



*Centrifuge*

**2-16P**



*Refrigerated Centrifuge*

**2-16PK**

**SIGMA 2-16P** No. 10155 (220-240 V, 50/60 Hz), No. 10156 (120 V, 50/60 Hz), No. 10157 (100 V, 50/60 Hz)

- Universal laboratory centrifuge for swing-out and angle rotors
- Spincontrol Universal
- Illuminated keys for start, stop, lid open
- For sedimentation up to 4 x 100 ml in swing-out-rotors or up to 20.000 x g in angle rotors
- Brushless drive practically maintenance-free
- Speed preselection up to 15.000 rpm Low speed operation from 100 rpm possible
- A magnetic rotor identification prevents rotors 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 (e.g. EN 61010-2-020)

**SIGMA 2-16PK** No. 10166 (220-240 V, 50/60 Hz)

- refrigerated version of 2-16P
- Universal laboratory centrifuge; speed range up to 15.300 rpm
- Possibility of precooling the rotors during standstill Refrigerant CFC-free (R 134 a)

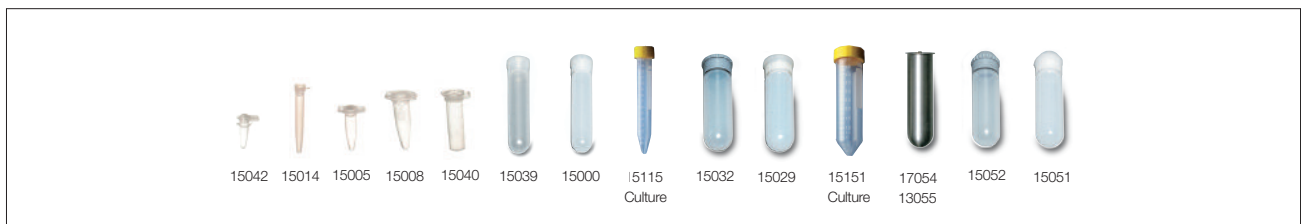
**SIGMA 2-16KC** No. 10170 (220-240 V, 50/60 Hz)

- Model C with control unit Spincontrol Comfort
- Motorized lid lock
- Technical dates like 2-16PK

**SIGMA 2-16KCH** No. 10167 (230 V/50 Hz)

- heated version of 2-16KC
- Max. rotor temperature +40 °C up to +60 °C depending on rotor and speed





Rotor No.	capacity	tube Order No.	2-16P		2-16PK	
			max. rpm	max. RCF	max. rpm	max. RCF
12104*	12 x 8 x 0.2 ml PCR	(15042)			14.000	21.475
12148*	24 x 1.5 – 2.0 ml	(15008, 15040)	15.000	20.627	15.300	21.460
12133*	30 x 1.5 – 2.0 ml	(15008, 15040)	12.000	16.099		
12132*	30 x 1.5 – 2.0 ml	(15008, 15040)			14.000	21.913
12141*	10 x 10 ml	(15000, 15039)	13.500	15.485	15.300	19.890
12072	20 x 15 ml Culture	(15115)	4.000	2.486	4.000	2.486
12073	30 x 15 ml Culture	(15115)	4.000	2.486	4.000	2.486
12139*	6 x 30 ml	(15032, 15029)	13.500	15.893	15.300	20.414
12151*	6 x 50 ml Culture	(15151)	7.800	6.462	9.000	8.603
12071	12 x 15 ml Culture	(15115)	4.000	2.254	4.000	2.254
	6 x 50 ml Culture	(15151)				
12138*	4 x 85 ml	(15076, 15080)	9.400	9.484	9.400	9.484

\* incl. hermetic aluminium lid

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

Rotortype	No.	Adapter	tube Order No.	No.	Adapter	tube Order No.
1.5 – 2.0 ml	13021	0.25 – 0.4 ml	(15042)	13002	0.5 – 0.75 ml PCR	(15005)
	13000	0.4 ml	(15014)			
30 ml	13059	10 ml	(15000, 15039)			
50 ml Culture	13060	15 ml Culture	(15115)	13079	50 ml	(15051, 15052)
	13079+			13079+		
	16018	15 ml Glass	(15085)	16030	30 ml Glass	(15086)
	13079+					
85 ml	13062	15 ml Greiner	(15065)	13064	30 ml Sterilin	
	13084	10 ml	(15000, 15020)	13083	30 ml	(15029, 15032)
	16019	15 ml Glass	(15085)	16031	30 ml Glass	(15086)
	13081	15 ml Culture	(15115)	13080	50 ml Culture	(15151)
	13063	15 ml Greiner	(15065)	13082	50 ml	(15051, 15052)

Swing-out rotor No. 11192

		<b>2-16P</b>		<b>2-16PK</b>	
<i>Rotor</i>		<i>max.</i>	<i>max.</i>	<i>max.</i>	<i>max.</i>
<i>No.</i>		<i>rpm</i>	<i>RCF</i>	<i>rpm</i>	<i>RCF</i>
<b>11192</b>	+ 2 x <b>13012</b>	4.500	3.034	5.000	3.745
<i>bucket</i>		<i>tube</i>			
<i>No.</i>		<i>Order No.</i>			
<b>13012</b>	4 x <b>15 ml</b> , Monovette	15020			
<i>Adapter</i>	<i>Adapter</i>	<i>tube</i>			
<i>Order No.</i>		<i>Order No.</i>			
<b>13070</b>	1 x <b>5 ml</b> , Vacuntainer				
<b>13071</b>	1 x <b>5 ml</b> , Hemolyse				
<b>13072</b>	1 x <b>4 - 7 ml</b>	15007			
		<b>2-16P</b>		<b>2-16PK</b>	
<i>Rotor</i>		<i>max.</i>	<i>max.</i>	<i>max.</i>	<i>max.</i>
<i>No.</i>		<i>rpm</i>	<i>RCF</i>	<i>rpm</i>	<i>RCF</i>
<b>11192</b>	+ 2 x <b>13009</b>	4.500	2.558	5.000	3.158
<i>Becher</i>		<i>Gefäß</i>			
<i>No.</i>		<i>Order No.</i>			
<b>13009</b>	5 x <b>5 ml</b> , Hemolyse	15060			
		<b>2-16P</b>		<b>2-16PK</b>	
<i>Rotor</i>		<i>max.</i>	<i>max.</i>	<i>max.</i>	<i>max.</i>
<i>No.</i>		<i>rpm</i>	<i>RCF</i>	<i>rpm</i>	<i>RCF</i>
<b>11192</b>	+ 2 x <b>13042</b>	4.500	3.011	5.000	3.717
<i>bucket</i>		<i>tube</i>			
<i>No.</i>		<i>Order No.</i>			
<b>13042</b>	6 x <b>15 ml</b> , Monovette	15020			
<i>Adapter</i>	<i>Adapter</i>	<i>tube</i>			
<i>Order No.</i>		<i>Order No.</i>			
<b>13070</b>	1 x <b>5 ml</b> , Vacuntainer				
<b>13071</b>	1 x <b>5 ml</b> , Hemolyse				
<b>13072</b>	1 x <b>4 - 7 ml</b>	15007			
		<b>2-16P</b>		<b>2-16PK</b>	
<i>Rotor</i>		<i>max.</i>	<i>max.</i>	<i>max.</i>	<i>max.</i>
<i>No.</i>		<i>rpm</i>	<i>RCF</i>	<i>rpm</i>	<i>RCF</i>
<b>11192</b>	+ 2 x <b>13152</b>	4.500	3.237	5.000	3.997
<i>bucket</i>		<i>tube</i>			
<i>No.</i>		<i>Order No.</i>			
<b>13152</b>	2 x <b>15 ml</b> , Culture	15115			
		<b>2-16P</b>		<b>2-16PK</b>	
<i>Rotor</i>		<i>max.</i>	<i>max.</i>	<i>max.</i>	<i>max.</i>
<i>No.</i>		<i>rpm</i>	<i>RCF</i>	<i>rpm</i>	<i>RCF</i>
<b>11192</b>	+ 2 x <b>13150</b>	4.500	3.260	5.000	4.025
incl. cap No. 17151					
<i>bucket</i>		<i>tube</i>			
<i>No.</i>		<i>Order No.</i>			
<b>13150</b>	1 x <b>50 ml</b> , Cultur	15151			
<i>Adapter</i>	<i>Adapter</i>	<i>tube</i>			
<i>Order No.</i>		<i>Order No.</i>			
<b>13060</b>	1 x <b>15 ml</b> , Cultur	15115			
<b>13064</b>	1 x <b>30 ml</b> , Sterilin				
		<b>2-16P</b>		<b>2-16PK</b>	
<i>Rotor</i>		<i>max.</i>	<i>max.</i>	<i>max.</i>	<i>max.</i>
<i>No.</i>		<i>rpm</i>	<i>RCF</i>	<i>rpm</i>	<i>RCF</i>
<b>11192</b>	+ 2 x <b>13097</b>	4.500	3.056	5.000	3.773
<i>bucket</i>		<i>tube</i>			
<i>No.</i>		<i>Order No.</i>			
<b>13097</b>	1 x <b>100 ml</b>	15100			
<i>Adapter</i>	<i>Adapter</i>	<i>tube</i>			
<i>Order No.</i>		<i>Order No.</i>			
<b>17925</b>	1 x <b>25 ml</b>	15025			
<b>17950</b>	1 x <b>50 ml</b>	15050			



11192

1 Set = 2 pcs



13012



13042



13152



13150



13097



17130

13041



14032



14034



14033

		<b>2-16P</b>		<b>2-16PK</b>	
<i>bucket No.</i>	<i>max. rpm</i>	<i>max. RCF</i>	<i>max. rpm</i>	<i>max. RCF</i>	
<b>11192 + 2 x 13041</b>	4.500	3.170	5.000	3.913	
Adapter for bucket 13041, sealable with cap 17130 1 Set = 2 pcs					
<i>Order No.</i>	<i>Adapter</i>			<i>tube Order No.</i>	
<b>14028</b>	4 x <b>1.5-2.0 ml</b> ,			15008	
<b>14036</b>	5 x Microtainer				
<b>14029</b>	5 x <b>5 - 7 ml</b> , Hemolyse			15007	
<b>14033</b>	4 x <b>5 - 7 ml</b> , Vacuntainer			15060	
<b>14030</b>	4 x <b>10 - 15 ml</b>			15000	
<b>14034</b>	3 x <b>15 ml</b> , Monovette			15015	
<b>14035</b>	1 x <b>30 ml</b> , Sterilin				
<b>14031</b>	1 x <b>25 - 30 ml</b>			15025	
<b>14032</b>	1 x <b>50 ml</b>			15050	
Swing-out rotor 4 x <b>100 ml</b> No. 11190 (11192 + 2 x 13097 + 4 x 15100)					
Swing-out rotor 16 x <b>15 ml</b> No. 11191 (11192 + 2 x 13012 + 16 x 15020)					



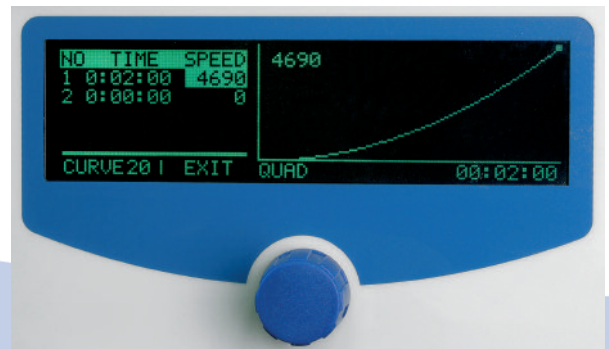
<b>4 x Cyt rotor</b>				
		<b>2-16PK</b>		
<i>Rotor No.</i>		<i>max. rpm</i>	<i>max. RCF</i>	
<b>11194</b>		3.000	1.137	
<b>MTP swing-out rotor</b>				
		<b>2-16PK</b>		
<i>Rotor No.</i>	<i>max. rpm</i>	<i>max. RCF</i>	<i>max. rpm</i>	<i>max. RCF</i>
<b>11122</b>	3.000	1.238	3.000	1.238
max. H. = 56 mm				
<b>11123</b>	4.000	2.129	4.000	2.129
max. H. = 50 mm				
<b>24 x 1.5 - 2.0 ml swing-out rotor</b>				
		<b>2-16PK</b>		
<i>Rotor No.</i>	<i>max. rpm</i>	<i>max. RCF</i>	<i>max. rpm</i>	<i>max. RCF</i>
<b>11124</b>	12.500	12.927	14.000	16.215
<i>No.</i>	<i>Adapter</i>	<i>1 Set = 2 pcs</i>		
<b>13021</b>	<b>0.2 ml</b> PCR			
<b>13000</b>	<b>0.4 ml</b> Reaction vials			
<b>13002</b>	<b>0.5 - 0.75 ml</b> Reaction vials			
<b>24 x ø 1.5 x 75 mm Microhematocrit</b>				
		<b>2-16PK</b>		
<i>Rotor No.</i>	<i>max. rpm</i>	<i>max. RCF</i>	<i>max. rpm</i>	<i>max. RCF</i>
<b>11409</b>	12.000	14.489	12.000	14.489
<b>17002</b>	reader			
<b>17005</b>	sealing putty			
<b>15001</b>	Microhematocrit capillary tubes 1.5 x 75 mm, 200 pcs.			
<b>17004</b>	Magnifying glass			



# Spincontrol Universal






# Spincontrol Comfort



### Spincontrol Universal

### Spincontrol Comfort

Timer	10sec – 11 h 59min	10sec – 9 h 59min
Backlight Display	LCD	Grafic LCD
Plain text pop up windows	–	+
Time increments [sec]	10;1	60;1
Short run	+	+
Continous run	+	+
Speed increments [rpm]	100;1	10;1
Permanent display preselected, actual values	+	+
g-force increments [xg]	10;1	10;1
Temperature increments [°C]	1*	1
Programs	50	50
Program list shows all parameters	–	+
Linear acceleration curves	2	10
Deceleration curves	–	10
Acceleration or deceleration curves user defined	–	10
Linear deceleration curves	2	10
Quadratic deceleration curves	–	10
Brakeless	+	+
Auto lid open, switchable	+; +	+; +
Accoustic signal, switchable	+; +	+; +
Optical display stillstand	+	+
Signal length preselectable	–	+
Languages		 
Couting cycles centrifuge, each rotor	+; –	+; +
Stillstand cooling*	+; –	+; +
Fast cool program Rapid-temp*	+	+
All rotors pre programmed	+	+
Max. radius reducible	–	+
Calculation for liquid desnity >1.2 g/cm <sup>3</sup>	–	+
Start delay	–	+
Controlunit lockable	+	+
Four figure code protection	–	+

\* 2-16PK only

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

	Sigma 2-16P	Sigma 2-16PK, 2-16KC
<i>Calibration certificate for speed and time</i>	No. 17714	No. 17714
<i>Calibration certificate for temperature speed and time</i>	–	No. 17715
<i>IQQQ</i>	No. 17710	No. 17711
<i>For a further rotor</i>	No. 17712	No. 17712



17920 Trolley for Sigma 2-16PK, 2-16KC  
(w x d x h) (570 x 497 x 600 mm)

Technical data	2-16P	2-16PK, 2-16KC
Power consumption [W]	240	720
Max. capacity [ml]	4 x 100	4 x 100
Max. speed [rpm]	15.000	15.300
Min. speed [rpm]	100	100
Interference suppression	EN 61326	EN 61326
Height x Width x Depth [mm]	300 x 365 x 452	310 x 550 x 570
Hight with open lid [mm]	610	705
Weight without rotor [kg]	32	60
Kinetic energy max. [Nm]	7.750	9.962
Noise level at max. speed (approx.)		
Rotor 12148	< 67 dB (A)	65 dB (A)
Rotor 11190	-	63 dB (A)
Max. acceleration rotor 12148 [sec]	33	27
rotor 11190 [sec]	36	22
Max deceleration rotor 12148 [sec]	27	18
rotor 11190 [sec]	20	17
Temperature setting range	-	(-20°C)* -10°C - +40°C
Min. rotor temperature	-	< 4°C **

\* 2-16KC \*\* bei 23°C ambient temperature

**SIGMA**   
Laboratory Centrifuges

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