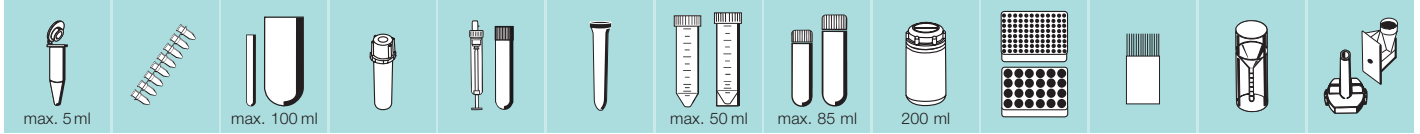


UNIVERSAL 320 / 320 R



Our multitasking centrifuges save space and costs

There are many good reasons for calling these centrifuges UNIVERSAL. Their excellent performance and comprehensive range of accessories enable them to carry out virtually any centrifuging task. And, since the UNIVERSAL 320/320R can be used for both standard and special applications, they are not only cost-effective, they also save valuable space in the laboratory.



TECHNOLOGY	UNIVERSAL 320		UNIVERSAL 320R ^{>1)}		
Benchtop centrifuge, without rotor	classic		cooled		
Power supply ²⁾	200–240 V 1~	100–127 V 1~	200–240 V 1~	240 V 1~	115–127 V 1~
Frequency	50–60 Hz		50 Hz	60 Hz	60 Hz
Consumption	400 VA		800 VA		950 VA
Emission, Immunity	EN/IEC 61326-1, class B	FCC class B	EN/IEC 61326-1, class B		FCC class B
/ Max. capacity	4x200 ml/6x85 ml				
Max. RPM (speed)	15,000 min ⁻¹				
Max. RCF	21,382				
Running time	1 sec–99 min : 59 sec, ∞ continuous run, short cycle mode (impulse key)				
Dimensions (HxWxD)	346x395x520 mm		346x401x695 mm		
Weight	approx. 31 kg		approx. 53 kg		
Refrigeration					
Temperature control, infinitely variable	-		from -20 to +40 °C		
Cat. No.	1401	1401-01	1406	1406-01	

¹⁾ Other voltages on request.

^{>1)} For a list of further versions of this model, please refer to page 14.

Swing-out rotor, 4-place



∠ 90°

n = 4,500 min⁻¹
max. RCF 3,328

illustrated with carriers 1560
with single-hand clamp lock and lids 1561
with bio-containment⁵⁾



Carrier 1565

The 1565 carrier is also available
without a lid and clamp lock.¹⁷⁾

Cat. No. (without carriers) **1554**

capacity in ml	1.5	2.0	5	5	6	7	9	15	15	25	50	85
∅ x L in mm	11x38		17x59	12x75	12x82	12x100	14x100	17x100	18x102	24x100	34x100	38x101
Cat. No.	2078	0536	-	0553²⁾	0501²⁾	0578²⁾	0500²⁾	0518²⁾	Corex®	0519²⁾	0521²⁾	0549
lid with bio-containment ⁵⁾ Cat. No. 1561												
carrier Cat. No. 1560												
Cat. No.	1571	1593		1589			1588	1572	1573	1574	1575	
boring ∅ x L in mm	11.5x39		17x52	13.5x60			17.5x60		18.5x74	25.2x66	35.2x69	38.5x74
tubes per rotor	56		16	28			20		16	4		
max. RCF ²⁾ upper/lower	3,328/2,332		3,328	3,215			3,215		3,260	3,056	3,147	3,260
radius in mm upper/lower	147/103		147	142			142		144	135	139	144
run-up in sec	28											
run-down in sec, braked	31											
temperature in °C ¹⁾	-8											

capacity in ml	100	125	150	200	1.1-1.4	2.6-3.4	4.9	2.7-3	4.5-5	4-5.5	7.5-8.5	9-10
∅ x L in mm	44x100	51x100	51x116	56x112	8x66	13x65	13x90	11x66	11x92	15x75	15x92	16x92
Cat. No.	0526²⁾	-	-	-	blood collection/urine tubes							
lid with bio-containment ⁵⁾ Cat. No. 1561												
carrier Cat. No. 1560												
Cat. No.	1576	1594	-	-	1589				1588			
boring ∅ x L in mm	45.5x69	52x77	57x77		13.5x60				17.5x60			
tubes per rotor		4			28				20			
max. RCF ²⁾	3,147	3,328			3,215				3,215			
radius in mm	139	147			142				142			
run-up in sec	28											
run-down in sec, braked	31											
temperature in °C ¹⁾	-8											

1) Lowest attainable temperature in precooled refrigerated centrifuges at max. speed. Lower temperatures can be attained by reducing the 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, carrier 1560 cannot be closed with lid 1561.

5) Tested by the TÜV in conformity with DIN EN 61010, section 2-020.



illustrated with carriers 1560
with single-hand clamp lock and lids 1561
with bio-containment⁵⁾

Swing-out rotor 1554

capacity in ml	10	1.6-5	4-7	4-7	8.5-10	12	11	15	30	50	12	
Ø x L in mm	15x102	13x75	13x100	16x75	16x100	17x102	16x110	17x120	25x110	29x115	17x100	
Cat. No.	blood collection / urine tubes						Nunc®	0509		-	0513	-
lid with bio-containment ⁵⁾ Cat. No. 1561												
carrier Cat. No. 1560												
Cat. No.	1588	1589	1588	1591	1581	1577	1595	1578	1579	1581		
boring Ø x L in mm	17.5x60	13.5x60	17.5x60	17.5x74	17.5x74	17x77	17x77	26x77	30x77	17.5x74		
tubes per rotor	20	28	20	12	16	8	12	4		16		
max. RCF ²⁾	3,215					3,260	3,328				3,260	
radius in mm	142					144	147				144	
run-up in sec	28											
run-down in sec, braked	31											
temperature in °C ¹⁾	-8											

capacity in ml	25	30	50	10	30	50	85	94	30	
Ø x L in mm	25x90	25x110	29x115	16x80	26x95	29x107	38x106	38x102	44x105	
Cat. No.	-	-	-	-	0545	0546	0547	0538¹³⁾	0534⁶⁾	
lid with bio-containment ⁵⁾ Cat. No. 1561										
carrier Cat. No. 1560										
Cat. No.	1582	1583	1584	1585	1586	1575	1587			
boring Ø x L in mm	26x65	30x77	16.5x60	26x74	29x74	38.5x74	45x71			
tubes per rotor	4		20	4						
max. RCF ²⁾	3,328		3,215	3,260			3,192			
radius in mm	147		142	144			141			
run-up in sec	28									
run-down in sec, braked	31									
temperature in °C ¹⁾	-8									

⁶⁾ A rubber stopper for closing the tube is available under Cat. No. 0535.

The tube may not be centrifuged with the stopper. The stopper only serves to close the tube for agitating or mixing.

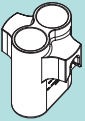







¹³⁾ The screw cap for tube No. 0538 is available with Cat. No. 0539. Dimensions with cap 38x110 mm.

¹⁷⁾ 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.



illustrated with carriers 1563

Swing-out rotor 1554

capacity in ml	12	15	50	50
Ø x L in mm	17x100	17x120	29x115	29x115
Cat. No.	-	0509	0513	-
 carrier Cat. No. 1563				
		+ E 2109 	+ E 2110-A 	
Cat. No.	1592		-	-
boring Ø x L in mm	17x87	17.5x74	30x87	30x87
tubes per rotor	8			
max. RCF ²⁾	3,260			
radius in mm	144			
run-up in sec	28			
run-down in sec, braked	31			
temperature in °C ¹⁾	-8			

¹⁾ Lowest attainable temperature in precooled refrigerated centrifuges at max. speed. Lower temperatures can be attained by reducing the 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.

²³⁾ Please ask for our detailed cyto brochure.

Swing-out rotor, 4-place































∠ 90°

n = 5,000 min⁻¹
max. RCF 4,193

illustrated with carriers 1425

Cat. No. (without carriers) **1494**

capacity in ml	1.5	2.0	1	3	5	6	7	9	15	25	50	100	suspension for cyto accessories
Ø x L in mm	11x38		6x45	10x60	12x75	12x82	12x100	14x100	17x100	24x100	34x100	44x100	
Cat. No.	2078	0536	Rhesus	-	0553⁽²⁾	0501⁽²⁾	0578⁽²⁾	0500⁽²⁾	0518⁽²⁾	0519⁽²⁾	0521⁽²⁾	0526⁽²⁾	cyto chambers⁽²³⁾
 carrier Cat. No. 1425													
Cat. No.	1444	1432	1433	1438	1434	1434	1431	1435	1436	1437	1452		
boring Ø x L in mm	11.5x38	6.5x34	10.5x40	13.4x50	12.7x60		17.5x84	25.5x84	35.5x84	45.5x86			-
tubes per rotor	36	144	56	28	48		28	8				4	
max. RCF ⁽²⁾	3,885	3,969	3,913								3,801		2,739
radius in mm	139	142	140								136		98
run-up in sec	30												
run-down in sec, braked	32												
temperature in °C ⁽¹⁾	-10												

capacity in ml	2.6-3.4	2.7-3	4-5.5	4.5-5	4.9	7.5-8.5	9-10	1.6-5	4-7	4-7	8.5-10	15	50	50
Ø x L in mm	13x65	11x66	15x75	11x92	13x90	15x92	16x92	13x75	13x100	16x75	16x100	17x120	29x115	29x115
Cat. No.	blood collection/urine tubes											0509	0513	-
 carrier Cat. No. 1425														
Cat. No.	1438	1441	1438	1441	1439	1438	1441	1442	1443	1737				
boring Ø x L in mm	13.4x50	16.5x50	13.4x50	16.5x50	17x45	13.4x50	16.5x50	17x90	30x90	30x90				
tubes per rotor	28					16	28					4		
max. RCF ⁽²⁾	3,913						4,081							
radius in mm	140						146							
run-up in sec	30													
run-down in sec, braked	32													
temperature in °C ⁽¹⁾	-10													



illustrated with carriers 1427

Swing-out rotor 1494

capacity in ml	1.5	2.0	1	3	5	6	7	9	15	25	50	1.1–1.4	2.6–3.4	2.7–3	
Ø x L in mm	11x38	11x38	6x45	10x60	12x75	12x82	12x100	14x100	17x100	24x100	34x100	8x66	13x65	11x66	
Cat. No.	2078	0536	Rhesus	-	0553²⁾	0501²⁾	0578²⁾	0500²⁾	0518²⁾	0519²⁾	0521²⁾	blood/urine tubes			
lid Cat. No. 1421															
carrier Cat. No. 1427															
Cat. No.	5277	1357	1327	1732	5229	5230	5237	5231	5232	5233	5278	1732	5229		
boring Ø x L in mm	11.5x38	6.5x23	10.5x23	13.4x58	12.5x44	12.4x87	15x73	17.8x87	25.5x87	35.5x87	9x41	13.4x58	12.5x44		
tubes per rotor	36	120	48	32	48	48	24	8	4	48	32	48			
max. RCF ²⁾	4,109	4,081	4,053	4,025	4,053	3,941			4,109	4,025	4,053				
radius in mm	147	146	145	144	145	141			147	144	145				
run-up in sec	30														
run-down in sec, braked	32														
temperature in °C ¹⁾	-7														

capacity in ml	4–5.5	4.5–5	4.9	7.5–8.5	9–10	1.6–5	4–7	8.5–10	15	50	25	30	50		
Ø x L in mm	15x75	11x92	13x90	15x92	16x92	13x75	13x100	16x75	16x100	17x120	29x115	25x90	25x110	29x115	
Cat. No.	blood collection/urine tubes										0509	0513	-	-	-
lid Cat. No. 1421															
carrier Cat. No. 1427															
Cat. No.	5279	5230	1732	5279	5271⁴⁾	1732	5271	5231	5275	5276	1731	5272	5233⁴⁾		
boring Ø x L in mm	15.6x41	12.4x87	13.4x58	15.6x41	17x66	13.4x58	17x66	17.8x87	17x90	30x90	25.5x72	25.5x85	35.5x87		
tubes per rotor	20	48	32	20	32	20	24	4	8	4	4	4			
max. RCF ²⁾	4,109	3,941	4,025	4,109	3,969	4,025	3,969	3,941	4,165	4,053	3,969	4,025	4,053		
radius in mm	147	141	144	147	142	144	142	141	149	145	142	144	145		
run-up in sec	30														
run-down in sec, braked	32														
temperature in °C ¹⁾	-7														

1) Lowest attainable temperature in precooled refrigerated centrifuges at max. speed. Lower temperatures can be attained by reducing the 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, carrier 1427 cannot be closed with lid 1421.

4) Please remove the inserts.



illustrated with carriers 1495 and lids 1492
with bio-containment⁵⁾

Swing-out rotor 1494

capacity in ml	1.5	2.0	1	3	5/6/7	9	15	25	50	94	100	1.1–1.4	2.7–5	2.6–4.9	4–8.5	
Ø x L in mm	11x38		6x45	10x60	12x75/82/100		14x100	17x100	24x100	34x100	38x102	44x100	8x66	11x66/92	13x65/90	15x75/92
Cat. No.	2078	0536	Rhesus	-	0553²⁾/0501²⁾/0578²⁾		0500²⁾	0518²⁾	0519²⁾	0521²⁾	0549	0526²⁾	blood / urine tubes			
lid with bio-containment ⁵⁾ Cat. No. 1492																
carrier Cat. No. 1495																
Cat. No.	1351	1339	1343	1383	1329	1330	1331	1396	0761	1457	1383	1459				
boring Ø x L in mm	11.2x38		6.5x34	10.5x43	13.4x48		17.6x91	25.2x87	35.2x87	38.5x92	45.6x98	9x47	13.4x48		15.6x47	
tubes per rotor	20		108	36	20		16	4				28	20		16	
max. RCF ²⁾	3,857		4,081	4,137	4,025		3,997	3,829	3,801	4,109	4,025	4,053	4,025		4,053	
radius in mm	138		146	148	144		143	137	136	147	144	145	144		145	
run-up in sec	30															
run-down in sec, braked	32															
temperature in °C ¹⁾	-10															

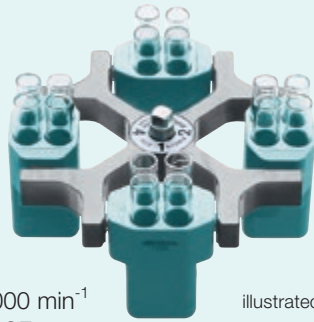
capacity in ml	9–10	10	1.6–7	4–10	15	30	50	12	25	30	50	10	30	50	85	30
Ø x L in mm	16x92	15x102	13x75/100	16x75/100	17x120	25x110	29x115	17x100	25x90	25x110	29x115	16x80	26x95	29x107	38x106	44x105
Cat. No.	blood / urine tubes				0509	-	0513	-	-	-	-	-	0545	0546	0547	0534⁶⁾
lid with bio-containment ⁵⁾ Cat. No. 1492																
carrier Cat. No. 1495																
Cat. No.	1329	1329⁴⁾	1383	1348	1347	1365	1384	6311	1363	1365	6318	1348	4417	4416	1396	0765
boring Ø x L in mm	17.6x91		13.4x48	16.5x56	17x90	26x80	30x90	17x80	26x72	26x80	29.5x80	16.5x56	26x83	29x93	38.5x92	45.9x98
tubes per rotor	16		20	16	4				16				4			
max. RCF ²⁾	3,997	4,193	4,025		4,193			3,689		4,193		4,025	3,857	4,137	4,109	3,997
radius in mm	143	150	144		150			132		150		144	138	148	147	143
run-up in sec	30															
run-down in sec, braked	32															
temperature in °C ¹⁾	-10															

⁵⁾ Tested by the TÜV in conformity with DIN EN 61010, section 2-020.

⁶⁾ A rubber stopper for closing the tube is available under Cat. No. 0535.

The tube may not be centrifuged with the stopper. The stopper only serves to close the tube for agitating or mixing.

Swing-out rotor, 4-place

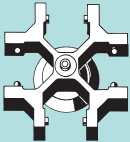













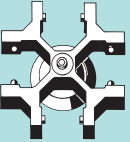










∠ 90°

n = 4,000 min⁻¹
max. RCF 2,665

illustrated with carriers 1369

Cat. No. (without carriers) **1624**

capacity in ml	5	6	7	9	15	20	25	45	50		
∅ x L in mm	12x75	12x82	12x100	14x100	17x100	21x100	24x100	31x100	34x100		
Cat. No.	0553²⁾	0501²⁾	0578²⁾	0500²⁾	0518²⁾	-	0519²⁾	-	0521²⁾		
 rotor Cat. No. 1624											
	with decanting aid		with decanting aid		+ 0701						
Cat. No.	1369-91	1372	1369-92	1370	1741	1369	1742	1346	1745	1345	1746
boring ∅ x L in mm	12.5x64.4	13.5x65	12.5x71.5	14.6x74	14.6x78	17.6x74	17.6x78	21.5x74	26x78	32x74	35x78
tubes per rotor	16	68	16	20	40	16	28	8		4	
max. RCF ²⁾	2,057	2,164	2,308		2,415	2,308	2,451	2,361	2,451	2,361	2,451
radius in mm	115	121	129		135	129	137	132	137	132	137
run-up in sec	20										
run-down in sec, braked	25										
temperature in °C ¹⁾	-17				-15	-17		-15			

capacity in ml	1.1–1.4	2.6–3.4	4–5.5	4.9	1.6–5	1.6–5	4–7	8.5–10	30	suspension for cyto accessories
∅ x L in mm	8x66	13x65	15x75	13x90	13x75	13x75	16x75	16x100	26x95	
Cat. No.	blood collection/urine tubes								0545	cyto chambers²³⁾
 rotor Cat. No. 1624										
	+ 0701	+ 0716			4 x 0768 ¹⁹⁾	+ 0716				
Cat. No.	1741	1742	1741	1741	1742	1369	1745		1660	
boring ∅ x L in mm	14.6x78	17.6x78	14.6x78	14.6x78	17.6x78	17.6x74	26x78		-	
tubes per rotor	40	28	40	40	28	16	8		4	
max. RCF ²⁾	2,415	2,325	2,451	2,129	2,325	2,308	2,451		1,646	
radius in mm	135	130	137	119	130	129	137		92	
run-up in sec	20									
run-down in sec, braked	25									
temperature in °C ¹⁾	-15						-17	-15		-16

¹⁾ Lowest attainable temperature in precooled refrigerated centrifuges at max. speed. Lower temperatures can be attained by reducing the 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.






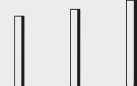













⁵⁾ Tested by the TÜV in conformity with DIN EN 61010, section 2 - 020.



illustrated with carriers 1481 and lids 1492
with bio-containment⁵⁾

Swing-out rotor 1624

capacity in ml	1.5	2.0	1	3	4
Ø x L in mm	11 x 38		6 x 45	10 x 60	12 x 60
Cat. No.	2078	0536	Rhesus	-	-
 carrier Cat. No. 1366					
					
Cat. No.	5277	1357	1327	1326	
boring Ø x L in mm	11.5 x 38	6.5 x 23	10.5 x 23	12.5 x 44	
tubes per rotor	36	120	48		
max. RCF ²⁾	1,968	1,950	1,932		
radius in mm	110	109	108		
run-up in sec	20				
run-down in sec, braked	25				
temperature in °C ¹⁾	-15				

capacity in ml	0.5	1.5	2.0	1	3	5/6/7	9	15	25	50	94
Ø x L in mm	10.7 x 36	11 x 38		6 x 45	10 x 60	12 x 75/82/100	14 x 100	17 x 100	24 x 100	34 x 100	38 x 102
Cat. No.	Pediatric	2078	0536	Rhesus	-	0553²⁾/0501²⁾/0578²⁾	0500²⁾	0518²⁾	0519²⁾	0521²⁾	0549
lid with bio-containment ⁵⁾ Cat. No. 1492											
carrier Cat. No. 1481											
Cat. No.		1351		1339	1343	1383	1329	1330	1331	1396	
boring Ø x L in mm		11.2 x 38		6.5 x 34	10.5 x 43	13.4 x 48	17.6 x 91	25.2 x 87	35.2 x 87	38.5 x 92	
tubes per rotor		20		108	36	20	16	4			
max. RCF ²⁾	2,379	2,451		2,594	2,630	2,558	2,540	2,433	2,415	2,612	
radius in mm	133	137		145	147	143	142	136	135	146	
run-up in sec	20										
run-down in sec, braked	25										
temperature in °C ¹⁾	-15										

¹⁹⁾ Packed in units of 10 pieces.

²³⁾ Please ask for our detailed cyto brochure.



illustrated with carriers 1481 and lids 1492
with bio-containment⁵⁾

Swing-out rotor 1624

capacity in ml	100	1.1–1.4	2.7–5	2.6–4.9	4–8.5	9–10	10	1.6–7	4–10	5	15
Ø x L in mm	44x100	8x66	11x66/92	13x65/90	15x75/92	16x92	15x102	13x75/100	16x75/100	17x59	17x120
Cat. No.	0526²⁾	blood collection/urine tubes								-	0509
lid with bio-containment ⁵⁾ Cat. No. 1492											
carrier Cat. No. 1481											
Cat. No.	0761	1457	1383	1459	1329	1329⁴⁾	1383	1348	6341	1347	
boring Ø x L in mm	45.9x98	9x47	13.4x48	15.6x47	17.6x91		13.4x48	16.5x56	17x45	17x90	
tubes per rotor	4	28	20	16	16		20	16	12	4	
max. RCF ²⁾	2,558	2,576	2,558	2,576	2,540	2,665	2,558	2,522	2,665		
radius in mm	143	144	143	144	142	149	143	141	149		
run-up in sec	20										
run-down in sec, braked	25										
temperature in °C ¹⁾	-15										

capacity in ml	50	12	25	30	50	10	30	50	85	30	
Ø x L in mm	29x115	17x100	25x90	25x110	29x115	16x80	26x95	29x107	38x106	44x105	
Cat. No.	0513	-	-	-	-	-	0545	0546	0547	0534⁶⁾	
lid with bio-containment ⁵⁾ Cat. No. 1492											
carrier Cat. No. 1481											
Cat. No.	1384	6311	1363	1365	6318	1348	4417	4416	1396	0765	
boring Ø x L in mm	30x90	17x80	26x72	26x80	29.5x80	16.5x56	26x83	29x93	38.5x92	45.9x98	
tubes per rotor	4					16	4				
max. RCF ²⁾	2,665	2,343	2,665		2,522	2,451	2,630	2,612	2,540		
radius in mm	149	131	149		141	137	147	146	142		
run-up in sec	20										
run-down in sec, braked	25										
temperature in °C ¹⁾	-15										

1) Lowest attainable temperature in precooled refrigerated centrifuges at max. speed. Lower temperatures can be attained by reducing the 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 the inserts.

Swing-out rotor, 4-place



∠ 90°

n = 4,500 min⁻¹
max. RCF 3,328

illustrated with carriers 1490 and lids 1492
with bio-containment⁵⁾

Cat. No. (without carriers) **1324**

capacity in ml	0.5	1.5	2.0	1	3	4	5	6	7	9	15	25
∅ x L in mm	10.7x36	11x38		6x45	10x60	10x88	12x75	12x82	12x100	14x100	17x100	24x100
Cat. No.	Pediatric	2078	0536	Rhesus	-	-	0553²⁾	0501²⁾	0578²⁾	0500²⁾	0518²⁾	0519²⁾
lid with bio-containment ⁵⁾ Cat. No. 1492 												
carrier Cat. No. 1490												
Cat. No.		1351	1339	1343			1383	1329	1330			
boring ∅ x L in mm		11.2x38		6.5x34	10.5x43		13.4x48		17.6x91		25.2x87	
tubes per rotor		20		108	36		20		16		4	
max. RCF ²⁾	2,966	3,056		3,237	3,283		3,192		3,170		3,034	
radius in mm	131	135		143	145		141		140		134	
run-up in sec	27											
run-down in sec, braked	30											
temperature in °C ¹⁾	-6											

capacity in ml	50	94	100	1.1–1.4	2.6–3.4	4.9	2.7–3	4.5–5	4–5.5	7.5–8.5	9–10	10
∅ x L in mm	34x100	38x102	44x100	8x66	13x65	13x90	11x66	11x92	15x75	15x92	16x92	15x102
Cat. No.	0521²⁾	0549	0526²⁾	blood collection / urine tubes								
lid with bio-containment ⁵⁾ Cat. No. 1492 												
carrier Cat. No. 1490												
Cat. No.	1331	1396	0761	1457		1383		1459	1329	1329⁴⁾		
boring ∅ x L in mm	35.2x87	38.5x92	45.9x100.5	9x47		13.4x48		15.6x47		17.6x91		
tubes per rotor		4		28		20		16				
max. RCF ²⁾	3,011	3,260	3,192	3,215		3,192		3,215		3,170	3,328	
radius in mm	133	144	141	142		141		142		140	147	
run-up in sec	27											
run-down in sec, braked	30											
temperature in °C ¹⁾	-6											

⁵⁾ Tested by the TÜV in conformity with DIN EN 61010, section 2-020.

⁶⁾ A rubber stopper for closing the tube is available under Cat. No. 0535.

The tube may not be centrifuged with the stopper. The stopper only serves to close the tube for agitating or mixing.

Swing-out rotor 1324

capacity in ml	1.6–5	4–7	4–7	8.5–10	5	15	30	50	12	25	30
Ø x L in mm	13x75	13x100	16x75	16x100	17x59	17x120	25x110	29x115	17x100	25x90	25x110
Cat. No.	blood/urine tubes				-	0509		-	0513		-
lid with bio-containment ⁵⁾ Cat. No. 1492											
carrier Cat. No. 1490											
Cat. No.	1383	1348	6341	1347	1356	1365	1384	6311	1363	1365	
boring Ø x L in mm	13.4x48	16.5x56	17x45	17x90	17x107	26x80	30x90	17x80	26x72	26x80	
tubes per rotor	20	16	12	4	12	4					
max. RCF ²⁾	3,192	3,147	3,328						2,920	3,328	
radius in mm	141	139	147						129	147	
run-up in sec	27										
run-down in sec, braked	30										
temperature in °C ¹⁾	-6										




















capacity in ml	50	10	30	50	85	30
Ø x L in mm	29x115	16x80	26x95	29x107	38x106	44x105
Cat. No.	-	-	0545	0546	0547	0534⁶⁾
lid with bio-containment ⁵⁾ Cat. No. 1492						
carrier Cat. No. 1490						
Cat. No.	6318	1348	4417	4416	1396	0765
boring Ø x L in mm	29.5x80	16.5x56	26x83	29x93	38.5x92	45.9x100.5
tubes per rotor	4	16	4			
max. RCF ²⁾	3,328	3,147	3,056	3,283	3,260	3,170
radius in mm	147	139	135	145	144	140
run-up in sec	27					
run-down in sec, braked	30					
temperature in °C ¹⁾	-6					
















1) Lowest attainable temperature in precooled refrigerated centrifuges at max. speed. Lower temperatures can be attained by reducing the 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, carrier 1490 cannot be closed with lid 1492.
 4) Please remove the inserts.



illustrated with carriers 1398

Swing-out rotor 1324

capacity in ml	5	6	7	9	15	2.6–3.4	2.7–3	4–5.5	4.5–5	4.9	9–10	10
Ø x L in mm	12x75	12x82	12x100	14x100	17x100	13x65	11x66	15x75	11x92	13x90	16x92	15x102
Cat. No.	0553²⁾	0501²⁾	0578²⁾	0500²⁾	0518²⁾	blood collection/urine tubes						
 carrier Cat. No. 1398												
												
Cat. No.	1486		1482A			1486	1482A		1486		1482A	
boring Ø x L in mm	13.4x57.5		17.5x81			13.4x57.5	17.5x81		13.4x57.5		17.5x81	
tubes per rotor	20		16			20	16		20		16	
max. RCF ²⁾	3,147		3,192			3,147	2,875		3,147		3,192	
radius in mm	139		141			139	127		139		141	
run-up in sec	27											
run-down in sec, braked	30											
temperature in °C ¹⁾	-6											

capacity in ml	1.6–5	4–7	4–7	12	15	50	12	50
Ø x L in mm	13x75	13x100	16x75	17x102	17x120	29x115	17x100	29x115
Cat. No.	blood/urine tubes				0509	0513	-	-
 carrier Cat. No. 1398								
								
Cat. No.	1486	1482A	1487	1483A	1484	1482A	1484⁴⁾	
boring Ø x L in mm	13.4x57.5	17.5x81	17.5x74	17x100	30x98	17.5x81	30x98	
tubes per rotor	20	16	12	16	4	16	4	
max. RCF ²⁾	3,147	3,034	3,102	3,305	3,260	3,192	3,260	
radius in mm	139	134	137	146	144	141	144	
run-up in sec	27							
run-down in sec, braked	30							
temperature in °C ¹⁾	-6							

⁵⁾ Tested by the TÜV in conformity with DIN EN 61010, section 2-020.

⁶⁾ A rubber stopper for closing the tube is available under Cat. No. 0535.
The tube may not be centrifuged with the stopper. The stopper only serves to close the tube for agitating or mixing.

Swing-out rotor, 6-place

Swing-out rotor, 8-place



∠ 90°

n = 4,000 min⁻¹
max. RCF 2,701





Cat. No. (with carriers) **1619**


































∠ 90°

n = 4,000 min⁻¹
max. RCF 2,415

Cat. No. (without carriers) **1611**

capacity in ml	15	50
∅ x L in mm	17x120	29x115
Cat. No.	0509	0513
 rotor Cat. No. 1619		
		
Cat. No.	1462-A	-
boring ∅ x L in mm	17x84	30x87.5
tubes per rotor	6	
max. RCF ²⁾	2,701	
radius in mm	151	
run-up in sec	20	
run-down in sec, braked	22	
temperature in °C ¹⁾	-15	

capacity in ml	5	6	7	10	15	2.6-3.4	2.7-3	4-5.5	4.5-5	7.5-8.5	1.6-5	4-7	4-7	8.5-10	
∅ x L in mm	12x75	12x82	12x100	17x70	13x100	17x100	13x65	11x66	15x75	11x92	15x92	13x75	13x100	16x75	16x100
Cat. No.	0553²⁾	0501²⁾	0578²⁾	2079	-	0518²⁾	blood collection / urine tubes								
 rotor Cat. No. 1611															
															
Cat. No.	1131-A	1643	1132-A	1643	1644	1131-A	1132-A	1643	1644	1131-A	1643	1132-A	1644		
boring ∅ x L in mm	13x53	13.2x81	17.5x53	13.2x81	17.5x81	13x53	17.5x53	13.2x81	17.5x81	13x53	13.2x81	17.5x53	17.5x81		
tubes per rotor	8														
max. RCF ²⁾	1,914	2,415	1,914	2,415	1,914	2,415	1,914	2,415	1,914	2,415	1,914	2,415	1,914	2,415	
radius in mm	107	135	107	135	107	135	107	135	107	135	107	135	107	135	
run-up in sec	20														
run-down in sec, braked	20														
temperature in °C ¹⁾	-16														

¹⁾ Lowest attainable temperature in precooled refrigerated centrifuges at max. speed. Lower temperatures can be attained by reducing the 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

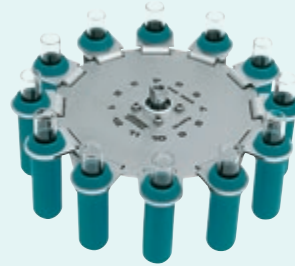
Swing-out rotor, 12-place



∠ 45°

n = 5,000 min⁻¹
max. RCF 3,857





Cat. No. (with carriers) **1617**
























∠ 55°
(with carriers 1127)
∠ 60°
(with carriers 1122)
∠ 80°
(with carriers 1621)

n = 5,000 min⁻¹
max. RCF 4,193

Cat. No. (without carriers) **1628**

capacity in ml	15	50
∅ x L in mm	17x120	29x115
Cat. No.	0509	0513
 rotor Cat. No. 1617		
		
Cat. No.	1462-A	-
boring ∅ x L in mm	17x84	30x94.5
tubes per rotor	8	
max. RCF ²⁾	3,857	
radius in mm	138	
run-up in sec	20	
run-down in sec, braked	19	
temperature in °C ¹⁾	-10	

capacity in ml	5	10	15	2.6–3.4	2.7–3	4–5.5	7.5–8.5	1.6–5	4–7	8.5–10
∅ x L in mm	12x75	17x70	17x100	13x65	11x66	15x75	15x92	13x75	16x75	16x100
Cat. No.	0553²⁾	2079	0518²⁾	blood collection / urine tubes						
 rotor Cat. No. 1628										
										
Cat. No.	1127	1122	1621	1127	1122	1621	1127	1122	1621	
boring ∅ x L in mm	13.2x53	17.5x53	17.5x79	13.2x53	17.5x53	17.5x79	13.2x53	17.5x53	17.5x79	
tubes per rotor	12									
max. RCF ²⁾	3,494	3,522	4,193	3,494	3,522	4,193	3,494	3,522	4,193	
radius in mm	125	126	150	125	126	150	125	126	150	
run-up in sec	16									
run-down in sec, braked	16									
temperature in °C ¹⁾	-15	-10	-10	-15	-15	-10	-15	-15	-10	

Swing-out rotor, 4-place

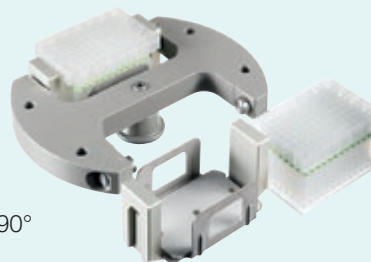
Swing-out rotor, 2-place



∠ 90°

n = 4,000 min⁻¹
max. RCF 1,896

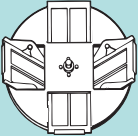

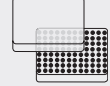
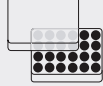
Cat. No. (without carriers) **1645**

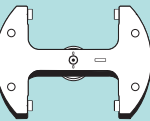

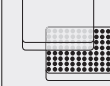
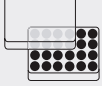










∠ 90°

n = 4,000 min⁻¹
max. RCF 2,218

Cat. No. (without carriers) **1460**

DxWxH in mm	86x128x15/17.5	86x128x22
Cat. No.	MTP	
 rotor Cat. No. 1645		
		
Cat. No.	4345	
boring Ø x L in mm	-	
plates per rotor	4	
max. RCF ²⁾	1,896	
radius in mm	106	
run-up in sec	20	
run-down in sec, braked	19	
temperature in °C ¹⁾	-16	

DxWxH in mm	86x128x15/17.5	86x128x22	86x128x44.5	86x128x46	86x128x83	59x84x11	82x124x20	-	
capacity in ml	-								0.2
Cat. No.	MTP		CP	DWP	MS	QP	Microtest plate (Terasaki)	PCR plate, 96 wells	PCR strips
 rotor Cat. No. 1460									
									
Cat. No.	1453-A							1453-A + 1485	
boring Ø x L in mm	-								
plates/strips per rotor	10	8	6	2	2	2	4	2	24x8
max. RCF ²⁾	2,218								
radius in mm	124								
run-up in sec	40								
run-down in sec, braked	45								
temperature in °C ¹⁾	-6								

¹⁾ Lowest attainable temperature in precooled refrigerated centrifuges at max. speed. Lower temperatures can be attained by reducing the 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 the TÜV in conformity with DIN EN 61010, section 2-020.

Angle rotor, 12-place

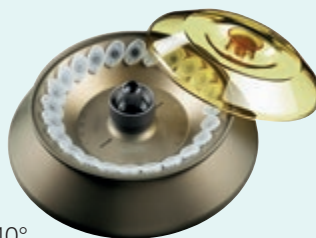
Angle rotor, 24-place



∠ 45°

n = 15,000 min⁻¹
max. RCF 16,602

Cat. No. 1612



∠ 40°

n = 15,000 min⁻¹
max. RCF 21,382

Cat. No. 1420-B

capacity in ml	0.2	0.4	0.5	0.8	1.5	2.0
∅ x L in mm	6x18	6x45	8x30	8x45	11x38	
Cat. No.	-	-	-	-	2078	0536
rotor Cat. No. 1612						
Cat. No.	2024	2023	2031⁷⁾	-	-	-
boring ∅ x L in mm	6x40	8x40	10.2x19	11.4x39	-	-
tubes per rotor	12					
max. RCF ²⁾	16,602					
radius in mm	66					
run-up in sec	25					
run-down in sec, braked	23					
temperature in °C ¹⁾	-10					

capacity in ml	0.2	0.4	0.5	0.8	1.5	2.0	0.5
∅ x L in mm	6x18	6x45	8x30	8x45	11x38		10.7x36
Cat. No.	-	-	-	-	2078	0536	Pediatric
rotor Cat. No. 1420-B							
Cat. No.	2024	2023	2031⁷⁾	-	-	-	0788²⁰⁾
boring ∅ x L in mm	6x40	8x40	10.2x19	11.2x42.6	11.2x39	-	-
tubes per rotor	24						12
max. RCF ²⁾	21,382						20,376
radius in mm	85						81
run-up in sec	25						
run-down in sec, braked	24						
temperature in °C ¹⁾	-4						

Optional for rotor 1420-B:



lid **Cat. No. 2425**
with bio-containment⁵⁾,
autoclavable



lid **Cat. No. 2423**
with bio-containment⁵⁾,
autoclavable, phenol-resistant

⁷⁾ For centrifugation at high speeds, we recommend to use form-fitting, phenol-resistant adapters 2031.
²⁰⁾ Packed in units of 15 pieces.

Angle rotor, 30-place

Angle rotor, 8-place

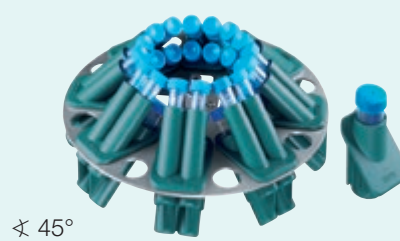


∠ 45°

n = 14,000 min⁻¹
max. RCF 21,255

with bio-containment⁵⁾,
phenol-resistant

Cat. No. 1689-A



∠ 45°

n = 4,500 min⁻¹
max. RCF 3,305

Cat. No. (without adapters) 1418

capacity in ml	0.2	0.4	0.5	0.8	1.5	2.0	0.5
∅ x L in mm	6x18	6x45	8x30	8x45	11x38		10.7x36
Cat. No.	-	-	-	-	2078	0536	Pediatric
lid with bio-containment ⁵⁾ incl.							
rotor Cat. No. 1689-A							
Cat. No.	2024	2023	2031 ⁷⁾	-	0788 ²⁰⁾		
boring ∅ x L in mm	6x40	8x40	10.2x19	11.2x40.9	11.2x39		
tubes per rotor	30						15
max. RCF ²⁾	21,255						20,376
radius in mm	97						93
run-up in sec	35						
run-down in sec, braked	31						
temperature in °C ¹⁾	0						

capacity in ml	5	15	1.1-1.4	2.6-3.4	2.7-3	9-10	1.6-5	4-7	8.5-10	12	15	50	12	50	50	
∅ x L in mm	12x75	17x100	8x66	13x65	11x66	16x92	13x75	13x100	16x100	17x102	17x120	29x115	17x100	29x115	29x107	
Cat. No.	0553 ²⁾	0518 ²⁾	blood collection/urine tubes									0509	0513	-	-	0546
rotor Cat. No. 1418																
Cat. No.	1467	1467	1467	1467	1467	1467	1467	1467	1467	1467	1467	1468	1467	1468	1468	
boring ∅ x L in mm	17.4x91												30.2x92	17.4x91	30.2x92	
tubes per rotor	32												8	32	8	
max. RCF ²⁾	2,762	3,215	2,762		3,215	2,762	3,305	3,215	3,215	3,283	3,147	3,215	3,147			
radius in mm	122	142	122		142	122	146	142		145	139	142	139			
run-up in sec	30															
run-down in sec, braked	31															
temperature in °C ¹⁾	-11															

¹⁾ Lowest attainable temperature in precooled refrigerated centrifuges at max. speed. Lower temperatures can be attained by reducing the 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 the TÜV in conformity with DIN EN 61010, section 2-020.

Angle rotor, 6-place






















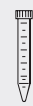













∠ 35°

n = 9,000 min⁻¹
max. RCF 9,509

illustrated with 6-place adapter set 1646

Cat. No. 1620A

capacity in ml	0.5	1.5	2.0	3	15	50	75	94	7.5–8.5	9–10	10	8.5–10
Ø x L in mm	10.7x36	11x38		10x60	17x100	34x100	35x105	38x102	15x92	16x92	15x102	16x100
Cat. No.	Pediatric	2078	0536	-	0518²⁾	0521²⁾	0548	0549	blood / urine tubes			
 rotor Cat. No. 1620A												
												
Cat. No.	1449				1451	1463	-		1451			
boring Ø x L in mm	11.4x39				17.5x92	35x89	38.6x90.2		17.5x92			
tubes per rotor	24				6	6	6		6			
max. RCF ²⁾	9,237				8,784	9,327	9,509		8,784			
radius in mm	102				97	103	105		97			
run-up in sec	30											
run-down in sec, braked	30											
temperature in °C ¹⁾	-11											

capacity in ml	5	15	50		10	30	50	85	
Ø x L in mm	17x59	17x120	29x115		16x80	26x95	29x107	38x106	
Cat. No.	-	0509	0513		-	0545	0546	0547	
 rotor Cat. No. 1620A									
									
Cat. No.	1476	1466	1454	1646³⁾	1448	1447	1446	-	
boring Ø x L in mm	17x51	17x106	29.8x97		-	16.5x74	26x85	29x92	38.6x90.2
tubes per rotor	6		3		6	12	6		
max. RCF ²⁾	8,603	8,965			8,784	8,603	9,056	9,509	
radius in mm	95	99			97	95	100	105	
run-up in sec	30								
run-down in sec, braked	30								
temperature in °C ¹⁾	-11								

¹⁾ For centrifugation at high speeds, we recommend to use form-fitting, phenol-resistant adapters 2031.

³⁾ 6-place adapter set for conical 50 ml tubes with screw cap.

²⁰⁾ Packed in units of 15 pieces.

Angle rotor, 12-place



∠ 35°

n = 6,000 min⁻¹
max. RCF 4,146

Cat. No. 1613


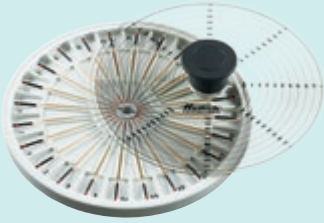
capacity in ml	4	5	6	15	1.1–1.4	2.6–3.4	2.7–3	4.5–5	4.9	7.5–8.5	9–10	10
∅ x L in mm	10x88	12x75	12x82	17x100	8x66	13x65	11x66	11x92	13x90	15x92	16x92	15x102
Cat. No.	-	0553 ²⁾	0501 ²⁾	0518 ²⁾	blood collection/urine tubes							
 rotor Cat. No. 1613												
Cat. No.	6305	1054-A	-	-	1054-A				-			
boring ∅ x L in mm	11.5x67.5	13.5x60	17.7x88		13.5x60				17.7x88			
tubes per rotor	12											
max. RCF ²⁾	3,502	3,300	4,146		3,300				4,146			
radius in mm	87	82	103		82				103			
run-up in sec	15											
run-down in sec, braked	15											
temperature in °C ¹⁾	-16											
























capacity in ml	1.6–5	4–7	8	8.5–10	15
∅ x L in mm	13x75	13x100	16x125	16x100	17x120
Cat. No.	blood collection/urine tubes				0509
 rotor Cat. No. 1613					
Cat. No.	1054-A	1058	-		
boring ∅ x L in mm	13.5x60	13.5x79	17.7x88		
tubes per rotor	12	12	6	12	6
max. RCF ²⁾	3,300	4,146			
radius in mm	82	103			
run-up in sec	15				
run-down in sec, braked	15				
temperature in °C ¹⁾	-16				


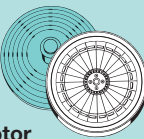
¹⁾ Lowest attainable temperature in precooled refrigerated centrifuges at max. speed. Lower temperatures can be attained by reducing the speed.

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.

²⁹⁾ Set of 6 carriers. For accommodating conical 15 ml tubes with screw cap, remove 6 opposite carriers from rotor No. 1615 and replace them with adapters No. 1647.

<p>Angle rotor, 12-place</p>  <p>∠ 35°</p> <p>n = 12,000 min⁻¹ max. RCF 16,582</p> <p>Cat. No. 1615</p>	<p>Hematocrit rotor, 24-place</p>  <p>n = 15,000 min⁻¹ max. RCF 21,382</p> <p>Cat. No. 1650</p>
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capacity in ml	4	5	6	15	1.1–1.4	2.6–3.4	2.7–3	4.5–5	4.9	7.5–10	10	1.6–5	4–7	8–10	15	
∅ x L in mm	10x88	12x75	12x82	17x100	8x66	13x65	11x66	11x92	13x90	15/16x92	15x102	13x75	13x100	16x100/125	17x120	
Cat. No.	-	0553²⁾	0501²⁾	0518²⁾	blood collection/urine tubes										0509	
 rotor Cat. No. 1615																
																
Cat. No.	6305	1054-A	-		1054-A							1054-A	1058	-		1647²⁹⁾
boring ∅ x L in mm	11.5x67.5	13.5x60	17.7x88		13.5x60					17.7x88		13.5x60	13.5x79	17.7x88		17x104
tubes per rotor	12											12	12	12	6	6
max. RCF ²⁾	14,006	13,201	16,582		13,201					16,582		13,201	16,582	16,582		15,455
radius in mm	87	82	103		82					103		82	103	103		96
run-up in sec	40															
run-down in sec, braked	40															
temperature in °C ¹⁾	-2															

capillaries, heparinised	basic	self-sealing and mylar-coated
Cat. No.	2074	1071
lid as evaluation disk incl.		
 rotor Cat. No. 1650	sealing putty	
Cat. No.	2077	-
boring ∅ x L in mm	-	
capillaries per rotor	24	
max. RCF ²⁾	21,382	
radius in mm	85	
run-up in sec	13	
run-down in sec, braked	9	
temperature in °C ¹⁾	-1	

Cyto rotors

Suitable for ROTOFIX 32A and UNIVERSAL 320/320R centrifuges

The 1624 (4-place) and 1626 (6-place) rotors allow preparation of top-quality cytological specimens using the proven Hettich method. See Hettich's application notes for cytology, which you can order free of charge or download from our website www.hettichlab.com.

For laboratories engaged in other areas besides cytology the 1624 rotor has the additional advantage that it can centrifuge tubes as well.

Hettich also offers two 12-place cyto rotors for higher sample throughputs and alternative methods.

The rotors 1515 and 1520 are easy to insert and remove from the centrifuge without the need for any tools.



Rotor, 4-place

illustrated with carriers 1660 and lids 1661 for cyto chambers.

$n = 4,000 \text{ min}^{-1}$
max. RCF 1,646

Cat. No. 1624 (without carriers)



Rotor, 6-place

illustrated with carriers 1660 and lids 1661 for cyto chambers

$n = 4,000 \text{ min}^{-1}$
max. RCF 2,039

Cat. No. 1626 (without carriers)



Rotor, 12-place

with a leaktight lid, illustrated with clips 1524 for different cyto chambers

$n = 2,000 \text{ min}^{-1}$
max. RCF 438

Cat. No. 1515 (without clips)



Disk rotor, 12-place

illustrated with clips 1524 for different cyto chambers

$n = 2,000 \text{ min}^{-1}$
max. RCF 438

Cat. No. 1520 (without clips)

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