



*Refrigerated Centrifuge*

**3-18KS**

## SIGMA 3-18KS

No. 10370 (220-240 V, 50/60 Hz), No. 10371 (208 V, 60 Hz), No. 10372 (200 V, 50/60 Hz), No. 10373 (120 V, 60 Hz)

- Universal refrigerated table top centrifuge; speed range up to 18.000 rpm
- Spincontrol S
- Illuminated keys for start, stop, lid open
- Various angle and swing-out rotors available
- Maximum capacity of 4 x 400 ml down to microtubes with different adapters in the same bucket
- Maintenance-free induction drive motor A microcontroller controls speed or gravitational field, time and temperature
- Suitable for low speeds e.g. for cell sedimentation, accuracy +/- 1 rpm
- Magnetic rotor identification prevents the rotor from overspeeding, active rotor identification
- Stainless steel bowl
- Imbalance switch
- No need to open the casing for emergency lid lock release
- Easy lid opening due pneumatic spring support
- Window in the centrifuge lid for external speed control
- Produced according to national and international safety regulations (EN 61010-2-020)
- Motorized lid lock
- Possibility of precooling the rotors during standstill Refrigerant CFC-free (R 134 a)

## SIGMA 3-18KHS No. 10374 (220-240 V, 50/60 Hz)

- heated version of 3-18KS
- max. rotor temp. 40-60 °C depending on rotor and speed
- Technical datas like 3-18KS

### ***Created during production. Centrifuge with one rotor***

<i>Calibration certificate for speed and time</i>	No. 17714
<i>Calibration certificate for temperature speed and time</i>	No. 17715
<i>IQOQ</i>	No. 17711
<i>For a further rotor</i>	No. 17712

<b>Biosafe Rotor</b>					
<i>Rotor No.</i>		<i>max. rpm</i>		<i>max. RCF</i>	
11180 + 2 x 13190		4.700		4.248	
11180 + 2 x 13194		4.700		4.149	
<b>complete rotor</b>					
No. <b>11182</b> : 12 x <b>50 ml</b> (11180 + 2 x 13190 + 2 x 17346 + 12 x 15151)					
<b>adapters for bucket 13190, sealable with cap 17190</b>					
1 Set = 2 pcs					
<i>No.</i>	<i>Adapter</i>	<i>tube Order No.</i>	<i>No.</i>	<i>Adapter</i>	<i>tube Order No.</i>
17350	24 x <b>0.5 – 0.75 ml</b>	15005	17376	4 x <b>40 – 50 ml</b>	15052
17361	16 x <b>Microtainer</b>		17375	3 x <b>50 ml</b>	15050
17353	20 x <b>1.5 – 2.0 ml</b>	15008, 15040	17346	3 x <b>50 ml Culture</b>	15151
17352	25 x <b>5 ml RIA</b>	15006	17377	4 x <b>50 ml Culture</b>	15151**
17356	16 x <b>5 – 6 ml</b>		17344	3 x <b>50 ml Culture*</b>	
	RIA, Hemolyse, Vacutainer		17385	1 x <b>78 – 85 ml</b>	15076
17354	16 x <b>7 ml</b>	15007	17390	1 x <b>100 ml</b>	15100
17351	12 x <b>7 – 9 ml Monovette</b>		17395	1 x <b>125 ml</b>	15125
17358	12 x <b>9 – 10 ml Monov. +15 ml</b>	15015	17393	1 x <b>175 ml Culture</b>	15174**
17355	12 x <b>10 – 12 ml</b>	15010	17400	1 x <b>200 ml</b>	15202
17345	5 x <b>15 ml Culture</b>	15115	17401	1 x <b>200 ml**</b>	15201
17359	9 x <b>15 ml Culture</b>	15115**	17347	1 x <b>250 ml</b>	15249
17370	5 x <b>25 – 30 ml</b>	15025	15401	1 x <b>400 ml</b>	15401
17362	5 x <b>30 ml</b>				
<b>Adapter for bucket 13194</b>					
<i>No.</i>	<i>Adapter</i>	<i>tube Order No.</i>	<i>No.</i>	<i>Adapter</i>	<i>tube Order No.</i>
18310	4 x <b>50 ml Culture</b>	15151**	18311	10x <b>15 ml Culture</b>	15115**
18309	4 x <b>50 ml Culture*</b>				



<i>Rotor No.</i>		<i>max. rpm</i>		<i>max. RCF</i>	
11180 + 2 x 13180		4.700		4.223	
<b>complete rotor</b>					
No. <b>11181</b> : 48 x <b>15 ml</b> (11180 + 2 x 13180 + 2 x 18015 + 48 x 15023)					
<b>adapters for bucket 13180, sealable with cap 17112</b>					
1 Set = 2 pcs					
<i>No.</i>	<i>Adapter</i>	<i>tube Order No.</i>	<i>No.</i>	<i>Adapter</i>	<i>tube Order No.</i>
18002	20 x <b>1.5 – 2.0 ml</b>	15008, 15040	18025	5 x <b>25 ml</b>	15025
18005	20 x <b>5 ml RIA</b>	15006	18030	5 x <b>25 – 30 ml</b>	15030
18009	20 x <b>5 – 6 ml Hemolyse</b>		18022	4 x <b>30 ml Sterilin</b>	
18012	12 x <b>5 – 7 ml Vacutainer</b>		18050	2 x <b>50 ml</b>	15050
18007	20 x <b>7 ml</b>	15007	18051	2 x <b>40 – 50 ml</b>	15052
18017	10 x <b>9 – 15 ml Monov. +15 ml</b>	15015	18052	2 x <b>50 ml Culture</b>	15151
18010	12 x <b>9 – 12 ml</b>	15010	18053	2 x <b>50 ml Culture*</b>	
18015	12 x <b>15 ml</b>	15015	18085	1 x <b>78 – 85 ml</b>	15076
18016	4 x <b>15 ml Culture</b>	15115	18100	1 x <b>100 ml</b>	15100
18018	6 x <b>15 ml Culture**</b>	15115	18125	1 x <b>125 ml</b>	15125
			18200	1 x <b>200 ml</b>	15202

\* with skirt \*\*without bucket cap



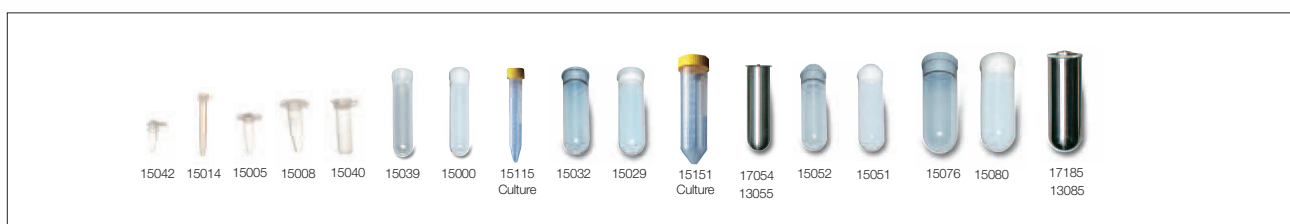
Rotor No.		max. rpm	max. RCF
11133 + 2 x 13104		5.500	5.242
11133 + 2 x 13130		5.500	5.411
<b>complete rotor</b>			
No. 11132: 28 x 15 ml (11133 + 2 x 13104 + 2 x 17015 + 28 x 15023)			
<b>adapters for bucket 13104, sealable with cap 17111</b>			
1 Set = 2 pcs			
No.	Adapter	tube Order No.	No. Adapter tube Order No.
17008	12 x 1.5 – 2.0 ml	15008, 15040	17032 1 x 30 ml Sterilin
17006	12 x 5 ml RIA, Hemolyse	15060	17049 1 x 50 ml Culture 15151
17027	7 x 5 – 7 ml Vacutainer		17048 1 x 50 ml Culture*
17007	12 x 7 ml	15007	17050 1 x 50 ml 15050
17012	6 x 10 ml	15010	17052 1 x 40 – 50 ml 15052
17018	4 x 9 – 10 ml Monov. +15 ml		17085 1 x 78 – 85 ml 15076
17015	7 x 15 ml	15015	17100 1 x 100 ml 15100
17019	3 x 15 ml Culture**	15115	17101 1 x 100 ml 15102
13130	3 x 15 ml Culture	15115	17125 1 x 125 ml 15125
17025	2 x 25 ml	15025	15202 PP-bottle 190 ml
17030	2 x 25 – 30 ml	15030	

\* with skirt \*\*without bucket cap



<b>4 x Cytrotor</b>			
Rotor No.		max. rpm	max. RCF
11224		3.000	1.137
<b>MTP swing-out rotor</b>			
Rotor No.		max. rpm	max. RCF
11222		3.000	1.238
max. H. = 56 mm			
11241		4.700	3.136
max. H. = 55 mm with hermetic cap No. 17108			
<b>24 x 1.5 – 2.0 ml swing-out rotor</b>			
Rotor No.		max. rpm	max. RCF
11135		14.000	16.215
No.	Adapter	1 Set = 2 pcs	
13021	0.2 ml PCR		
13000	0.4 ml reaction caps		
13002	0.5 – 0.75 ml reaction caps		
<b>0.2 – 2.0 ml drumrotor</b>			
Rotor No.		max. rpm	max. RCF
11136		14.500	16.454
capacity: 6 x adapter			
No.	Adapter	1 Set = 2 pcs	
14021	8 x 4 x 0.2 ml PCR		
14020	10 x 0.2 – 0.5 ml PCR		
14000	20 x 0.25 – 0.4 ml reaction caps		
14002	10 x 1.5 – 2.0 ml reaction caps		





<i>Rotor No.</i>	<i>capacity</i>	<i>tube Order No.</i>	<i>max. rpm</i>	<i>max. RCF</i>
<b>12115</b>	12 x 8 x <b>0.2 ml</b> PCR	15042	16.400	29.468
<b>12154</b>	24 x <b>1.5 – 2.0 ml</b>	15008, 15040	18.000	29.700
<b>12131</b>	30 x <b>1.5 – 2.0 ml</b>	15008, 15040	16.400	30.070
<b>12349</b>	48 x <b>1.5 – 2.0 ml</b>	15008, 15040	15.000	25.155
<b>12111</b>	10 x <b>10 ml</b>	15000, 15039	18.000	27.530
<b>12157</b>	20 x <b>10 ml</b>	15000, 15039	10.000	10.956
<b>12171</b>	12 x <b>15 ml</b> Culture	15115	13.500	20.172
<b>12158</b>	6 x <b>30 ml</b>	15032, 15029	18.000	28.616
<b>19776</b>	6 x <b>50 ml</b> Culture	15151	14.000	20.379
<b>12150</b>	6 x <b>50 ml</b>	15051, 15052	14.600	20.018
<b>12156</b>	8 x <b>50 ml</b>	15051, 15052	13.800	20.440
<b>12155</b>	4 x <b>85 ml</b>	15076, 15080	14.500	21.390
<b>12159</b>	6 x <b>85 ml</b>	15076, 15080	11.400	14.239

All rotors incl. hermetic aluminium lid


### adapter for angle rotors 1 Set = 2 pcs

<i>Rotortype</i>	<i>No.</i>	<i>Adapter</i>	<i>tube Order No.</i>	<i>No.</i>	<i>Adapter</i>	<i>tube Order No.</i>
<b>1.5 – 2.0 ml</b>	<b>13021</b>	<b>0.25 – 0.4 ml</b>	15042	<b>13002</b>	<b>0.5 – 0.75 ml</b> PCR	(15005)
	<b>13000</b>	<b>0.4 ml</b>	15014			
<b>30 ml</b>	<b>13059</b>	<b>10 ml</b>	15000, 15039			
<b>50 ml</b> Culture	<b>13060</b>	<b>15 ml</b> Culture	15115	<b>13079</b>	<b>50 ml</b>	(15051, 15052)
<b>50 ml</b>	<b>16018</b>	<b>15 ml</b> Glass	15085	<b>16030</b>	<b>30 ml</b> Glass	(15086)
	<b>13062</b>	<b>15 ml</b> round bottom				
<b>85 ml</b>	<b>13084</b>	<b>10 ml</b>	15000, 15020	<b>13083</b>	<b>30 ml</b>	(15029, 15032)
	<b>16019</b>	<b>15 ml</b> Glass	15085	<b>16031</b>	<b>30 ml</b> Glass	(15086)
	<b>13081</b>	<b>15 ml</b> Culture	15115	<b>13080</b>	<b>50 ml</b> Culture	(15151)
	<b>13063</b>	<b>15 ml</b> round bottom		<b>13082</b>	<b>50 ml</b>	(15051, 15052)

# Spincontrol S



## Spincontrol S

Display	TFT
Plain text pop up windows	+
Permanent display preselected, current values	+
Display shows dimensions	+
Languages	
Timer	10 sec - 99 h 59 min
Timing after set speed has been reached, switchable	+; +
Time increments [sec]	60; 1
Short run	+
Continous run	+
Speed increments [rpm]	10; 1
Display speed and g-force	+
G-force increments [xg]	10; 1
Temperature increments [°C]	1
Switchable °C, °F	+
Standstill cooling, switchable	+; +
Standstill heating, switchable <sup>1</sup>	+; +
Rapid cooling program: Rapid_temp	+
Start refused with exceeded temperature tolerance, tolerance preselectable	+; +
Programs	60
User defined program name	+
Program list shows all parameters	+
Linear acceleration curves	10
Quadratic acceleration curves	10
User defined acceleration curves	10
Linear deceleration curves	10
Quadratic deceleration curves	10
User defined deceleration curves	10
Brakeless	+
Combination deceleration a. brakeless from 1000 - 150 rpm selectable	+
Auto lid open, switchable	+; +
Accoustic signal, switchable	+; +
Signal length preselectable	+
Optical display stillstand	+
Counting cycles centrifuge, each rotor	+; +
Pop up window end of rotor life time	+
Automatic lid opening at the end of the run, switchable	+; +
All rotors pre programmed speed, g-force, radius	+
Max. radius decreaseable	+
Calculation for liquid density >1.2 g/cm <sup>3</sup>	+
Start delay	+
Controlunit lockable	+
Code protection	+
Run monitoring	+
Microprocessor controlled	+

<sup>1</sup> only for 3-18KHS



17926 Trolley  
(W x H x D, 670 x 497 x 650 mm)

Technical data	3-18KS
Power consumption [W]	1010
Max. capacity [ml]	4 x 400
Max. speed [rpm]	18.000
Min. speed [rpm]	100
Interference suppression	EN 61326
HeightxWidthxDepth [mm]	355 x 630 x 600
Height with open lid [mm]	785
Weight without rotor [kg]	78
Kinetic energy max. [Nm]	22.989
Noise level at max. speed (approx.)	
Rotor 12154 at 18.000 rpm	66 dB (A)
Rotor 11132 at 5.500 rpm	60 dB (A)
Max. acceleration rotor 12154 [sec]	28
rotor 11132 [sec]	20
Max. deceleration rotor 12154 [sec]	53
rotor 11132 [sec]	12
Temperature setting range	-20°C – +40°C
Rotor 11132 5.500 rpm *) [°C]	< 2
Rotor 12154 18.000 rpm *) [°C]	< 4

\* at 23 °C ambient temperature

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