

# UNIVERSAL 320 | 320 R

## A universal choice

The UNIVERSAL 320 is a compact, versatile and indispensable general purpose centrifuge. Excellent performance and a comprehensive range of accessories enable the UNIVERSAL 320 to carry out virtually any centrifuging tasks including plates, blood tubes, cell culture, microliter and cytology. This unit is available with refrigeration and a temperature range from -20 °C to +40 °C (UNIVERSAL 320 R).

### — FEATURES

- RPM: 500 - 16,000 min<sup>-1</sup> – adjustable in increments of 10
- Max. RCF: 24,900
- Max. capacity: 4 x 200 ml / 6 x 94 ml
- The universal choice among the benchtop centrifuges
- Choice of 18 rotors
- IVDR-conform according to regulation (EU) 2017/746
- Noise level of 48 dB(A) with angle rotor 1611
- Easy operation with keypad and control knob
- Impulse key for short cycle mode
- 9 program memories
- 9 individual acceleration and 10 deceleration stages
- Model 320 R coolable from -20 to +40 °C (with pre-cooling function)



Centrifuge packages for the model can be found on [page 92](#)



More information about the control panel can be found on [page 202](#)

**CYTO**

Cyto system available for this model. More information on [page 180](#)

### — FIELDS OF APPLICATION

- Small laboratories
- Hospitals
- Cell Culture laboratories
- University / Academic research
- Pharmaceutical laboratories
- Food analyzing laboratories
- Physicians Office Lab (POL)



UNIVERSAL 320



UNIVERSAL 320 R



according to regulation (EU) 2017/746

## TECHNICAL DATA

	UNIVERSAL 320 non-refrigerated	UNIVERSAL 320 R refrigerated
voltage *)	200 – 240 V 1 ~	200 – 240 V 1 ~      240 V 1 ~
frequency	50 – 60 Hz	50 – 60 Hz      60 Hz
consumption	400 VA	800 VA
emission, immunity	EN/IEC 61326-1, class B	EN/IEC 61326-1, class B
max. capacity	4 x 200 ml / 6 x 94 ml	4 x 200 ml / 6 x 94 ml
max. RPM	16,000 min <sup>-1</sup>	16,000 min <sup>-1</sup>
max. RCF	24,900	24,900
running time	1sec – 99 min: 59 sec, ∞ continuous run, short cycle mode (impulse button)	1sec – 99 min: 59 sec, ∞ continuous run, short cycle mode (impulse button)
dimensions (WxDxH)	401 x 529 x 346 mm	407 x 698 x 346 mm
weight	approx. 31 kg	approx. 52 kg
noise level	48 dB (A) with rotor 1611	50 dB (A) with rotor 1611
temperature control, infinitely variable	-	from -20 to +40 °C
<b>Cat. No.</b>	<b>1401</b>	<b>1406</b>
100 – 127 V 1 ~ / 50–60 Hz *)	1401-01	1406-01
consumption	400 VA	950 VA
emission, Immunity	FCC class B	FCC class B

\*) Other voltages on request.

## AVAILABLE ROTORS

SWING-OUT ROTORS	angle	max. RPM	max. capacity	Cat. No.	page
swing-out rotor, 4-places	90°	4,500 min <sup>-1</sup>	4x200 ml	<b>1554</b>	72
swing-out rotor, 4-places	90°	5,000 min <sup>-1</sup>	4x100 ml	<b>1494</b>	75
swing-out rotor, 4-places	90°	4,000 min <sup>-1</sup>	4x100 ml	<b>1624</b>	78
swing-out rotor, 4-places	90°	4,500 min <sup>-1</sup>	4x100 ml	<b>1324</b>	81
swing-out rotor, 8-places	90°	4,000 min <sup>-1</sup>	8x15 ml	<b>1611</b>	83
swing-out rotor, 12-places	55° / 60° / 80°	4,000 min <sup>-1</sup>	12x15 ml	<b>1628</b>	83
swing-out rotor, 8-places	45°	5,000 min <sup>-1</sup>	8x50 ml	<b>1617</b>	84
swing-out rotor, 6-places	90°	4,000 min <sup>-1</sup>	6x50 ml	<b>1619</b>	84
swing-out rotor, 2-places	90°	4,000 min <sup>-1</sup>	10 plates	<b>1460</b>	85
swing-out rotor, 24-places	90°	13,000 min <sup>-1</sup>	24x2 ml	<b>1555</b>	85
ANGLE ROTORS					
angle rotor, 24-places	50°	16,000 min <sup>-1</sup>	24x2 ml	<b>1552</b>	86
angle rotor, 30-places	45°	14,150 min <sup>-1</sup>	30x2 ml	<b>1553</b>	86
angle rotor, 64-places	45°	13,000 min <sup>-1</sup>	64x0.2 ml	<b>1551</b>	87
angle rotor, 18-places	45°	14,150 min <sup>-1</sup>	18 x 5 ml	<b>1627</b>	87
angle rotor, 6-places	35°	9,000 min <sup>-1</sup>	6x94 ml	<b>1556</b>	88
angle rotor, 12-places	35°	6,000 min <sup>-1</sup>	12x15 ml	<b>1613</b>	89
angle rotor, 12-places	35°	12,000 min <sup>-1</sup>	12x15 ml	<b>1615</b>	90
angle rotor, 8-places	45°	4,500 min <sup>-1</sup>	8x50 ml	<b>1418</b>	91

## SWING-OUT ROTOR, 4-PLACE | 1554



<b>Rotor</b>	
max. RPM   max. RCF	4,500 min <sup>1</sup>   3,328
max. capacity	4 x 200 ml
run-up   run-down, braked in sec	28   31
angle   max. noise level	90°   60 dB (A)
temperature in °C <sup>1)</sup>	-8
<b>Cat. No.</b>	<b>1554</b>

<b>Bucket with clamp lock</b>	
Lid bioseal <sup>5)</sup>	1561
<b>Cat. No.</b>	<b>1560</b>
<b>Bucket without clamp lock<sup>14)</sup></b>	
<b>Cat. No.</b>	<b>1565</b>



<b>Vessels</b>															
capacity in ml	1.5	2.0	5	5	6	7	9	15	15	25	50	85	100	125	150
Ø x L in mm	11 x 38	11 x 38	17 x 59	12 x 75	12 x 82	12 x 100	14 x 100	17 x 100	18 x 102	24 x 100	34 x 100	38 x 101	44 x 100	51 x 100	51 x 116
max. RCF <sup>2)</sup>	3,328	2,332	3,328	3,215	3,215	3,215	3,215	3,215	3,260	3,056	3,147	3,260	3,124	3,328	3,328
radius in mm	147	103	147	142	142	142	142	142	144	135	138	144	138	147	147
<b>Cat. No.</b>	<b>microliter tubes</b>			<b>tubes<sup>2)</sup></b>											

<b>Adapter</b>															
boring Ø x L in mm	11.5 x 39	11.5 x 39	17 x 52	13.5 x 60	13.5 x 60	13.5 x 60	17.5 x 60	17.5 x 60	18.5 x 74	25.2 x 66	35.2 x 69	38.5 x 74	45.5 x 69	52 x 77	52 x 77
vessels per rotor	56	56	16	28	28	28	20	20	16	4	4	4	4	4	4
<b>Cat. No.</b>	<b>1571</b>	<b>1571</b>	<b>1593</b>	<b>1589</b>	<b>1589</b>	<b>1589</b>	<b>1588</b>	<b>1588</b>	<b>1572</b>	<b>1573</b>	<b>1574</b>	<b>1575</b>	<b>1576</b>	<b>1594</b>	<b>1594</b>

<b>Vessels</b>															
capacity in ml	200	1.1-1.4	2.6-3.4	4.9	2.7-3	4-5	4-5.5	7.5-8.2	9-10	10	1.6-5	4-7	4-7	8.5-10	12
Ø x L in mm	56 x 112	8 x 66	13 x 65	13 x 90	11 x 66	11 x 92	15 x 75	15 x 92	16 x 92	15 x 102	13 x 75	13 x 100	16 x 75	16 x 100	17 x 102
max. RCF <sup>2)</sup>	3,328	3,215	3,215	3,215	3,215	3,215	3,215	3,215	3,215	3,215	3,215	3,215	3,215	3,215	3,215
radius in mm	147	142	142	142	142	142	142	142	142	142	142	142	142	142	142
<b>Cat. No.</b>	<b>0555</b>	<b>blood collection / urine vessels</b>													

<b>Adapter</b>															
boring Ø x L in mm	57 x 77	13.5 x 60	13.5 x 60	13.5 x 60	13.5 x 60	13.5 x 60	17.5 x 60	17.5 x 60	17.5 x 60	17.5 x 60	13.5 x 60	13.5 x 60	17.5 x 60	17.5 x 60	17.5 x 74
vessels per rotor	4	28	28	28	28	28	20	20	20	20	28	28	20	20	12
<b>Cat. No.</b>	-	<b>1589</b>	<b>1589</b>	<b>1589</b>	<b>1589</b>	<b>1589</b>	<b>1588</b>	<b>1588</b>	<b>1588</b>	<b>1588</b>	<b>1589</b>	<b>1589</b>	<b>1588</b>	<b>1588</b>	<b>1591</b>

<b>Vessels</b>																
capacity in ml	11	15	15	30	50	12	25	30	50	10	30	50	85	94	30	
Ø x L in mm	16 x 110	17 x 120	17 x 120	25 x 110	30 x 115	17 x 100	25 x 90	15 x 110	29 x 115	16 x 80	26 x 95	29 x 107	38 x 106	38 x 102	44 x 105	
max. RCF <sup>2)</sup>	3,260	3,328	3,328	3,328	3,328	3,260	3,328	3,328	3,328	3,215	3,260	3,260	3,260	3,260	3,192	
radius in mm	144	147	147	147	147	144	147	147	147	142	144	144	144	144	141	
<b>Cat. No.</b>	<b>Nunc<sup>®</sup></b>	<b>tubes with screw cap</b>													<b>0534<sup>®</sup></b>	

<b>Adapter</b>															
boring Ø x L in mm	17.5 x 74	17 x 77	17 x 77	26 x 77	30 x 77	17.5 x 74	26 x 65	26 x 65	30 x 77	16.5 x 60	26 x 74	29 x 74	38.5 x 74	38.5 x 74	45 x 71
vessels per rotor	16	8	12	4	4	16	4	4	4	20	4	4	4	4	4
<b>Cat. No.</b>	<b>1581</b>	<b>1577</b>	<b>1595</b>	<b>1578</b>	<b>1579</b>	<b>1581</b>	<b>1582</b>	<b>1582</b>	<b>1583</b>	<b>1584</b>	<b>1585</b>	<b>1586</b>	<b>1575</b>	<b>1575</b>	<b>1587</b>

## SWING-OUT ROTOR, 4-PLACE | 1554

Rotor	
max. RPM   max. RCF	4,500 min <sup>-1</sup>   3,328
max. capacity	4 x 50 ml
run-up   run-down, braked in sec	28   31
angle   max. noise level	90°   58 dB (A)
temperature in °C <sup>1)</sup>	-8
<b>Cat. No.</b>	<b>1554</b>



Bucket	
<b>Cat. No.</b>	<b>1559</b>



Vessels	
capacity in ml	5 6 7 8 9 15 2.6-3.4 2.7-3 4-5.5 4.5-5 4.9 9-10 10 1.6-5 4-7
Ø x L in mm	12x75 12x82 12x100 16x125 14x100 17x100 13x65 11x66 15x75 11x92 13x90 16x92 15x102 13x75 13x100
max. RCF <sup>2)</sup>	3,215 3,215 3,215 3,328 3,260 3,260 3,215 3,215 3,215 3,215 3,215 3,260 3,260 3,215 3,215
radius in mm	142 142 142 147 144 144 142 142 142 142 142 144 144 142 142
<b>Cat. No.</b>	<b>tubes<sup>2)</sup></b> <b>blood collection / urine vessels</b>

Adapter	
boring Ø x L in mm	13.4x57.5 13.4x57.5 13.4x57.5 16.4x82 17.5x81 17.5x81 13.4x57.5 13.4x57.5 17.5x81 13.4x57.5 13.4x57.5 17.5x81 17.5x81 13.4x57.5 13.4x57.5
vessels per rotor	20 20 20 16 16 16 20 20 16 20 20 16 16 20 20
<b>Cat. No.</b>	<b>1486 1486 1486 1488 1482A 1482A 1486 1486 1482A 1486 1486 1482A 1482A 1486 1486</b>

Vessels	
capacity in ml	4-7 8.5-10 12 15 50 12 50
Ø x L in mm	16x75 16x100 17x102 17x120 29x115 17x100 29x115
max. RCF <sup>2)</sup>	3,215 3,260 3,147 3,351 3,305 3,260 3,305
radius in mm	142 144 139 148 146 144 146
<b>Cat. No.</b>	<b>blood- / urine vessels tubes with screw cap</b>

Adapter	
boring Ø x L in mm	17.5x81 17.5x81 17.5x74 17x100 30x98 17.5x81 30x98
vessels per rotor	16 16 12 16 4 16 4
<b>Cat. No.</b>	<b>1482A 1482A 1487 1483A 1484 1482A 1484<sup>4)</sup></b>

1) For cooled versions: Lowest temperature achievable with precooling and max. speed.  
 2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.  
 3.2) When using these tubes, bucket 1560 cannot be closed with lid 1561.  
 4) Please remove the spacer.  
 5) Tested by the TÜV in conformity with DIN EN 61010, section 2-020.  
 6) A rubber stopper for closing the tube for agitating or mixing is available under Cat. No. 0535. The tube may not be centrifuged with the stopper.  
 14) With the E3922 add-on kit and the 1561 lid, the 1565 carrier can be converted at a later time to a 1560 carrier with single-hand clamp lock.

— SWING-OUT ROTOR, 4-PLACE | 1554



**Rotor**

max. RPM   max. RCF	4,500 min <sup>1</sup>   3,260
max. capacity	8x50 ml
run-up   run-down, braked in sec	28   31
angle   max. noise level	90°   58 dB (A)
temperature in °C <sup>1)</sup>	-8
<b>Cat. No.</b>	<b>1554</b>

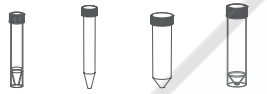


**Bucket**

Cat. No.	1563
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**Vessels**



capacity in ml	12	15	50	50
Ø x L in mm	17x100	17x120	29x115	29x115
max. RCF <sup>2)</sup>	3,260	3,260	3,260	3,260
radius in mm	144	144	144	144
<b>Cat. No.</b>	<b>tubes with screw cap</b>			



+ E 2109 +E2110-A



**Adapter**

boring Ø x L in mm	17x87	17x87	30x87	30x87
vessels per rotor	8	8	8	8
<b>Cat. No.</b>	<b>1592</b>	<b>1592</b>	-	-

1) For cooled versions: Lowest temperature achievable with precooling and max. speed.  
 2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.

## SWING-OUT ROTOR, 4-PLACE | 1494

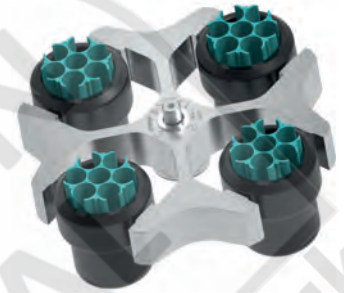


### Rotor

max. RPM   max. RCF	5,000 min <sup>-1</sup>   4,193
max. capacity	4 x 100 ml
run-up   run-down, braked in sec	30   32
angle   max. noise level	90°   56 dB (A)
temperature in °C <sup>1)</sup>	-10
<b>Cat. No.</b>	<b>1494</b>

### Bucket

<b>Cat. No.</b>	<b>1425</b>
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### Vessels

capacity in ml	1.5	2.0	1	3	5	6	7	9	15	25	50	100	1-8
Ø x L in mm	11 x 38	11 x 38	6 x 45	10 x 60	12/18 x 75	12 x 82	12 x 100	14 x 100	17 x 100	24 x 100	34 x 100	44 x 100	simple / multiple
max. RCF <sup>2)</sup>	3,885	3,885	3,969	3,913	3,913	3,913	3,913	3,913	3,913	3,913	3,913	3,801	2,879
radius in mm	139	139	142	140	140	140	140	140	140	140	140	136	103
<b>Cat. No.</b>	<b>microliter tubes</b>		<b>Rhesus</b>	<b>tubes<sup>2)</sup></b>								<b>cyto chambers</b>	



### Adapter

boring Ø x L in mm	11.2 x 38	11.2 x 38	6.5 x 34	10.5 x 40	13.4 x 50	12.5 x 60	12.5 x 60	17.5 x 84	17.5 x 84	25.5 x 84	35.5 x 84	45.5 x 80	-
vessels per rotor	36	36	144	56	28	48	48	28	28	8	4	4	4
<b>Cat. No.</b>	<b>1444</b>	<b>1444</b>	<b>1432</b>	<b>1433</b>	<b>1438</b>	<b>1434</b>	<b>1434</b>	<b>1431</b>	<b>1431</b>	<b>1435</b>	<b>1436</b>	<b>1437</b>	<b>1452</b>

### Vessels

capacity in ml	2.6-3.4	2.7-3	4-5.5	4.5-5	4.9	7.5-8.2	9-10	1.6-5	4-7	4-7	8.5-10	50
Ø x L in mm	13 x 65	11 x 66	15 x 75	11 x 92	13 x 90	15 x 92	16 x 92	13 x 75	13 x 100	16 x 75	16 x 100	29 x 115
max. RCF <sup>2)</sup>	3,913	3,913	3,913	3,913	3,913	3,913	3,913	3,913	3,913	3,913	3,913	4,081
radius in mm	140	140	140	140	140	140	140	140	140	140	140	146
<b>Cat. No.</b>	<b>blood collection / urine vessels</b>											<b>-</b>



### Adapter

boring Ø x L in mm	13.4 x 50	13.4 x 50	16.5 x 50	13.4 x 50	13.4 x 50	16.5 x 50	17 x 45	13.4 x 50	13.4 x 50	16.5 x 50	16.5 x 50	30 x 90
vessels per rotor	28	28	28	28	28	28	16	28	28	28	28	4
<b>Cat. No.</b>	<b>1438</b>	<b>1438</b>	<b>1441</b>	<b>1438</b>	<b>1438</b>	<b>1441</b>	<b>1439</b>	<b>1438</b>	<b>1438</b>	<b>1441</b>	<b>1441</b>	<b>1443</b>

### CYTO

Cyto system available for this model.  
More information on [page 180](#)

1) For cooled versions: Lowest temperature achievable with precooling and max. speed.  
2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.

## SWING-OUT ROTOR, 4-PLACE | 1494



### Rotor

max. RPM   max. RCF	5,000 min <sup>-1</sup>   4,109
max. capacity	4 x 50 ml
run-up   run-down, braked in sec	30   32
angle   max. noise level	90°   54 dB (A)
temperature in °C <sup>1)</sup>	-7
<b>Cat. No.</b>	<b>1494</b>

### Bucket

Lid	1421
<b>Cat. No.</b>	<b>1427</b>



### Vessels

capacity in ml	1.5	2.0	1	3	5	6	7	9	15	25	50	1.1-1.4	2.6-2.9	2.7-3	4-5.5
Ø x L in mm	11 x 38	11 x 38	6 x 45	10 x 60	12/13x75	12 x 82	12 x 100	14 x 100	17 x 100	24 x 100	34 x 100	8 x 66	13 x 65	11 x 66	15 x 75
max. RCF <sup>2)</sup>	4,109	4,109	4,081	4,053	4,025	4,053	3,941	3,941	3,941	3,941	3,941	4,109	4,025	4,053	4,109
radius in mm	147	147	146	145	144	145	141	141	141	141	141	147	144	145	147
<b>Cat. No.</b>	<b>microliter tubes</b>		<b>Rhesus</b>	<b>tubes<sup>2)</sup></b>								<b>blood collection / urine vessels</b>			

### Adapter

boring Ø x L in mm	11.5 x 38	11.5 x 38	6.5 x 23	10.5 x 23	13.4 x 58	12.5 x 42	12.4 x 82.5	15 x 69.5	17.8 x 82.5	25.5 x 82.5	35.5 x 82.5	9 x 41	13.4 x 58	12.5 x 42	15.6 x 41
vessels per rotor	36	36	120	48	32	48	48	24	24	8	4	48	32	48	20
<b>Cat. No.</b>	<b>5277</b>	<b>5277</b>	<b>1357</b>	<b>1327</b>	<b>1732</b>	<b>5229</b>	<b>5230</b>	<b>5237</b>	<b>5231</b>	<b>5232</b>	<b>5233</b>	<b>5278</b>	<b>1732</b>	<b>5229</b>	<b>5279</b>

### Vessels

capacity in ml	4.5 - 5	4.9	7.5 - 8.2	9 - 10	1.6 - 5	4 - 7	4 - 7	8.5 - 10	15	50	25	30	50	
Ø x L in mm	11 x 92	13 x 90	15 x 92	16 x 92	13 x 75	13 x 100	16 x 75	16 x 100	17 x 120	29 x 115	25 x 90	25 x 110	34 x 100	
max. RCF <sup>2)</sup>	3,941	4,025	4,109	3,969	4,025	4,025	3,969	3,941	4,165	4,053	3,665	4,025	3,941	
radius in mm	141	144	147	142	144	144	142	141	145	145	142	144	141	
<b>Cat. No.</b>	<b>blood collection / urine vessels</b>										<b>tubes with screw cap</b>			

### Adapter

boring Ø x L in mm	12.4 x 82.5	13.4 x 58	15.6 x 41	17 x 66	13.4 x 58	13.4 x 58	17 x 66	17.8 x 82.5	17 x 90	30 x 90	25.5 x 72	25.5 x 85	35.5 x 82.5	+ 6316	
vessels per rotor	48	32	20	20	32	32	20	24	4	4	8	4	4		
<b>Cat. No.</b>	<b>5230</b>	<b>1732</b>	<b>5279</b>	<b>5271<sup>4)</sup></b>	<b>1732</b>	<b>1732</b>	<b>5271<sup>4)</sup></b>	<b>5231</b>	<b>5275</b>	<b>5276</b>	<b>1731</b>	<b>5272</b>	<b>5233<sup>4)</sup></b>		

1) For cooled versions: Lowest temperature achievable with precooling and max. speed.  
 2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.  
 3.1) When using these tubes, carrier 1427 cannot be closed with lid 1421.  
 4) Please remove the spacer.

## SWING-OUT ROTOR, 4-PLACE | 1494



### Rotor

max. RPM   max. RCF	5.000 min <sup>-1</sup>   4.193
max. capacity	4 x 100 ml
run-up   run-down, braked in sec	30   32
angle   max. noise level	90°   58 dB (A)
temperature in °C <sup>1)</sup>	-10
<b>Cat. No.</b>	<b>1494</b>

### Bucket

Lid bioseal <sup>5)</sup>	1492
<b>Cat. No.</b>	<b>1495</b>



### Vessels

capacity in ml	0.5	1.5	2.0	1	3	5	6	7	9	15	25	50	94	100
Ø x L in mm	10.7x46	11x38	11x38	6 x 45	10 x 60	12/13x75	12x82	12x100	14x100	17x100	24x100	34x100	38x102	44x100
max. RCF <sup>2)</sup>	3,745	3,857	3,857	4,081	4,137	4,025	4,025	4,025	3,997	3,997	3,829	3,801	4,109	4,025
radius in mm	134	138	138	145	148	144	144	144	143	143	137	136	147	144
<b>Cat. No.</b>	<b>Pediatric</b>	<b>microliter tubes</b>			<b>Rhesus</b>	<b>tubes<sup>2)</sup></b>								

### Adapter

boring Ø x L in mm	11.2x38	11.2x38	11.2x38	6.5x34	10.5x40	13.4x45	13.4x45	13.4x45	17.6x89	17.6x89	25.2x77	35.2x77	38.5x92	45.6x98
vessels per rotor	20	20	20	108	36	20	20	20	16	16	4	4	4	4
<b>Cat. No.</b>	<b>1351</b>	<b>1351</b>	<b>1351</b>	<b>1339</b>	<b>1343</b>	<b>1383</b>	<b>1383</b>	<b>1383</b>	<b>1329</b>	<b>1329</b>	<b>1330</b>	<b>1331</b>	<b>1396</b>	<b>0761</b>

### Vessels

capacity in ml	1.1–1.4	2.7–3	4.5–5	2.6–2.9	4.9	4–5.5	7.5–8.2	9–10	10	1.6–7	1.6–7	4–10	4–10
Ø x L in mm	8 x 66	11x66	11x92	13x65	13x90	15x75	15x92	16 x 92	15 x 102	13x75	13 x 100	16 x 75	16 x 100
max. RCF <sup>2)</sup>	4,053	4,025	4,025	4,025	4,025	4,053	4,053	3,997	4,193	4,025	4,025	4,025	4,025
radius in mm	145	144	144	144	144	145	145	143	150	144	144	144	144
<b>Cat. No.</b>	<b>blood collection / urine vessels</b>												

### Adapter

boring Ø x L in mm	9x47	13.4x45	13.4x45	13.4x45	13.4x45	15.6x47	15.6x47	17.6x89	17.6x89	13.4x45	13.4x45	16.5x52	16.5x52
vessels per rotor	28	20	20	20	20	16	16	16	16	20	20	16	16
<b>Cat. No.</b>	<b>1457</b>	<b>1383</b>	<b>1383</b>	<b>1383</b>	<b>1383</b>	<b>1459</b>	<b>1459</b>	<b>1329</b>	<b>1329<sup>4)</sup></b>	<b>1383</b>	<b>1383</b>	<b>1348</b>	<b>1348</b>

### Vessels

capacity in ml	15	30	50	12	25	50	10	30	50	85	30
Ø x L in mm	17 x 120	25 x 110	29 x 115	17 x 100	25 x 90	29 x 115	16 x 80	26 x 95	29x107	38x106	44x105
max. RCF <sup>2)</sup>	4,193	4,193	4,193	4,193	3,689	4,193	4,025	3,857	4,137	4,109	3,997
radius in mm	150	150	150	150	132	150	144	138	148	147	143
<b>Cat. No.</b>	<b>tubes with screw cap</b>										<b>0534<sup>9)</sup></b>

### Adapter

boring Ø x L in mm	17x90	26x80	30x90	17x80	26x72	29.5x80	16.5x52	26x83	29x93	38.5x92	45.9x98
vessels per rotor	4	4	4	4	4	4	16	4	4	4	4
<b>Cat. No.</b>	<b>1347</b>	<b>1365</b>	<b>1384</b>	<b>6311</b>	<b>1363</b>	<b>6318</b>	<b>1348</b>	<b>4417</b>	<b>4416</b>	<b>1396</b>	<b>0765</b>

- 1) For cooled versions: Lowest temperature achievable with precooling and max. speed.
- 2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.
- 3) When using these tubes, bucket 1495 cannot be closed with lid 1492.
- 4) Please remove the spacer.
- 5) Tested by the TÜV in conformity with DIN EN 61010, section 2-Q20.
- 6) A rubber stopper for closing the tube for agitating or mixing is available under Cat. No. 0535. The tube may not be centrifuged with the stopper.



## SWING-OUT ROTOR, 4-PLACE | 1624



### Rotor

max. RPM   max. RCF	4,000 min <sup>-1</sup>   2,665
max. capacity	4 x 50 ml
run-up   run-down, braked in sec	20   25
angle	90°
<b>Cat. No.</b>	<b>1624</b>

### Vessels

capacity in ml	5	5	6	7	9	9	15	15	20	25	45	50	1-8
Ø x L in mm	12x75	12x75	12x82	12x100	14x100	14x100	17x100	17x100	21x100	24x100	31x100	34x100	simple / multiple
max. RCF <sup>2)</sup>	2,057	2,164	2,308	2,308	2,308	2,415	2,308	2,415	2,361	2,451	2,361	2,451	1,646
radius in mm	115	121	129	129	129	135	129	137	132	137	132	137	92
temperature in °C <sup>1)</sup>	-17	-17	-17	-17	-17	-15	-17	-15	-15	-15	-15	-15	-16

<b>Cat. No.</b>	<b>tubes<sup>2)</sup></b>												<b>cyto chambers</b>
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### Carrier

boring Ø x L in mm	12x75	13.5x65	12.5x71.5	12.5x71.5	14.6x74	14.6x78	17.6x71.5	17.6x78	21.5x74	26x78	32x74	35x78	-
vessels per rotor	16	68	16	16	20	40	16	28	8	8	4	4	4
<b>Cat. No.</b>	<b>1369-91</b>	<b>1372</b>	<b>1369-92</b>	<b>1369-92</b>	<b>1370</b>	<b>1741</b>	<b>1369</b>	<b>1742</b>	<b>1346</b>	<b>1745</b>	<b>1345</b>	<b>1746</b>	<b>1660</b>

### Vessels

capacity in ml	1.1 - 1.4	2.6 - 3.4	4.5 - 5	4.9	1.6 - 5	4 - 7	4 - 7	4 - 7	8.5 - 10	30
Ø x L in mm	8 x 66	13x65	15x75	13x90	13x75	16 x 75	13 x 100	13 x 100	16 x 100	26 x 95
max. RCF <sup>2)</sup>	2,415	2,325	2,325	2,451	2,325	2,325	2,361	2,451	2,308	2,451
radius in mm	135	130	130	137	130	130	132	137	129	137
temperature in °C <sup>1)</sup>	-15	-15	-15	-15	-15	-15	-15	-15	-17	-15

<b>Cat. No.</b>	<b>blood collection / urine vessels</b>									<b>-</b>
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### Carrier

boring Ø x L in mm	14.6x78	17.6x78	17.6x78	14.6x78	17.6x78	17.6x78	14.6x74	13.5x78	17.6x71.5	26x78
vessels per rotor	40	28	28	40	28	28	20	28	16	8
<b>Cat. No.</b>	<b>1741</b>	<b>1742</b>	<b>1742</b>	<b>1741</b>	<b>1742</b>	<b>1742</b>	<b>1370<sup>4)</sup></b>	<b>1739</b>	<b>1369<sup>4)</sup></b>	<b>1745</b>

### CYTO

For more information about our Cyto accessory, see [page 178](#)

- 1) For cooled versions: Lowest temperature achievable with precooling and max. speed.
- 2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.
- 4) Please remove spacer.
- 5) Tested by the TÜV in conformity with DIN EN 61010. section 2-020.
- 16) Packed in units of 10 pieces.
- 20) This combination permits no Vacutainers made of glass.

## SWING-OUT ROTOR, 4-PLACE | 1624



### Rotor

max. RPM   max. RCF	4,000 min <sup>-1</sup>   1,968		
max. capacity	48 x 4 ml		
run-up   run-down, braked in sec	22   25		
angle   max. noise level	90°   48 dB (A)		
temperature in °C	-15		
<b>Cat. No.</b>	<b>1624</b>		

### Bucket

<b>Cat. No.</b>	<b>1366</b>
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### Vessels

capacity in ml	1.5	2.0	1	4
Ø x L in mm	11 x 38	11 x 38	6 x 45	12 x 60
max. RCF <sup>2)</sup>	1,968	1,968	1,950	1,932
radius in mm	110	110	109	108
<b>Cat. No.</b>	<b>microliter tubes</b>	<b>Rhesus</b>	<b>tubes<sup>2)</sup></b>	



### Adapter

boring Ø x L in mm	11.5x38	11.5x38	6.5x23	12.5x44
vessels per rotor	36	36	120	48
<b>Cat. No.</b>	<b>5277</b>	<b>5277</b>	<b>1357</b>	<b>1326</b>

## SWING-OUT ROTOR, 4-PLACE | 1624



### Rotor

max. RPM   max. RCF <sup>2)</sup>	4,000 min <sup>-1</sup>   2,665		
max. capacity	4 x 100 ml		
run-up   run-down, braked in sec	20   25		
angle   max. noise level	90°   58 dB (A)		
temperature in °C	-15		
<b>Cat. No.</b>	<b>1624</b>		

### Bucket

Lid bioseal <sup>5)</sup>	1492
<b>Cat. No.</b>	<b>1481</b>



### Vessels

capacity in ml	0.5	1.5	2.0	1	3	4	5	6	7	9	15	25	50	85	100
Ø x L in mm	10.7x46	11x38	11x38	6x45	10x60	10x88	12x75	12x82	12x100	14x100	17x100	24x100	34x100	38x106	44x100
max. RCF <sup>2)</sup>	2,379	2,451	2,451	2,594	2,630	2,630	2,558	2,558	2,558	2,540	2,540	2,433	2,415	2,612	2,558
radius in mm	133	137	137	145	147	131	143	143	143	142	142	136	135	146	143
<b>Cat. No.</b>	<b>Pediatric</b>	<b>microliter tubes</b>		<b>Rhesus</b>	<b>tubes<sup>2)</sup></b>										



### Adapter

boring Ø x L in mm	11.2x38	11.2x38	11.2x38	6.5x34	10.5x43	13.4x45	13.4x45	13.4x45	13.4x45	17.6x89	17.6x89	25.2x77	35.2x75	38.5x92	45.9x98	
vessels per rotor	20	20	20	108	36	20	20	20	20	16	16	4	4	4	4	
<b>Cat. No.</b>	<b>1351</b>	<b>1351</b>	<b>1351</b>	<b>1339</b>	<b>1343</b>	<b>1383</b>	<b>1383</b>	<b>1383</b>	<b>1383</b>	<b>1329</b>	<b>1329</b>	<b>1330</b>	<b>1331</b>	<b>1396</b>	<b>0761</b>	

## SWING-OUT ROTOR, 4-PLACE | 1624



### Rotor

max. RPM   max. RCF	4,000 min <sup>-1</sup>   2,665
max. capacity	4 x 100 ml
run-up   run-down, braked in sec	20   25
angle   max. noise level	90°   58 dB (A)
temperature in °C	-15
<b>Cat. No.</b>	<b>1624</b>

### Bucket

Lid bioseal <sup>5)</sup>	1492
<b>Cat. No.</b>	<b>1481</b>



### Vessels

capacity in ml	1.1–1.4	2.7–3	4.5–5	2.6–2.9	4.9	4–8.5	7.5–8.2	9–10	10	1.6–5	4–7	4–7	8.5–10
Ø x L in mm	8 x 66	11 x 66	11 x 92	13 x 65	13 x 90	15 x 75	15 x 92	16 x 92	15 x 102	13 x 75	13 x 100	16 x 75	16 x 100
max. RCF <sup>2)</sup>	2,576	2,558	2,558	2,558	2,558	2,576	2,576	2,540	2,665	2,558	2,558	2,522	2,522
radius in mm	144	143	143	143	143	144	144	142	149	143	143	141	141
<b>Cat. No.</b>	<b>blood collection / urine vessels</b>												



### Adapter

boring Ø x L in mm	9 x 47	13.4 x 45	13.4 x 45	13.4 x 45	13.4 x 45	15.6 x 47	15.6 x 47	17.6 x 89	17.6 x 89	13.4 x 45	13.4 x 45	16.5 x 52	16.5 x 52
vessels per rotor	28	20	20	20	20	16	16	16	16	20	20	16	16
<b>Cat. No.</b>	<b>1457</b>	<b>1383</b>	<b>1383</b>	<b>1383</b>	<b>1383</b>	<b>1459</b>	<b>1459</b>	<b>1329</b>	<b>1329<sup>4)</sup></b>	<b>1383</b>	<b>1383</b>	<b>1348</b>	<b>1348</b>

### Vessels

capacity in ml	15	50	12	25	30	50	10	30	50	85	30	
Ø x L in mm	17 x 120	29 x 115	17 x 100	25 x 90	25 x 110	29 x 115	16 x 80	26 x 95	29 x 107	38 x 106	44 x 105	
max. RCF <sup>2)</sup>	2,665	2,665	2,665	2,343	2,665	2,665	2,522	2,451	2,630	2,612	2,540	
radius in mm	149	149	149	131	149	149	141	137	147	146	142	
<b>Cat. No.</b>	<b>tubes with screw cap</b>											<b>0534<sup>6)</sup></b>

chrome bath tube



### Adapter

boring Ø x L in mm	17 x 90	30 x 90	17 x 80	26 x 72	26 x 80	29.5 x 80	16.5 x 52	26 x 83	29 x 93	38.5 x 92	45.9 x 98
vessels per rotor	4	4	4	4	4	4	16	4	4	4	4
<b>Cat. No.</b>	<b>1347</b>	<b>1384</b>	<b>6311</b>	<b>1363</b>	<b>1365</b>	<b>6318</b>	<b>1348</b>	<b>4417</b>	<b>4416</b>	<b>1396</b>	<b>0765</b>

Spacer

- 1) For cooled versions: Lowest temperature achievable with precooling and max. speed.
- 2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.
- 3.) When using these tubes, bucket 1752 or 5051 cannot be closed with lid 1751 or 5053.
- 4) Please remove the spacer.
- 5) Tested by the TÜV in conformity with DIN EN 61010, section 2-020.
- 6) A rubber stopper for closing the tube for agitating or mixing is available under Cat. No. 0535. The tube may not be centrifuged with the stopper.

## SWING-OUT ROTOR, 4-PLACE | 1324



### Rotor

max. RPM   max. RCF	4,500 min <sup>-1</sup>   3,328
max. capacity	4 x 100 ml
run-up   run-down, braked in sec	27   30
angle   max. noise level	90°   58 dB (A)
temperature in °C	-6
<b>Cat. No.</b>	<b>1324</b>

### Bucket

Lid bioseal <sup>5)</sup>	1492
<b>Cat. No.</b>	<b>1490</b>



### Vessels

capacity in ml	0.5	1.5	2.0	1	3	4	5	6	7	9	15	25	50	85	100
Ø x L in mm	10.7x46	11x38	11x38	6x45	10x60	10x88	12x75	12x82	12x100	14x100	17x100	24x100	34x100	38x106	44x100
max. RCF <sup>2)</sup>	2,966	3,056	3,056	3,237	3,283	3,283	3,192	3,192	3,192	3,170	3,170	3,034	3,011	3,260	3,192
radius in mm	131	135	135	143	145	145	141	141	141	140	140	134	133	144	141
<b>Cat. No.</b>	<b>Pediatric</b>	<b>microliter tubes</b>			<b>Rhesus</b>	<b>tubes<sup>2)</sup></b>									



### Adapter

boring Ø x L in mm	11.2x38	11.2x38	11.2x38	6.5x34	10.5x43	10.5x43	13.4x45	13.4x45	13.4x45	17.6x89	17.6x89	25.2x77	35.2x77	38.5x92	45.9x100.5
vessels per rotor	20	20	20	108	36	36	20	20	20	16	16	4	4	4	4
<b>Cat. No.</b>	<b>1351</b>	<b>1351</b>	<b>1351</b>	<b>1339</b>	<b>1343</b>	<b>1343</b>	<b>1383</b>	<b>1383</b>	<b>1383</b>	<b>1329</b>	<b>1329</b>	<b>1330</b>	<b>1331</b>	<b>1396</b>	<b>0761</b>

### Vessels

capacity in ml	1.1-1.4	2.6-2.9	4.9	2.7-3	4.5-5	4-5.5	7.5-8.2	9-10	10	1.6-5	4-7	4-7	8.5-10	15
Ø x L in mm	8 x 66	13x65	13x90	11x66	11x92	15x75	15x92	16x92	15x102	13x75	13x100	16x75	16x100	17x120
max. RCF <sup>2)</sup>	3,215	3,192	3,192	3,192	3,192	3,215	3,215	3,170	3,328	3,192	3,192	3,147	3,147	3,328
radius in mm	142	141	141	141	141	142	142	140	147	141	141	139	139	147
<b>Cat. No.</b>	<b>blood collection / urine vessels</b>													<b>-</b>



### Adapter

boring Ø x L in mm	9x47	13.4x45	13.4x45	13.4x45	13.4x45	15.6x47	15.6x47	17.6x89	17.6x89	13.4x45	13.4x45	16.5x52	16.5x52	17x90
vessels per rotor	28	20	20	20	20	16	16	16	16	20	20	16	16	4
<b>Cat. No.</b>	<b>1457</b>	<b>1383</b>	<b>1383</b>	<b>1383</b>	<b>1383</b>	<b>1459</b>	<b>1459</b>	<b>1329</b>	<b>1329<sup>4)</sup></b>	<b>1383</b>	<b>1383</b>	<b>1348</b>	<b>1348</b>	<b>1347</b>

### Vessels

Kapazität in ml	15	30	50	12	25	30	50	10	30	50	85	30
Ø x L in mm	17x120	25 x 110	29 x 115	17 x 100	25 x 90	25 x 110	29 x 115	16 x 80	26 x 95	29x107	38x106	44 x 105
max. RCF <sup>2)</sup>	3,328	3,328	3,328	3,328	2,920	3,328	3,328	3,147	3,056	3,283	3,260	3,170
radius in mm	147	147	147	147	129	147	147	139	135	145	144	140
<b>Cat. No.</b>	<b>tubes with screw cap</b>											<b>- 6)</b>



### Adapter

boring Ø x L in mm	17 x 107	26x80	30x90	17x80	26x72	26x80	29.5x80	16,5x52	26x83	29x93	38.5x92	45.9x100.5
vessels per rotor	12	4	4	4	4	4	4	16	4	4	4	4
<b>Cat. No.</b>	<b>1356</b>	<b>1365</b>	<b>1384</b>	<b>6311</b>	<b>1363</b>	<b>1365</b>	<b>6318</b>	<b>1348</b>	<b>4417</b>	<b>4416</b>	<b>1396</b>	<b>0765</b>

## SWING-OUT ROTOR, 4-PLACE | 1324



### Rotor

max. RPM   max. RCF	4,500 min <sup>1</sup>   3,305
max. capacity	4 x 50 ml
run-up   run-down, braked in sec	27   30
angle   max. noise level	90°   54 dB (A)
temperature in °C	-6
<b>Cat. No.</b>	<b>1324</b>

### Bucket

<b>Cat. No.</b>	<b>1398</b>
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### Vessels

capacity in ml	9	15	4-4,5	9-10	10	4-7	8,5-10	15	50	12	50
Ø x L in mm	14x100	17x100	15x75	16x92	15x102	16x75	16x100	17 x 120	29 x 115	17 x 100	29 x 115
max. RCF <sup>2)</sup>	3,192	3,192	2,875	3,192	3,192	3,034	3,034	3,305	3,260	3,192	3,260
radius in mm	141	141	127	141	141	134	134	146	144	141	144
<b>Cat. No.</b>	<b>tubes<sup>2)</sup></b>		<b>blood collection / urine vessels</b>				<b>tubes with screw cap</b>				



### Adapter

boring Ø x L in mm	17.5x81	17.5x81	17.5x81	17.5x81	17.5x81	17.5x81	17.5x81	17x100	30x98	17,5x81	30x98
vessels per rotor	16	16	16	16	16	16	16	16	4	16	4
<b>Cat. No.</b>	<b>1482A</b>	<b>1482A</b>	<b>1482A</b>	<b>1482A</b>	<b>1482A</b>	<b>1482A</b>	<b>1482A</b>	<b>1483A</b>	<b>1484</b>	<b>1482A</b>	<b>1484<sup>4)</sup></b>

1) For cooled versions: Lowest temperature achievable with precooling and max. speed.  
 2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.  
 4) Please remove spacer.

## SWING-OUT ROTOR, 8-PLACE | 1611



### Rotor

max. RPM   max. RCF	4,000 min <sup>-1</sup>   2,415
max. capacity	8 x 15 ml
run-up   run-down, braked in sec	20   20
angle   max. noise level	90°   48 dB (A)
temperature in °C <sup>1)</sup>	-16
<b>Cat. No.</b>	<b>1611</b>



### Vessels

capacity in ml	5	6	7	10	15	2.6-2.9	2.7-3	4-5.5	4.5-5	7.5-8.2	1.6-5	4-7	4-7	8.5-10
Ø x L in mm	12/13 x 75	12 x 82	12 x 100	13 x 100	17 x 100	13 x 65	11 x 66	15 x 75	11 x 92	15 x 92	13 x 75	13 x 100	16 x 75	16 x 100
max. RCF <sup>2)</sup>	1,914	1,914	2,415	2,415	2,415	1,914	1,914	1,914	2,415	2,415	1,914	2,415	1,914	2,415
radius in mm	107	107	135	135	135	107	107	107	135	135	107	135	107	135
<b>Cat. No.</b>	<b>tubes<sup>2)</sup></b>					<b>blood collection / urine vessels</b>								



### Bucket

boring Ø x L in mm	13 x 53	13 x 53	13.2 x 81	13.2 x 81	17.5 x 81	13 x 53	13 x 53	17.5 x 53	13.2 x 81	17.5 x 81	13 x 53	13.2 x 81	17.5 x 53	17.5 x 81
vessels per rotor	8	8	8	8	8	8	8	8	8	8	8	8	8	8
<b>Cat. No.</b>	<b>1131-A</b>	<b>1131-A</b>	<b>1643</b>	<b>1643</b>	<b>1644</b>	<b>1131-A</b>	<b>1131-A</b>	<b>1132-A</b>	<b>1643</b>	<b>1644</b>	<b>1131-A</b>	<b>1643</b>	<b>1132-A</b>	<b>1644</b>

## SWING-OUT ROTOR, 12-PLACE | 1628



### Rotor

max. RPM   max. RCF <sup>2)</sup>	5,000 min <sup>-1</sup>   4,193
max. capacity	12 x 15 ml
run-up   run-down, braked in sec	16   16
angle   max. noise level	55° / 60° / 80°   54 dB (A)
<b>Cat. No.</b>	<b>1628</b>



### Vessels

capacity in ml	5	10	15	2.6-2.9	2.7-3	4-5.5	7.5-8.2	1.6-5	4-7	8.5-10
Ø x L in mm	12/13 x 75	17 x 100	17 x 100	13 x 65	11 x 66	15 x 75	15 x 92	13 x 75	16 x 75	16 x 100
max. RCF <sup>2)</sup>	3,466	3,522	4,193	3,466	3,466	3,522	4,193	3,466	3,522	4,193
radius in mm	124	126	150	124	124	126	150	124	126	150
temperature in °C <sup>1)</sup>	-10	-10	-10	-15	-15	-15	-10	-15	-15	-10
<b>Cat. No.</b>	<b>tubes<sup>2)</sup></b>			<b>blood collection / urine vessels</b>						



### Bucket

boring Ø x L in mm	13.2 x 53	17.5 x 53	17.5 x 79	13.2 x 53	13.2 x 53	17.5 x 53	17.5 x 79	13.2 x 53	17.5 x 53	17.5 x 79
vessels per rotor	12	12	12	12	12	12	12	12	12	12
<b>Cat. No.</b>	<b>1127-A</b>	<b>1122</b>	<b>1621</b>	<b>1127-A</b>	<b>1127-A</b>	<b>1122</b>	<b>1621</b>	<b>1127-A</b>	<b>1122</b>	<b>1621</b>

- 1) For cooled versions: Lowest temperature achievable with precooling and max. speed.
- 2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.

## SWING-OUT ROTOR, 8-PLACE | 1617

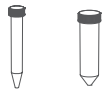


### Rotor

max. RPM   max. RCF	5,000 min <sup>-1</sup>   3,857	
max. capacity	8 x 50 ml	
run-up   run-down, braked in sec	20   19	
angle   max. noise level	45°   50 dB (A)	
temperature in °C <sup>1)</sup>	-10	
<b>Cat. No.</b>	<b>1617</b>	



### Vessels



capacity in ml	15	50
Ø x L in mm	17x120	29x115
max. RCF <sup>2)</sup>	3,857	3,857
radius in mm	138	138
<b>Cat. No.</b>	<b>tubes with screw cap</b>	



### Adapter



boring Ø x L in mm	17x84	30x94.5
vessels per rotor	8	8
<b>Cat. No.</b>	<b>1462-A</b>	<b>-</b>

## SWING-OUT ROTOR, 6-PLACE | 1619

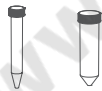


### Rotor

max. RPM   max. RCF	4,000 min <sup>-1</sup>   2,701	
max. capacity	6 x 50 ml	
run-up   run-down, braked in sec	20   22	
angle   max. noise level	90°   50 dB (A)	
temperature in °C <sup>1)</sup>	-15	
<b>Cat. No.</b>	<b>1619</b>	



### Vessels



capacity in ml	15	50
Ø x L in mm	17x120	29x115
max. RCF <sup>2)</sup>	2,701	2,701
radius in mm	151	151
<b>Cat. No.</b>	<b>tubes with screw cap</b>	



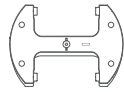
### Adapter



boring Ø x L in mm	17x84	30x87.5
vessels per rotor	6	6
<b>Cat. No.</b>	<b>1462-A</b>	<b>-</b>

- 1) For cooled versions: Lowest temperature achievable with precooling and max. speed.
- 2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.

## — SWING-OUT ROTOR, 2-PLACE | 1460



### Rotor

max. RPM   max. RCF	4,000 min <sup>-1</sup>   2,218
max. capacity	10 plates
run-up   run-down, braked in sec	40   45
angle   max. noise level	90°   55 dB (A)
temperature in °C <sup>1)</sup>	-6
<b>Cat. No.</b>	<b>1460</b>



### Vessels

capacity in ml	-	-	-	-	-	0,2
W x D x H in mm	128x86x15	128x86x22	128x86x44,5	128x86x46	124x82x20	-
max. RCF <sup>2)</sup>	2,433	2,433	2,433	2,433	2,433	2,433
radius in mm	136	136	136	136	136	136
<b>Cat. No.</b>	<b>MTP</b>	<b>CP</b>	<b>DWP</b>	<b>MS</b>	<b>PCR plate, 96 wells</b>	<b>PCR strips</b>



### Bucket

boring Ø x L in mm	-	-	-	-	-	-
vessels per rotor	10	8	2	2	2	24 x 8
<b>Cat. No.</b>	<b>1453-A</b>	<b>1453-A</b>	<b>1453-A</b>	<b>1453-A</b>	<b>1453-A + 1485</b>	<b>1453-A + 1485</b>

## — SWING-OUT ROTOR, 24-PLACE | 1555



### Rotor

max. RPM   max. RCF	13,000 min <sup>-1</sup>   18,327
max. capacity	24 x 2 ml
run-up   run-down, braked in sec	36   31
angle	90°
temperature in °C <sup>1)</sup>	3
<b>Cat. No.</b>	<b>1555</b>

Lid bioseal<sup>3)</sup>,  
phenol-resistant

**Cat. No.**



**INCLUSIVE**



### Vessels

capacity in ml	0.2	0.4	0.5	0.8	1.5	2
Ø x L in mm	6x18	6x45	8x30	8x45	11x38	11x38
max. RCF <sup>2)</sup>	18,327	18,327	18,327	18,327	18,327	18,327
radius in mm	97	97	97	97	97	97
<b>Cat. No.</b>	<b>microliter tubes</b>					



### Adapter

boring Ø x L in mm	6x40	6x40	8x40	8x40	10,2x19,3	11,5x38,5
vessels per rotor	24	24	24	24	24	24
<b>Cat. No.</b>	<b>2024</b>	<b>2024</b>	<b>2023</b>	<b>2023</b>	<b>2031<sup>7)</sup></b>	-

- 1) For cooled versions: Lowest temperature achievable with precooling and max. speed.
- 2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.
- 3) Tested by TÜV in conformity with DIN EN 61010, section 2-020.
- 4) For centrifugation at high speeds, we recommend to use conical, phenol-resistant adapters. Cat. No. 2031.



## — ANGLE ROTOR, 24-PLACE | 1552



### Rotor

max. RPM   max. RCF	16,000 min <sup>-1</sup>   24,900
max. capacity	24 x 2 ml
run-up   run-down, braked in sec	30   29
angle   max. noise level	50°   58 dB (A)
temperature in °C <sup>1)</sup>	2
<b>Cat. No.</b>	<b>1552</b>

+ Lid bioseal<sup>®</sup>, phenol-resistant

Cat. No.

**INCLUSIVE**



### Vessels

capacity in ml	0.2	0.4	0.5	0.8	1.5	2	0.5
Ø x L in mm	6x18	6x45	8x30	8x45	11x38	11x38	10,7 x 46
max. RCF <sup>2)</sup>	24,900	24,900	24,900	24,900	24,900	24,900	23,755
radius in mm	87	87	87	87	87	87	83
<b>Cat. No.</b>	<b>microliter tubes</b>						<b>Pediatric</b>



+ Adapter

### Adapter

boring Ø x L in mm	6x40	6x40	8x40	8x40	10,2x19,3	11,2x42,6	11,2x39
vessels per rotor	24	24	24	24	24	24	12
<b>Cat. No.</b>	<b>2024</b>	<b>2024</b>	<b>2023</b>	<b>2023</b>	<b>2031<sup>7)</sup></b>	<b>-</b>	<b>0788<sup>17)</sup></b>



## — ANGLE ROTOR, 30-PLACE | 1553



### Rotor

max. RPM   max. RCF	14,150 min <sup>-1</sup>   21,713
max. capacity	30 x 2 ml
run-up   run-down, braked in sec	35   32
angle	45°
temperature in °C <sup>1)</sup>	-1
<b>Cat. No.</b>	<b>1553</b>

+ Lid bioseal<sup>®</sup>, phenol-resistant

Cat. No.

**INCLUSIVE**



### Vessels

capacity in ml	0.2	0.4	0.5	0.8	1.5	2	0.5
Ø x L in mm	6x18	6x45	8x30	8x45	11x38	11x38	10,7 x 46
max. RCF <sup>2)</sup>	21,713	21,713	21,713	21,713	21,713	21,713	20,818
radius in mm	97	97	97	97	97	97	93
<b>Cat. No.</b>	<b>microliter tubes</b>						<b>Pediatric</b>



+ Adapter

### Adapter

boring Ø x L in mm	6x40	6x40	8x40	8x40	10,2x19,3	11,2x40,9	11,2x39
vessels per rotor	30	30	30	30	30	30	15
<b>Cat. No.</b>	<b>2024</b>	<b>2024</b>	<b>2023</b>	<b>2023</b>	<b>2031<sup>7)</sup></b>	<b>-</b>	<b>0788<sup>17)</sup></b>



- 1) For cooled versions: Lowest temperature achievable with precooling and max. speed.
- 2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.
- 5) Tested by TÜV in conformity with DIN EN 61010, section 2-020.
- 7) For centrifugation at high speeds, we recommend to use conical, phenol-resistant adapters. Cat. No. 2031.
- 17) Packed in units of 15 pieces.

## — ANGLE ROTOR, 8-PLACE | 1551



### Rotor

max. RPM   max. RCF	13,000 min <sup>-1</sup>   13,604	
max. capacity	8 x PCR-Strips	
run-up   run-down, braked in sec	36   31	
angle   max. noise level	45°   58 dB (A)	
temperature in °C <sup>1)</sup>	-4	
<b>Cat. No.</b>	<b>1551</b>	



Lid bioseal<sup>®</sup>,  
phenol-resistant  
Cat. No.



**INCLUSIVE**



### Vessels

capacity in ml	0.2	0.2
Ø x L in mm	6 x 18	-
max. RCF <sup>2)</sup>	13,604	13,604
radius in mm	64	8 x 8
<b>Cat. No.</b>	-	<b>PCR-Strips</b>



## — ANGLE ROTOR, 18-PLACE | 1627



### Rotor

max. RPM   max. RCF	14,150 min <sup>-1</sup>   22,161	
max. capacity	18 x 5 ml	
run-up   run-down, braked in sec	35   32	
angle	45°	
temperature in °C <sup>1)</sup>	2	
<b>Cat. No.</b>	<b>1627</b>	



Lid bioseal<sup>®</sup>,  
phenol-resistant  
Cat. No.



**INCLUSIVE**



### Vessels

capacity in ml	5
Ø x L in mm	17 x 59
max. RCF <sup>2)</sup>	22,161
radius in mm	18
<b>Cat. No.</b>	-



- 1) For cooled versions: Lowest temperature achievable with precooling and max. speed.
- 2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.
- 5) Tested by TÜV in conformity with DIN EN 61010, section 2-020.

## — ANGLE ROTOR, 6-PLACE | 1556



### Rotor

max. RPM   max. RCF	9.000 min <sup>-1</sup>   10.595
max. capacity	6 x 94 ml
run-up   run-down, braked in sec	36   32
angle   max. noise level	35°   60 dB (A)
temperature in °C <sup>1)</sup>	0
<b>Cat. No.</b>	<b>1556</b>

Lid bioseal<sup>5)</sup>, phenol-resistant

Cat. No.

**INCLUSIVE**



### Vessels

capacity in ml	1.5	2	15	50	50	85	7.5-8.2	9-10	10	8.5-10	15	50	10	30	50
Ø x L in mm	11 x 38	11 x 38	17 x 100	35 x 105	34 x 100	38 x 101	15 x 92	16 x 92	15 x 102	16 x 100	17 x 120	29 x 115	16 x 80	26 x 95	29 x 107
max. RCF <sup>2)</sup>	10,324	10,324	10,052	10,414	10,414	10,595	10,052	10,052	10,052	10,052	10,052	10,052	10,414	9,690	10,142
radius in mm	114	114	111	115	115	117	111	111	111	111	111	111	115	107	112
<b>Cat. No.</b>	<b>microliter tubes</b>			<b>tubes<sup>3)</sup></b>			<b>blood collection / urine vessels</b>				<b>tubes with screw cap</b>				



### Adapter

boring Ø x L in mm	11.4 x 39	11.4 x 39	17.5 x 78	35 x 89	35 x 89	-	17.5 x 78	17.5 x 78	17.5 x 78	17.5 x 78	17 x 106	29.8 x 97	16.5 x 72	26 x 85	29 x 92
vessels per rotor	24	24	6	6	6	6	6	6	6	6	6	6	12	6	6
<b>Cat. No.</b>	<b>1449</b>	<b>1449</b>	<b>1478</b>	<b>1463</b>	<b>1463</b>	<b>-</b>	<b>1478</b>	<b>1478</b>	<b>1478</b>	<b>1478</b>	<b>1466</b>	<b>1454</b>	<b>1477</b>	<b>1447</b>	<b>1446</b>

### Vessels

capacity in ml	85	94
Ø x L in mm	38 x 106	38 x 102
max. RCF <sup>2)</sup>	10,595	10,595
radius in mm	117	117
<b>Cat. No.</b>	<b>tubes with screw cap</b>	



### Adapter

boring Ø x L in mm	-	-
vessels per rotor	6	6
<b>Cat. No.</b>	<b>-</b>	<b>-</b>

1) For cooled versions: Lowest temperature achievable with precooling and max. speed.  
 2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.  
 5) Tested by TÜV in conformity with DIN EN 61010, section 2-020.

## ANGLE ROTOR, 12-PLACE | 1613



### Rotor

max. RPM   max. RCF	6,000 min <sup>-1</sup>   4,146
max. capacity	12 x 15 ml
run-up   run-down, braked in sec	15   15
angle   max. noise level	35°   50 dB (A)
temperature in °C <sup>1)</sup>	-16
<b>Cat. No.</b>	<b>1613</b>



### Vessels

capacity in ml	0.5	1.5	2.0	4	5	6	15	1.1-1.4	2.6-2.9	2.7-3	4.5-5	4.9	7.5-8.2	9-10	10
Ø x L in mm	10.7 x 46	11 x 38	11 x 38	10 x 88	12/13 x 75	12 x 82	17 x 100	8 x 66	13 x 65	11 x 66	11 x 92	13 x 90	15 x 92	16 x 92	15 x 102
max. RCF <sup>2)</sup>	2,777	2,737	2,737	3,502	3,300	3,300	4,146	3,300	3,300	3,300	4,146	4,146	4,146	4,146	4,146
radius in mm	69	68	68	87	82	82	103	82	82	82	103	103	103	103	103
<b>Cat. No.</b>	<b>Pediatric</b>	<b>microliter tubes</b>			<b>tubes<sup>2)</sup></b>			<b>blood collection / urine vessels</b>							



### Adapter

boring Ø x L in mm	11 x 35	11 x 35	11 x 35	11.5 x 67.5	13.5 x 59	13.5 x 59	17.7 x 88	13.5 x 59	13.5 x 59	13.5 x 59	17.7 x 88	17.7 x 88	17.7 x 88	17.7 x 88	17.7 x 88
vessels per rotor	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
<b>Cat. No.</b>	<b>2 x 1063-6 (6 pcs.)</b>			<b>6305</b>	<b>1054-A</b>	<b>1054-A</b>	<b>-</b>	<b>1054-A</b>	<b>1054-A</b>	<b>1054-A</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>

### Vessels

capacity in ml	1.6-5	4-7	8	8.5-10	5	15
Ø x L in mm	13 x 75	13 x 100	16 x 125	16 x 100	17 x 59	17 x 120
max. RCF <sup>2)</sup>	3,300	4,146	4,146	4,146	3,180	4,146
radius in mm	82	103	103	103	79	103
<b>Cat. No.</b>	<b>blood collection / urine vessels</b>			<b>-</b>	<b>-</b>	<b>-</b>



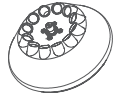
### Adapter

boring Ø x L in mm	13.5 x 60	17.7 x 88	17.7 x 88	17.7 x 88	17.7 x 88	17.7 x 88
vessels per rotor	12	12	6	12	12	6
<b>Cat. No.</b>	<b>1054-A</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>

1) For cooled versions: Lowest temperature achievable with precooling and max. speed.

2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.

## ANGLE ROTOR, 12-PLACE | 1615



### Rotor

max. RPM   max. RCF	12,000 min <sup>1</sup>   16,582
max. capacity	12 x 15 ml
run-up   run-down, braked in sec	40   40
angle   max. noise level	35°   52 dB (A)
temperature in °C <sup>1)</sup>	-2
<b>Cat. No.</b>	<b>1615</b>

### Vessels

capacity in ml	0.5	1.5	2.0	4	5	6	15	1.1 - 1.4	2.6 - 2.9	2.7 - 3	4.5 - 5	4.9	7.5 - 10	10
Ø x L in mm	10.7 x 46	11 x 38	11 x 38	10 x 88	12/13 x 75	12 x 82	17 x 100	8 x 66	13 x 65	11 x 66	11 x 92	13 x 90	15/16 x 92	15 x 102
max. RCF <sup>2)</sup>	11,108	10,947	10,947	14,006	13,201	13,201	16,582	13,201	13,201	13,201	16,582	16,582	16,582	16,582
radius in mm	69	68	68	87	82	82	103	82	82	82	103	103	103	103
<b>Cat. No.</b>	<b>Pediatric</b>	<b>microliter tubes</b>			<b>tubes <sup>2)</sup></b>			<b>blood collection / urine vessels</b>						



### Adapter

boring Ø x L in mm	11 x 35	11 x 35	11 x 35	11.5 x 67.5	13.5 x 59	13.5 x 59	17.7 x 88	13.5 x 59	13.5 x 59	13.5 x 59	17.7 x 88	17.7 x 88	17.7 x 88	17.7 x 88
vessels per rotor	12	12	12	12	12	12	12	12	12	12	12	12	12	12
<b>Cat. No.</b>	<b>2 x 1063-6 (6 pcs.)</b>			<b>6305</b>	<b>1054-A</b>	<b>1054-A</b>	<b>-</b>	<b>1054-A</b>	<b>1054-A</b>	<b>1054-A</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>

### Vessels

capacity in ml	1.6 - 5	4 - 7	8.5 - 10	8	5	15
Ø x L in mm	13 x 75	13 x 100	16 x 100	16 x 125	17 x 59	17 x 120
max. RCF <sup>2)</sup>	13,201	16,582	16,582	16,582	12,718	15,455
radius in mm	82	103	103	103	79	96
<b>Cat. No.</b>	<b>blood collection / urine vessels</b>			<b>-</b>	<b>-</b>	<b>-</b>



### Adapter

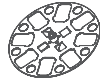
boring Ø x L in mm	13.5 x 59	17.7 x 88	17.7 x 88	17.7 x 88	17 x 25	17 x 104
vessels per rotor	12	12	12	6	12	6
<b>Cat. No.</b>	<b>1054-A</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>1064</b>	<b>1647 <sup>25)</sup></b>

1) For cooled versions: Lowest temperature achievable with precooling and max. speed.

2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.

25) Adapter (set), 6-place: For conical 15 ml tubes with screw cap, remove carriers from rotor and replace them with adapters.

## — ANGLE ROTOR, 8-PLACE | 1418



### Rotor

max. RPM   max. RCF	4,500 min <sup>-1</sup>   3,305
max. capacity	8x50 ml
run-up   run-down, braked in sec	30   31
angle   max. noise level	45°   54 dB (A)
temperature in °C <sup>1)</sup>	-5
<b>Cat. No.</b>	<b>1418</b>



### Vessels

capacity in ml	5	15	1.1-1.4	2.6-2.9	2.7-3	9-10	1.6-5	4-7	8.5-10	12	15	50	12	50	50
Ø x L in mm	12/13x75	17x100	8x66	13x65	11x66	16x92	13x75	13x100	16x100	17x102	17x120	29x115	17x100	29x115	29x107
max. RCF <sup>2)</sup>	2,762	3,215	2,762	2,762	2,762	3,215	2,762	3,215	3,215	3,215	3,283	3,147	3,215	3,147	3,147
radius in mm	122	142	122	122	122	142	122	146	142	142	145	139	142	139	139

Cat. No.	tubes <sup>2)</sup>		blood collection / urine vessels						tubes with screw cap							
	+ 1054-A	+ 0716	+ 1054-A	+ 1054-A	+ 1054-A	+ 0716	+ 1054-A	+ 0716	+ 0716	+ 0716	+ E2109	+ E2110-A	+ 0716			
<b>Carrier</b>																
boring Ø x L in mm	17.4x91	17.4x91	17.4x91	17.4x91	17.4x91	17.4x91	17.4x91	17.4x91	17.4x91	17.4x91	17.4x91	30.2x92	17.4x91	30.2x92	30.2x92	
vessels per rotor	32	32	32	32	32	32	32	32	32	32	32	8	32	8	8	
<b>Cat. No.</b>	<b>1467</b>	<b>1467</b>	<b>1467</b>	<b>1467</b>	<b>1467</b>	<b>1467</b>	<b>1467</b>	<b>1467</b>	<b>1467</b>	<b>1467</b>	<b>1467</b>	<b>1468</b>	<b>1467</b>	<b>1468</b>	<b>1468</b>	

1) For cooled versions: Lowest temperature achievable with precooling and max. speed.  
 2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.

## PACKAGES

### UNIVERSAL 320 BLOOD TUBE PACKAGE 1

		number of vessels	volume (ml)	size (mm)	RPM	RCF
- 1 x UNIVERSAL 320 centrifuge	1401	28	1.6 - 7	13 x 90 / 100	5,000	3,913
- 1 x swing-out rotor, 4-place	1494	28	4 - 10	16 x 75 / 100	5,000	3,913
- 4 x bucket	1425					
- 4 x adapter, 7-place	1438					
- 4 x adapter, 7-place	1441					

#### 1401SET1

### UNIVERSAL 320 BLOOD TUBE PACKAGE 2

		number of vessels	volume (ml)	size (mm)	RPM	RCF
- 1 x UNIVERSAL 320 centrifuge	1401	28	1.6 - 7	13 x 90 / 100	4,500	3,215
- 1 x swing-out rotor, 4-place	1554	20	4 - 10	16 x 75 / 100	4,500	3,215
- 4 x bucket	1560					
- 4 x lid (bioseal)	1561					
- 4 x adapter, 7-place	1589					
- 4 x adapter, 5-place	1588					

#### 1401SET2

### UNIVERSAL 320 CONICAL PACKAGE 3

		number of vessels	volume (ml)	size (mm)	RPM	RCF
- 1 x UNIVERSAL 320 centrifuge	1401	16	15	17 x 120	4,500	3,305
- 1 x swing-out rotor, 4-place	1324	4	50	29 x 115	4,500	3,260
- 4 x bucket	1398					
- 4 x adapter, 4-place (conical)	1483A					
- 4 x adapter, 1-place (conical)	1484					

#### 1401SET3

### UNIVERSAL 320 R CONICAL PACKAGE 1

		number of vessels	volume (ml)	size (mm)	RPM	RCF
- 1 x UNIVERSAL 320 R centrifuge	1406	16	15	17 x 120	4,500	3,328
- 1 x swing-out rotor, 4-place	1554	4	50	30 x 115	4,500	3,328
- 4 x bucket	1560					
- 4 x lid (bioseal)	1561					
- 4 x adapter, 2-place (conical)	1577					
- 4 x adapter, 1-place (conical)	1579					

#### 1406SET1

### UNIVERSAL 320 R BLOOD TUBE PACKAGE 2

		number of vessels	volume (ml)	size (mm)	RPM	RCF
- 1 x UNIVERSAL 320 R centrifuge	1406	28	1.6 - 7	13 x 90 / 100	5,000	3,913
- 1 x swing-out rotor, 4-place	1494	28	4 - 10	16 x 75 / 100	5,000	3,913
- 4 x bucket	1425					
- 4 x adapter, 7-place	1438					
- 4 x adapter, 7-place	1441					

#### 1406SET2

### UNIVERSAL 320 R CONICAL PACKAGE 3

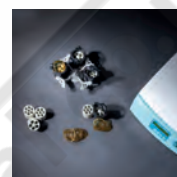
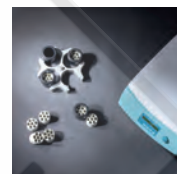
		number of vessels	volume (ml)	size (mm)	RPM	RCF
- 1 x UNIVERSAL 320 R centrifuge	1406	20	1.6 - 7	13 x 90 / 100	4,000	2,558
- 1 x swing-out rotor, 4-place	1324	16	4 - 10	16 x 75 / 100	4,000	2,522
- 4 x bucket	1398					
- 4 x adapter, 4-place (conical)	1483A					
- 4 x adapter, 1-place (conical)	1484					

#### 1406SET3

### UNIVERSAL 320 R BLOOD TUBE PACKAGE 4

		number of vessels	volume (ml)	size (mm)	RPM	RCF
- 1 x UNIVERSAL 320 R centrifuge	1406	16	15	17 x 120	4,500	3,305
- 1 x swing-out rotor, 4-place	1624	4	50	29 x 115	4,500	3,260
- 4 x bucket	1481					
- 4 x lid (bioseal)	1492					
- 4 x adapter, 5-place	1383					
- 4 x adapter, 4-place	1348					

#### 1406SET4



## UNIVERSAL 320 R BLOOD TUBE PACKAGE 5

		number of vessels	volume (ml)	size (mm)	RPM	RCF
- 1 x UNIVERSAL 320 R centrifuge	1406	28	1.1 - 7	13 x 90 / 100	4,500	3,215
- 1 x swing-out rotor, 4-place	1554	20	4 - 10	17 x 100	4,500	3,215
- 4 x bucket	1560					
- 4 x lid (biodicht)	1561					
- 4 x adapter, 7-place	1589					
- 4 x adapter, 5-place	1588					
<b>1406SET5</b>						



## UNIVERSAL 320 R BLOOD TUBE PACKAGE 6

		number of vessels	volume (ml)	size (mm)	RPM	RCF
- 1 x UNIVERSAL 320 R centrifuge	1406	32	1.6 - 7	13 x 90 / 100	5,000	4,025
- 1 x swing-out rotor, 4-place	1494	24	8.5 - 15	17 x 100	5,000	3,941
- 4 x bucket	1427					
- 4 x lid (bioseal)	1421					
- 4 x adapter, 8-place	1732					
- 4 x adapter, 6-place	5231					
<b>1406SET6</b>						







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