

LAB & INDUSTRY EQUIPMENT

BUCH  HOLM



Buch & Holm A/S

Marielundvej 39 • 2730 Herlev • Tlf. +45 44 54 00 00 • e-mail b-h@buch-holm.dk • www.buch-holm.dk
Box 10058 • S-200 43 Malmö • Tel. +46 (0)40 30 50 30 • e-mail b-h@buch-holm.se • www.buch-holm.se

Sigma 4-5L



Benchtop centrifuge
• Unrefrigerated



Top performer for high throughput



Sigma is a leading international manufacturer of laboratory centrifuges for diverse sectors, including biotechnology, pharmaceutical, medical and environment analysis. Laboratories, institutions and companies everywhere in the world have been relying on premium Sigma quality – Made in Germany – for more than 40 years. The company stands for innovative products and development of durable, energy-efficient and especially user-friendly devices.

The high-performance Sigma 4-5L laboratory centrifuge is designed for throughput and capacity. The high torque enables especially short acceleration times and makes laboratory processes efficient. This centrifuge is recommended for applications in clinical diagnostics and for life sciences applications.

The Sigma 4-5L boasts impressive features: Optimized air guidance guarantees very low specimen heating and pleasantly quiet running. As an additional innovative feature, the IVD version of the unit has a sensor to monitor the specimen limit temperature, making it a valuable tool for protecting sensitive specimens. The maximum permissible specimen temperature can be freely set by the user. The unit monitors this temperature and informs the user by an alert on the display if the limit was exceeded during the separation process.

The innovative features enable compliance with the strict quality demands of clinical diagnostics. The net result is high potential cost savings, because the Sigma 4-5L can certainly hold its own against refrigerated units in the same class.

Impressive performance

Maximum throughput and easy handling

The maximum capacity for blood collection tubes per run for in vitro diagnostics (IVD) is outstanding. For instance, it can accommodate up to 144 blood collection tubes (13 mm diameter) or 100 blood collection tubes (16 mm diameter) from all known manufacturers. This means the Sigma 4-5L offers up to 25% more capacity than comparable units in its class.

The high RCF of nearly 4,500 x g is also well suited to centrifugation of gel tubes, while at the same time helping to optimise turnaround times. Standard routines can be stored and recalled conveniently in

up to 50 programs. Ten selectable acceleration and braking curves facilitate optimisation of separation processes and additionally shorten run times.

The Sigma 4-5L is very quiet in operation, resulting in a pleasant work environment in the laboratory. At the end of centrifugation, the two motorised lid locks are automatically unlocked and the lid is opened by gas springs to a maximum angle of about 85°. That way the end of the cycle can easily be recognised, even at a large distance.

Sigma 4-5L

- High-performance benchtop centrifuge
- Speed range up to 4,700 rpm
- Maximum capacity: 4 x 750 ml
- Up to 144 blood collection tubes per run
- User-friendly Spincontrol L controller
- Fifty programs
- Compact, space-saving unit
- Low noise level
- Short braking and acceleration times
- Zero-maintenance induction motor
- High imbalance tolerance
- Motorised lid opening
- Sensor for monitoring a user-settable maximum specimen temperature limit (only IVD version)
- Automatic imbalance monitoring
- Rotor life monitoring for a high degree of safety
- Easily cleaned stainless steel chamber
- Window in lid for external speed monitoring
- Manufactured according to the latest national and international standards (e.g. EN 61010-2-020)





Rotors and accessories

Comprehensive options for the laboratory

The Sigma 4-5L is optimised for use with swing-out rotors. The extensive accessories portfolio supports tube sizes from 1.5 to 750 ml. In addition, buckets to hold microtiter and deepwell plates are available. All this is possible without rotor exchange, at RCF up to 4.643 x g.

For working with specimens that must be kept contained, the hexagonal bucket can be closed with a transparent cap for biosafe operation.

The bail allows the buckets to be opened quickly and easily with just one hand.

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

Swing-out rotors

Swing-out rotor 11650 / 11660

- Max. capacity: 4 x 750 ml
- Max. speed: 4,700 rpm
- Max. RCF: 4,643 x g*
- Angle: 90°



Swing-out rotor 11660 and bucket 13460

- Max. capacity: 100 x 15 ml
- Max. speed: 4,700 rpm
- Max. RCF: 4,470 x g
- Angle: 90°



MTP swing-out rotor

MTP swing-out rotor 11650 / 11660


- Max. capacity: 16 microtiter plates
- Max. speed: 4,700 rpm
- Max. RCF: 3,877 x g
- Angle: 90°



* Max. RCF for all glass tubes approximately 4,000 x g





















Swing-out rotor 11650



















Round bucket 13450*

- Max. capacity: 4 x 750 ml
- Max. speed: 4,700 rpm
- Max. RCF: 4,643 x g
- Max. tube length mid-bucket without / with cap: 148 / 137 mm
- Biosafe with cap 17170 
- Angle: 90°

* Also usable in rotor 11660 with same specifications




Tube										
Rated capacity (filling volume) [ml]	1.5	2	5	5	6 (5)	7	10	10	10	10
Diameter x length [mm]	10.7 x 42	10.7 x 42	12 x 75	17 x 60	12 x 100	12 x 100	16.1 x 81.1	16.1 x 81.1	16.1 x 81.1	16 x 100
Tube material	PP	PP	PS	PPCO	Glass	Glass	PF	PC	PPCO	Glass
Item no.	15008	15040	15060	–	15007	15027	15000	15010	15039	15015
Adapter										
for round bucket 13450										
Bore diameter x length [mm]	11.1 x 38.5	12.8 x 52	17 x 52	12.8 x 74	16.5 x 55	17.5 x 75				
Tubes per adapter / rotor	26 / 104	37 / 148	12 / 48	32 / 128	20 / 80	19 / 76				
Centrifuging radius [mm]	181	180	185	182	183	183				
Item no.	17653	17652	17211	17654	17655	17658				

Tube									
Rated capacity (filling volume) [ml]	10	14	14	15 (13)	15	25	25	25	30 (26)
Diameter x length [mm]	16 x 100	17 x 100	17 x 100	17 x 110	16.5 x 120	25 x 90	24 x 100	24 x 100	25.3 x 98
Tube material	Glass	PS	PP	Glass	PP	PP	Glass	Glass	PF
Item no.	15024	15020	15023	15022	15115	–	15025	15026	15029
Adapter									
for round bucket 13450									
Bore diameter x length [mm]		17.5 x 75		17 x 78.5	17 x 78.5	25.5 x 70		25.5 x 77	
Tubes per adapter / rotor		19 / 76		12 / 48	15 / 60	7 / 28		8 / 32	
Centrifuging radius [mm]		183		187	187	175		185	
Item no.		17658		17659	17660*	17662		17670	

* Only possible without cap 17170










Swing-out rotor 11650






Round bucket 13450*




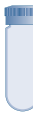
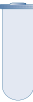
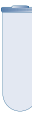
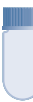

- Max. capacity: 4 x 750 ml
- Max. speed: 4,700 rpm
- Max. RCF: 4,643 x g
- Max. tube length mid-bucket without / with cap: 148 / 137 mm
- Biosafe with cap 17170 
- Angle: 90°









* Also usable in rotor 11660 with same specifications

Tube										
Rated capacity (filling volume) [ml]	30 (26)	30 (28)	30	30	50 (38)	50 (43)	50	50	50	50
Diameter x length [mm]	25.3 x 98	25.3 x 98	24 x 105	25 x 107	28.8 x 107	28.5 x 107	28.5 x 101.5	34 x 100	34 x 100	34 x 100
Tube material	PPCO	PC	Glass	PP	PPCO	PF	Stainless steel	Glass	Glass	PC
Item no.	15032	15030	15033	–	15052	15051	13055	15045	15050	15049

Adapter					
for round bucket 13450					
Bore diameter x length [mm]		25.5 x 77	25.5 x 70	29.5 x 77	35.5 x 77.5
Tubes per adapter / rotor		8 / 32	7 / 28	7 / 28	4 / 16
Centrifuging radius [mm]		185	175	185	185
Item no.		17670	17662	17676	17675


Tube									
Rated capacity (filling volume) [ml]	50	50	50	85 (73)	85 (76)	94 (85)	94	100 (75)	100 (90)
Diameter x length [mm]	35 x 100	29 x 117	29 x 117	38 x 112	38 x 112	38 x 103	38 x 110	44 x 100	44 x 100
Tube material	Glass	PP	PP	PF	PPCO	Stainless steel	PC	Glass	Glass
Item no.	15056	–	15151	15080	15076	13085	15094	15078	15106

Adapter						
for round bucket 13450						
Bore diameter x length [mm]	35.5 x 77.5	29.5 x 74	29.5 x 78.5	29.5 x 78	38.5 x 77	45.5 x 77
Tubes per adapter / rotor	4 / 16	5 / 20	5 / 20	7 / 28	3 / 12	2 / 8
Centrifuging radius [mm]	185	182	186	186	185	185
Item no.	17675	17678	17677	17649*	17685	17690**

* Only possible without cap 17170; ** Including rubber cushion 16051






















Swing-out rotor 11650
















Round bucket 13450*

- Max. capacity: 4 x 750 ml
- Max. speed: 4,700 rpm
- Max. RCF: 4,643 x g
- Max. tube length mid-bucket without / with cap: 148 / 137 mm
- Biosafe with cap 17170 
- Angle: 90°

* Also usable in rotor 11660 with same specifications




Tube										
Rated capacity (filling volume) [ml]	100	100	150	175	175	200 (168)	200	225	250 (232)	250 (232)
Diameter x length [mm]	44 x 100	45 x 100	51 x 99	61 x 118	62 x 139.2	56 x 112	61 x 130	61 x 137	61.4 x 122	61.4 x 122
Tube material	Glass	PC	PP	PP	PP	PPCO	PP	PP	PF	PPCO
Item no.	15100	15103	15125	–	15175	15202	15174	–	15247	15249
Adapter										
for round bucket 13450 										
Bore diameter x length [mm]	45.5 x 77	51.5 x 77	61 x 100	62.5 x 110	57.5 x 77	62.5 x 110	61 x 100		62.5 x 77	
Tubes per adapter / rotor	2 / 8	1 / 4	1 / 4	1 / 4	1 / 4	1 / 4	1 / 4	1 / 4	1 / 4	1 / 4
Centrifuging radius [mm]	185	185	188	188	185	188	188	188	185	185
Item no.	17690*	17692	17694	17693	17696	17693	17694		17698	

Tube							
Rated capacity (filling volume) [ml]	250	250	400	500	500	650	750
Diameter x length [mm]	61.4 x 125	61 x 145	85 x 118	85 x 135	95.5 x 147	100 x 111	100 x 127
Tube material	Stainless steel	PP	PPCO	PPCO	PP	PP	PPCO
Item no.	13255	–	15401	15501	–	13456	15917
Adapter							
for round bucket 13450 							
Bore diameter x length [mm]	62.5 x 77	62.5 x 110	86 x 107	96.3 x 110	101 x 102	101 x 102	
Tubes per adapter / rotor	1 / 4	1 / 4	1 / 4	1 / 4	– / 4	– / 4	
Centrifuging radius [mm]	185	188	185	188	188	188	
Item no.	17698	17693**	13654	17682**	–	–	

* Including rubber cushion 16051; ** Only possible without cap 17170

Swing-out rotor 11650

Round bucket 13450*

- Max. capacity: 4 x 750 ml
- Max. speed: 4,700 rpm
- Max. RCF: 4,643 x g
- Max. tube length mid-bucket without / with cap: 148 / 137 mm
- Biosafe with cap 17170 
- Angle: 90°

* Also usable in rotor 11660 with same specifications



MTP swing-out rotor 11650











Rectangular bucket 13421*, including plate holder 17979

- Max. plate height: 61 mm
- Max. speed: 4,700 rpm
- Max. RCF: 3,877 x g
- Max. load per carrier: 500 g
- Angle: 90°

* Also usable in rotor 11660 with same specifications








Blood and urine tubes

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

Adapter

for round bucket 13450



					
Bore diameter x length [mm]	12.8 x 52	13.8 x 54	16.5 x 55	17.5 x 75	17.5 x 75
Tubes per adapter / rotor	37 / 148	23 / 92	20 / 80	19 / 76	7 / 28
Centrifuging radius [mm]	180	182	183	183	183
Item no.	17652	17656	17655	17658	17658*

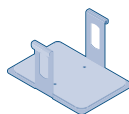
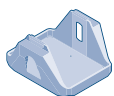
Plate



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

Adapter


for rectangular bucket 13421



Bore diameter x length [mm]	–			
Plates per rotor	16	12	4	12
Centrifuging radius [mm]	157			
Item no.	17979			










Swing-out rotor 11660

Rectangular bucket 13460 with cap 17460

- Max. capacity: 100 x 15 ml
- Max. speed: 4,700 rpm
- Max. RCF: 4,470 x g
- Max. tube length mid-bucket without / with cap: 141 / 135 mm
- Biosafe with cap 17460 
- Angle: 90°



Blood and urine tubes

									
Rated capacity (filling volume) [ml]	1.1–1.4	2.7–5	4–6	1.6–5.6	1.8–7	4–10	6–10	9–10	10
Diameter x length with lid [mm]	8 x 82	11 x 82–108	13 x 81–106	13 x 81–106	13 x 81–107	15 x 91–108	16 x 106–107	16 x 108	15 x 118
Tube material	PP	PP	PP	PP	PP	PP	PP	PP	PP
Item no.	–	–	–	–	–	–	–	–	–

Adapter

for
bucket
13460



Bore diameter x length [mm]	13.5 x 56	17.5 x 57	17.5 x 57
Tubes per adapter / rotor	36 / 144	25 / 100	25 / 100
Centrifuging radius [mm]	177	178	178
Item no.	18461	18460	18460*

Spincontrol L controller

Easy operation, maximum safety

Well conceived, uncluttered and extensive options are hallmarks of the Spincontrol L controller. It is still based on a patented Sigma concept. The brilliantly simple design of the Spincontrol L has only three buttons (Start, Stop, and Lid) along with the proven multifunction knob. Operating parameters can be entered conveniently and stored in up to 50 programs using the intuitive user interface. The backlit LCD display is easy to read at a distance.

A special feature is automatic monitoring of the number of operational rotor cycles. The integrated cycle counter keeps track of all completed rotor runs and informs the user when a defined limit value is reached. This alert system is based on real measurement data and helps to reliably avoid damage to rotors and the centrifuge.

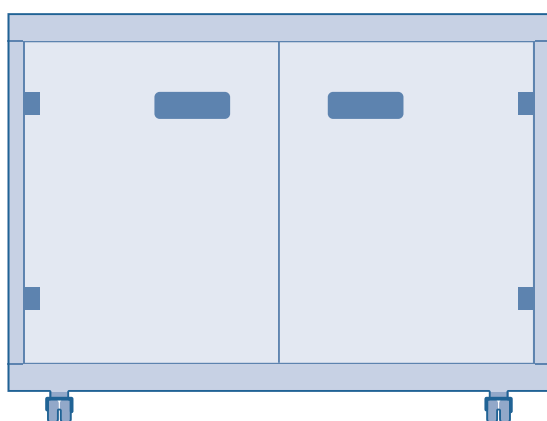
Display	Backlit LCD
Constant display of setpoints and actual values	+
Speed/RCF display	+
Timer (s; h:min)	10 – 99:59
Timer tracks time after setpoint speed is reached; switchable	+, +
Short run, Continuous run	+, +
Time increment [s]	1
Speed increment [rpm]	100
Specimen temperature alert, increment [°C]	1*
Display of actual specimen temperature	+
RCF increment [x g]	10
Programs	50
Acceleration curves	10
Braking curves	10
Free run-out	+
Automatic lid opening at end of run, switchable	+, +
Audible signal, switchable	+, +
Visual standstill indication	+
Rotor cycle monitoring	+
Rotor end-of-life warning	+
Lockable controller	+
Microprocessor control	+

* Only Sigma 4-SL IVD version



Centrifuge tables

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



Centrifuge table 17920

For Sigma 2-16KL

W x H x D [mm]: 600 x 501 x 550

Centrifuge table 17921

For Sigma 6-16KS

W x H x D [mm]: 790 x 515 x 684

Centrifuge table 17922

For Sigma 6-16S

W x H x D [mm]: 581 x 481 x 684

Centrifuge table 17923

For Sigma 3-30KS

W x H x D [mm]: 570 x 481 x 616

Centrifuge table 17926

For Sigma 3-16KL, 3-18KS, 4-16KS

W x H x D [mm]: 650 x 501 x 647

Centrifuge table 17927

For Sigma 3-16L, 4-5L, 4-16S

W x H x D [mm]: 490 x 497 x 647

Premium quality

Made in Germany

The Sigma 4-5L centrifuge meets the highest technical requirements of laboratory standards. Developed and produced at our facility in Osterode, Germany, it is a high-performance, durable and energy-efficient quality product and conforms to the latest safety, emissions and environmental standards. Sigma guarantees the availability of spare parts and wearing parts for at least 10 years.

Furthermore, you benefit from our extensive services portfolio, including commissioning, maintenance, device calibration and more. Our qualified service technicians are ready to provide professional maintenance and repair as well as loaner devices if necessary. All support services are designed to ensure reliability and optimise system availability.

Sigma Service

For maintenance and repairs please contact our Service department at www.sigma-zentrifugen.de/en/service

Sigma 4-5L

Max. capacity [ml]	
Swing-out rotor	4 x 750
Max. RCF	4,643
Maximum speed [rpm]	4,700
Minimum speed [rpm]	100
Noise level at maximum speed (approximate) [dB(A)]	
Swing-out rotor 11660 with bucket 13460 and cap	66
Max. acceleration time [s]	
Swing-out rotor 11660 with bucket 13460 and cap	23
Max. braking time [s]	
Swing-out rotor 11660 with bucket 13460 and cap	20
Power consumption [W]	1,230
Height x width x depth [mm]	390 x 496 x 634
Height with open lid [mm]	880
Weight without rotor [kg]	77

Calibration

Documented proof of compliance with essential technical parameters.

Speed or run time (item no. 17713)
 Speed and run time (item no. 17714)
 Speed, run time, temperature (item no. 17715)

Device qualification (IQOQ)

This comprehensive device qualification includes installation qualification and metrological checking of all functional parameters with a rotor.

IQOQ package for:

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

Sigma 4-5L centrifuge

220–240 V, 50/60 Hz (item no. 10405)
 120 V, 60 Hz (item no. 10404)

Sigma 4-15L centrifuge, IVD version

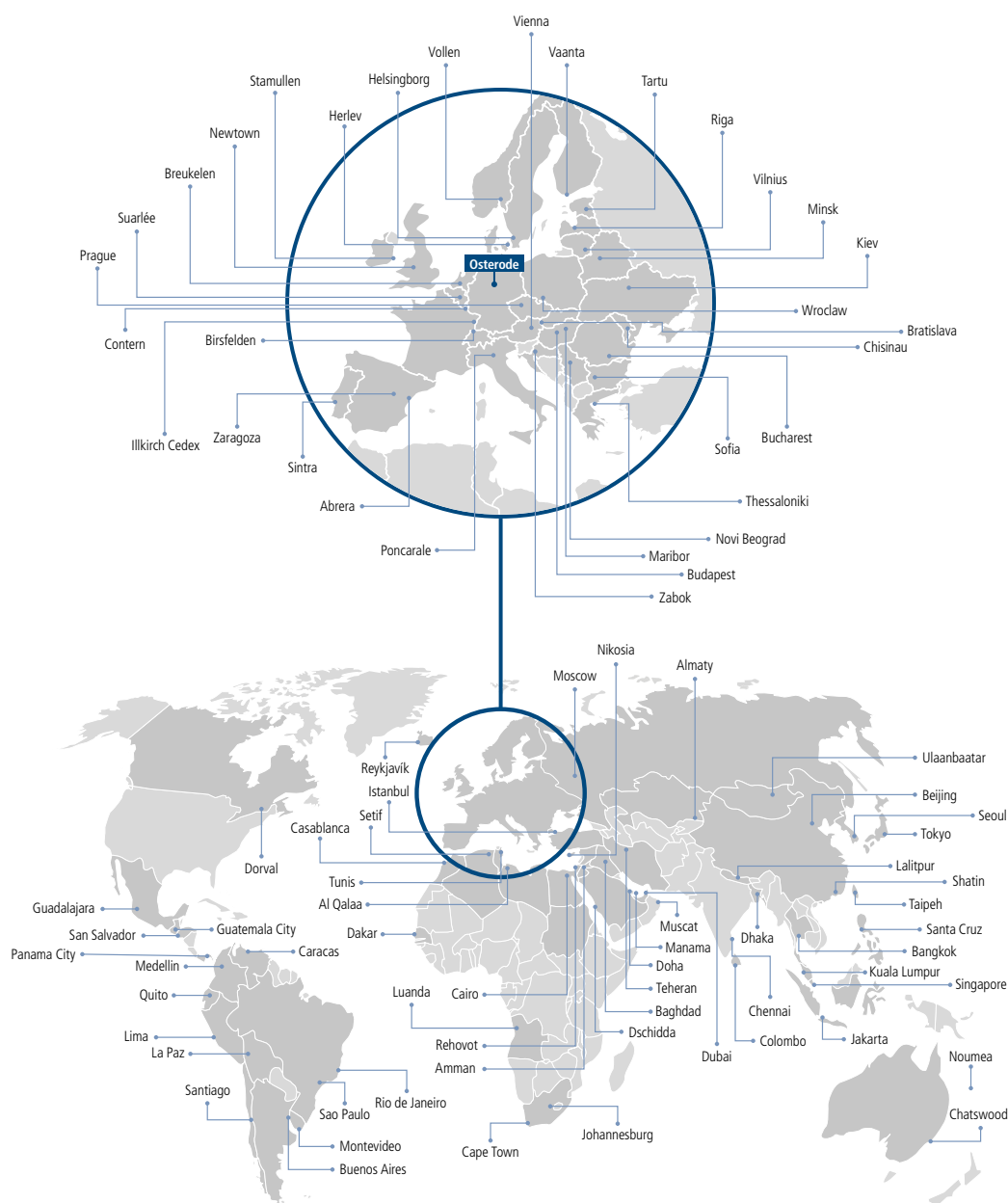
220–240 V, 50/60 Hz (item no. 10407)
 220 V, 50/60 Hz (item no. 10408)
 120 V, 60 Hz (item no. 10406)



Global service

For local product security

Our trained service partners in over 100 countries ensure consistently high quality in accordance with national regulations. Our specialists can also be engaged quickly around the world, either remotely or on site in person.



Selected locations of our representatives.

An overview of all representatives with detailed contact information can be found at www.sigma-zentrifugen.de/vertriebspartner



Sigma Laborzentrifugen GmbH

An der Unteren Söse 50

37520 Osterode am Harz

Tel. +49 (0) 55 22 / 50 07-0

Fax +49 (0) 55 22 / 50 07-12

info@sigma-zentrifugen.de

www.sigma-zentrifugen.de