations. Both tubes and cytological preparations can be centrifuged without requiring a rotor change. Changing the carriers is all that is needed. Rotor **No. 1624** accommodates cyto suspensions **No. 1660** and **No. 1680**.

Rotors **No. 1626** and **No. 1648** were especially designed for use in cytology. They are recommended for laboratories working exclusively in this area.



Rotor, 4-place  
illustrated with suspensions 1680  
for angle chambers

**Cat. No. 1624** (without suspensions)



Cyto rotor, 6-place  
illustrated with suspensions 1680  
for angle chambers

**Cat. No. 1626** (without suspensions)



Cyto rotor, 8-place  
illustrated with suspensions 1680  
for angle chambers

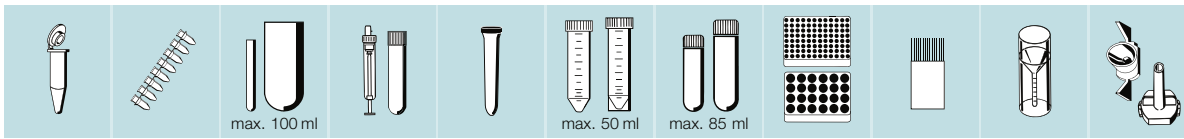
**Cat. No. 1648** (with suspensions)



Cyto rotor, 6-place  
illustrated with suspensions 1660  
for cyto chambers

**Cat. No. 1626** (without suspensions)

# UNIVERSAL 320/320 R



## Our multitalented centrifuges save space and costs

There are many good reasons for calling these centrifuges UNIVERSAL. Their excellent performance and comprehensive range of accessories enable them to carry out virtually any centrifuging task. And, since the UNIVERSAL 320/320 R can be used for both standard and special applications, they are not only cost-effective, they also save valuable space in the laboratory.



## TECHNOLOGY

TECHNOLOGY	UNIVERSAL 320		UNIVERSAL 320 R <sup>*)</sup>		
	classic		cooled		
Benchtop centrifuge, without rotor					
Power supply <sup>*)</sup>	200–240 V 1~	100–127 V 1~	200-240 V 1~	240 V 1~	115–127 V 1~
Frequency	50–60 Hz		50 Hz	60 Hz	60 Hz
Consumption	400 VA		800 VA		950 VA
Emission, Immunity	EN / IEC 61326-1, class B	FCC class B	EN / IEC 61326-1, class B	FCC class B	
/  Max. capacity	4 x 100 ml / 32 x 15 ml				
Max. RPM (speed)	15,000 min <sup>-1</sup>				
Max. RCF	21,382				
Running time	1 sec – 99 min : 59 sec, ∞ continuous run, short cycle mode (impulse key)				
Dimensions (HxWxD)	346 x 395 x 520 mm		346 x 401 x 695 mm		
Weight	approx. 31 kg		approx. 53 kg		
<b>Refrigeration</b>					
Temperature control, infinitely variable	-		from -20 to +40 °C		
Cat. No.	1401	1401-01	1406	1406-01	

<sup>\*)</sup> Other voltages on request.

<sup>\*)</sup> For a list of further versions of this model, please refer to page 12.

### Swing-out rotor, 4-place
































↻ 90°

n = 5,000 min<sup>-1</sup>  
max. RCF 4,193

illustrated with carriers 1425

**Cat. No.** (without carriers) **1494**

capacity in ml	1.5	2.0	1	3	5	6	7	9	15	25	50	100	suspension for cyto accessories
Ø x L in mm	11 x 38		6 x 45	10 x 60	12 x 75	12 x 82	12 x 100	14 x 100	17 x 100	24 x 100	34 x 100	44 x 100	
Cat. No.	<b>2078</b>	<b>0536</b>	<b>Rhesus</b>	-	<b>0553<sup>2)</sup></b>	<b>0501<sup>2)</sup></b>	<b>0578<sup>2)</sup></b>	<b>0500<sup>2)</sup></b>	<b>0518<sup>2)</sup></b>	<b>0519<sup>2)</sup></b>	<b>0521<sup>2)</sup></b>	<b>0526<sup>2)</sup></b>	<b>cyto chambers<sup>23)</sup></b>
 <b>carrier</b> Cat. No. <b>1425</b>													
Cat. No.	<b>1444</b>	<b>1432</b>	<b>1433</b>		<b>1434</b>			<b>1431</b>	<b>1435</b>	<b>1436</b>	<b>1437</b>	<b>1452</b>	
boring Ø x L in mm	11.5 x 38		6.5 x 34	10.5 x 40	12.7 x 60			17.5 x 84		25.5 x 84	35.5 x 84	45.5 x 86	-
tubes per rotor	36		144	56	48			28		8	4	4	4
max. RCF <sup>2)</sup>	3,885		3,969	3,913							3,801		2,739
radius in mm	139		142	140							136		98
run-up in sec	30												
run-down in sec, braked	32												
temperature in °C <sup>1)</sup>	-10												

capacity in ml	2.6-3.4	2.7-3	4-5.5	4.5-5	4.9	7.5-8.5	9-10	1.6-5	4-7	4-7	8.5-10	15	50	50
Ø x L in mm	13 x 65	11 x 66	15 x 75	11 x 92	13 x 90	15 x 92	16 x 92	13 x 75	13 x 100	16 x 75	16 x 100	17 x 120	29 x 115	29 x 115
Cat. No.	<b>blood collection/urine tubes</b>											<b>0509</b>	<b>0513</b>	-
 <b>carrier</b> Cat. No. <b>1425</b>														
Cat. No.	<b>1438</b>	<b>1441</b>	<b>1438</b>	<b>1441</b>	<b>1439</b>	<b>1438</b>	<b>1441</b>	<b>1442</b>	<b>1443</b>	<b>1737</b>				
boring Ø x L in mm	13.4 x 50	16.5 x 50	13.4 x 50	16.5 x 50	17 x 45	13.4 x 50	16.5 x 50	17 x 90	30 x 90	30 x 90				
tubes per rotor	28					16		28					4	
max. RCF <sup>2)</sup>	3,913							4,081						
radius in mm	140							146						
run-up in sec	30													
run-down in sec, braked	32													
temperature in °C <sup>1)</sup>	-10													

<sup>1)</sup> Lowest attainable temperature in precooled refrigerated centrifuges at max. speed. Lower temperatures can be attained by reducing the speed.

<sup>2)</sup> Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote <sup>2)</sup> is 4,000.

<sup>23)</sup> Please ask for our detailed cyto brochure.



illustrated with carriers 1427

**Swing-out rotor Cat. No. (without carriers) 1494**

capacity in ml	1.5/2.0	1	3	5	6	7	9	15	25	50	1.1–1.4	2.6–3.4	2.7–3	4–5.5
Ø x L in mm	11 x 38	6 x 45	10 x 60	12 x 75	12 x 82	12 x 100	14 x 100	17 x 100	24 x 100	34 x 100	8 x 66	13 x 65	11 x 66	15 x 75
<b>Cat. No.</b>	<b>2078/0536</b>	<b>-</b>	<b>Rhesus</b>	<b>-</b>	<b>0553<sup>2)</sup></b>	<b>0501<sup>2)</sup></b>	<b>0578<sup>2)</sup></b>	<b>0500<sup>2)</sup></b>	<b>0518<sup>2)</sup></b>	<b>0519<sup>2)</sup></b>	<b>0521<sup>2)</sup></b>	<b>blood collection/urine tubes</b>		
lid Cat. No. 1421														
carrier Cat. No. 1427														
<b>Cat. No.</b>	<b>5277</b>	<b>1357</b>	<b>1327</b>	<b>1732</b>	<b>5229</b>	<b>5230</b>	<b>5237</b>	<b>5231</b>	<b>5232</b>	<b>5233</b>	<b>5278</b>	<b>1732</b>	<b>5229</b>	<b>5279</b>
boring Ø x L in mm	11.5 x 38	6.5 x 23	10.5 x 23	13.4 x 58	12.5 x 44	12.4 x 87	15 x 73	17.8 x 87	25.5 x 87	35.5 x 87	9 x 41	13.4 x 58	12.5 x 44	15.6 x 41
tubes per rotor	36	120	48	32	48	48	24	8	4	48	32	48	20	
max. RCF <sup>2)</sup>	4,109	4,081	4,053	4,025	4,053	3,941			4,109	4,025	4,053	4,109		
radius in mm	147	146	145	144	145	141			147	144	145	147		
run-up in sec	30													
run-down in sec, braked	32													
temperature in °C <sup>1)</sup>	-7													
































capacity in ml	4.5–5	4.9	7.5–8.5	9–10	1.6–5	4–7	8.5–10	15	50	25	30	50	
Ø x L in mm	11 x 92	13 x 90	15 x 92	16 x 92	13 x 75	13 x 100	16 x 75	16 x 100	17 x 120	29 x 115	25 x 90	25 x 110	29 x 115
<b>Cat. No.</b>	<b>blood collection/urine tubes</b>								<b>0509</b>	<b>0513</b>	<b>-</b>	<b>-</b>	<b>-</b>
lid Cat. No. 1421													
carrier Cat. No. 1427													
<b>Cat. No.</b>	<b>5230</b>	<b>1732</b>	<b>5279</b>	<b>5271<sup>4)</sup></b>	<b>1732</b>	<b>5271</b>	<b>5231</b>	<b>5275</b>	<b>5276</b>	<b>1731</b>	<b>5272</b>	<b>5233<sup>4)</sup></b>	
boring Ø x L in mm	12.4 x 87	13.4 x 58	15.6 x 41	17 x 66	13.4 x 58	17 x 66	17.8 x 87	17 x 90	30 x 90	25.5 x 72	25.5 x 85	35.5 x 87	
tubes per rotor	48	32	20	32	20	24	4	8	4	4	4		
max. RCF <sup>2)</sup>	3,941	4,025	4,109	3,969	4,025	3,969	3,941	4,165	4,053	3,969	4,025	4,053	
radius in mm	141	144	147	142	144	142	141	149	145	142	144	145	
run-up in sec	30												
run-down in sec, braked	32												
temperature in °C <sup>1)</sup>	-7												

































1) Lowest attainable temperature in precooled refrigerated centrifuges at max. speed. Lower temperatures can be attained by reducing the speed.

2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.

3) When using these tubes, carrier 1427 cannot be closed with lid 1421.


 illustrated with carriers 1495 and lids 1492  
 with bio-containment<sup>5)</sup>
**Swing-out rotor Cat. No. (without carriers) 1494**

capacity in ml	1.5	2.0	1	3	5/6/7	9	15	25	50	94	100	1.1–1.4	2.7–5	2.6–4.9	4–8.5	
Ø x L in mm	11 x 38		6 x 45	10 x 60	12 x 75/82/100	14 x 100	17 x 100	24 x 100	34 x 100	38 x 102	44 x 100	8 x 66	11 x 66/92	13 x 65/90	15 x 75/92	
<b>Cat. No.</b>	<b>2078</b>	<b>0536</b>	<b>Rhesus</b>	-	<b>0553<sup>2)</sup>/0501<sup>2)</sup>/0578<sup>2)</sup></b>	<b>0500<sup>2)</sup></b>	<b>0518<sup>2)</sup></b>	<b>0519<sup>2)</sup></b>	<b>0521<sup>2)</sup></b>	<b>0549</b>	<b>0526<sup>2)</sup></b>	<b>blood/urine tubes</b>				
lid with bio-containment <sup>5)</sup> Cat. No. 1492																
<b>carrier</b> Cat. No. 1495																
<b>Cat. No.</b>	<b>1351</b>	<b>1339</b>	<b>1343</b>	<b>1383</b>	<b>1329</b>	<b>1330</b>	<b>1331</b>	<b>1396</b>	<b>0761</b>	<b>1457</b>	<b>1383</b>	<b>1459</b>				
boring Ø x L in mm	11.2 x 38		6.5 x 34	10.5 x 43	13.4 x 48	17.6 x 91	25.2 x 87	35.2 x 87	38.5 x 92	45.9 x 98	9 x 47	13.4 x 48	15.6 x 47			
tubes per rotor	20		108	36	20	16	4				28	20	16			
max. RCF <sup>2)</sup>	3,857		4,081	4,137	4,025	3,997	3,829	3,801	4,109	4,025	4,053	4,025	4,053			
radius in mm	138		146	148	144	143	137	136	147	144	145	144	145			
run-up in sec	30															
run-down in sec, braked	32															
temperature in °C <sup>1)</sup>	-10															

capacity in ml	9–10	10	1.6–7	4–10	15	30	50	12	25	30	50	10	30	50	85	30
Ø x L in mm	16 x 92	15 x 102	13 x 75/100	16 x 75/100	17 x 120	25 x 110	29 x 115	17 x 100	25 x 90	25 x 110	29 x 115	16 x 80	26 x 95	29 x 107	38 x 106	44 x 105
<b>Cat. No.</b>	<b>blood/urine tubes</b>				<b>0509</b>	-	<b>0513</b>	-	-	-	-	-	<b>0545</b>	<b>0546</b>	<b>0547</b>	<b>0534<sup>6)</sup></b>
lid with bio-containment <sup>5)</sup> Cat. No. 1492																
<b>carrier</b> Cat. No. 1495																
<b>Cat. No.</b>	<b>1329</b>	<b>1329<sup>4)</sup></b>	<b>1383</b>	<b>1348</b>	<b>1347</b>	<b>1365</b>	<b>1384</b>	<b>6311</b>	<b>1363</b>	<b>1365</b>	<b>6318</b>	<b>1348</b>	<b>4417</b>	<b>4416</b>	<b>1396</b>	<b>0765</b>
boring Ø x L in mm	17.6 x 91		13.4 x 48	16.5 x 56	17 x 90	26 x 80	30 x 90	17 x 80	26 x 72	26 x 80	29.5 x 80	16.5 x 56	26 x 83	29 x 93	38.5 x 92	45.9 x 98
tubes per rotor	16		20	16	4				16				4			
max. RCF <sup>2)</sup>	3,997	4,193	4,025		4,193			3,689		4,193		4,025	3,857	4,137	4,109	3,997
radius in mm	143	150	144		150			132		150		144	138	148	147	143
run-up in sec	30															
run-down in sec, braked	32															
temperature in °C <sup>1)</sup>	-10															

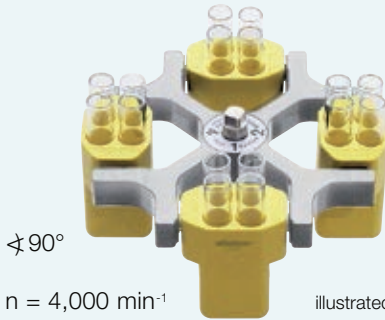
4) Please remove the inserts.

5) Tested by the TÜV in conformity with DIN EN 61010, section 2-020.

6) A rubber stopper for closing the tube is available under Cat. No. 0535.

The tube may not be centrifuged with the stopper. The stopper only serves to close the tube for agitating or mixing.

## Swing-out rotor, 4-place

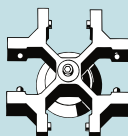















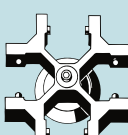






↻ 90°






n = 4,000 min<sup>-1</sup>  
max. RCF 2,665

illustrated with carriers 1369

**Cat. No.** (without carriers) **1624**

capacity in ml	5	6	7	9	15	20	25	45	50	1.1–1.4	2.6–3.4	4–5.5	
Ø x L in mm	12 x 75	12 x 82	12 x 100	14 x 100	17 x 100	21 x 100	24 x 100	31 x 100	34 x 100	8 x 66	13 x 65	15 x 75	
<b>Cat. No.</b>	<b>0553<sup>2)</sup></b>	<b>0501<sup>2)</sup></b>	<b>0578<sup>2)</sup></b>	<b>0500<sup>2)</sup></b>	<b>0518<sup>2)</sup></b>	-	<b>0519<sup>2)</sup></b>	-	<b>0521<sup>2)</sup></b>	<b>blood/urine tubes</b>			
 <b>rotor</b> Cat. No. <b>1624</b>													
	with decanting aid		with decanting aid		+ 0701						+ 0701	+ 0716	
<b>Cat. No.</b>	<b>1369-91</b>	<b>1372</b>	<b>1369-92</b>	<b>1370</b>	<b>1741</b>	<b>1369</b>	<b>1742</b>	<b>1346</b>	<b>1745</b>	<b>1345</b>	<b>1746</b>	<b>1741</b>	<b>1742</b>
boring Ø x L in mm	11.5 x 64.4	13.5 x 65	11.5 x 71.5	14.6 x 74	14.6 x 78	17.6 x 74	17.6 x 78	21.5 x 74	26 x 78	32 x 74	35 x 78	14.6 x 78	17.6 x 78
tubes per rotor	16	68	16	20	40	16	28	8	4	4	40	28	
max. RCF <sup>2)</sup>	2,057	2,164	2,308	2,415	2,308	2,451	2,361	2,451	2,361	2,451	2,415	2,325	
radius in mm	115	121	129	135	129	137	132	137	132	137	135	130	
run-up in sec	20												
run-down in sec, braked	25												
temperature in °C <sup>1)</sup>	-17			-15	-17	-19	-17	-15	-17	-15	-19		

capacity in ml	4.9	1.6–5	4–7	8.5–10	30	suspensions for cyto accessories
Ø x L in mm	13 x 90	13 x 75	16 x 75	16 x 100	26 x 95	
<b>Cat. No.</b>	<b>blood collection/urine tubes</b>				<b>0545</b>	<b>cyto chambers<sup>2)</sup></b>
 <b>rotor</b> Cat. No. <b>1624</b>						
		+ 0716				
<b>Cat. No.</b>	<b>1741</b>	<b>1742</b>	<b>1369</b>	<b>1745</b>	<b>1660</b>	<b>1680</b>
boring Ø x L in mm	14.6 x 78	17.6 x 78	17.6 x 74	26 x 78	-	
tubes per rotor	40	28	16	8	4	
max. RCF <sup>2)</sup>	2,451	2,325	2,308	2,451	1,646	1,467
radius in mm	137	130	129	137	92	82
run-up in sec	20					
run-down in sec, braked	25					
temperature in °C <sup>1)</sup>	-15	-19	-17	-15	-16	-17

capacity in ml	1.5	2.0	1	3	4
Ø x L in mm	11 x 38		6 x 45	10 x 60	12 x 60
<b>Cat. No.</b>	<b>2078</b>	<b>0536</b>	<b>Rhesus</b>	-	-
 <b>carrier</b> Cat. No. <b>1366</b>					
<b>Cat. No.</b>	<b>5277</b>	<b>1357</b>	<b>1327</b>	<b>1326</b>	
boring Ø x L in mm	11.5 x 38	6.5 x 23	10.5 x 23	12.5 x 44	
tubes per rotor	36	120	48		
max. RCF <sup>2)</sup>	1,968	1,950	1,932		
radius in mm	110	109	108		
run-up in sec	20				
run-down in sec, braked	25				
temperature in °C <sup>1)</sup>	-17				

<sup>1)</sup> Lowest attainable temperature in precooled refrigerated centrifuges at max. speed. Lower temperatures can be attained by reducing the speed.

<sup>2)</sup> Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote <sup>2)</sup> is 4,000.

<sup>4)</sup> Please remove the inserts.



illustrated with carriers 1481 and lids 1492  
with bio-containment<sup>5)</sup>

**Swing-out rotor Cat. No. (without carriers) 1624**

capacity in ml	1.5	2.0	1	3	5/6/7	9	15	25	50	94	100	1.1-1.4	2.7-5	2.6-4.9	4-8.5	
Ø x L in mm	11 x 38		6 x 45	10 x 60	12 x 75/82/100		14 x 100	17 x 100	24 x 100	34 x 100	38 x 102	44 x 100	8 x 66	11 x 66/92	13 x 65/90	15 x 75/92
<b>Cat. No.</b>	<b>2078</b>	<b>0536</b>	<b>Rhesus</b>	-	<b>0553<sup>2)</sup>/0501<sup>2)</sup>/0578<sup>2)</sup></b>		<b>0500<sup>2)</sup></b>	<b>0518<sup>2)</sup></b>	<b>0519<sup>2)</sup></b>	<b>0521<sup>2)</sup></b>	<b>0549</b>	<b>0526<sup>2)</sup></b>	<b>blood/urine tubes</b>			
lid with bio-containment <sup>5)</sup> Cat. No. 1492																
<b>carrier</b> Cat. No. 1481																
<b>Cat. No.</b>	<b>1351</b>	<b>1339</b>	<b>1343</b>	<b>1383</b>	<b>1329</b>	<b>1330</b>	<b>1331</b>	<b>1396</b>	<b>0761</b>	<b>1457</b>	<b>1383</b>	<b>1459</b>				
boring Ø x L in mm	11.2 x 38		6.5x34	10.5 x 43	13.4 x 48		17.6x91	25.2x87	35.2x87	38.5 x 92		45.9 x 98	9 x 47	13.4 x 48		15.6 x 47
tubes per rotor	20		108	36	20		16	4				28	20	16		
max. RCF <sup>2)</sup>	2,451		2,594	2,630	2,558		2,540	2,433	2,415	2,612	2,558	2,576	2,576	2,558		2,576
radius in mm	137		145	147	143		142	136	135	146	143	144	144	143		144
run-up in sec	20															
run-down in sec, braked	25															
temperature in °C <sup>1)</sup>	-15															

capacity in ml	9-10	10	1.6-7	4-10	15	50	12	25	30	50	10	30	50	85	30	
Ø x L in mm	16 x 92	15 x 102	13 x 75/100	16 x 75/100	17 x 120	29 x 115	17 x 100	25 x 90	25 x 110	29 x 115	16 x 80	26 x 95	29 x 107	38 x 106	44 x 105	
<b>Cat. No.</b>	<b>blood collection/urine tubes</b>				<b>0509</b>	<b>0513</b>	-	-	-	-	-	<b>0545</b>	<b>0546</b>	<b>0547</b>	<b>0534<sup>3)</sup></b>	
lid with bio-containment <sup>5)</sup> Cat. No. 1492																
<b>carrier</b> Cat. No. 1481																
<b>Cat. No.</b>	<b>1329</b>	<b>1329<sup>4)</sup></b>	<b>1383</b>	<b>1348</b>	<b>1347</b>	<b>1384</b>	<b>6311</b>	<b>1363</b>	<b>1365</b>	<b>6318</b>	<b>1348</b>	<b>4417</b>	<b>4416</b>	<b>1396</b>	<b>0765</b>	
boring Ø x L in mm	17.6 x 91		13.4x48	16.5x56	17 x 90	30 x 90	17 x 80	26 x 72	26 x 80	29.5x80	16.5 x 56	26 x 83	29 x 93	38.5 x 92	45.9 x 98	
tubes per rotor	16		20	16	4				16			4				
max. RCF <sup>2)</sup>	2,540	2,665	2,558	2,522	2,665		2,343	2,665		2,522	2,451	2,630	2,612	2,540		
radius in mm	142	149	143	141	149		131	149		141	137	147	146	142		
run-up in sec	20															
run-down in sec, braked	25															
temperature in °C <sup>1)</sup>	-15															

<sup>5)</sup> Tested by the TÜV in conformity with DIN EN 61010, section 2-020.

<sup>6)</sup> A rubber stopper for closing the tube is available under Cat. No. 0535.

The tube may not be centrifuged with the stopper. The stopper only serves to close the tube for agitating or mixing.

<sup>23)</sup> Please ask for our detailed cyto brochure.

## Swing-out rotor, 4-place



↗ 90°

n = 4,500 min<sup>-1</sup>  
max. RCF 3,328

illustrated with carriers 1490 and lids 1492  
with bio-containment<sup>5)</sup>

**Cat. No.** (without carriers) **1324**

capacity in ml	1.5	2.0	1	3	4	5	6	7	9	15	25	50	94	100
Ø x L in mm	11 x 38		6 x 45	10 x 60	10 x 88	12 x 75	12 x 82	12 x 100	14 x 100	17 x 100	24 x 100	34 x 100	38 x 102	44 x 100
<b>Cat. No.</b>	<b>2078</b>	<b>0536</b>	<b>Rhesus</b>	-	-	<b>0553<sup>2)</sup></b>	<b>0501<sup>2)</sup></b>	<b>0578<sup>2)</sup></b>	<b>0500<sup>2)</sup></b>	<b>0518<sup>2)</sup></b>	<b>0519<sup>2)</sup></b>	<b>0521<sup>2)</sup></b>	<b>0549</b>	<b>0526<sup>2)</sup></b>
lid with bio-containment <sup>5)</sup> Cat. No. 1492														
<b>carrier</b> Cat. No. 1490														
<b>Cat. No.</b>	<b>1351</b>	<b>1339</b>	<b>1343</b>	<b>1343</b>	<b>1343</b>	<b>1383</b>	<b>1383</b>	<b>1329</b>	<b>1329</b>	<b>1330</b>	<b>1331</b>	<b>1396</b>	<b>1396</b>	<b>0761</b>
boring Ø x L in mm	11.2 x 38		6.5 x 34	10.5 x 43		13.4 x 48		17.6 x 91		25.2 x 87	35.2 x 87	38.5 x 92	45.9 x 100.5	
tubes per rotor	20		108	36		20		16		4				
max. RCF <sup>2)</sup>	3,056		3,237	3,283		3,192		3,170		3,034	3,011	3,260	3,192	
radius in mm	135		143	145		141		140		134	133	144	141	
run-up in sec	27													
run-down in sec, braked	30													
temperature in °C <sup>1)</sup>	-6													

capacity in ml	1.1-1.4	2.6-3.4	4.9	2.7-3	4.5-5	4-5.5	7.5-8.5	9-10	10	1.6-5	4-7	4-7	8.5-10
Ø x L in mm	8 x 66	13 x 65	13 x 90	11 x 66	11 x 92	15 x 75	15 x 92	16 x 92	15 x 102	13 x 75	13 x 100	16 x 75	16 x 100
<b>Cat. No.</b>	<b>blood collection/urine tubes</b>												
lid with bio-containment <sup>5)</sup> Cat. No. 1492													
<b>carrier</b> Cat. No. 1490													
<b>Cat. No.</b>	<b>1457</b>	<b>1383</b>		<b>1459</b>		<b>1329</b>	<b>1329<sup>4)</sup></b>	<b>1383</b>		<b>1348</b>			
boring Ø x L in mm	9 x 47	13.4 x 48		15.6 x 47		17.6 x 91		13.4 x 48		16.5 x 56			
tubes per rotor	28	20		16		16		20		16			
max. RCF <sup>2)</sup>	3,215	3,192		3,215		3,170	3,328	3,192		3,147			
radius in mm	142	141		142		140	147	141		139			
run-up in sec	27												
run-down in sec, braked	30												
temperature in °C <sup>1)</sup>	-6												

1) Lowest attainable temperature in precooled refrigerated centrifuges at max. speed. Lower temperatures can be attained by reducing the speed.

2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.

3) When using these tubes, carrier 1490 cannot be closed with lid 1492.



illustrated with carriers 1398

**Swing-out rotor 1324**

capacity in ml	15	30	50	12	25	30	50	10	30	50	85	30	
Ø x L in mm	17 x 120	25 x 110	29 x 115	17 x 100	25 x 90	25 x 110	29 x 115	16 x 80	26 x 95	29 x 107	38 x 106	44 x 105	
<b>Cat. No.</b>	<b>0509</b>	-	<b>0513</b>	-	-	-	-	-	<b>0545</b>	<b>0546</b>	<b>0547</b>	<b>0534<sup>6)</sup></b>	
lid with bio-containment <sup>5)</sup> Cat. No. 1492													
<b>carrier</b> Cat. No. 1490													
<b>Cat. No.</b>	<b>1347</b>	<b>1356</b>	<b>1365</b>	<b>1384</b>	<b>6311</b>	<b>1363</b>	<b>1365</b>	<b>6318</b>	<b>1348</b>	<b>4417</b>	<b>4416</b>	<b>1396</b>	<b>0765</b>
boring Ø x L in mm	17 x 90	17 x 107	26 x 80	30 x 90	17 x 80	26 x 72	26 x 80	29.5 x 80	16.5 x 56	26 x 83	29 x 93	38.5 x 92	45.9 x 100.5
tubes per rotor	4	12	4				16				4		
max. RCF <sup>2)</sup>	3,328	3,328		2,920		3,328		3,147	3,056	3,283	3,260	3,170	
radius in mm	147	147		129		147		139	135	145	144	140	
run-up in sec	27												
run-down in sec, braked	30												
temperature in °C <sup>1)</sup>	- 6												

capacity in ml	5	6	7	9	15	2.6-3.4	2.7-3	4-5.5	4.5-5	4.9	9-10	10	1.6-5	4-7	4-7	12
Ø x L in mm	12 x 75	12 x 82	12 x 100	14 x 100	17 x 100	13 x 65	11 x 66	15 x 75	11 x 92	13 x 90	16 x 92	15 x 102	13 x 75	13 x 100	16 x 75	17 x 102
<b>Cat. No.</b>	<b>0553<sup>2)</sup></b>	<b>0501<sup>2)</sup></b>	<b>0578<sup>2)</sup></b>	<b>0500<sup>2)</sup></b>	<b>0518<sup>2)</sup></b>	<b>blood collection/urine tubes</b>										
<b>carrier</b> Cat. No. 1398																
<b>Cat. No.</b>	<b>1486</b>	<b>1482A</b>	<b>1486</b>	<b>1482A</b>	<b>1486</b>	<b>1482A</b>	<b>1486</b>	<b>1482A</b>	<b>1486</b>	<b>1482A</b>	<b>1486</b>	<b>1482A</b>	<b>1486</b>	<b>1482A</b>	<b>1487</b>	
boring Ø x L in mm	13.4 x 57.5		17.5 x 81		13.4 x 57.5		17.5 x 81		13.4 x 57.5		17.5 x 81		13.4 x 57.5		17.5 x 81	
tubes per rotor	20		16		20		16		20		16		20		12	
max. RCF <sup>2)</sup>	3,147		3,192		3,147		2,875		3,147		3,192		3,147		3,102	
radius in mm	139		141		139		127		139		141		139		137	
run-up in sec	27															
run-down in sec, braked	30															
temperature in °C <sup>1)</sup>	- 6															

4) Please remove the inserts.  
 5) Tested by the TÜV in conformity with DIN EN 61010, section 2-020.  
 6) A rubber stopper for closing the tube is available under Cat. No. 0535.  
 The tube may not be centrifuged with the stopper. The stopper only serves to close the tube for agitating or mixing.

UNIVERSAL 320

**Swing-out rotor, 6-place**

**Swing-out rotor, 8-place**

**Swing-out rotor, 12-place**



±90°

n = 4,000 min<sup>-1</sup>  
max. RCF 2,701

**Cat. No. (with carriers) 1619**



±45°

n = 5,000 min<sup>-1</sup>  
max. RCF 3,857










**Cat. No. (with carriers) 1617**







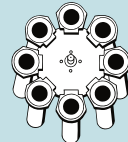



±55°  
(with carriers 1127)  
±60°  
(with carriers 1122)  
±80°  
(with carriers 1621)










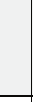
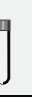


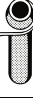







n = 5,000 min<sup>-1</sup>  
max. RCF 4,193

**Cat. No. (without carriers) 1628**

capacity in ml	15	50	12	50
Ø x L in mm	17x120	29x115	17x100	29x115
<b>Cat. No.</b>	<b>0509</b>	<b>0513</b>	-	-
				
<b>carrier</b> Cat. No. <b>1398</b>				
<b>Cat. No.</b>	<b>1483A</b>	<b>1484</b>	<b>1482A</b>	<b>1484<sup>4)</sup></b>
boring Ø x L in mm	17x100	30x98	17.5x81	30x98
tubes per rotor	16	4	16	4
max. RCF <sup>2)</sup>	3,305	3,260	3,192	3,260
radius in mm	146	144	141	144
run-up in sec	27			
run-down in sec, braked	30			
temperature in °C <sup>1)</sup>	- 6			

capacity in ml	15	50
Ø x L in mm	17x120	29x115
<b>Cat. No.</b>	<b>0509</b>	<b>0513</b>
		
<b>rotor</b> Cat. No. <b>1619</b>		
<b>Cat. No.</b>	<b>1462-A</b>	-
boring Ø x L in mm	17 x 84	30x 87.5
tubes per rotor	6	
max. RCF <sup>2)</sup>	2,701	
radius in mm	151	
run-up in sec	20	
run-down in sec, braked	22	
temperature in °C <sup>1)</sup>	- 15	

capacity in ml	15	50
Ø x L in mm	17x120	29x115
<b>Cat. No.</b>	<b>0509</b>	<b>0513</b>
		
<b>rotor</b> Cat. No. <b>1617</b>		
<b>Cat. No.</b>	<b>1462-A</b>	-
boring Ø x L in mm	17 x 84	30x 94.5
tubes per rotor	8	
max. RCF <sup>2)</sup>	3,857	
radius in mm	138	
run-up in sec	20	
run-down in sec, braked	19	
temperature in °C <sup>1)</sup>	- 10	

capacity in ml	5	10	15	2.6-3.4	2.7-3	4-5.5	7.5-8.5	1.6-5	4-7	8.5-10
Ø x L in mm	12 x 75	17x70	17x100	13x65	11x66	15x75	15x92	13x75	16x75	16 x 100
<b>Cat. No.</b>	<b>0553<sup>2)</sup></b>	<b>2079</b>	<b>0518<sup>2)</sup></b>	<b>blood collection/urine tubes</b>						
										
<b>rotor</b> Cat. No. <b>1628</b>										
<b>Cat. No.</b>	<b>1127</b>	<b>1122</b>	<b>1621</b>	<b>1127</b>	<b>1122</b>	<b>1621</b>	<b>1127</b>	<b>1122</b>	<b>1621</b>	
boring Ø x L in mm	13.2 x 53	17.5 x 53	17.5 x 79	13.2 x 53	17.5 x 53	17.5 x 79	13.2 x 53	17.5 x 53	17.5 x 79	
tubes per rotor	12									
max. RCF <sup>2)</sup>	3,494	3,522	4,193	3,494	3,522	4,193	3,494	3,522	4,193	
radius in mm	125	126	150	125	126	150	125	126	150	
run-up in sec	16									
run-down in sec, braked	16									
temperature in °C <sup>1)</sup>	- 15	- 10	- 15	- 15	- 10	- 15	- 15	- 10	- 15	

<sup>1)</sup> Lowest attainable temperature in precooled refrigerated centrifuges at max. speed. Lower temperatures can be attained by reducing the speed.

<sup>2)</sup> Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote <sup>2)</sup> is 4,000.

**Swing-out rotor, 8-place**

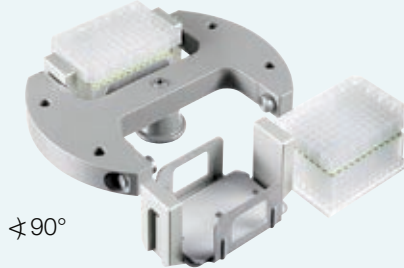
**Swing-out rotor, 2-place**



±90°

n = 4,000 min<sup>-1</sup>  
max. RCF 2,415





























**Cat. No.** (without carriers) **1611**

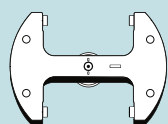

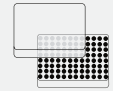











±90°

n = 4,000 min<sup>-1</sup>  
max. RCF 2,218

**Cat. No.** (without carriers) **1460**

capacity in ml	5	6	7	10	15	2.6–3.4	2.7–3	4–5.5	4.5–5	7.5–8.5	1.6–5	4–7	4–7	8.5–10	
Ø x L in mm	12 x 75	12 x 82	12 x 100	17 x 70	13 x 100	17 x 100	13 x 65	11 x 66	15 x 75	11 x 92	15 x 92	13 x 75	13 x 100	16 x 75	16 x 100
Cat. No.	<b>0553<sup>2)</sup></b>	<b>0501<sup>2)</sup></b>	<b>0578<sup>2)</sup></b>	<b>2079</b>	-	<b>0518<sup>2)</sup></b>	<b>blood collection/urine tubes</b>								
 <b>rotor</b> Cat. No. <b>1611</b>															
															
Cat. No.	<b>1131</b>	<b>1643</b>	<b>1132</b>	<b>1643</b>	<b>1644</b>	<b>1131</b>	<b>1132</b>	<b>1643</b>	<b>1644</b>	<b>1131</b>	<b>1643</b>	<b>1132</b>	<b>1644</b>	<b>1131</b>	<b>1644</b>
boring Ø x L in mm	13 x 53	13.2 x 81	17.5 x 53	13.2 x 81	17.5 x 81	13 x 53	17.5 x 53	13.2 x 81	17.5 x 81	13 x 53	13.2 x 81	17.5 x 53	17.5 x 81	13 x 53	17.5 x 81
tubes per rotor	8														
max. RCF <sup>2)</sup>	1,914	2,415	1,914	2,415	2,415	1,914	2,415	1,914	2,415	1,914	2,415	1,914	2,415	1,914	2,415
radius in mm	107	135	107	135	135	107	135	107	135	107	135	107	135	107	135
run-up in sec	20														
run-down in sec, braked	20														
temperature in °C <sup>1)</sup>	-16														

D x W x H in mm	86 x 128 x 15/17.5		86 x 128 x 22	86 x 128 x 44.5	86 x 128 x 46	86 x 128 x 83	59 x 84 x 11	82 x 124 x 20	-	
capacity in ml	-									0.2
Cat. No.	<b>MTP</b>		<b>CP</b>	<b>DWP</b>	<b>MS</b>	<b>QP</b>	<b>Microtest plate (Terasaki)</b>	<b>PCR plate, 96 wells</b>	<b>PCR strips</b>	
 <b>rotor</b> Cat. No. <b>1460</b>										
										
Cat. No.	<b>1453-A</b>							<b>1453-A + 1485</b>		
boring Ø x L in mm	-									
plates/strips per rotor	10	8	6	2	2	2	4	2	24 x 8	
max. RCF <sup>2)</sup>	2,218									
radius in mm	124									
run-up in sec	40									
run-down in sec, braked	45									
temperature in °C <sup>1)</sup>	-6									

<sup>4)</sup> Please remove the inserts.

### Swing-out rotor, 4-place



↻ 90°

n = 4,000 min<sup>-1</sup>  
max. RCF 1,896

**Cat. No.** (without carriers) **1645**

### Angle rotor, 12-place



↻ 45°

n = 15,000 min<sup>-1</sup>  
max. RCF 16,602

**Cat. No.** **1612**

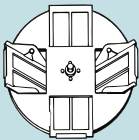

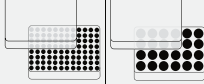

### Angle rotor, 24-place










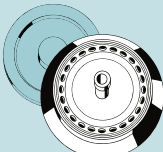






↻ 40°

n = 15,000 min<sup>-1</sup>  
max. RCF 21,382

**Cat. No.** **1420-B**

D x W x H in mm	86 x 128 x 15/17.5	86 x 128 x 22
<b>Cat. No.</b>	<b>MTP</b>	<b>CP</b>
		
<b>rotor</b> Cat. No. <b>1645</b>		
<b>Cat. No.</b>	<b>4345</b>	
boring Ø x L in mm	-	
plates per rotor	4	
max. RCF <sup>2)</sup>	1,896	
radius in mm	106	
run-up in sec	20	
run-down in sec, braked	19	
temperature in °C <sup>1)</sup>	- 16	

capacity in ml	0.2	0.4	0.5	0.8	1.5	2.0
Ø x L in mm	6 x 18	6 x 45	8 x 30	8 x 45	11 x 38	
<b>Cat. No.</b>	-	-	-	-	<b>2078</b>	<b>0536</b>
 <b>rotor</b> Cat. No. <b>1612</b>						
<b>Cat. No.</b>	<b>2024</b>	<b>2023</b>	<b>2031<sup>7)</sup></b>	-		
boring Ø x L in mm	6 x 40	8 x 40	10.2x19	11.4 x 39		
tubes per rotor	12					
max. RCF <sup>2)</sup>	16,602					
radius in mm	66					
run-up in sec	25					
run-down in sec, braked	23					
temperature in °C <sup>1)</sup>	- 10					

capacity in ml	0.2	0.4	0.5	0.8	1.5	2.0
Ø x L in mm	6 x 18	6 x 45	8 x 30	8 x 45	11 x 38	
<b>Cat. No.</b>	-	-	-	-	<b>2078</b>	<b>0536</b>
 <b>rotor</b> Cat. No. <b>1420-B</b>						
<b>Cat. No.</b>	<b>2024</b>	<b>2023</b>	<b>2031<sup>7)</sup></b>	-		
boring Ø x L in mm	6 x 40	8 x 40	10.2x19	11.2x42.6		
tubes per rotor	24					
max. RCF <sup>2)</sup>	21,382					
radius in mm	85					
run-up in sec	25					
run-down in sec, braked	24					
temperature in °C <sup>1)</sup>	- 4					

#### Optional for rotor 1420-B:



lid **Cat. No. 2425**  
with bio-containment<sup>5)</sup>,  
autoclavable



lid **Cat. No. 2423**  
with bio-containment<sup>5)</sup>,  
autoclavable, phenol-resistant

<sup>1)</sup> Lowest attainable temperature in precooled refrigerated centrifuges at max. speed. Lower temperatures can be attained by reducing the speed.

<sup>2)</sup> Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote <sup>2)</sup> is 4,000.

<sup>5)</sup> Tested by the TÜV in conformity with DIN EN 61010, section 2-020.

### Angle rotor, 30-place

### Angle rotor, 8-place



↗ 45°

n = 14,000 min<sup>-1</sup>  
max. RCF 21,255

with bio-containment<sup>5)</sup>

**Cat. No. 1689-A**



↗ 45°

n = 4,500 min<sup>-1</sup>  
max. RCF 3,305

**Cat. No. (without adapters) 1418**

capacity in ml	0.2	0.4	0.5	0.8	1.5	2.0
Ø x L in mm	6 x 18	6 x 45	8 x 30	8 x 45	11 x 38	
<b>Cat. No.</b>	-	-	-	-	<b>2078</b>	<b>0536</b>
lid with bio-containment <sup>5)</sup> incl.						
<b>rotor</b> Cat. No. <b>1689-A</b>						
<b>Cat. No.</b>	<b>2024</b>		<b>2023</b>		<b>2031<sup>7)</sup></b>	
boring Ø x L in mm	6 x 40		8 x 40		10.2x19 11.2x40.9	
tubes per rotor	30					
max. RCF <sup>2)</sup>	21,255					
radius in mm	97					
run-up in sec	35					
run-down in sec, braked	31					
temperature in °C <sup>1)</sup>	0					

capacity in ml	5	15	1.1-1.4	2.6-3.4	2.7-3
Ø x L in mm	12 x 75	17 x 100	8 x 66	13 x 65	11 x 66
<b>Cat. No.</b>	<b>0553<sup>2)</sup></b>	<b>0518<sup>2)</sup></b>	<b>blood/urine tubes</b>		
<b>rotor</b> Cat. No. <b>1418</b>					
<b>Cat. No.</b>	<b>1467</b>	<b>1467</b>	<b>1467</b>		
boring Ø x L in mm	17.4 x 91	17.4 x 91	17.4 x 91		
tubes per rotor	32	32	32		
RCF max. <sup>2)</sup>	2,762	3,215	2,762		
radius in mm	122	142	122		
run-up in sec	30				
run-down in sec, braked	31				
temperature in °C <sup>1)</sup>	- 11				

capacity in ml	9-10	1.6-5	4-7	8.5-10	12	15	50	12	50	50	
Ø x L in mm	16x92	13x75	13x100	16x100	17x102	17x120	29x115	17x100	29x115	29x107	
<b>Cat. No.</b>	<b>blood collection/urine tubes</b>						<b>0509</b>	<b>0513</b>	-	-	<b>0546</b>
<b>rotor</b> Cat. No. <b>1418</b>											
<b>Cat. No.</b>	<b>1467</b>	<b>1467</b>	<b>1467</b>	<b>1467</b>	<b>1467</b>	<b>1467</b>	<b>1468</b>	<b>1467</b>	<b>1468</b>		
boring Ø x L in mm	17.4 x 91	17.4 x 91	17.4 x 91	17.4 x 91	17.4 x 91	17.4 x 91	30.2 x 92	17.4 x 91	30.2 x 92		
tubes per rotor	32	32	32	32	32	32	8	32	8		
RCF max. <sup>2)</sup>	3,215	2,762	3,305	3,215	3,215	3,283	3,147	3,215	3,147		
radius in mm	142	122	146	142	142	145	139	142	139		
run-up in sec	30										
run-down in sec, braked	31										
temperature in °C <sup>1)</sup>	- 11										

<sup>7)</sup> For centrifugation at high speeds, we recommend to use form-fitting, phenol-resistant adapters 2031.

**Angle rotor, 6-place**

 $\angle 35^\circ$ 

 n = 9,000 min<sup>-1</sup>  
 max. RCF 9,509

**Cat. No. 1620A**
**Angle rotor, 12-place**

 $\angle 35^\circ$ 


















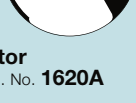
















 n = 6,000 min<sup>-1</sup>  
 max. RCF 4,146

































**Cat. No. 1613**
**Angle rotor, 12-place**

 $\angle 35^\circ$ 

 n = 12,000 min<sup>-1</sup>  
 max. RCF 16,582

**Cat. No. 1615**

capacity in ml	1.5	2.0	15	50	75	94	7.5-8.5	9-10	10	8.5-10	15	50	10	30	50	85
Ø x L in mm	11 x 38		17 x 100	34 x 100	35 x 105	38 x 102	15 x 92	16 x 92	15 x 102	16 x 100	17 x 120	29 x 115	16 x 80	26 x 95	29 x 107	38 x 106
<b>Cat. No.</b>	<b>2078</b>	<b>0536</b>	<b>0518<sup>2)</sup></b>	<b>0521<sup>2)</sup></b>	<b>0548</b>	<b>0549</b>	<b>blood/urine tubes</b>				<b>0509</b>	<b>0513</b>	-	<b>0545</b>	<b>0546</b>	<b>0547</b>
 <b>rotor</b> Cat. No. <b>1620A</b>																
 <b>rotor</b> Cat. No. <b>1620A</b>																
<b>Cat. No.</b>	<b>1449</b>	<b>1451</b>	<b>1463</b>	-	<b>1451</b>	<b>1466</b>	<b>1454</b>	<b>1646<sup>3)</sup></b>	<b>1448</b>	<b>1447</b>	<b>1446</b>	-				
boring Ø x L in mm	11.4 x 39	17.5 x 92	35 x 89	38.6 x 90.2	17.5 x 92	17 x 106	29.8 x 97	-	16.5 x 74	26 x 85	29 x 92	38.6 x 90.2				
tubes per rotor	24	6	6	6	6	6	6	3	6	12	6					
max. RCF <sup>2)</sup>	9,237	8,784	9,327	9,509	8,784	8,965	8,784	8,965	8,784	8,603	9,056	9,509				
radius in mm	102	97	103	105	97	99	97	95	100	105						
run-up in sec	30															
run-down in sec, braked	30															
temperature in °C <sup>1)</sup>	- 11															

capacity in ml	4	5	6	15	1.1-1.4	2.6-3.4	2.7-3	4.5-5	4.9	7.5-10	10	1.6-5	4-7	8-10	15	
Ø x L in mm	10 x 88	12 x 75	12 x 82	17 x 100	8 x 66	13 x 65	11 x 66	11 x 92	13 x 90	15/16 x 92	15 x 102	13 x 75	13 x 100	16 x 100/125	17 x 120	
<b>Cat. No.</b>	-	<b>0553<sup>2)</sup></b>	<b>0501<sup>2)</sup></b>	<b>0518<sup>2)</sup></b>	<b>blood collection/urine tubes</b>										<b>0509</b>	
 <b>rotor</b> Cat. No. <b>1613</b>																
 <b>rotor</b> Cat. No. <b>1613</b>																
<b>Cat. No.</b>	<b>6305</b>	<b>1054-A</b>	-	<b>1054-A</b>	-							<b>1054-A</b>	<b>1058</b>	-		
boring Ø x L in mm	11.5 x 67.5	13.5 x 60	17.7 x 88	13.5 x 60	17.7 x 88							13.5 x 60	13.5 x 79	17.7 x 88		
tubes per rotor	12															
max. RCF <sup>2)</sup>	3,502	3,300	4,146	3,300	4,146							3,300	4,146			
radius in mm	87	82	103	82	103							82	103			
run-up in sec	15															
run-down in sec, braked	15															
temperature in °C <sup>1)</sup>	- 16															

<sup>1)</sup> Lowest attainable temperature in precooled refrigerated centrifuges at max. speed. Lower temperatures can be attained by reducing the speed.

<sup>2)</sup> Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote <sup>2)</sup> is 4,000.

<sup>3)</sup> 6-place adapter set for conical 50 ml tubes with screw cap.

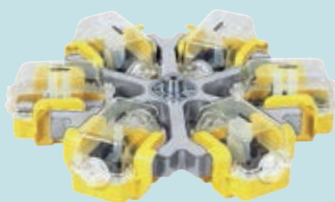
**Hematocrit rotor, 24-place**



n = 15,000 min<sup>-1</sup>  
max. RCF 21,382

**Cat. No. 1650**

**Cyto rotor, 6-place**



n = 4,000 min<sup>-1</sup>  
max. RCF 2,039

**Cat. No. (without suspensions) 1626**

**Cyto rotor, 8-place**


























n = 4,000 min<sup>-1</sup>  
max. RCF 2,218


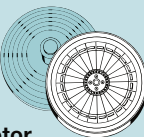
**Cat. No. (with suspensions) 1648**

For detailed information on the comprehensive Hettich cyto system, please turn to the pages 156-158.

illustrated with  
suspensions 1660  
and lids 1661  
for cyto chambers

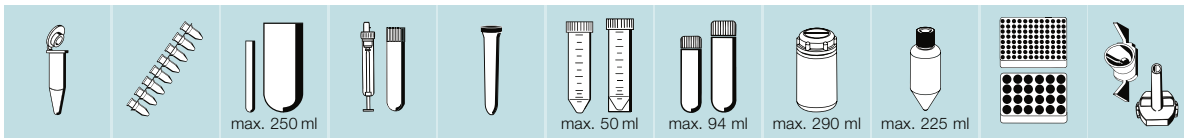
illustrated with  
suspensions 1680  
for angle chambers

capacity in ml	4	5	6	15	1.1-1.4	2.6-3.4	2.7-3	4.5-5	4.9	7.5-10	10	1.6-5	4-7	8-10	15		
Ø x L in mm	10x88	12x75	12x82	17x100	8x66	13x65	11x66	11x92	13x90	15/16x92	15x102	13x75	13x100	16x100/125	17x120		
Cat. No.	-	0553 <sup>2)</sup>	0501 <sup>2)</sup>	0518 <sup>2)</sup>	blood collection/urine tubes										0509		
 <b>rotor</b> Cat. No. 1615																	
																	
Cat. No.	<b>6305</b>	<b>1054-A</b>	-	-	<b>1054-A</b>			-				<b>1054-A</b>	<b>1058</b>	-	<b>1647<sup>29)</sup></b>		
boring Ø x L in mm	11.5x67.5	13.5x60	17.7x88		13.5x60			17.7x88				13.5x60	13.5x79	17.7x88	17x104		
tubes per rotor					12								12	12	12	6	6
max. RCF <sup>2)</sup>	14,006	13,201	16,582		13,201			16,582				13,201	16,582	16,582	15,455		
radius in mm	87	82	103		82			103				82	103	103	96		
run-up in sec									40								
run-down in sec, braked									40								
temperature in °C <sup>1)</sup>									-2								

standard capillaries, heparinised	basic	self-sealing and mylar-coated
Cat. No.	<b>2074</b>	<b>1071</b>
lid as evaluation disk incl.		
 <b>rotor</b> Cat. No. 1650	sealing putty	
Cat. No.	<b>2077</b>	-
boring Ø x L in mm	-	
capillaries per rotor	24	
max. RCF <sup>2)</sup>	21,382	
radius in mm	85	
run-up in sec	13	
run-down in sec, braked	9	
temperature in °C <sup>1)</sup>	-1	

<sup>29)</sup> Set of 6 carriers. For accommodating conical 15 ml tubes with screw cap, remove 6 opposite carriers from rotor No. 1615 and replace them with adapters No. 1647.

# ROTINA 380/380 R



## High-performance centrifuges deliver separation technology to satisfy the highest standards

Efficiency and safety are key requisites in today's laboratories - whether for research or routine tasks. The ROTINA 380 and 380 R centrifuge models are ideally equipped to take on these challenges. Samples with capacities of up to 4 x 290 ml can be processed with a max. RCF of 4,863. Should higher speeds be required, angle rotors with a max. RCF of 16,504 for 50 ml tubes or 24,400 for microlitre tubes are available.



ROTINA 380

TECHNOLOGY	ROTINA 380		ROTINA 380 R <sup>*)</sup>	
	classic		cooled	
Benchtop centrifuge, without rotor				
Power supply <sup>*)</sup>	200 – 240 V 1 ~	100 – 127 V 1 ~	200 – 240 V 1 ~	110 – 127 V 1 ~
Frequency	50 – 60 Hz		50 – 60 Hz	60 Hz
Consumption	650 VA	700 VA	1,300 VA	1,400 VA
Emission, Immunity	EN / IEC 61326-1, class B	FCC class B	EN / IEC 61326-1, class B	FCC class B
Max. capacity	4 x 290 ml			
Max. RPM (speed)	15,000 min <sup>-1</sup>			
Max. RCF	24,400			
Running time	1 sec – 99 h : 59 min : 59 sec, ∞ continuous run, short cycle mode (impulse key)			
Dimensions (HxWxD)	418 x 457 x 600 mm		418 x 457 x 750 mm	
Weight	approx. 51 kg	approx. 58,5 kg	approx. 81 kg	approx. 88,5 kg
<b>Refrigeration</b>				
Temperature control, infinitely variable	-		from - 20 to + 40 °C	
Cat. No.	1701	1701-01	1706	1706-01

<sup>\*)</sup> Other voltages on request.

<sup>>)</sup> For a list of further versions of this model, please refer to page 12.

**Swing-out rotor, 4-place**



↻ 90°

n = 5,000 min<sup>-1</sup>  
max. RCF 4,863

illustrated with carriers 1752 and lids 1751  
with bio-containment<sup>5)</sup>

**Cat. No.** (without carriers) **1754**

capacity in ml	1.5	2.0	3	4	5	6	7	9	10	15	20	25	45	50	75
Ø x L in mm	11 x 38		10 x 60	12 x 60	12 x 75	12 x 82	12 x 100	14 x 100	17 x 70	17 x 100	21 x 100	24 x 100	31 x 100	34 x 100	35 x 105
<b>Cat. No.</b>	<b>2078</b>	<b>0536</b>	-		<b>0553<sup>2)</sup></b>	<b>0501<sup>2)</sup></b>	<b>0578<sup>2)</sup></b>	<b>0500<sup>2)</sup></b>	<b>2079</b>	<b>0518<sup>2)</sup></b>	-	<b>0519<sup>2)</sup></b>	-	<b>0521<sup>2)</sup></b>	<b>0548</b>
lid with bio-containment <sup>5)</sup> Cat. No. 1751															
carrier Cat. No. 1752															
<b>Cat. No.</b>	<b>1761</b>	<b>1761</b>			<b>1762-A</b>		<b>1763-A</b>		<b>1764</b>		<b>1765</b>				
boring Ø x L in mm	11.2 x 39.5		11.2 x 39.5		12.5 x 56		17.5 x 62		25.5 x 81		35.5 x 81				
tubes per rotor	144		72		96		52		24		12				
max. RCF <sup>2)</sup> upper/lower	3,494 / 4,779		4,779				4,668								
radius in mm upper/lower	125 / 171		171				167								
run-up in sec							42								
run-down in sec, braked							27								
temperature in °C <sup>1)</sup>							0								

capacity in ml	94	100	100	250	1.1-1.4	2.6-3.4	2.7-3	4-5.5	4.5-5	4.9	7.5-8.5	9-10	10	1.6-5	4-7
Ø x L in mm	38 x 102	40 x 115	44 x 100	65 x 115	8 x 66	13 x 65	11 x 66	15 x 75	11 x 92	13 x 90	15 x 92	16 x 92	15 x 102	13 x 75	13 x 100
<b>Cat. No.</b>	<b>0549</b>	<b>0523<sup>2)</sup></b>	<b>0526<sup>2)</sup></b>	<b>0530<sup>2)</sup></b>	<b>blood collection/urine tubes</b>										
lid with bio-containment <sup>5)</sup> Cat. No. 1751															
carrier Cat. No. 1752															
<b>Cat. No.</b>	<b>1777</b>	<b>1767</b>	<b>1766</b>	<b>1768</b>	<b>1781</b>	<b>1783-A</b>	<b>1762-A</b>	<b>1763-A</b>	<b>1762-A</b>	<b>1783-A</b>	<b>1763-A</b>		<b>1783-A</b>		
boring Ø x L in mm	38.5 x 80	41 x 97	45 x 87	66 x 104.5	9 x 49	13.5 x 54	12.5 x 56	17.5 x 62	12.5 x 56	13.5 x 54	17.5 x 62		13.5 x 54		
tubes per rotor	8	4	4	4	96	64	96	52	96	64	52		64		
max. RCF <sup>2)</sup>	4,807	4,640	4,640				4,668								
radius in mm	172	166	166				167								
run-up in sec							42								
run-down in sec, braked							27								
temperature in °C <sup>1)</sup>							0								

1) Lowest attainable temperature in precooled refrigerated centrifuges at max. speed. Lower temperatures can be reached by reducing the speed.  
2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.  
5) Tested by the TÜV in conformity with DIN EN 61010, section 2-020.

ROTINA 380



illustrated with carriers 1752 and lids 1751  
with bio-containment<sup>5)</sup>

**Swing-out rotor Cat. No. (without carriers) 1754**

capacity in ml	4-7	8	8.5-10	15	50	12	25	30	50	50	10	14	30	50
Ø x L in mm	16x75	16x125	16x100	17x120	29x115	17x100	25x90	25x110	29x115	29x115	16x80	16.5x106	26x95	29x107
<b>Cat. No.</b>	<b>blood collection tubes</b>			<b>0509</b>	<b>0513</b>	<b>-</b>				<b>0513</b>	<b>-</b>	<b>0545</b>	<b>0546</b>	
lid with bio-containment <sup>5)</sup> Cat. No. 1751														
carrier Cat. No. 1752														
<b>Cat. No.</b>	<b>1763-A</b>		<b>1763-A</b>	<b>1771-A</b>	<b>1772-A</b>	<b>1773</b>	<b>1779</b>		<b>1774-A</b>		<b>1763-A</b>	<b>1775</b>	<b>1774-A</b>	
boring Ø x L in mm	17.5x62		17.5x62	17x84	30x84	17x78	26.5x72		30x80		17.5x62	26.5x70	30x80	
tubes per rotor	52	12	52	36	16	36	20		16		52	24	16	
max. RCF <sup>2)</sup>	4.668			4.863	4.863	4.696	4.528		4.752		4.668	4.807	4.752	
radius in mm	167			174	174	168	162		170		167	172	170	
run-up in sec	42													
run-down in sec, braked	27													
temperature in °C <sup>1)</sup>	0													

capacity in ml	85	94	175	175	200	225	250	290
Ø x L in mm	38 x 106	38 x 102	61 x 118	62 x 144	60 x 130	61 x 137	61 x 122	62 x 137
<b>Cat. No.</b>	<b>0547</b>	<b>0538</b> <sup>13)</sup>	<b>Falcon</b> <sup>®</sup>	<b>Nalgene</b> <sup>®</sup>	<b>Nunc</b> <sup>®</sup>	<b>Falcon</b> <sup>®</sup>	<b>5127</b> <sup>28)</sup>	<b>-</b> <sup>28)</sup>
lid with bio-containment <sup>5)</sup> Cat. No. 1751								
carrier Cat. No. 1752								
<b>Cat. No.</b>	<b>1777</b>	<b>1782</b>	<b>1778</b>	<b>1778</b>	<b>1782</b>	<b>1782</b>	<b>1769</b>	
boring Ø x L in mm	38.5x80		62x111	62x111	62x111	62x111	62x100	
tubes per rotor	8			4				
max. RCF <sup>2)</sup>	4.807			4.863				
radius in mm	172			174				
run-up in sec	42							
run-down in sec, braked	27							
temperature in °C <sup>1)</sup>	0							

1) Lowest attainable temperature in precooled refrigerated centrifuges at max. speed. Lower temperatures can be reached by reducing the speed.

2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.

3) When using these tubes, carrier 1752 and 5051 cannot be closed with lid 1751 resp. 5053.

**Swing-out rotor, 4-place**



±90°

n = 4,000 min<sup>-1</sup>  
max. RCF 3,095

illustrated with carriers 5051  
and lids 5053

**Cat. No.** (without carriers) **1798**

capacity in ml	1.5/2.0		3	5	6	7	9	15	25	50	100	100
Ø x L in mm	11 x 38		10x60	12x75	12x82	12x100	14x100	17x100	24x100	34x100	40x115	44x100
<b>Cat. No.</b>	-	<b>2078/0536</b>	-	<b>0553<sup>2)</sup></b>	<b>0501<sup>2)</sup></b>	<b>0578<sup>2)</sup></b>	<b>0500<sup>2)</sup></b>	<b>0518<sup>2)</sup></b>	<b>0519<sup>2)</sup></b>	<b>0521<sup>2)</sup></b>	<b>0523<sup>2)</sup></b>	<b>0526<sup>2)</sup></b>
lid Cat. No. 5053												
carrier Cat. No. 5051												
<b>Cat. No.</b>	<b>5257</b>	<b>5281</b>	<b>5267</b>	<b>5227</b>	<b>5247<sup>18)</sup></b>	<b>5264</b>	<b>5248<sup>18)</sup></b>	<b>5242</b>	<b>5243</b>	<b>5249</b>	<b>5262</b>	
boring Ø x L in mm	12.5x42	11.5x50	11x44	12.5x42	12.5x86	16x50	17.5x86	26x86	36x86	42x86	45.5x86	
tubes per rotor	160	64	80	80	80	48	48	20	8	4		
max. RCF <sup>2)</sup> upper/lower	1,950/2,826	2,826	2,737	2,773	2,755	2,773	2,755					
radius in mm upper/lower	109/158	158	153	155	154	155	154					
run-up in sec	24											
run-down in sec, braked	17											
temperature in °C <sup>1)</sup>	-8											















capacity in ml	1.1-1.4	2.6-3.4	2.7-3	4-5.5	4.5-5	4.9	7.5-8.5	9-10	10	1.6-5	4-7	4-7	8.5-10
Ø x L in mm	8x66	13x65	11x66	15x75	11x92	13x90	15x92	16x92	15x102	13x75	13x100	16x75	16x100
<b>Cat. No.</b>	<b>blood collection/urine tubes</b>												
lid Cat. No. 5053													
carrier Cat. No. 5051													
<b>Cat. No.</b>	<b>5267</b>	<b>5268</b>	<b>5227</b>	<b>5264</b>	<b>5227</b>	<b>5268</b>	<b>5264</b>	<b>5258</b>		<b>5268</b>	<b>5264</b>	<b>5248</b>	
boring Ø x L in mm	11x44	13.5x52	12.5x42	16x50	12.5x42	13.5x52	16x50	17.6x86		13.5x52	16x50	17.5x86	
tubes per rotor	80	48	80	48	80	48	44	48					
max. RCF <sup>2)</sup>	2,737	2,808	2,773		2,808	2,773	2,755	2,808		2,773	2,755		
radius in mm	153	157	155		157	155	154	157		155	154		
run-up in sec	24												
run-down in sec, braked	17												
temperature in °C <sup>1)</sup>	-8												

<sup>5)</sup> Tested by the TÜV in conformity with DIN EN 61010, section 2-020.  
<sup>13)</sup> The screw cap for tube No. 0538 is available with Cat. No. 0539. Dimensions with cap 38 x 106 mm.  
<sup>18)</sup> With Cat. No. 5247-91 or 5248-91 these adapters can also be ordered with a decanting aid.  
<sup>24)</sup> Carrier must be loaded as illustrated.  
<sup>28)</sup> At temperatures of over + 40 °C and / or when not filled to capacity, bottles may warp during centrifugation.



illustrated with carriers 5051

**Swing-out rotor Cat. No. (without carriers) 1798**

capacity in ml	15	30	50	12	30	50	two-tier frame for cyto accessories
Ø x L in mm	17 x 120	25 x 110	29 x 115	17 x 100	25 x 110	29 x 115	
<b>Cat. No.</b>	<b>0509</b>	-	<b>0513</b>	-	-	-	<b>cyto chambers</b> <sup>23)</sup>
lid Cat. No. <b>5053</b>	 <sup>3)</sup>	 <sup>3)</sup>	 <sup>3)</sup>	 <sup>3)</sup>	 <sup>3)</sup>	 <sup>3)</sup>	
<b>carrier</b> Cat. No. <b>5051</b>						 + 2 x 6316	
<b>Cat. No.</b>	<b>6306</b>	<b>5266</b>	<b>5259</b>	<b>6306</b>	<b>5266</b>	<b>5243</b>	<b>5280</b>
boring Ø x L in mm	17 x 90	26 x 86	30 x 86	17 x 90	26 x 86	36 x 86	-
tubes per rotor	28	20	8	28	20	8	8
max. RCF <sup>2)</sup> upper/lower	2,898	2,755	2,826	2,898	2,755	2,755	1,735 / 2,737
radius in mm upper/lower	162	154	158	162	154	154	97 / 153
run-up in sec	24						
run-down in sec, braked	17						
temperature in °C <sup>1)</sup>	-8						

<sup>1)</sup> Lowest attainable temperature in precooled refrigerated centrifuges at max. speed. Lower temperatures can be reached by reducing the speed.

<sup>2)</sup> Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote <sup>2)</sup> is 4,000.

<sup>3)</sup> When using these tubes, carrier 5051 resp. 5092 cannot be closed with lid 5053 resp. 5093.



illustrated with carriers 5092 and lids 5093  
with bio-containment<sup>5)</sup>

**Swing-out rotor Cat. No. (without carriers) 1798**

capacity in ml	5	6	7	10	15	25	50	100	100	250
Ø x L in mm	12x75	12x82	12x100	17x70	17x100	24x100	34x100	44x100	40x115	65x115
<b>Cat. No.</b>	<b>0553<sup>2)</sup></b>	<b>0501<sup>2)</sup></b>	<b>0578<sup>2)</sup></b>	<b>2079</b>	<b>0518<sup>2)</sup></b>	<b>0519<sup>2)</sup></b>	<b>0521<sup>2)</sup></b>	<b>0526<sup>2)</sup></b>	<b>0523<sup>2)</sup></b>	<b>0530<sup>2)</sup></b>
lid with bio-containment <sup>5)</sup> Cat. No. 5093										
<b>carrier</b> Cat. No. 5092										
<b>Cat. No.</b>	<b>5128</b>	<b>5120</b>	<b>5136</b>	<b>5122</b>	<b>5124</b>	<b>5125</b>	<b>5126</b>	<b>5126</b>	<b>5126</b>	<b>1791</b>
boring Ø x L in mm	12.8x45	12.8x82	12.8x82	17.5x60.7	17.5x60.7	25.5x82	35.5x85	45.5x85	42x85	66x103
tubes per rotor	48		32		16		4		4	
max. RCF <sup>2)</sup>	3,005		2,952		2,898		2,952		3,095	
radius in mm	168		165		162		165		173	
run-up in sec	24									
run-down in sec, braked	17									
temperature in °C <sup>1)</sup>	-8									

capacity in ml	15	30	50	12	25	30	50	10	250	290
Ø x L in mm	17x120	25x110	29x115	17x100	25x90	25x110	29x115	16x80	61x122	62x137
<b>Cat. No.</b>	<b>0509</b>	-	<b>0513</b>	-	-	-	-	-	<b>5127<sup>28)</sup></b>	<b>-<sup>28)</sup></b>
lid with bio-containment <sup>5)</sup> Cat. No. 5093										
<b>carrier</b> Cat. No. 5092										
<b>Cat. No.</b>	<b>5129<sup>4)</sup></b>	<b>5122</b>	<b>5123</b>	<b>5121</b>	<b>5134</b>	<b>5122</b>	<b>5135</b>	<b>5136</b>	<b>6319</b>	
boring Ø x L in mm	17x85	25.5x82	30x85	17.5x82	26x73	25.5x82	30x99	17.5x60.7	66x103	
tubes per rotor	28	16	8	28	12	16	8	32	4	
max. RCF <sup>2)</sup>	3,095	2,898	3,095	3,005	2,826	2,898	3,023	2,952	3,095	
radius in mm	173	162	173	168	158	162	169	165	173	
run-up in sec	24									
run-down in sec, braked	17									
temperature in °C <sup>1)</sup>	-8									

<sup>4)</sup> Please remove the inserts.

<sup>5)</sup> Tested by the TÜV in conformity with DIN EN 61010, section 2-020.

<sup>23)</sup> Please ask for our detailed cyto brochure.

<sup>28)</sup> At temperatures of over + 40 °C and / or when not filled to capacity, bottles may warp during centrifugation.