



*Centrifuge*

**3-16P**



*Refrigerated Centrifuge*

**3-16PK**

**SIGMA 3-16P** No. 10335 (220-240 V, 50/60 Hz), No. 10336 (120 V, 60 Hz), No. 10337 (100 V, 50 / 60 Hz)

- Universal table top centrifuge; speed range up to 14.500 rpm
- Spincontrol Universal
- 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
- Magnetic rotor identification prevents the rotor from overspeeding, active rotor identification
- Stainless steel bowl
- Window in the lid for external speed control
- Backlighted knobs for start, stop, lid open
- Wearless electric fuse
- Imbalance switch
- Motor over excess temperature switch
- No need to open the casing for emergency lid lock release
- Easy lid opening due pneumatic spring support
- Produced according to national and international safety regulations (e. g. IEC 1010)

**SIGMA 3-16PK** No. 10330 (220-240 V, 50/60 Hz), No. 10331 (120 V, 60 Hz), No. 10332 (100 V, 50/60 Hz)

- refrigerated version of 3-16P
- Universal refrigerated table top centrifuge; speed range up to 15.300 rpm
- Possibility of precooling the rotors during standstill; Refrigerant CFC-free (R 134 a)
- Fast cooling program: Rapid temp

		<b>3-16P</b>		<b>3-16PK</b>	
<i>Rotor No.</i>		<i>max. rpm</i>	<i>max. RCF</i>	<i>max. rpm</i>	<i>max. RCF</i>
<b>11180</b>	+ 2 x <b>13190</b>	4.200	3.392	4.500	3.894
<b>11180</b>	+ 2 x <b>13194</b>	4.200	3.313	4.500	3.803
<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>					
<b>1 Set = 2 pcs</b>					
<i>No.</i>	<i>Adapter</i>	<i>tube Order No.</i>	<i>No.</i>	<i>Adapter</i>	<i>tube Order No.</i>
<b>17350</b>	24 x <b>0.5 – 0.75 ml</b>	(15005)	<b>17376</b>	4 x <b>40 – 50 ml</b>	(15052)
<b>17361</b>	16 x <b>Microtainer</b>		<b>17375</b>	3 x <b>50 ml</b>	(15050)
<b>17353</b>	20 x <b>1.5 – 2.0 ml</b>	(15008, 15040)	<b>17346</b>	3 x <b>50 ml Culture</b>	(15151)
<b>17352</b>	25 x <b>5 ml RIA</b>	(15006)	<b>17377</b>	4 x <b>50 ml Culture</b>	(15151)**
<b>17356</b>	16 x <b>5 – 6 ml</b>		<b>17344</b>	3 x <b>50 ml Culture*</b>	
	RIA, Hemolyse, Vacutainer		<b>17385</b>	1 x <b>78 – 85 ml</b>	(15076)
<b>17354</b>	16 x <b>7 ml</b>	(15007)	<b>17390</b>	1 x <b>100 ml</b>	(15100)
<b>17351</b>	12 x <b>7 – 9 ml Monovette</b>		<b>17395</b>	1 x <b>125 ml</b>	(15125)
<b>17358</b>	12 x <b>9 – 10 ml Monov. +15 ml</b>	(15015)	<b>17393</b>	1 x <b>175 ml Culture</b>	(15174)**
<b>17355</b>	12 x <b>10 – 12 ml</b>	(15010)	<b>17400</b>	1 x <b>200 ml</b>	(15202)
<b>17345</b>	5 x <b>15 ml Culture</b>	(15115)	<b>17401</b>	1 x <b>200 ml**</b>	(15201)
<b>17359</b>	9 x <b>15 ml Culture</b>	(15115)**	<b>17347</b>	1 x <b>250 ml</b>	(15248)
<b>17370</b>	5 x <b>25 – 30 ml</b>	(15025)	<b>15401</b>	1 x <b>400 ml</b>	(15401)
<b>17362</b>	5 x <b>30 ml Sterilin</b>				
<b>Adapter for bucket 13194</b>					
<i>No.</i>	<i>Adapter</i>		<i>No.</i>	<i>Adapter</i>	
<b>18310</b>	4 x <b>50 ml Cultur</b>	(15151)**	<b>18311</b>	10 x <b>15 ml Cultur</b>	(15115)**
<b>18309</b>	4 x <b>50 ml Cultur*</b>				



		<b>3-16P</b>		<b>3-16PK</b>	
<i>Rotor No.</i>		<i>max. rpm</i>	<i>max. RCF</i>	<i>max. rpm</i>	<i>max. RCF</i>
<b>11180</b>	+ 2 x <b>13180</b>	4.200	3.372	4.500	3.871
<b>complete rotor</b>					
No. <b>11181</b> : 48 x <b>15 ml</b> (11180 + 2 x 13180 + 2 x 18015 + 48 x 15020)					
<b>adapters for bucket 13180, sealable with cap 17112</b>					
<b>1 Set = 2 pcs</b>					
<i>No.</i>	<i>Adapter</i>	<i>tube Order No.</i>	<i>No.</i>	<i>Adapter</i>	<i>tube Order No.</i>
<b>18002</b>	20 x <b>1.5 – 2.0 ml</b>	(15008, 15040)	<b>18025</b>	5 x <b>25 ml</b>	(15025)
<b>18005</b>	20 x <b>5 ml RIA</b>	(15006)	<b>18030</b>	5 x <b>25 – 30 ml</b>	(15030)
<b>18009</b>	20 x <b>5 – 6 ml Hemolyse</b>		<b>18022</b>	4 x <b>30 ml Sterilin</b>	
<b>18012</b>	12 x <b>5 – 7 ml Vacutainer</b>		<b>18050</b>	2 x <b>50 ml</b>	(15050)
<b>18007</b>	20 x <b>7 ml</b>	(15007)	<b>18051</b>	2 x <b>40 – 50 ml</b>	(15052)
<b>18017</b>	10 x <b>9 – 15 ml Monov. +15 ml</b>	(15015)	<b>18052</b>	2 x <b>50 ml Culture</b>	(15151)
<b>18010</b>	12 x <b>9 – 12 ml</b>	(15010)	<b>18053</b>	2 x <b>50 ml Culture*</b>	
<b>18015</b>	12 x <b>15 ml</b>	(15015)	<b>18085</b>	1 x <b>78 – 85 ml</b>	(15076)
<b>18016</b>	4 x <b>15 ml Culture</b>	(15115)	<b>18100</b>	1 x <b>100 ml</b>	(15100)
<b>18018</b>	6 x <b>15 ml Culture**</b>	(15115)	<b>18125</b>	1 x <b>125 ml</b>	(15125)
			<b>18200</b>	1 x <b>200 ml</b>	(15202)

\* with skirt    \*\*without bucket cap



		<b>3-16P</b>		<b>3-16PK</b>	
<i>Rotor No.</i>		<i>max. rpm</i>	<i>max. RCF</i>	<i>max. rpm</i>	<i>max. RCF</i>
<b>11133 + 2 x 13104</b>		5.000	4.500	5.500	5.445
<b>11133 + 2 x 13130</b>		5.000	4.472	5.500	5.411
<b>complete rotor</b>					
No. <b>11132</b> : 28 x <b>15 ml</b> (11133 + 2 x 13104 + 2 x 17015 + 28 x 15023)					
<b>adapters for bucket 13104, sealable with cap 17111</b>					
1 Set = 2 pcs					
<i>No.</i>	<i>Adapter</i>	<i>tube Order No.</i>		<i>No.</i>	<i>Adapter tube Order No.</i>
<b>17008</b>	12 x <b>1.5 – 2.0 ml</b>	(15008, 15040)		<b>17032</b>	1 x <b>30 ml Sterilin</b>
<b>17006</b>	12 x <b>5 ml RIA, Hemolyse</b>	(15060)		<b>17049</b>	1 x <b>50 ml Culture</b> (15151)
<b>17027</b>	7 x <b>5 – 7 ml Vacutainer</b>			<b>17048</b>	1 x <b>50 ml Culture*</b>
<b>17007</b>	12 x <b>7 ml</b>	(15007)		<b>17050</b>	1 x <b>50 ml</b> (15050)
<b>17012</b>	6 x <b>10 ml</b>	(15010)		<b>17052</b>	1 x <b>40 – 50 ml</b> (15052)
<b>17018</b>	4 x <b>9 – 10 ml Monov. +15 ml</b>			<b>17085</b>	1 x <b>78 – 85 ml</b> (15076)
<b>17015</b>	7 x <b>15 ml</b>	(15015)		<b>17100</b>	1 x <b>100 ml</b> (15100)
<b>17019</b>	3 x <b>15 ml Culture**</b>	(15115)		<b>17101</b>	1 x <b>100 ml</b> (15102)
<b>13130</b>	3 x <b>15 ml Culture</b>	(15115)		<b>17125</b>	1 x <b>125 ml</b> (15125)
<b>17025</b>	2 x <b>25 ml</b>	(15025)		<b>15202</b>	PP-bottle <b>190 ml</b>
<b>17030</b>	2 x <b>25 – 30 ml</b>	(15030)		<b>15203</b>	PC-bottle <b>200 ml</b>

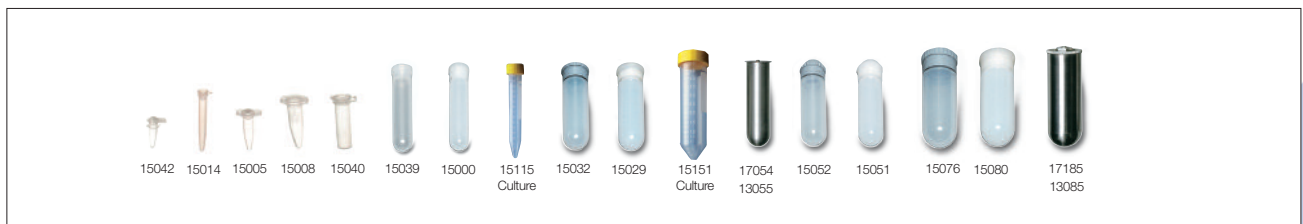
\* with skirt \*\*without bucket cap



<b>4 x Cyt rotor</b>					
		<b>3-16P</b>		<b>3-16PK</b>	
<i>Rotor No.</i>		<i>max. rpm</i>	<i>max. RCF</i>	<i>max. rpm</i>	<i>max. RCF</i>
<b>11224</b>		3.000	1.137	3.000	1.137
<b>MTP swing-out rotor</b>					
		<b>3-16P</b>		<b>3-16PK</b>	
<i>Rotor No.</i>		<i>max. rpm</i>	<i>max. RCF</i>	<i>max. rpm</i>	<i>max. RCF</i>
<b>11222</b>		3.000	1.238	3.000	1.238
max. H. = 56 mm					
<b>11240</b>		4.700	2.717	4.700	2.717
max. H. = 64 mm					
<b>24 x 1.5 – 2.0 ml swing-out rotor</b>					
		<b>3-16P</b>		<b>3-16PK</b>	
<i>Rotor No.</i>		<i>max. rpm</i>	<i>max. RCF</i>	<i>max. rpm</i>	<i>max. RCF</i>
<b>11135</b>		12.500	12.927	14.000	16.215
<i>No.</i>	<i>Adapter</i>	1 Set = 2 pcs			
<b>13021</b>	<b>0.2 ml PCR</b>				
<b>13000</b>	<b>0.4 ml reaction caps</b>				
<b>13002</b>	<b>0.5 – 0.75 ml reaction caps</b>				
<b>0.2 – 2.0 ml drumrotor</b>					
		<b>3-16P</b>		<b>3-16PK</b>	
<i>Rotor No.</i>		<i>max. rpm</i>	<i>max. RCF</i>	<i>max. rpm</i>	<i>max. RCF</i>
<b>11136</b>		13.000	13.226	14.500	16.454
capacity: 6 x adapter					
<i>No.</i>	<i>Adapter</i>	1 Set = 2 pcs			
<b>14021</b>	8 x 4 x <b>0.2 ml PCR</b>				
<b>14020</b>	10 x <b>0.2 – 0.5 ml PCR</b>				
<b>14000</b>	20 x <b>0.25 – 0.4 ml reaction caps</b>				
<b>14002</b>	10 x <b>1.5 – 2.0 ml reaction caps</b>				





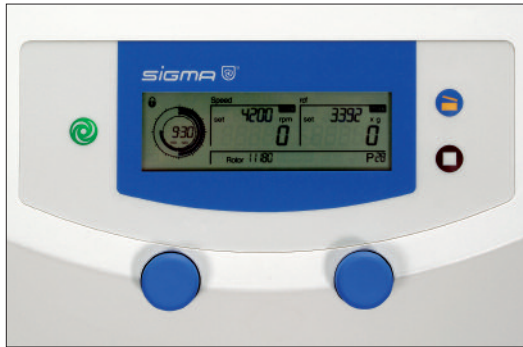


Rotor No.	capacity	tube	3-16P		3-16PK	
			max. rpm	max. RCF	max. rpm	max. RCF
12115	12 x 8 x <b>0.2 ml</b> PCR	(15042)	14.000	21.475	14.000	21.475
12154	24 x <b>1.5 – 2.0 ml</b>	(15008, 15040)	14.500	19.275	15.300	21.460
12131	30 x <b>1.5 – 2.0 ml</b>	(15008, 15040)	13.200	19.480	14.000	21.913
12348	48 x <b>1.5 – 2.0 ml</b>	(15008, 15040)	14.000	18.407	15.300	21.984
12111	10 x <b>10 ml</b>	(15000, 15039)	14.500	17.865	15.300	19.890
12157	20 x <b>10 ml</b>	(15000, 15039)	9.000	8.875	10.000	10.956
12171	12 x <b>15 ml</b> Culture	(15115)	9.000	8.965	9.500	9.989
12112	12 x <b>15 ml</b>	(15065)	8.000	7.155	9.000	9.056
12158	6 x <b>30 ml</b>	(15032, 15029)	14.500	18.570	15.300	20.675
19776	6 x <b>50 ml</b> Culture	(15151)	9.000	8.422	9.500	9.384
12150	6 x <b>50 ml</b>	(15051, 15052)	10.000	9.391	11.000	11.363
12156	8 x <b>50 ml</b>	(15051, 15052)	9.000	8.694	10.000	10.733
12155	4 x <b>85 ml</b>	(15076, 15080)	10.000	10.174	10.000	10.174
12159	6 x <b>85 ml</b>	(15076, 15080)	8.000	7.012	8.000	7.012

All rotors incl. hermetic aluminium lid

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

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



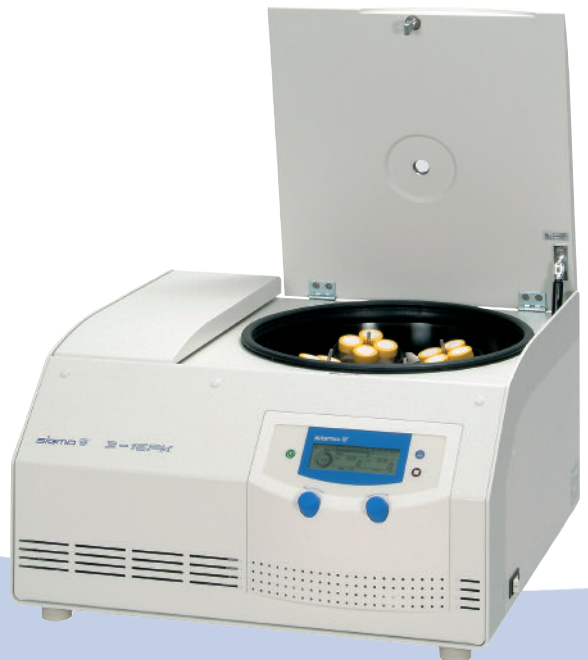
*Sigma 3-16P*



*Sigma 3-16PK*



**Sigma 3-16P**



**Sigma 3-16PK**

### Spincontrol Universal

Timer	10 sec – 11 h 59min
Display	LCD
Time increments [sec]	10;1
Short run	+
Continuous run	+
Speed increments [rpm]	100;1
Permanent display preselected, actual values	+
g-force increments [xg]	10;1
Temperature increments [°C] (only 3-16PK)	1
Programs	50
Linear acceleration curves	2
Linear deceleration curves	2
Brakeless	+
Auto lid open, switchable	+; +
Acoustic signal, switchable	+; +
Optical display stillstand	+
Counting cycles centrifuge	+
Fast cool programm Rapid temp (only 3-16PK)	+
All rotors are programmed	+
Controlunit lockable	+

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

	<b>Sigma 3-16P</b>	<b>Sigma 3-16PK</b>
<i>Calibration certificate for speed and time</i>	No. 17714	No. 17714
<i>Calibration certificate for temperature speed and time</i>	–	No. 17715
<i>IQOQ</i>	No. 17710	No. 17711
<i>For a further rotor</i>	No. 17712	No. 17712



17927 Trolley  
(W x H x D, 490 x 497 x 647 mm)



17926 Trolley  
(W x H x D, 650 x 497 x 647 mm)

Technical data	3-16P	3-16PK
Power consumption [W]	440	1010
Max. capacity [ml]	4 x 400	4 x 400
Max. speed [rpm]	14.500	15.300
Min. speed [rpm]	100	100
Hight x Width x Depth [mm]	355 x 460 x 600	355 x 630 x 600
Hight with open lid [mm]	770	785
Interference suppression	EN 61326	EN 61326
Weight without rotor [kg]	48	78
Kinetic energy max. [Nm]	9.530	9.970
Noise level at max. speed (approx.)		
Rotor 12154 at 14.500/15.300 rpm	60 dB (A)	66 dB (A)
Rotor 11132 at 5.000 rpm	66 dB (A)	60 dB (A)
Max. acceleration rotor 12154 [sec]	29	28
rotor 11132 [sec]	22	20
Max deceleration rotor 12154 [sec]	46	53
rotor 11132 [sec]	11	12
Temperature setting range	-	-10°C – +40°C
Rotor 11132 5.500 rpm *) [°C]	-	< 2
Rotor 12154 15.300 rpm *) [°C]	-	< 4

\* at 23 °C ambient temperature

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Laborzentrifugen

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