

# Sigma 2-7

Benchtop centrifuge

Unrefrigerated



www.sigma-zentrifugen.de



# High performance in a new design

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, energyefficient and especially user-friendly devices.

The Sigma 2-7 scores with many new features. One highlight is the blue LED running indicator, which enables operators to see whether the device is still running – even at a distance. Other unique features are the ten program storage locations (unequalled in its class), the patented lid closing damper, and the optional programmable centrifuge wait and start times. This delayed start feature has been specifically developed for clinical in vitro diagnostics (IVD) using blood tubes. The necessary

clotting time can be preset on the device to simplify work processes. The low noise level and ergonomic operation make the device ideal for everyday use in the laboratory environment. The Sigma 2-7 combines high capacity (up to 4 x 100 ml) with exceptional flexibility. The maximum RCF of more than 2,500 x g is suitable for many application areas in clinical diagnostics, veterinary medicine, pharmacy, environmental analysis and industrial production, as well as universities and research facilities.

The performance specifications and accessories are primarily oriented to small to medium-size laboratories. In the area of clinical diagnostics, the Sigma 2-7 sets the standard with the capacity of up to 24 blood collection tubes 16 x 100 mm. The innovative six-fold bucket allows up to 50% more capacity per run to be achieved. That boosts throughput in the laboratory and enables faster patient diagnoses.

# **Top marks for functionality** Easy operation, convenience and maximum safety

The Sigma 2-7 is equipped with a well organised, clear display at a perfect viewing angle and with large buttons. The intuitive Spincontrol Basic control unit makes entry of operating parameters and programs simple. The centrifuge run time can be selected in seconds, and the LED run time indicator is readily visible at a distance.

The motorised lid lock, which closes automatically to eliminate extra effort, is a nice practical touch. The innovative electronics provide extremely high energy efficiency and low sensitivity to mains voltage fluctuations. Together with a powerful motor, this enables outstanding acceleration and braking times. With two sets of acceleration and braking profiles, the Sigma 2-7 is also suitable for centrifuging sensitive cells requiring gentle run-up and run-down. With these features, the Sigma 2-7 sets standards for easy operation, convenience and safety.

The compact Sigma 2-7 (just 37.8 cm wide) saves space in the laboratory and is pleasantly quiet. The low noise level of less than 53 dB(A) at maximum speed with the swing-out rotor ensures a quiet work environment.

The Sigma 2-7 is also available as an IVD model.

#### Sigma 2-7

- High-performance small centrifuge
- Innovative LED running indicator, readily visible at a distance
- Speed range up to 4,000 rpm
- Maximum capacity: 4 x 100 ml / 30 x 15 ml
- Up to 24 blood collection tubes (16 x 100 mm) per run
- Clear and convenient Spincontrol Basic control unit
- User-configurable audible signal for keypress and end of run
- Ten programs
- Two acceleration and braking curves
- Compact device; fits on every lab bench
- Low height for easy loading and unloading
- Short acceleration and braking times
- Automatic imbalance monitoring
- Adjustable start delay (for clotting time, etc.)
- Low noise level
- Motorised lid lock
- Automatic lid opening
- Low temperature rise in continuous operation
- Automatic overspeed monitoring
- Durable, easy-care stainless steel chamber
- Window in lid for external speed monitoring
- Produced in compliance with the latest national and international standards (e.g. EN 61010-2-020)





## **Rotors and accessories** Large selection and a multitude of applications

The Sigma 2-7 is available with numerous swing-out and fixedangle rotors, various buckets and adapters. The extensive accessories accept tubes from 1.5 ml to 100 ml as well as microtiter plates and deep-well plates.

Special features include the intelligently designed four-fold and six-fold buckets for nearly all commonly used blood collection tubes. The Sigma 2-7 can hold up to 24 blood tubes (16 x 100 mm) in the swing-out rotor, setting a new standard for compact laboratory centrifuges. The innovative bucket design simplifies working with different tube sizes by minimising the need to exchange buckets and adapters. That makes work processes more convenient and helps to reduce operating costs.

Another special feature is the swing-out rotor for microtiter plates. Up to six microtiter plates per run can be centrifuged with RCF exceeding 2,100 x g. These performance specifications and versatility are otherwise only available with larger laboratory centrifuges.

The portfolio is rounded out by general-purpose round buckets with hermetically sealable caps, making them suitable for use with sensitive specimens.

Another unique feature is that custom accessories can be produced upon request. The rotors and accessories are made from certified high-grade materials to withstand the most severe stresses.

#### Swing-out rotors starting on page 7



#### Fixed-angle rotors starting on page 13

#### Fixed-angle rotor 12072

- Max. capacity: 20 x 15 ml
- Max. speed: 4,000 rpm
- Max. RCF: 2,486 x g
  Angle: 33°



#### Fixed-angle rotor 12073

- Max. capacity: 30 x 15 ml
- Max. speed: 4,000 rpm
- Max. RCF: 2,486 x g
- Angle: 33° (both rows)



▶ p.14

#### Round bucket 13299 (1 set = 2 pcs.)\*

- Max. capacity: 4 x 100 ml
- Max. speed: 4,000 rpm
- Max. RCF: 2,540 x g
  Max. tube length in middle of bucket with / without cap: 126 / 117 mm
- Hermetically closable with cap 17299
- Angle: 90°
- \* Bucket not autoclavable



The regular greasing of the rotor bolts is no longer **necessary** – this minimises

Tube	-	T	Ţ	Ţ						K
Rated capacity (filling volume) [ml]	0,5	1.5	2	5	5	6 (5)	7	10	10	10
Diameter x length [mm]	10.8 x 46.5	10.7 x 42	10.7 x 42	17 x 60	12 x 75	12 x 100	12 x 100	16.1 x 81.1	16.1 x 81.1	16.1 x 81.1
Tube material	PP	PP	PP	РРСО	PS	Glass	Glass	PF	РС	РРСО
ltem no.	Paediatrics	15008	15040	-	15060	15007	15027	15000	15010	15039
Adapter										
for round bucket 13299			$\langle \cdot \rangle$		5	**	ane.			
Bore diameter x length [mm]		11.1 x 35		17 x 52		13.5 x 52			16.5 x 56	
Tubes per adapter / rotor		4 / 16		3 / 12		5 / 20			4 / 16	
Centrifuging radius [mm]		137		139		139			138	
Item no.		14301*		14309		14302			14303	
Tube			119	nde						
Rated capacity (filling volume) [ml]	10	10	14	14	15 (13)	15	25	25	25	30 (26)
Diameter x length [mm]	16 x 100	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	Glass	PS	РР	Glass	PP	РР	Glass	Glass	PF
Item no.	15015	15024	15020	15023	15022	15115	_	15025	15026	15029
Adapter for round bucket 13299				3						
Bore diameter x length [mm]	16.5	x 56		17.5 x 67.5		17 x 76	25.5 x 56		25.5 x 58	
Tubes per adapter / rotor	4 /	16		3 / 12		2 / 8	1 / 4		1 / 4	
Centrifuging radius [mm]	13	38		140		126	138		140	
ltem no.	143	303		14307		14300**	14308		14304	

#### Round bucket 13299 (1 set = 2 pcs.)\*

- Max. capacity: 4 x 100 ml
- Max. speed: 4,000 rpm
- Max. RCF: 2,540 x g
  Max. tube length in middle of bucket with / without cap: 126 / 117 mm
- Hermetically closable with cap 17299
- Angle: 90°
- \* Bucket not autoclavable



The regular greasing of the rotor bolts is no longer

Tube						P				
Rated capacity (filling volume) [ml]	30 (26)	30 (28)	30	30	50	50	50	50	50	50
Diameter x length [mm]	25.3 x 98	25.3 x 98	24 x 105	25 x 107	34 x 100	34 x100	35 x 100	34 x 100	28 x 115	29 x 117
Tube material	РРСО	PC	Glass	РР	Glass	Glass	Glass	PC	РР	PP
ltem no.	15032	15030	15033	-	15045	15050	15056	15049	_	15151
Adapter										
for round bucket 13299			$\langle \cdot \rangle$		4					
Bore diameter x length [mm]		25.5 x 58		25.5 x 56		35.5	x 58		29.5 x 67	29.6 x 90
Tubes per adapter / rotor		1 / 4		1/4		1	/ 4		1 / 4	1 / 4
Centrifuging radius [mm]		140		138		1.	40		139	142
ltem no.		14304		14308		14	305		14310*	14299
Tube		La contra de la co	<u>Sk</u>	200	2150					
Rated capacity (filling volume) [ml]	100 (75)	100 (90)	100	100						
Diameter x length [mm]	44 x 100	44 x 100	44 x 100	45 x 100						
Tube material	Glass	Glass	Glass	PC						
Item no.	15078	15106	15100	15103						
Adapter for round bucket 13299			3							
Bore diameter x length [mm]		45.1	x 98.5							
Tubes per adapter / rotor		1	/ 4							
Centrifuging radius [mm]		1	39							
ltem no.		16	051							

#### Round bucket 13299 (1 set = 2 pcs.)\*

- Max. capacity: 4 x 100 ml
- Max. speed: 4,000 rpm
- Max. RCF: 2,540 x g
  Max. tube length in middle of bucket with / without cap: 126 / 117 mm
- Hermetically closable with cap 17299
- Angle: 90°
- \* Bucket not autoclavable



\* Tube 13 x 107 mm only possible without cap 17299 \*\* Only possible without cap 17299

#### Bucket 13296 (1 set = 2 pcs.)\*

- Max. capacity: 24 x 15 ml
- Max. speed: 4,000 rpm
   Max. RCF: 2,379 x g
   Angle: 90°

- \* Bucket not autoclavable



### The regular greasing of the rotor bolts is no longer

Tube					,0	5		
Rated capacity (filling volume) [ml]	10	10	10	10	10	14	14	15 (13)
Diameter x length [mm]	16 x 100	16 x 100	16.1 x 81.1	16.1 x 81.1	16.1 x 81.1	17 x 100	17 x 100	17 x 110
Tube material	Glass	Glass	PF	PC	РРСО	PS	PP	Glass
ltem no.	15015	15024	15000	15010	15039	15020	15023	15022
Adapter								
for bucket 13296			$\langle \cdot \rangle$				100	
Bore diameter x length [mm]	17.5	x 64.5			17.5 x	67.5	0	
Tubes per bucket / rotor	6	/ 24			67	24		
Centrifuging radius [mm]	1	130			13	3		
tem no.	16020 -							
				200	243	_		
Blood and urine tubes								<u> </u>
Rated capacity (filling volume) [ml]	1.1-1.4	2.7-5	1.6-6	1.8-7	4-10	8-9	6-10	9-10
Diameter x length with lid [mm]	8 x 82	11 x 82-108	13 x 81-106	13 x 81-107	15 x 91-108	16 x 107	16 x 106	16 x 108
Tube material	PP	PP	PP, PET	PET	PP, PET	PET	PET	PP
tem no.	-	-	-	-	-	-	-	-
Adapter for bucket 13296								
Bore diameter x length [mm]					17.5 x 67.5			

Bore diameter x length [mm]	17.5 x 67.5
Tubes per bucket / rotor	6 / 24
Centrifuging radius [mm]	133
ltem no.	-

#### Bucket 13035 (1 set = 2 pcs.)\*

- Max. capacity: 8 x 15 ml
- Max. capacity. 8 x 15 ml
   Max. speed: 4,000 rpm
   Max. RCF: 2,379 x g
   Angle: 90°
- \* Bucket not autoclavable



The regular greasing of the rotor bolts is no longer **necessary** – this minimises

Rated capacity (filing volume) [m]       10       10       10       10       14       14       15 (13)       15         Diameter x length [mm]       15 1.x 81.1       16 1.x 81.1       17 1.5 x 86       17 1.5 x 86       17 1.5 x 86       16 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1	Tube						5			
Tube material         PF         PC         PPC0         Glass         Glass         PS         PP         Glass         PP           Item no.         15000         15010         15039         15015         15024         15020         15023         15022         15115           Adapter for bucket 13035         Gass         PS         PP         Glass         PP         Glass         PP           Bore dameter x length [mm]         T7.5 x 86         T7.5 x 86         T	Rated capacity (filling volume) [ml]	10	10	10	10	10	14	14	15 (13)	15
Item no.         15000         15010         15039         15015         15024         15020         15023         15022         15115           Adapter for bucket 13035         Image: Constraint of the second of	Diameter x length [mm]	16.1 x 81.1	16.1 x 81.1	16.1 x 81.1	16 x 100	16 x 100	17 x 100	17 x 100	17 x 110	16.5 x 120
Adapter       T.5 x 86         for bucket       17.5 x 86         Bore diameter x length (mm)       133         tebs per bucket / rotor       4 / 8         Centrifuging radius (mm)       133         tem no.       -         Blood and urine tubes       1         Ageter       -         Blood and urine tubes       1         Ageter capacity (filing volume) (ml)       1.1 - 1.4         1.1 - 1.4       2.7 - 5         1.6 - 6       1.8 - 7         4.10       8 - 9         6.10       9 - 10         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 108         16 we material       PP         PP       PP, PET         PET       PP         PD and ter       17.5 x 76         17.5 x 76       17.5 x 86         12035       123         Bore diameter x length (mm)	Tube material	PF	PC	РРСО	Glass	Glass	PS	РР	Glass	РР
for bucket 13035       Image: Second se	ltem no.	15000	15010	15039	15015	15024	15020	15023	15022	15115
13035       Image: constrained on the second o	Adapter							72		
Tubes per bucket / rotor       4 / 8         Centriluging radius [mm]       133         Item no.       -         Blood and urine tubes       1         Blood and urine tubes       1         1       1.1 - 1.4         2.7 - 5       1.6 - 6         1.8 - 7       4 - 10         8 - 9       6 - 10       9 - 10         10       11 x 82 - 108       13 x 81 - 106         Diameter x length with lid [mm]       8 x 82       11 x 82 - 108         11 x 82 - 108       13 x 81 - 106       13 x 81 - 107         15 x 91 - 108       16 x 107       16 x 106       16 x 108         15 x 118       PP       PP       PP       PP         PP       PP       PP       PP       PP         Reter langth with lid [mm]       17.5 x 86       17.5 x 76       17.5 x 86         1303       123       133       133				$\langle \mathcal{O} \rangle$		5		ne.		
Centrifuging radius [mm]       133         Item no.       -         Blood and urine tubes       -         Rated capacity (filling volume) [mi]       1.1-1.4       2.7-5       1.6-6       1.8-7       4-10       8-9       6-10       9-10       10         Diameter x length with lid [mm]       8x 82       11 x82-108       13 x81-106       13 x81-107       15 x 91-108       16 x 107       16 x 108       15 x 118         Tube material       PP       PP       PP       PET       10.0       10.0<	Bore diameter x length [mm]					17.5 x 86	1.0			
Item no.       -         Blood and urine tubes       -         Rated capacity (filling volume) [mi]       1.1–1.4         2.7–5       1.6–6         11       x.82–106         13       x.81–106         15       x.9–9         6–10       9–10         10       15 x 91–108         16 x 107       16 x 106         16 x 108       15 x 118         Tube material       PP         PP       PP, PET         PET       PET         PET       PET         PET       PET         PP       PP, PET         PET       PET         PE       PE         Itobs per bucket / rotor       4 / 8         Itas       123         Itas       133	Tubes per bucket / rotor					4 / 8				
Blood and urine tubes         Image: Constraint of the second	Centrifuging radius [mm]					133	$\mathbf{X}$			
Rated capacity (filling volume) [mi]       1.1-1.4       2.7-5       1.6-6       1.8-7       4-10       8-9       6-10       9-10       10         Diameter x length with lid [mm]       8 x 82       11 x 82-108       13 x 81-106       13 x 81-107       15 x 91-108       16 x 107       16 x 106       16 x 108       15 x 118         Tube material       PP       PP       PP, PET       PET       PET       PET       PET       PP       PP       PP         Item no.       -       103       33 <t< td=""><td>Item no.</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>	Item no.									
Diameter x length with lid [mm]         8 x 82         11 x 82 - 108         13 x 81 - 106         13 x 81 - 107         15 x 91 - 108         16 x 107         16 x 106         16 x 108         15 x 118           Tube material         PP         PP         PP, PET         ST         ST         ST	Blood and urine tubes								Ĩ	Ĩ
Tube material         PP         PP         PP, PET         PET         PP, PET         PET         PET         PET         PET         PP         PP         PP           Item no.         -         <	Rated capacity (filling volume) [ml]	1.1-1.4	2.7-5	1.6-6	1.8-7	4-10	8-9	6-10	9-10	10
Item no.       -<	Diameter x length with lid [mm]	8 x 82	11 x 82-108	13 x 81-106	13 x 81-107	15 x 91-108	16 x 107	16 x 106	16 x 108	15 x 118
Adapter           for bucket 13035         Image: Constraint of the system of the sy	Tube material	PP	PP	PP, PET	PET	PP, PET	PET	PET	PP	PP
for bucket 13035         Image: Constraint of the system Solution of the system Bore diameter x length [mm]         17.5 x 86         17.5 x 76         17.5 x 86           Bore diameter x length [mm]         17.5 x 86         4 / 8         4 / 8         4 / 8           Tubes per bucket / rotor         4 / 8         4 / 8         4 / 8         4 / 8           Centrifuging radius [mm]         133         123         133         133	ltem no.	-	-	-	-	_	-	-	-	-
Tubes per bucket / rotor         4 / 8         4 / 8         4 / 8           Centrifuging radius [mm]         133         123         133	for bucket									
Tubes per bucket / rotor         4 / 8         4 / 8         4 / 8           Centrifuging radius [mm]         133         123         133	Bore diameter x length [mm]		17.5	x 86		17.5 x 76		17.5	x 86	
Centrifuging radius [mm]         133         123         133			4 /	8		4 / 8		4	/ 8	
Item no. – 13073 <sup>*</sup> –			13	33		123	133			
	Item no.		-	-		13073 <sup>*</sup>			-	

#### MTP swing-out rotor 11123

with 1 set (quantity 2) rectangular buckets 13223

- Max. plate height: 50 mm
- Max. speed: 4,000 rpm
- Max. RCF: 2,111 x g
  Max. load per carrier: 346 g
- Angle: 90°





#### Fixed-angle rotor 12072

#### with 20 buckets 13011

- Max. capacity: 20 x 15 ml
   Max. speed: 4,000 rpm
   Max. RCF: 2,486 x g
   Angle: 33°



Tube         Image: Constraint of the second se											
Diameter x length [mm]         12 x 75         12 x 100         16 1 x 811         16 1 x 811         16 8 x 100         16 x 100         17 x 100         16 x x 120           Len no.         15060         15007         15010         15039         15015         15024         15020         15023         15022         15115           Bore diameter x length [mm]         13.5 x 69         12.5 x 85         17.9 x 77.8         17.9 x 87.8         -///20         -///20         -///20         -///20         -///20         -///20         -///20         -///20         -///20         -///20         -///20         -///20         -///20         -///20         -///20         -///20         -///20         -///20         -///20         -///	Tube					b					
Lube material         PS         Glass         PC         PPCO         Glass         Glass         PS         PP         Glass         PP           Item no.         15060         15007         15010         15039         15015         15024         15020         15023         15022         15115           Adapter         Image: Constraint of the constraint o	Rated capacity (filling volume) [ml]	5	6 (5)	10	10	10	10	14	14	15 (13)	15
Item no.       15060       15007       15010       15039       15015       15024       15020       15023       15022       15115         Adapter for fixed-angle rotor 12072       Image: Construction of the stand o	Diameter x length [mm]	12 x 75	12 x 100	16.1 x 81.1	16.1 x 81.1	16 x 100	16 x 100	17 x 100	17 x 100	17 x 110	16.5 x 120
Adapter       Image: Second condition of the second condition	Tube material	PS	Glass	PC	РРСО	Glass	Glass	PS	PP	Glass	PP
for fixed-angle rotor 2072 Bore diameter x length (mm) 13.5 x 69 12.5 x 85 17.9 x 77.8 17.9 x 77.8 17.9 x 87.8 17.9 x 87.8 13.9 13.9 13.9 13.9 13.9 13.9 13.9 13.9 13.9 13.9 13.9 13.9 13.9 14.9 15. 108 15. 108	ltem no.	15060	15007	15010	15039	15015	15024	15020	15023	15022	15115
totor 12072       Bore diameter x length [mm]       13.5 x 69       12.5 x 85       17.9 x 77.8       17.9 x 87.8         Tubes per adapter / rotor       1 / 20       1 / 20       1 / 20       - / 20         Centrifuging radius [mm]       117       133       129       139         Item no.       13071       13072       13073       -         Blod and urine tubes         Rated capacity (filling volume) [m1]       1.1 - 1.4       2.7 - 3.1       1.6 - 5.3       2.7 - 5       7.5 - 8.5       4.9 - 6       9.5 - 10       6 - 10       9 - 10       8         Diameter x length with lid [mm]       8.82       11 x 82       13 x 81 - 91       11 x 82 - 108       13 x 106 - 107       15 x 108       15 x 108 - 118       15 x 106 - 118       16 x 103 - 107       16 5 x 103         Tube material       PP       PP       PFT       PP       PFT       PP       PI       Glass         Item no.       -       <	Adapter							77			
Tubes per adapter / rotor       1 / 20       1 / 20       1 / 20       - / 20         Centrifuging radius [mm]       117       133       129       139         Item no.       13071       13072       13073       -         Blood and urine tubes       -       -       -       -         Rated capacity (filling volume) [ml]       1.1-1.4       2.7-3.1       1.6-5.3       2.7-5       7.5-8.5       4.9-6       9.5-10       6-10       9-10       8         Diameter x length with lid [mm]       8 x 82       11 x 82       13 x 81-91       11 x 82-108       13 x 106-107       15 x 106-118       16 x 108       16 x 131         Tube material       PP       PET       PP       PET       PP       PET       PP       Glass         for fixed-angle rotor       -	rotor					5		A.C.			
Centrifuging radius [mm]       117       133       129       139         Item no.       13071       13072       13073       -         Blood and urine tubes       1 </td <td>Bore diameter x length [mm]</td> <td>13.5 x 69</td> <td>12.5 x 85</td> <td>17.9</td> <td>x 77.8</td> <td></td> <td>1.0</td> <td>17.9</td> <td>x 87.8</td> <td></td> <td></td>	Bore diameter x length [mm]	13.5 x 69	12.5 x 85	17.9	x 77.8		1.0	17.9	x 87.8		
Item no.       13071       13072       13073       –         Blood and urine tubes       Image: Constraint of the state of t	Tubes per adapter / rotor	1 / 20	1 / 20	1.	/ 20			-	/ 20		
Blood and urine tubes       Image: Constraint of the second	Centrifuging radius [mm]	117	133	1	29		X	1	39		
Rated capacity (filling volume) [ml]       1.1-1.4       2.7-3.1       1.6-5.3       2.7-5       7.5-8.5       4.9-6       9.5-10       6-10       9-10       8         Diameter x length with lid [mm]       8 x 82       11 x 82       13 x 81-91       11 x 82-108       15 x 108       13 x 106-107       15 x 106-118       16 x 106-107       16 x 108       16 x 131         Tube material       PP       PP       PET       PP       PET       PET <t< td=""><td>Item no.</td><td>13071</td><td>13072</td><td>13</td><td>073</td><td>15</td><td></td><td></td><td>-</td><td></td><td></td></t<>	Item no.	13071	13072	13	073	15			-		
Diameter x length with lid [mm]       8 x 82       11 x 82       13 x 81-91       11 x 82-108       15 x 108       13 x 106-107       15 x 106-118       16 x 106-107       16 x 108       16 x 131         Tube material       PP       PP       PET       PP       PP       PP       Glass         Item no.       -       -       -       -       -       -       -       -         Adapter       for fixed-angle rotor       for fixed-angle rotor       If item item item item item item item item	Blood and urine tubes			TO P	nde		11				
Diameter x length with lid [mm]       8 x 82       11 x 82       13 x 81-91       11 x 82-108       15 x 108       13 x 106-107       15 x 106-118       16 x 106-107       16 x 108       16 x 131         Tube material       PP       PP       PET       PP       PP       PP       Glass         Item no.       -       -       -       -       -       -       -       -         Adapter       for fixed-angle rotor       for fixed-angle rotor       If item item item item item item item item		Ï	Ĩ		<u>ï</u>	I				I	
Tube material     PP     PP     PET     PP     PP     PET     PP, PET     PET     PP     Glass       Item no.     -     -     -     -     -     -     -     -     -       Adapter       for fixed-angle rotor     -     -     -     -     -     -     -				¥							
Item no											
Adapter for fixed-angle			PP								Glass
for fixed-angle		_	-	_		_				_	
	for fixed-angle rotor					•				۲	
Bore diameter x length [mm]         13.8 x 60         12.5 x 85         17.9 x 77.8         17.9 x 87.8         17.9 x 77.8         17.9 x 87.8			13.8 x 60		12.5 x 85	17.9 x 77.8		17.9 x 87.8		17.9 x 77.8	17.9 x 87.8
Tubes per adapter / rotor         1 / 20         1 / 20         1 / 20         - / 20         1 / 20         - / 20	Tubes per adapter / rotor		1 / 20		1 / 20	1 / 20		- / 20		1 / 20	- / 20
Centrifuging radius [mm]         108         133         129         139         139	Centrifuging radius [mm]		108		133	129		139		129	139
ltem no. 13070 13072 13073 – 13073 –	ltem no.		13070		13072	13073		_		13073	-

#### Fixed-angle rotor 12073

#### with 30 buckets 13011

- Max. capacity: 30 x 15 ml
  Max. speed: 4,000 rpm
  Max. RCF outer row: 2.486 x g
  Max. RCF inner row: 2.111 x g
  Angle: 33° (both rows)



Tube				Ĵ			C			
Rated capacity (filling volume) [ml]	5	6 (5)	10	10	10	10	14	14	15 (13)	15
Diameter x length [mm]	12 x 75	12 x 100	16.1 x 81.1	16.1 x 81.1	16 x 100	16 x 100	17 x 100	17 x 100	17 x 110	16.5 x 120
Tube material	PS	Glass	PC	РРСО	Glass	Glass	PS	PP	Glass	PP
ltem no.	15060	15007	15010	15039	15015	15024	15020	15023	15022	15115
Adapter										
for fixed-angle rotor 12073		ĺ			9		100			
Bore diameter x length [mm]	13.5 x 69	12.5 x 85	17.9	x 77.8			17.9	x 87.8		
Tubes per adapter / rotor	1 / 30	1 / 30	1.	/ 30				/ 30		
Centrifuging radius (outer/inner)[mm]	117 / 96	133 / 112	129	/ 108			139	/ 118		
Item no.	13071	13072	13	073				_		
				. 9,						
Blood and urine tubes	1		ĨĨ		Î					
	11-14	27-31	16-53	27-5	75-85	49-6	95-10	6-10	9-10	8
Rated capacity (filling volume) [ml]	1.1-1.4 8 x 82	2.7-3.1 11 x 82	1.6-5.3 13 x 81-91	$\frac{1}{2.7-5}$	7.5-8.5	$\frac{4.9-6}{13 \times 106-107}$	<u>9.5-10</u> <u>15 x 106-118</u>	6-10	9-10 16 x 108	8 16 x 131
Rated capacity (filling volume) [ml] Diameter x length with lid [mm]	8 x 82	11 x 82	13 x 81-91	11 x 82-108	15 x 108	13 x 106-107	15 x 106-118	16 x 106-107	16 x 108	16 x 131
Rated capacity (filling volume) [ml] Diameter x length with lid [mm] Tube material										
Rated capacity (filling volume) [ml] Diameter x length with lid [mm] Tube material Item no.	8 x 82	11 x 82	13 x 81-91	11 x 82-108 PP	15 x 108	13 x 106-107 PET	15 x 106-118	16 x 106-107 PET	16 x 108	16 x 131
Rated capacity (filling volume) [ml] Diameter x length with lid [mm] Tube material	8 x 82	11 x 82	13 x 81-91	11 x 82-108 PP	15 x 108	13 x 106-107 PET	15 x 106-118	16 x 106-107 PET	16 x 108	16 x 131
Rated capacity (filling volume) [ml] Diameter x length with lid [mm] Tube material Item no. Adapter for fixed-angle rotor	8 x 82	11 x 82	13 x 81-91	11 x 82-108 PP	15 x 108	13 x 106-107 PET	15 x 106-118	16 x 106-107 PET	16 x 108	16 x 131
Rated capacity (filling volume) [ml] Diameter x length with lid [mm] Tube material Item no. Adapter for fixed-angle rotor 12073	8 x 82	11 x 82 PP 	13 x 81-91	11 x 82-108 PP -	15 x 108 PP -	13 x 106-107 PET	15 x 106-118 PP, PET -	16 x 106-107 PET	16 x 108 PP -	16 x 131 Glass -
Rated capacity (filling volume) [ml] Diameter x length with lid [mm] Tube material Item no. Adapter for fixed-angle rotor 12073 Bore diameter x length [mm]	8 x 82	11 x 82 PP 	13 x 81-91	11 x 82-108 PP - 12.5 x 85	15 x 108 PP -	13 x 106-107 PET	15 x 106-118 PP, PET - 17.9 x 87.8	16 x 106-107 PET	16 x 108 PP -	16 x 131 Glass 

## Material properties Guideline for optimal tube selection

Due to the many factors that influence material properties, this overview is only intended as a general recommendation. There is no guarantee of the stated properties. Users should therefore carefully test materials for suitability under specific application conditions. Tubes should be discarded as soon as they show any sign of material fatigue.

	Polycarbonate (PC)	Polyvinyl fluoride (PF)	Polystyrene (PS)	Polyethylene (PE)	Polypropylene (PP)
Autoclave resistant	Yes	Yes	No	No	Yes
Elasticity	Not elastic	Not elastic	Not elastic	Good	Not elastic
Transparency	Transparent	Translucent	Transparent	Translucent	Translucent
Microwave resistant	Moderate	Yes	No	Limited	Moderate
Chemical resistance				1.0	
Weak acids	Yes	Yes	Yes	Yes	Yes
Strong acids	No	Yes	Limited	Yes	Yes
Alcohols and alkalis	No	Yes	Yes	Yes	Yes
Salts	Limited	Yes	Limited	Yes	Yes
Note:	Frequent autoclaving leads to loss of strength	Tubes should be completely filled and closed for use at maximum RCF	oiol		

		501		
	PP copolymer (PPCO)	Glass	High-speed glass (HS glass)	Stainless steel
Autoclave resista <mark>nt</mark>	Yes	Yes	Yes	Yes
Elasticity	Moderate	Not elastic	Not elastic	Not elastic
Transparency	Translucent	Transparent	Transparent	Opaque
Microwave resistant	Moderate	Yes	Yes	No
Chemical resistance	<i>A</i> .			
Weak acids	Yes	Yes	Yes	Limited
Strong acids	Yes	Yes	Yes	Limited
Alcohols and alkalis	Yes	Yes	Yes	Yes
Salts	Yes	Yes	Yes	Limited
Note:		Max. RCF for all glass tubes approx. 4,000 x g	High-speed glass for maximum RCF of 13,100 x g	

# **Spincontrol Basic** Advanced control, intuitive operation

Spincontrol Basic is a programmable and user-friendly control unit with a clearly organised and intuitive user interface that simplifies everyday tasks in the lab. Operating parameters are entered using centrally arranged arrow buttons, and parameter settings can be changed during operation. Another clever feature is the optional adjustable automatic lid opening at the end of the run.

Spincontrol Basic can hold up to ten programs – a unique feature in its class. These user-modifiable programs can store standard routines for retrieval at any time.

That makes the control unit ideal for institutions where specimens with different operating parameters must be centrifuged. Quick access to stored programs facilitates enhanced process reliability and quality of analytical results.

Two pairs of acceleration and braking curves help to optimise separation processes. Short or pulsed runs are also possible by pressing and holding the Start/Stop button.

Display	LCD
Speed/RCF display	+
Timer (s; min:s)	10 – 99:59
Short run, Continuous run	+,+
Time increment [s]	1
Speed increment [rpm]	100
RCF increment [x g]	10
Programs	10
Acceleration curves	2 (fast, soft)
Braking curves	2 (fast, soft)
Automatic lid opening at end of run, switchable	<b>O</b> +,+
Start delay (clotting time) adjustable, switchable	+,+
Audible signal, switchable	+ , +
Visual standstill indication	+
Lockable controller	+
Microprocessor control	+



# Premium quality Made in Germany

The Sigma 2-7 centrifuge meets the highest technical requirements and laboratory standards. Developed and produced at our facility in Osterode, Germany, it is a high-performance, durable and energy-efficient quality product and conforms to the latest safety, emissions and environmental standards. Sigma guarantees the availability of spare parts and wearing parts for at least 10 years. Furthermore, you benefit from our extensive services portfolio, including commissioning, maintenance, device calibration and more. Our qualified service technicians are ready to provide professional maintenance and repair as well as loaner devices if necessary. All support services are designed to ensure reliability and optimise system availability.

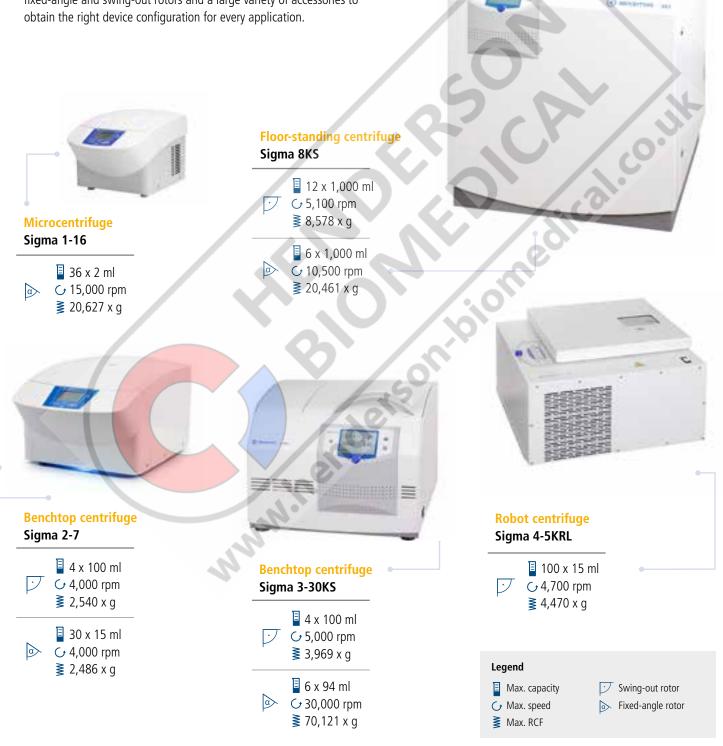
	Sigma 2-7	Sigma Service For maintenance and repairs please contact our Service department at
Max. capacity [ml]		www.sigma-zentrifugen. de/en/service
Swing-out rotor	4 x 100	0.
Fixed-angle rotor	30 x 15	
Max. RCF	2,540	
Maximum speed [rpm]	4,000	Calibration
Minimum speed [rpm]	100	Documented proof of compliance with
Noise level at maximum speed (approximate) [dB(A)]		essential technical parameters.
Fixed-angle rotor 12073	54	Speed or run time (item no. 17713)
Swing-out rotor 11071 with buckets 13299 and caps	53	Speed and run time (item no. 17714)
Max. acceleratio <mark>n time [s</mark> ]		Speed, run time, temperature (item no. 17715)
Fixed-angle ro <mark>tor 12073</mark>	18	Device multipation (1000)
Swing-out rotor 11071 with buckets 13299 and caps	13	Device qualification (IQOQ)
Max. braking time [s]		This comprehensive device qualification
Fixed-angle rotor 12073	14	includes installation qualification and metro- logical checking of all functional parameters
Swing-out rotor 11071 with buckets 13299 and caps	10	<ul> <li>with a rotor.</li> </ul>
Power consumption [W]	210	
Height x width x depth [mm]	293 x 378 x 535	<ul> <li>IQOQ documents (item no. 170000)</li> <li>IQOQ on site (upon request)</li> </ul>
Height with open lid [mm]	643	
Weight without rotor [kg]	23	

**Sigma 2-7** centrifuge, IVD version 100–240 V, 50/60 Hz (item no. 10227)



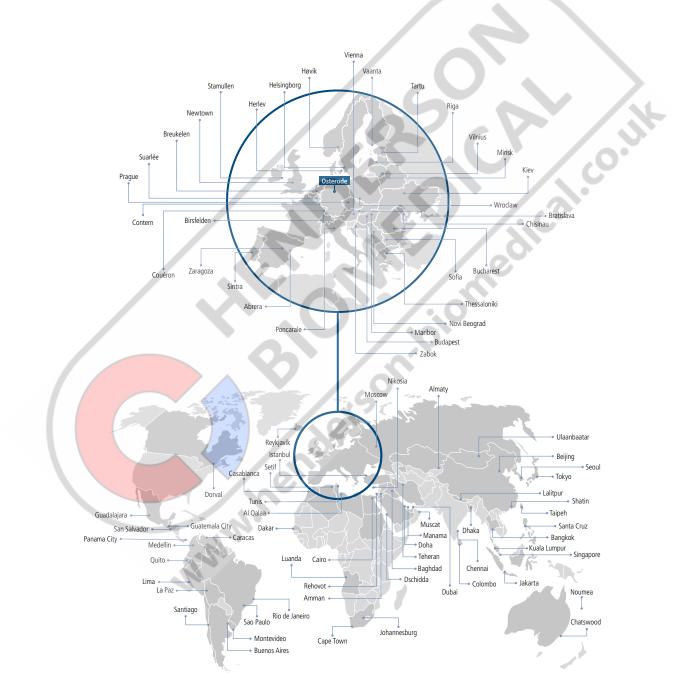
# **Product portfolio**

Sigma offers a broad product portfolio with more than 25 laboratory centrifuges. They can be combined with an extensive range of fixed-angle and swing-out rotors and a large variety of accessories to obtain the right device configuration for every application.



# **Global service** For local product security

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



Selected locations of our representatives.

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



#### Sigma Laborzentrifugen GmbH

dical.co.uk

iome

www.nenderson

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



#### LABORATORY EQUIPMENT MAINTENANCE, REPAIR, CALIBRATION AND SALES

Established in 1987, Henderson Biomedical is the UK's leading laboratory equipment sales and service provider. Our knowledgeable team can provide you with excellent sales advice on a range of different types of laboratory equipment including centrifuges, refrigerators, freezers and heat sealers.

Henderson Biomedical is also able to provide you with first class after-sales service and calibration of your laboratory equipment. We are an **ISO 17025 (UKAS) accredited calibration test laboratory** and our team of Field Service Engineers cover the whole of the United Kingdom.

Please contact us for more information on the types of equipment we supply and the different after-sales services we can offer.

Henderson Biomedical Unit 3, Swan Close Croydon CR0 2DZ United Kingdom

#### Tel: 020 8663 4610

For sales enquiries: sales@henderson-biomedical.co.uk For all other enquiries: info@henderson-biomedical.co.uk www.henderson-biomedical.co.uk