

# CENTRIFUGES



**BOECO HEMATOCRIT  
CENTRIFUGE HC-240**

## BOECO HEMATOCRIT CENTRIFUGE HC-240

High-speed bench-top centrifuge for hematocrit determinations with brushless frequency drive. At 16.060 g sedimentation is completed in just a little over 6 minutes.

The HC-240 centrifuge includes a segmented hematocrit rotor for 24 capillaries. With the segmented hematocrit rotor every capillary has its own chamber. If a capillary breaks, the fragments stay in this chamber or segment without affecting other capillaries.

The lid of the rotor is evaluation disc and cover in one. The hematocrit value can be read off the lid/evaluation disc right after centrifugation.

### Controls and displays

- ▶ During centrifugation the actual values of the parameters are indicated
- ▶ The centrifuge's speed and running time can be variably adjusted for different applications:
- ▶ Speed display in RPM or RCF
  - RPM input from 200 to 10.000 in steps of 10, starting from 10.000 to the maximum speed in steps of 100
  - RCF input from 200 to 10.000 in steps of 1, starting from 10.000 to the maximum speed in steps of 10
- ▶ Time t/min: 1 - 99 min. in steps of 1 min., Time t/sec: 1-59 sec. in steps of 1 sec., Continuous operation
- ▶ Brake stage, selectable between fast and slow
- ▶ Pulse key: For short centrifugation operations
- ▶ Open lid key

### Safety

- ▶ Lid locking and holding device
- ▶ Emergency lid lock release
- ▶ Lid closure of metal
- ▶ Imbalance switch-off
- ▶ Flexible motor bearings
- ▶ Deep metal rotor chamber (die-cast-aluminium) to securely accomodate the rotor

### Design

- ▶ Smooth plastic housing, easy to clean
- ▶ Metal lid
- ▶ Deep metal rotor chamber

### Technical details

Max. RPM (speed) / RCF: 13,000 rpm / 16,060 RCF  
 Noise level: ≤ 57 dB(A)  
 Dimensions in mm (HxWxD): 228 x 262 x 352  
 Net weight: approx. 10 kg  
 Emission / Immunity : EN / IEC 61326-1, class B / FCC class B



haematocrit rotor with lid as evaluation disc included.

capacity	75 µl
Capillaries	1,5 x 75 mm
Rotor and Lid as evaluation disc incl.	
Cat.-No.	-
capillaries per rotor	24
RCF	16,060
radius in mm	85
run-up in sec	8
run-down in sec <sup>2)</sup>	10

The HC-240 conforms to safety regulations such as IEC 61010, or the CE mark and all relevant EC standards and DIN norms and has been manufactured under ISO 9001:2008

### Code

Code	Description
BOE 01801-13	BOECO centrifuge HC-240, 208-240V, 50/60 Hz, with hematocrit rotor and lid as evaluation disc
BOE 01801-12	BOECO centrifuge HC-240, 100-127V, 50/60 Hz, with hematocrit rotor and lid as evaluation disc

## BOECO CENTRIFUGE SC-8

Practical and handy the SC-8 is the ideal centrifuge for small sample volumens. It is supplied with a 8-place angle steel rotor, which accomodates various tube systems as well as 15 ml glass tubes without adapters. The centrifuge is microprocessor controlled.

### Controls and displays

- ▶ During centrifugation the actual values of the parameters are indicated
- ▶ The centrifuge's speed and running time can be variably adjusted for different applications:
- ▶ Speed display in RPM or RCF
  - RPM input from 200 to the maximum speed in steps of 10 RCF input from 200 to the maximum speed in steps of 1
- ▶ Time t/min: 1 - 99 min. in steps of 1 min., Time t/sec: 1-59 sec. in steps of 1 sec., Continuous operation
- ▶ Brake stage, selectable between fast and slow
- ▶ Pulse key: For short centrifugation operations
- ▶ Open lid key

### Safety

- ▶ Lid locking and holding device
- ▶ Emergency lid lock release
- ▶ Lid closure of metal
- ▶ Imbalance switch-off
- ▶ Flexible motor bearings
- ▶ Deep metal rotor chamber (die-cast-aluminium) to securely accomodate the rotor

### Design

- ▶ Smooth plastic housing, easy to clean
- ▶ Metal lid
- ▶ Deep metal rotor chamber

The SC-8 conforms to safety regulations such as IEC 61010, or the CE mark and all relevant EC standards and DIN norms and has been manufactured under ISO 9001:2008

### Technical details

Max RPM (speed) / RCF: 6,000 rpm / 3,421 RCF  
 Noise level: ≤ 50 dB(A)  
 Dimensions in mm (HxWxD): 228 x 262 x 352  
 Net weight: approx. 9 kg  
 Emission / Immunity: EN / IEC 61326-1, class B / FCC class B

### Code

Code	Description
BOE 01800-13	BOECO centrifuge SC-8, 208-240 V, 50/60 Hz, complete with 8-place angle rotor
BOE 01800-12	BOECO centrifuge SC-8, 100-127 V, 50/60 Hz, complete with 8-place angle rotor

capacity in ml	4	5	7	15	15	blood collection / urine tubes		
	dimensions Ø x L mm	10 x 88	12/13 x 75	13 x 100	17 x 100	17 x 120	max 17 x 100	
n=6,000 min <sup>-1</sup> Rotor included								
Cat.-No.	06305	01054-A	01058	-	-	-	-	-
tubes per rotor	8	8	8	8	4	8		
RCF	2,817	2,697	3,461	3,461			3,461	
radius in mm	70	67	86	86			99	
run-up in sec					26			
run-down in sec <sup>2)</sup>					37			



**BOECO CENTRIFUGE SC-8**

## BOECO CENTRIFUGE SC-6

The BOECO SC-6 is a small centrifuge with a swing-out rotor especially designed for use in clinical laboratories and 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 rpm<sup>-1</sup>.



BOECO CENTRIFUGE SC-6



The BOECO SC-6 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.

### Controls and displays

- ▶ During centrifugation the actual values of the parameters are indicated
- ▶ The centrifuge's speed and running time can be variably adjusted for different applications.
- ▶ Speed display in RPM x 100, input in steps of 100
- ▶ Time t/min: 1 - 99 min, continuous operation
- ▶ Pulse key: For short centrifugation operations
- ▶ Open lid key

### Safety

- ▶ Lid locking and holding device
- ▶ Centrifuge chamber of stainless steel
- ▶ Emergency lid lock release
- ▶ Lid closure of metal
- ▶ Imbalance switch-off
- ▶ Flexible motor bearings

### Design

- ▶ Smooth plastic housing, easy to clean
- ▶ Metal lid
- ▶ Stainless steel centrifuging chamber, deep-drawn and seamless

The SC-6 conforms to safety regulations such as IEC 61010, or the CE mark and all relevant EC standards and DIN norms and has been manufactured under ISO 9001:2008

### Technical details

Max RPM (speed) / RCF:	4,000 rpm / 2,254 RCF
Noise level:	≤ 50 dB(A)
Dimensions in mm (HxDxW):	239 x 326 x 389
Net weight:	approx 13 kg
Emission / Immunity:	EN / IEC 61326-1, class B / FCC class B

### Code Description

BOE 02300-13	BOECO centrifuge SC-6, 200-240V, 50/60 Hz, complete with 6-place swing-out rotor and carriers 02331 and 02333 (6 of each)
BOE 02300-12	BOECO centrifuge SC-6, 100-127V, 50/60 Hz, complete with 6-place swing-out rotor and carriers 02331 and 02333 (6 of each)

capacity in ml	4	5	6	1,6-7	4-7	8,5-10	15	blood collection / urine tubes
dimensions Ø x L mm	10 x 88	12x75	13x82	13/16x75	13x100	16x100	17x100	max 17 x 100
n=4,000 min <sup>-1</sup> Rotor and carriers included								
Cat.-No.	02331	02333	02333	02333	02331	02331	02331	02331
tubes per rotor	6	6	6	6	6	6	6	6
RCF	2,254	1,807	1,807	1,807	2,254	2,254	2,254	2,254
radius in mm	126	101	101	101	126	126	126	126
run-up in sec					10			
run-down in sec <sup>2)</sup>						21		

## BOECO CENTRIFUGE C-28A

The non-refrigerated microprocessor-controlled C-28A is the ideal bench-top centrifuge for performing daily routine tasks in doctors' laboratories and small hospitals. But because of the wide range of accessories the C-28A can also be used for sample preparation in research and industrial laboratories.

The centrifuge has a brushless frequency drive (no carbon brushes). A special locking device allows effortless opening and closing of the lid with just one hand.



BOECO CENTRIFUGE C-28A

### Controls and displays

- ▶ During centrifugation the actual values of the parameters are indicated
- ▶ Entry of the running parameters via foil keypad
- ▶ Speed display in RPM x 100, input in steps of 100
- ▶ Time t/min: 1 - 99 min, continuous operation
- ▶ Impulse key: For short centrifugation operations

### Safety

- ▶ Housing and lid of metal finished in a scratch and impact resistant coating
- ▶ Centrifuge chamber of stainless steel
- ▶ Lid locking and holding device
- ▶ See-through glass in the lid
- ▶ Emergency lid lock release
- ▶ Imbalance switch-off
- ▶ Easily exchangeable rotors
- ▶ Automatic rotor recognition

The C-28A conforms to safety regulations such as IEC 61010 or the CE mark and all relevant EC standards and DIN norms and has been manufactured under ISO 9001:2008

### Technical details

Max. RPM (speed) / RCF:	6,000 rpm / 4,226 RCF
Noise level:	< 58 dB(A) (dependent on rotor)
Dimensions in mm:	257 (H) x 366 (W) x 430 (D)
Net weight:	approx. 23 kg
Emission / Immunity:	EN / IEC 61326-1 class B, FCC class B

### Code Description

BOE 01206-13	BOECO centrifuge C-28A, 208-240 V, 50-60 Hz, without rotor
BOE 01206-12	BOECO centrifuge C-28A, 100-127 V, 50-60 Hz, without rotor

capacity in ml	5	4-7	15	15	50	12	50	50
dimensions Ø x L mm	12 x 75	13 x 100	17 x 100	17 x 120	29 x 115	17 x 100	29 x 115	29 x 107
+ 01054A								
Cat.-No.	01467	01467	01467	01467	01468	01467	01468	01468
tubes per rotor	32	32	32	32	8	32	8	8
RCF	2,182	2,612	2,540	2,594	2,486	2,540	2,486	2,486
radius in mm	122	146	142	145	139	142	139	139
run-up in sec					30			
run-down in sec <sup>2)</sup>					31			



ROTOR 01418 WITH  
01467

**Swing-out rotor, 4-place,**  
01624, illustrated with  
carriers 01369  
 $n=4,000 \text{ min}^{-1}$ ,  
max RCF 2,665,  
max. cap. 4 x 100 ml.



**Swing-out rotor, 4-place,**  
01624 illustrated with  
carriers 01481 and lids  
01492 with bio-  
containment

Please take care  
not to exceed the  
tubes' max.  
permissible RCF!

2) braked  
run-down



**Swing-out rotor, 4-place 01324,**  
illustrated with carrier 01398 and  
adapter 01483A  
 $n=4,000 \text{ min}^{-1}$ , max RCF 2,522



**Swing-out rotor, 4-place 01324,**  
illustrated with carrier 01490 and  
lids 01492  
 $n=4,000 \text{ min}^{-1}$ , max RCF 2,630  
for max. 4 x 100 ml

capacity ml	1.5/2.0	1	3/4	5	6/7	9/15	25	50	100	10	30	50	85	15	50	12	25	30	50	
dimensions Ø x L mm	11 x 38	6 x 45 mmesu	10x60/88	13x75	13x82/100	14/17x100	24 x 100	34 x 100	44 x 100	16x80/100	26x95	29x107	38x106	17x120	29x115	17x100	25x110	29x115		
lid No. 01492 biocontainment <sup>2)</sup>																				
Carrier Cat.-No. 01490																				
Cat.-No.	01351	01339	01343	01383	01383	01329	01330	01331	00761	01348	04417	04416	01396	01356	01347	01384	06311	01363	01365	06318
tubes per rotor	20	108	36	20	20	16	4	4	4	16	4	4	4	12						
RCF	2,415	2,558	2,594	2,522	2,522	2,504	2,397	2,379	2,522	2,486	2,415	2,594	2,576		2,630		2,308		2,630	
radius in mm	135	143	145	141	141	140	134	133	141	139	135	145	144		147		132		150	
run-up in sec																	27			
run-down in sec. <sup>2)</sup>																	30			

capacity in ml	5	9	9	15	15	1,6 - 7	20	25	45	50
dimensions Ø x L mm	12/13x75	14 x 100	14 x 100	17 x 100	17 x 100	12/13x75 16 x 75	21 x 100	24 x 100	31 x 100	34 x 100
n=4,000 min <sup>-1</sup> rotor Cat.-No. 01624										
Cat.-No.	01372	01370	01741	01369	01742	01742	01346	01745	01345	01746
tubes per rotor	68	20	40	16	28	28	8	8	4	4
RCF	2,164	2,308	2,415	2,308	2,415	2,325	2,361	2,415	2,361	2,415
radius in mm	121	129	135	129	137	130	132	137	132	137
run-up in sec							22			
run-down in sec. <sup>2)</sup>							25			



**Swing-out rotor, 8-place,**  
 $n=4,000 \text{ min}^{-1}$ , RCF 2,415,  
for 8 x 15 ml,  
stainless steel,  
with suspensions No. 01644,  
PA, fibreglass  
reinforced.

capacity in ml	5	10	10	15
dimensions Ø x L mm	12/13x75	17 x 70	13 x 100	17 x 100
n=4,000 min <sup>-1</sup> Cat.-No. 01611				
Cat.-No.	01131	01132	01643	01644
tubes per rotor	8	8	8	8
RCF		1,914		2,415
radius in mm		107		135
run-up in sec			22	
run-down in sec. <sup>2)</sup>			25	



**Swing-out rotor, 12-place,**  
 $n=4,000 \text{ min}^{-1}$ , RCF  
2,680,  
for 12 x 15 ml, stainless  
steel, with suspensions No.  
01621, PA, fibreglass  
reinforced.

capacity in ml	5	10	15	
dimensions Ø x L mm	12/13 x 75	17 x 70	17 x 100	
n=5,000 min <sup>-1</sup> Cat.-No. 01628				
Cat.-No.	01127	01122	01621	
tubes per rotor	12	12	12	
RCF	2,236	2,254	2,683	
radius in mm	125	126	150	
run-up in sec		22		
run-down in sec. <sup>2)</sup>		25		

capacity in ml	1	3	5/6/7	4-10	9/15	25	30	50	50	85	100	15	50	15	50	1,6 - 7	4 - 10
dimensions Ø x L mm	6x45 mhesu	10 x 60	12x75-100	16x75/100	14/17x100	24 x 100	26 x 95	29 x 107	34 x 100	38 x 106	44 x 100	17 x 120	29 x 115	13x75/100	16x75/100		
lid with bio-containment 01492																	
Carrier Cat.-No. 01481																	
Cat.-No.	01339	01343	01383	01348	01329	01330	04417	04416	01331	01396	00761	01347	01384	01383	01348		
tubes per rotor	108	36	20	16	16	4	4	4	4	4	4	4	4	20	16		
RCF	2,594	2,630	2,558	2,522	2,540	2,433	2,451	2,630	2,415	2,612	2,558	2,665	2,558	2,522			
radius in mm	145	147	143	141	142	136	137	147	135	146	143	149	143	141			
run-up in sec												22					
run-down in sec. <sup>2)</sup>												25					



**BOECO MINI  
CENTRIFUGE M-6**

### BOECO MINI CENTRIFUGE M-6

This Mini-centrifuge is ideal for quick spin downs for Micro and PCR tubes and PCR strip. The M-6 is supplied with a 6 x 1,5/2,0ml angle rotor, a 2 x 8x0,2ml strip rotor and a slide rotor. Operation of the centrifuge begins when the lid is closed. When opening the lid the rotor automatically decelerates and comes to a stop. A rubber footplate keeps the unit stable and avoids vibration. The M-6 is CE marked and has been manufactured under ISO 9001

#### Technical details

Max. RPM (speed) / RCF:	6.000 rpm / 2000 x g
Noise level:	50 dB(A)
Power:	120V to 240V, 50/60Hz
Dimensions in mm:	175 (D) x 148 (W) x 118 (H)
Net weight:	approx 1,1 kg

#### Code Description

BOE 8074000	BOECO Mini Centrifuge M-6, EU Plug
BOE 8074100	BOECO Mini Centrifuge M-6, US Plug
BOE 8074200	BOECO Mini Centrifuge M-6, UK Plug



**BOECO CENTRIFUGE MICROSPIN 12**

### BOECO CENTRIFUGE MICROSPIN 12

is a compact bench-top microliter centrifuge for medical and biological research, molecular diagnostics, biochemistry, immunology and cell technologies. It can be used for extracting RNA/DNA samples, separation of cell suspensions and other micro quantitative analysis.

The microprocessor control provides precise control of the set parameters and a user-friendly interface allows a easy entry of parameters.

The brushless motor provides quite, vibration free performance, even at high speeds and a long product service life.

The angle rotor is made out of aluminium.

Due to the low voltage external power supply, the Microspin 12 can be used in cold rooms.

#### Controls and displays

- ▶ During centrifugation the actual values of the parameters are indicated
- ▶ Entry of the running parameters via foil keypad
- ▶ Speed display in RPM x 100, increment 100 rpm
- ▶ Time t/min: 1 - 30 min, increment 1 min
- ▶ Open lid key

#### Safety

- ▶ Lid locking and holding device
- ▶ Emergency lid lock release
- ▶ Metal protective inserts and enclosures inside the body
- ▶ See-through glass in the lid
- ▶ Imbalance switch-off

The Microspin 12 conforms to safety regulations such as EN 61326, EN 61010 or the CE mark and all relevant EC standards and DIN norms and has been manufactured under ISO 9001:2000

#### Technical details

Max. RPM (speed) / RCF:	14,500 rpm / 12,400 x g
Noise level:	≤ 62 dB(A)
Power (external):	AC 100-240V, 60W/DC24V, 2.5A
Dimensions in mm:	200 (D) x 240 (W) x 125 (H)
Net weight:	approx. 3,5 kg

#### Code Description

BOE 8075000	BOECO Micro centrifuge Microspin 12, 100-240V, 50/60 Hz, with angle rotor for 12 x 1,5/2,0 ml tubes and each 12 adapters for 0,2 and 0,5 ml tubes
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### BOECO CENTRIFUGE MC-24

Powerful, space-saving, low-noise, reliable and microprocessor-controlled microlitre centrifuge with brushless frequency drive.

Available Q1/2015 !



**BOECO CENTRIFUGE MC-24**

THE IMAGE SHOWS A WRONG DISPLAY,  
THE ACTUAL DISPLAY WILL BE LIKE THE  
DISPLAY FROM MODELS HC-240 / SC-8

#### Controls and displays

- ▶ During centrifugation the actual values of the parameters are indicated
- ▶ Entry of the running parameters via foil keypad
- ▶ Speed display in RPM or RCF
- ▶ RPM input from 200 to 10.000 in steps of 10, starting from 10.000 to the maximum speed in steps of 100
- ▶ RCF input from 200 to 10.000 in steps of 1, starting from 10.000 to the maximum speed in steps of 10
- ▶ Time t/min: 1 - 99 min. in steps of 1min.,
- ▶ Time t/sec: 1-59 sec. in steps of 1 sec.,
- ▶ Continuous operation
- ▶ Brake stage, selectable between fast and slow
- ▶ Pulse key: For short centrifugation operations
- ▶ Open lid key

#### Safety

- ▶ Lid locking and holding device
- ▶ Emergency lid lock release
- ▶ Motor overheating protection
- ▶ Imbalance switch-off
- ▶ Deep metal rotor chamber (die-cast-aluminium) to securely accomodate the rotor

The MC-24 conforms to safety regulations such as IEC 61010 or the CE mark and all relevant EC standards and DIN norms and has been manufactured under ISO 9001:2008

#### Technical details

Max. RPM (speed) / RCF:	13,300 rpm / 17,008 RCF
Noise level:	≤ 58 dB(A)
Emission / Immunity:	EN / IEC 61326-1 class B / FCC class B
Dimensions in mm:	228 (H) x 262 (W) x 352 (D)
Net weight:	approx. 11 kg

#### Code Description

BOE 01203-13	BOECO centrifuge MC-24, 208-240 V, 50-60 Hz, without rotor
BOE 01203-12	BOECO centrifuge MC-24, 100-127 V, 50-60 Hz, without rotor

capacity in ml	1.5	0.5/0.8	0,2 /0.4	2.0
dimensions Ø x L mm	11x38	8x30/45	6x18/45	11x38
Angle rotor, 12-place				
Cat.-No. 01252	n=13,300 min <sup>-1</sup>	02023	02024	-
tubes per rotor	12			
RCF	14.041			
radius in mm	71			
run-up in sec.	15			
run-down in sec. <sup>2)</sup>	16			

capacity in ml	1.5	0.5/0.8	0,2 /0.4	2.0
dimensions Ø x L mm	11x38	8x30/45	6x18/45	11x38
Angle rotor, 18-place				
Cat.-No. 01258	n=13,300 min <sup>-1</sup>	02023	02024	-
tubes per rotor	18			
RCF	15.030			
radius in mm	76			
run-up in sec.	15			
run-down in sec. <sup>2)</sup>	16			



capacity in ml	1.5	0.5/0.8	0,2 /0.4	2.0	1.5	2.0
dimensions Ø x L mm	11x38	8x30/45	6x18/45	11x38	mico spin columns	11x38
Angle rotor, 18-place						
Cat.-No. 01213	n=13,300 min <sup>-1</sup>	02023	02024	-	with high speeds we recommend to use adapter No. 02031	
tubes per rotor	18					
RCF	15.030					
radius in mm	76					
run-up in sec.	15					
run-down in sec. <sup>2)</sup>	16					

The special raised rim of the rotor 01213 enables centrifugation with open tube lids.

## BOECO CENTRIFUGES M-240 / M-240R

The M-240 and M-240R rank among the fastest centrifuges in their class – with a maximum speed of 15,000 rpm and an RCF of 21,382. Not only are they fast, the M-240R also refrigerates quickly: to +4°C with the Fast Cool function in 10 to 15 minutes. Even thermosensitive samples can be gently centrifuged thanks to highly reliable refrigeration. Best separation results are guaranteed with the smooth-running, high-performance motor featuring a maintenance-free frequency drive. With the optional autoclavable and aerosol-tight accessories, even infectious materials can be processed safely for both the user and the environment.

### User-Friendliness

- ▶ Automatic lid locking
- ▶ Quick-entry foil keypad
- ▶ Easy-to-read, digital display
- ▶ Display of current parameter values
- ▶ Select key for parameter selection
- ▶ Impulse key for short centrifuging
- ▶ Open lid key
- ▶ RCF key
- ▶ Twist knob to enter values
- ▶ RPM in increments of 10
- ▶ Running time in minutes, max. 99 min
- ▶ Temperature in increments of 1°C (M-240R)
- ▶ 4 programmable memories

### Refrigeration (M-240R)

- ▶ Infinitely variable setting from -10 °C to +40 °C
- ▶ Fast Cool function in 10 - 15 min to +4 °C
- ▶ Stand-by mode maintains the set temperature
- ▶ Automatic refrigeration switch-off when the lid is opened

### Safety

- ▶ Lid dropping protection
- ▶ Lid locking and holding
- ▶ Emergency lid lock release
- ▶ Motor overheating protection
- ▶ Chamber overheating protection
- ▶ Imbalance switch-off
- ▶ Standstill indication  
with the refrigerated model M-240R the LED in the Open key lights up with the M-240 the lid opens automatically after the rotor has come to a standstill

The M-240 / M-240R conform to safety regulations such as IEC 61010, all relevant EC standards and DIN norms and have been manufactured under ISO 9001:2008

### Technical details

	<b>M-240</b>	<b>M-240R</b>
Max. RPM (speed) / RCF:	15,000 RPM / 21,382 RCF	
Noise level: (dependent on rotor)	≤ 59 dB (A)	≤ 52 dB(A)
Dimensions in mm (HxWxD):	260 x 275 x 344	260 x 281 x 533
Net weight:	approx 11,5 kg	28 kg
Emission / Immunity:	EN / IEC 61326-1 / class B / FCC class B	

### Code Description

BOE 02400-13	BOECO centrifuge M-240, 200-240 V, 50-60 Hz, without rotor
BOE 02400-12	BOECO centrifuge M-240, 100-127 V, 50-60 Hz, without rotor
BOE 02405-13	BOECO refrigerated centrifuge M-240R, 200-240 V, 50 Hz, without rotor
BOE 02405-12	BOECO refrigerated centrifuge M-240R, 100-127 V, 50-60 Hz, without rotor



BOECO CENTRIFUGE M-240



BOECO CENTRIFUGE M-240R

## Rotors for M-240 and M-240 R



Angle rotor, 24-place

Cat. No. 02424B

n= 15,000 min<sup>-1</sup>,

max RCF 21,382

Lid 0E3243 incl.

capacity in ml	1.5	0.5/0.8	0.2 /0.4	2.0
dimensions Ø x L mm	11x38	8x30/45	6x18/45	11x38
with high speeds we recommend to use adapter No. 02031				
n=15,000 min <sup>-1</sup>				
Cat.-No.	02424B	02023	02024	—
tubes per rotor	24			
RCF	21,382			
radius in mm	85			
run-up in sec.	20			
run-down in sec. <sup>2)</sup>	28			
temperature °C <sup>3)</sup>	+4			



Angle rotor, 30-place,

Cat. No. 02430B

n= 15,000 min<sup>-1</sup>

max RCF 20,376

Lid 0E3243 incl.

capacity in ml	0,5
dimensions Ø x L mm	8 x 30
with high speeds we recommend to use adapter No. 02031	
n=15,000 min <sup>-1</sup>	
Cat.-No.	02430B
tubes per rotor	30
RCF	20,376
radius in mm	81
run-up in sec.	19
run-down in sec. <sup>2)</sup>	28
temperature °C <sup>3)</sup>	+4



Angle rotor, 24-place

Cat. No. 02428

n= 15,000 min<sup>-1</sup>,

max RCF 21,382

Lid with bio-containment,  
autoclavable, phenol-re-  
sistant incl.

capacity in ml	1.5	0.5/0.8	0.2 /0.4	2.0	1.5	2.0
dimensions Ø x L mm	11x38	8x30/45	6x18/45	11x38	micro spin columns	11x38
with high speeds we recommend to use adapter No. 02031					with high speeds we recommend to use adapter No. 02031	
n=15,000 min <sup>-1</sup>						
Cat.-No.	02428	02023	02024	—	—	—
tubes per rotor	24					
RCF	21,382					
radius in mm	85					
run-up in sec.	20					
run-down in sec. <sup>2)</sup>	28					
temperature °C <sup>3)</sup>	+4					



Angle rotor, 30-place,

Cat. No. 02427A

n= 15,000 min<sup>-1</sup>,

max RCF 20,627

Lid 0E3243 incl.

capacity in ml	1.5	0.5/0.8	0.2 /0.4	2.0
dimensions Ø x L mm	11x38	8x30/45	6x18/45	11x38
with high speeds we recommend to use adapter No. 02031				
n=15,000 min <sup>-1</sup>				
Cat.-No.	02427A	02023	02024	—
tubes per rotor	30			
RCF	20,627			
radius in mm	82			
run-up in sec.	22			
run-down in sec. <sup>2)</sup>	30			
temperature °C <sup>3)</sup>	+4			



Angle rotor, 32-place, 4x 8  
for PCR tubes and strips

Cat. No. 02418A

n= 15,000 min<sup>-1</sup>

max RCF 14,338

Optional Lid 0E3423

capacity in ml	0,2
dimensions Ø x L mm	6 x 18
with high speeds we recommend to use adapter No. 02031	
n=15,000 min <sup>-1</sup>	
Cat.-No.	02418A
tubes per rotor	32
RCF	14,338
radius in mm	57
run-up in sec.	19
run-down in sec. <sup>2)</sup>	28
temperature °C <sup>3)</sup>	+4



Angle rotor, 20-place  
for cryo tubes

Cat. No. 02426B

n= 15,000 min<sup>-1</sup>

max RCF 21,

## BOECO CENTRIFUGES U-320 / U-320R

Because of their comprehensive range of accessories, the U-320 and U-320R centrifuges are the perfect universal centrifuges for routines in basic research and R&D laboratories of the pharmaceutical and biotechnical industry. The microprocessor controlled centrifuges have a brushless frequency drive (no carbon brushes) and a motorized lid locking.

### Performance

- ▶ High RCF
- ▶ Extremely short run-up and run-down times

### Design

- ▶ Metal housing, metal lid
- ▶ Stainless steel centrifuging chamber
- ▶ Viewing port in the lid

### Refrigeration (U-320R)

- ▶ Infinitely variable setting from -20 °C to +40 °C
- ▶ Fast cool function

### User-Friendliness

- ▶ Automatic lid locking
- ▶ Emergency lid-lock release
- ▶ Easily exchangeable rotors
- ▶ 10 programmable memories
- ▶ 9 acceleration and braking ramps, or unbroken run down time

### Safety

- ▶ Lid locking and holding during rotor run
- ▶ Emergency lid lock release
- ▶ Motor overheating protection
- ▶ Chamber overheating protection (with U-320R)
- ▶ Imbalance switch-off
- ▶ Automatic rotor recognition
- ▶ Lid dropping protection

### Controls and displays

- ▶ During centrifugation the actual values of the parameters are indicated
- ▶ Change-over RPM/RCF: by entering the rotor radius r/mm the Centrifuge will calculate/indicate speed or RCF.
- ▶ Time preselection in steps of minutes and seconds / continuous operation
- ▶ Temperature T/°C: Input in increments of 1°C
- ▶ Impulse key: For short centrifugation operations

The U-320 / U-320R conform to safety regulations such as IEC 61010 or the CE mark and all relevant EC standards and DIN norms and have been manufactured under ISO 9001:2008

### Technical details

#### U-320                  U-320 R

Max RPM (speed) / RCF:	15,000 RPM / 21,382 RCF
Noise level:	≤ 68 dB (A)                  ≤ 58 dB(A)
(dependent on rotor)	
Dimensions in mm (HxWxD):	346 x 395 x 520                  346 x 401 x 695
Net weight:	approx 31 kg                  53 kg
Emission / Immunity:	EN IIEC 61326-1, class B / FCC CClass B

### Code                  Description

BOE 01401-13	BOECO centrifuge U-320, 200-240 V, 50-60 Hz, without rotor
BOE 01401-12	BOECO centrifuge U-320, 100-127 V, 50-60 Hz, without rotor
BOE 01406-13	BOECO refrigerated centrifuge U-320R, 200-240 V, 50 Hz / 240 V, 60 Hz, without rotor
BOE 01406-12	BOECO refrigerated centrifuge U-320R, 115-127 V, 60 Hz, without rotor



BOECO CENTRIFUGE U-320



BOECO CENTRIFUGE U-320R



Swing-out rotor, 4-place,  
n= 4,000 min-1,  
RCF 2,665,  
for max. 4 x 100 ml

capacity in ml	5	9	9	15	1,6 - 7	15	20	25	45	50
dimensions Ø x L mm	12/13x75	14 x 100	14 x 100	17 x 100	12/13x75 16 x 75	17 x 100	21 x 100	24 x 100	31 x 100	34 x 100
n=4,000 min <sup>-1</sup>										
Cat.-No. 01624										
Cat.-No.	01372	01370	01741	01369	01742	01742	01346	01745	01345	01746
tubes per rotor	68	20	40	16	28	28	8	8	4	4
RCF	2,164	2,308	2,415	2,308	2,325	2,415	2,361	2,415	2,361	2,415
radius in mm	121	129	135	129	130	137	132	137	132	137
run-up in sec							22			
run-down in sec. <sup>2)</sup>							25			
temperature °C <sup>3)</sup>	- 17	- 15	- 17	- 19	- 15	- 17	- 15	- 17	- 15	- 15

capacity in ml	1	3	5/6/7	4-10	9/15	25	30	50	50	85	100	15	50	1,6 - 7	4 - 10
dimensions Ø x L mm	6x45 Rhesus	10 x 60	12 x 82/100	16x75/100	14/17 x 100	24 x 100	26 x 95	29 x 107	34 x 100	38 x 106	44 x 100	17 x 120	29 x 115	13x75/100	16x75/100
lid 01492															
Cat.-No. 01481															
Cat.-No.	01339	01343	01383	01348	01329	01330	04417	04416	01331	01396	00761	01347	01384	01383	01348
tubes per rotor	108	36	20	16	16	4	4	4	4	4	4	4	4	20	16
RCF	2,594	2,630	2,558	2,522	2,540	2,433	2,451	2,630	2,397	2,612	2,558	2,665	2,558	2,522	
radius in mm	145	147	143	141	142	136	137	147	134	146	143	149	143	141	
run-up in sec												20			
run-down in sec. <sup>2)</sup>												25			
temperature °C <sup>3)</sup>												- 15			



Swing-out rotor, 4-place,  
No 01494,  
n= 5,000 min-1,  
max. RCF 4,193,  
illustrated with buckets  
01427

capacity ml	1.5/2.0	1	3	5	6	7	9	15	25	50	15	25	30	50
dimensions Ø x L mm	11 x 38	6 x 45 Rhesus	10 x 60	13 x 75	12 x 82	12 x 100	14 x 100	17 x 100	24 x 100	34 x 100	17 x 120	25 x 90	25 x 110	29 x 115
lid Cat.-No. 01421														
Cat.-No. 01427														
Cat.-No.	05277	01357	01327	01732	05229	05230	05237	05231	05232	05233	05275	01731	05272	05276
tubes per rotor	36	120	48	32	48	48	24	24	8	4	4	8	4	4
RCF	4,109	4,081	4,053	4,025	4,053			3,941			4,165	3,969	4,025	4,053
radius in mm	147	146	145	144	145			141			149	142	144	145
run-up in sec											30			
run-down in sec. <sup>2)</sup>											32			
temperature °C <sup>3)</sup>											- 7			

2) When using these tubes, bucket 01427 cannot be closed with lid 01421



Swing-out rotor, 4-place,  
No 01494,  
n= 5,000 min-1,  
max. RCF 4,193,  
illustrated with buckets 01425

capacity ml	1.5/2.0	1	3	2,6-7	5/6/7	9/15	25	50	100	15	50	50	4 - 10
dimensions Ø x L mm	11 x 38	6 x 45 Rhesus	10 x 60	11x100	12x75-100	14/17x100							

capacity ml	1.5/2.0	1	3	5	6/7	9/15	25	50	100	10	30	50	85	15	50	12	25	30	50
dimensions Ø x L mm	11 x 38	6 x 45 rhesus	10x60	13x75	13x82/100	14/17x100	24 x 100	34 x 100	44 x 100	16x80/100	26x95	29x107	38x106	17x120	29x115	17x100	25x90	25x110	29x115
lid No. 01492 biocontainment <sup>3)</sup>																			
Carrier Cat.-No. 01495																			
Cat.-No.	01351	01339	01343	01383	01383	01329	01330	01331	00761	01348	04417	04416	01396	01347	01384	06311	01363	01365	06318
tubes per rotor	20	108	36	20	20	16	4	4	4	16	4	4	4				4		
RCF	3,857	4,081	4,137	4,025	4,025	3,997	3,829	3,801	4,025	4,025	3,857	4,137	4,109		4,193	3,689	4,193		
radius in mm	138	146	148	144	144	143	137	136	144	144	138	148	147		150	132	150		
run-up in sec														30					
run-down in sec. <sup>2)</sup>														32					
temperature °C <sup>1)</sup>														-10					



Swing-out rotor, 8-place,  
01324 illustrated with  
suspension 01398 and  
adapter 01483  
 $n = 4,500 \text{ min}^{-1}$ ,  
max RCF 3,260,



Swing-out rotor, 4-place  
01324, illustrated with  
carrier 01490 and lids  
01492  
 $n = 4,500 \text{ min}^{-1}$ ,  
max. RCF 3,328  
for max. 4 x 100 ml

capacity ml	9	15	2,6-2,9	4-5,5	9-10	10	4-7	15	50	12	50
dimensions Ø x L mm	14x100	17x100	13x65	15x75	16-92	15-102	16 x 75	17x120	29x115	17x100	29x115
Carrier Cat.-No. 01398											
Cat.-No.	01482	01482	01482	01482	01483A	01484	01482	01484			
tubes per rotor					16			16	4	16	4
RCF					3,192			3,305	3,260	3,192	
radius in mm					141			46	144	141	144
run-up in sec					27						
run-down in sec. <sup>2)</sup>					30						
temperature °C <sup>1)</sup>					-6						

capacity ml	1.5/2.0	1	3/4	5	6/7	9/15	25	50	100	10	30	50	85	15	50	12	25	30	50	
dimensions Ø x L mm	11 x 38	6 x 45 rhesus	10x60/88	13x75	13x82/100	14/17x100	24 x 100	34 x 100	44 x 100	16x80/100	26x95	29x107	38x106	17x120	29x115	17x100	25x90	25x110	29x115	
lid No. 01492 biocontainment <sup>3)</sup>																				
Carrier Cat.-No. 01490																				
Cat.-No.	01351	01339	01343	01383	01383	01329	01330	01331	00761	01348	04417	04416	01396	01356	01347	01384	06311	01363	01365	06318
tubes per rotor	20	108	36	20	20	16	4	4	4	16	4	4	4	12		4				
RCF	3,056	3,237	3,283	3,192	3,192	3,170	3,034	3,011	3,192	3,147	3,056	3,283	4,260		3,328	2,920	3,328			
radius in mm	135	143	145	141	141	140	134	133	141	139	135	145	144		147	129	147			
run-up in sec														27						
run-down in sec. <sup>2)</sup>														30						
temperature °C <sup>1)</sup>														-6						



Swing-out rotor, 8-place,  
 $n = 4,000 \text{ min}^{-1}$ , RCF 2,415,  
for 8 x 15 ml,  
stainless steel,  
with suspensions No.  
01644, PA, fibreglass  
reinforced.

capacity ml	5	10	10	15
dimensions Ø x L mm	12/13x75	17 x 70	13 x 100	17 x 100
n=4,000 min <sup>-1</sup>				
Cat.-No.	01131	01132	01643	01644
tubes per rotor	8	8	8	8
RCF	1,914		2,415	
radius in mm	107		135	
run-up in sec		20		
run-down in sec. <sup>2)</sup>		22		
temperature °C <sup>1)</sup>		-16		



Swing-out rotor, 12-place,  
 $n = 5,000 \text{ min}^{-1}$ ,  
RCF 4,193,  
for 12 x 15 ml, stainless  
steel, with suspensions  
No. 01621, PA, fibreglass  
reinforced.

capacity ml	5	10	15
dimensions Ø x L mm	12/13 x 75	17 x 70	17 x 100
n=5,000 min <sup>-1</sup>			
Cat.-No.	01127	01122	01621
tubes per rotor	12	12	12
RCF	3,494	3,522	4,193
radius in mm	125	126	150
run-up in sec		16	
run-down in sec. <sup>2)</sup>		16	
temperature °C <sup>1)</sup>		-15	-10



Swing-out rotor, 8-place,  
 $n = 5,000 \text{ min}^{-1}$ ,  
RCF 3,875,  
for 8 x 50/15 ml,  
stainless steel, with  
suspensions, aluminium.

capacity in ml	15	50



<

90°



**Swing-out rotor,  
2-place, n=4,000 min<sup>-1</sup>,  
RCF 2,218,  
for microtitre plates,  
aluminium, coated,  
with suspensions No.  
01453A, stainless steel.**

 n=4,000 min <sup>-1</sup> Rotor Cat.-No. 01460	microtitre plate	culture plate	deep well plate	MS	QP	Microtest plate (Terasaki)	PCR plate 96 wells	PCR strips 0,2 ml
01453A							01453A + 01485	
RCF 2,218							2	24 x 8
radius in mm							124	
run-up in sec							40	
run-down in sec. <sup>2)</sup>							45	
temperature °C <sup>1)</sup>							-6	

90°



**Swing-out rotor,  
4-place,  
n= 4,000 min<sup>-1</sup>, RCF  
1,896,  
for microtitre  
plates, rotor and  
carriers No. 04345 of  
stainless steel.**

 n=4,000 min <sup>-1</sup> Rotor Cat.-No. 01645	microtitre plate	culture plate
Cat.-No.		04345
plates per rotor		4
RCF		1,896
radius in mm		106
run-up in sec		20
run-down in sec. <sup>2)</sup>		19
temperature °C <sup>1)</sup>		- 16



**Angle rotor,  
Cat. No. 01689A  
30-place,  
n= 14,000 min<sup>-1</sup>  
max RCF 21,255**

capacity in ml	1.5	0.5/0.8	0,2 /0.4	2.0
dimensions Ø x L mm	11x38	8x30/45	6x18/45	11x38
 lid with bio-containment incl. n=14,000 min <sup>-1</sup> Cat.-No. 01689A				
with high speeds we recommend to use adapter No. 02031				
Cat.-No.	–	02023	02024	–
tubes per rotor				30
RCF				21,255
radius in mm				97
run-up in sec				35
run-down in sec. <sup>2)</sup>				31
temperature °C <sup>1)</sup>				0



**Angle rotor,  
Cat. No. 01420B  
24-place,  
n= 15,000 min<sup>-1</sup>,  
max RCF 21,382**

capacity in ml	1.5	0.5/0.8	0,2 /0.4	2.0
dimensions Ø x L mm	11x38	8x30/45	6x18/45	11x38
 Lid OE2040 incl. n=15,000 min <sup>-1</sup> Cat.-No. 01420B				
with high speeds we recommend to use adapter No. 02031				
Cat.-No.	–	02023	02024	–
tubes per rotor		24		
		21,382		
radius in mm		85		
run-up in sec		25		
run-down in sec. <sup>2)</sup>		23		
		-4		

Optional for rotor 01420



Lid (Cat. No. 02425 with bio-containment autoclavable)



Lid (Cat. No. 02423 with bio-containment autoclavable, phenol-resistant)



**Cyto rotor, 6-place, aluminium, coated with cyto suspensions, suitable for U-320 and U-320R more information is available in a detailed cyto brochure.**

**1) Lowest attainable temp. in precooled refrigerated centrifuges at max. speed**

**2) Rund down in sec. braked**

Please make sure not to exceed the tubes max. permissible RCF.  
For glass tubes the max RCF is 4.000

## *distillation & filtration & separation & sample preparation*



### CENTRIFUGE - "mini"

- Compact and easy to use personal centrifuge for quick spin downs, micro-filter cell separations, and HPLC samples.
- Durable transparent and UV resistant polycarbonate lid and ABS resin body.
- DC motor accelerates the rotor to the set speed with low vibration and also with a quiet operation less than 50 dB noise level.
- Starts and reaches a maximum speed of 7.000 rpm in seconds.
- Multi voltage design guarantees stable running and high accuracy of speed.
- Featured with a door interlock system for extra safety.
- For user safety electronic brake immediately stops when lid opens.
- Rotor is seated on a tapered shaft which enables tool-free, fast and easy exchange.
- Supplied with two rotors and adapters to accommodate 0,5 ml and 1,5 ml and 2 ml tubes and also PCR tubes.



8 cavity rotor designed for 1,5 & 2.0 ml tubes directly.



16 cavity rotor designed for 0,2 ml PCR tubes which can also hold 2 x 8 PCR strips.



**Easy to start:** Close the lid, the rotor starts and instantly reaches 7.000 rpm.



**Easy to stop:** Open the lid, the electronical brake immediately stops the rotor.



tube adapters of 0,2 ml & 0,5 ml tubes to be used with 8 cavity rotor.

catalogue no	603.01.001
dimensions / weight (mm / kg)	180 x 140 x 117 / 0,5
voltage (V)	100 - 240
frequency (Hz)	50 / 60
maximum speed (rpm)	7000
maximum RCF (xg)	2680
noise level (dB)	< 50
run time	continuous operation
rotor capacity	0,2 / 0,5 / 1,5 / 2,0 ml x 8 0,2 ml x 16 PCR strips 0,2 ml x 2 PCR 8 strips
standard accessories	16 cavity & 8 cavity rotors & adapters

## *distillation & filtration & separation & sample preparation*

### CENTRIFUGE - "mini" - "high speed"

- Ideal centrifuge for fast spins for higher RCF requirement, for PCR protocols, for microfilter cell separations, clinical applications and HPLC protocols.
- Offers memory function up to 10 different programs.
- Featured with an explosion proof and fully enclosed strong inner structure for full safety.
- Brushless DC motor accelerates the rotor to the set speed with low vibration and also with a quiet operation less than 56 dB noise level.
- Air evacuation system ensures free air flow during high speed to prevent samples being over heated.
- User friendly large LCD display enables easy setting and reading of the functional parameters.
- Both RPM and RCF can be set and displayed. The parameters can be modified after the set speed is reached.
- Starts and reaches the maximum speed of 15.000 rpm with max 15.100 RCF in seconds. Speed can be set with an accuracy of +/- 20 rpm.
- Metal casing with low gravity, provides stable and reliable running at maximum speed.
- Timer can be set from 30 seconds to 99 minutes or continuous running. Timer starts once the target speed is reached for more accurate operation time.
- Offers quick spins by pressing and holding the "pulse" key.
- Multi voltage design guarantees stable running and high accuracy of speed.
- Featured with a dual door interlock system for twice safety. Electronic brake immediately stops when lid opens for user safety. Lid is released automatically when the rotor stops.
- Rotor is sealed on a tapered shaft which enables tool-free, fast and easy exchange.
- Supplied with a 12 cavity rotor designed for 1,5&2.0 ml tubes directly and 12 pieces tube adapters of 0,5 ml tube volume.



User friendly large LCD display enables easy setting and reading of the functional parameters. Both RPM and RCF can be set and displayed.



High strength plastic rotor with excellent balance offers a stable operation. 12 cavity rotor designed for 0,5 & 1,5 & 2.0 ml tubes directly.

catalogue no	603.02.001
dimensions / weight (mm / kg)	256 x 225 x 155 / 6,0
voltage (V)	100 - 240
frequency (Hz)	50 / 60
maximum speed (rpm)	15000
maximum RCF (xg)	15100
speed accuracy (rpm)	± 20
noise level (dB)	< 56
run time	timer & continuous operation
rotor capacity	0,5 / 1,5 / 2,0 ml x 12
standard accessories	12 cavity rotors
safety devices	door interlock over speed detection over temperature detection automatic internal diagnosis

## **distillation & filtration & separation & sample preparation**

### **CENTRIFUGE - "micro" - "high speed" - "with & without refrigeration"**



➤ Ideal centrifuge for fast spins for higher RCF requirement, for PCR protocols, for microfilter cell separations, clinical applications and HPLC protocols.

➤ Brushless DC motor accelerates the rotor to the set speed with low vibration and also with a quiet operation less than 58 dB noise level.

➤ User friendly large LCD display enables easy setting and reading of the functional parameters.

➤ Both RPM and RCF can be set and displayed. The parameters can be modified after the set speed is reached.

➤ Starts and reaches a maximum speed of 15.000 rpm with max 21.380 x g RCF in seconds. Speed can be set with an accuracy of +/- 20 rpm.

➤ Metal casing with low gravity, provides stable running at maximum speed. A powerful and efficient cooling system based on multi-flow air cooling principle minimizes rotor heating with a ratio of 10°C per one hour working period.

➤ Timer can be set from 30 seconds to 99 minutes or continuous running. Timer starts once the target speed is reached for more accurate operation time.

➤ Short spin function is used for quick spins by pressing and holding the "pulse" key.

➤ Featured with a dual door interlock system for twice safety. Electronic brake immediately stops when lid opens for user safety. Lid is released automatically when the rotor stops (excluding refrigerated model).

➤ The unique design guarantees stable running and high accuracy of speed.

***Centrifuges are supplied without rotors.  
Rotors should be ordered separately.***

*Rotors are manufactured from military grade aluminum alloy with high mechanical strength for precise running and highest level of safety.*

*Rotors can be fully autoclaved with unlimited service time*

*Unique biosafe rotor/anti-sample overflow system stops sample leakage during centrifugation and prevents microbial contamination.*

*Rubber seals fitted to the rotor guarantees bio-seal condition. The rotor is bio-safe once the tubes are inserted and the lid is closed.*



*24 cavity rotor for 1,5 / 2,0 ml  
for 0,2 ml for 0,5 ml  
catalogue no: 603.03.101*



*4 cavity rotor for 0,2 ml / PCR 8  
catalogue no: 603.03.102*

## *distillation & filtration & separation & sample preparation*

### CENTRIFUGE - "micro" - "high speed" - "with & without refrigeration"



Dual door interlock system for twice safety. Electronic brake for immediate stops when lid opens for user safety.

The lid remains closed after run time in order to keep the chamber temperature stable (refrigerated model).

Automatic release of the lid when the rotor stops to save processing time.



Unique pre-cooling system provides cool-down prior to operation and keeps the chamber at the pre-set temperature.

Just after 7 minutes the powerfull cooling system quickly cools down chamber to 2°C and keeps the samples temperature under 2°C even at maximum speed. Sound alert adds additional safety factor to the precise temperature stability in the chamber.



User friendly large LCD display shows all informations including accumulated running time and last running parameters. Offers full-digit display and easy identification of parameters.

Unique temperature display protects sensitive samples. RPM or G-force can be set and displayed. Parameters can be modified after the set speed is achieved.

<b>catalogue no</b>	<b>603.04.001 (with refrigeration)</b>	<b>603.03.001 (W/O refrigeration)</b>
<b>dimensions / weight (mm / kg)</b>	338x580x324 / 30	280x364x266 / 12
<b>voltage (V)</b>	220	220
<b>frequency (Hz)</b>	50	50
<b>maximum speed (rpm)</b>	15000	15000
<b>maximum RCF (xg)</b>	21380	21380
<b>speed accuracy (rpm)</b>	± 20	± 20
<b>noise level (dB)</b>	< 56	< 58
<b>run time</b>	30 sec. - 99 min. or continuous	30 sec. - 99 min. or continuous
<b>acceleration / braking time (sec)</b>	25 s ↑ 25 s ↓	25 s ↑ 25 s ↓
<b>temperature range</b>	(-20°C) to (+40°C)	N/A
<b>safety devices</b>	dual door interlock over - speed detection over temperature detection automatic internal diagnostic	dual door interlock over - speed detection over temperature detection automatic internal diagnostic
<b>additional features</b>	speed / RCF switch short time run function sound alert function	speed / RCF switch short time run function sound alert function

## *distillation & filtration & separation & sample preparation*



### CENTRIFUGE - "clinical"

- Ideal centrifuge for fast separation of serum, plasma, urea, blood samples and other routine applications in medical, research and chemical laboratories.
- Explosion proof and marked as CE, cTUVus, and FCC. MCA test according to IEC/EN61010-2-20.
- Brushless DC motor accelerates the rotor to the set speed with low vibration and also with a quiet operation less than 56 dB noise level.
- User friendly large LCD display enables easy setting and reading of the functional parameters.
- Both RPM and RCF can be set and displayed. The parameters can be modified after the set speed is reached.
- Starts and reaches a maximum speed of 4.500 rpm with max 2.490 x g RCF in seconds. Speed can be set with an accuracy of +/- 20 rpm.
- Metal casing with low gravity, provides stable and reliable running at maximum speed.
- Timer can be set from 30 seconds to 99 minutes or continuous running. Timer starts once the target speed is reached for more accurate operation time.

<i>catalogue no</i>	<b>603.05.001</b>
<i>dimensions / weight (mm / kg)</i>	255 x 245 x 140 / 6,0
<i>voltage (V)</i>	220
<i>frequency (Hz)</i>	50
<i>maximum speed (rpm)</i>	4500
<i>speed control (rpm)</i>	increment of 100
<i>maximum RCF (xg)</i>	2490
<i>RCF control (xg)</i>	increment of 100
<i>speed accuracy (rpm)</i>	± 20
<i>noise level (dB)</i>	< 56
<i>run time</i>	30 sec. - 99 min. or continuous
<i>acceleration / braking time (sec)</i>	20 s ↑ 20 s ↓
<i>safety devices</i>	door interlock over-speed detection automatic internal diagnosis
<i>additional features</i>	sound alert function speed / RCF switch short time run function



*Door interlock system for extra safety. Electronic brake for immediate stops when lid opens for user safety. Automatic release of the lid when the rotor stops to save processing time.*



*High strength plastic rotor and excellent balance technology to guarantee a quiet and stable operation.*

*Delivered complete with a 12 cavity angled rotor and suitable adaptors to be used with 15 ml conical tubes and all kinds of blood collection tubes.*



*User friendly large LCD display shows all informations including accumulated running time and last running parameters.*

*Both RPM and RCF can be set and displayed. The parameters can be modified after the set speed is reached.*

## *distillation & filtration & separation & sample preparation*

### CENTRIFUGE - "hematocrit"

- Offers ideal solutions for determination of erythrocytes, determination of the bilirubin content and extraction of DNA and RNA.
- Explosion proof and marked as CE, cTUVus, and FCC. MCA test according to IEC/EN61010-2-20.
- Passed EN61010-2-101:2002 particular requirements for in vitro diagnostic (IVD) medical equipment.
- Brushless DC motor accelerates the rotor to the set speed with low vibration and with a quiet operation less than 60 dB noise level.
- User friendly large LCD display shows all informations including accumulated running time and last running parameters.
- Also offers full-digit display and easy identification of parameters RPM or G-force can be set and displayed.
- Starts and reaches a max speed of 14.000 rpm with max 18.620 x g RCF in seconds. Speed can be set with an accuracy of +/- 30 rpm.
- Metal casing with low gravity, provides stable and reliable running at maximum speed.
- Timer can be set from 30 seconds to 99 minutes or continuous running. Timer starts once the target speed is reached for more accurate operation time.
- Short spin function is used for quick spins by pressing and holding the "pulse" key.
- The unique design with stable running and high accuracy of speed.
- Door interlock system for extra safety. Electronic brake for immediate stops when lid opens for user safety.
- Automatic release of the lid when the rotor stops. Supplied without rotors. Rotors should be ordered separately.

**High strength plastic rotor and excellent balance technology to guarantee a quiet and stable operation.**

24 cavity rotor for capillary tubes.

**catalogue no:** 603.06.101

24 cavity rotor for 2 ml/ 1,5 ml, 0,2 ml and 0,5 ml tubes and related tube inserts.

**catalogue no:** 603.06.102



<b>catalogue no</b>	<b>603.06.001</b>
<b>dimensions / weight (mm / kg)</b>	280x364x266 / 12
<b>voltage (V)</b>	220
<b>frequency (Hz)</b>	50
<b>maximum speed (rpm)</b>	14000
<b>maximum RCF (xg)</b>	18620
<b>speed accuracy (rpm)</b>	± 30
<b>noise level (dB)</b>	< 60
<b>run time</b>	30 sec. - 99 min. or continuous
<b>acceleration / braking time (sec)</b>	20 s ↑ 20 s ↓
<b>safety devices</b>	door interlock over - speed detection over - temperature detection automatic internal diagnosis automatic rotor identification
<b>additional features</b>	sound alert function speed / RCF switch short time run function



User friendly large LCD display shows all informations including accumulated running time and last running parameters.

Offers full-digit display and easy identification of parameters RPM or G-force can be set and displayed.

Parameters can be modified after the set speed is achieved.  
Quick spins are possible by pressing and holding PULSE key.

## *distillation & filtration & separation & sample preparation*



*Supplied without rotors and buckets. Rotors and buckets should be ordered separately*

**NEW**

### **CENTRIFUGE - "multipurpose"**

- High capacity universal centrifuge for multipurpose applications. Offers centrifuge up to 4 x 100 ml tubes.
- Brushless DC motor accelerates the rotor to the set speed with low vibration and also with a quiet operation less than 58 dB noise level.
- User friendly large LCD display enables easy setting and reading of the functional parameters.
- Both RPM and RCF can be set and displayed. The parameters can be modified after the set speed is reached.
- Features such as multiple acceleration and brake setting option, automatic rotor identification feature and memory capacity up to 10 different application guarantees reliable and fast centrifugation.
- Starts and reaches a maximum speed of 6000 rpm with max 4170 RCF in seconds. Speed can be set with an accuracy of +/- 20 rpm.
- Timer can be set from 30 seconds to 99 minutes or continuous running. Timer starts once the target speed is reached for more accurate operation time.
- Short spin function is used for quick spins by pressing and holding the "pulse" key.
- Multi voltage design guarantees stable running and high accuracy of speed.
- Featured with a dual door interlock system for twice safety. Electronic brake immediately stops when lid opens for user safety. Lid is released automatically when the rotor stops



*User friendly large LCD display enables easy setting and reading of the functional parameters.*



Featured with a dual door interlock system for twice safety. Electronic brake immediately stops when lid opens for user safety. Lid is released automatically when the rotor stops

<i>catalogue no</i>	<b>603.07.001</b>
<i>dimensions / weight (mm / kg)</i>	445 x 579 x 269 / 36
<i>voltage (V)</i>	220
<i>frequency (Hz)</i>	50
<i>maximum speed (rpm)</i>	6000
<i>maximum RCF (xg)</i>	4170
<i>speed accuracy (rpm)</i>	$\pm 20$
<i>noise level (dB)</i>	< 56
<i>run time</i>	30 sec. - 99 min. or continuous
<i>acceleration / braking time (sec)</i>	25 s $\uparrow$ 25 s $\downarrow$
<i>temperature range</i>	(-20°C) to (+40°C)
<i>safety devices</i>	dual door interlock over - speed detection over temperature detection automatic internal diagnostic
<i>additional features</i>	speed / RCF switch short time run function sound alert function

## ***distillation & filtration & separation & sample preparation***

*accessories for multipurpose centrifuge*



Fix angle rotor for 30 x 15 ml tubes. Max. speed 5000 rpm.  
Max. RCF 3300 x g. **Catalogue no: 603.07.101**



Fix angle rotor for 6 x 50 ml tubes. Max. speed 6000 rpm.  
Max. RCF 4610 x g. **Catalogue no: 603.07.102**

*Swing-out rotor is supplied without adapters and buckets.  
Adapters and buckets should be ordered separately*



Swing-out rotor for max 4 x 100 ml tubes. Max. speed 4000 rpm.  
Max. RCF 2830 x g. **Catalogue no: 603.07.103**



Adapter for swing-out rotor for 4 x 15 ml tubes. (4 pieces should be ordered for 1 rotor) **Catalogue no: 603.07.104**



Adapter for swing-out rotor for 2x 50 ml tubes. (4 pieces should be ordered for 1 rotor) **Catalogue no: 603.07.105**



Adapter for swing-out rotor for 1 x 100 ml tubes. (4 pieces should be ordered for 1 rotor) **Catalogue no: 603.07.106**

## Wirówka D3024 Niebieska seria Chemland

NIEBIESKA!  
SERIA!

D3024 kompaktowa a zarazem mocna i szybka wirówka używana w chemii fizycznej i analitycznej, biochemii, biologii komórkowej i molekularnej, w laboratoriach klinicznych i centrach krwiodawstwa. Idealnie nadaje się do zaawansowanych prac badawczych.

- Sedimentacja komórek i wirusów
- Oddzielenie organelli wewnętrzkomórkowych
- Izolacja makromolekułów, takich jak DNA, RNA, białek i lipidów.

Duży wyświetlacz LCD

Dostarczana z 24 miejscowym 1.5/2.0 ml wirnikiem aluminiowym wraz z pokrywą.

Szybkie i stabilne działanie przy cichej pracy wirnika.

Silnik napędowy, bezobsługowy.

Specjalna konstrukcja podwójnego chłodzenia powietrza minimalizuje nagrzewanie wirnika **do poniżej 10° C.**

Dodatkowe wirniki to 4 x 8- PCR.

Praca pulsacyjna do szybkich obrotów.

Po odwirowaniu, sygnalizowanie dźwiękowe oraz automatyczne otwieranie pokrywy.

Automatyczna podwójna blokada drzwi.

Funkcja chwilowego odwirowania (PULSE).

Over-speed - czujnik przekroczenia prędkości.

Max. Prędkość : 15000rpm (300-15000rpm), skok co 10rpm.

Max. RCF : 21380 × g, 10 g przyrost.

Czas pracy : 30Sek Timer 99min lub praca ciągła.



**Model D3024 R** ( z funkcją zamrażania) posiada potężny kompresor i system szybkiego chłodzenia (schłodzenie do 2°C w 7 min w temperaturze pomieszczenia 25° C ) w zakresie temperatur od 20 °C do - 40 °C.

numer katalogowy	opis
06-D3024	wirówka D3024
06-D3024R	wirówka D3024R z chłodzeniem
06-19400002	aluminiowy rotor AS24 12 x 2ml/1,5ml
06-19400003	aluminiowy rotor AS36-05 36x0,5ml oraz 36x0,2ml
06-19400004	aluminiowy rotor AS4-PCR8 4X8PCR/0,2ml
06-194000011	aluminiowy rotor AS18-5 18x5ml



## Wirówka D2012 PLUS Niebieska seria Chemland

D2012 plus kompaktowa a zarazem mocna i szybka wirówka używana w chemii fizycznej i analitycznej, biochemii, biologii komórkowej i molekularnej, w laboratoriach klinicznych i centrach krwiodawstwa. Idealnie nadaje się do zaawansowanych prac badawczych.



NIEBIESKA  
SERIA !



NIEBIESKA  
SERIA !

- Sedimentacja komórek i wirusów
- Oddzielenie organelli wewnętrzkomórkowych
- Izolacja DNA, RNA, białek i lipidów.

Duży wyświetlacz LCD zapewnia wszystkie informacje wizualne.

Zeliwna podstawa na czterech przyssawkach, nisko położony środek ciężkości, zapewniają stabilne i niezawodne działanie.

Dostarczany z 12 miejscowym 1.5/2.0 ml wirnikiem wraz z pokrywą.

Praca cicha przy szybkich obrotach.

Automatyczna blokada drzwi.

Over-speed - czujnik przekroczenia szybkości.

Max. Prędkość : 15000 rpm (200-15000rpm), skok co 100rpm .

Max. RCF: 15100 × g, 100 rpm × g przyrost.

Czas pracy: 30 s do 99 min timer lub praca ciągła.

Wymiary: (W) 255 x (L) 245 x (H) 150 mm.

Waga: 7kg.

numer katalogowy	opis
06-D2012 plus	wirówka D2012 PLUS
06-D2012	wirówka D2012+ rotor aluminiowy A12-2
06-19400003	plastikowy rotor A12-2P 12 x 2ml/1,5ml

## Plastikowy adapter do redukcji otworów rotora

numer katalogowy	wkład redukcyjny z [ml]	[ml]
06-19500001	2	0,2
06-19500002	2	0,5

## Wirówka D1008 PLUS Niebieska seria Chemland

Kompaktowa Mini wirówka

Maksymalna prędkość 7000rpm/2680xg

Dostarczana z rotorami 16x0,2ml, 8 x 1.5/2.0 ml. (8 x 0,5 / 8 x 0.2 ml za pomocą adapterów). Kompaktowa konstrukcja. Praca bardzo cicha. Idealny do mikroprobówek i probówek PCR.

Złączanie: wystarczy zamknąć pokrywę dla startu i otworzyć pokrywę dla stop lub przy użyciu włłącznik / wyłącznik.

Waga: 0,5 kg. Autoklawalna do 121°C.

Do zastosowań laboratoryjnych, w komplecie z wymiennymi rotorami.

numer katalogowy	opis
06-D 1008	wirówka D1008 PLUS + komplet rotorów adaptery opcja

## 6. Distillation, separation, filtration

### Separating, centrifuging/Benchtop centrifuges

#### Manual centrifuge HAND CENTRIFUGE

Maintenance-free, bench-mounted manually operated centrifuge  
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.

Hettich



9.943 004

#### Specifications

Max. RCF:	13000 x g
Max. speed:	3000rpm
Max. capacity:	4 x 15ml
Dimensions (WxDxH):	140 x 175 x 285mm
Weight:	approx. 0.9kg

Description	PK	Cat. No.
Manual centrifuge, without rotor	1	6.050 054
Manual centrifuge, with rotor 4 x 15ml conical tubes	1	9.943 004 1
Rotor 4 x 15ml conical tubes	1	6.202 087
Rotor 4 x 15ml conical or round bottom tubes (max. length of 125mm and max. diam. 17mm)	1	6.233 904

#### Benchtop centrifuges EBA 200/EBA 200 S

The practical and handy EBA 200 and EBA 200 S are supplied with an 8-place angle rotor. Designed for small sample throughput, they are ideal for use in doctors' surgeries or in large laboratories as auxiliary equipment. With impulse key for short centrifuging, one-hand lid locking and lid holding. Easy entry of the parameters time and speed (rpm) via foil keypad. Actual values are displayed during centrifugation. Various tubes (incl. glass tubes) can be centrifuged without an adapter. Adapters for additional blood collection tubes are available on request. Model EBA 200 S is supplied with adapters for 13 x 75mm Vacutainers (1.6ml to 5ml).

Hettich



6.265 303

#### Specifications

Max. RCF	
EBA 200:	3461xg
EBA 200 S:	6153xg
Max. speed	
EBA 200:	6000rpm
EBA 200 S:	8000rpm
Max. capacity:	8 x 15ml
Timer:	1 to 99min, continuous run, short cycle mode (impulse key)
Power consumption	
EBA 200:	55 W
EBA 200 S:	80 W
Dimensions (WxDxH):	262 x 352 x 228mm
Weight	
EBA 200:	approx. 8kg
EBA 200 S:	approx. 10kg
Power supply:	200 - 240V, 50/60Hz

Type	Description	PK	Cat. No.
EBA 200	with angle rotor	1	6.265 303 2
EBA 200 S	with angle rotor	1	9.943 479

Accessories available on request.

## 6. Distillation, separation, filtration

### Separating, centrifuging/Benchtop centrifuges

#### Benchtop centrifuge EBA 270

The EBA 270 is a small centrifuge with a 90 degree swing-out rotor. It accepts common blood or urine tubes up to a volume of 15 ml and accelerates them to a maximum speed of 4.000rpm. Stainless steel chamber for easy cleaning, decontamination and maintenance. With microprocessor controling, impulse key for short time centrifuging, one-hand lid closure and lid lock. Adjustable foil keypad with easy-to-read, multi-view digital display. Indication of the actual state during the run. Unit comes complete with 6-tube rotor and tube carriers (10ml and 15ml).

Hettich

1



#### Specifications

Max. RCF:	2254xg
Max. speed:	4000rpm
Max. capacity:	6 x 15ml
Timer:	1 to 99min, continuous run, short cycle mode (impulse key)
Power consumption:	80W
Dimensions (WxDxH):	326 x 389 x 239mm
Weight:	approx. 14kg
Power supply:	200 - 240V, 50/60Hz

Type	Description	PK	Cat. No.
EBA 270	with swing-out rotor	1	<b>6.242 287 1</b>

#### 2 Benchtop centrifuge ROTOFIX 32 A

Microprocessor-controlled benchtop centrifuge with a comprehensive and versatile range of accessories. 11 exchangeable rotors enable a multitude of applications. With frequency drive, impulse key for short period centrifuging, lid locking and holding. An "rcf" key allows display of the rcf during operation, while the key is pressed. Easy entry of rpm (speed) and time via foil keypad. Actual values are displayed during centrifugation.

Hettich

2



#### Specifications

Max. RCF:	4226xg
Max. speed:	6000rpm
Max. capacity:	4 x 100ml/32 x 15ml
Timer:	1 to 99min, continuous run, short cycle mode (impulse key)
Power consumption:	180W
Dimensions (WxDxH):	366 x 430 x 257mm
Weight:	approx. 23kg
Power supply:	208 - 240V, 50/60Hz

Type	Description	PK	Cat. No.
ROTOFIX 32 A	without rotor	1	<b>9.943 119</b>
1624	Swing-out rotor for max. 4 x 100ml or 4 slide preparations, without carriers	1	<b>9.943 386</b>
1481	Round carrier 100ml fitting into swing-out rotor 1624	1	<b>9.943 339</b>

Additional accessories on request.

## 6. Distillation, separation, filtration

### Separating, centrifuging/Benchtop centrifuges



9.943 118

#### Microlitre centrifuges MIKRO 200/200 R

Refrigerated and non-refrigerated, high-performance microlitre centrifuges. Five exchangeable rotors are available. With frequency drive, microprocessor control with 4 programmable memories, impulse key for short centrifuging, powered lid locking and "open lid" key. Easy entry of the parameters via select keys and a twist knob. A switch key enables entry/display of rpm (speed) or rcf, as required. Actual values are displayed during centrifugation. The refrigerated MIKRO 200 R allows chamber temperature control between -10 to +40°C. With the Fast Cool function it refrigerates to +4°C in 10 to 15 minutes. The "stand-by" mode maintains the set temperature between runs.

Hettich

#### Specifications

Max. RCF:	21382xg
Max. speed:	15000rpm
Max. capacity:	30 x 0.2 to 2ml
Cooling temperature Mikro 200 R:	-10 to +40°C
Timer:	1sec to 99min : 59sec, continuous run, short cycle mode (impulse key)
Power consumption	
MIKRO 200:	240 W
MIKRO 200 R:	360 W
Dimensions (WxDxH)	
MIKRO 200:	275 x 344 x 260mm
MIKRO 200 R:	281 x 547 x 260mm
Weight	
MIKRO 200:	approx. 11.5kg
MIKRO 200 R:	approx. 28kg
Power supply:	200 - 240V, 50/60Hz



6.237 606

#### Type Description PK Cat. No.

MIKRO 200	without rotor	1	9.943 117
MIKRO 200 R	refrigerated, without rotor	1	9.943 118 1
2424-B	Angle rotor for 24 x 1.5/2.2 ml ml microtubes with standard lid	1	6.237 606 2
2428	Angle rotor for 24 x 0.2 to 2ml microtubes with filter insert	1	9.943 477

Additional accessories on request.



9.943 250

#### Microlitre centrifuges MIKRO 220/220 R

Microlitre centrifuges with outstanding performance characteristics. Model MIKRO 220 accommodates 9 alternative rotors, the refrigerated version MIKRO 220 R takes 13 alternative rotors. The MIKRO 220/220 R feature frequency drive, microprocessor control and impulse key for short period centrifuging. Extremely short acceleration and deceleration times, easy entry of the parameters via a foil keypad and digital display. As necessary, a switch key enables entry/display of rpm (speed) or rcf. 10 complete running programmes can be stored and recalled. The refrigerated MIKRO 220 R can control chamber temperature between -20 and +40°C.

Hettich

#### Specifications

Max. RCF:	31514xg
Max. speed:	18000rpm
Max. capacity:	60 x 0.2 to 2ml or 6 x 50ml (MIKRO 220 R only)
Cooling temperature MIKRO 220 R:	-20 to +40°C
Timer:	1 sec to 99 min : 59 sec, continuous run, short cycle mode (impulse key)
Power consumption	
MIKRO 220:	240 W
MIKRO 220 R:	360 W
Dimensions (WxDxH)	
MIKRO 220:	330 x 420 x 313mm
MIKRO 220 R:	330 x 650 x 313mm
Weight	
MIKRO 220:	approx. 42kg
MIKRO 220 R:	approx. 21kg
Power supply:	200 - 240V, 50/60Hz



9.943 327

#### Type Description PK Cat. No.

MIKRO 220	without rotor	1	9.943 250 3
MIKRO 220 R	refrigerated, without rotor	1	9.943 251
1195-A	Angle rotor for 24 x 0.2 to 2ml microtubes with bio-containment lid	1	9.943 327 4

Additional accessories on request.

## 6. Distillation, separation, filtration

### Separating, centrifuging/Benchtop centrifuges

#### 2 Benchtop centrifuges UNIVERSAL 320/320 R

The UNIVERSAL 320/320 R impress with excellent performance in both the high and low speed ranges, and versatile, easily exchangeable accessories. At low speeds, they process standard tubes up to a volume of 100ml, microtitre plates, conical tubes with screw cap, blood collection tubes and cyto accessories. Microlitre tubes can be accelerated to an rcf of 21382. A selection of 19 rotors is available for the UNIVERSAL 320/320 R centrifuges. With frequency drive, microprocessor control, impulse key for short centrifuging, quick-entry foil keypad and digital display. As necessary, a switch key enables entry/display of rpm (speed) or rcf. Ten complete running programmes can be stored and recalled. Temperature in the refrigerated UNIVERSAL 320 R is adjustable within a range of -20 to +40°C.

##### Specifications

Max. RCF:	21382xg
Max. speed:	15000rpm
Max. capacity:	4 x 100ml/32 x 15ml
Cooling temperature UNIVERSAL 320 R:	-20 to +40°C
Timer:	1sec to 99min : 59 sec, continuous run, short cycle mode (impulse key)
Power consumption	
UNIVERSAL 320:	400W
UNIVERSAL 320 R:	800W
Dimensions (WxDxH)	
UNIVERSAL 320:	395 x 520 x 346mm
UNIVERSAL 320 R:	401 x 695 x 346mm
Weight	
UNIVERSAL 320:	approx. 31kg
UNIVERSAL 320 R:	approx. 53kg
Power supply:	200 - 240V, 50/60Hz

Type	Description	PK	Cat. No.
UNIVERSAL 320	without rotor	1	9.943 120
UNIVERSAL 320 R	without rotor, with refrigeration	1	9.943 121 1
1494	Swing-out rotor for max. 4 x 100ml without carriers	1	9.943 399
1624	Swing-out rotor for max. 4 x 100ml or 4 slide preparations without carriers	1	9.943 386

Additional accessories on request.



9.943 121



2

#### 4 Benchtop centrifuges ROTINA 380/380 R

High-performance, benchtop centrifuges with a comprehensive range of accessories especially for applications in the fields of diagnostics, genetics and microbiology. *Hettich*  
Both models offer a choice of 11 rotors. With frequency drive, microprocessor control, impulse key for short centrifuging and powered lid locking. The advanced C control panel significantly facilitates 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. Digital display. As necessary, a switch key enables entry/display of rpm (speed) or rcf. With 98 programmable memories. Temperature within the chamber of the refrigerated ROTINA 380 R is controllable within a range of -20 to +40°C. The temperature can also be set in degrees Fahrenheit.

##### Specifications

Max. RCF:	24400xg
Max. speed:	15000rpm
Max. capacity:	4 x 290ml
Cooling temperature ROTINA 380 R:	-20 to +40°C
Timer:	1sec to 99min : 59sec, continuous run, short cycle mode (impulse key)
Power consumption	
ROTINA 380:	650 W
ROTINA 380 R:	1150 W
Dimensions (WxDxH)	
ROTINA 380:	457 x 600 x 418mm
ROTINA 380 R:	457 x 750 x 418mm
Weight	
ROTINA 380:	approx. 51kg
ROTINA 380 R:	approx. 81kg
Power supply:	200 - 240V, 50/60Hz

Type	Description	PK	Cat. No.
ROTINA 380	without rotor	1	9.943 129 3
ROTINA 380 R	without rotor, with refrigeration	1	9.943 130
1754	Swing-out rotor for max. 4 x 290ml without carriers	1	9.943 467
1752	Round carrier 290ml for swing-out rotor 1754	1	9.943 468

Additional accessories on request.



9.943 129



4

## 6. Distillation, separation, filtration

### Separating, centrifuging/Benchtop centrifuges

1



9.943 126

2



#### 2 Benchtop centrifuges ROTINA 420/420 R

The compact benchtop centrifuges are designed both for high sample throughput and high sample volumes. With a max. capacity of 4 x 600ml, 140 blood collection tubes or 16 microtitre plates they are ideal for applications in clinical chemistry, in biotechnology and in life science research facilities. With frequency drive, microprocessor control and impulse key for short centrifuging and motorised lid locking. The advanced C control panel is ideal for daily routine tasks in the laboratory. Parameter selection is achieved via the use of symbol keys. Values are set with the control knob, and recorded by pressing the Start key. Digital display. 98 programmable memories. Temperature in the refrigerated ROTINA 420 R is adjustable within a range of -20 to +40°C. The temperature can also be set in degrees Fahrenheit.

Hettich

#### Specifications

Max. RCF:	24400xg
Max. speed:	15000rpm
Max. capacity:	4 x 600ml
Cooling temperature ROTINA 420 R:	-20 to +40°C
Timer:	1sec to 99h : 59min : 59sec, continuous run, short cycle mode
Power consumption ROTINA 420/420 R:	870W/1500W
Dimensions (WxDxH) ROTINA 420/420 R:	506 x 650 x 423mm/713 x 654 x 423mm
Weight ROTINA 420/420 R:	approx. 75kg/approx. 108kg
Power supply:	200 - 240V, 50/60Hz

Type	Description	PK	Cat. No.
ROTINA 420	without rotor	1	9.943 125
ROTINA 420 R	without rotor, with refrigeration	1	9.943 126 1
4784-A	Swing-out rotor for max. 4 x 600ml or 16 microtitre plates without carriers	1	9.943 475

Additional accessories on request.

3



9.943 150

#### Centrifuges ROTANTA 460 series

Developed for large volumes, the model offers frequency drive, microprocessor control, impulse key for short centrifuging, and powered lid locking. As necessary, a switch key enables entry/display of RPM (speed) or RCF. All ROTANTA 460 models feature the extended C control panel, which provides up to 98 programmable memories. Temperature in the refrigerated ROTANTA 460 R is controllable within a range of -20°C to +40°C. The refrigerated ROTANTA 460 R can also be supplied in an underbench version or as a floorstanding model.

Hettich

#### Without rotors. Please order separately.

#### Specifications

Max. RCF:	24400xg
Max. speed range:	15000rpm
Max. capacity:	4 x 750ml
Cooling temperature Rotanta 460 R:	-20 to +40°C
Timer:	1sec to 99h : 59min : 59sec, continuous run, short cycle mode
Power consumption	
ROTANTA 460/ROTANTA 460 R,RC,RF:	1000W/1600W
Dimensions (WxDxH)	
ROTANTA 460:	554 x 706 x 456mm
ROTANTA 460 R:	770 x 706 x 456mm
ROTANTA 460 RC:	554 x 697 x 683mm
ROTANTA 460 RF:	554 x 697 x 961mm
Weight	
ROTANTA 460:	approx. 101kg
ROTANTA 460 R,RC:	approx. 141kg
ROTANTA 460 RF:	approx. 164kg
Power supply:	200 - 240V, 50/60Hz

4



9.943 474

Type	Description	PK	Cat. No.
ROTANTA 460	Benchtop centrifuge, classic	1	9.943 150 3
ROTANTA 460 R	Benchtop centrifuge, cooled	1	9.943 152
ROTANTA 460 RC	Underbench centrifuge, cooled	1	9.943 154
ROTANTA 460 RF	Floorstanding centrifuge, cooled	1	9.943 155
5699	Swing-out rotor for max. 4 x 750ml or 4 blood bag systems 450ml	1	9.943 474 4
4880	Round carrier with single-hand clamp lock for max. 750 ml for swing-out rotor 5699	1	9.943 486
4883	Lid with bio-containment for round carrier 4880	1	9.943 487

## 6. Distillation, separation, filtration

### Separating, centrifuging/Benchtop centrifuges

#### Microlitre centrifuge Z 216 M/Z 216 MK

The Z 216 M and Z 216 MK are setting new standards in this centrifuge class. Capable of centrifuging up to 44 x 1.5/2.0 ml at each run.

Hermle

Due to their compact design and quiet running properties they are fitting perfectly in their working area.

The powerful refrigeration system of Z 216 MK keeps samples at temperatures as low as 4°C during a continuous run at 20000 xg.

##### Specifications:

- Maintenance-free induction drive
- Microprocessor with large LCD Display
- Motor driven lid lock
- Active imbalance-identification and cut off
- Standstill cooling
- Audible signal at the end of each run
- Rapid acceleration and deceleration (see rotor data)
- Lowest sample temperature 4°C at 20000xg
- Noise level < 60 dBA at 20000xg
- Extremely compact with a space saving footprint
- Quick access to samples with a snap on lid
- Aerosol tight rotor option
- Manufactured according to international safety regulations, i.e. IEC 61010
- Distinct control panel

##### Specifications

Max. RCF:	Z 216 M/Z 216 MK
	21380xg
Max. speed:	15000rpm
Max. capacity:	44 x 1.5/2.0ml
Cooling temperature Z 216 MK:	-20 to 40°C
Timer:	59min 50sec/10sec increments 99h 59min/1min increments
Power consumption:	560W
Dimensions (WxDxH):	280 x 390 x 290mm/280 x 550 x 290mm
Weight:	17kg/35kg
Power supply:	230V, 50/60Hz

Description	PK	Cat. No.
Microlitre centrifuge Z 216 M	1	7.660 217 1
Refrigerated microlitre centrifuge Z 216 MK	1	6.231 520
Refrigerated microlitre centrifuge Z 216 MK incl. angle rotor	1	6.230 074
Microlitre centrifuge Z 216 MK incl. rotor V14, 24 x 1,5/2,0 ml cooled	1	9.945 933
Angle rotor 24 x 1.5/2.0ml	1	9.945 715
Angle rotor 24 x 1.5/2.0ml, hermetically sealed	1	9.945 716
Angle rotor 30 x 1.5/2.0ml, hermetically sealed	1	9.945 717
Angle rotor 12 x 5ml, closable	1	9.945 922
Angle rotor for 4 x 8 PCR Stripes	1	9.945 718 2
Angle rotor for 12 x 5ml reaction vessels, closable	1	7.660 218 3

1



7.660 217

2



9.945 718

3



7.660 218

## 6. Distillation, separation, filtration

### Separating, centrifuging/Benchtop centrifuges

1



6.240 037

#### Refrigerated high speed centrifuge Z 32 HK

With a wide range of accessories, the Z 32 HK high speed centrifuge is applicable in a wide variety of research settings. In spite of the remarkably small footprint, the Z 32 HK features a powerful refrigeration system capable of maintaining cool sample temperatures even at maximum speed.

Hermle

##### Specifications:

- Maintenance-free induction drive
- Microprocessor with large LCD display
- Motor driven lid lock
- Automatic rotor identification system with over speed protection immediately upon rotor installation
- Active imbalance identification and cut off rotor specific
- Imbalance tolerant drive
- CFC-free refrigeration system
- A large variety of rotors and accessories
- Manufactured according to international safety regulations, i.e. IEC 61010
- Audible signal at the end of each run with several melody options
- Quick and easy rotor exchange
- Noise level under 60dBA at max. speed
- Distinct control panel

2



9.945 915

##### Specifications

Max. RCF:	38012 x g
Max. speed:	20000rpm
Max. capacity:	4 x 100ml
Cooling temperature:	-20 to +40°C in 1°C increments
Timer:	59min 50sec/10sec increments 99h 59min/1 min increments
Power consumption:	1200W
Dimensions (WxDxH):	400 x 700 x 360mm
Weight:	71kg
Power supply:	230V, 50/60Hz

##### Description

PK Cat. No.

Refrigerated High Speed Centrifuge Z 32 HK	1	6.240 037	1
Angle rotor for max. 6 x 85ml	1	9.945 915	2
Angle rotor for max. 20 x 10ml	1	9.945 916	

For further accessories see Z 326/Z326K.

3

#### Compact centrifuge Z 206 A

Compact centrifuge for physicians and clinical laboratories.

Hermle

The Z 206 A accepts up to 12 x 15ml conical and round bottom tubes. For tubes with smaller dimensions we offer several adapters. For larger volumes we offer an angle rotor for 6 x 50ml conical and round bottom tubes.

- Microprocessor with LCD display
- Electrical lid lock
- Pre-selection of the rotor type
- Active imbalance-identification and cut off
- Manufactured according to international safety regulations, i.e. IEC 61010
- Noise level under 60dBA at max. speed
- A large variety of rotors and accessories
- Easy change of rotors
- Distinct control panel



9.945 737

##### Specifications

Max. RCF:	4180xg
Max. speed:	6000rpm
Max. capacity:	6 x 50ml
Timer:	59min 50sec/10sec increments 99h 59min/1min increments
Power consumption:	100W
Dimensions (WxDxH):	280 x 370 x 260mm
Weight:	15kg
Power supply:	230V, 50/60Hz

##### Description

PK Cat. No.

Compact centrifuge Z 206 A	1	9.945 737	3
Compact centrifuge Z 206 A incl. angle rotor 12x15ml	1	9.945 738	
Angle rotor 12 x 15ml	1	9.945 728	4
Angle rotor 6 x 50ml	1	9.945 729	
Angle rotor 18 x 1.5/2.0ml	1	9.945 739	
Swing out rotor 6 x 5ml	1	9.945 740	5

4



9.945 728

5



9.945 740

## 6. Distillation, separation, filtration

### Separating, centrifuging/Benchtop centrifuges

#### Universal centrifuges Z 326/Z 326 K

Universal laboratory centrifuge for medical laboratory, from the large volume (4 x 100ml) to reaction vessels.

Both the table top centrifuge Z 326 and the refrigerated table top centrifuge Z 326 K offer a wide assortment of rotor options, making them ideal for a wide variety of research applications. Rotor exchange between swing out, micro, or high volume angled rotors is very simple and can take place in a matter of seconds. The Z 326 K includes the refrigeration system on the back side of the unit, optimised for the lab bench at only 40cm wide.

#### Specifications:

- Maintenance-free induction drive
- Microprocessor with large LCD display
- Motor driven lid lock
- Automatic rotor identification system with over speed protection, immediately upon rotor insertion
- Active imbalance-identification and cut off (rotor specific)
- Imbalance tolerant drive
- CFC free refrigeration system (Z 326 K)
- A large variety of rotors and accessories
- Manufactured according to international safety regulations, i.e. IEC 61010
- Audible signal at the end of each run with several melody options
- Rotor exchange is easy to handle
- Noise level under 60dBA at max. speed
- Optimized airflow system keeps the samples cool (Z 326)
- Distinct control panel

1



6.241 114

2



6.238 614

3



6.241 887

4



9.945 910

5



6.238 615

#### Specifications

Max. RCF:	23545xg
Max. speed:	18000rpm
Max. capacity:	4 x 100ml
Cooling temperature Z 326 K:	-20 to +40°C in 1°C increments
Timer:	59min 50sec/10sec increments 99h 59min/1min increments
Power consumption	
Z 326:	455W
Z 326 K:	660W
Dimensions (WxDxH)	
Z 326:	400 x 480 x 360mm
Z 326 K:	400 x 700 x 360mm
Weight	
Z 326:	43 kg
Z 326 K:	60 kg
Power supply:	230V, 50/60Hz

Description	PK	Cat. No.
Universal centrifuges Z 326	1	6.241 114 1
Universal centrifuges Z 326 K	1	6.238 613
Swing out Rotor, 4 place	1	6.238 614 2
Bucket 1 x 100ml	2	9.945 750
Bucket 1 x 50ml Falcon	2	9.945 752
Bucket 2 x 15ml Falcon	2	9.945 753
Bucket 10 x 1.5ml	2	9.945 771
Swing out Rotor, 4 place	1	6.241 887 3
Bucket 2 x 50ml Falcon	2	9.945 772
Bucket 3 x 15ml Falcon	2	9.945 773
Bucket hermetic for tube racks	2	6.241 888
Tube racks 1 x 100ml	2	6.240 595
Tube racks 1 x 50ml Falcon	2	6.902 309
Tube racks 2 x 15ml Falcon	2	6.902 310
Tube racks 7 x 5 to 7ml	2	9.945 903
Tube racks 5 x 1.5ml	2	6.902 308
Swing out rotor 2 x 3 Microtiterplates	1	9.945 910 4
Angle rotor for max. 12 x 15ml	1	9.945 912
Angle rotor for max. 6 x 50ml	1	9.945 913
Angle rotor for max. 6 x 85ml	1	6.240 038
Angle rotor for max. 24 x 1.5/2.0ml	1	6.238 615 5
Angle rotor for 4 x 8 PCR Stripes	1	9.945 919