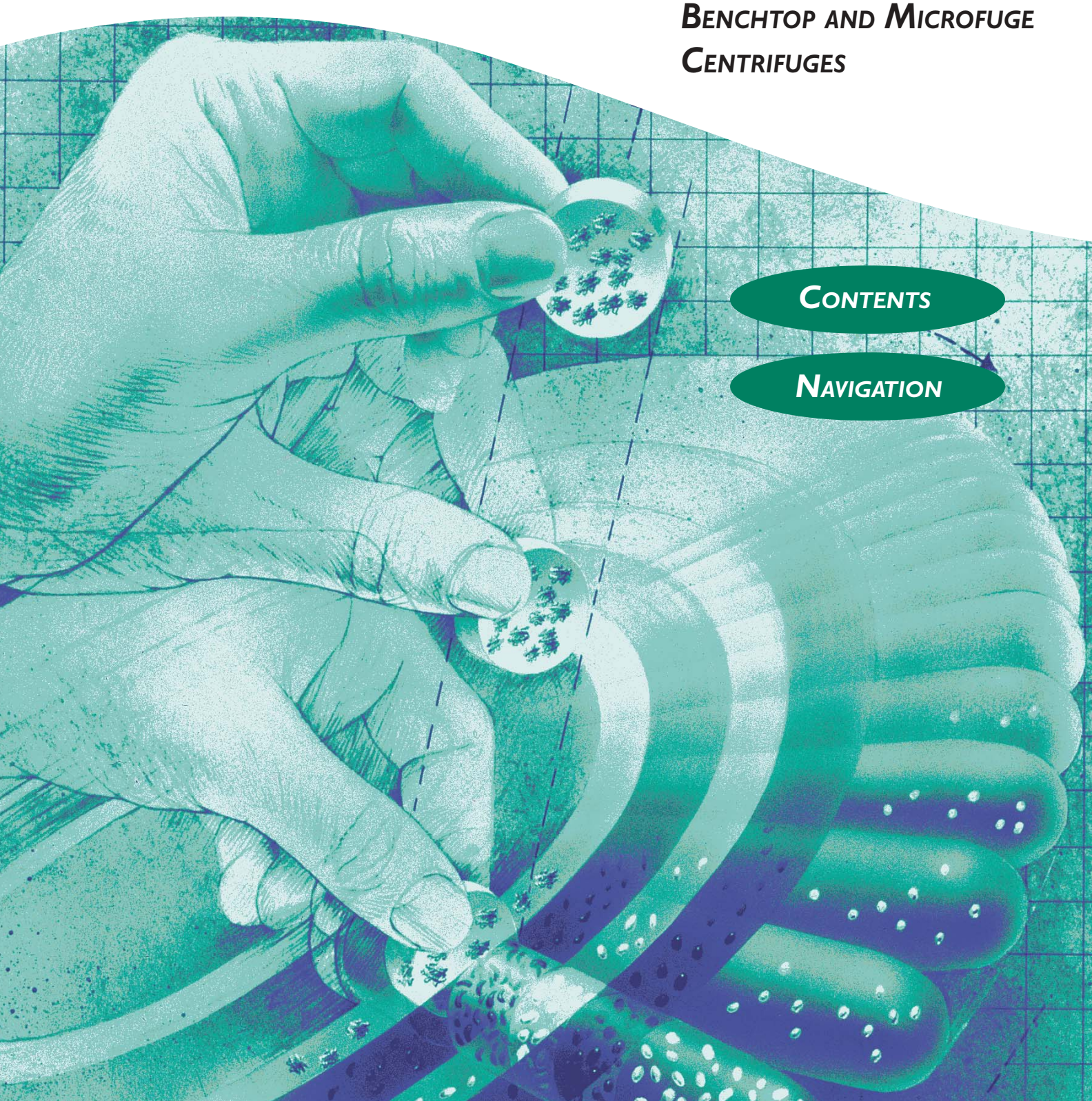
BR-8102G

BECKMAN COULTER

Rotors, Tubes & Accessories

High Performance, High Capacity, Benchtop and Microfuge Centrifuges



Contents

Navigation

Since the introduction of the first commercial ultracentrifuge in 1949 – the classic Beckman Model L – Beckman Coulter has been at the forefront of centrifug e innovation. Although the physics of this basic separation technique never change, Beckman Coulter continually designs new and innovative rotors and accessories, and develops advanced methods that allow the forces of centrifugation to be applied in new ways.

This centrifuge product selection guide is designed to help you determine the most efficient centrifuge tools for your work.

Each section begins with a brief description of instruments that Beckman Coulter offers within that centrifuge category. Because biocontainment is a major concern in today's laboratories, Beckman Coulter provides a number of options that address this issue. Special biocontainment accessories are available across our centrifuge product line and are identified with this icon:

Rotors with this symbol have been tested to demonstrate containment of aerosols under normal operating conditions of the associated Beckman Coulter centrifuge when used and maintained as instructed.*

Following the centrifuge descriptions, listings of their rotors are included with information on speed and g-force capability. Also included is information on tubes and bottles that can be used and the adapters they require.

Tubes and bottles are cross-referenced in a separate section that provides details on tube materials, chemical compatibility, tube designs, and tube closure options.

A reference section at the back of the guide includes quick-reference charts on instrument and tube selection and frequently-used formulas, as well as a listing of centrifuge literature and training tools available from Beckman Coulter.

** The rotors were tested for microbiological containment[1] at an independent, third-party testing facility[2] and found to be suitable for use with materials up to ACDP category.[3] Improper use or maintenance may affect seal integrity and thus containment. Testing by these facilities does not imply their endorsement of these products.*

1. Harper, G. J. (1984) Evaluation of sealed containers for use in centrifuges by a dynamic microbiological method. J. Clin Pathol. 37, *1134-1139.*

2. CAMR, Porton Down, U.K., or USAMRIID, Fort Detrick, Maryland, U.S.A.

3. Advisory Committee on Dangerous Pathogens (1984). Categorization of pathogens according to hazard and categories of containment. HMSO, *ISBNO 11 883761 3.*

The following rotors were tested at Porton Down (1994) to the same test criteria as used by USAMRIID: H6002, S4180 (screw-on buckets), JA-12, JS-4.3, JA-17, JA-18.

Contents

Table of Contents

High-Performance Centrifugation

High-Capacity Centrifugation

Benchtop Centrifugation

Microcentrifugation

Tubes and Bottles

Reference

Support Services

Contents

High-Performance Centrifugation

Avanti® J-30I High-Performance Centrifuges

The Maximum g-force for High Performance

The Avanti J-30I High-Performance Centrifuge System gives you the fastest separations possible—in the shortest amount of time. Swinging bucket and fixed-angle rotors provide maximum separation forces in excess of 100,000 x *g* at speeds up to 30,000 rpm. Your productivity is ensured by unmatched accel/decel rates and an easy run set-up. Your sample spends more time at full force and less time in the centrifuge.

Avanti J-30I High-Performance Centrifuge

Specifications

Maximum Speed	30,000 rpm
Maximum *g*-force	110,500 × *g*
Speed Control	±10 rpm of set speed or 0.15%, whichever is greater
Imbalance Tolerance	±2.5% opposing sample imbalance
Drive Type	Microprocessor-controlled Switched Reluctance Drive*
Centrifuge Warranty	1 year
Drive Warranty	3 years
Drive Cooling	Air-cooled
Refrigeration System	Non-CFC, non-ozone depleting refrigerant
Max. Capacity Volume Range	4,000 mL
Single Tube Sample Volume Range	1.5 – 1,000 mL
Set Temperature Range	-20° to 40°C in 1° increments
Temperature Control	±2°C of set
User-Settable Programs	30 two-step programs
Time Setting	1 min. to 99:59 hours, hold or $\omega^2 t$
Acceleration/Deceleration Rates	12 accel/13 decel
Friction Reduction System	Yes
Zonal Capability	Yes
Dynamic Rotor Inertia Check	Automatic
Heat Output	2.0 kW (6900 BTU/hr)
Sound Level	< 57 dBa (3 ft. from instrument at 30,000 rpm)
Dimensions	865 mm × 876 mm × 711 mm (34.1" H × 34.5" D × 28" W)
Weight	310 kg (680 lb)
Voltage Requirements	208 V, 30 A, 60 Hz; 220 V, 30 A, 50 Hz; 220/380 V, 16 A, 50 Hz

** Manufactured under license from Switched Reluctance Drives Limited, Harrogate, UK.*

Part Numbers

	200/208/240 V 60 Hz	230 V 50 Hz	220/380 V 50 Hz, 3-Phase
Avanti J-30I	363118	363120	363121

Avanti® J-25 Series High-Performance Centrifuges

Accelerated Throughput, Shorter Run Times With the Avanti J-2[illegible]

The Avanti J-25 High-Performance Centrifuge Systems let your lab perform more separations than any other conventional high-speed centrifuges, while cutting run times. That's because the J-25 Series offers faster acceleration, higher speeds and greater g-forces than conventional high-speed centrifuges (25,000 rpm and up to 75,000 x *g* - with larger volumes).

The Avanti J-25 has an air-cooled drive, uses no CFCs in manufacturing, and has an advanced refrigeration system that eliminates CFCs from its design. It consumes less than half the power and produces less heat than conventional models.

Avanti J-25 Series High-Performance Centrifuges

Specifications

Maximum Speed	25,000 rpm
Maximum *g*-force	75,600 x *g*
Speed Control	± 10 rpm of set speed or 0.1%, whichever is greater
Imbalance Tolerance	± 2.5% opposing sample imbalance
Drive Type	Microprocessor-controlled Switched Reluctance Drive*
Centrifuge Warranty	1 year
Drive Warranty	3 years
Drive Cooling	Air-cooled
Refrigeration System	Non-CFC, non-ozone depleting refrigerant
Max. Capacity Volume Range	4,000 mL
Single Tube Sample Volume Range	1.5 – 1,000 mL
Set Temperature Range	-20° to 40°C in 1° increments
Temperature Control	± 2°C of set
User-Settable Programs	J-25I – 30 two-step programs J-25 – No programming
Time Setting	J-25I – 1 min. to 99:59 hours, hold, or ω^2t J-25 – 1 min. to 3:00 hours, hold
Acceleration/Deceleration Rates	J-25I – 12 accel/13 decel J-25 – 2 accel/3 decel
Friction Reduction System	Yes
Zonal Capability	J-25I – Yes J-25 – No
Dynamic Rotor Inertia Check	J-25I – Automatic J-25 – Manual
Heat Output	2.0 kW (6900 BTU/hr)
Sound Level	< 57 dBa (3 ft. from instrument at 25,000 rpm)
Dimensions	865 mm x 876 mm x 711 mm (34.1" H x 34.5" D x 28" W)
Weight	264 kg (583 lb)
Voltage Requirements	208 V, 30 A, 60 Hz; 220 V, 30 A, 50 Hz; 380 V, 16 A, 50 Hz

** Manufactured under license from Switched Reluctance Drives Limited, Harrogate, UK.*

Part Numbers

	200/208/240 V 50/60 Hz	230/240 V 50 Hz	380 V 50 Hz, 3-Phase
Avanti J-25	363102	363104	363105
Avanti J-25I	363106	363108	363109
Elutriation Systems			
Avanti J-25	363110	363112	363113
Avanti J-25I	363114	363116	363117

Contents

Avanti® J-20XP Series High-Performance Centrifuges

Highest Throughput Available—6 liters in under 10 minutes

The Avanti J-20XP Series is designed for high throughput and versatility. Teamed with the J-LITE® JLA-8.1000 6-liter rotor, the J-LITE polycarbonate and polypropylene bottles, and disposable HarvestLine™ System liners, the J-20XP centrifuges can process 6 liters in less time than it takes conventional centrifuges to process 3 liters. These are versatile high-performance systems as well, capable of running the full line of Beckman Coulter high-performance rotors—including the AllSpin™ (JS-5.3) rotor with optional microplate carriers and adapters for conical tubes and bottles.

Avanti J-20XP Series Centrifuge

Specifications

Maximum Speed	26,000 rpm
Maximum *g*-force	82,000 × *g*
Speed Control	± 10 rpm of set speed or 0.1%, whichever is greater
Drive Type	Switched Reluctance Drive*
Drive Cooling	Air-cooled
Centrifuge Warranty	1 year
Drive Warranty	3 years
Refrigeration System	Non-CFC, non-ozone-depleting refrigerant
Max. Capacity Volume Range	6,000 mL
Single Tube Sample Volume Range	1.5 – 1,000 mL
Ambient Temperature Range	15° to 40°C
Set Temperature Range	-10° to 40°C
Temperature Control	± 2°C of set
User-Settable Programs	J-20XPI: 30 two-step programs J-20XP: No programming
Zonal Capability	J-20XPI: Yes J-20XP: No
Time Setting	1 min. to 99:59 hours, hold or $\omega^2 t$ (J-20XPI) 1 min. to 3 hours, hold (J-20XP)
Acceleration/Deceleration Rates	12 accel/13 decel (J-20XPI) 2 accel/3 decel (J-20XP)
Dynamic Rotor Inertia Check	J-20XPI: Automatic J-20XP: Manual
Heat Output	2.0 kW (6,900 BTU/hr)
Sound Level	< 57 dBa (3 ft. from instrument at maximum speed)
Dimensions	865 mm × 876 mm × 711 mm (34.1″ H × 34.5″ D × 28″ W)
Weight	264 kg (583 lb)

** Manufactured under license from Switched Reluctance Drives Limited, Harrogate, UK.*

Part Numbers

	200/208/240 V 50/60 Hz	230 V 50 Hz	220/380 V 50 Hz, 3-Phase
Avanti J-20XPI	368613	368614	368615
Avanti J-20XP	368608	368611	368612
Avanti J-20XPI with Elutriation	3686473	368644	368645
Avanti J-20XP with Elutriation	368640	368641	368642

Contents

Avanti® J-E Series High-Performance Centrifuge

Compact High Performance Centrifuge that fits directly in your lab

Whether your application is related to Cellular, Genetic, or Protein analysis, the Avanti J-E with speeds up to 21,000 rpm (53,300 x *g*) coupled with powerful SR* drive technology provides you with fast separations.

A comprehensive line of labware, with up to twenty-four 96-well microtiter plate processing, 4 x 1L bottles, and HarvestLine™ System liners extend the versatility of this centrifuge. For clinical research applications, conical tubes and bottles for swinging bucket rotors spin volumes of 15, 50, 250, and 500 mL for effective blood component isolation with a variety of gradient kits.

The J-E is energy efficient for low heat output plus the quiet operation ensures a comfortable, productive work environment.

Avanti J-E High-Performance Centrifuge

Specifications

Maximum Speed	21,000 rpm
Maximum *g*-force	53,300 × *g*
Speed Control	Actual rotor speed, ±50 rpm of set speed
Drive Type	Switched Reluctance Drive*
Drive Cooling	Air-cooled
Centrifuge Warranty	1 year
Drive Warranty	2 years
Refrigeration System	Non-CFC, non-ozone-depleting refrigerant
Max. Capacity Volume Range	4,000 mL
Ambient Temperature Range	15° to 35°C
Set Temperature Range	-10° to 40°C in 1° increments
Temperature Control	±2°C of set
Time Setting	1 min. to 99:59 hours, hold
Acceleration/Deceleration Rates	2 accel/3 decel
Heat Output	2.0 kW (6,900 BTU/hr)
Sound Level	< 65 dBa (3 ft. from instrument at maximum speed)
Dimensions	91.4 cm × 80 cm × 63.5 cm (60" H × 31.5" D × 25" W)
Weight	267.4 kg (589 lb)

** Manufactured under license from Switched Reluctance Drives Limited, Harrogate, UK.*

Part Numbers

	208/240 V 50 Hz	230 V 50/60 Hz	200 V 50/60 Hz
Avanti J-E	369001	369003	369005

HarvestLine™ System Liners

HarvestLine™ disposable bottle liners provide a significant improvement in the centrifugation of biological material. HarvestLine System liners enhance operator safety by reducing exposure to endotoxins and other pathogenic material resulting from manual scraping of harvested solids from labware. Used in Avanti Series centrifuges, these unique liners retain sample pellets after decanting and can be quickly and easi8ly sealed, frozen, and stored. HarvestLine liners can be gamma sterilized.

HarvestLine System for JLA-8.1000 and JLA-9.000 Rotors

JLA-8.1000 and JLA-1000 Fixed Angle Rotor with Liners—for use in the Avanti J-20XP, Avanti J-HC, Avanti J-25, and Avanti J-30I

The 6 x 1 liter JLA-8.1000 composite rotor system with liners is ideal for harvesting bacterial and yeast cell cultures from fermenters, clearing cell debris from homogenates, or purifying large-volume viruses and polysaccharides for vaccine production. The JLA-9.1000 rotor provides up to 16,800 x *g* for high throughput.

JS-5.0 Swinging Bucket Rotor with Liners—for use in the Avanti J-HC

The 4 x 2.25 liter JS-5.0 rotor with liners is ideal for greater sample throughput. This system is ideal for separating bacterial, yeast, and tissue homogenates. At 7,500 x *g*, the rotor harvests *E. coli* at a clearing rate of 99% in less than 10 minutes (throughput of better than 36 liters per hour).

Specifications

Maximum Speed	
in the JLA-8.1000 rotor	8,000 rpm
in the JLA-9.1000 rotor	9,000 rpm
Maximum *g*-force	
in the JLA-8.1000 rotor	15,900 × *g*
in the JLA-9.1000 rotor	16,800 × *g*
Run Time	Up to 20 min. instrument set time
Temperature Range	4° to 10°C
Acceleration/Deceleration	Up to instrument maximum settings

Part Numbers

369264	**HarvestLine System Liner Kit** Contains 120 liners (369256), filling rack (368740), and funnel (977472)
369256	**HarvestLine System Liners** (qty. 120)

High-Performance Centrifuge/Rotor Compatibility Chart

	Avanti J-30I Max. RPM/ *g* Force	Avanti J-20XP Max. RPM/ *g* Force	Avanti J-25 Max. RPM/ *g* Force	Avanti J-E Max. RPM/ *g* Force	J2 Series (except J2-HC) Max. RPM/ *g* Force	Angle	Containment	
Fixed-Angle Rotors								
JA-30.50 Ti	30,000 *108,860*	26,000 *81,800*	25,000 *75,600*	N/A	21,000 *53,300*	34°	Single- or dual-locking lid/ fluid annulus	
JA-25.50	25,000 *75,600*	25,000 *75,600*	25,000 *75,600*	21,000 *53,300*	21,000 *53,300*	34°	Single- or dual-locking lid/ fluid annulus	Biosafety
JA-25.15	25,000 *74,200*	25,000 *74,200*	25,000 *74,200*	N/A	21,000 *52,400*	25°	Single- or dual-locking lid/ fluid annulus	Biosafety
JA-21	21,000 *50,400*	21,000 *50,400*	21,000 *50,400*	21,000 *50,400*	21,000 *50,400*	40°	Secondary containment system available	
JA-20.1	20,000 *51,500*	20,000 *51,500*	20,000 *51,500*	20,000 *51,500*	20,000 *51,500*	23°	Secondary containment system available	Biosafety
JA-20	20,000 *48,400*	20,000 *48,400*	20,000 *48,400*	20,000 *48,400*	20,000 *48,400*	34°	Secondary containment system available	Biosafety
JA-18.1	18,000 *42,100*	18,000 *42,100*	18,000 *42,100*	N/A	18,000 *42,100*	25°	N/A	
JA-18	18,000 *47,900*	18,000 *47,900*	18,000 *47,900*	16,000 *37,800*	18,000 *47,900*	23°	N/A	Biosafety
JA-17	17,000 *39,800*	17,000 *39,800*	17,000 *39,800*	17,000 *39,800*	17,000 *53,300*	25°	Secondary containment system available	Biosafety
JLA-16.250	16,000 *38,400*	16,000 *38,400*	16,000 *38,400*	16,000 *38,400*	14,000 *29,400*	25°	Single- or dual-locking lid/ fluid annulus	Biosafety
JA-14	14,000 *30,100*	14,000 *30,100*	14,000 *30,100*	14,000 *30,100*	14,000 *30,100*	25°	Secondary containment system available	Biosafety
JA-12	12,000 *23,200*	12,000 *23,200*	12,000 *23,200*	12,000 *23,200*	12,000 *23,200*	35°	Single- or dual-locking lid/ fluid annulus	Biosafety
JLA-10.500	10,000 *18,500*	10,000 *18,500*	10,000 *18,500*	10,000 *18,500*	10,000 *18,500*	20°	Secondary containment system available	Biosafety
JA-10	10,000 *17,700*	10,000 *17,700*	10,000 *17,700*	10,000 *17,700*	10,000 *17,700*	25°	Secondary containment system available	
JLA-9.1000	9,000 *16,800*	9,000 *16,800*	9,000 *16,800*	6,300 *8,300*	N/A	20°	Secondary containment system available	
JLA-8.1000	N/A	8,000 *15,900*	N/A	N/A	N/A	20°	Secondary containment system available	Biosafety

High-Performance Centrifuge/Rotor Compatibility Chart *(continued)*

	Avanti J-30I Max. RPM/ *g* Force	Avanti J-20XP Max. RPM/ *g* Force	Avanti J-25 Max. RPM/ *g* Force	Avanti J-E Max. RPM/ *g* Force	J2 Series (except J2-HC) Max. RPM/ *g* Force	Angle	Containment
Swinging Bucket Rotors							
JS-24.38	24,000 *103,900*	10,000 *18,000*	10,000 *18,000*	N/A	N/A	Horz.	Cap, O-ring
JS-24.15	24,000 *110,500*	10,000 *19,190*	10,000 *19,190*	N/A	N/A	Horz.	Cap, O-ring
JS-13.1	13,000 *26,500*	13,000 *26,500*	13,000 *26,500*	13,000 *26,500*	13,000 *26,500*	Horz.	Single-locking lid
JS-7.5	7,500 *10,400*	7,500 *10,400*	7,500 *10,400*	N/A	7,500 *10,400*	Horz.	N/A
JS-5.9	5,900 *6,870*	5,900 *6,870*	5,900 *6,870*	N/A	N/A	Horz.	N/A
JS-5.3	N/A	5,300 *6,130*	N/A	5,300 *6,130*	N/A	Horz.	N/A
JS-4.3	N/A	4,300 *4,220*	N/A	N/A	N/A	Horz.	Aerosolve® Cannister Biosafety
JS-4.0	N/A	4,000 *4,050*	N/A	N/A	N/A	Horz.	Aeroseal Cover Biosafety

	Avanti J-30I Max. RPM/ *g* Force	Avanti J-20XP Max. RPM/ *g* Force	Avanti J-25 Max. RPM/ *g* Force	Avanti J-E Max. RPM/ *g* Force	J2 Series (except J2-HC) Max. RPM/ *g* Force
Elutriation, Continuous Flow, and Zonal Rotors					
JE-5.0	N/A	5,000 *2,410*	5,000 *2,410*	N/A	N/A
JE-6B	6,000 *5,080*	N/A	6,000 *5,080*	N/A	6,000 *5,080*
JCF-Z Std. Core	20,000 *39,900*	20,000 *39,900*	20,000 *39,900*	N/A	20,000 *39,900*
JCF-Z Large Core	20,000 *39,900*	20,000 *39,900*	20,000 *39,900*	N/A	20,000 *39,900*
JCF-Z Small Core	20,000 *39,900*	20,000 *39,900*	20,000 *39,900*	N/A	20,000 *39,900*
JCF-Z Reograd Core	20,000 *39,900*	20,000 *39,900*	20,000 *39,900*	N/A	20,000 *39,900*
JCF-Z Zonal Core	20,000 *39,900*	20,000 *39,900*	20,000 *39,900*	N/A	20,000 *39,900*

High-Performance Rotor Summary

Rotor Type	Part Number	Maximum Speed (rpm)	Maximum Force at r_{min} (*g*)	Maximum Force at r_{max} (*g*)	*k* Factor	Number Tubes/Bottles and Size (diameter x length) mm/in.	Rotor Capacity (mL)	Approx. Accel. Time[1] (min:sec)	Comments
Fixed-Angle Rotors									
JA-30.50 Ti	363420 Biosafety Lid 363421 with Single Lock Lid	30,000	40,320	108,860	280	8 x 50 mL 29 x 104 mm (1.125 x 4 in.)	400 mL	5:15[a]	Harvesting bacteria, processing tissue culture, subcellular particulates, routine pelleting such as precipitates and phase separation.
JA-25.50	363058 Biosafety Lid 363055 with Single Lock Lid	25,000	26,950	75,600	418	8 x 50 mL 29 x 105 mm (1.125 x 4 in.)	400 mL	3:30[b]	High-force, efficient pelleting of cell particles from tissue homogenates. Short column virus purification.
JA-25.15	363050 Biosafety Lid 363054 with Single Lock Lid	25,000	36,400/ 22,400	74,200/ 60,200	265/ 380	24 x 15 mL 18 x 100 mm (0.625 x 4 in.)	360 mL	3:15[b]	High-force, efficient pelleting of subcellular particles, bacteria, algae, and chloroplasts. Short column banding of virus and subcellular particles.
JA-21	334845	21,000	22,200	50,400	470	18 x 10 mL 16 x 80 mm (0.625 x 3 in.)	180 mL	1:30[b]	High-force, fast, efficient separation of many samples in small volume. Viruses, bacteriophage, mitochondria, nuclei.
JA-20.1	342095	20,000	28,700 21,100	51,500 43,900	371/ 465	32 x 15 mL 18 x 99 mm (0.625 x 4 in.)	480 mL	1:30[b]	High-force, large volume. Has 2 concentric rows of 15-mL tubes. Efficient separation of particles with 100 S or larger sedimentation coefficients.
JA-20	334831	20,000	14,300	48,400	770	8 x 50 mL 29 x 104 mm (1.125 x 4 in.)	400 mL	1:30[b]	Harvesting bacteria and cell membranes, processing tissue homogenates, separating cell particulates.
JA-18.1	347824	18,000	34,500	42,100	156[c]	24 x 1.8 mL 11 x 38 mm (0.4 x 1.5 in.)	43.2 mL	1:20[b]	High-force sedimentation in microcentrifuge-sized tubes under refrigerated conditions. Tube oriented at either a 25° or 45° angle.
JA-18	346944	18,000	23,200	47,900	566	10 x 100 mL 38 x 102 mm (1.5 x 4 in.)	1 liter	6:30[b]	High-force, large volume. Pelleting bacteria, cell membranes, and subcellular organelles.
JA-17	341973 369691 for use with Avanti™ J-E	17,000	18,180	39,800	690	14 x 50 mL 29 x 104 mm (1.125 x 4 in.)	700 mL	2:30[b]	Harvesting bacteria and cell membranes, processing tissue homogenates, separating cell particulates.
JLA-16.250	363930 Biosafety Lid 363934 with Single Lock Lid	16,000	13,200	39,300	1,350	6 x 250 mL 62 x 120 mm (2.5 x 5.5 in.)	1.5 liters	3:30[b]	Harvesting bacteria and cell membranes, processing tissue homogenates, separating cell particulates.
JA-14	339247	14,000	7,680	30,100	1,764	6 x 250 mL 62 x 120 mm (2.5 x 4.8 in.)	1.5 liters	4:00[b]	General-purpose, large-volume, and multi-tube processing.
JA-12	360992 Biosafety Lid 360993 with Single-locking Lid	12,000	11,500	23,200	1,244	12 x 50 mL 30 x 103 mm conical (1.17 x 4 in.)	600 mL	3:30[a]	General pelleting of cells, bacteria, and food products. Separating of proteins, viruses, and subcellular fractions. Phase separations and binding studies.

1 Accel times are approximate, and subject to change.

a Typical accel time in Avanti J-30I (JS rotors using mandatory slow accel setting).

b Typical accel time in Avanti J-25 Series.

c k Factor changes to 91 when tubes are held at alternative 25° angle in this rotor (which provides two tube angles).

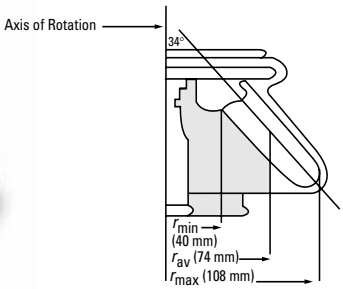
Avanti® J Series Rotor Summary (continued)

Rotor Type	Part Number	Maximum Speed (rpm)	Maximum Force at r_{min} (*g*)	Maximum Force at r_{max} (*g*)	*k* Factor	Number Tubes/Bottles and Size (diameter x length)	Rotor Capacity (mL)	Approx. Accel. Time[1] (min:sec)	Comments
Fixed-Angle Rotors (continued)									
JLA-10.500	360830 with Closures 369681 for use with Avanti™ J-E	10,000	6,050	18,500	2,840	6 x 500 mL 69 x 160 mm (2.75 x 6.5 in.)	3 liters	2:30[a]	Lightweight, high-volume, fixed-angle rotor for initial processing of tissue homogenate and other large particles.
JA-10	334833	10,000	4,260	17,700	3,610	6 x 500 mL 69 x 160 mm (2.75 x 6.5 in.)	3 liters	4:30[a]	High-volume, fixed-angle rotor for initial processing of tissue homogenate and other large particles.
JLA-9.1000	366754	9,000	7,440	16,800	2,540	4 x 1000 mL 95 x 191 mm (3.8 x 7.65 in.)	4 liters	2:30[b]	General purpose, large-volume processing, pelleting of bacteria, cell organelles, viruses, and precipitates.
JLA-8.1000	363688	8,000	8,530	15,900	2,500	6 x 1000 mL 95 x 191 mm (3.8 x 7.65 in.)	6 liters	6:00[b]	General purpose, large-volume processing, pelleting of bacteria, subcellular organelles, viruses, and precipitates.
Swinging-Bucket Rotors									
JS-24.38	360743	24,000	48,600	103,900	334	6 x 38.5 mL 25 x 89 mm (1 x 3.5 in.)	231 mL	5:15[c]	Harvesting bacteria, processing tissue homogenates, subcellular particulates, routine pelleting such as precipitates and phase separations.
JS-24.15	362396	24,000	50,900	110,500	376	6 x 15 mL 16 x 96 mm (0.625 x 3.75 in.)	90 mL	5:15[c]	Harvesting bacteria, processing tissue homogenates, subcellular particulates, routine pelleting such as precipitates and phase separations.
JS-13.1	346963	13,000	7,760	26,500	1,841	6 x 50 mL 29 x 105 mm (1.125 x 4 in.)	300 mL	2:30[a]	Density gradient centrifugation of cells. Sedimentation of nuclei and protein or nuclei acid precipitates. Clarification of tissue homogenates.
JS-7.5	336380	7,500	3,210	10,400	5,287	4 x 250 mL 62 x 136 mm (2.5 x 5.5 in.)	1 L	1:00[a]	Initial processing of cells and removal of cell debris from culture media. Accepts round-bottom bottles for easier handling of pellets.
JS-5.9	369331	5,400	5,980	6,570	??	2 x 500 mL ?? x ?? mm (?? x ?? in.)	1 L	1:00[a]	High-throughput processing (DNA or RNA kits), serial dilution of small volumes.
JS-5.3[d] (AllSpin™)	368690	5,300	5,170	6,870		4 x 500 mL ?? x ?? mm (?? x ?? in.)	2 L	2:00[g]	Sucrose/glycerol gradients, centrifugal filtration, binding studies, clearing debris/large particles, pelleting, plasma protein precipitates.
JS-4.3[e]	362734	4,300	1,532	4,220	13,892	4 x 750 mL 96 x 130 mm (3.8 x 5.2 in.)	3 L	1:00[b]	Rapid sedimentation of protein precipitates, large particles, cells, binding studies, and separating serum from whole blood.
JS-4.0[f]	339086	4,000	1,540	4,050	15,300	4 x 1000 97 x 167 (3.82 x 6.57 in.)	4 L	1:30[b]	Rapid sedimentation of protein precipitates, large particles, cells, and cell debris, as well as binding studies and separating serum from whole blood.

1 Accel times are approximate and subject to change.
a Typical accel time in Avanti J-25 Series.
b Typical accel time in Avanti J-20XP Series.
c Typical accel time in Avanti J-30I (JS Rotors using mandatory slow accel setting).
d For use in Avanti J-E and J-20XP Series only.
e For use in Avanti J-20XP Series only.
f For use in Avanti J-20XP Series and J6 Series only.
g Typical accel time in Avanti J-E Series.

Avanti® J Series Rotor Summary (continued)

Rotor Type	Part Number	Maximum Speed (rpm)	Maximum Force at r_{min} (*g*)	Maximum Force at r_{max} (*g*)	*k* Factor	Number Tubes/Bottles and Size (diameter x length)	Rotor Capacity (mL)	Approx. Accel. Time[1] (min:sec)	Comments
Continuous-Flow Rotor									
JCF-Z	335140 (standard core)	20,000	32,000	39,900	100	Not applicable	660 mL	N.A.	Purification of viruses and/or concentration of large volumes of solution. Pelleting or sedimenting on a sucrose cushion. Maximum pellet size: 400 mL.
	357544 (small pellet core)	20,000	23,300	36,300	281	Not applicable	240 mL	N.A.	Pelleting liquids that contain a low ratio of solids–such as bacterial cultures, or water containing clay particles or algae. Maximum pellet size: 200 mL.
	357521 (large pellet core)	20,000	22,850	39,900	293	Not applicable	1,250 mL	N.A.	Pelleting solutions that have high solid-to-water ratios as high as 1:2 slurries. Maximum pellet size: 800 mL.
Zonal Rotor									
JCF-Z	354006	20,000	9,000	39,900	710	69 mm	1,990 mL	N.A.	Fast start up. Dynamic loading and unloading. Isopycnic banding, linear, and discontinuous gradients. Subcellular fractions from tissue homogenates, algae, and chloroplasts.
Reorienting Gradient Rotor									
JCF-Z	354005	20,000	11,650	39,900	779	63 mm	1,750 mL	N.A.	No rotating seal. Static loading and unloading. Gradient reorients in rotor. Especially useful for fragile material such as DNA strands.



Fixed-Angle Rotor, Titanium

Major applications: Harvesting bacteria, processing tissue homogenates, subcellular particulates, routine pelleting such as precipitates and phase separations.

Max. RPM	Max. *g*	*k* Factor	Number of Tubes Volume/Size	Rotor Capacity
30,000	108,860	280	8 × 50 mL 29 × 104 mm 1.125 × 4 in	400 mL

For use in Avanti® J Series centrifuges (except Avanti J-E).

No. 363420. JA-30.50 Fixed-Angle Ti Rotor with Biosafety Lid.
No. 363421. JA-30.50 Fixed-Angle Ti Rotor with Single Lock Lid.

Tubes and Bottles

Tube Style/Material	Part No.	Quantity	Nominal Volume per Tube (mL)	Size (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Bottles with Screw Caps									
Polyallomer	357003	25	50.0	29 x 104	———	———	75,600	403	25,000
Polycarbonate	357002	25	50.0	29 x 104	———	———	75,600	403	25,000
	355672	25	10.0	16 x 80	361703†	1	91,000	244	30,000
Bottles with Cap Assemblies									
Polyallomer	357001	6	50.0	29 x 104	———	———	108,900	280	30,000*
Polycarbonate	357000	6	50.0	29 x 104	———	———	108,900	280	30,000
Tubes with Snap-On Caps									
Polyallomer	357448	500	1.5	9.5 x 38	361705†	1	73,400	126	30,000
Thickwall Polycarbonate	363664	25	50.0	29 x 104	———	———	75,600	403	25,000
Thickwall Polypropylene	357005	25	50.0	29 x 104	———	———	75,600	403	25,000
Polypropylene	356090	500	1.5	9.5 x 38	361705†	1	73,400	126	30,000
Open-Top Tubes									
Thickwall Polycarbonate	363647	25	50.0	29 x 104	———	———	108,900	280	30,000*
Thickwall Polypropylene	357007	25	50.0	29 x 104	———	———	108,900	280	30,000

** At 2°C; at 25°C, maximum speed must be limited to 26,000 rpm for tube 357001 and 29,000 rpm for tube 363647.*

† Set of 2.

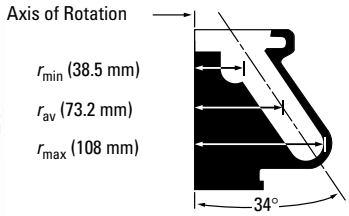
Rotor Replacement Parts

870612	O-ring for Rotor Lid
011757	Small O-ring for Rotor Lid
363424	Lid Assembly, Biosafety (tie-down assembly included)
363430	Lid Assembly, Single-lock
363431	Tie-down for Single-locking Lid

Adapters

See chart on page 2–6 for adapters used with non-Beckman Coulter tubes and bottles.

361703 361705



Fixed-Angle Rotor, Aluminum

Major applications: Harvesting bacteria, processing tissue homogenates, subcellular particulates, routine pelleting such as precipitates and phase separations.

Max. RPM	Max. *g*	k Factor	Number of Tubes Volume/Size	Rotor Capacity
25,000	75,600	418	8 x 50 mL 29 x 104 mm 1.125 x 4 in	400 mL

For use in Avanti® J and J-E Series centrifuges.

No. 363058. JA-25.50 Fixed-Angle Rotor with Biosafety Lid.
No. 363055. JA-25.50 Fixed-Angle Rotor with Single Lock Lid.

Tubes and Bottles

Tube Style/Material		Part No.	Quantity	Nominal Volume per Tube (mL)	Size (mm)	Required Adapters	Tubes per Adapter	g-Force	k Factor	Maximum Speed
Bottles with Screw Caps										
Polyallomer		357003	25	50.0	29 x 104	———	———	75,600	418	25,000
Polycarbonate		357002	25	50.0	29 x 104	———	———	75,600	418	25,000
		355672	25	10.0	16 x 80	361703†	1	63,240	350	25,000
Bottles with Cap Assemblies										
Polyallomer		361694	24	50.0	29 x 104	———	———	75,600	418	25,000
Polycarbonate		361693	24	50.0	29 x 104	———	———	75,600	418	25,000
Tubes with Snap-On Caps										
Polycarbonate	Thickwall	363664*	25	50.0	29 x 104	———	———	75,600	418	25,000
Polypropylene	Thickwall	357005*	25	50.0	29 x 104	———	———	75,600	418	25,000
		356090	500	1.5	9.5 x 38	361705†	1	50,960	182	25,000
Open-Top Tubes										
Polyallomer		357448	500	1.5	9.5 x 38	361705†	1	50,960	182	25,000
Polycarbonate	Thickwall	363647	25	50.0	29 x 104	———	———	75,600	418	25,000
Polypropylene	Thickwall	357007	25	50.0	29 x 104	———	———	75,600	418	25,000

** Order cap separately (pkg. of 25): 356264 (natural), 357359 (red), 357360 (green), 357361 (yellow), or 357362 (blue).*

† Set of 2.

Rotor Replacement Parts

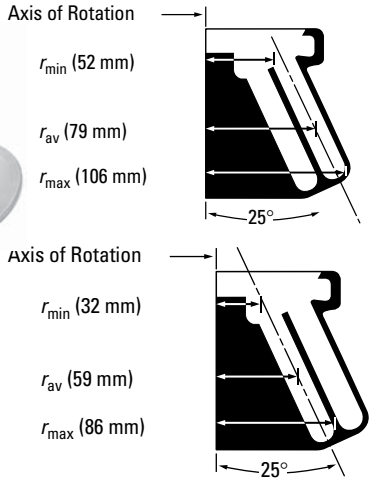
870612	O-ring for Rotor Lid
011757	Small O-ring for Rotor Lid
363023	Lid Assembly, Biosafety (Tie-down Assembly included)
363041	Rotor Lid, Single Lock
363049	Tie-down for Single-locking Lid

Adapters

See chart on page 2–6 for adapters used with non-Beckman Coulter tubes and bottles.

361703 361705

Contents



Fixed-Angle Rotor, Aluminum

Major applications: Harvesting bacteria, processing tissue homogenates, subcellular particulates, routine pelleting such as precipitates and phase separations.

	Max. RPM	Max. *g*	*k* Factor	Number of Tubes Volume/Size	Rotor Capacity
Outer Row	25,000	74,200	265	24 x 15 mL 18 x 100 mm	360 mL
Inner Row	25,000	60,200	380	0.75 x 4 in	

For use in Avanti® J Series centrifuges (except Avanti J-E).

No. 363050. JA-25.15 Fixed-Angle Rotor with Biosafety Lid.
No. 363054. JA-25.15 Fixed-Angle Rotor, Single Lock Lid.

Tubes and Bottles

Tube Style/Material	Part No.	Quantity	Nominal Volume per Tube (mL)	Size (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Bottles with Screw Caps									
Polycarbonate	355672	25	4.0	16 x 80	342327	1	60,200	204	25,000
Open-Top Tube									
Thickwall Polyallomer	355640 355644	25 25	10.0 4.0	16 x 75 13 x 64	342327 303313	1 1	56,700 49,000	180 120	25,000 25,000
Polycarbonate	342080	100	15.0	18 x 100	———	———	74,200	265	25,000
Thickwall Polycarbonate*	355630 355645	25 25	10.0 4.0	16 x 75 13 x 64	342327 303313	1 1	56,700 49,000	180 120	25,000 25,000
Polyethylene*	342081	100	15.0	18 x 100	———	———	74,200	265	25,000
Polypropylene*	342082	100	15.0	18 x 100	———	———	74,200	265	25,000

* *To order caps for 15-mL tubes 342080, 342081, and 342082, use part number 343656 for a package of 50.*

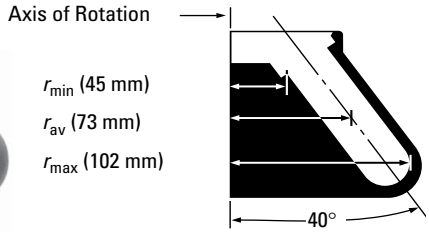
Rotor Replacement Parts

964911 Large O-ring for Rotor Lid
011757 Small O-ring for Rotor Lid
363024 Lid Assembly, Biosafety (Tie-down Assembly included)
363047 Rotor Lid, Single Lock
363048 Tie-down for Single-locking Lid

Adapters

See chart on page 2–6 for adapters used with non-Beckman Coulter tubes and bottles.

303313 342327



Fixed-Angle Rotor, Aluminum

Major applications: Rapid, efficient separation of many samples in small volumes, such as viruses, bacteriophage, mitochondria, and nuclei.

Max. RPM	Max. *g*	*k* Factor	Number of Tubes Volume/Size	Rotor Capacity
21,000	50,400	470	18 x 10 mL 16 x 80 mm 0.625 x 3 in	180 mL

For use in Avanti® J and J-E Series centrifuges.

No. 334845. JA-21 Fixed-Angle Rotor for 21,000 rpm operation.

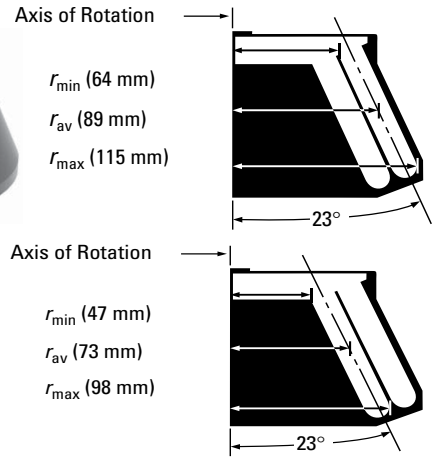
Tubes and Bottles

Tube Style/Material	Part No.	Quantity	Nominal Volume per Tube (mL)	Size (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Bottles with Screw Caps									
Polycarbonate	355672	25	10.0	16 x 80	———	———	50,400	469	21,000
Open-Top Tubes									
Thickwall Polyallomer	355640	25	10.0	16 x 76	———	———	50,400	470	21,000
Thickwall Polycarbonate	355630	25	10.0	16 x 76	———	———	50,400	470	21,000
Stainless Steel	301108	1	10.0	16 x 76	———	———	50,400	470	21,000

See chart on page 2–6 for adapters used with non-Beckman Coulter tubes and bottles.

Rotor Replacement Parts

870612	O-ring for Rotor Lid
870980	O-ring for Rotor Hub
343631	Lid Attachment Bolt Assembly
369349	Rotor Lid
364916	Tie-down Kit



Fixed-Angle Rotor, Aluminum

Major applications: High-force, large-volume separation of particles with 100 *S* or larger sedimentation coefficients.

	Max. RPM	Max. *g*	*k* Factor	Number of Tubes Volume/Size	Rotor Capacity
Outer Row	20,000	51,500	371	32 x 15 mL 18 x 99 mm	480 mL
Inner Row	20,000	43,900	465	0.625 x 4 in	

For use in Avanti® J and J-E Series centrifuges.

No. 342095. JA-20.1 Fixed-Angle Rotor for 20,000 rpm operation.

Tubes and Bottles

Tube Style/Material	Part No.	Quantity	Nominal Volume per Tube (mL)	Size (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor*	Maximum Speed
Bottles with Screw Caps									
Polycarbonate	355672	25	10.0	16 x 80	342327	1	47,900	325	20,000
Open-Top Tubes									
Thickwall Polyallomer	355640	25	10.0	16 x 75	342327	1	47,900	325	20,000
Thickwall Polycarbonate	342080	100	15.0	18 x 99	———	———	51,500	371	20,000
Thickwall Polycarbonate	355630	25	10.0	16 x 76	342327	1	47,900	325	20,000
Thickwall Polyethylene	342081	100	15.0	18 x 97	———	———	51,500	371	20,000
Thickwall Polypropylene	342082	100	15.0	18 x 98	———	———	51,500	371	20,000
Stainless Steel	301108	1	10.0	16 x 76	342327	1	47,900	325	20,000

Rotor Supplies

338896 Rotor Removal Tool
338689 Adapter Collar for 338896 Rotor Removal Tool

Caps for 15-mL Tubes

343656 Caps (box of 50) for 342080, 342081, and 342082 Tubes

Rotor Replacement Parts

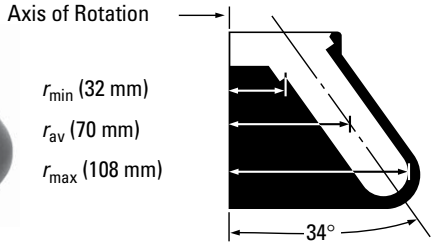
834301 O-ring for Rotor Lid
870980 O-ring for Rotor Hub
358368 Lid Attachment Bolt Assembly
341976 Rotor Lid
364915 Tie-down Kit
354456 Hold-down Knob, for use with filtration tubes regularly run without lid

** Measured using the outer row of tubes.*

Adapters

See chart on page 2–6 for adapters used with non-Beckman Coulter tubes and bottles.

342327



Fixed-Angle Rotor, Aluminum

Major applications: Harvesting bacteria and cell membranes, processing tissue homogenates, separating cell particulates.

Max. RPM	Max. *g*	*k* Factor	Number of Tubes Volume/Size	Rotor Capacity
20,000	48,400	770	8 x 50 mL 29 x 104 mm 1.125 x 4 in	400 mL

For use in Avanti® J and J-E Series centrifuges.

No. 334831. JA-20 Fixed-Angle Rotor for 20,000 rpm operation.

Tubes and Bottles

Tube Style/Material		Part No.	Quantity	Nominal Volume per Tube (mL)	Size (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Bottles with Screw Caps										
Polyethylene		357003	25	50.0	29 x 104	———	———	48,400	770	20,000
Polycarbonate		357002	25	50.0	29 x 104	———	———	48,400	770	20,000
		355672	25	10.0	16 x 80	342327/870329	1	43,500	650	20,000
Bottles with Cap Assemblies										
Polyallomer		357001	6	50.0	29 x 104	———	———	48,400	770	20,000
Polycarbonate		357000	6	50.0	29 x 104	———	———	48,400	770	20,000
Tubes with Snap-On Caps										
Polyallomer	Natural	357448	500	1.5	11 x 39	344497*	3	48,400	770	20,000
Thickwall Polycarbonate		363664	25	50.0	29 x 104	———	———	48,400	770	20,000
Thickwall Polypropylene		357005	25	50.0	29 x 104	———	———	48,400	770	20,000
	Orange	356094	500	1.5	11 x 38	344497*	3	48,400	770	20,000
	Yellow	356093	500	1.5	11 x 38	344497*	3	48,400	770	20,000
	Green	356092	500	1.5	11 x 38	344497*	3	48,400	770	20,000
	Blue	356091	500	1.5	11 x 38	344497*	3	48,400	770	20,000
	Natural	356090	500	1.5	11 x 38	344497*	3	48,400	770	20,000
Open-Top Tubes										
Polycarbonate		340196	500	1.8	11 x 39	344497*	3	48,400†	770	20,000
Polypropylene	Thickwall	363647	25	50.0	29 x 104	———	———	48,400	770	20,000

Rotor Supplies

346965 Rotor Removal Tool
338689 Adapter Collar for 346965 Rotor Removal Tool

Cap Assembly Replacement Parts

356284 Cap for 357000 and 357001 Bottle
358627 Insert for 357000 and 357001 Cap Assembly; order only as a replacement part
961582 O-ring for 357000 and 357001 Bottle

Rotor Replacement Parts

870612 O-ring for Rotor Lid
870980 O-ring for Rotor Hub
364914 Tie-down Kit
369349 Rotor Lid
354456 Hold-down Knob, for use with filtration tubes regularly run without lid

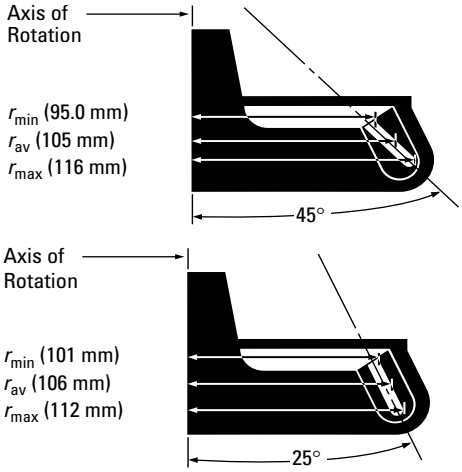
* *Can be double-stacked. Force will vary depending on tube position.*

† *Calculated at rmax, g-force will be less for tubes located in upper adapter when adapters are stacked. Force will also vary depending on tube position in adapter.*

Adapters

See chart on page 2–6 for adapters used with non-Beckman Coulter tubes and bottles.

342327 344497 870329



Fixed-Angle Rotor, Aluminum

Major applications: High-force sedimentation in microcentrifuge tubes under refrigerated conditions.

Max. RPM at 45° Angle*	Max. *g*	*k* Factor	Number of Tubes Volume/Size	Rotor Capacity
18,000	42,100	156	24 x 1.8 mL 11 x 38 mm 0.4 x 1.5 in.	43.2 mL

Max. RPM at 25° Angle*	Max. *g*	*k* Factor	Number of Tubes Volume/Size	Rotor Capacity
17,000	36,300	91	24 x 1.8 mL 11 x 38 mm 0.4 x 1.5 in.	43.2 mL

For use in Avanti® J Series centrifuges (except Avanti J-E).

No. 347824. JA-18.1 Fixed-Angle Rotor. Includes 24 reversible adapters that provide 18,000 rpm maximum speed. In the J2-HC centrifuge: 15,000 rpm maximum speed at 45° angle and 16,000 rpm maximum speed at 25° angle. Tubes are not included.

Tubes and Bottles

Tube Style/Material		Part No.	Quantity	Nominal Volume per Tube (mL)	Size (mm)	Required Adapters	Tubes per Adapter†	*g*-Force	*k* Factor	Maximum Speed*
Tubes with Snap-On Caps										
Polyallomer	Natural	357448	500	1.5	11 x 38	347562	1	42,100	———	18,000
Polyethylene		340196	500	1.8	11 x 38	347562	1	42,100	———	18,000
Open-Top Tubes with Separate Cap										
Polypropylene		343169	500	1.5	11 x 38	347562	1	42,100	———	18,000

* *In the J2-HC, maximum speeds are reduced to 15,000 rpm at 45° angle and 16,000 rpm at 25° angle.*

† *Adapters are reversible, so that tube angle can be set at either 45° or 25°, depending on application requirements.*

Rotor Replacement Parts

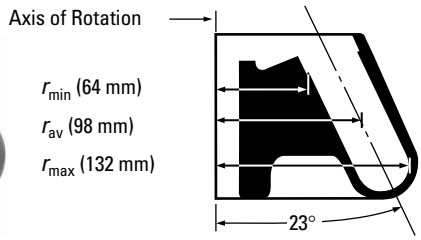
011921 O-ring
335112 Washer
347821 Rotor Knob Assembly
364918 Tie-down Kit

Adapters

See chart on page 2–6 for adapters used with non-Beckman Coulter tubes and bottles.

347562

Contents



Fixed-Angle Rotor, Aluminum

Major applications: High-force, large-volume. Pelleting bacteria, cell membranes, and subcellular organelles.

Max. RPM	Max. *g*	*k* Factor	Number of Tubes Volume/Size	Rotor Capacity
18,000 (16,000 rpm at 4°C and below)	47,900	566	10 x 100 mL 38 x 102 mm	1 L 1.5 x 4 in

For use in Avanti® J and J-E Series centrifuges.

No. 369679. JA-18 Fixed-Angle Rotor for 18,000 rpm operation.
Tubes and bottles not included.

Tubes and Bottles

Tube Style/Material		Part No.	Quantity	Nominal Volume per Tube (mL)	Size (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Quick-Seal® Tubes										
Polyallomer		345776	25	100.0	38 x 102	———	———	47,900	566	18,000
Ultra-Clear™		345778	25	100.0	38 x 102	———	———	47,900	566	18,000
Bottles with Cap Assemblies										
Polycarbonate		355620	6	70.0	38 x 102	———	———	47,900	566	18,000
Polypropylene		355624	6	94.0	38 x 102	———	———	47,900	566	18,000
Bottles with Screw Caps										
Polyallomer		357003	25	50.0	29 x 104	347539	1	44,000	———	18,000
Polycarbonate		357002	25	50.0	29 x 104	347539	1	44,000	———	18,000
Tubes with Snap-On Caps										
Polyallomer	Natural	357448	500	1.5	11 x 39	344497/347539†	3	35,000	———	18,000
Polyethylene		340196	500	1.8	11 x 39	344497/347539†	3	35,000	———	18,000
Polypropylene	Orange	356094	500	1.5	11 x 39	344497/347539†	3	35,000	———	18,000
	Yellow	356093	500	1.5	11 x 39	344497/347539†	3	35,000	———	18,000
	Green	356092	500	1.5	11 x 39	344497/347539†	3	35,000	———	18,000
	Blue	356091	500	1.5	11 x 39	344497/347539†	3	35,000	———	18,000
	Natural	356090	500	1.5	11 x 39	344497/347539†	3	35,000	———	18,000
	Natural‡	343169	500	1.5	11 x 38	344497†	3	35,000	———	18,000
Open-Top Tubes										
Polycarbonate*		363647	25	50.0	29 x 104	347539	1	47,900	566	18,000
Polypropylene*		357007	25	50.0	29 x 104	347539	1	47,900	566	18,000

* *A cap is available for these tubes, but it cannot be used in the JA-18 rotor; for a cap to use when storing samples, order cap 356262.*

† *Can be double-stacked. Force will vary depending on tube position.*

‡ *With separate cap.*

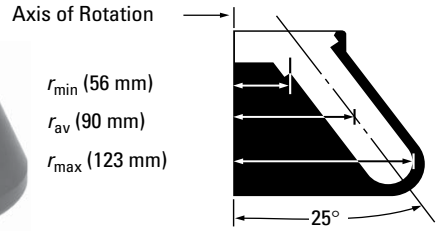
Rotor Replacement Parts

346947 Tie-down Bolt Assembly
346965 Rotor Removal Tool
364845 Rotor Lid Assembly
364917 Tie-down Kit

Adapters

See chart on page 2–6 for adapters used with non-Beckman Coulter tubes and bottles.

344497 347539



Fixed-Angle Rotor, Aluminum

Major applications: High-force, large-volume. Pelleting bacteria, cell membranes, and subcellular organelles.

Max. RPM	Max. *g*	*k* Factor	Number of Tubes Volume/Size	Rotor Capacity
17,000	39,800	690	14 x 50 mL 29 x 104 mm 1.125 x 4 in	700 mL

For use in Avanti® J and J-E Series centrifuges.

No. 341973. JA-17 Fixed-Angle Rotor.
Tubes and bottles not included.

No. 369691. JA-17 Fixed-Angle Rotor for use with Avanti J-E centrifuges. Tubes and bottles not included.

Tubes and Bottles

Tube Style/Material	Part No.	Quantity	Nominal Volume per Tube (mL)	Size (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Bottles with Cap Assemblies									
Polyallomer	357001	6	50.0	29 x 104	———	———	39,800	690	17,000
	361694	24	50.0	29 x 104	———	———	39,800	690	17,000
Polycarbonate	357000	6	50.0	29 x 104	———	———	39,800	690	17,000
	361693	24	50.0	29 x 104	———	———	39,800	690	17,000
Bottles with Screw Caps									
Polyallomer	357003	25	50.0	29 x 104	———	———	39,800	690	17,000
Polycarbonate	357002	25	50.0	29 x 104	———	———	39,800	690	17,000
	355672	25	10.0	16 x 80	342327/870329	1	32,000	———	17,000
Tubes with Snap-On Caps									
Polypropylene	357005†	25	50.0	29 x 104	———	———	39,800*	690	17,000
Tubes without Caps									
Thickwall Polycarbonate	363647	25	50.0	29 x 104	———	———	39,800	690	17,000
Thickwall Polypropylene	357007	25	50.0	29 x 104	———	———	39,800	689	17,000

Rotor Supplies

346965 Rotor Removal Tool
338689 Adapter Collar for 346945 Rotor Removal Tool

Cap Assembly Replacement Parts

356284 Cap for 357000 and 357001 Tubes
358627 Insert for 357000 and 357001 Cap Assembly; order only for use in tubes
961582 O-ring for 357000 and 357001 Cap Assembly

* *Can be double-stacked. Force will vary depending on position of tube in adapter.*
† *A maximum of seven tubes can be used, placed in every other rotor hole (tubes placed in adjacent holes will hit one another).*
‡ *With separate cap.*

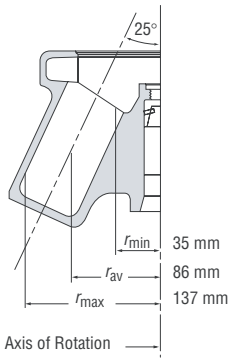
Rotor Replacement Parts

878951 O-ring for Rotor Lid
870980 O-ring for Rotor Hub
358367 Lid Attachment Bolt Assembly
364913 Tie-down Kit
341926 Rotor Lid
354456 Hold-down Knob (used to run filtration tubes without lid)

Adapters

See chart on page 2–6 for adapters used with non-Beckman Coulter tubes and bottles.

342327 344497 870329



Fixed-Angle Rotor, Aluminum

Major applications: General purpose, large-volume and multitube processing. Lightweight alternative to conventional 6 × 250 rotors; empty rotor weight is 10.3 kg (22.7 lb).

Max. RPM	Max. *g*	*k* Factor	Number of Tubes Volume/Size	Rotor Capacity
16,000*	39,300	1,350	6 × 250 mL 62 × 120 mm 2.5 × 5.5 in	1.5 L

For use in Avanti® J and J-E Series centrifuges.

No. 363930. J-Lite® JLA-16.250 Rotor Assembly with Biosafety Lid.
No. 363934. Rotor Assembly with Single Lock Lid.

Tubes and Bottles

Tube Style/Material	Part No.	Quantity	Nominal Volume per Tube (mL)	Size (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed*
Bottles with Screw Caps									
Polyallomer	357003	25	38.5	29 x 104	356997	1	32,200	650	16,000
Polycarbonate	357002	25	38.5	29 x 104	356997	1	32,200	660	16,000
Bottles with Cap Assembly									
Polyallomer	357001	24	40.0	29 x 104	356997	1	32,200	650	16,000
Polycarbonate	357000	24	40.0	29 x 104	356997	1	32,200	660	16,000
Wide-mouth Polycarbonate	356013	6	250.0	62 x 120	——	——	38,400	1,350	16,000
Wide-mouth Polypropylene	356011	6	250.0	62 x 120	——	——	38,400	1,350	16,000
Tubes with Snap-On Caps									
Polycarbonate	363664	25	36.0	29 x 104	356997	1	32,100	400	16,000
Polypropylene	357005	25	36.0	29 x 104	356997	1	32,100	400	16,000
Open-Top Tubes, Conical Graduated									
Polypropylene	355663	6	15.0	17 x 119	356964	5	6,900	4,190	7,000
BioVials									
Polypropylene	566353	1000	4.0	14 x 55	342098	9	2,300	10,700	4,000

* *The maximum speed is 14,000 rpm in J2 Series centrifuges.*

Rotor Replacement Parts

363931	Double-locking Lid Assembly
363935	Single-locking Lid Assembly
893502	Large O-ring for Either Lid Assembly (5.987 dia.)
893503	Small O-ring for Either Lid Assembly (1.046 dia.)

Adapters

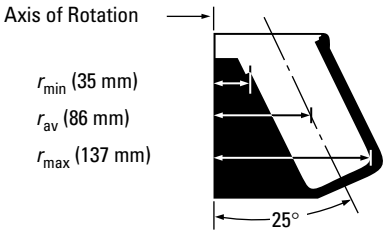
See chart on page 2–6 for adapters used with non-Beckman Coulter tubes and bottles.

342098

356964

356997

Contents



Fixed-Angle Rotor, Aluminum

Major applications: General-purpose, large-volume and multi-tube processing. Adapters permit use of up to 30 each 15-mL tubes and up to 72 each 3-mL tubes.

Max. RPM	Max. *g*	*k* Factor	Number of Tubes Volume/Size	Rotor Capacity
14,000	30,100	1,660	6 x 250 mL 62 x 120 mm 2.5 x 4.8 in	1.5 L

For use in Avanti® J and J-E Series centrifuges.

No. 339247. JA-14 Fixed-Angle Rotor for 14,000 rpm operation.
Tubes and bottles not included.

Tubes and Bottles

Tube Style/Material	Part No.	Quantity	Nominal Volume per Tube (mL)	Size (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Bottles with Screw Caps									
Polyallomer	357003	25	50.0	29 x 104	356997	1	30,100	1,764	14,000
Conical Polyallomer	356989	6	230.0	60 x 121	356983	1	8,600	6,158	7,500
Polycarbonate	357002	25	50.0	29 x 104	356997	1	30,100	1,764	14,000
Conical Polycarbonate	356987	6	230.0	62 x 120	356983	1	8,600	6,158	7,500
Bottles with Cap Assemblies									
Polyallomer	357001	6	50.0	29 x 104	356997	1	30,100	1,764	14,000
Polycarbonate	357000	6	50.0	29 x 104	356997	1	30,100	1,764	14,000
Wide-mouth Polycarbonate	356013	6	250.0	62 x 120	———	———	30,100	1,764	14,000
Wide-mouth Polypropylene	356011	6	250.0	62 x 120	———	———	30,100	1,764	14,000
Bottle with Snap-On Cap									
Polyallomer	361694	6	50.0	29 x 104	356997	1	30,100	1,764	14,000
Tubes with Snap-On Caps									
Polycarbonate	363664	25	50.0	29 x 104	356997	1	30,100	1,764	14,000
Thickwall Polypropylene	357005	25	50.0	29 x 104	356997	1	30,100	1,764	14,000
Open-Top Tubes									
Polycarbonate	363647	25	50.0	29 x 104	356997	1	30,100	1,764	14,000
Polypropylene	357007	25	50.0	29 x 104	356997	1	30,100	1,764	14,000
Conical Polypropylene	355663	6	15.0	17 x 119	356995	5	5,000	7,056	7,000
BioVials									
Polypropylene	566353	1000	4.0	14 x 55	342098*	9	20,000	———	14,000

* *Can be double-stacked.*

Rotor Replacement Parts

346965	Rotor Removal Tool
870137	Spring Pin for JA-14 Rotor Lid
870138	O-ring for Rotor Lid
870980	O-ring for Rotor Hub
338609	Rotor Lid
364912	Tie-down Kit

Adapters

See chart on page 2–6 for adapters used with non-Beckman Coulter tubes and bottles.

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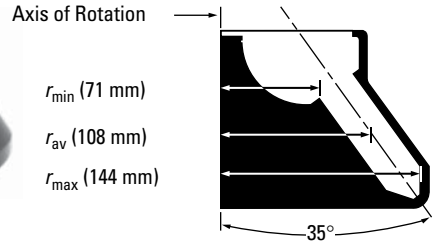


Fixed-Angle Rotor, Aluminum

Major applications: Pelleting cells, bacteria, or subcellular fractions; phase separations; binding studies.

Max. RPM	Max. *g*	*k* Factor	Number of Tubes Volume/Size	Rotor Capacity
12,000*	23,200	1,244	12 x 50 mL 30 x 103 mm (conical) 1.17 x 4 in	600 mL

For use in Avanti® J and J-E Series centrifuges.

No. 360992. JA-12 Fixed-Angle Rotor with Dual-locking Biosafety Lid for 12,000 rpm operation. Tubes and bottles not included.

No. 360993. JA-12 Fixed-Angle Rotor with Single-locking Lid for 12,000 rpm operation. Tubes and bottles not included.

Tubes and Bottles

Tube Style/Material	Part No.	Quantity	Nominal Volume per Tube (mL)	Size (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Conical*	——	——	50.0	——	——	——	23,200	——	12,000

* *Tested using Corning and Falcon 50-mL conical tubes. Corning is a registered trademark of Corning Class Works; Falcon is a registered trademark of Becton, Dickinson and Company.*

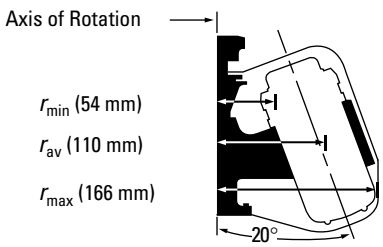
See chart on page 2–6 for adapters used with non-Beckman Coulter tubes and bottles.

Rotor Replacement Parts

364846	Dual-locking Lid Assembly
360991	Single-locking Lid Assembly
360999	Tie-down Bolt (for use without lid)
961696	O-ring for Rotor Lids
961697	O-ring for Rotor Body
364919	Tie-down Kit (Single)
364922	Tie-down Kit (Dual-locking)
346965	Rotor Removal Tool

Rotor Supplies

339558	Rotor Cleaning Kit
339555	Solution 555™ (1 qt.)
335148	Silicone vacuum grease (2 oz.)
306812	Spinkote™ Lubricant (1 oz.)



Fixed-Angle Rotor, Aluminum

Major applications: Large-volume for initial processing of bacteria or other cells from fermentors, clearing cell debris from homogenates, or pelleting subcellular organelles and protein precipitates.

Max. RPM	Max. *g*	*k* Factor	Number of Tubes Volume/Size	Rotor Capacity
10,000	18,500	2,840	6 x 500 mL 69 x 160 mm 2.75 x 6.5 in	3 L

For use in Avanti® J and J-E Series centrifuges.

No. 360830. J-Lite® JLA-10.500 Rotor Assembly. Includes 6 canisters with secondary liquid closures.

No. 369681. J-Lite® JLA-10.500 Rotor Assembly. Includes 6 canisters with secondary liquid closures. For use with Avanti J-E centrifuge.

No. 360828. Removable Cannisters for JLA-10.500 (set of 2 with 2 secondary liquid closures).

Tubes and Bottles

Tube Style/Material	Part No.	Quantity	Nominal Volume per Tube (mL)	Size (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Bottles with Cap Assemblies									
Polyallomer	357001	6	50.0	29 x 104	356996	1	12,000	2,840	10,000
Polycarbonate	357000	6	50.0	29 x 104	356996	1	12,000	2,840	10,000
	361690	6	500.0	69 x 160	———	———	18,600	2,840	10,000
Wide-mouth Polycarbonate	356013	6	250.0	69 x 122	362750	1	17,700	2,840	10,000
Polypropylene	361691	6	500.0	69 x 160	———	———	11,900	4,440	8,000
Wide-mouth Polypropylene	356011	6	250.0	69 x 122	362750	1	17,700	2,840	10,000
Bottles with Screw Caps									
Polyallomer	357003	25	50.0	29 x 104	356996	1	12,000	2,840	10,000
Polycarbonate	357002	25	50.0	29 x 104	356996	1	12,000	2,840	10,000
Tubes with Snap-On Caps									
Polypropylene	357005	25	50.0	29 x 104	356996	1	12,000	2,840	10,000
Polycarbonate	363664	25	50.0	29 x 104	356996	1	12,000	2,840	10,000
Open-Top Tubes									
Polycarbonate	363647	25	50.0	29 x 104	356996	1	12,000	2,840	10,000
Polypropylene	357007	25	50.0	29 x 104	356996	1	12,000	2,840	10,000
Conical Graduated Polypropylene	355663	6	15.0	17 x 119	356994	5	7,800	6,730	6,500
BioVials									
Polypropylene	566353	1000	4.0	14 x 55	362750/342098*	9	———	———	10,000

* *BioVials require adapters P/N 362750 AND 342098 to run in the JLA-10.500. Two adapters P/N 342098 can be double-stacked inside of one adapter P/N 362750 per rotor cavity if greater capacity is desired.*

Rotor Replacement Parts

363334	Rotor Lid Assembly
360828	Cannisters (set of 2 with 2 cannister closures)
360842	Cannister Closure Assembly (1)
360848	O-ring for Cannister Closure (set of 12)
363335	Cannister Rack
360834	Cannister Sleeve Washer

Adapters

See chart on page 2–6 for adapters used with non-Beckman Coulter tubes and bottles.

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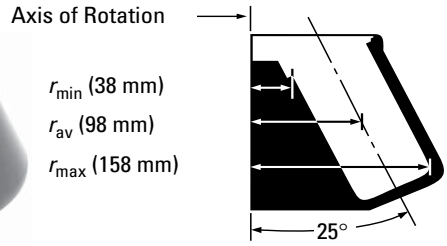

Fixed-Angle Rotor, Aluminum

Major applications: Large-volume for initial processing of tissue homogenates and other large particles.

Max. RPM	Max. *g*	*k* Factor	Number of Tubes Volume/Size	Rotor Capacity
10,000	17,700	3,610	6 x 500 mL 69 x 160 mm 2.75 x 6.5 in	3 L

For use in Avanti® J, J-E Series, and J6 series centrifuges.

No. 369687. JA-10 Fixed-Angle Rotor for 10,000 rpm operation.
Includes carrying handle. Tubes and bottles not included.

Tubes and Bottles

Tube Style/Material	Part No.	Quantity	Nominal Volume per Tube (mL)	Size (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Bottles with Cap Assemblies									
Polyallomer	357001	6	50.0	29 x 104	356996	1	17,700	———	10,000
Polycarbonate	355605	6	500.0	69 x 160	———	———	17,700	3,610	10,000
	357000	6	50.0	29 x 104	356996	1	17,700	———	10,000
Wide-mouth Polycarbonate	356013	6	250.0	69 x 120	362750	1	17,700	———	10,000
Polypropylene	355607	6	500.0	69 x 159	———	———	11,300	3,610	8,000
Wide-mouth Polypropylene	356011	6	250.0	62 x 120	362750	1	17,700	———	10,000
Bottles with Screw Caps									
Polyallomer	357003	25	50.0	29 x 104	356996	1	17,700	———	10,000
Polycarbonate	355664	6	500.0	69 x 160	———	———	17,700	3,610	10,000
	357002	25	50.0	29 x 104	356996	1	17,700	———	10,000
Polypropylene	355665	6	500.0	69 x 159	———	———	4,400	3,610	5,000
Tubes with Snap-On Caps									
Polycarbonate	363664	25	50.0	29 x 104	356996	1	17,700	———	10,000
Thickwall Polypropylene	357005	25	50.0	29 x 104	356996	1	17,700	———	10,000
Open-Top Tubes									
Polycarbonate	363647	25	50.0	29 x 104	356996	1	17,700	———	10,000
Thickwall Polypropylene	357007	25	50.0	29 x 104	356996	1	17,700	———	10,000
Conical Graduated Polypropylene	355663	6	15.0	17 x 119	356960	5	7,000	———	6,500
BioVials									
Polypropylene	566353	1000	4.0	14 x 55	362750/342098*	9	17,700	———	10,000

* *BioVials require adapters P/N 362750 AND 342098 to run in the JA-10. Two adapters P/N 342098 can be double-stacked inside of one adapter P/N 362750 per rotor cavity if greater capacity is desired.*

Rotor Replacement Parts

346965	Rotor Removal Tool
338689	Collar Adapter for Rotor Removal Tool
870139	O-ring for Rotor Lid
870980	O-ring for Rotor Body
364911	Tie-down Kit
334492	Rotor Lid

Adapters

See chart on page 2–6 for adapters used with non-Beckman Coulter tubes and bottles.

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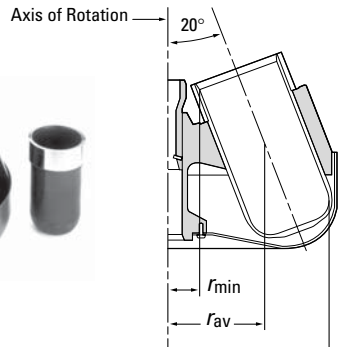


Fixed-Angle Rotor, Aluminum

Major applications: General purpose, large-volume processing, pelleting of bacteria, subcellular organelles, viruses, and precipitates. Empty rotor weight is 23.9 lb (10.8 kg).

Max. RPM	Max. *g*	k Factor	Number of Tubes Volume/Size	Rotor Capacity
9,000	16,800	2,540	4 x 1000 mL 95 x 191 mm 3.8 x 7.65 in.	4 L

For use in Avanti® J and J-E Series centrifuges.

No. 366754. J-Lite® JLA-9.1000 Rotor Package
Includes rotor body, lid, carbon fiber cannisters, and labware kit 392574.

No. 969330. J-Lite JLA-9.1000 Rotor Package
Includes rotor body, lid, carbon fiber cannisters, labware kit 392574, and 4 polycarbonate bottles with cap assemblies (two 363676).

No. 969331. J-Lite JLA-9.1000 Rotor Package
Includes rotor body, lid, carbon fiber cannisters, labware kit 392574, and 4 polypropylene bottles with cap assemblies (two 363678).

Tubes and Bottles

Tube Style/Material	Part No.	Quantity	Nominal Volume per Tube (mL)	Size (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed*
Bottle with Cap Assemblies†									
J-Lite PC-1000‡ (Polycarbonate)	363676	2	1000.0	95 x 191	———	———	16,800	2,540	9,000
J-Lite PP-1000 (Polypropylene)**	363678	2	1000.0	95 x 191	———	———	15,900	3,220	8,000
Bottles Only									
J-Lite PC-1000 (Polycarbonate)	366751	2	1000.0	95 x 191	———	———	16,800	2,540	9,000
J-Lite PP-1000 (Polypropylene)	366752	2	1000.0	95 x 191	———	———	15,900	3,220	8,000

Labware Kit Part Number 392574

Includes: 1 ea. 974627 Bottle Rack (holds 6 bottles)
1 ea. 363646 Spatula
1 ea. 366770 Tool Kit

Accessories

974627 Bottle Rack (holds 6 bottles for easy transport)
363663 Bottle Rack (holds 3 bottles for easy transport)
363646 Spatula
363689 Vent Plug Screw and O-ring (pkg. of 6)
363680 Cap/Closure Assembly (set of 2)
(Includes cap/closure, O-ring, plug, and plug O-ring)
366748 Plug Assembly, AutoVent Polycarbonate (pkg. of 2)
366749 Plug Assembly, AutoVent Ultem[1] (pkg. of 2)
366770 Tool Kit (includes one bottle grip and one wrench)
366772 Teflon Spray

Rotor Replacement Parts

363583 Rotor Lid Assembly
363686 J-Lite JLA-9.1000 Removable Cannisters (set of 2)
970884 O-ring, Cap/Closure
970883 O-ring, Plug
363601 Cannister Sleeve Washer (set of 6)
366768 Cap/Closure Replacement Assembly (set of 6)
366769 Cap/Closure Replacement O-rings (set of 6)
366767 AutoVent Plug Replacement O-rings (set of 6)
Includes six large plug O-rings and six AutoVent plug O-rings.

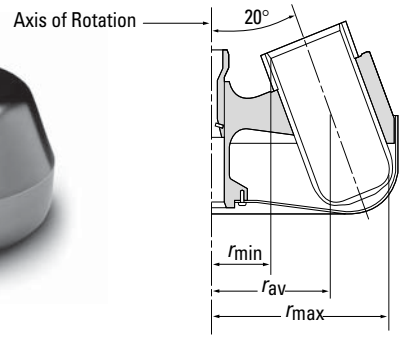
* *All maximum speed and RCF values are for Avanti J Series Centrifuges. Maximum speeds listed are guidelines only. These speeds have been achieved in reliability tests at Beckman Coulter but, because of manufacturing variances, no guarantee of performance or fit is expressed or implied.*

† *Bottle assemblies include cap/closure. The cap/closure serves the dual purpose of sealing the bottle and providing a secondary seal on the carbon-fiber cannister to minimize sample loss resulting from bottle leak or failure.*

‡ *PC-1000 must be run with cap/closure; minimum fill volume is 500 mL.*

** *PP-1000 must be run with cap/closure; minimum fill volume is 1,000 mL.*

1 *Ultem is a registered trademark of GE Plastics.*



Fixed-Angle Rotor, Aluminum

Major applications: General purpose, large-volume processing, pelleting of bacteria, cell organelles, viruses, and precipitates. Empty rotor weight is 16.8 kg (37 lb).

Max. RPM	Max. *g*	*k* Factor	Number of Bottles Volume/Size	Rotor Capacity
8,000	15,900	2,470	6 x 1000 mL 95 x 191 mm 3.8 x 7.65 in.	6 L

For use in Avanti® 20XP Series centrifuges only.

No. 363688. J-Lite® JLA-8.1000 Rotor Package (includes rotor body, lid, carbon fiber cannisters, and labware kit 392574.

No. 969328. J-Lite JLA-8.1000 Rotor Package
Includes rotor body, lid, carbon fiber cannisters, labware kit 392574, and 6 polycarbonate bottles with cap assemblies (three 363676).

No. 969329. J-Lite JLA-8.1000 Rotor Package
Includes rotor body, lid, carbon fiber cannisters, labware kit 392574, and 6 polypropylene bottles with cap assemblies (three 363678).

Tubes and Bottles

Tube Style/Material	Part No.	Quantity	Nominal Volume per Tube (mL)	Size (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed*
Bottle with Cap Assemblies†									
J-Lite PC-1000‡ (Polycarbonate)	363676	2	1000.0	95 x 191	———	———	15,900	2,500	8,000
J-Lite PP-1000 (Polypropylene)**	363678	2	1000.0	95 x 191	———	———	12,200	2,845	7,000
Bottles Only									
J-Lite PC-1000 (Polycarbonate)	366751	2	1000.0	95 x 191	———	———	15,900	2,500	8,000
J-Lite PP-1000 (Polypropylene)	366752	2	1000.0	95 x 191	———	———	12,200	2,845	7,000

Labware Kit Part Number 363681

Labware Kit Part Number 392574

Includes: 1 ea. 974627 Bottle Rack (holds 6 bottles)
1 ea. 363646 Spatula
1 ea. 366770 Tool Kit

Accessories

974627 Bottle Rack (holds 6 bottles for easy transport)
363663 Bottle Rack (holds 3 bottles for easy transport)
363646 Spatula
363689 Vent Plug Screw and O-ring (pkg. of 6)
363680 Cap/Closure Assembly (set of 2)
(Includes cap/closure, O-ring, plug, and plug O-ring)
366748 Plug Assembly, AutoVent Polycarbonate (pkg. of 2)
366749 Plug Assembly, AutoVent Ultem[1] (pkg. of 2)
366770 Tool Kit (includes one bottle grip and one wrench)
366772 Teflon Spray

Rotor Replacement Parts

363583 Rotor Lid Assembly
363686 J-Lite JLA-9.1000 Removable Cannisters (set of 2)
970884 O-ring, Cap/Closure
970883 O-ring, Plug
363601 Cannister Sleeve Washer (set of 6)
366768 Cap/Closure Replacement Assembly (set of 6)
366769 Cap/Closure Replacement O-rings (set of 6)
366767 AutoVent Plug Replacment O-rings (set of 6)
Includes six large plug O-rings and six AutoVent plug O-rings.

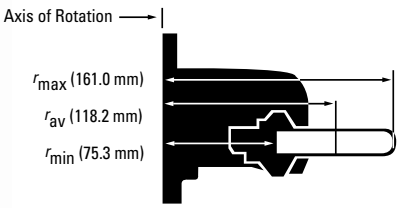
* *All maximum speed and RCF values are for Avanti J Series Centrifuges. Maximum speeds listed are guidelines only. These speeds have been achieved in reliability tests at Beckman Coulter, but because of manufacturing variances, no guarantee of performance or fit is expressed or implied.*

† *Bottle assemblies include cap/closure. The cap/closure serves the dual purpose of sealing the bottle and providing a secondary seal on the carbon-fiber cannister to minimize sample loss resulting from bottle leak or failure.*

‡ *PC-1000 must be run with cap/closure, minimum fill volume is 500 mL.*

** *PP-1000 must be run with cap/closure, minimum fill volume is 1000 mL.*

1 *Ultem is a registered trademark of GE Plastics.*



Swinging-Bucket Rotor, Aluminum, Titanium Buckets

Major applications: Harvesting bacteria, processing tissue homogenates, subcellular particulates, routine pelleting such as precipitates and phase separations.

Max. RPM	Max. *g*	*k* Factor	Number of Tubes Volume/Size	Rotor Capacity
24,000*	103,900	334	6 × 38.5 mL 25 × 89 mm 1 × 3.5 in	231 mL

For use in Avanti® J Series centrifuges (except Avanti J-E).

No. 360743. JS-24.38 Swinging-Bucket Rotor, with six 38.5-mL buckets.

Tubes and Bottles

Tube Style/Material	Part No.	Quantity	Nominal Volume per Tube (mL)	Size (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed*
Quick-Seal® Bell-Top Tubes									
Polyallomer	344623	50	33.0	25 x 83	355536†	1	103,900	317	24,000
	343665	50	27.0	25 x 64	355536†	1	103,900	260	24,000
	343664	50	15.0	25 x 38	355536†	1	103,900	167	24,000
***k*onical Polyallomer**	358652	50	8.5	25 x 38	358155 355536†	1	103,900	167	24,000
	358654	50	23.0	25 x 76	358155 355536†	1	103,900	297	24,000
Open-Top Tubes									
Polyallomer	326823	50	38.5	25 x 89	——	——	103,900	334	24,000
***k*onical™ Polyallomer**	358125	50	25.0	25 x 76	358156	1	95,500	297	24,000
	358126	50	30.0	25 x 89	358156	1	103,900	334	24,000
Thickwall Polyallomer	355642	25	32.0	25 x 89	——	——	103,900	334	24,000
Thickwall Polycarbonate	355631	25	32.0	25 x 89	——	——	103,900	334	24,000
Ultra-Clear™	344058	50	38.5	25 x 89	——	——	103,900	334	24,000

* *Reaches 24,000 rpm in the Avanti J-30I centrifuge only. Not recommended for use in Avanti J-25 Series (max. speed 10,000 rpm), or Avanti J-20XP Series (max. speed 10,000 rpm). Incompatible with all J2 Series.*

† *Noryl Floating Spacer. Noryl is a registered trademark of GE Plastics.*

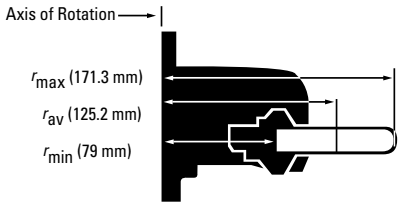
Rotor Replacement Parts

362397	Bucket Set - 38 mL (set of 6 with caps and O-rings)
812715	Bucket O-ring
362785	Rotor Stand

Adapters

See chart on page 2–6 for adapters used with non-Beckman Coulter tubes and bottles.

355536 358155 358156



Swinging-Bucket Rotor, Aluminum, Titanium Buckets

Major applications: Harvesting bacteria, processing tissue homogenates, subcellular particulates, routine pelleting such as precipitates and phase separations.

Max. RPM	Max. *g*	*k* Factor	Number of Tubes Volume/Size	Rotor Capacity
24,000*	110,500	376	6 × 15 mL 16 × 96 mm 0.625 × 3.75 in	90 mL

For use in Avanti® J Series centrifuges (except Avanti J-E).

No. 362396. JS-24.15 Swinging-Bucket Rotor with six 15-mL buckets.

Tubes and Bottles

Tube Style/Material	Part No.	Quantity	Nominal Volume per Tube (mL)	Size (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed*
Quick-Seal® Bell-Top Tubes									
Polyallomer	356562	50	4.2	16 x 38	355579†	1	110,500	193	24,000
	345830	50	6.3	16 x 44	355579†	1	110,500	215	24,000
	344621	50	8.0	16 x 57	355579†	1	110,500	261	24,000
	344622	50	10.0	16 x 67	355579†	1	110,500	293	24,000
Open-Top Tubes									
Polyallomer	361707	50	15.0	16 x 96	——	——	110,500	376	24,000
***k*onical Polyallomer**	361708	50	12.5	16 x 93	358155	1	108,500	368	24,000
Ultra-Clear™	361706	50	15.0	16 x 96	——	——	110,500	376	24,000

* *Reaches 24,000 rpm in the Avanti J-30I centrifuge only. Not recommended for use in Avanti J-25 Series (max speed 10,000 rpm), or Avanti J-20XP Series (max. speed 10,000 rpm). Incompatible with all J2 Series.*

† *Noryl Floating Spacer. Noryl is a registered trademark of GE Plastics.*

Rotor Replacement Parts

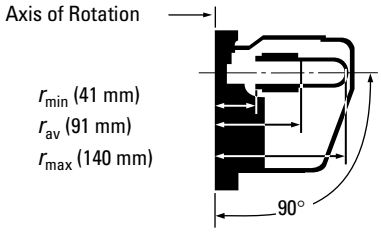
362398	Bucket Set - 15 mL (set of 6 with caps and O-rings)
815472	Bucket O-ring
362785	Rotor Stand
364802	Rotor and Adapter Assembly

Adapters

See chart on page 2–6 for adapters used with non-Beckman Coulter tubes and bottles.

358155

355579



Swinging-Bucket Rotor, Aluminum

Major applications: Harvesting bacteria, processing tissue homogenates, separating cell particulates. Isolation of cell membrane using density gradients.

Max. RPM	Max. *g*	*k* Factor	Number of Tubes Volume/Size	Rotor Capacity
13,000	26,500	1,841	6 x 50 mL 29 x 105 mm 1.125 x 4 in	300 mL

For use in Avanti® J and J-E Series centrifuges.

No. 346963. JS-13.1 Swinging-Bucket Rotor for 13,000 rpm operation. Includes carrying handle. Tubes and bottles not included.

Tubes and Bottles

Tube Style/Material		Part No.	Quantity	Nominal Volume per Tube (mL)	Size (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Bottles with Screw Caps										
Polyallomer		357003	25	50.0	29 x 104	———	———	26,500	1,840	13,000
Polycarbonate		357002	25	50.0	29 x 104	———	———	26,500	1,840	13,000
		355672	25	10.0	16 x 80	342327/870329	1	26,500	1,840	13,000
Tubes with Snap-On Caps										
Polypropylene		357005†	25	50.0	29 x 104	———	———	26,500	1,840	13,000
Polycarbonate		363664†	25	50.0	29 x 104	———	———	26,500	1,840	13,000
Polyethylene		340196	500	1.8	11 x 39	344497*	3	26,500	1,840	13,000
Polyallomer	Natural	357448	500	1.5	11 x 39	344497*	3	26,500	1,840	13,000
Polypropylene	Orange	356094	500	1.5	11 x 39	344497*	3	26,500	1,840	13,000
	Yellow	356093	500	1.5	11 x 39	344497*	3	26,500	1,840	13,000
	Green	356092	500	1.5	11 x 39	344497*	3	26,500	1,840	13,000
	Blue	356091	500	1.5	11 x 39	344497*	3	26,500	1,840	13,000
	Natural	356090	500	1.5	11 x 39	344497*	3	26,500	1,840	13,000
Open-Top Tubes										
Polycarbonate		355630	25	10.0	16 x 76	342326/870329	1	8,000	———	13,000

* *Can be double-stacked. Force will vary depending on tube position.*

† *Cannot be run with caps in this rotor.*

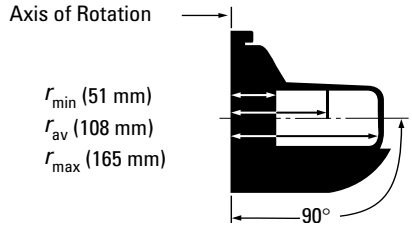
Rotor Replacement Parts

346965	Rotor Removal Tool
346976	Buckets (set of 6)
364862	Rotor Tie-down Assembly
364921	Tie-down Kit
346979	Windshield Bowl Trim
346964	Rotor Lid Assembly

Adapters

See chart on page 2–6 for adapters used with non-Beckman Coulter tubes and bottles.

342326 342327 344497 870329



Swinging-Bucket Rotor, Aluminum

Major applications: Initial processing of cells and removal of cell debris from culture media.

Max. RPM	Max. *g*	*k* Factor	Number of Tubes Volume/Size	Rotor Capacity
7,500	10,400	5,287	4 x 250 mL 62 x 136 mm 2.5 x 5.5 in	1 L

For use in Avanti® J Series centrifuges (except Avanti J-E).

No. 336380. JS-7.5 Swinging-Bucket Rotor for 7,500 rpm operation. Includes four 250-mL buckets. Multitube carriers available separately. Tubes and bottles not included.

No. 362212. JS-7.5 Rotor without buckets.

Multitube Carriers

For added versatility, three Multitube Carriers are available for the JS-7.5 Rotor. These Carriers require no adapters to accommodate 50-mL conical tubes, 50-mL round-bottom tubes, and 5-mL round-bottom tubes. Multitube carriers are interchangeable with the buckets of the JS-7.5 Rotor.

50-mL Conical Tube Carrier

No. 362213. Multitube Carrier for 50-mL conical tubes. Holds three tubes per carrier for maximum rotor capacity of 12 × 50-mL conical tubes. Set of two.

Major applications: General-purpose pelleting (especially of cells), as well as nucleic acid precipitations and isolation of mononuclear cells using Ficoll-Paque.*

Max. RPM	Max. *g*	*k* Factor	Number of Tubes Volume/Size	Rotor Capacity
7,500	10,580	4,140	12 x 50 mL (conical) 29 x 103 mm 1.125 x 4 in	600 mL

50-mL Round-Bottom Tube Carrier

No. 362214. Multitube Carrier for 50-mL round-bottom tubes. Holds four tubes per carrier for maximum rotor capacity of 16 × 50-mL tubes. Set of two.

Major applications: General-purpose centrifugation.

Max. RPM	Max. *g*	*k* Factor	Number of Tubes Volume/Size	Rotor Capacity
7,500	10,080	3,959	16 x 50 mL 29 x 104 mm 1.125 x 4 in	800 mL

5-mL Round-Bottom Tube Carrier

No. 362215. Multitube Carrier for 5-mL round-bottom tubes. Holds 24 tubes per carrier for maximum rotor capacity of 96 × 5-mL tubes. Set of two.

Major applications: RIA and other multitube assays.

Max. RPM	Max. *g*	*k* Factor	Number of Tubes Volume/Size	Rotor Capacity
7,500	8,950	2,818	96 x 5 mL 12 x 75 mm 0.5 x 3 in	480 mL

* *Ficoll-Paque is a registered trademark of Pharmacia Fine Chemicals.*

Tubes for 250-mL Bucket

Tubes and Bottles

Tube Style/Material	Part No.	Quantity	Nominal Volume per Tube (mL)*	Size (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Bottles with Screw Caps									
Polycarbonate	357002	25	50.0	29 x 104	356997	1	9,000	———	7,500
	355673	6	250.0	62 x 136	336389	1	10,400	5,290	7,500
Polypropylene	357003	25	50.0	29 x 104	356997	1	9,000	———	7,500
Bottles with Cap Assemblies									
Polycarbonate	355600	6	50.0	29 x 104	356997	1	9,000	———	7,500
Conical Polycarbonate	356987	6	230.0	62 x 141	356983	1	10,400	5,290	7,500
Wide-mouth Polycarbonate	356013	6	250.0	62 x 120	———	———	10,400	5,290	7,500
Polypropylene	355603	6	50.0	29 x 104	356997	1	9,000	———	7,500
Conical Polypropylene	356989	6	230.0	62 x 141	356983	1	10,400	5,290	7,500
Wide-mouth Polypropylene	356011	6	250.0	62 x 120	———	———	10,400	5,290	7,500
Tubes with Snap-On Caps									
Polycarbonate	363664	25	50.0	29 x 104	356997	1	9,000	———	7,500
Polypropylene	357005	25	50.0	29 x 104	356997	1	9,000	———	7,500
Open Top Tubes									
Polycarbonate (Graduated)	363647	25	50.0	29 x 104	———	———	10,080	5,290	7,500
Polypropylene (Graduated)	357007	25	50.0	17 x 120	356964	1	9,000	———	7,500
BioVials									
Polypropylene	566353	1000	4.0	14 x 55	342098*	9	———	———	7,500

* *Adapter 342098 can be double-stacked to increase rotor capacity.*

Adapters

See chart on page 2–6 for adapters used with non-Beckman Coulter tubes and bottles.

336389 342098 356964 356983 356997

Tubes for 4-place Carrier

Tubes and Bottles

Tube Style/Material	Part No.	Quantity	Nominal Volume per Tube (mL)	Size (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Bottles with Screw Caps									
Polyallomer	357003	25	50.0	29 x 104	———	———	10,400	———	7,500
Polycarbonate	357002	25	50.0	29 x 104	———	———	10,400	———	7,500
Tubes with Snap Caps									
Polycarbonate	363664*	25	50.0	29 x 104	———	———	10,400	———	7,500
Polypropylene	357005*	25	50.0	29 x 104	———	———	10,400	———	7,500
Open-Top Tubes									
Polycarbonate	363647	25	50.0	29 x 104	———	———	10,400	———	7,500

* *See Rotor Manual for instructions on positioning these tubes in the carrier.*

See chart on page 2-6 for adapters used with non-Beckman Coulter tubes and bottles.

Rotor Replacement Parts

885367	Retaining Ring for Rotor Knob Shaft if purchased after 1/1/81. If purchased before 1/1/81, use 885367 and 336747.
816952	Polyethylene Rotor Foot
362216	250-mL Buckets (set of 2)
362212	JS-7.5 Rotor without carriers or buckets
364920	Tie-down Kit
362213	3 x 50 mL Conical Multitube Carriers (set of 2)
362214	4 x 50 mL Round-bottom Multitube Carriers (set of 2)
362215	24 x 5 mL Round-bottom Multitube Carriers (set of 2)

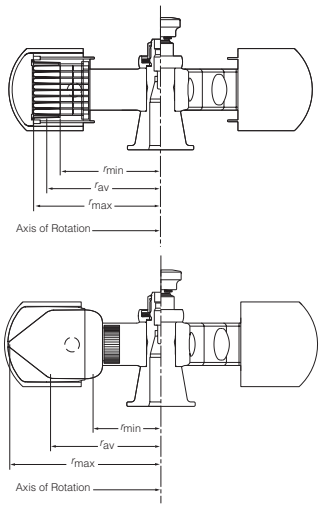
Adapters

See chart on page 2–6 for adapters used with non-Beckman Coulter tubes and bottles.

342098

356983

356997



Swinging-Bucket Rotor, Anodized Aluminum

Major applications: Rapid sedimentation of protein precipitates, large particles, cells, and cell debris. It can be used for binding studies and separating serum from whole blood.

Max. RPM	Max. *g*	Number of Tubes Volume	Rotor Capacity
5,300	6,870	4 x 500 mL	2 L

For use in Avanti® J-E and J-20XP Series centrifuges only.

No. 368690. JS-5.3 Swinging-Bucket Rotor. Four-place rotor with anodized aluminum buckets designed for use with adapters to accommodate a wide range of tubes and bottles. Rotor buckets are interchangeable with microplate carriers. Includes tie-down knob.

No. 969314. JS-5.3 Swinging-Bucket Rotor Package. Includes rotor, buckets, tie-down knob, and microplate carrier kit (368314).

Microplate Carrier Kit

No. 368914. Microplate Carrier Kit. Includes 4 carriers (368905) and 4 support pads (369382).

Replacement Parts for Microplate Carriers

369382 Support Pads (set of 4)
368905 Microplate Carrier (set of 4)

Tubes and Bottles

Size	Required Adapter (pkg. 4)	Adapter Color	Tubes per Adapter	*g*-Force*	Maximum Speed
5 mL round, 13 mm diameter, variable lengths	392071	Beige	33	6,145	5,300
10 mL round, 16 mm diameter, variable lengths	392072	Purple	24	6,145	5,300
15 mL round, 17 mm diameter, variable lengths	392073	Red	20	6,145	5,300
15 mL conical, 17 mm diameter, variable lengths	392075	Green	18	6,425†	5,300
50 mL round, 29 mm diameter, variable lengths	392074	Yellow	8	6,145	5,300
50 mL conical, 30 × 115 mm	392076	Black	7	6,480†	5,300
250 mL round/230 mL conical	392077	Yellow	1	6,670	5,300‡
250 mL conical, 60 × 172 mm	392079	Orange	1	6,870	5,300
500 mL conical	392078	Blue	1	6,870	5,300
15 mL conical	356964 (each)	Yellow	1	6,670	5,300**
50 mL conical	356966 (each)	Yellow	1	6,670	5,300**

* *Maximum RCF and speed for adapters. Use manufacturers' recommendations for tube and bottle limits.*
† *Maximum RCF for labware tested in this adapter is 4,000 × g. Use manufacturers' recommendations for max g-force.*
‡ *Requires a cushion (356983) to be placed at bottom of adapter.*
** *Use this adapter inside the 250-mL adapter (392077) to run tubes at 6,670 × g.*

Adapters

See chart on page 2–6 for adapters used with non-Beckman Coulter tubes and bottles.

392071 392072 392073 392074 392075 392076 392079 392077 392078 356966 356964

Description	Part No.	Quantity	Volume	Maximum Speed	Accessory Description*	Part No.	Quantity
Labware							
Multiwell Polystyrene Plate, 96-Well, Nonsterile	609844	100	300 µL/well	5,300	Cap Strip, Nonsterile† Cap Strip, Sterile† Aluminum Foil Lid‡	267002 267005 538619	12 12 100
Deep-Well Polystyrene Plate, 96-Well, Nonsterile	267001	24	1 mL/well	5,300	Cap Strip, Nonsterile Cap Strip, Sterile Aluminum Foil Lid	267002 267005 538619	12 12 100
Deep-Well Polystyrene Plate, 96-Well, Sterile	267004	24	1 mL/well	5,300	Cap Strip, Nonsterile Cap Strip, Sterile Aluminum Foil Lid	267002 267005 538619	12 12 100
Deep-Well Polypropylene Plate, 96-Well, Nonsterile	267006	24	1 mL/well	5,300	Cap Strip, Nonsterile Cap Strip, Sterile Aluminum Foil Lid	267002 267005 538619	12 12 100
Deep-Well Polypropylene Plate, 96-Well, Sterile	267007	24	1 mL/well	5,300	Cap Strip, Nonsterile Cap Strip, Sterile Aluminum Foil Lid	267002 267005 538619	12 12 100
Square-Well Polystyrene Plate,	140504	24	2 mL/well	5,300	Aluminum Foil Lid	538619	100

* *When stacking polypropylene multiwell plates, place a support pad (369382) beneath the bottom plate and a cap strip between the plates to prevent breakage during centrifugation. Also use the support pad beneath all polystyrene deep-well plates.*

† *Caps are optional.*

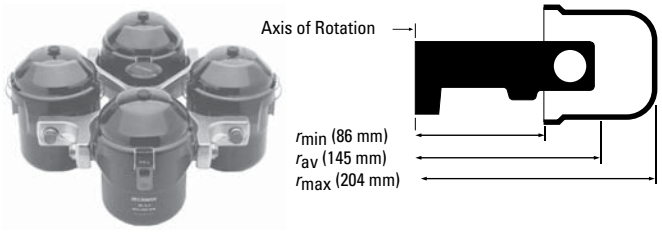
‡ *Requires 4-inch soft-rubber roller (538618) for installation.*

Rotor Replacement Parts

368690 JS-5.3 rotor assembly
368410 Rotor tie-down knob
368415 Bucket (set of 4)
368914 Microplate carrier kit
Contains:
368905 Microplate carrier (set of 4)
369382 Support pad (set of 4)

Rotor Supplies

Replacement tube and bottle adapters (set of 2):
368907 Beige (13 mm dia)
368909 Purple (16 mm dia)
368910 Red (17 mm dia)
368911 Yellow (29 mm dia)
368915 Green (15 mL conical)
368916 Black (50 mL conical)
369385 Orange (250 mL conical)
369383 Yellow (250 mL round/230 mL conical)
369384 Blue (500 mL conical)
538618 Rubber roller, 4-in., for sealing foil microplate lids
339558 Rotor Cleaning Kit
339555 Beckman Solution 555 (1 qt)
339379 Rotor cleaning brush
977212 Paint On Graphite Lubricant (1/2 oz)



Swinging-Bucket Rotor, Anodized Aluminum

Major applications: Rapid sedimentation of protein precipitates, large particles, cells, and cell debris. It can be used for binding studies and separating serum from whole blood.

Max. RPM	Max. *g*	*k* Factor	Number of Tubes Volume/Size	Rotor Capacity
4,300	4,220	11,800	4 x 750 mL 96 x 130 mm 3.8 x 5.2 in	3 L

For use in Avanti® J-20XP Series centrifuges only.

No. 362734. JS-4.3 Swinging-Bucket Rotor. Four-place rotor with anodized aluminum buckets designed for use with modular disk adapters to accommodate a variety of tubes (as indicated in the chart below) and other adapters and blood bag cups. Can be used with Beckman Coulter Aerosolve® Cannisters which are designed to provide added protection from aerosols. Rotor buckets are interchangeable with microplate carriers.

Bucket Covers

No. 361264. Set of two. Transparent bucket covers for JS-4.3 Buckets to contain broken tubes. Includes gasket and clips.

Aerosolve® Cannisters

No. 359232. Set of four.
No. 359481. Set of two.
Aerosolve Cannisters fit in JS-4.3 Rotor Buckets. These cannisters feature an O-ring seal and are completely transparent so a broken tube can be seen and proper precautions taken before you break the seal. Cannisters can also be used as 500-mL wide-mouth bottles. Specially-designed adapters accommodate most popular tubes within the cannister. **In the Tubes and Bottles chart below, specifications and adapters required for the use of tubes within Aerosolve Cannisters are listed in bold type.**

MicroPlus Carriers

No. 362394. MicroPlus Carrier Assembly. Includes carrier, base, and rubber pad to cushion plates. Each carrier can hold up to 3 microplates, 1 deep-well/square well plate, 1 rack of MiniTubes, or other labware in 96-well format. Set of 2. Maximum allowable speed is 3,250 rpm (1924 x *g*).

Replacement Parts for MicroPlus Carrier

361302 Base and Rubber Pads (set of 2)
362390 Rubber Pads (set of 4)
361304 MicroPlus Carriers (set of 2)

Tubes and Bottles

Tube Style/Material	Part No.	Quantity	Nominal Volume per Tube (mL)	Size (mm)	Required Adapters Set of 2/Set of 4	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Bottles with Screw Caps									
Polypropylene	356855	6	750.0	96 x 130	349846 (ea.)	1	4,040	———	4,300
	355665	6	500.0	69 x 159	349945 (ea.)	1	4,150	———	4,300
Polycarbonate	358299	1	750.0	96 x 130	349846 (ea.)	1	4,040	———	4,300
	357002	25	50.0	29 x 104	359474/359153	7	3,830	———	4,300
					359486/359164	**4**	3,670	———	4,300
Polycarbonate	355673	6	250.0	62 x 136	349946 (ea.)	1	4,040	———	4,300
Wide-mouth Polycarbonate	356013	6	250.0	62 x 122	349946 (ea.)	1	4,040	———	4,300
Wide-mouth Polypropylene	356011	6	250.0	62 x 122	349946 (ea.)	1	4,040	———	4,300
Conical Wide-mouth Polypropylene	356989	6	230.0	62 x 141	356983 and 349946* **356985 (ea.)**	1	4,040	———	4,300
Conical Wide-mouth Polycarbonate	356987	6	230.0	62 x 141	356983 and 349946* **356985 (ea.)**	1	4,040	———	4,300
Polyallomer	357003	25	50.0	29 x 104	359474/359153 **359486/359164**	7 **4**	3,830	———	4,300

* *Use adapter 356983 with adapter 349946.*

Adapters

See chart on page 2–6 for adapters used with non-Beckman Coulter tubes and bottles.

349846 349945 349946 356983 356985 359474 359486

Tubes and Bottles

Tube Style/Material	Part No.	Quantity	Nominal Volume per Tube (mL)	Size (mm)	Required Adapters Set of 2/Set of 4	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Bottles with Screw Caps									
Polyallomer	357003	6	50.0	29 x 104	359474/359153 **359486/359164**	7 **4**	———	———	4,300
Polycarbonate	358299	6	750.0	96 x 130	349846 (ea.)	1	———	———	4,300
	355673	6	50.0	29 x 104	349946 (ea.)	1	———	———	4,300
	357002	6	50.0	29 x 104	359474/359153 **359486/359164**	7 **4**	———	———	4,300
Polypropylene	356855	6	750.0	96 x 130	349846 (ea.)	1	———	———	4,300
Bottles with Cap Assemblies									
Polyallomer	357001	6	50.0	29 x 104	359474/359153 **359486/359164**	7 **4**	———	———	4,300
Polycarbonate	356013	6	250.0	62 x 122	349946 (ea.)	1	———	———	4,300
	357000	6	50.0	29 x 104	359474/359153 **359486/359164**	7 **4**	———	———	4,300
Polypropylene	355607	6	500.0	69 x 160	349945 (ea.)	1	———	———	4,300
	355665	6	500.0	69 x 159	349945 (ea.)	1	———	———	4,300
	356011	6	250.0	62 x 122	349946 (ea.)	1	———	———	4,300
Bottles									
Wide-mouth Polycarbonate	358275	25	250.0	62 x 122	349946 (ea.)	1	———	———	4,300
Polypropylene	355650	6	500.0	69 x 159	349945 (ea.)	1	———	———	4,300
Wide-mouth Polypropylene	358326	25	250.0	62 x 120	349946 (ea.)	1	———	———	4,300
Conical Tubes									
Wide-mouth Conical Polycarbonate	356987	6	230.0	62 x 141	356983 and 349946	1	———	———	4,300
Wide-mouth Conical Polypropylene	356989	6	230.0	62 x 141	356983 and 349946	1	———	———	4,300
Open-Top Tubes									
Polyallomer	355640	25	10.0	16 x 76	359471/359150 **359484/359162**	19 **12**	———	———	4,300
Polycarbonate	363664	25	50.0	29 x 103	359474/359153 **359486/359164**	7 **4**	———	———	4,300
	342080	100	15.0	18 x 98	359473/359152	14	———	———	4,300
	355630	25	10.0	16 x 76	359471/359150 **359484/359162**	19 **12**	———	———	4,300
Polyethylene	342081	100	15.0	18 x 98	359473/359152	14	———	———	4,300
Polypropylene	357007	25	50.0	29 x 103	359474/359153 **359486/359164**	7 **4**	———	———	4,300
	342082	100	15.0	18 x 98	359473/359152	14	———	———	4,300
Stainless Steel	301108	1	10.0	16 x 76	359471/359150 **359484/359162**	7 **4**	———	———	4,300

Adapters

See chart on page 2–6 for adapters used with non-Beckman Coulter tubes and bottles.

349846 349945 349946 356983 359471 359473 359474 359484 359486

Tubes and Bottles

Tube Style/Material		Part No.	Quantity	Nominal Volume per Tube (mL)	Size (mm)	Required Adapters Set of 2/Set of 4	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Tubes with Snap-On Caps										
Polyallomer		357448	500	1.5	11 x 38	359469/359148 354511 (ea.)* **354495 (ea.)**	26 **26**	———	———	4,300
Polycarbonate		363664	25	50.0	29 x 103	359474/359153 **359486/359164**	7 **4**	———	———	4,300
Polyethylene	Natural	340196	500	1.8	11 x 39	359469/359148 354511 (ea.)* **354495 (ea.)**	26 **26**	———	———	4,300
Polypropylene		357005	25	50.0	29 x 103	359474/359153 **359486/359164**	7 **4**	———	———	4,300
	Natural†	343169	500	1.5	11 x 38	359469/359148 354511 (ea.)* **354495 (ea.)**	26 **26**	———	———	4,300
	Natural†	356090	500	1.5	11 x 38	359469/359148 354511 (ea.)* **354495 (ea.)**	26 **26**	———	———	4,300
	Blue	356091	500	1.5	11 x 38	359469/359148 354511 (ea.)* **354495 (ea.)**	26 **26**	———	———	4,300
	Green	356092	500	1.5	11 x 38	359469/359148 354511 (ea.)* **354495 (ea.)**	26 **26**	———	———	4,300
	Yellow	356093	500	1.5	11 x 38	359469/359148 354511 (ea.)* **354495 (ea.)**	26 **26**	———	———	4,300
	Orange	356094	500	1.5	11 x 38	359469/359148 354511 (ea.)* **354495 (ea.)**	26 **26**	———	———	4,300
	Green	356092	500	1.5	11 x 38	359469/359148 354511 (ea.)* **354495 (ea.)**	26 **26**	———	———	4,300
BioVials										
Polypropylene		566353	1,000	4.0	14 x 55	359470/359149 **344517 (ea.)**	24 **10**	———	———	4,300

** Tube retainer (P/N 354511) is sold separately.*

† Cap separate.

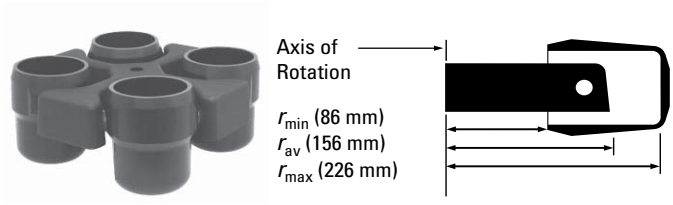
Rotor Replacement Parts

361261	Aluminum Buckets, weight-matched set of 4
362735	Rotor Yoke, forged stainless steel
361264	Bucket Cover Kit
361304	MicroPlus Multiwell Plate Carriers, with bases and pads (set of 2)
361302	Replacement Bases for MicroPlus Carriers, with pads (set of 2)
362390	Replacement Pads for MicroPlus Carriers (set of 4)
362737	Knob Assembly

Adapters

See chart on page 2–6 for adapters used with non-Beckman Coulter tubes and bottles.

344517 354495 354511 359469 359470 359474 359486



Swinging-Bucket Rotor (Unshielded), Aluminum

Major applications: Rapid sedimentation of protein precipitates, large particles, cells, and cell debris. It can be used for binding studies and separating serum from whole blood.

Max. RPM	Max. *g*	Rotor Capacity	Approximate Accel/Decel Time
4,000	4,050	4 Liters, 4 Blood Bags, 12 Microplates, 148 RIA Tubes	1:30/2:00 min.

For use in Avanti® J-20XP Series and J-6 Series centrifuges only.

No. 339086. JS-4.0 Swinging-Bucket Rotor. Unshielded, four-place rotor with aluminum rotor yoke and removable aluminum swinging buckets. Buckets are interchangeable with Microplate Carriers for spinning microtiter plates and MiniTube Racks.
Note: requires tie-down kit P/N 367045 for use with Avanti J-20XP Series Centrifuge.

** When used with optional Aeroseal™ Covers P/N 343686.*

Tubes and Bottles

Tube Style/Material	Part No.	Quantity	Nominal Volume per Tube (mL)	Size (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Bottles with Screw Caps									
Polyallomer	357003	25	50.0	29 x 104	339103	7	———	———	4,000
Polycarbonate	355675	6	1000.0	97 x 167	356096	1	———	———	4,000
	358299	1	750.0	96 x 130	356096	1	———	———	4,000
	355664	6	500.0	69 x 160	339109	1	———	———	4,000
	357002	25	50.0	29 x 104	339103	7	———	———	4,000
Polycarbonate	355672	25	10.0	16 x 80	341977	19	———	———	4,000
Round-bottom Polycarbonate	355673	6	250.0	62 x 136	339108	1	———	———	4,000
Polypropylene	355676	6	1000.0	97 x 167	356096	1	———	———	4,000
	356855	6	750.0	96 x 130	356096	1	———	———	4,000
	355665	6	500.0	69 x 159	339109	1	———	———	4,000
Bottles with Cap Assemblies									
Polyallomer	357001	6	50.0	29 x 104	339103	7	———	———	4,000
Polycarbonate	355620	6	70.0	38 x 102	339104	2	———	———	4,000
	357000	6	50.0	29 x 104	339103	7	———	———	4,000
Wide-mouth Polycarbonate	355605	6	500.0	69 x 160	339109	1	———	———	4,000
	356013	6	250.0	62 x 122	339108	1	———	———	4,000
Polypropylene	355624	6	100.0	38 x 102	339104	2	———	———	4,000
Wide-mouth Polypropylene	355607	6	500.0	69 x 160	339109	1	———	———	4,000
	356011	6	250.0	62 x 122	339108	1	———	———	4,000

Adapters

See chart on page 2–6 for adapters used with non-Beckman Coulter tubes and bottles.

339103 339104 339108 339109 341977 356096

Tubes and Bottles

Tube Style/Material		Part No.	Quantity	Nominal Volume* per Tube (mL)	Size (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Bottles										
Polycarbonate		355649	6	500.0	69 x 160	339109	1	———	———	4,000
		355655	6	70.0	38 x 102	339104	2	———	———	4,000
Wide-mouth Polycarbonate		358275	25	250.0	62 x 122	339108	1	———	———	4,000
Polypropylene		355650	6	500.0	69 x 159	339109	1	———	———	4,000
		355626	6	100.0	38 x 102	339104	2	———	———	4,000
Wide-mouth Polypropylene		358326	25	250.0	62 x 122	339108	1	———	———	4,000
Conical Tubes										
Polycarbonate with cap		356987	6	230.0	62 x 141	356983/339108	1	———	———	4,000
Polypropylene with cap		356989	6	230.0	62 x 141	356983/339108	1	———	———	4,000
Graduated Polypropylene		355663	6	15.0	17 x 120	339102	14	———	———	4,000
Tubes with Snap-On Caps										
Polyallomer	Natural	357448	500	1.5	11 x 38	339100/354511	26	———	———	4,000
	Natural*	343169	500	1.5	11 x 38	339100/354511	26	———	———	4,000
Polycarbonate		363664	6	50.0	29 x 103	339103	7	———	———	4,000
Polyethylene		340196	500	1.8	11 x 39	339100/354511	26	———	———	4,000
Polypropylene	Orange	356094	500	1.5	11 x 38	339100/354511	26	———	———	4,000
	Yellow	356093	500	1.5	11 x 38	339100/354511	26	———	———	4,000
	Green	356092	500	1.5	11 x 38	339100/354511	26	———	———	4,000
	Blue	356091	500	1.5	11 x 38	339100/354511	26	———	———	4,000
	Natural	356090	500	1.5	11 x 38	339100/354511	26	———	———	4,000
Polypropylene		357005	6	50.0	29 x 103	339103	7	———	———	4,000

** Cap separate.*

Adapters

See chart on page 2–6 for adapters used with non-Beckman Coulter tubes and bottles.

339100 339102 339103 339104 339108 339109 341977 354511 356096 356983

Tubes and Bottles *(continued)*

Tube Style/Material	Part No.	Quantity	Nominal Volume per Tube (mL)	Size (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Open-Top Tubes									
Polyallomer	355640	25	10.0	16 x 76	341977	19	———	———	4,000
Polycarbonate	363647	25	50.0	29 x 103	339103	7	———	———	4,000
	342080	100	15.0	18 x 98	339102	14	———	———	4,000
	355630	25	10.0	16 x 76	341977	19	———	———	4,000
Polyethylene	342081	100	15.0	18 x 98	339102	14	———	———	4,000
Polypropylene	357007	25	50.0	29 x 103	339103	7	———	———	4,000
	342082	100	15.0	18 x 98	339102	14	———	———	4,000
BioVials									
Polypropylene	566353	1000	4.0	14 x 55	339101	24	———	———	4,000

Blood-Bag Cups

No. 339127. Yellow cup with inner diameter of 88 mm for single- and double-packs.

No. 339129. Red cup with inner diameter of 98 mm for triple- and quad-packs.

Aeroseal™ Covers

Biosafety

No. 343686. Cover for round buckets of JS-4.0. Features O-ring seal to provide added aerosol protection. Transparent so broken tubes can be detected and proper precautions taken before breaking seal.

Microplate Carriers

No. 358680. Set of two. Special carriers, interchangeable with buckets, slip onto yoke of JS-4.0 Rotor. Each carrier holds three microplates for a total capacity of 12 per run. Maximum speed 2,600 rpm (1450 x *g*).

Rotor Supplies

339031 Rotor Tie-down Screw
341710 Bucket Set (set of 4)
878439 Torquing Bar for Rotor Tie-down Screw
367045 Rotor Tie-down Kit for Avanti® J-20XP Series Centrifuge

Adapters

See chart on page 2–6 for adapters used with non-Beckman Coulter tubes and bottles.

339101 339102 339108 341977

How To Order the JCF-Z Rotor

For a complete Beckman Coulter JCF-Z Rotor system, the following components are required.

1. A JCF-Z Rotor (choose according to application; continuous flow, zonal, or reorienting gradient).
2. Optional high-flow seal assembly for processing up to 100 liters/hour.
3. An appropriate bracket assembly (for Avanti® J Series instruments only).
4. A pump system (not supplied by Beckman Coulter, but recommendations below).
5. A Beckman Coulter J2 Series or Avanti J Series centrifuge.

Continuous-Flow Rotors

No. 335140. JCF-Z Continuous-Flow Rotor, Titanium, Standard Pellet Core. Includes Standard continuous-flow core (pellet size 200 mL), standard-flow rotating seal assembly, and tool kit. Bracket kit required for use with Avanti J Series centrifuges, and pump system required for all applications.

Max. RPM	Max. *g*	*k* Factor	Rotor Capacity
20,000	39,900	100	660 mL

No. 357544. JCF-Z Continuous-Flow Rotor, Titanium, Small Pellet Core. Includes Small Pellet continuous-flow core (pellet size 200 mL), standard-flow rotating seal assembly, and tool kit. Bracket kit required for use with Avanti J Series centrifuges, and pump system required for all applications.

Max. RPM	Max. *g*	*k* Factor	Rotor Capacity
20,000	36,300	281	240 mL

No. 357521. JCF-Z Continuous-Flow Rotor, Titanium, Large Pellet Core. Includes Large Pellet continuous-flow core (pellet size 800 mL), standard-flow rotating seal assembly, and tool kit. Bracket kit required for use with Avanti J Series centrifuges, and pump system required for all applications.

Max. RPM	Max. *g*	*k* Factor	Rotor Capacity
20,000	39,900	293	1,250 mL

Bracket Kits for use with Avanti J-Series Centrifuges

No. 363843. Bracket Kit, for use with Avanti J-25 Series and Avanti J-30I centrifuges, and standard Cole-Parmer size-16 tubing (6.4 mm, 1/4-in. O.D.). For other size tubing, see optional kits below.

No. 366431. Bracket Kit, for use with Avanti J-20XP Series centrifuges, and standard Cole-Parmer size-16 tubing (6.4 mm, 1/4-in. O.D.). For other size tubing, see optional kits below.

No. 363844. Size-14 Tubing Adapter Kit, for use with Cole-Parmer size-14 tubing (4.8 mm, 3/16 in.). Order in addition to one of above Bracket Kits.

No. 363845. Size-15 Tubing Adapter Kit, for use with Cole-Parmer size-15 tubing (9.5 mm, 3/8 in.). Order in addition to one of above Bracket Kits.

Recommended Pumps

The chosen pump must meet the following requirements: (a) has a continuously adjustable flow rate from 6 to 100 mL/min; (b) has a flow rate controllable to within ±1.5%; (c) has a flow rate independent of back pressure up to 40 psi; and (d) has pulsation less than 5% of flow rate.

We recommend Cole-Parmer Masterflex® L/S® Standard Digital Pump E-77921-00 (115 VAC), or L/S Standard Digital Pump E-77921-07 (230 VAC). These are not available from Beckman Coulter, but may be ordered direct from Cole-Parmer (625 East Bunker Court, Vernon Hills, Illinois 60061-1844 USA, Phone 847-549-7600, Fax 847-549-7676, TDD hotline: 800-833-7400, E-mail: info@coleparmer.com). Contact Cole-Parmer directly to receive current ordering information for these or comparable pumps.

These pumps include: Easy-Load® pump head model E-07518-12 (accepts L/S 15 and L/S 24 tubing), 10 ft. (3 m) of Tygon† LFL L/S 24 tubing model E-06429-24 (flow range of 28 to 1700 ml/min), and 10 to 600 rpm standard digital drive model E-07523-20 (115 VAC) or E-07523-27 (230 VAC).

** Masterflex, L/S, and Easy-Load are registered trademarks of Cole-Parmer Instrument Company.*
† Tygon is a registered trademark of Norton Company.

Zonal and Reorienting Gradient Rotors

No. 354006. JCF-Z Zonal Rotor, Titanium.
Includes Zonal core, standard-flow rotating seal assembly, and tool kit. Bracket kit required for use with Avanti J Series centrifuges, and pump system required for all applications.

Max. RPM	Max. *g*	*k* Factor	Rotor Capacity
20,000	39,900	710	1,990 mL

No. 354005. JCF-Z Reorienting Gradient Rotor, Titanium.
Includes reorienting gradient core, sample transfer assembly, and tool kit. Bracket kit required for use with Avanti J Series centrifuges, and pump system required for all applications.

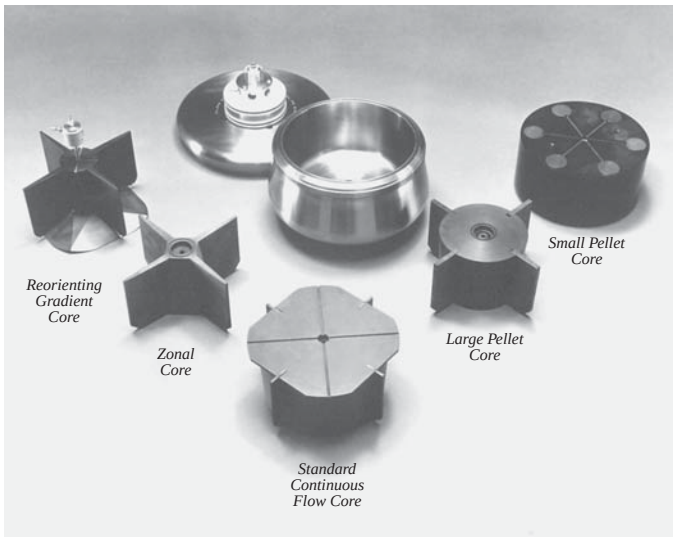
Max. RPM	Max. *g*	*k* Factor	Rotor Capacity
20,000	39,900	779	1,750 mL

Interchangeable Cores and Accessories

335130	Continuous-flow Core, Standard
350641	Continuous-flow Core, Large-Pellet
350601	Continuous-flow Core, Small-Pellet
335141	Zonal Core
343348	Zonal Keylock Switch for J2-21
350585	Reorienting Gradient Core and Sample Transfer Assembly
335142	Standard-flow, Rotating Seal Assembly required for Zonal- and Continuous-flow Operation
335134	High-flow Seal Assembly Kit: permits processing up to 100 liters/hour in Continuous-flow Core

JCF-Z-Rotor Replacement Parts

335144	Rotating Seal, Carbon-graphite
812715	O-ring for JCF-Z Rotor Plug (Min. order 12)
815473	O-ring for JCF-Z Rotor Lid Stem, ⅝" O.D. (Min. order 6)
824412	O-ring for JCF-Z Rotating Seal, ¾" O.D. (Min. order 6)
854519	O-ring for bottom of JCF-Z-Rotor Bowl (Min. order 6)
366190	Bearing, Stainless Steel
870655	O-ring for JCF-Z Rotating Seal, .502 O.D. (Min. order 6)
870688	O-ring for JCF-Z Rotor Lid, 7.188 O.D.
335143	Tool Kit



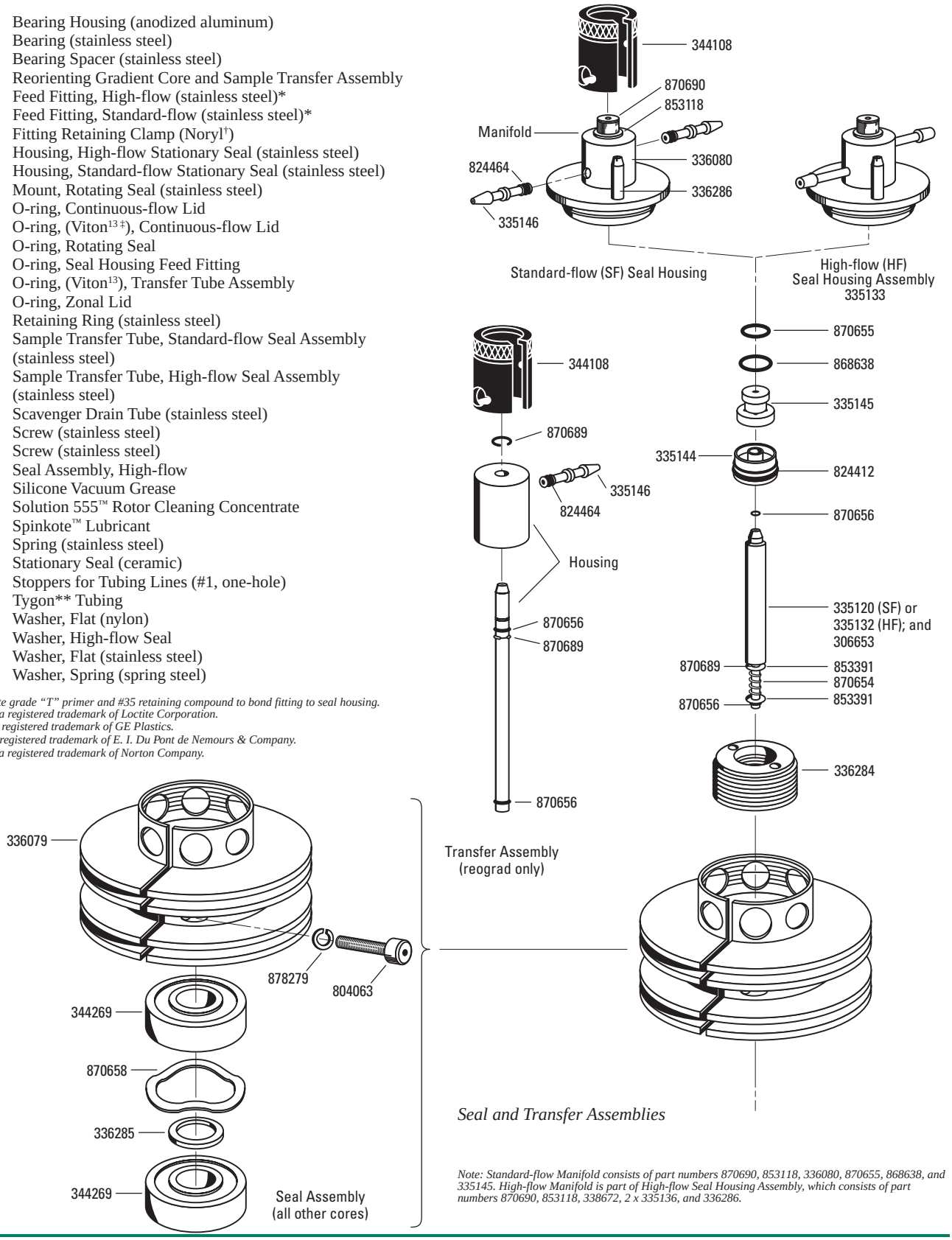
For use in Avanti® J Series centrifuges.

Many of the parts on this list are pictured for easy identification.

Supply List

336079	Bearing Housing (anodized aluminum)
366190	Bearing (stainless steel)
336285	Bearing Spacer (stainless steel)
350585	Reorienting Gradient Core and Sample Transfer Assembly
335136	Feed Fitting, High-flow (stainless steel)*
335146	Feed Fitting, Standard-flow (stainless steel)*
344108	Fitting Retaining Clamp (Noryl†)
338672	Housing, High-flow Stationary Seal (stainless steel)
336080	Housing, Standard-flow Stationary Seal (stainless steel)
336284	Mount, Rotating Seal (stainless steel)
870526	O-ring, Continuous-flow Lid
817033	O-ring, (Viton‡), Continuous-flow Lid
824412	O-ring, Rotating Seal
824464	O-ring, Seal Housing Feed Fitting
870656	O-ring, (Viton), Transfer Tube Assembly
870315	O-ring, Zonal Lid
870689	Retaining Ring (stainless steel)
335120	Sample Transfer Tube, Standard-flow Seal Assembly (stainless steel)
335132	Sample Transfer Tube, High-flow Seal Assembly (stainless steel)
336286	Scavenger Drain Tube (stainless steel)
804063	Screw (stainless steel)
870690	Screw (stainless steel)
335133	Seal Assembly, High-flow
335148	Silicone Vacuum Grease
339555	Solution 555™ Rotor Cleaning Concentrate
306812	Spinkote™ Lubricant
870654	Spring (stainless steel)
335145	Stationary Seal (ceramic)
336403	Stoppers for Tubing Lines (#1, one-hole)
306653	Tygon** Tubing
878279	Washer, Flat (nylon)
853118	Washer, High-flow Seal
853391	Washer, Flat (stainless steel)
870658	Washer, Spring (spring steel)

** Use Loctite grade "T" primer and #35 retaining compound to bond fitting to seal housing. Loctite is a registered trademark of Loctite Corporation.*
† Noryl is a registered trademark of GE Plastics.
‡ Viton is a registered trademark of E. I. Du Pont de Nemours & Company.
*** Tygon is a registered trademark of Norton Company.*



Seal and Transfer Assemblies

Note: Standard-flow Manifold consists of part numbers 870690, 853118, 336080, 870655, 868638, and 335145. High-flow Manifold is part of High-flow Seal Housing Assembly, which consists of part numbers 870690, 853118, 338672, 2 x 335136, and 336286.

High-Capacity Centrifugation

J6 Series High-Capacity Centrifuges
Unmatched Versatility for Multiple-Application Requirements

The J6 Series continues the Beckman Coulter tradition of rugged reliability in a quiet floor centrifuge. The J6, with six-liter capacity, is available in three models — from a basic analog model to sophisticated digital models — and offers a wide range of innovative rotors, carriers, adapters, and other accessories to handle all your high-capacity centrifuge applications. (J6 Series Centrifuges can also run all J2 Series Rotors to 6,000 rpm.)

J6 Series instruments generate speeds and forces to 6,000 rpm and 6,835 x *g*.

Color-Coded Multi-Disc™ Adapters for All Popular Tubes and Bottles

Beckman Coulter's Multi-Disc Adapters bring real convenience to handling large numbers of samples. The first color-coded, stackable adapter discs for large capacity centrifugation, these modular adapter discs can be stacked to support various tube lengths and are easily disassembled for cleaning. A thick rubber bottom pad cushions tubes to protect from breakage. Specific adapters required for use with various tube sizes are included in the following rotor listings.

Aeroseal™ Covers

Aeroseal Covers are designed to provide added protection from hazardous aerosols. They fit the round buckets of J6 Swinging-Bucket Rotors with an O-ring seal. These clear covers let you see a broken tube so proper precautions can be taken before opening. Biosafety

For more information on J6 Series Centrifuges, order Bulletin SB-812.

J6 Series Centrifuges

Part Numbers

	208 V 60 Hz	240 V 50 Hz	220 V 50 Hz
J6-MI High-Capacity Centrifuge with Microprocessor Control and Brushless Induction Drive	360291	360292	360293
J6-MC High-Capacity Centrifuge with Microprocessor Control and Conventional Brush Drive	360281	360282	360283
J6-HC High-Capacity Centrifuge with Analog Control and Conventional Brush Drive	360271	360272	360273

Avanti® J-HC Centrifuges

A New Dimension in Bioprocessing

The Avanti J-HC High Capacity Centrifuge provides you with a complete solution for batch bioprocessing. A maximum of 9 liters can be spun at speeds of 5,000 rpm and 7,480 × *g* for greater sample throughput. This allows processing of up to 36 liters per hour when harvesting bacteria. Enhanced operator safety is provided with disposable HarvestLine™ system liners.

Avanti J-HC High-Capacity Bioprocessing Centrifuge System

Specifications

Maximum Speed	10,000 rpm
Maximum *g*-force	17,100 × *g* (JA-10 rotor @ 10,000 rpm)
Speed Control	± 10 rpm of set speed
Max. Capacity	7,500 mL
Single Bucket Volume	1,250 mL
Set Temperature Range	-10° to 40°C
Temperature Control	± 2°C
User-Settable Programs	30 two-step programs
Friction Reduction	Automatic
Maximum Heat Dissipation to Room	2.0 kW (6,900 BTU/hr)
Noise Level	60 dBa (3 ft. from instrument at 10,000 rpm)
Weight	300 kg (660 lb)
Dimensions	91 cm × 86 cm × 71 cm (36″ H × 34″ D × 28″ W)

Part Numbers

	200/208/240 V 50/60 Hz	230 V 50 Hz	380 V 50 Hz, 3-Phase
Total CGMP Bioprocessing Centrifuge System	367520	367521	367522
Includes: Avanti J-HC system, JS-3.4A-1250 ARIES rotor assembly, one labware kit (P/N 367887), and the SpinTrace II Network base unit (P/N 367515—connectivity up to 8 centrifuges) which includes computer, interface hardware, and bar code scanner (P/N 367516).			
Bioprocessing Centrifuge System	368484	368485	368486
Includes: Avanti J-HC system, JS-3.4A-1250 ARIES rotor assembly, one labware kit (P/N 367887), and one labware kit (P/N 367887)			

HarvestLine™ System Liners

Unique design enhances productivity

The HarvestLine System for the Beckman Coulter JS-5.0 rotor provides a convenient method of loading, recovering, and storing samples run in this rotor. HarvestLine System liners eliminate time-consuming manual scraping of harvested solids from labware and enhance operator biosafety.

HarvestLine liners can be sterilized (gamma radiation), placed in a freezer (-70°C) for prolonged storage, and are compatible with commonly used chemicals and solvents. They facilitate the harvesting of:

- Mammalian and insect culture separations
- Bacterial, yeast, and tissue homogenate isolations
- Virus harvesting for vaccine production—viral vector gene therapy and monoclonal antibody production.

HarvestLine System for JS-5.0 Rotor

Part Numbers

368735	**HarvestLine System Liners** (qty. 50)

SpinTrace™ II Laboratory Information Network System
New process documentation for CGMP compliance in bioprocessing

SpinTrace II is a laboratory information network for the Avanti® J-HC, J-20XPI, and J-25I series centrifuges developed to automatically and accurately collect data to enhance throughput and help meet CGMP compliance for the bioprocessing laboratory.

SpinTrace II is user friendly, providing consistent process control, complete traceability, information management, and centralized monitoring. The system includes an IBM-compatible personal computer that can simultaneously operate up to 32 Avanti J-HC, J-20XPI, and J-25I series centrifuges, each equipped with an optional bar code scanner.

Part Numbers

367515	SpinTrace II Network System & Computer (for connecting up to 8 centrifuges)
975843	SpinTrace II Computer Upgrade Card (to connect 8 to 24 centrifuges)
975844	SpinTrace II Computer Upgrade Card (to connect 24 to 32 centrifuges)
367516	SpinTrace II Interface Hardware (with a bar code scanner)
367517	SpinTrace II Interface Hardware (without a bar code scanner)

High-Capacity Centrifuge/Rotor Compatibility Chart

	Avanti J-HC Max. RPM/ *g* Force	J2-HC Max. RPM/ *g* Force	J6 Series Max. RPM/ *g* Force	Angle	Containment	
Fixed-Angle Rotors						
JA-10	10,000 *17,700*	10,000 *17,700*	6,000 *6,400**	25°	Secondary containment system available	
JLA-8.1000	8,000 *15,900*	N/A	N/A	20°	Secondary containment system available	Biosafety

	Avanti J-HC Max. RPM/ *g* Force	J2-HC Max. RPM/ *g* Force	J6 Series Max. RPM/ *g* Force	Angle	Containment	
Swinging Bucket Rotors						
JS-5.2	N/A	N/A	5,200 *6,840*	Horz.	Aeroseal™ Cover	Biosafety
JS-5.0	5,000 *7,480*	N/A	N/A	Horz.	J-Wide™ Cup Lid O-ring and 0.2-µ filters	
JS-4.3	N/A	4,300 *4,220*	N/A	Horz.	Aerosolve® Cannister	Biosafety
JS-4.2SM **JS-4.2SMA**	N/A	N/A	4,200 *4,900*	Horz.	N/A	
JS-4.2A	4,200 *5,020*	N/A	4,200 *5,020*	Horz.	Aeroseal Cover	Biosafety
JS-4.2	4,200 *5,020*	N/A	4,200 *5,020*	Horz.	Aeroseal Cover	Biosafety
JS-4.0	N/A	N/A	4,000 *4,050*	Horz.	Aeroseal Cover	Biosafety
JS-3.0	N/A	N/A	3,000 *2,560*	Horz.	N/A	Biosafety

	Avanti J-HC Max. RPM/ *g* Force	J2-HC Max. RPM/ *g* Force	J6 Series Max. RPM/ *g* Force
Elutriation, Continuous Flow, and Zonal Rotors			
JE-5.0	N/A	N/A	5,000 *4,700*
JCF-Z **Std. Core**	N/A	18,000 *32,300*	N/A
JCF-Z **Large Core**	N/A	18,000 *32,300*	N/A
JCF-Z **Small Core**	N/A	18,000 *32,300*	N/A
JCF-Z **Reograd Core**	N/A	18,000 *32,300*	N/A
JCF-Z **Zonal Core**	N/A	18,000 *32,300*	N/A

** At maximum speed (6,000 rpm) in these centrifuges.*

High-Capacity Centrifuges Rotor Summary

Rotor Type	Part Number	Maximum Speed (rpm)	Maximum Force at r_{min} (*g*)	Maximum Force at r_{max} (*g*)	*k* Factor	Number Tubes/Bottles and Size (diameter x length) mm / in.	Rotor Capacity (mL)	Approx. Accel. Time[1] (min:sec)	Comments
Swinging-Bucket Rotors									
JS-5.2	339087	5,200	2,600	6,840	3,570	4 x 1000 97 x 167 3.82 x 6.57	4 L	2:00[b]	Rapid sedimentation of protein precipitates, large particles, cells, and cell debris, as well as binding studies and separating serum from whole blood.
JS-5.0	367820	5,000	3,020	7,480	9,171	4 x 2,250	9 L	3:30[d]	Rapid, large-volume separation of bacteria, yeast, and tissue homogenates.
JS-4.3	362734	4,300	1,780	4,220	11,800	4 x 750 96 x 130 3.8 x 5.2	4 L	1:30[c]	Rapid sedimentation of protein precipitates, large particles, cells, and cell debris, as well as binding studies and separating serum from whole blood.
JS-4.2	339080	4,200	2,250	5,020	11,500	6 x 1000 97 x 167 3.82 x 6.57	6 L	2:30	Rapid sedimentation of protein precipitates, large particles, cells, and cell debris, as well as binding studies and separating serum from whole blood.
JS-4.2A	366695	4,200	2,250	5,020	11,500	6 x 1000 97 x 167 3.82 x 6.57	6 L	2:30	Rapid sedimentation of protein precipitates, large particles, cells, and cell debris, as well as binding studies and separating serum from whole blood.
JS-4.2SM	348394	4,200	2,290	4,900	10,900	6 x 660 Triple or quad blood bag pack		2:30	Separation of serum from whole blood and blood component separation.
JS-4.2SMA	366670	4,200	2,290	4,900	10,900	6 x 660 Triple or quad blood bag pack		2:30	Separation of serum from whole blood and blood component separation.
JS-4.0	339086	4,000	1,540	4,050	15,300	4 x 1000 97 x 167 3.82 x 6.57	4 L	1:30[c]	Rapid sedimentation of protein precipitates, large particles, cells, and cell debris, as well as binding studies and separating serum from whole blood.
JS-3.4A-1250	368137	3,400	1,480	3,370	18,044	6 x 1,250	7.5 L	2:30[d]	Bioprocessing application, large-volume mammalian and insect cell separation.
JS-3.0	339081	3,000	1,150	2,560	22,521	6 x 1,000 97 x 167 3.82 x 6.57	6 L	2:00	Sedimenting protein precipitates, large particles, cells, and cell debris.

Rotor Type	Part Number	Maximum Speed (rpm)	Maximum *g* at Point of Elutriation	Flow Rate (mL/min)	Number of Chambers	Rotor Capacity	Sample Capacity	Comments
Elutriator Rotors								
JE-6B[2]	347514	6,000	3,470	5 to 100	1 Flow-through	5 mL Separation chamber	Milligrams to grams	Counterflow centrifugation. Separation by sedimentation rate. Gentle processing of whole cells in isotonic media. Cells remain viable.
JE-5.0[3]	356900	5,000	2,410	5 to 400	1 or 2	40 mL	up to 10^{10} cells	Counterflow centrifugation. Separation by sedimentation rate. Gentle processing of whole cells in isotonic media. Cells remain viable.

1 Accel times are approximate, and subject to change.

2 Use only in Avanti J-25 Series, J-30I, and J2 Series. Requires additional components. See detail page.

3 Use only in Avanti J-20XP Series and J6 Series. Requires additional components. See detail page.

a Typical accel time in Allegra™ 6 Series centrifuge.

b Typical accel time in J-6B centrifuge (rotor fully loaded).

c Typical accel time in Avanti J-20XP Series centrifuge.

d Typical accel time in Avanti® J-HC centrifuge.

Adapter/Accessory Summary

Multi-Disc™ Adapters

Color Code	Typical Tube/Bottle Volume (mL)	Maximum Tube Diameter (mm)	Discs per Adapter*	Tubes per Adapter	Tubes per JS-5.2 or JS-4.0 Rotor	Tubes per JS-4.2, JS-4.2A, or JS-3.0 Rotor	Adapter Assembly Part No.
Blue	3 and 5	12	5	37	148	222	339100
Orange	10	14	6	24	96	144	339101
Purple	12	16	8	19	76	114	341977
Green	20	18	8	14	56	84	339102
Yellow	50	28	7	7	28	42	339103
Light Green	50 conical	29	5	4	16	24	345386
Dark Blue	50	35	7	4	16	24	341794
Brown	100	44	4	2	8	12	339104
Red	250	62	8	1	4	6	339108
Yellow	500	70	9	1	4	6	339109

Replacement Parts for Multi-Disc Adapters

	Rubber Pad	339175
	Bail	339096
	Modified Bail for Use with Aeroseal™ Covers	343369

Bottle Sleeve

Blue	1 Liter	98	———	1	4	6	344040

Double-Stacking Adapter

Blue/White	3- and 5-mL	12	———	19	———	114	339119

Tube-Retaining/Decanting Device

White	3- and 5-mL	12	1	37	148	222	343108

Blood-Bag Cups

Blood-Bag Cup, yellow, for a single or double pack, for JS-5.2, JS-4.2, JS-4.0, JS-3.0	339127
Blood-Bag Cup, orange, for a triple or quad pack, for JS-5.2, JS-4.2, JS-4.0, JS-3.0	339129
Blood-Bag Cup, oval, maroon, for a single or double pack, for JS-4.2SM and JS-4.2SMA	356993
Blood-Bag Cup, orange, for a triple or quad pack, for GH-3.8 and GH-3.8A	356857

** Additional adapter discs can be added. For multiple-hole adapters, the absolute maximum tube length with added discs is 130 mm. Maximum length in the single-hole adapters for bottles is 160 mm.*

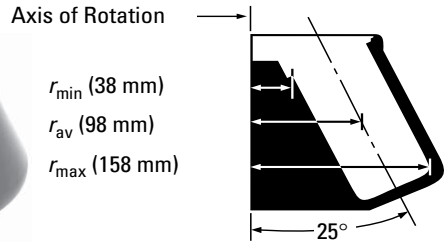
Adapter/Accessory Summary (continued)

	Part No.
Aerosolve® Cannisters	
Aerosolve Cannisters for JS-4.3	343686

Aerosolve Cannister Adapters

Color Code	Typical Tube/Bottle Volume (mL)	Maximum Tube Diameter (mm)	Tubes per Adapter	Tubes per JS-4.3, GH-3.8 or GH-3.8A Rotor	Adapter Assembly Part No. (set of 4)	Adapter Assembly Part No. (set of 2)
White	1.5	11	24	96	354495	———
Blue	3 and 5	12	24	96	359482	359160
Tan	5	13	24	96	359489	358993
Orange	10	14	18	72	359483	359161
Purple	12 3 and 5	16 12	12 6	48 24	359484	359162
White (vials)	15	14	10	40	344517	———
Green	15 and 20 3 and 5	18 12	12 6	48 24	359485	359163
Light Green (conical)	15 3 and 5	17 12	6 6	24 24	359487	358991
Lime Green (conical)	50 3 and 5	30 12	4 6	16 24	359488	358992
Yellow	50 3 and 5	70 12	1 4	4 16	359486	359164
Cannister Kit	500	——	——	——	359481	359232

Aeroseal™ Covers	
Aeroseal Covers for Round Buckets, for JS-5.2, JS-4.2, JS-4.2A, JS-4.0, JS-3.0	343686
Bails for Multi-Disc Adapters when Aeroseal Covers are used in round buckets	343369



Fixed-Angle Rotor, Aluminum

Major applications: Large-volume for initial processing of tissue homogenates and other large particles.

Max. RPM	Max. *g*	*k* Factor	Number of Tubes Volume/Size	Rotor Capacity
10,000	17,700	3,610	6 x 500 mL 69 x 160 mm 2.75 x 6.5 in	3 L

For use in Avanti® J-HC, Avanti J2-HC, and J6 series centrifuges.

No. 369687. JA-10 Fixed-Angle Rotor for 10,000 rpm operation.
Includes carrying handle. Tubes and bottles not included.

Tubes and Bottles

Tube Style/Material	Part No.	Quantity	Nominal Volume per Tube (mL)	Size (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Bottles with Cap Assemblies									
Polyallomer	357001	6	50.0	29 x 104	356996	1	17,700	———	10,000
Polycarbonate	355605	6	500.0	69 x 160	———	———	17,700	3,610	10,000
	357000	6	50.0	29 x 104	356996	1	17,700	———	10,000
Wide-mouth Polycarbonate	356013	6	250.0	69 x 120	362750	1	17,700	———	10,000
Polypropylene	355607	6	500.0	69 x 159	———	———	11,300	3,610	8,000
Wide-mouth Polypropylene	356011	6	250.0	62 x 120	362750	1	17,700	———	10,000
Bottles with Screw Caps									
Polyallomer	357003	25	50.0	29 x 104	356996	1	17,700	———	10,000
Polycarbonate	355664	6	500.0	69 x 160	———	———	17,700	3,610	10,000
	357002	25	50.0	29 x 104	356996	1	17,700	———	10,000
Polypropylene	355665	6	500.0	69 x 159	———	———	4,400	3,610	5,000
Tubes with Snap-On Caps									
Polycarbonate	363664	25	50.0	29 x 104	356996	1	17,700	———	10,000
Thickwall Polypropylene	357005	25	50.0	29 x 104	356996	1	17,700	———	10,000
Open-Top Tubes									
Polycarbonate	363647	25	50.0	29 x 104	356996	1	17,700	———	10,000
Thickwall Polypropylene	357007	25	50.0	29 x 104	356996	1	17,700	———	10,000
Conical Graduated Polypropylene	355663	6	15.0	17 x 119	356960	5	7,000	———	6,500
BioVials									
Polypropylene	566353	1000	4.0	14 x 55	362750/342098*	9	17,700	———	10,000

* *BioVials require adapters P/N 362750 AND 342098 to run in the JA-10. Two adapters P/N 342098 can be double-stacked inside of one adapter P/N 362750 per rotor cavity if greater capacity is desired.*

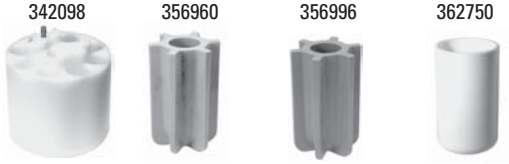
Rotor Replacement Parts

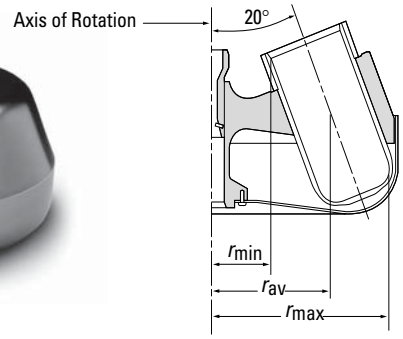
346965	Rotor Removal Tool
338689	Collar Adapter for Rotor Removal Tool
870139	O-ring for Rotor Lid
870980	O-ring for Rotor Body
364911	Tie-down Kit
334492	Rotor Lid

Adapters

See chart on page 2–6 for adapters used with non-Beckman Coulter tubes and bottles.

342098 356960 356996 362750





Fixed-Angle Rotor, Aluminum

Major applications: General purpose, large-volume processing, pelleting of bacteria, cell organelles, viruses, and precipitates. Empty rotor weight is 16.8 kg (37 lb).

Max. RPM	Max. *g*	*k* Factor	Number of Bottles Volume/Size	Rotor Capacity
8,000	15,900	2,470	6 x 1000 mL 95 x 191 mm 3.8 x 7.65 in.	6 L

For use in Avanti® J-HC centrifuges only.

No. 363688. J-Lite® JLA-8.1000 Rotor Package (includes rotor body, lid, carbon fiber cannisters, and labware kit 392574.

No. 969328. J-Lite JLA-8.1000 Rotor Package
Includes rotor body, lid, carbon fiber cannisters, labware kit 392574, and 6 polycarbonate bottles with cap assemblies (three 363676).

No. 969329. J-Lite JLA-8.1000 Rotor Package
Includes rotor body, lid, carbon fiber cannisters, labware kit 392574, and 6 polypropylene bottles with cap assemblies (three 363678).

Tubes and Bottles

Tube Style/Material	Part No.	Quantity	Nominal Volume per Tube (mL)	Size (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed*
Bottle with Cap Assemblies†									
J-Lite PC-1000‡ (Polycarbonate)	363676	2	1000.0	95 x 191	———	———	15,900	2,500	8,000
J-Lite PP-1000 (Polypropylene)**	363678	2	1000.0	95 x 191	———	———	12,200	2,845	7,000
Bottles Only									
J-Lite PC-1000 (Polycarbonate)	366751	2	1000.0	95 x 191	———	———	15,900	2,500	8,000
J-Lite PP-1000 (Polypropylene)	366752	2	1000.0	95 x 191	———	———	12,200	2,845	7,000

Labware Kit Part Number 363681

Labware Kit Part Number 392574

Includes: 1 ea. 974627 Bottle Rack (holds 6 bottles)
1 ea. 363646 Spatula
1 ea. 366770 Tool Kit

Accessories

974627 Bottle Rack (holds 6 bottles for easy transport)
363663 Bottle Rack (holds 3 bottles for easy transport)
363646 Spatula
363689 Vent Plug Screw and O-ring (pkg. of 6)
363680 Cap/Closure Assembly (set of 2)
(Includes cap/closure, O-ring, plug, and plug O-ring)
366748 Plug Assembly, AutoVent Polycarbonate (pkg. of 2)
366749 Plug Assembly, AutoVent Ultem[1] (pkg. of 2)
366770 Tool Kit (includes one bottle grip and one wrench)
366772 Teflon Spray

Rotor Replacement Parts

363583 Rotor Lid Assembly
363686 J-Lite JLA-9.1000 Removable Cannisters (set of 2)
970884 O-ring, Cap/Closure
970883 O-ring, Plug
363601 Cannister Sleeve Washer (set of 6)
366768 Cap/Closure Replacement Assembly (set of 6)
366769 Cap/Closure Replacement O-rings (set of 6)
366767 AutoVent Plug Replacment O-rings (set of 6)
Includes six large plug O-rings and six AutoVent plug O-rings.

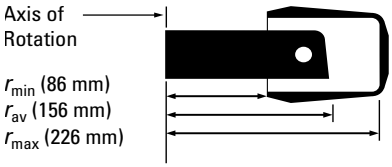
* *All maximum speed and RCF values are for Avanti J Series Centrifuges. Maximum speeds listed are guidelines only. These speeds have been achieved in reliability tests at Beckman Coulter, but because of manufacturing variances, no guarantee of performance or fit is expressed or implied.*

† *Bottle assemblies include cap/closure. The cap/closure serves the dual purpose of sealing the bottle and providing a secondary seal on the carbon-fiber cannister to minimize sample loss resulting from bottle leak or failure.*

‡ *PC-1000 must be run with cap/closure, minimum fill volume is 500 mL.*

** *PP-1000 must be run with cap/closure, minimum fill volume is 1000 mL.*

1 *Ultem is a registered trademark of GE Plastics.*



Swinging-Bucket Rotor (Windshielded)

Major applications: Rapid sedimentation of protein precipitates, large particles, cells, and cell debris. It can be used for binding studies and separating serum from whole blood.

Max. RPM	Max. *g*	Rotor Capacity	Approximate Accel/Decel Time (min:sec)
5,200	6,840	4 Liters, 4 Blood Bags, 12 Microplates, 148 RIA-Tubes	2:00/2:30

For use in J6 Series centrifuges only.

No. 339087. JS-5.2 Swinging-Bucket Rotor. Windshielded, four-place rotor with aluminum rotor yoke and removable aluminum swinging buckets. Buckets are interchangeable with Microplate Carriers for spinning microtiter plates and MiniTube Racks.
Note: requires tie-down kit P/N 367045 for use with Avanti J-20XP Series Centrifuge.
** When used with optional Aeroseal™ Covers, P/N 343686.*

Tubes and Bottles

Tube Style/Material	Part No.	Quantity	Nominal Volume per Tube (mL)	Size (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Bottles with Screw Caps									
Polyallomer	357003	25	50.0	29 x 104	339103	7	———	———	5,200
Polycarbonate	355675	6	1000.0	97 x 167	356096	1	———	———	5,200
	358299	1	750.0	96 x 130	356096	1	———	———	5,200
	355664	6	500.0	69 x 160	339109	1	———	———	5,200
	357002	25	50.0	29 x 104	339103	7	———	———	5,200
Polycarbonate	355672	25	10.0	16 x 80	341977	19	———	———	5,200
Round-bottom Polycarbonate	355673	6	250.0	62 x 136	339108	1	———	———	5,200
Polypropylene	355676	6	1000.0	97 x 167	356096	1	———	———	5,200
	356855	6	750.0	96 x 130	356096	1	———	———	5,200
	355665	6	500.0	69 x 159	339109	1	———	———	5,200
Bottles with Cap Assemblies									
Polyallomer	357001	6	50.0	29 x 104	339103	7	———	———	5,200
Polycarbonate	355620	6	70.0	38 x 102	339104	2	———	———	5,200
	357000	6	50.0	29 x 104	339103	7	———	———	5,200
Wide-mouth Polycarbonate	355605	6	500.0	69 x 160	339109	1	———	———	5,200
	356013	6	250.0	62 x 122	339108	1	———	———	5,200
Polypropylene	355624	6	100.0	38 x 102	339104	2	———	———	5,200
Wide-mouth Polypropylene	355607	6	500.0	69 x 160	339109	1	———	———	5,200
	356011	6	250.0	62 x 122	339108	1	———	———	5,200

Adapters

See chart on page 2–6 for adapters used with non-Beckman Coulter tubes and bottles.

339103 339104 339108 339109 341977 356096

Tubes and Bottles

Tube Style/Material		Part No.	Quantity	Nominal Volume* per Tube (mL)	Size (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Bottles										
Polycarbonate		355649	6	500.0	69 x 160	339109	1	———	———	5,200
		355655	6	70.0	38 x 102	339104	2	———	———	5,200
Wide-mouth Polycarbonate		358275	25	250.0	62 x 122	339108	1	———	———	5,200
Polypropylene		355650	6	500.0	69 x 159	339109	1	———	———	5,200
		355626	6	100.0	38 x 102	339104	2	———	———	5,200
Wide-mouth Polypropylene		358326	25	250.0	62 x 122	339108	1	———	———	5,200
Conical Tubes										
Polycarbonate with cap		356987	6	230.0	62 x 141	356983/339108	1	———	———	5,200
Polypropylene with cap		356989	6	230.0	62 x 141	356983/339108	1	———	———	5,200
Graduated Polypropylene		355663	6	15.0	17 x 120	339102	14	———	———	5,200
Tubes with Snap-On Caps										
Polyallomer	Natural	357448	500	1.5	11 x 38	339100/354511	26	———	———	5,200
	Natural*	343169	500	1.5	11 x 38	339100/354511	26	———	———	5,200
Polycarbonate		363664	6	50.0	29 x 103	339103	7	———	———	5,200
Polyethylene		340196	500	1.8	11 x 39	339100/354511	26	———	———	5,200
Polypropylene	Orange	356094	500	1.5	11 x 38	339100/354511	26	———	———	5,200
	Yellow	356093	500	1.5	11 x 38	339100/354511	26	———	———	5,200
	Green	356092	500	1.5	11 x 38	339100/354511	26	———	———	5,200
	Blue	356091	500	1.5	11 x 38	339100/354511	26	———	———	5,200
	Natural	356090	500	1.5	11 x 38	339100/354511	26	———	———	5,200
Polypropylene		357005	6	50.0	29 x 103	339103	7	———	———	5,200

** Cap separate.*

Adapters

See chart on page 2–6 for adapters used with non-Beckman Coulter tubes and bottles.

339100 339102 339103 339104 339108 339109 341977 354511 356096 356983

Tubes and Bottles *(continued)*

Tube Style/Material	Part No.	Quantity	Nominal Volume per Tube (mL)	Size (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Open-Top Tubes									
Polyallomer	355640	25	10.0	16 x 76	341977	19	———	———	5,200
Polycarbonate	363647	25	50.0	29 x 103	339103	7	———	———	5,200
	342080	100	15.0	18 x 98	339102	14	———	———	5,200
	355630	25	10.0	16 x 76	341977	19	———	———	5,200
Polyethylene	342081	100	15.0	18 x 98	339102	14	———	———	5,200
Polypropylene	357007	25	50.0	29 x 103	339103	7	———	———	5,200
	342082	100	15.0	18 x 98	339102	14	———	———	5,200
BioVials									
Polypropylene	566353	1000	4.0	14 x 55	339101	24	———	———	5,200

Blood-Bag Cups

No. 339127. Yellow cup with inner diameter of 88 mm for single- and double-packs.

No. 339129. Red cup with inner diameter of 98 mm for triple- and quad-packs.

Aeroseal™ Covers

Biosafety

No. 343686. Cover for round buckets of JS-5.2. Features O-ring seal to provide added aerosolprotection. Transparent so broken tubes can be detected and proper precautions taken before breaking seal.

Microplate Carriers

No. 358680. Set of two. Special carriers, interchangeable with buckets, slip onto yoke of JS-5.2 Rotor. Each carrier holds three microplates for a total capacity of 12 per run. Maximum speed 2,600 rpm (1450 x *g*).

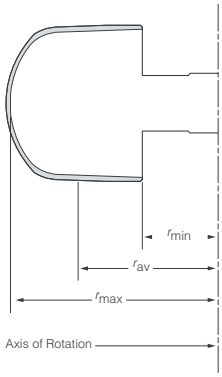
Rotor Supplies

339031 Rotor Tie-down Screw
341710 Bucket Set (set of 4)
878439 Torquing Bar for Rotor Tie-down Screw
367045 Rotor Tie-down Kit for Avanti® J-20XP Series Centrifuge

Adapters

See chart on page 2–6 for adapters used with non-Beckman Coulter tubes and bottles.

339101 339102 339108 341977



Swinging-Bucket Rotor, Anodized Aluminum

Major applications: Separating bacterial, yeast, and tissue homogenates; harvesting cultures.

Max. RPM	Max. *g*	*k* Factor	Number of Containers	Rotor Capacity
5,000	7,480	9,171	4 x 2.25 L	9 L

For use in Avanti® J-HC centrifuges only.

No. 367820. JS-5.0 Swinging-Bucket Rotor Assembly with Labware Kit. Four-place rotor with anodized aluminum buckets. Includes 4 cups, 4 cup covers with plugs, 8 red cup gaskets, 4 green liner gaskets, 60 air vent filters, 50 HarvestLine™ system liners, 2 cup racks, 1 spatula.

No. 368968. JS-5.0 Swinging-Bucket Rotor Assembly.

Labware Kit

No. 368732. Includes 4 cups, 4 cup covers with plugs, 8 red cup gaskets, 4 green liner gaskets, 60 air vent filters, 50 HarvestLine™ system liners, 2 cup racks, 1 spatula.

Container Assembly

No. 368730. Includes 4 cups, 4 covers with plugs, and 4 cup gaskets (369257).

HarvestLine System Liners

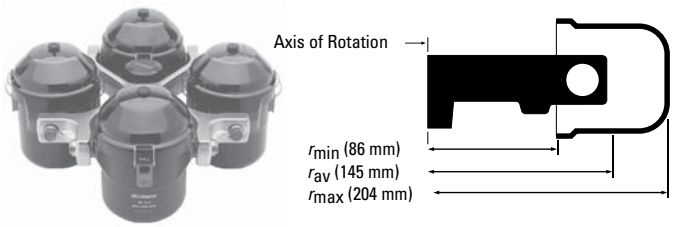
No. 368735. Set of 50 polyethylene system liners (food grade ccompliant).

Rotor Accessories

368727 Rack
367891 Spatula (set of 2)
369259 Partition (set of 4)
367837 Buckets (set of 4)
369257 Gaskets, Cup (red, set of 4)
369261 Gaskets, Liner (green, set of 4)
977212 Paint-on Graphite Lubricant
339558 Rotor Cleaning Kit
339555 Solution 555™ (1 qt)
306812 Spinkote™ Lubricant (2 oz)

Rotor Replacement Parts

346965 Rotor Removal Tool
367824 Tie-down Bolt
368521 Tie-down Tool



Swinging-Bucket Rotor, Anodized Aluminum

Major applications: Rapid sedimentation of protein precipitates, large particles, cells, and cell debris. It can be used for binding studies and separating serum from whole blood.

Max. RPM	Max. *g*	*k* Factor	Number of Tubes Volume/Size	Rotor Capacity
4,300	4,220	11,800	4 x 750 mL 96 x 130 mm 3.8 x 5.2 in	3 L

For use in Avanti® J-20XP Series and J-HC centrifuges only.

No. 362734. JS-4.3 Swinging-Bucket Rotor. Four-place rotor with anodized aluminum buckets designed for use with modular disk adapters to accommodate a variety of tubes (as indicated in the chart below) and other adapters and blood bag cups. Can be used with Beckman Coulter Aerosolve® Cannisters which are designed to provide added protection from aerosols. Rotor buckets are interchangeable with microplate carriers.

Bucket Covers

No. 361264. Set of two. Transparent bucket covers for JS-4.3 Buckets to contain broken tubes. Includes gasket and clips.

Aerosolve® Cannisters

No. 359232. Set of four.
No. 359481. Set of two.
Aerosolve Cannisters fit in JS-4.3 Rotor Buckets. These cannisters feature an O-ring seal and are completely transparent so a broken tube can be seen and proper precautions taken before you break the seal. Cannisters can also be used as 500-mL wide-mouth bottles. Specially-designed adapters accommodate most popular tubes within the cannister. **In the Tubes and Bottles chart below, specifications and adapters required for the use of tubes within Aerosolve Cannisters are listed in bold type.**

MicroPlus Carriers

No. 362394. MicroPlus Carrier Assembly. Includes carrier, base, and rubber pad to cushion plates. Each carrier can hold up to 3 microplates, 1 deep-well/square well plate, 1 rack of MiniTubes, or other labware in 96-well format. Set of 2. Maximum allowable speed is 3,250 rpm (1924 x *g*).

Replacement Parts for MicroPlus Carrier

361302 Base and Rubber Pads (set of 2)
362390 Rubber Pads (set of 4)
361304 MicroPlus Carriers (set of 2)

Tubes and Bottles

Tube Style/Material	Part No.	Quantity	Nominal Volume per Tube (mL)	Size (mm)	Required Adapters Set of 2/Set of 4	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Bottles with Screw Caps									
Polypropylene	356855	6	750.0	96 x 130	349846 (ea.)	1	4,040	———	4,300
	355665	6	500.0	69 x 159	349945 (ea.)	1	4,150	———	4,300
Polycarbonate	358299	1	750.0	96 x 130	349846 (ea.)	1	4,040	———	4,300
	357002	25	50.0	29 x 104	359474/359153	7	3,830	———	4,300
					359486/359164	**4**	3,670	———	4,300
Polycarbonate	355673	6	250.0	62 x 136	349946 (ea.)	1	4,040	———	4,300
Wide-mouth Polycarbonate	356013	6	250.0	62 x 122	349946 (ea.)	1	4,040	———	4,300
Wide-mouth Polypropylene	356011	6	250.0	62 x 122	349946 (ea.)	1	4,040	———	4,300
Conical Wide-mouth Polypropylene	356989	6	230.0	62 x 141	356983 and 349946* **356985 (ea.)**	1	4,040	———	4,300
Conical Wide-mouth Polycarbonate	356987	6	230.0	62 x 141	356983 and 349946* **356985 (ea.)**	1	4,040	———	4,300
Polyallomer	357003	25	50.0	29 x 104	359474/359153 **359486/359164**	7 **4**	3,830	———	4,300

* *Use adapter 356983 with adapter 349946.*

Adapters

See chart on page 2–6 for adapters used with non-Beckman Coulter tubes and bottles.

349846 349945 349946 356983 356985 359474 359486

Tubes and Bottles

Tube Style/Material	Part No.	Quantity	Nominal Volume per Tube (mL)	Size (mm)	Required Adapters Set of 2/Set of 4	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Bottles with Screw Caps									
Polyallomer	357003	6	50.0	29 x 104	359474/359153 **359486/359164**	7 **4**	———	———	4,300
Polycarbonate	358299	6	750.0	96 x 130	349846 (ea.)	1	———	———	4,300
	355673	6	50.0	29 x 104	349946 (ea.)	1	———	———	4,300
	357002	6	50.0	29 x 104	359474/359153 **359486/359164**	7 **4**	———	———	4,300
Polypropylene	356855	6	750.0	96 x 130	349846 (ea.)	1	———	———	4,300
Bottles with Cap Assemblies									
Polyallomer	357001	6	50.0	29 x 104	359474/359153 **359486/359164**	7 **4**	———	———	4,300
Polycarbonate	356013	6	250.0	62 x 122	349946 (ea.)	1	———	———	4,300
	357000	6	50.0	29 x 104	359474/359153 **359486/359164**	7 **4**	———	———	4,300
Polypropylene	355607	6	500.0	69 x 160	349945 (ea.)	1	———	———	4,300
	355665	6	500.0	69 x 159	349945 (ea.)	1	———	———	4,300
	356011	6	250.0	62 x 122	349946 (ea.)	1	———	———	4,300
Bottles									
Wide-mouth Polycarbonate	358275	25	250.0	62 x 122	349946 (ea.)	1	———	———	4,300
Polypropylene	355650	6	500.0	69 x 159	349945 (ea.)	1	———	———	4,300
Wide-mouth Polypropylene	358326	25	250.0	62 x 120	349946 (ea.)	1	———	———	4,300
Conical Tubes									
Wide-mouth Conical Polycarbonate	356987	6	230.0	62 x 141	356983 and 349946	1	———	———	4,300
Wide-mouth Conical Polypropylene	356989	6	230.0	62 x 141	356983 and 349946	1	———	———	4,300
Open-Top Tubes									
Polyallomer	355640	25	10.0	16 x 76	359471/359150 **359484/359162**	19 **12**	———	———	4,300
Polycarbonate	363664	25	50.0	29 x 103	359474/359153 **359486/359164**	7 **4**	———	———	4,300
	342080	100	15.0	18 x 98	359473/359152	14	———	———	4,300
	355630	25	10.0	16 x 76	359471/359150 **359484/359162**	19 **12**	———	———	4,300
Polyethylene	342081	100	15.0	18 x 98	359473/359152	14	———	———	4,300
Polypropylene	357007	25	50.0	29 x 103	359474/359153 **359486/359164**	7 **4**	———	———	4,300
	342082	100	15.0	18 x 98	359473/359152	14	———	———	4,300
Stainless Steel	301108	1	10.0	16 x 76	359471/359150 **359484/359162**	7 **4**	———	———	4,300

Adapters

See chart on page 2–6 for adapters used with non-Beckman Coulter tubes and bottles.

349846 349945 349946 356983 359471 359473 359474 359484 359486

Tubes and Bottles

Tube Style/Material		Part No.	Quantity	Nominal Volume per Tube (mL)	Size (mm)	Required Adapters Set of 2/Set of 4	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Tubes with Snap-On Caps										
Polyallomer		357448	500	1.5	11 x 38	359469/359148 354511 (ea.)* **354495 (ea.)**	26 **26**	———	———	4,300
Polycarbonate		363664	25	50.0	29 x 103	359474/359153 **359486/359164**	7 **4**	———	———	4,300
Polyethylene	Natural	340196	500	1.8	11 x 39	359469/359148 354511 (ea.)* **354495 (ea.)**	26 **26**	———	———	4,300
Polypropylene		357005	25	50.0	29 x 103	359474/359153 **359486/359164**	7 **4**	———	———	4,300
	Natural†	343169	500	1.5	11 x 38	359469/359148 354511 (ea.)* **354495 (ea.)**	26 **26**	———	———	4,300
	Natural†	356090	500	1.5	11 x 38	359469/359148 354511 (ea.)* **354495 (ea.)**	26 **26**	———	———	4,300
	Blue	356091	500	1.5	11 x 38	359469/359148 354511 (ea.)* **354495 (ea.)**	26 **26**	———	———	4,300
	Green	356092	500	1.5	11 x 38	359469/359148 354511 (ea.)* **354495 (ea.)**	26 **26**	———	———	4,300
	Yellow	356093	500	1.5	11 x 38	359469/359148 354511 (ea.)* **354495 (ea.)**	26 **26**	———	———	4,300
	Orange	356094	500	1.5	11 x 38	359469/359148 354511 (ea.)* **354495 (ea.)**	26 **26**	———	———	4,300
	Green	356092	500	1.5	11 x 38	359469/359148 354511 (ea.)* **354495 (ea.)**	26 **26**	———	———	4,300
BioVials										
Polypropylene		566353	1,000	4.0	14 x 55	359470/359149 **344517 (ea.)**	24 **10**	———	———	4,300

** Tube retainer (P/N 354511) is sold separately.*
† Cap separate.

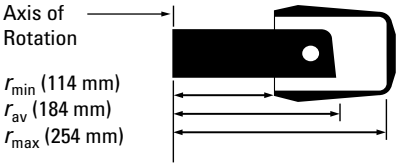
Rotor Replacement Parts

361261	Aluminum Buckets, weight-matched set of 4
361251	Rotor Yoke, forged stainless steel
361264	Bucket Cover Kit
361304	MicroPlus Multiwell Plate Carriers, with bases and pads (set of 2)
361302	Replacement Bases for MicroPlus Carriers, with pads (set of 2)
362390	Replacement Pads for MicroPlus Carriers (set of 4)
362737	Knob Assembly

Adapters

See chart on page 2–6 for adapters used with non-Beckman Coulter tubes and bottles.

344517 354495 354511 359469 359470 359474 359486



Swinging-Bucket Rotor (Windshielded)

Major applications: Rapid sedimentation of protein precipitates, large particles, cells, and cell debris. It can be used for binding studies and separating serum from whole blood.

Max. RPM	Max. *g*	Rotor Capacity	Approximate Accel/Decel Time (min:sec)
4,200	5,020	6 Liters, 6 Blood Bags, 18 Microplates, 336 RIA-Tubes	2:30/3:00

For use in Avanti® J-HC and J6 Series centrifuges only.

No. 339080. JS-4.2 Swinging-Bucket Rotor. Windshielded, six-place rotor with aluminum rotor yoke and removable aluminum swinging buckets.

Buckets are interchangeable with Microplate Carriers 358682† for spinning microtiter plates and MiniTube Racks.

** When used with optional Aeroseal™ Covers, P/N 343686.*

† Microplate carriers cannot be run in the Avanti J-HC centrifuge.

Tubes and Bottles

Tube Style/Material	Part No.	Quantity	Nominal Volume per Tube (mL)	Size (mm)	Required Adapters (Multi-Disc™)	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Bottles with Screw Caps									
Polyallomer	357003	25	50.0	29 x 104	339103	7	5,020	———	4,200
Polycarbonate	355675*	6	1000.0	97 x 167	356096	1	5,020	———	4,200
	358299*	1	750.0	96 x 130	356096	1	5,020	———	4,200
	355664	6	500.0	69 x 160	339109	1	5,020	———	4,200
	355673	6	250.0	62 x 136	339108	1	5,020	———	4,200
	357002	25	50.0	29 x 104	339103	7	5,020	———	4,200
	355672	25	10.0	16 x 80	341977	19	5,020	———	4,200
Polypropylene	355676*	6	1000.0	97 x 167	356096	1	5,020	———	4,200
	356855*	6	750.0	96 x 130	356096	1	5,020	———	4,200
	355665	6	500.0	69 x 159	339109	1	5,020	———	4,200
Bottles with Cap Assemblies									
Polyallomer	357001	6	50.0	29 x 104	339103	7	5,020	———	4,200
Polycarbonate	355620	6	70.0	38 x 102	339104	2	5,020	———	4,200
	357000	6	50.0	29 x 104	339103	7	5,020	———	4,200
Wide-mouth Polycarbonate	355605	6	500.0	69 x 160	339109	1	5,020	———	4,200
	356013	6	250.0	62 x 122	339108	1	5,020	———	4,200
Polypropylene	355624	6	100.0	38 x 102	339104	2	5,020	———	4,200
Wide-mouth Polypropylene	355607	6	500.0	69 x 160	339109	1	5,020	———	4,200
	356011	6	250.0	62 x 120	339108	1	5,020	———	4,200
Bottles									
Polycarbonate	355649	6	500.0	69 x 160	339109	1	5,020	———	4,200
	355655	6	70.0	38 x 102	339104	2	5,020	———	4,200
Wide-mouth Polycarbonate	358275	25	250.0	62 x 122	339108	1	5,020	———	4,200
Polypropylene	355650	6	500.0	69 x 159	339109	1	5,020	———	4,200
	355626	6	100.0	38 x 102	339104	2	5,020	———	4,200
Wide-mouth Polypropylene	358326	25	250.0	62 x 120	339108	1	5,020	———	4,200

** These bottles require a sleeve rather than an adapter.*

Adapters

See chart on page 2–6 for adapters used with non-Beckman Coulter tubes and bottles.

339103 339104 339108 339109 341977 356096

Tubes and Bottles

Tube Style/Material		Part No.	Quantity	Nominal Volume per Tube (mL)	Size (mm)	Required Adapters (Multi-Disc™)	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Conical Tubes										
Polycarbonate with cap		356987	6	230.0	62 x 141	356983/339108	1	5,020	———	4,200
Polypropylene with cap		356989	6	230.0	62 x 141	356983/339108	1	5,020	———	4,200
Graduated Polypropylene		355663	6	15.0	17 x 120	339102	14	5,020	———	4,200
Tubes with Snap-On Caps										
Polyallomer	Natural	357448	500	1.5	11 x 38	339100/354511	26	5,020	———	4,200
	Orange	357444	500	1.5	11 x 38	339100/354511	26	5,020	———	4,200
	Yellow	357445	500	1.5	11 x 38	339100/354511	26	5,020	———	4,200
	Green	357446	500	1.5	11 x 38	339100/354511	26	5,020	———	4,200
	Blue	357447	500	1.5	11 x 38	339100/354511	26	5,020	———	4,200
Polycarbonate		363664	25	50.0	29 x 104	356997	1	5,020	———	4,200
Polyethylene	Natural	340196	500	1.8	11 x 39	339100/354511	26	5,020	———	4,200
Polypropylene		357005	25	50.0	29 x 103	339103	7	5,020	———	4,200
	Natural*	343169	500	1.5	11 x 38	339100/354511	26	5,020	———	4,200
	Natural	356090	500	1.5	11 x 38	339100/354511	26	5,020	———	4,200
	Blue	356091	500	1.5	11 x 38	339100/354511	26	5,020	———	4,200
	Green	356092	500	1.5	11 x 38	339100/354511	26	5,020	———	4,200
	Yellow	356093	500	1.5	11 x 38	339100/354511	26	5,020	———	4,200
	Orange	356094	500	1.5	11 x 38	339100/354511	26	5,020	———	4,200
BioVials										
Polypropylene		566353	1,000	4.0	14 x 55	339101	24	5,020	———	4,200

* *Cap separate.*

Adapters

See chart on page 2–6 for adapters used with non-Beckman Coulter tubes and bottles.

339100 339102 339103 339108 339109 354511 356983 356997

Tubes and Bottles

Tube Style/Material	Part No.	Quantity	Nominal Volume per Tube (mL)	Size (mm)	Required Adapters (Multi-Disc™)	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Open-Top Tubes									
Polyallomer	355640	25	10.0	16 x 76	341977	19	5,020	———	4,200
Polycarbonate	363647	25	50.0	29 x 103	339103	7	5,020	———	4,200
	342080	100	15.0	18 x 98	339102	14	5,020	———	4,200
	355630	25	10.0	16 x 76	341977	19	5,020	———	4,200
Polyethylene	342081	100	15.0	18 x 98	339102	14	5,020	———	4,200
Polypropylene	357007	25	50.0	29 x 103	339103	7	5,020	———	4,200
	342082	100	15.0	18 x 98	339102	14	5,020	———	4,200
Stainless Steel	301108	1	10.0	16 x 76	341977	19	5,020	———	4,200

Blood-Bag Cups

No. 339127. Yellow cup with inner diameter of 88 mm for single- and double-packs (set of 2).

No. 339129. Red cup with inner diameter of 98 mm for triple- and quad-packs (set of 2).

Aeroseal™ Covers

Biosafety

No. 343686. Cover for round buckets of JS-4.2. Features O-ring seal to provide added aerosol protection. Transparent so broken tubes can be detected and proper precautions taken before breaking seal.

Microplate Carriers

No. 358682. Set of two. Special carriers, interchangeable with buckets, slip onto yoke of JS-4.2 Rotor. Each carrier holds three microplates for a total capacity of 18 per run. Max. speed 2,500 rpm.

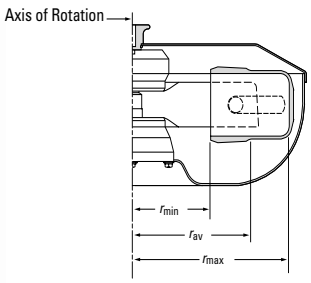
Rotor Replacement Parts

367045	Rotor Tie-down Kit
348392	Cover Assembly
368574	Buckets (set of 6, blue-anodized)

Adapters

See chart on page 2–6 for adapters used with non-Beckman Coulter tubes and bottles.

339102 339103 341977



Swinging-Bucket Rotor (Windshielded)

Major applications: Rapid sedimentation of protein precipitates, large particles, cells, and cell debris. It can be used for binding studies and separating serum from whole blood.

Max. RPM	Max. *g*	Rotor Capacity	Approximate Accel/Decel Time (min:sec)
4,200	5,020	6 Liters, 6 Blood Bags, 18 Microplates, 336 RIA-Tubes	2:30/3:00

For use in Avanti® J-HC and J6 Series centrifuges only.

No. 366695. JS-4.2A Swinging-Bucket Rotor. Windshielded, six-place rotor with aluminum rotor yoke and removable aluminum swinging buckets. Buckets are interchangeable with Microplate Carriers 358682† for spinning microtiter plates and MiniTube Racks. ARIES "Smart Balance" technology provides imbalance compensation for rotors with buckets that are unbalanced up to 100 grams.

Tubes and Bottles

Tube Style/Material	Part No.	Quantity	Nominal Volume per Tube (mL)	Size (mm)	Required Adapters (Multi-Disc™)	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Bottles with Screw Caps									
Polyallomer	357003	25	50.0	29 x 104	339103	7	5,020	———	4,200
Polycarbonate	355675*	6	1000.0	97 x 167	356096	1	5,020	———	4,200
	358299*	1	750.0	96 x 130	356096	1	5,020	———	4,200
	355664	6	500.0	69 x 160	339109	1	5,020	———	4,200
	357002	25	50.0	29 x 104	339103	7	5,020	———	4,200
	355672	25	10.0	16 x 80	341977	19	5,020	———	4,200
Round-bottom Polycarbonate	355673	6	250.0	62 x 136	339108	1	5,020	———	4,200
Polypropylene	355676*	6	1000.0	97 x 167	356096	1	5,020	———	4,200
	356855*	6	750.0	96 x 130	356096	1	5,020	———	4,200
	355665	6	500.0	69 x 159	339109	1	5,020	———	4,200
Bottles									
Polycarbonate	355649	6	500.0	69 x 160	339109	1	5,020	———	4,200
	355655	6	70.0	38 x 102	339104	2	5,020	———	4,200
Wide-mouth Polycarbonate	358275	25	250.0	62 x 122	339108	1	5,020	———	4,200
Polypropylene	355650	6	500.0	69 x 159	339109	1	5,020	———	4,200
	355626	6	100.0	38 x 102	339104	2	5,020	———	4,200
Wide-mouth Polypropylene	358326	25	250.0	62 x 120	339108	1	5,020	———	4,200
Bottles with Cap Assemblies									
Polyallomer	357001	6	50.0	29 x 104	339103	7	5,020	———	4,200
Polycarbonate	355620	6	70.0	38 x 102	339104	2	5,020	———	4,200
	357000	6	50.0	29 x 104	339103	7	5,020	———	4,200
Wide-mouth Polycarbonate	355605	6	500.0	69 x 160	339109	1	5,020	———	4,200
	356013	6	250.0	62 x 122	339108	1	5,020	———	4,200
Polypropylene	355624	6	100.0	38 x 102	339104	2	5,020	———	4,200
Wide-mouth Polypropylene	355607	6	500.0	69 x 160	339109	1	5,020	———	4,200
	356011	6	250.0	62 x 120	339108	1	5,020	———	4,200

** These bottles require a sleeve rather than an adapter.*

Adapters

See chart on page 2–6 for adapters used with non-Beckman Coulter tubes and bottles.

339103 339104 339108 339109 341977 356096

Tubes and Bottles

Tube Style/Material		Part No.	Quantity	Nominal Volume per Tube (mL)	Size (mm)	Required Adapters (Multi-Disc™)	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Conical Tubes										
Polycarbonate with cap		356987	6	230.0	62 x 141	356983/339108	1	5,020	———	4,200
Polypropylene with cap		356989	6	230.0	62 x 141	356983/339108	1	5,020	———	4,200
Graduated Polypropylene		355663	6	15.0	17 x 120	339102	14	5,020	———	4,200
Tubes with Snap-On Caps										
Polyallomer	Natural	357448	500	1.5	11 x 38	339100/354511	26	5,020	———	4,200
	Orange	357444	500	1.5	11 x 38	339100/354511	26	5,020	———	4,200
	Yellow	357445	500	1.5	11 x 38	339100/354511	26	5,020	———	4,200
	Green	357446	500	1.5	11 x 38	339100/354511	26	5,020	———	4,200
	Blue	357447	500	1.5	11 x 38	339100/354511	26	5,020	———	4,200
Polycarbonate		363664	25	50.0	29 x 104	356997	1			4,200
Polyethylene	Natural	340196	500	1.8	11 x 39	339100/354511	26	5,020	———	4,200
Polypropylene		357005	25	50.0	29 x 103	339103	7	5,020	———	4,200
	Natural	356090	500	1.5	11 x 38	339100/354511	26	5,020	———	4,200
	Natural	343169	500	1.5	11 x 38	339100/354511	26	5,020	———	4,200
	Blue	356091	500	1.5	11 x 38	339100/354511	26	5,020	———	4,200
	Green	356092	500	1.5	11 x 38	339100/354511	26	5,020	———	4,200
	Yellow	356093	500	1.5	11 x 38	339100/354511	26	5,020	———	4,200
	Orange	356094	500	1.5	11 x 38	339100/354511	26	5,020	———	4,200
BioVials										
Polypropylene		566353	1,000	4.0	14 x 55	339101	24	5,020	———	4,200

* *Cap separate.*

Adapters

See chart on page 2–6 for adapters used with non-Beckman Coulter tubes and bottles.

339100 339102 339103 339108 339109 354511 356983 356997

Tubes and Bottles

Tube Style/Material	Part No.	Quantity	Nominal Volume per Tube (mL)	Size (mm)	Required Adapters (Multi-Disc™)	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Open-Top Tubes									
Polyallomer	355640	25	10.0	16 x 76	341977	19	5,020	———	4,200
Polycarbonate	363647	25	50.0	29 x 103	339103	7	5,020	———	4,200
	342080	100	15.0	18 x 98	339102	14	5,020	———	4,200
	355630	25	10.0	16 x 76	341977	19	5,020	———	4,200
Polyethylene	342081	100	15.0	18 x 98	339102	14	5,020	———	4,200
Polypropylene	357007	25	50.0	29 x 103	339103	7	5,020	———	4,200
	342082	100	15.0	18 x 98	339102	14	5,020	———	4,200

Blood-Bag Cups

No. 339127. Yellow cup with inner diameter of 88 mm for single- and double-packs (set of 2).

No. 339129. Red cup with inner diameter of 98 mm for triple- and quad-packs (set of 2).

Aeroseal™ Covers

Biosafety

No. 343686. Cover for round buckets of JS-4.2A. Features O-ring seal to provide added aerosol protection. Transparent so broken tubes can be detected and proper precautions taken before breaking seal.

Microplate Carriers

No. 358682. Set of two. Special carriers, interchangeable with buckets, slip onto yoke of JS-4.2A Rotor. Each carrier holds three microplates for a total capacity of 18 per run. Max. speed 2,500 rpm.

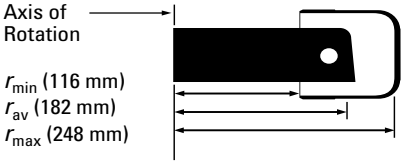
Rotor Replacement Parts

367045	Rotor Tie-down Kit
348392	Cover Assembly
368574	Buckets (set of 6, blue-anodized)

Adapters

See chart on page 2–6 for adapters used with non-Beckman Coulter tubes and bottles.

339102 339103 341977



Swinging-Bucket Rotor (Windshielded)

Major applications: Separation of serum from whole blood, blood component separation.

Max. RPM	Max. *g*	Rotor Capacity	Approximate Accel/Decel Time (min:sec)
4,200	4,900	6 Blood Bags 18 Microplates	2:30/3:00

For use in J6 Series centrifuges only.

No. 348394. JS-4.2SM Swinging-Bucket Rotor. Windshielded, six-place rotor designed with oval-shaped buckets specifically for blood bank applications which utilize similarly shaped blood bags. Buckets are interchangeable with microplate carriers for blood serum studies. Includes six oval-shaped blood-bag cups.

Microplate Carriers

No. 358682. Set of two. Special carriers, interchangeable with buckets, slip onto yoke of JS-4.2SM Rotor. Each carrier holds three microplates for a total capacity of 18 per run. Maximum speed 2,500 rpm.

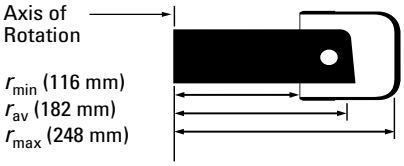
Blood-Bag Cups

No. 356993. Oval-shaped white cup that fits the oval-shaped JS-4.2SM buckets.

No. 363651. Oval-shaped gray cup for quad-packs (filters).

Rotor Replacement Parts

367045	Rotor Tie-down Kit
348392	Cover Assembly
348393	Buckets (set of 6)
348359	Liners



Swinging-Bucket Rotor (Windshielded)

Major applications: Separation of serum from whole blood, blood component separation.

Max. RPM	Max. *g*	Rotor Capacity	Approximate Accel/Decel Time (min:sec)
4,200	4,900	6 Blood Bags	2:30/3:00

For use in J6 Series centrifuges only.

No. 366670. JS-4.2SMA Swinging-Bucket Rotor. Windshielded, six-place rotor designed with oval-shaped buckets specifically for blood bank applications which utilize similarly shaped blood bags. Buckets are interchangeable with microplate carriers for blood serum studies. Includes six oval-shaped blood-bag cups. ARIES "Smart Balance" technology provides imbalance compensation for rotors with buckets that are unbalanced up to 100 grams.

Microplate Carriers

No. 358682. Set of two. Special carriers, interchangeable with buckets, slip onto yoke of JS-4.2SMA Rotor. Each carrier holds three microplates for a total capacity of 18 per run. Maximum speed 2,500 rpm.

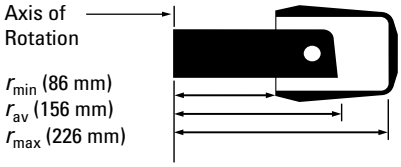
Blood-Bag Cups

No. 356993. Oval-shaped white cup that fits the oval-shaped JS-4.2SMA buckets.

No. 363651. Oval-shaped gray cup for quad-packs (filters).

Rotor Replacement Parts

367045	Rotor Tie-down Kit
348392	Cover Assembly
348393	Buckets (set of 6)
348359	Liners



Swinging-Bucket Rotor (Unshielded), Aluminum

Major applications: Rapid sedimentation of protein precipitates, large particles, cells, and cell debris. It can be used for binding studies and separating serum from whole blood.

Max. RPM	Max. *g*	Rotor Capacity	Approximate Accel/Decel Time
4,000	4,050	4 Liters, 4 Blood Bags, 12 Microplates, 148 RIA Tubes	1:30/2:00 min.

For use in Avanti® J-20XP Series and J6 Series centrifuges.only.

No. 339086. JS-4.0 Swinging-Bucket Rotor. Unshielded, four-place rotor with aluminum rotor yoke and removable aluminum swinging buckets. Buckets are interchangeable with Microplate Carriers for spinning microtiter plates and MiniTube Racks.
Note: requires P/N 367045 for use with Avanti J-20XP Series Centrifuge.

** When used with optional Aeroseal™ Covers P/N 343686.*

Tubes and Bottles

Tube Style/Material	Part No.	Quantity	Nominal Volume per Tube (mL)	Size (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Bottles with Screw Caps									
Polyallomer	357003	25	50.0	29 x 104	339103	7	———	———	4,000
Polycarbonate	355675	6	1000.0	97 x 167	356096	1	———	———	4,000
	358299	1	750.0	96 x 130	356096	1	———	———	4,000
	355664	6	500.0	69 x 160	339109	1	———	———	4,000
	357002	25	50.0	29 x 104	339103	7	———	———	4,000
Polycarbonate	355672	25	10.0	16 x 80	341977	19	———	———	4,000
Round-bottom Polycarbonate	355673	6	250.0	62 x 136	339108	1	———	———	4,000
Polypropylene	355676	6	1000.0	97 x 167	356096	1	———	———	4,000
	356855	6	750.0	96 x 130	356096	1	———	———	4,000
	355665	6	500.0	69 x 159	339109	1	———	———	4,000
Bottles with Cap Assemblies									
Polyallomer	357001	6	50.0	29 x 104	339103	7	———	———	4,000
Polycarbonate	355620	6	70.0	38 x 102	339104	2	———	———	4,000
	357000	6	50.0	29 x 104	339103	7	———	———	4,000
Wide-mouth Polycarbonate	355605	6	500.0	69 x 160	339109	1	———	———	4,000
	356013	6	250.0	62 x 122	339108	1	———	———	4,000
Polypropylene	355624	6	100.0	38 x 102	339104	2	———	———	4,000
Wide-mouth Polypropylene	355607	6	500.0	69 x 160	339109	1	———	———	4,000
	356011	6	250.0	62 x 122	339108	1	———	———	4,000

Adapters

See chart on page 2–6 for adapters used with non-Beckman Coulter tubes and bottles.

339103 339104 339108 339109 341977 356096

Contents

Tubes and Bottles

Tube Style/Material		Part No.	Quantity	Nominal Volume* per Tube (mL)	Size (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Bottles										
Polycarbonate		355649	6	500.0	69 x 160	339109	1	———	———	4,000
		355655	6	70.0	38 x 102	339104	2	———	———	4,000
Wide-mouth Polycarbonate		358275	25	250.0	62 x 122	339108	1	———	———	4,000
Polypropylene		355650	6	500.0	69 x 159	339109	1	———	———	4,000
		355626	6	100.0	38 x 102	339104	2	———	———	4,000
Wide-mouth Polypropylene		358326	25	250.0	62 x 122	339108	1	———	———	4,000
Conical Tubes										
Polycarbonate with cap		356987	6	230.0	62 x 141	356983/339108	1	———	———	4,000
Polypropylene with cap		356989	6	230.0	62 x 141	356983/339108	1	———	———	4,000
Graduated Polypropylene		355663	6	15.0	17 x 120	339102	14	———	———	4,000
Tubes with Snap-On Caps										
Polyallomer	Natural	357448	500	1.5	11 x 38	339100/354511	26	———	———	4,000
	Natural*	343169	500	1.5	11 x 38	339100/354511	26	———	———	4,000
Polycarbonate		363664	6	50.0	29 x 103	339103	7	———	———	4,000
Polyethylene		340196	500	1.8	11 x 39	339100/354511	26	———	———	4,000
Polypropylene	Orange	356094	500	1.5	11 x 38	339100/354511	26	———	———	4,000
	Yellow	356093	500	1.5	11 x 38	339100/354511	26	———	———	4,000
	Green	356092	500	1.5	11 x 38	339100/354511	26	———	———	4,000
	Blue	356091	500	1.5	11 x 38	339100/354511	26	———	———	4,000
	Natural	356090	500	1.5	11 x 38	339100/354511	26	———	———	4,000
Polypropylene		357005	6	50.0	29 x 103	339103	7	———	———	4,000

** Cap separate.*

Adapters

See chart on page 2–6 for adapters used with non-Beckman Coulter tubes and bottles.

339100 339102 339103 339104 339108 339109 341977 354511 356096 356983

Tubes and Bottles^*(continued)*

Tube Style/Material	Part No.	Quantity	Nominal Volume per Tube (mL)	Size (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Open-Top Tubes									
Polyallomer	355640	25	10.0	16 x 76	341977	19	———	———	4,000
Polycarbonate	363647	25	50.0	29 x 103	339103	7	———	———	4,000
	342080	100	15.0	18 x 98	339102	14	———	———	4,000
	355630	25	10.0	16 x 76	341977	19	———	———	4,000
Polyethylene	342081	100	15.0	18 x 98	339102	14	———	———	4,000
Polypropylene	357007	25	50.0	29 x 103	339103	7	———	———	4,000
	342082	100	15.0	18 x 98	339102	14	———	———	4,000
BioVials									
Polypropylene	566353	1000	4.0	14 x 55	339101	24	———	———	4,000

Blood-Bag Cups

No. 339127. Yellow cup with inner diameter of 88 mm for single- and double-packs.

No. 339129. Red cup with inner diameter of 98 mm for triple- and quad-packs.

Aeroseal™ Covers

Biosafety

No. 343686. Cover for round buckets of JS-4.0. Features O-ring seal to provide added aerosol protection. Transparent so broken tubes can be detected and proper precautions taken before breaking seal.

Microplate Carriers

No. 358680. Set of two. Special carriers, interchangeable with buckets, slip onto yoke of JS-4.0 Rotor. Each carrier holds three microplates for a total capacity of 12 per run. Maximum speed 2,600 rpm (1450 x *g*).

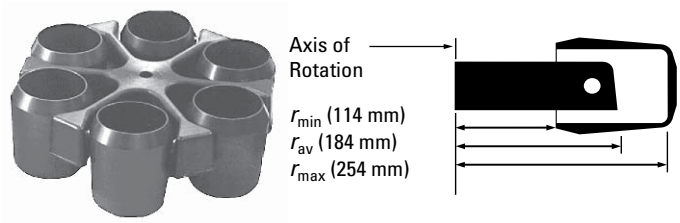
Rotor Supplies

339031	Rotor Tie-down Screw
341710	Bucket Set (set of 4)
878439	Torquing Bar for Rotor Tie-down Screw
367045	Rotor Tie-down Kit for Avanti® J-20XP Series Centrifuge

Adapters

See chart on page 2–6 for adapters used with non-Beckman Coulter tubes and bottles.

339101 339102 339108 341977



Swinging-Bucket Rotor (Unshielded)

Major applications: Major applications: Rapid sedimentation of protein precipitates, large particles, cells, and cell debris. It can be used for binding studies and separating serum from whole blood.

Max. RPM	Max. *g*	Rotor Capacity	Approximate Accel/Decel Time (min:sec)
3,000	2,560	6 Liters, 6 Blood Bags, 18 Microplates, 336 RIA-Tubes	2:00/1:30 min.

For use in J6 Series centrifuges only.

No. 339081. JS-3.0 Swinging-Bucket Rotor. Unshielded, six-place rotor with aluminum rotor yoke and removable aluminum swinging buckets. Buckets are interchangeable with Microplate Carriers 358682 for spinning microtiter plates and MiniTube Racks in the JS-3.0 Rotor.

** When used with optional Aeroseal™ Covers, P/N 343686.*

Tubes and Bottles

Tube Style/Material	Part No.	Quantity	Nominal Volume per Tube (mL)	Size (mm)	Required Adapters (Multi-Disc™)	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Bottles with Screw Caps									
Polyallomer	357003	25	50.0	29 x 104	339103	7	2,560	———	3,000
Polycarbonate	355675	6	1000.0	97 x 167	356096*	1	2,560	———	3,000
	358299	1	750.0	96 x 130	356096*	1	2,560	———	3,000
	355664	6	500.0	69 x 160	339109	1	2,560	———	3,000
	355673	6	250.0	62 x 136	339108	1	2,560	———	3,000
	357002	25	50.0	29 x 104	339103	7	2,560	———	3,000
	355672	25	10.0	16 x 80	341977	19	2,560	———	3,000
Polypropylene	355676	6	1000.0	97 x 167	356096*	1	2,560	———	3,000
	356855	6	750.0	96 x 130	356096*	1	2,560	———	3,000
	355665	6	500.0	69 x 159	339109	1	2,560	———	3,000
Bottles with Cap Assemblies									
Polyallomer	357001	6	50.0	29 x 104	339103	7	2,560	———	3,000
Polycarbonate	355620	6	70.0	38 x 102	339104	2	2,560	———	3,000
	357000	6	50.0	29 x 104	339103	7	2,560	———	3,000
Wide-mouth Polycarbonate	355605	6	500.0	69 x 160	339109	1	2,560	———	3,000
	356013	6	250.0	62 x 122	339108	1	2,560	———	3,000
Polypropylene	355624	6	100.0	38 x 102	339104	2	2,560	———	3,000
Wide-mouth Polypropylene	355607	6	500.0	69 x 160	339109	1	2,560	———	3,000
	356011	6	250.0	62 x 120	339108	1	2,560	———	3,000
Bottles									
Polycarbonate	355649	6	500.0	69 x 160	339109	1	2,560	———	3,000
	355655	6	70.0	38 x 102	339104	2	2,560	———	3,000
Wide-mouth Polycarbonate	358275	25	250.0	62 x 122	339108	1	2,560	———	3,000
Polypropylene	355650	6	500.0	69 x 159	339109	1	2,560	———	3,000
	355626	6	100.0	38 x 102	339104	2	2,560	———	3,000
Wide-mouth Polypropylene	358326	25	250.0	62 x 120	339108	1	2,560	———	3,000

** These bottles require a sleeve rather than an adapter.*

Adapters

See chart on page 2–6 for adapters used with non-Beckman Coulter tubes and bottles.

339103 339104 339108 339109 341977 356096

Tubes and Bottles

Tube Style/Material		Part No.	Quantity	Nominal Volume per Tube (mL)	Size (mm)	Required Adapters (Multi-Disc™)	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Conical Tubes										
Polycarbonate with cap		356987	6	230.0	62 x 141	356983/339108	1	2,560	———	3,000
Polypropylene with cap		356989	6	230.0	62 x 141	356983/339108	1	2,560	———	3,000
Graduated Polypropylene		355663	6	15.0	17 x 120	339102	14	2,560	———	3,000
Tubes with Snap-On Caps										
Polyallomer	Natural	357448	500	1.5	11 x 38	339100/354511	26	2,560	———	3,000
	Orange	357444	500	1.5	11 x 38	339100/354511	26	2,560	———	3,000
	Yellow	357445	500	1.5	11 x 38	339100/354511	26	2,560	———	3,000
	Green	357446	500	1.5	11 x 38	339100/354511	26	2,560	———	3,000
	Blue	357447	500	1.5	11 x 38	339100/354511	26	2,560	———	3,000
Polycarbonate		363664	25	50.0	29 x 104	356997	1	2,560	———	3,000
Polyethylene	Natural	340196	500	1.8	11 x 39	339100/354511	26	2,560	———	3,000
Polypropylene		357005	25	50.0	29 x 103	339103	7	2,560	———	3,000
	Natural*	343169	500	1.5	11 x 38	339100/354511	26	2,560	———	3,000
	Natural	356090	500	1.5	11 x 38	339100/354511	26	2,560	———	3,000
	Blue	356091	500	1.5	11 x 38	339100/354511	26	2,560	———	3,000
	Green	356092	500	1.5	11 x 38	339100/354511	26	2,560	———	3,000
	Yellow	356093	500	1.5	11 x 38	339100/354511	26	2,560	———	3,000
	Orange	356094	500	1.5	11 x 38	339100/354511	26	2,560	———	3,000
BioVials										
Polypropylene		566353	1,000	4.0	14 x 55	339101	24	2,560	———	3,000

* *Cap separate.*

Adapters

See chart on page 2–6 for adapters used with non-Beckman Coulter tubes and bottles.

339100 339102 339103 339108 339109 354511 356983 356997

Tubes and Bottles

Tube Style/Material	Part No.	Quantity	Nominal Volume per Tube (mL)	Size (mm)	Required Adapters (Multi-Disc™)	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Open-Top Tubes									
Polyallomer	355640	25	10.0	16 x 76	341977	19	2,560	———	3,000
Polycarbonate	363647	25	50.0	29 x 103	339103	7	2,560	———	3,000
	342080	100	15.0	18 x 98	339102	14	2,560	———	3,000
	355630	25	10.0	16 x 76	341977	19	2,560	———	3,000
Polyethylene	342081	100	15.0	18 x 98	339102	14	2,560	———	3,000
Polypropylene	357007	25	50.0	29 x 103	339103	7	2,560	———	3,000
	342082	100	15.0	18 x 98	339102	14	2,560	———	3,000
Stainless Steel	301108	1	10.0	16 x 76	341977	19	2,560	———	3,000

Blood-Bag Cups

No. 339127. Yellow cup with inner diameter of 88 mm for single- and double-packs (set of 2).

No. 339129. Red cup with inner diameter of 98 mm for triple- and quad-packs (set of 2).

Aeroseal™ Covers

Biosafety

No. 343686. Cover for round buckets of JS-3.0. Features O-ring seal to provide added aerosol protection. Transparent so broken tubes can be detected and proper precautions taken before breaking seal.

Microplate Carriers

No. 358682. Set of two. Special carriers, interchangeable with buckets, slip onto yoke of JS-3.0 Rotor. Each carrier holds three microplates for a total capacity of 18 per run. Max. speed 2,500 rpm.

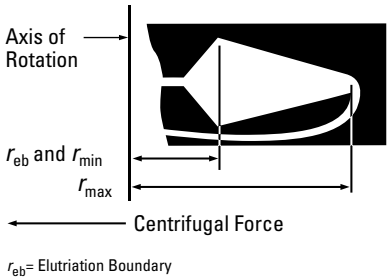
Rotor Replacement Parts

367045	Rotor Tie-down Kit
338392	Cover Assembly
368574	Buckets (set of 6, blue-anodized)

Adapters

See chart on page 2–6 for adapters used with non-Beckman Coulter tubes and bottles.

339102 339103 341977



r_{eb}= Elutriation Boundary

Elutriator Rotor

For use in Avanti® J-20XP Series and J6 Series Centrifuges equipped with viewport door and strobe assembly.

Max. RPM	Max. *g*	Maximum Volume	Elutriation Boundary
5,000	4,700	40 mL	86 mm (2,410 *g*)

For use in Avanti® J-20XP Series and current model J6 Series centrifuges only.

No. 356900. JE-5.0 Elutriator Rotor Assembly. Includes bypass chamber and supplies, and features a quick-release assembly which can be autoclaved for sterile operation. For use in Avanti J-20XP Series and current model J6 Series Centrifuges only. Order elutriation chamber(s) separately. (For complete Elutriation System, a number of components are necessary. See *How to Order* below.)

Elutriation Chamber

Description	Part No.	Max. Cells Recovered per Run	Minimum Cells Required for Loading per Fraction	Max Elutriated Buffer Volume
40-mL	356940	10^{10}	10^{7}	1000 mL
5-mL	356943	10^{10}	10^{7}	1000 mL
Sanderson	356945	10^{10}	10^{5}	1000 mL

How to Order

For a complete Beckman Coulter Elutriation System, the following components are required:

1. An Elutriator Rotor Assembly
2. An Elutriation Chamber
3. An Elutriation Centrifuge equipped with viewport door and strobe assembly.

Beckman Coulter Avanti J-20XP Series and J6 Series Centrifuges can be ordered as Elutriation Centrifuges fully equipped with the appropriate door and strobe assembly. See Section 1 for ordering information. Existing Beckman Coulter 6000-rpm centrifuges can also be adapted for elutriation. To do so, refer to the section below.

Also necessary but not available from Beckman Coulter is a pump that meets the following requirements: (a) has continuously adjustable flow rate from 6 to 100 mL/min; (b) has flow rate controllable to within ± 1.5%; (c) has flow rate independent of back pressure up to 40 psi; and (d) has pulsation less than 5% of flow rate. Recommended pumps are listed below.

To Upgrade an Existing Beckman Coulter Centrifuge

For Avanti J-20XP Series, order the appropriate kit listed below (order only one kit):

No. 366562. 50/60 Hz. For use with Avanti J-20XP. Kit includes Strobe Lamp/Control Assembly and Door Assembly with Viewport.

No. 366563. 50/60 Hz. For use with Avanti J-20XPI. Kit includes Strobe Lamp/Control Assembly and Door Assembly with Viewport.

For J6 Series, order BOTH of the kits below:

No. 358354. 50/60 Hz. Strobe Lamp and Control Assembly for use with current model microprocessor-controlled J6-MC and J6-MI centrifuges. Requires door assembly sold below.

No. 360345. 50/60 Hz. Door Assembly with Viewport for use with current model microprocessor-controlled J6-MC and J6-MI centrifuges. Requires strobe lamp and control assembly sold above.

Recommended Pump (not supplied by Beckman Coulter)

We recommend the Cole-Parmer Masterflex* Digital Drive Pump System. These are not available from Beckman Coulter, but may be ordered directly from Cole-Parmer (625 East Bunker Court, Vernon Hills, Illinois 60061-1844 USA, Phone 847-549-7600, Fax 847-549-7676, TDD hotline: 800-833-7400, E-mail: info@coleparmer.com). Contact Cole-Parmer directly to receive current ordering information for these or comparable pumps.

A complete pump consists of one each of the following components:

1. Easy-Load* pump head (stainless steel)
2. Tygon† L/S* 16 tubing standard drive (10 to 600 rpm, 115 VAC or 230 VAC)

Supplies

335148	Silicone Vacuum Grease, 1 oz
339555	Solution 555™ Cleaning Concentrate, 1 qt
306812	Spinkote™ Lubricant (for rotor/shaft interface), 2 oz
357520	Tubing, Tygon 1/8-in. (I.D.) × 1/4-in. (O.D.)
357580	Tubing, Silicone 3/16-in. (I.D.) × 5/16-in. (O.D.) (for rotating seal-assembly connection)

Tools

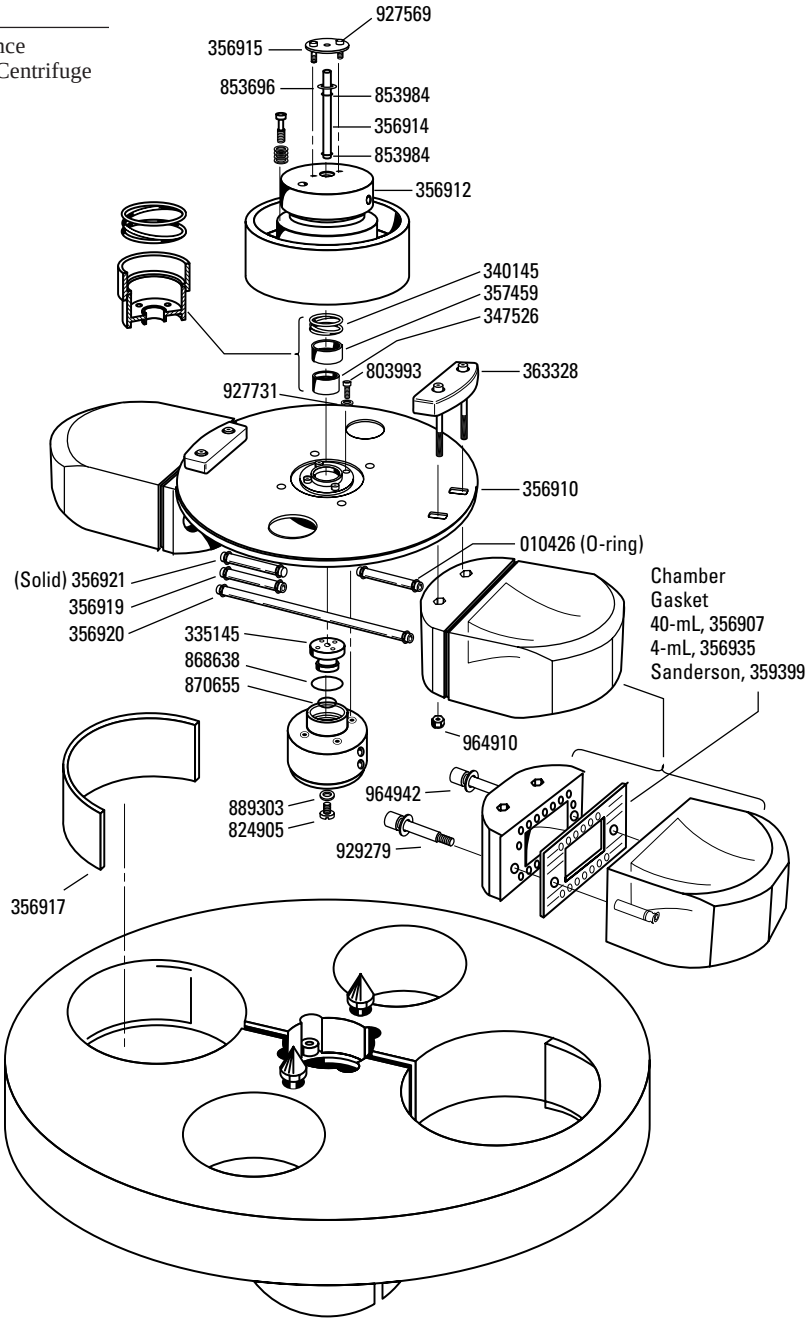
927784	Pliers for Retaining Clip (bearing removal)
016223	Wrench, 1/8-in. Hex Driver
927766	Wrench, 5/16-in. Hex T-handle
029840	Wrench, 5/32-in. Hex Driver
001884	Wrench, 5/64-in. Hex Driver
817305	Wrench, 9/64-in. Hex Angle

** Masterflex, Easy-Load, and L/S are registered trademarks of Cole-Parmer Instrument Company.*

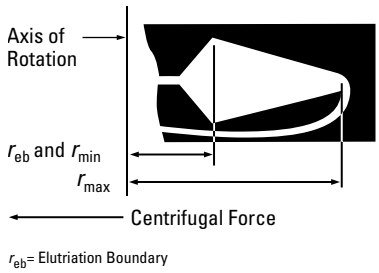
† Tygon is a registered trademark of Norton Company.

Replacement Parts

358291	Quick-release Seal Assembly 5.0 with counterbalance
366922	Anchor Cable Assembly for Avanti J-20XP Series Centrifuge
358182	Anchor Cable Assembly for J6 Series Centrifuge
355161	Ball Bearing, S.C.D.
356014	Cable Retainer
356940	Chamber, Large (40-mL), "A"
356941	Chamber, Large (40-mL), "B"
356943	Chamber, Standard (5-mL), "A"
356944	Chamber, Standard (5-mL), "B"
356945	Chamber, Sanderson (5-mL), "A"
356946	Chamber, Sanderson (5-mL), "B"
849660	Chamber Mounting Nut
356917	Chamber Pad
356907	Chamber Gasket, 40-mL
356935	Chamber Gasket, 4-mL
359399	Chamber Gasket, Sanderson, 4-mL
356930	Chamber Mount
356921	Chamber Tube (solid)
356942	Counterbalance
927768	Fitting, Inlet Line (to seal assembly), 3/16 in. I.D.
000148	Fuse, Strobe, 1.0 A-TD 250 VAC
870671	Glass Plate for Lapping Seal (4 x 5 in.)
356912	Housing, Bearing
356911	Housing, Seal
870655	O-ring, Small, Seal Housing
011519	O-ring, Small, Bearing Shaft
868638	O-ring, Large, Seal Housing
853984	O-ring, Center Tube
853696	O-ring, Retaining, Center Tube
010426	O-ring, Transfer Tube
356910	Plate, Chamber/Seal Support
340148	Pressure Gauge Assembly
347549	Reflector, rpm
878681	Retaining Clip, Bearing Assembly
356915	Retaining Plate, Transfer Tube
927286	Retaining Ring, Internal
335213	Sample Reservoir, 30-mL
335197	Sample Reservoir, 30-mL
803993	Screw, Cap (support plate to seal housing)
927569	Screw, Cap (retaining plate)
841717	Screw, Chamber Mounting
824905	Screw, Housing
929279	Screw, Shoulder (chamber assembly)
347526	Seal, Rotating, Black
335145	Seal, Stationary, White
347543	Syringe Assembly
356913	Shaft (bearing)
357459	Spacer (spring/seal)
340145	Spring (seal assembly)
356920	Tube, Long
356919	Tube, Short
356914	Tube, Transfer
870669	Valve, Stopcock (3-way)
021623	Washer, Flat (bearing housing to support plate)
887438	Washer, Flat (bearing housing to support plate)
889303	Washer, Flat (seal housing)
927730	Washer, Spring (retaining plate)
927731	Washer, Spring (support plate to seal housing)
852685	Washer, Spring (bearing assembly, 3 required)
878475	"Y" Hose Fitting
347978	Flash Tube



Exploded View of JE-5.0 Parts with Part Numbers



Elutriator Rotor

Max. RPM	Max. *g*	Maximum Volume	Elutriation Boundary
6,000	5,080	5 mL	86 mm (3,470 g)

For use in Avanti® J-25 Series and J-30I centrifuges equipped with viewport door and strobe assembly.

No. 347514. JE-6B Elutriator Rotor Assembly. Includes bypass chamber and supplies. For use in Avanti J-25 Series and J-30I Elutriation Centrifuges and earlier J2 Series Centrifuges already equipped with Elutriation Accessories. Order elutriation chamber(s) separately. (For complete Elutriation System, a number of components are necessary. See *How to Order* below.)

Elutriation Chamber

Description	Part No.	Max. Cells Recovered per Run	Minimum Cells Required for Loading per Fraction	Max Elutriated Buffer Volume
5-mL	347986	10^9	10^7	100 mL
Sanderson	347985	10^9	10^5	100 mL

How to Order

For a complete Beckman Coulter Elutriation System, the following components are required:

1. An Elutriator Rotor Assembly
2. An Elutriation Chamber
3. An Elutriation Centrifuge equipped with viewport door and strobe assembly.

Beckman Coulter Avanti J-25 Series and J-30I Centrifuges can be ordered as Elutriation Centrifuges fully equipped with the appropriate door and strobe assembly. Existing Beckman Coulter Avanti J-25 and Avanti J-30I centrifuges can also be adapted for elutriation. To do so, order the appropriate assembly below.

Also necessary but not available from Beckman Coulter is a pump that meets the following requirements: (a) has continuously adjustable flow rate from 6 to 100 mL/min; (b) has flow rate controllable to within ± 1.5%; (c) has flow rate independent of back pressure up to 40 psi; and (d) has pulsation less than 5% of flow rate. Recommended pumps are listed below.

To Upgrade an Existing Beckman Coulter Centrifuge

For Beckman Coulter Avanti J-25 Series and J-30I, order the appropriate kit listed below (order only one kit):

No. 363840. 50/60 Hz. For use with Avanti J-25. Kit includes Strobe Lamp/Control Assembly and Door Assembly with Viewport.

No. 363841. 50/60 Hz. For use with Avanti J-25I and J-30I. Kit includes Strobe Lamp/Control Assembly and Door Assembly with Viewport.

Recommended Pump (not supplied by Beckman Coulter)

We recommend the Cole-Parmer Masterflex Digital Pump Drive System. These are not available from Beckman Coulter, but may be ordered direct from Cole-Parmer (625 East Bunker Court, Vernon Hills, Illinois 60061-1844 USA, Phone 847-549-7600, Fax 847-549-7676, TDD hotline: 800-833-7400, E-mail: info@coleparmer.com). Contact Cole-Parmer directly to receive current ordering information for these or comparable pumps.

A complete pump consists of one each of the following components:

1. Easy-Load* pump head model E-07518-10 (stainless steel)
2. Tygon† L/S* 14 tubing model E-96420-14 standard digital drive (10 to 600 rpm) model E-07523-20 (115 VAC) or E-07523-27 (230 VAC).

Replacement Parts

335145	Stationary Seal
355161	Bearing Assembly Ball Bearings (2)
347524	Bearing Assembly Spacer
340145	Bearing Assembly Spring Washer
347985	Chamber, Sanderson (not including O-rings)
347986	Chamber, Standard (not including O-rings)
340149	Chamber Gasket (Sanderson)
340144	Chamber Gasket (Standard)
010426	Chamber O-rings (8)
347528	Chamber Plugs (2)
347912	Chamber Screws (2)
347919	Photoelectric Detector
347549	Reflecting Label
347526	Rotating Seal
335146	Seal Housing Feed Fitting
824464	Seal Housing Feed Fitting O-rings (2)
344108	Seal Housing Plastic Feed Fitting Retainer Clamps (2)
336284	Seal Mount
815473	Shaft O-ring (lowest)
011519	Shaft O-ring (upper)
336285	Spacer
347918	Strobe Lamp Assembly
869306	Foot Pads for Strobe Control (4)
000148	Strobe Fuse
347978	Strobe Lamp Bulb
347517	Transfer Tube
853984	Transfer Tube O-ring
347520	Transfer Tube Screw
878238	Transfer Tube Screw O-rings, Larger
878239	Transfer Tube Screw O-rings, Smaller

Replacement Parts for Previous Model JE-6 Rotor

0l0426	O-ring for Separation Chamber and Bypass Chamber
335196	Bypass Chamber
335205	Separation Chamber
335206	Sanderson-type Chamber
340144	Gasket for Separation Chamber
340149	Gasket for Sanderson-type Chamber
347912	Screw for Separation Chamber

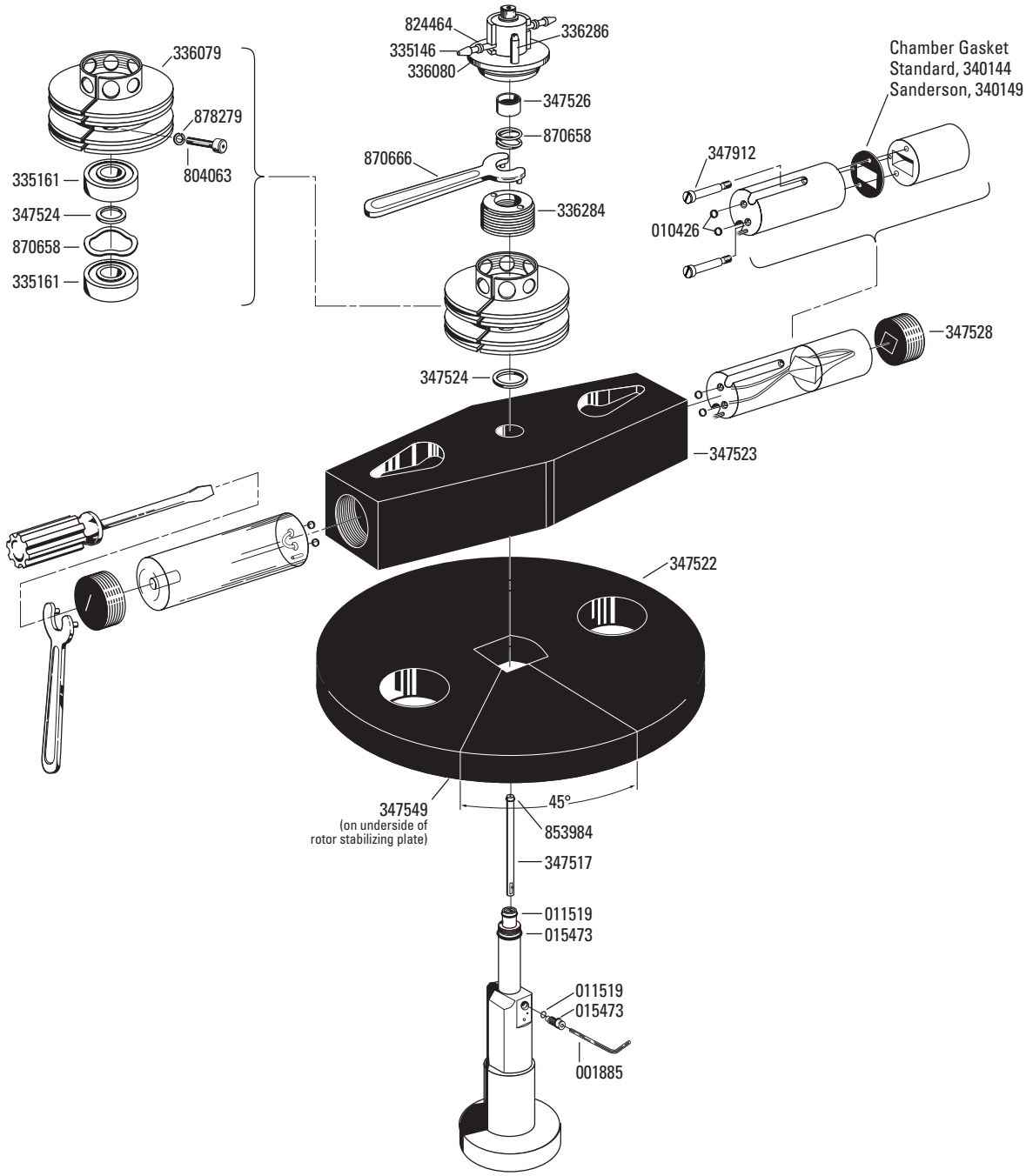
** Masterflex, Easy-Load, and L/S are registered trademarks of Cole-Parmer Instrument Company.*
† Tygon is a registered trademark of Norton Company.

Supplies and Tools

001311 Allen Wrench, 3/16 in.
340144 Chamber Gasket, Standard
340149 Chamber Gasket, Sanderson
870671 Glass Plate for resurfacing (lapping) rotating seals
001885 Hex Driver Wrench, 3/32 in.
335213 Sample Reservoir, 30-mL (including needles)
335197 Sample Reservoir, 75-mL (including needles)
005898 Screwdriver
335148 Silicone Vacuum Grease, 1 oz
339555 Solution 555™ Cleaning Solution, 1 qt.
870666 Spanner Wrench
306812 Spinkote™ Lubricant, 2 oz
306956 Tubing, Silastic* 7.6 m (25 ft.)
306833 Tubing, Tygon† 3.0 m (10 ft.)

** A registered trademark of Dow Corning Corporation.*
† A registered trademark of Norton Company.

For more information on elutriation, order Bulletin SB-574.



Benchtop Centrifugation

Allegra™ 6/6R/6KR General Purpose Centrifuges

Allegra 6 Centrifuge

Allegra 6R Centrifuge

Allegra 6KR Centrifuge

The Allegra™ 6 General Purpose Centrifuges are ideal for cell culture, plasma, and other general-purpose separations. The exclusive ARIES™ Smart Balance Rotor recognizes and corrects rotor imbalance up to 50 grams per bucket set. The popular GH-3.8 swinging bucket rotor allows you to run samples from 1.5 mL to 750 mL—tubes, bottles, microplates, specialty bottles, and blood bags. This includes running as many as 56 x 15 mL conical tubes or 12 standard microplates. Exclusive Aerosolve™ Cannisters help minimize contamination from broken or leaking tubes. performs from 2,010 to 5,710 x *g*. Available in refrigerated or nonrefrigerated benchtop and refrigerated kneewell models.

Specifications

Maximum Speed	6,100 rpm/4,730 rpm*
Maximum *g*-force	5,710 x *g*/4,550 x *g**
Speed Control	±30 rpm of set speed
Drive Type	Direct drive, replaceable brushes
Time Setting	30 min timer, hold
Accel/Decel Rates	1 accel, 3 decel
Settable Temperature Range†	-5° to 25°C
Operating Temperature Range	0° to 35°C
Maximum Heat Output	0.9 kW (3701 BTU/hr.)—Allegra 6 1.59 kW (5425 BTU/hr.)—Allegra 6R/6KR
Maximum Noise Output	< 60 dB
Dimensions	
Allegra 6	39.4 cm (15.5 in.) H x 66.0 cm (26 in.) D x 54.6 cm (21.5 in.) W
Allegra 6R	39.4 cm (15.5 in.) H x 66.0 cm (26 in.) D x 76 cm (30 in.) W
Allegra 6KR	67.3 cm (26.5 in.) H x 66.0 cm (26 in.) D x 54.6 cm (21.5 in.) W
Weight	
Allegra 6	51.7 kg (114.0 lb)
Allegra 6R	75.8 kg (167.0 lb)
Allegra 6KR	90.3 kg (100.0 lb)

**Using fixed angle rotors/using swinging bucket rotors.*

† Allegra 6R and 6KR only.

Part Numbers	Allegra 6 Benchtop	Allegra 6R Refrigerated Benchtop	Allegra 6KR Refrigerated Kneewell
60 Hz, 120 V	366802	366816	366830
50 Hz, 230 V	366803	366817	366831
50/60 Hz, 100 V	366804	366818	366832

Allegra™ 25R High-Performing Centrifuge

Allegra 25R Centrifuge

The Allegra™ 25R High-Performing Centrifuge is perfect for DNA—from bacteria and yeast pelleting—through isolation and purification—to post-reaction cleanup. With a wide range of interchangeable swinging bucket and fixed angle rotors, it accommodates from 0.25 mL to 500 mL, including popular 1.5 mL tubes for mini-preps and spin columns; 50 mL, 250 mL, and 500 mL tubes; 96-well plates; DNA kits; and PCR plates. With a maximum 15,000 rpm (25,160 x *g*), you can complete DNA sample prep quickly and efficiently before moving on to the rest of your DNA process.

Part Numbers

369434	60 Hz, 208 V
369435	50/60 Hz, 200 V
369436	50 Hz, 230 V

Specifications

Maximum Speed	15,000 rpm
Maximum *g*-force	25,160 x *g*
Speed Control	±50 rpm of set speed
Drive Type	Asynchronous direct drive, brushless
Time Setting	9 hr 59 min timer, hold
Accel/Decel Rates	10 independent profiles
Settable Temperature Range	-20° to 40°C
Ambient Temperature Range	10° to 35°C
Maximum Heat Output	6,824 BTU/hr (2.0 kW)
Maximum Noise Output	< 68 dB
Dimensions	40.5 cm (16 in.) H x 68.5 cm (27 in.) D x 65.0 cm (25.6 in.) W
Weight	124.0 kg (273.4 lb)

Allegra™ 21 Multipurpose Centrifuges

The Allegra™ 21 Centrifuges offer you a compact footprint for general molecular biology separations. With a maximum capacity up to 720 mL—you can choose from a library of 11 interchangeable rotors accommodating tubes and bottles from 0.25 mL to 180 mL. maintenance-free motor spins up to 15,300 rpm (21,460 x *g*). Available in refrigerated or non-refrigerated models with operating temperatures from 2° to 40°C (refrigerated).

Allegra 21 and 21R Centrifuges

Part Numbers	Allegra 21 Benchtop	Allegra 21R Refrigerated Benchtop
60 Hz, 120 V	367574	367570
50 Hz, 230 V	367575	367571
50/60 Hz, 100 V	367573	367572

Specifications

Maximum Speed	
Allegra 21	14,500 rpm/4,500 rpm*
Allegra 21R	15,300 rpm/5,500 rpm*
Maximum *g*-force	
Allegra 21	19,300 x *g*/3,650 x *g*†
Allegra 21R	21,500 x *g*/5,450 x *g*†
Speed Control	±50 rpm of set speed
Drive Type	Brushless induction
Time Setting	9 hr 59 min timer, pulse button, hold
Accel/Decel Rates	10 independent profiles
Settable Temperature Range‡	-20° to 40°C
Operating Temperature Range	
Allegra 21	< 15°C above ambient
Allegra 21R	±1°C of set temperature at max. speed and set temperature 5°C
Maximum Heat Output	
Allegra 21	0.34 kW (1160 BTU/hr.)
Allegra 21R	0.75 kW (2546 BTU/hr.)
Maximum Noise Output	< 62 dB
Dimensions	
Allegra 21	38 cm (15.0 in.) H x 49 cm (19.3 in.) D x 42 cm (16.6 in.) W
Allegra 21R	38 cm (15.0 in.) H x 64 cm (25.2 in.) D x 42 cm (16.6 in.) W
Weight	
Allegra 21	50 kg (110.3 lb)
Allegra 21R	70 kg (154.4 lb)

** Using fixed angle rotors/using S4180 swinging bucket rotor.*
† Using F2402H fixed angle rotor/using S4180 swinging bucket rotor.
‡ Allegra 21R only.

Contents

Allegra™ 64R Centrifuges

Allegra 64R Centrifuge

The Allegra™ 64R takes high *g*-forces (up to 64,400 x *g*) to the lab bench. Optimal for subcellular fractionation, proteins, and viruses—you can spin from 0.25 mL to 85 mL; operate at temperatures from 2° to 4°C; and select rotors that have been certified by Porton Down, UK, for biocontainment.

Part Numbers

364104	60 Hz, 208 V
364103	60 Hz, 200 V
364102	50 Hz, 200 V
364105 (European Version)	50 Hz, 230 V
364106 (UK Version)	50 Hz, 230 V

Specifications

Maximum Speed	30,000 rpm
Maximum *g*-force	64,400 x *g*
Speed Control	±25 rpm of set speed
Drive Type	Brushless induction
Time Setting	9 hr 59 min. timer, pulse button, hold
Accel/Decel Rates	10 independent profiles
Settable Temperature Range	-20° to 40°C
Operating Temperature Range	2° to 40°C
Maximum Heat Output	1.58 kW (5400 BTU/hr)
Maximum Noise Output	< 65 dB
Dimensions	38 cm (15.0 in.) H x 61 cm (24.0 in.) D x 66 cm (26.0 in.) W
Weight	86 kg (190 lb)

Benchtop Centrifuges Rotor Summary

Rotor Type	Part Number	Maximum Speed (rpm)	Maximum Force at r_{min} (*g*)	Maximum Force at r_{max} (*g*)	*k* Factor	Number Tubes/Bottles and Size (diameter x length) mm / in.	Rotor Capacity (mL)	Approx. Accel. Time[1] (min:sec)	Comments
Fixed-Angle Rotors									
F1202	364630	30,000	31,200	64,396	204	12 x 1.8 11 x 45 0.44 x 1.8	21.6	0:30*	Pellet subcellular organelles, viruses, bacteria, mitochondria, chloroplasts, or algae.
	For use in the Allegra™ 64R only								
F0630	361231	26,200	16,700	59,860	454	6 x 38.5 25.3 x 92 1 x 4	231	2:00*	Pellet subcellular organelles, viruses, bacteria, mitochondria, chloroplasts, or algae.
	For use in the Allegra 64R and Allegra 21 and 21R or series								
F2402H	361171	26,000	37,900	62,084	185	24 x 1.8 11 x 45 0.44 x 1.8	43.2	1:10*	Pellet subcellular organelles, viruses, bacteria, mitochondria, chloroplasts, or algae.
	For use in the Allegra 64R and Allegra 21 and 21R or series								
F1010	361140	26,000	15,100	57,438	500	10 x 10 16.1 x 81.1 0.625 x 3	100	0:40*	Pellet subcellular organelles, viruses, bacteria, mitochondria, chloroplasts, or algae.
	For use in the Allegra 64R and Allegra 21 and 21R or series								
F3602	364600	22,000	30,900	47,618	224	36 x 1.8 11 x 45 0.48 x 1.8	64.8	2:00*	Pellet subcellular organelles, viruses, bacteria, mitochondria, chloroplasts, or algae.
	For use in the Allegra 64R and Allegra 21 and 21R or series								
F0650	364610	21,000	10,400	41,400	795	6 x 50 29 x 104 1.125 x 4.75	300	1:45*	Density gradient separations of erythrocytes, cell lysate fractions, granules, as well as differential separation of DNA, proteins, and virus.
	For use in the Allegra 64R only								
F0485	364620	20,000	9,410	40,248	920	4 x 85 38 x 104 1.5 x 4	340	1:15*	Pellet subcellular organelles, viruses, bacteria, mitochondria, chloroplasts, or algae.
	For use in the Allegra 64R only								
F0850	364640	16,500	10,100	28,611	973	8 x 50 29 x 104 1.125 x 4	400	2:00*	Density gradient separations of erythrocytes, cell lysate fractions, granules, as well as differential separation of DNA, proteins, and virus.
	For use in the Allegra 64R and Allegra 21 and 21R or series								
F0685	364650	15,500	6,730	26,320	1,428	6 x 85 38 x 104 1.5 x 4	510	1:45*	Pellet subcellular organelles, viruses, bacteria, mitochondria, chloroplasts, or algae.
	For use in the Allegra 64R and Allegra 21 and 21R or series								
TA-15-1.5	368298	15,000	16,900	25,160	428	30 x 1.5 11 x 45 0.5 x 1.8	45	0:34**	Pellet subcellular organelles, viruses, bacteria, mitochondria, chloroplasts, or algae.
	For use in the Allegra 25R only								
TA-14-50	368303	14,000	7,250	21,100	1,380	8 x 50 29 x 104 1.25 x 4	400	0:37**	Pellet cells from large volumes, or cell particles from tissue homogenates. Short-column methods used to purify large quantities of virus in gradients.
	For use in the Allegra 25R only								
TA-10-250	368293	10,000	3,920	15,300	3,450	6 x 250 62 x 141 2.5 x 5.75	1.5 L	2:00**	Pellet cells from large volumes, or cell particles from tissue homogenates. Short-column methods used to purify large quantities of virus in gradients.
	For use in the Allegra 25R only								

** Typical accel time in Allegra 64R using accel curve 9.*

† Typical accel time in Allegra 6 series.

*** Typical accel time in Allegra 25R centrifuge.*

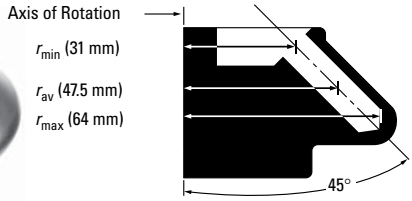
Benchtop Centrifuges Rotor Summary (cont'd)

Rotor Type	Part Number	Maximum Speed (rpm)	Maximum Force at r_{min} (*g*)	Maximum Force at r_{max} (*g*)	*k* Factor	Number Tubes/Bottles and Size (diameter x length) mm / in.	Rotor Capacity (mL)	Approx. Accel. Time[1] (min:sec)	Comments
Fixed-Angle Rotors (cont'd)									
C1015	364680	10,000	4,260	10,392	2,270	10 x 15 17 x 120 0.65 x 4.75	150	0:55*	Pellet subcellular organelles, viruses, bacteria, mitochondria, chloroplasts, or algae.
	For use in the Allegra 64R and Allegra 21 and 21R or series								
C0650	364670	10,000	3,580	10,400	2,680	6 x 50 28.5 x 107 1.125 x 4.25	300	1:00*	General pelleting of cells, bacteria, and food products; separation of proteins, viruses, and subcellular fractions; phase separations; and binding studies.
	For use in the Allegra 64R and Allegra 21 and 21R or series								
GA-6	367054	6,100	1,460	5,710	9,730	6 x 250 62 x 122 2.5 x 4.8	1.5 L	3:30†	Pelleting bacterial cells from large volumes or particles tissue homogenates.
	For use in the Allegra 6 series								
Horizontal and Swinging Bucket Rotors									
H6002	363000	12,200	5,840	12,400	N.A.	60 x 1.8 11 x 38 0.5 x 1.5	108	0:25*	Pellet subcellular organelles, viruses, bacteria, mitochondria, chloroplasts, or algae.
	For use in the Allegra 64R and Allegra 21 and 21R or series								
S0410	364660	10,000	2,910	10,733	3,310	4 x 10 16 x 81.1 0.65 x 3.25	40	0:23*	Sediment protein precipitates, large particles, cells, cell debris, and for separations using gradients.
	For use in the Allegra 64R only								
S4180	361101	5,500	1,760	5,450	8,800	4 x 180 55 x 104 2.2 x 4.16	720	0:54*	Sediment protein precipitates. large particles, cells, and cell debris.
	For use in the Allegra 21 series								
TS-5.1-500	368308	5,100	2,500	5,500	7,600	4 x 500 85 x 135 3.5 x 5.5	2 L	1:00**	Sediment protein precipitates, large particles, cells, and cell debris.
	For use in the Allegra 25R only								
GH-3.8	360581	3,750	———	3,210	———	4 x 750 96 x 130 3.85 x 5.25	3 L	2:40*	Rapidly sediments protein precipitates, large particles, cells, and cell debris. Can also be used for binding studies and for separating serum from whole blood.
	For use in the Allegra 6 series								
GH-3.8A	366650	3,750	———	3,210	———	4 x 750 96 x 130 3.85 x 5.25	3 L	2:40*	Rapidly sediments protein precipitates, large particles, cells, and cell debris. Can also be used for binding studies and for separating serum from whole blood.
	For use in the Allegra 6 series								
PTS-2000	362158	3,250	———	2,010	———	80 x 10 16 x 100 0.65 x 4	800	1:20*	Separates serum or plasma from red blood cells.
	For use in the Allegra 6 series								
S2096	361111	3,000	706	1,107	3,310	2 plate carriers, 6 plates, 2 deepwell	576	0:21†	Serial dilution of liquid volumes.
	For use in the Allegra 21 series								
S5700	268954	5,700	———	6130	———	10 microplates, 4 deepwell 2 96-well kits 2 PCR plates	960	0:47	DNA sample preparation
	For use in the Allegra 25R only								

** Typical accel time in Allegra 64R using accel curve 9.*

† Typical accel time in Allegra 21 series, accel curve 9, rotor fully loaded.

*** Typical accel time in TJ-25 centrifuge.*



Fixed-Angle Rotor, Aluminum

Major applications: Pelleting subcellular organelles, DNA, viruses, bacteria, mitochondria, chloroplasts, or algae.

Max. RPM	Max. *g*	*k* Factor	Number of Tubes Volume/Size	Rotor Capacity
30,000	64,396	204	12 x 1.8 mL 11 x 45 mm 0.44 x 1.8 in	21.6 mL

For use in Allegra™ 64R centrifuges only.

No. 364630. F1202 Fixed-Angle Rotor, for 30,000 rpm operation. Tubes and bottles not included.

Tubes and Bottles

Tube Style/Material	Part No.	Quantity	Nominal Volume per Tube (mL)	Size (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Tubes with Attached Caps									
Polyallomer	357448	500	1.5	11 x 40	364701	1	64,396	204	30,000
Polyethylene	340196	500	1.8	11 x 45	364701	1	7,200	———	10,000
Tubes, Plain									
Polyethylene	314326	1000	400 µL	7 x 40	361247	1	9,500	———	11,500
	652823	1000	250 µL	5 x 45	361247	1	9,500	———	11,500
Tubes, Coated									
Polyethylene	652824*	1000	400 µL	7 x 40	361247	1	9,500	———	11,500
	652825†	1000	400 µL	7 x 40	361247	1	9,500	———	11,500
	652821*	1000	250 µL	5 x 45	361247	1	9,500	———	11,500
	652822†	1000	250 µL	5 x 45	361247	1	9,500	———	11,500
Tubes with Separate Caps									
Polypropylene	343169	500	1.5	11 x 40	364701	1	64,396	204	30,000
	342867	1000	400 µL	7 x 40	361247	1	9,500	———	11,500
	342865	1000	250 µL	7 x 30	361247	1	9,500	———	11,500

* *Heparin-Lithium Fluoride coated.*

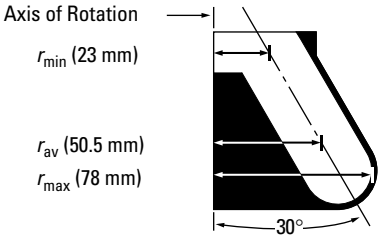
† *Heparin-Lithium coated.*

Rotor Replacement Parts

364633	Rotor Lid
961931	Rotor Lid O-ring
361367	Tie-down Screw
361371	T-handle Rotor Wrench

Adapters

361247 364701



Fixed-Angle Rotor, Aluminum

Major applications: Pelleting subcellular organelles, viruses, bacteria, mitochondria, chloroplasts, or algae.

Max. RPM	Max. *g*	*k* Factor	Number of Tubes Volume/Size	Rotor Capacity
26,200*	59,860	454	6 x 38.5 mL 25 x 100 mm 1 x 4 in	231 mL

For use in Allegra™ 64R and Allegra 21 Series centrifuges only.

No. 361231. F0630 Fixed-Angle Rotor, for 26,200 rpm operation. Tubes and bottles not included.

Tubes and Bottles

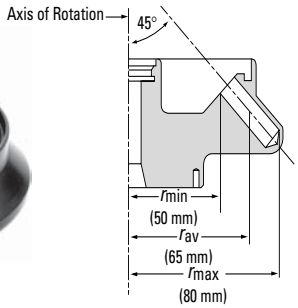
Tube Style/Material	Part No.	Quantity	Nominal Volume per Tube (mL)	Size (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Tubes									
Polyallomer	355642	25	38.5	25 x 89	———	———	59,860	454	26,200
	326825	50	34.0	25 x 76	———	———	28,300	———	18,000
Ultra-Clear™	344058	25	38.5	25 x 89	———	———	59,860	454	26,200
Bottle Assemblies									
Polyallomer	363073	6	30.0	25.3 x 92	———	———	59,860	454	26,200
Polycarbonate	355616	6	26.3	25 x 89	———	———	59,860	454	26,200
Bottles with Screw Caps									
Polycarbonate	363070	6	30.0	25.3 x 92	———	———	59,860	454	26,200
Teflon†	364699	6	30.0	25.3 x 92	———	———	59,860	454	26,200

* *In the Allegra 64R centrifuge. This rotor is rated at a lower speed in the Allegra 21 and 21R centrifuges, so g-forces and k factors are different. See the rotor manual for specific information.*

† *Teflon is a registered trademark of E. I. Du Pont de Nemours & Company.*

Rotor Replacement Parts

361205 Rotor Lid
361923 Rotor Lid O-ring
361367 Tie-down Screw
361371 T-handle Rotor Wrench



Fixed-Angle Rotor, Aluminum

Major applications: Pelleting subcellular organelles, nucleic acids, viruses, bacteria, mitochondria, chloroplasts, or algae.

Max. RPM	Max. *g*	*k* Factor	Number of Tubes Volume/Size	Rotor Capacity
26,000[a]	62,084	185	24 x 1.8 mL 11 x 45 mm 0.44 x 1.8 in	43.2 mL

For use in Allegra™ 64R and Allegra 21 Series centrifuges only.

No. 361171. F2402H Hermetically Sealed Rotor, for 26,000 rpm operation. Tubes and bottles not included.

Tubes and Bottles

Tube Style/Material	Part No.	Quantity	Nominal Volume per Tube (mL)	Size (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Tubes with Attached Caps									
Polyallomer	357448	500	1.5	11 x 40	364701	1	62,084	185	20,000
Polyethylene	340196	500	1.8	11 x 45	364701	1	8,960	———	10,000
Tubes with Separate Caps									
Polypropylene	343169	500	1.5	11 x 40	364701	1	62,084	185	26,000
	342867	1000	400 µL	7 x 40	361247	1	11,900	———	11,500
	342865	1000	250 µL	7 x 30	361247	1	11,900	———	11,500
Tubes, Plain									
Polyethylene	314326	1000	400 µL	7 x 40	361247	1	11,900	———	11,500
	652823	1000	250 µL	5 x 45	361247	1	11,900	———	11,500
Tubes, Coated									
Polyethylene	652824*	1000	400 µL	7 x 40	361247	1	11,900	———	11,500
	652825†	1000	400 µL	7 x 40	361247	1	11,900	———	11,500
	652821*	1000	250 µL	5 x 45	361247	1	11,900	———	11,500
	652822†	1000	250 µL	5 x 45	361247	1	11,900	———	11,500

a In the Allegra 64R centrifuge. This rotor is rated at a lower speed in the Allegra 21 and 21R centrifuges, so g-forces and k factors are different. See the rotor manual for specific information.

* *Heparin-Lithium Fluoride coated.*

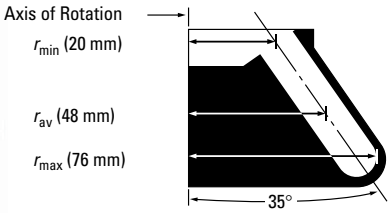
† *Heparin-Lithium coated.*

Rotor Replacement Parts

974933 Rotor Lid O-ring (small)
361367 Tie-down Screw
361371 T-handle Rotor Wrench
974934 Rotor O-ring (large)

Adapters

361247 364701



Fixed-Angle Rotor, Aluminum

Major applications: Pelleting subcellular organelles, viruses, bacteria, mitochondria, chloroplasts, or algae.

Max. RPM	Max. *g*	*k* Factor	Number of Tubes Volume/Size	Rotor Capacity
26,000	57,438	500	10 x 10 mL 16.1 x 81.1 mm 0.625 x 3 in	100 mL

For use in Allegra™ 64R and Allegra 21 Series centrifuges only.

No. 361140. F1010 Fixed-Angle Rotor, for 26,000 rpm operation. Tubes and bottles not included.

Tubes and Bottles

Tube Style/Material	Part No.	Quantity	Nominal Volume per Tube (mL)	Size (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Tubes									
Thickwall Polyallomer	355640	25	10.0	16 x 76	———	———	57,400	500	26,000
	355646*	25	6.5	16 x 64	342602*	1	———	———	26,000
Thickwall Polycarbonate	355630	25	10.0	16 x 76	———	———	57,400	500	26,000
	355647*	25	6.5	16 x 64	342602*	1	———	———	26,000
Ultra-Clear™	344085	50	13.5	16 x 76	———	———	57,400	500	26,000
Bottles with Screw Caps									
Polyallomer	364695	10	10.0	16.1 x 81.1	———	———	57,400	500	26,000
Polycarbonate	355672	25	10.0	16 x 80	———	———	57,400	500	26,000
Teflon†	364693	10	10.0	16.1 x 81.1	———	———	57,400	500	26,000

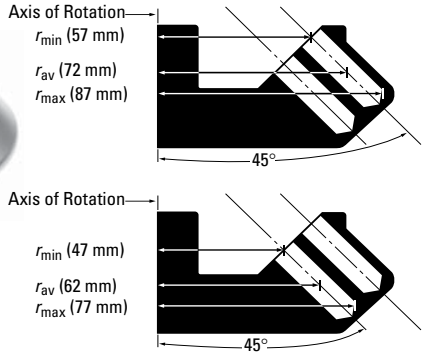
a In the Allegra 64R centrifuge. This rotor is rated at a lower speed in the Allegra 21 and 21R centrifuges, so g-forces and k factors are different. See the rotor manual for specific information.

** To facilitate tube removal, place rubber pad (part number 342602) at the bottom of the tube cavity before inserting the tube.*

† Teflon is a registered trademark of E. I. Du Pont de Nemours & Company.

Rotor Replacement Parts

361145	Rotor Lid
961923	Rotor Lid O-ring
361367	Tie-down Screw
361371	T-handle Rotor Wrench



Fixed-Angle Rotor, Aluminum

Major applications: Pelleting subcellular organelles, nucleic acids, viruses, bacteria, mitochondria, chloroplasts, or algae.

Max. RPM	Max. *g* Outer/Inner	*k* Factor Outer/Inner	Number of Tubes Volume/Size	Rotor Capacity
22,000	47,618/ 41,666	224/260	36 x 1.8 mL 11 x 45 mm 0.48 x 1.8 in	64.8 mL

For use in Allegra™ 64R and Allegra 21 Series centrifuges only.

No. 364600. F3602 Fixed-Angle Rotor, for 22,000 rpm operation. Tubes and bottles not included.

Tubes and Bottles

Tube Style/Material	Part No.	Quantity	Nominal Volume per Tube (mL)	Size (mm)	Required Adapters	Tubes per Adapter	*g*-Force Outer/Inner	*k* Factor Outer/Inner	Maximum Speed
Tubes with Attached Caps									
Polyallomer	357448	500	1.5	11 x 40	364701	1	47,618/41,666	224/260	22,000
Polyethylene	340196	500	1.8	11 x 45	364701	1	9,740/8,620	1,070/1,250	10,000
Tubes with Separate Caps									
Polypropylene	343169	500	1.5	11 x 40	364701		47,618/41,666	224/260	22,000
	342867	1000	400 µL	7 x 40	361247	1	12,900/11,400	809/944	11,500
	342865	1000	250 µL	7 x 30	361247	1	12,900/11,400	809/944	11,500
Tubes, Plain									
Polyethylene	314326	1000	400 µL	7 x 40	361247	1	12,900/11,400	809/944	11,500
	652823	1000	250 µL	5 x 45	361247	1	12,900/11,400	809/944	11,500
Tubes, Coated									
Polyethylene	652824*	1000	400 µL	7 x 40	361247	1	12,900/11,400	809/944	11,500
	652825†	1000	400 µL	7 x 40	361247	1	12,900/11,400	809/944	11,500
	652821*	1000	250 µL	5 x 45	361247	1	12,900/11,400	809/944	11,500
	652822†	1000	250 µL	5 x 45	361247	1	12,900/11,400	809/944	11,500

a In the Allegra 64R centrifuge. This rotor is rated at a lower speed in the Allegra 21 and 21R centrifuges, so g-forces and k factors are different. See the rotor manual for specific information.

* *Heparin-Lithium Fluoride coated.*

† *Heparin-Lithium coated.*

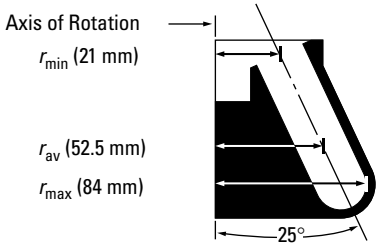
Rotor Replacement Parts

364603	Rotor Lid
961929	Rotor Lid O-ring
361367	Tie-down Screw
361371	T-handle Rotor Wrench
364690	Adapter, 750 µL Tubes
361167	Lid Screw
361168	Lid Handle

Adapters

361247

364701



Fixed-Angle Rotor, Aluminum

Major applications: Density gradient separations of erythrocytes, cell lysate fractions, granules, as well as different separations of DNA, proteins, and viruses.

Max. RPM	Max. *g*	*k* Factor	Number of Tubes Volume/Size	Rotor Capacity
21,000	41,400	795	6 x 50 mL 29 x 104 mm 1.125 x 4.75 in	300 mL

For use in Allegra™ 64R centrifuges only.

No. 364610. F0650 Fixed-Angle Rotor, for 21,000 rpm operation. Tubes and bottles not included.

Tubes and Bottles

Tube Style/Material	Part No.	Quantity	Nominal Volume per Tube (mL)	Size (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Bottles with Screw Caps									
Polyallomer	357003	25	50.0	29 x 104	———	———	41,400	795	21,000
Polycarbonate	357002	25	50.0	29 x 104	———	———	41,400	795	21,000
Teflon* with High-speed Screw Cap	363076	8	50.0	28.5 x 107	———	———	41,400	795	21,000
Bottles with Cap Assemblies									
Polyallomer	357001	6	50.0	29 x 104	———	———	41,400	795	21,000
Polycarbonate	357000	6	50.0	29 x 104	———	———	41,400	795	21,000
Tubes									
Polycarbonate	363647	25	50.0	29 x 104	———	———	41,400	795	21,000
Polycarbonate, graduated	363075	8	50.0	29 x 104	———	———	32,300	———	18,500
Polypropylene	357007	25	50.0	29 x 104	———	———	41,400	795	21,000
Conical Tubes									
Polypropylene	355663	6	15.0	17 x 120	870329	1	9,400	———	10,000

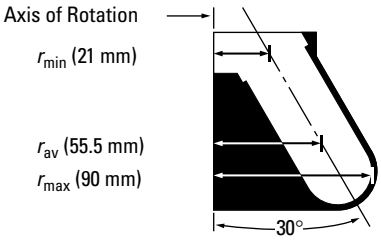
** Teflon is a registered trademark of E. I. Du Pont de Nemours & Company.*

Rotor Replacement Parts

364613	Rotor Lid
961930	Rotor Lid O-ring
361367	Tie-down Screw
361371	T-handle Rotor Wrench

Adapters

870329



Fixed-Angle Rotor, Aluminum

Major applications: Pelleting subcellular organelles, viruses, bacteria, mitochondria, chloroplasts, or algae.

Max. RPM	Max. *g*	*k* Factor	Number of Tubes Volume/Size	Rotor Capacity
20,000	40,248	920	4 x 85 mL 38 x 104 mm 1.5 x 4 in	340 mL

For use in Allegra™ 64R centrifuges only.

No. 364620. F0485 Fixed-Angle Rotor, for 20,000 rpm operation. Tubes and bottles not included.

Tubes and Bottles

Tube Style/Material	Part No.	Quantity	Nominal Volume per Tube (mL)	Size (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Bottles with Cap Assemblies									
Polycarbonate	363081	6	85.0	38 x 104	———	———	40,248	920	20,000
	355620	6	70.0	38 x 102	———	———	40,248	920	20,000
Bottles with Screw Caps									
Polyallomer	357003	25	50.0*	29 x 104	347539	1	40,248	———	20,000
Polycarbonate	364718	6	85.0	38 x 104	———	———	40,248	920	20,000
	357002	25	50.0	29 x 104	347539	1	40,248	———	20,000
Polypropylene	355624	25	100.0*	38 x 102	———	———	40,248	920	20,000
Polypropylene with Special Cap	364719	6	85.0	38 x 104	———	———	40,248	920	20,000
Tubes									
Polyallomer	345775†	25	94.0	38 x 102	344120	1	40,248	920	20,000
	355643†	25	81.0	38 x 102	344120	1	40,248	920	20,000
Polycarbonate	363647	25	50.0	29 x 104	347539	1	40,248	———	20,000
Thickwall Polycarbonate	355628†	25	81.0	38 x 102	344120	1	40,248	920	20,000
Polypropylene	357007	25	50.0	29 x 104	347539	1	40,248	———	20,000

* *Run with reduced fill volume to prevent spilling/leaking.*

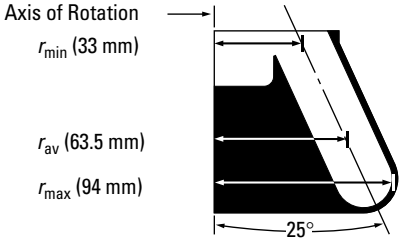
† *To facilitate tube removal, place rubber pad (part number 344120) at the bottom of the tube cavity before inserting the tube.*

Rotor Replacement Parts

364623	Rotor Lid
961930	Rotor Lid O-ring
361367	Tie-down Screw
361371	T-handle Rotor Wrench

Adapters

347539



Fixed-Angle Rotor, Aluminum

Major applications: Density gradient separations of erythrocytes, cell lysate fractions, granules, as well as different separations of DNA, proteins, and viruses.

Max. RPM	Max. *g*	*k* Factor	Number of Tubes Volume/Size	Rotor Capacity
16,500	28,611	973	8 x 50 mL 29 x 104 mm 1.125 x 4 in	400 mL

For use in Allegra™ 64R and Allegra 21 Series centrifuges only.

No. 364640. F0850 Fixed-Angle Rotor, for 16,500 rpm operation. Tubes and bottles not included.

Tubes and Bottles

Tube Style/Material	Part No.	Quantity	Nominal Volume per Tube (mL)	Size (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Bottles with Cap Assemblies									
Polyallomer	357001	6	50.0	29 x 104	———	———	28,611	973	16,500
Polycarbonate	357000	6	50.0	29 x 104	———	———	28,611	973	16,500
Bottles with Screw Caps									
Polyallomer	357003	25	50.0	29 x 104	———	———	28,611	973	16,500
Polycarbonate	357002	25	50.0	29 x 104	———	———	28,611	973	16,500
Tubes									
Polycarbonate	363647	25	50.0	29 x 104	———	———	28,611	973	16,500
Graduated Polycarbonate	363075	8	50.0	29 x 104	———	———	17,800	1,570	13,000
Polypropylene	357007	25	50.0	29 x 104	———	———	28,611	973	16,500
Teflon* with High-speed Screw Cap	363076	8	50.0	28.5 x 107	———	———	28,611	973	16,500
Tubes with Snap-On Caps									
Polycarbonate	363664	25	50.0	29 x 104	———	———	28,611	973	16,500
Polypropylene	357005	25	50.0	29 x 104	———	———	28,611	973	16,500
Conical Tubes									
Polypropylene	355663	6	15.0	17 x 120	870329	1	10,500	———	10,000

a In the Allegra 64R centrifuge. This rotor is rated at a lower speed in the Allegra 21 and 21R centrifuges, so g-forces and k factors are different. See the rotor manual for specific information.

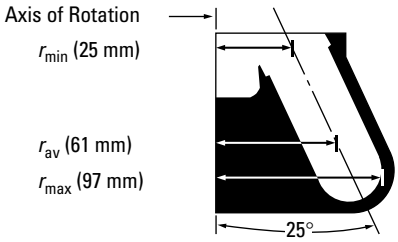
* *Teflon is a registered trademark of E. I. Du Pont de Nemours & Company.*

Rotor Replacement Parts

364643 Rotor Lid
961922 Rotor Lid O-ring
361367 Tie-down Screw
361371 T-handle Rotor Wrench

Adapters

870329



Fixed-Angle Rotor, Aluminum

Major applications: Pelleting subcellular organelles, viruses, bacteria, mitochondria, chloroplasts, or algae.

Max. RPM	Max. *g*	*k* Factor	Number of Tubes Volume/Size	Rotor Capacity
15,500	26,320	1,428	6 x 85 mL 38 x 104 mm 1.5 x 4 in	510 mL

For use in Allegra™ 64R and Allegra 21 Series centrifuges only.

No. 364650. F0685 Fixed-Angle Rotor, for 15,500 rpm operation. Tubes and bottles not included.

Tubes and Bottles

Tube Style/Material	Part No.	Quantity	Nominal Volume per Tube (mL)	Size (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Bottles with Cap Assemblies									
Polycarbonate	363081	6	85.0	38 x 104	———	———	26,320	1,428	15,500
	355620*	6	70.0	38 x 102	———	———	26,320	1,428	15,500
Bottles with Screw Caps									
Polyallomer	357003†	25	50.0	29 x 104	347539	1	26,320	1,428	15,500
Polycarbonate	357002	25	50.0	29 x 104	347539	1	26,320	1,428	15,500
Polypropylene	355624	6	100.0‡	38 x 102	———	———	26,320	1,428	15,500
	363082	6	80.0	38 x 104	———	———	26,320	1,428	15,500
Tube									
Thinwall Polyallomer	345775**	25	94.0	38 x 102	———	———	26,320	1,428	15,500
Thickwall Polyallomer	355643**	25	94.0	38 x 102	———	———	26,320	1,428	15,500
Polycarbonate	355628**	25	94.0	38 x 102	———	———	26,320	1,428	15,500
	363647	6	50.0	29 x 104	347539	1	26,320	1,428	15,500
Polypropylene	357007	25	50.0	29 x 104	347539	1	26,320	1,428	15,500

a In the Allegra 64R centrifuge. This rotor is rated at a lower speed in the Allegra 21 and 21R centrifuges, so g-forces and k factors are different. See the rotor manual for specific information.

* *Requires adapter pad 342604.*

† *Requires adapter pad 347539.*

‡ *Run with reduced fill volume to prevent spilling/leaking.*

** *To facilitate tube removal, place rubber pad (part number 344120) at the bottom of the tube cavity before inserting the tube.*

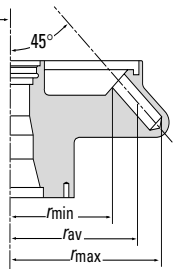
Rotor Replacement Parts

364653	Rotor Lid
961929	Rotor Lid O-ring
361367	Tie-down Screw
361371	T-handle Rotor Wrench

Adapters

347539

Contents



Fixed-Angle Rotor, Aluminum

Major applications: Pelleting subcellular organelles, nucleic acids, viruses, bacteria, mitochondria, chloroplasts, or algae.

Max. RPM	Max. *g*	Rotor Capacity	Approximate Accel/Decel Time (min:sec)
15,000	25,160	30 x 1.5 mL 11 x 45 mm 0.5 x 1.8 in.	0:34/0:50

For use in the Allegra™ 25R centrifuge only.

No. 368298. TA-15-1.5 Fixed Angle Rotor.

Tubes and Bottles

Tube Style/Material		Part No.	Quantity	Nominal Volume per Tube (mL)	Size (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Tubes with Snap-on Caps										
Polyallomer	Natural	357448	500	1.5	11 x 38	364701	1	———	———	15,000
Polyethylene		340196	500	1.8	11 x 39	364701	1	———	———	10,000
		652824*	1000	400 µL	7 x 40	361247	1	———	———	11,500
		652825†	1000	400 µL	7 x 40	361247	1	———	———	11,500
		314326	1000	400 µL	7 x 40	361247	1	———	———	11,500
		652821*	1000	250 µL	5 x 45	361247	1	———	———	11,500
		652822†	1000	250 µL	5 x 45	361247	1	———	———	11,500
		652823	1000	250 µL	5 x 45	361247	1	———	———	11,500
Polypropylene	Natural	343169	500	1.5	11 x 38	364701	1	———	———	11,500

** Heparin-Lithium-Fluoride coated.*
† Heparin-Lithium coated.

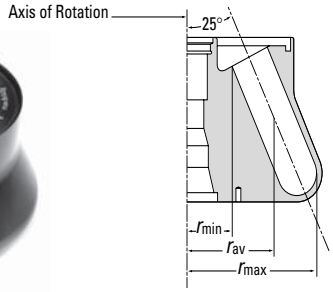
Rotor Replacement Parts

368299	Lid Assembly
368300	O-ring
368245	Tie-down Screw
368246	T-handle Rotor Wrench

Adapters

361247

364701



Fixed-Angle Rotor, Aluminum

Major applications: Pelleting cells from large volumes, or cell particles from tissue homogenates. Short-column methods (such as partially filled tubes) may also be used to purify large quantities of virus in a cushion gradient.

Max. RPM	Max. *g*	Rotor Capacity	Approximate Accel/Decel Time (min:sec)
14,000	21,100	8 x 50 29 x 104 mm 1.25 x 4 in.	0:37/0:59

For use in the Allegra™ 25R centrifuge only.

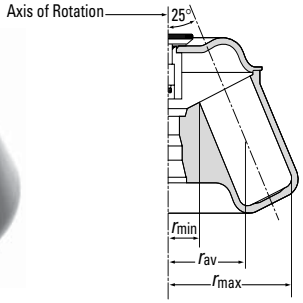
No. 368303. TA-14-50 Fixed Angle Rotor.

Tubes and Bottles

Tube Style/Material	Part No.	Quantity	Nominal Volume per Tube (mL)	Size (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Bottles with Screw Caps									
Polyallomer	357003	25	50.0	29 x 104	———	———	21,100	1,380	14,000
Polycarbonate	357002	25	50.0	29 x 104	———	———	21,100	1,380	14,000
Bottles with Cap Assemblies									
Polyallomer	357001	6	50.0	29 x 104	———	———	21,100	1,380	14,000
Polypropylene	357000	6	50.0	29 x 104	———	———	21,100	1,380	14,000
Tubes with Snap-On Caps									
Polycarbonate	363664	25	50.0	29 x 104	———	———	21,100	1,380	14,000
Polypropylene	357005	25	50.0	29 x 104	———	———	21,100	1,380	14,000
Open-Top Tubes									
Polycarbonate	363647	25	50.0	29 x 104	———	———	21,100	1,380	14,000
Polypropylene	357007	25	50.0	29 x 104	———	———	21,100	1,380	14,000

Rotor Replacement Parts

368304	Lid Assembly
368305	O-ring
368245	Tie-down Screw
368246	T-handle Rotor Wrench



Fixed-Angle Rotor, Aluminum

Major applications: Pelleting cells from large volumes, or cell particles from tissue homogenates. Short-column methods (such as partially filled tubes) may also be used to purify large quantities of virus in a cushion gradient.

Max. RPM	Max. *g*	Rotor Capacity	Approximate Accel/Decel Time (min:sec)
10,000	15,300	6 x 250 62 x 141 mm 2.5 x 5.75 in.	2:00/2:00

For use in the Allegra™ 25R centrifuge only.

No. 368293. TA-10-250 Fixed Angle Rotor.

Tubes and Bottles

Tube Style/Material	Part No.	Quantity	Nominal Volume per Tube (mL)	Size (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Bottles with Cap Assemblies									
Polyallomer	357001	6	50.0	29 x 104	356997	1	———	———	10,000
Polypropylene	357000	6	50.0	29 x 104	356997	1	———	———	10,000
Wide-mouth Polypropylene	356011	25	250.0	62 x 122	———	———	15,300	3,450	10,000
Wide-mouth Polycarbonate	356013	25	250.0	62 x 122	———	———	15,300	3,450	10,000
Bottles with Screw Caps									
Polyallomer	357003	25	50.0	29 x 104	356997	1	———	———	10,000
Polycarbonate	357002	25	50.0	29 x 104	356997	1	———	———	10,000
Tubes with Snap-On Caps									
Polycarbonate	363664	25	50.0	29 x 103	356997	1	———	———	10,000
Polypropylene	357005	25	50.0	29 x 103	356997	1	———	———	10,000
Conical Tubes									
Polycarbonate with Cap	356987	6	230.0	62 x 141	356983	1	———	———	10,000
Polypropylene with Cap	356989	6	230.0	62 x 141	356983	1	———	———	10,000
Open-Top Tubes									
Polycarbonate	363647	25	50.0	29 x 103	356997	1	———	———	10,000
Polypropylene	357007	25	50.0	29 x 103	356997	1	———	———	10,000

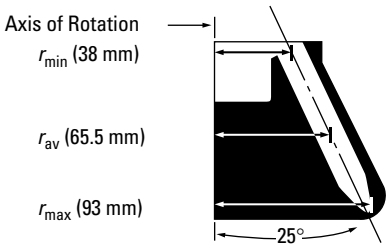
Rotor Replacement Parts

368294 Lid Assembly
368245 Tie-down Screw
368246 T-handle Rotor Wrench

Adapters

356983

356997



Fixed-Angle Rotor, Aluminum

Major applications: Pelleting of subcellular organelles, viruses, bacteria, mitochondria, chloroplasts, or algae.

Max. RPM	Max. *g*	*k* Factor	Number of Tubes Volume/Size	Rotor Capacity
10,000	10,397	2,270	10 x 15 mL 17 x 120 mm 0.65 x 4.75 in	150 mL

For use in Allegra™ 64R and Allegra 21 Series centrifuges only.

No. 364680. C1015 Fixed-Angle Rotor, for 10,000 rpm operation. Tubes and bottles not included.*

Tubes and Bottles

Tube Style/Material	Part No.	Quantity	Nominal Volume per Tube (mL)	Size (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Tubes									
Conical	——	——	15.0	17 x 120	——	——	10,397	2,270	10,000

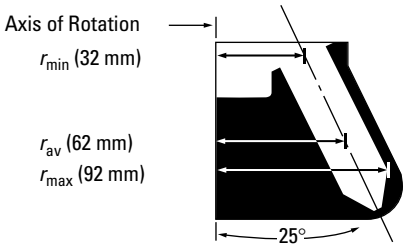
a In the Allegra 64R centrifuge. This rotor is rated at a lower speed in the Allegra 21 and 21R centrifuges, so g-forces and k factors are different. See the rotor manual for specific information.

** Tubes available from scientific supply vendors.*

See chart on page 2–6 for adapters used with non-Beckman Coulter tubes and bottles.

Rotor Replacement Parts

364683	Rotor Lid
961932	Rotor Lid O-ring
361367	Tie-down Screw
361371	T-handle Rotor Wrench



Fixed-Angle Rotor, Aluminum

Major applications: General pelleting of cells, bacteria, and food products; separation of proteins, viruses, and subcellular fractions; phase separation; and binding studies.

Max. RPM	Max. *g*	*k* Factor	Number of Tubes Volume/Size	Rotor Capacity
10,000	10,400	2,680	6 x 50 mL 28.5 x 107 mm 1.125 x 4.25 in	300 mL

For use in Allegra™ 64R and Allegra 21 Series centrifuges only.

No. 364670. C0650 Fixed-Angle Rotor, for 10,000 rpm operation. Tubes and bottles not included.*

Tubes and Bottles

Tube Style/Material	Part No.	Quantity	Nominal Volume per Tube (mL)	Size (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Tubes									
Conical	——	——	50.0	28.5 x 107	——	——	10,400	2,680	10,000

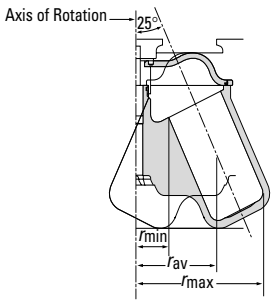
a In the Allegra 64R centrifuge. This rotor is rated at a lower speed in the Allegra 21 and 21R centrifuges, so g-forces and k factors are different. See the rotor manual for specific information.

** Tubes available from scientific supply vendors.*

See chart on page 2–6 for adapters used with non-Beckman Coulter tubes and bottles.

Rotor Replacement Parts

364673 Rotor Lid
961922 Rotor Lid O-ring
361367 Tie-down Screw
361371 T-handle Rotor Wrench



Fixed-Angle Rotor, Aluminum

Major applications: Pelleting bacterial cells from large volumes or particles from tissue homogenates.

Max. RPM	Max. *g*	Number of Tubes Volume/Size	Approximate Accel/Decel Time (min:sec)
6,100	5,710	6 x 250 mL 62 x 122 mm 0.5 x 4.25 in	3:30/1:15

For use in Allegra™ 6 Series centrifuges only.

No. 367054. GA-6 Fixed Angle Rotor.

Tubes and Bottles

Tube Style/Material	Part No.	Quantity	Nominal Volume per Tube (mL)	Size (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Bottles with Screw Caps									
Polyallomer	357003	25	50.0	29 x 104	356997	1	———	———	6,100
Polycarbonate	355628	25	40.0	29 x 104	356997	1	———	———	6,100
Bottles with Cap Assemblies									
Polyallomer	357001	6	45.0	29 x 104	356997	1	———	———	6,100
Polycarbonate	356013 357000	6 6	250.0 45.0	62 x 122 29 x 104	——— 356997	——— 1	5,710 ———	——— ———	6,100
Polypropylene	356011	6	250.0	62 x 120	———	———	5,710	———	6,100
Tubes with Snap-on Caps									
Polycarbonate	363664	25	36.5	29 x 103	356997	1	———	———	6,100
Polypropylene	357005	25	36.5	29 x 103	356997	1	———	———	6,100
Tubes									
Polypropylene, graduated	355663	6	30	17 x 119	356995	1	———	———	6,100
BioVials	566353	1000	4	14 x 55	342098	9	———	———	4,000

Rotor Replacement Parts

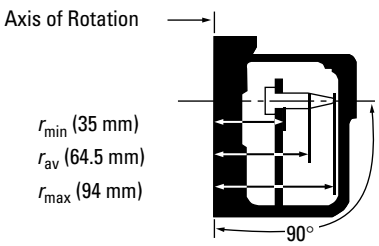
367050	Rotor Lid Assembly
870980	O-ring (rotor)
870138	O-ring (lid)
367057	Rotor Removal Tool

Adapters

342098

356995

356997



Horizontal (Bowl) Rotor, Aluminum

Major applications: Pelleting subcellular organelles, viruses, bacteria, mitochondria, chloroplasts, or algae.

Max. RPM	Max. *g*	*k* Factor	Number of Tubes Volume/Size	Rotor Capacity
12,200	12,400	N.A.	60 x 1.8 mL 11 x 39 mm 0.44 x 1.5 in	108 mL

For use in Allegra™ 64R and Allegra 21 Series centrifuges only.

No. 363000. H6002 Horizontal Rotor, for 12,200 rpm operation. Tubes and bottles not included.

Tubes and Bottles

Tube Style/Material		Part No.	Quantity	Nominal Volume per Tube (mL)	Size (mm)	Tube Holder Color & Part No.* Set of 2/Set of 6	Tubes per Holder	*g*-Force	*k* Factor	Maximum Speed†
Tubes with Attached Caps										
Polyallomer		357448	500	1.5	11 x 38	blue 345527/345524	10	12,400	———	12,200
Polyethylene		340196	500	1.8	11 x 39	blue 345527/345524	10	8,320	———	10,000
Tubes										
Microtainer‡		———	———	600 µL	———	red 345526 **red 345522***	12 **12**	12,300	———	12,200
Polypropylene		343169	500	1.5	11 x 38	blue 345527/345524	10	12,400	———	12,200
		344319	500	500 µL	8 x 28	red 345526 **red 345522***	12 **12**	9,950	———	12,200
		342867	1000	400 µL	7 x 40	dark green 345525 **dark green 345521***	14 **14**	11,600	———	12,200
		342865	1000	250 µL	7 x 30	dark green 345525 **dark green 345521***	14 **14**	8,890	———	12,200
Plain Tubes										
Polyethylene		314326	1000	400 µL	7 x 40	dark green 345525 **dark green 345521***	14 **14**	7,820	———	10,000
		652823	1000	250 µL	5 x 45	dark green 345525 **dark green 345521***	14 **14**	7,895	———	11,500
Coated Tubes										
Polyethylene	Blue	652825	1000	400 µL	7 x 40	dark green 345525 **dark green 345521***	14 **14**	10,300	———	11,500
Polyethylene	Yellow	652824	1000	400 µL	7 x 40	dark green 345525 **dark green 345521***	14 **14**	10,300	———	11,500
Polyethylene	Blue	652822	1000	250 µL	5 x 45	dark green 345525 **dark green 345521***	14 **14**	7,900	———	11,500
Polyethylene	Yellow	652821	1000	250 µL	5 x 45	dark green 345525 **dark green 345521***	14 **14**	7,900	———	11,500

a In the Allegra 64R centrifuge. This rotor is rated at a lower speed in the Allegra 21 and 21R centrifuges, so g-forces and k factors are different. See the rotor manual for specific information.

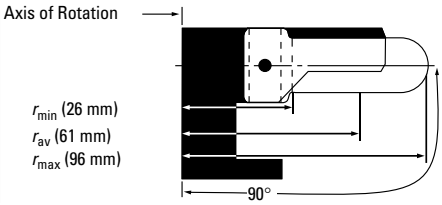
** Bold numbers feature 30° resting angle to minimize remixing of loose pellets upon completion of run.*

† Based on empirical tests of tube strength with the lid in place on the rotor.

‡ Microtainer is a registered trademark of Becton, Dickinson and Company; available commercially.

Rotor Replacement Parts

363002	Rotor Lid
363003	Rotor Lid Knob
344658	Rotor Lid O-ring
344659	Rotor O-ring
361367	Tie-down Screw
361371	T-handle Rotor Wrench



Swinging-Bucket Rotor, Anodized Aluminum

Major applications: Rapidly sediments protein precipitates, large particles, cells, cell debris, and for separations using gradients.

Max. RPM	Max. *g*	*k* Factor	Number of Tubes Volume/Size	Rotor Capacity
10,000	10,733	3,310	4 x 10 mL 16 x 81.1 mm 0.65 x 3.25 in	40 mL

For use in Allegra™ 64R centrifuges only.

No. 364660. S0410 Swinging-Bucket Rotor Assembly, for 10,000 rpm operation. Tubes and bottles not included.

Tubes and Bottles

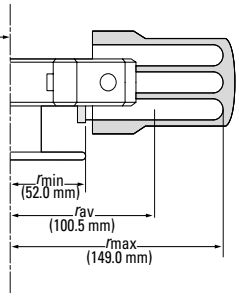
Tube Style/Material	Part No.	Quantity	Nominal Volume per Tube (mL)	Size (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Bottle with Cap Assembly									
Polycarbonate	355672	25	10.0	16 x 80	———	———	10,733	3,310	10,000
Bottles with Screw Caps									
Polyallomer	364695	10	10.0	16.1 x 81.1	———	———	10,733	3,310	10,000
Teflon*	364693	10	10.0	16.1 x 81.1	———	———	10,733	3,310	10,000
Tubes									
Polyallomer	355640	25	13.5	16 x 76	———	———	10,733	3,310	10,000
	355646†	25	8.0	16 x 64	344120	1	———	———	10,000
Polycarbonate	355630	25	13.5	16 x 76	———	———	10,733	3,310	10,000
	355647†	25	8.0	16 x 64	344120	1	———	———	10,000
Ultra-Clear™	344085	50	13.5	16 x 76	———	———	10,733	3,310	10,000

* *Teflon is a registered trademark of E. I. Du Pont de Nemours & Company.*

† *To facilitate tube removal, place rubber pad (part number 344120) at the bottom of the tube cavity before inserting the tube.*

Rotor Replacement Parts

364633 Buckets (set of 4)
361367 Tie-down Screw
361371 T-handle Rotor Wrench



Swinging-Bucket Rotor, Anodized Aluminum

Major applications: Rapidly sediments protein precipitates, large particles, cells, cell debris, and for separations using gradients.

Max. RPM	Max. *g*	*k* Factor	Number of Tubes Volume/Size	Rotor Capacity
5,500†	5,450	8,800	4 x 180 mL 55 x 104 mm 2.2 x 4.16 in.	720 mL

For use in Allegra™ 21 Series centrifuges only.

No. 361101. S4180 Swinging-Bucket Rotor Assembly, for 5,500 rpm operation. Tubes and bottles not included.

Tubes and Bottles

Tube Style/Material		Part No.	Quantity	Nominal Volume per Tube (mL)	Size (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Bottles with Cap Assemblies										
Polycarbonate		363081	6	85.0	38 x 104	361237	1	———	———	5,500
Bottles with Screw Caps										
Polyallomer		364695	10	10.0	16.1 x 81.1	361225	1	———	———	5,500
Polycarbonate		364718	6	85.0	38 x 104	361237	1	———	———	5,500
		355672	25	10.0	16 x 80	361225	1	———	———	5,500
Polyethylene		361245	4	180.0	55 x 104	———	———	5,450	———	5,500
Polypropylene with Special Cap		364719	6	85.0	38 x 104	361237	1	———	———	5,500
Open-Top Tubes with Separate Cap										
Polypropylene		343169	500	1.5	11 x 38	361224	12	———	———	5,500
Tubes with Snap-On Caps										
Polypropylene	Orange	356094	500	1.5	11 x 38	361224	12	———	———	5,500
	Yellow	356093	500	1.5	11 x 38	361224	12	———	———	5,500
	Green	356092	500	1.5	11 x 38	361224	12	———	———	5,500
	Blue	356091	500	1.5	11 x 38	361224	12	———	———	5,500
	Natural	356090	500	1.5	11 x 38	361224	12	———	———	5,500

** With threaded-top buckets and screw-on covers (P/N 361243).*

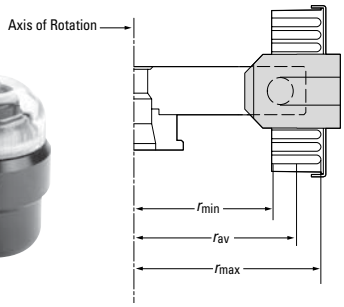
† In refrigerated centrifuges. In non-refrigerated centrifuges, the S4180 rotor is rated for 4,500 rpm so g-force and k factor are different.

Rotor Replacement Parts

361244	Buckets, Open-top (set of 4)
361243	Threaded-top Buckets with Screw-on Covers (set of 4)
361242	Replacement Cover for Bucket 361243 (set of 4)
361240	Buckets for 15-mL Conical Tubes
361367	Tie-down Screw
361371	T-handle Rotor Wrench

Adapters

347562



Swinging Bucket Rotor, Aluminum

Major applications: Sedimenting protein precipitates, large particles, cells, and cell debris.

Max. RPM	Max. *g*	Rotor Capacity	Approximate Accel/Decel Time (min:sec)
5,100	5,540	4 x 500 85 x 135 mm 3.5 x 5.5 in.	0:59/0:47

For use in the Allegra™ 25R centrifuge only.

No. 368308. TS-5.1-500 Swinging Bucket Rotor.

Tubes, Bottles, and Labware

Tube Style/Material	Part No.	Quantity	Nominal Volume per Tube (mL)	Size (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Bottles with Screw Caps									
Polyallomer	364695	10	10.0	16.1 x 81.1	368469	12	———	———	5,100
Polycarbonate	368454	2	500.0	85 x 135	———	———	5,540	———	5,100
	356013	6	250.0	62 x 122	368456	1	———	———	5,100
	355672	25	10.0	16 x 80	368469	12	———	———	5,100
Polypropylene	368453	2	500.0	85 x 135	———	———	5,540	———	5,100
	356011	6	250.0	62 x 122	368456	1	———	———	5,100
Tubes with Caps									
Polyallomer	357448	500	1.5	11 x 40	368470	16	———	———	5,100
Open-Top Tubes									
Thickwall Polyallomer	355640	25	10.0	16 x 76	368469	12	———	———	5,100
Thickwall Polycarbonate	355630	25	10.0	16 x 76	368469	12	———	———	5,100
	355647	25	6.5	16 x 64	368469	12	———	———	5,100

* *With sealed bucket covers.*

Adapters

368456 368469 368470

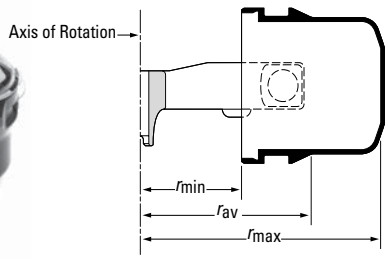
No. 368308. TS-5.1-500 Swinging Bucket Rotor.

Description	Part No.	Quantity	Volume	Maximum Speed	Accessory Description	Part No.	Quantity
Labware							
Multiwell Polystyrene Plate, 96-Well, Nonsterile	609844	100	300 µL/well	5,100	Rubber Pad	362390	4
Deep-Well Polystyrene Plate, 96-Well, Nonsterile	267001	24	1 mL/well	5,100	Cap Strip, Nonsterile Cap Strip, Sterile Aluminum Foil Lid	267002 267005 538619	10 12 100
Deep-Well Polystyrene Plate, 96-Well, Sterile	267004	24	1 mL/well	5,100	Cap Strip, Nonsterile Cap Strip, Sterile Aluminum Foil Lid	267002 267005 538619	10 12 100
Deep-Well Polypropylene Plate, 96-Well, Nonsterile	267006	24	1 mL/well	5,100	Cap Strip, Nonsterile Cap Strip, Sterile Aluminum Foil Lid	267002 267005 538619	10 12 100
Deep-Well Polypropylene Plate, 96-Well, Sterile	267007	24	1 mL/well	5,100	Cap Strip, Nonsterile Cap Strip, Sterile Aluminum Foil Lid	267002 267005 538619	10 12 100
Square-Well Polystyrene Plate,	140504	24	2 mL/well	5,100	Aluminum Foil Lid	538619	100

*Caps are optional
†Requires 4-inch soft roller (538618) for installation.

Rotor Replacement Parts

368452	Bucket (set of 2)
368472	Bucket Cover (set of 2)
368455	Bucket O-ring (pkg. of 8)
368451	Microplate Carrier (set of 2)
368245	Tie-down Screw
368246	T-handle Rotor Wrench



Swinging-Bucket Rotor

Major applications: Rapidly sediments protein precipitates, large particles, cells, and cell debris. Can also be used for binding studies and for separating serum from whole blood.

Max. RPM	Max. *g*	Number of Tubes Volume/Size	Approximate Accel/Decel Time (min:sec)
3,750	3,210	4 x 750 mL 96 x 130 mm 3.85 x 5.25 in	2:40/1:20

For use in Allegra™ 6 Series centrifuges only.

No. 360581. GH-3.8 Swinging-Bucket Rotor. Unshielded, four-place rotor with stainless-steel rotor yoke and removable aluminum swinging buckets. Buckets are interchangeable with MicroPlus multiwell plate carriers 362394 for spinning microtiter plates or microfuge tubes using rack inserts.

Bucket Covers

No. 360585. Set of two. Transparent bucket covers for GH-3.8 Buckets to contain broken tubes. Includes cover assembly, O-ring, and Silicone Vacuum Grease.

Aerosolve® Cannisters

No. 359232. Set of four.
No. 359481. Set of two.
Aerosolve Cannisters fit in GH-3.8 Rotor Buckets. These cannisters feature an O-ring seal and are completely transparent so a broken tube can be seen and proper precautions taken before you break the seal. Cannisters can also be used as 500-mL wide-mouth bottles. Specially-designed adapters accommodate most popular tubes within the cannister. **In the Tubes and Bottles chart below, specifications and adapters required for the use of tubes within Aerosolve Cannisters are listed in bold type.**

MicroPlus Carriers

No. 362394. MicroPlus Carrier Assembly. Includes carrier, base, and rubber pad to cushion plates. Each carrier can hold up to 3 microplates, 1 deep-well/square well plate, 1 rack of MiniTubes, or other labware in 96-well format. Set of 2. Maximum allowable speed is 3,250 rpm (1924 x *g*).

Replacement Parts for MicroPlus Carrier

361302 Base and Rubber Pads (set of 2)
362390 Rubber Pads (set of 4)
361304 MicroPlus Carriers (set of 2)

Tubes and Bottles

Tube Style/Material	Part No.	Quantity	Nominal Volume per Tube (mL)	Size (mm)	Required Modular Disk Adapters Set of 2/Set of 4	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Bottles with Screw Caps									
Polyallomer	357003	25	50.0	29 x 104	359474/359153 **359486/359164**	7	2,910	——	3,750
Polycarbonate	358299	1	750.0	96 x 130	349846	1	2,910	——	3,750
	355673	6	250.0	62 x 136	349946	1	2,910	——	3,750
	357002	25	50.0	29 x 104	359474/359153 **359486/359164**	7	2,910	——	3,750
Polypropylene	356855	6	750.0	96 x 130	349846	1	2,910	——	3,750
	355665	6	500.0	69 x 159	349945	1	2,910	——	3,750
Teflon with High-Speed Cap	363076	25	50.0	28.5 x 107	359474/359153 **359486/359164**	7	2,910	——	3,750

** With sealed bucket covers.*

Adapters

349846 349945 349946 359474 359486

Contents

Tubes and Bottles

Tube Style/Material	Part No.	Quantity	Nominal Volume per Tube (mL)	Size (mm)	Required Modular Disk Adapters Set of 2/Set of 4	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Bottles with Cap Assemblies									
Polyallomer	357001	6	50.0	29 x 104	359474/359153 **359486/359164**	7	2,910	——	3,750
	361694	6	50.0	29 x 104	359474/359153 **359486/359164**	7	2,910	——	3,750
Polycarbonate	356013	6	250.0	62 x 122	349946				
	357000	6	50.0	29 x 104	359474/359153 **359486/359164**	7	2,910	——	3,750
	361693	6	50.0	29 x 104	359474/359153 **359486/359164**	7	2,910	——	3,750
Polypropylene	356011	6	250.0	62 x 122	349946	1	2,910	——	3,750
Bottles									
Polycarbonate	355649	6	500.0	69 x 160	349945	1	2,910	——	3,750
Wide-mouth Polycarbonate	358275	25	250.0	62 x 122	349946	1	2,910	——	3,750
Polypropylene	355650	6	500.0	69 x 159	349945	1	2,910	——	3,750
	355607	6	500.0	69 x 160	349945	1	2,910	——	3,750
Wide-mouth Polypropylene	358326	25	250.0	62 x 122	349946	1	2,910	——	3,750
Open-Top Tubes									
Polyallomer	355640	25	10.0	16 x 76	359471/359150 **359484/359162**	19	2,910	——	3,750
Polyethylene	342081	100	15.0	18 x 98	359473/359152	14	2,910	——	3,750
Polycarbonate	363647	25	50.0	29 x 104	359474/359153 **359486/359164**	7	2,910	——	3,750
	342080	100	15.0	18 x 98	359473/359152	14	2,910	——	3,750
	355630	25	10.0	16 x 76	359471/359150 **359484/359162**	19	2,910	——	3,750
Graduated Polycarbonate	363075	8	50.0	29 x 104	359474/359153 **359486/359164**	7	2,910	——	3,750

** Use with 349946.*

† Graduated.

Adapters

349945 349946 356960 359471 359473 359474 359484 359486

Tubes and Bottles

Tube Style/Material		Part No.	Quantity	Nominal Volume per Tube (mL)	Size (mm)	Required Modular Disk Adapters Set of 2/Set of 4	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Open-Top Tubes (continued)										
Polypropylene		357007	25	50.0	29 x 104	359474/359153 **359486/359164**	7	2,910	——	3,750
		342082	100	15.0	18 x 98	359473/359152	14	2,910	——	3,750
		355663†	6	15.0	17 x 120	356960	5			3,750
Stainless Steel		301108	1	10.0	16 x 76	359471/359150 **359484/359162**	19	2,910	——	3,750
Tubes with Snap-On Caps										
Polyallomer		357448	500	1.5	11 x 38	359469/359148 **354495/** ——	37	2,910	——	3,750
Polycarbonate		363664	6	50.0	29 x 103	359474/359153 **359486/359164**	7	2,910	——	3,750
Conical Polycarbonate		356987	6	230.0	62 x 141	349946	1	2,910	——	3,750
Polyethylene		340196	500	1.8	11 x 38	359469/359148 **354495/** ——	37	2,910	——	3,750
Polypropylene		357005	25	36.5	29 x 104	359474/359153 **359486/359164**	7	2,910	——	3,750
	Orange	356094	500	1.5	11 x 38	359469/359148 **354495/** ——	37	2,910	——	3,750
	Yellow	356093	500	1.5	11 x 38	359469/359148 **354495/** ——	37	2,910	——	3,750
	Green	356092	500	1.5	11 x 38	359469/359148 **354495/** ——	37	2,910	——	3,750
	Blue	356091	500	1.5	11 x 38	359469/359148 **354495/** ——	37	2,910	——	3,750
	Natural	356090	500	1.5	11 x 38	359469/359148 **354495/** ——	37	2,910	——	3,750
	Natural	343169*	500	1.5	11 x 38	359469/359148 **354495/** ——	37	2,910	——	3,750
Conical Polypropylene		356989	6	230.0	62 x 141	349946	1	2,910	——	3,750
BioVials										
Polypropylene		566353	1,000	4.0	14 x 55	359470/359149 **344517/** ——	24	2,910	——	3,750

** Separate cap.*

Adapters

344517 349946 354495 356960 359469 359470 359471 359473 359474 359484 359486

Blood-Bag Cups

No. 356856. Yellow cup with inner diameter of 90 mm for single- or double-packs.

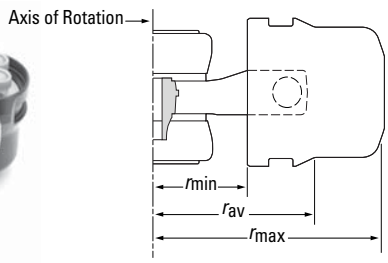
No. 356857. Orange cup with inner diameter of 97 mm for triple- or quad-packs.

MicroPlus Multiwell Plate Carriers

No. 362394. Set of two. Special carriers, interchangeable with buckets, slip onto yoke of GH-3.8 Rotor. Each carrier holds one deep-well plate or up to three 96-well microplates for a total capacity of up to 12 per run. Maximum speed 3,250 rpm (1,928 x *g*).

Rotor Supplies

356035	Rotor Tie-down Nut
927571	O-ring for Rotor Tie-down Nut
360589	Bucket Set (set of 4)
356036	Torquing Bar



Swinging-Bucket Rotor

Major applications: Rapidly sediments protein precipitates, large particles, cells, and cell debris. Can also be used for binding studies and for separating serum from whole blood.

Max. RPM	Max. *g*	Number of Tubes Volume/Size	Approximate Accel/Decel Time (min:sec)
3,750	3,210	4 x 750 mL 96 x 130 mm 3.85 x 5.25 in	2:40/1:20

For use in Allegra™ 6 Series centrifuges only.

No. 366650. GH-3.8A Swinging-Bucket Rotor. Unshielded, four-place rotor with stainless-steel rotor yoke and removable aluminum swinging buckets. Buckets are interchangeable with MicroPlus multiwell plate carriers 362394 for spinning microtiter plates or microfuge tubes using rack inserts. ARIES technology provides imbalance compensation for rotors with buckets that are unbalanced up to 50 grams.

MicroPlus Carriers

No. 362394. MicroPlus Carrier Assembly. Includes carrier, base, and rubber pad to cushion plates. Each carrier can hold up to 3 microplates, 1 deep-well/square well plate, 1 rack of MiniTubes, or other labware in 96-well format. Set of 2. Maximum allowable speed is 3,250 rpm (1924 x *g*).

Replacement Parts for MicroPlus Carriers

361302 Base and Rubber Pads (set of 2)
362390 Rubber Pads (set of 4)
361304 MicroPlus Carriers (set of 2)

Tubes and Bottles

Tube Style/Material	Part No.	Quantity	Nominal Volume per Tube (mL)	Size (mm)	Required Adapters Set of 2/Set of 4	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Bottles with Screw Caps									
Polyallomer	357003	25	50.0	29 x 104	359474/359153	7	2,910	——	3,750
Polycarbonate	357002	25	50.0	29 x 104	359474/359153 359486/359164	7	2,910	——	3,750
Teflon with High-Speed Cap	363076	25	50.0	28.5 x 107	359474/359153	7	2,910	——	3,750
Bottles with Cap Assemblies									
Polyallomer	357001	6	50.0	29 x 104	359474/359153	7	2,910	——	3,750
	361694	6	50.0	29 x 104	359474/359153	7	2,910	——	3,750
Polycarbonate	356013	6	250.0	62 x 122	349946	1	2,910	——	3,750
	356989	6	230.0	62 x 141	356983*	1	2,910	——	3,750
	357000	6	50.0	29 x 104	359474/359153	7	2,910	——	3,750
	361693	6	50.0	29 x 104	359474/359153	7	2,910	——	3,750

** With sealed bucket covers.*

*** Use with adapter P/N 349946.*

Adapters

349946 356983 359474

Tubes and Bottles

Tube Style/Material		Part No.	Quantity	Nominal Volume per Tube (mL)	Size (mm)	Required Adapters Set of 2/Set of 4	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Open-Top Tubes										
Polyallomer		355640	25	10.0	16 x 76	349471/359150	19	2,910	——	3,750
Polyethylene		342081	100	15.0	18 x 98	359473/359152	14	2,910	——	3,750
Polycarbonate		342080	100	15.0	18 x 98	359473/359152	14	2,910	——	3,750
		355630	25	10.0	16 x 76	359471/359150	19	2,910	——	3,750
Polypropylene		357007	25	50.0	29 x 104	359474/359153	7	2,910	——	3,750
		342082	100	15.0	18 x 98	359473/359152	14	2,910	——	3,750
Stainless Steel		301108	1	13.5	16 x 76	359471/359150	19	2,910	——	3,750
Tubes with Snap-On Caps										
Polyallomer		357448	500	1.5	11 x 38	359469/359148	37	2,910	——	3,750
Polycarbonate		357004	6	50.0	29 x 103	359474/359153	7	2,910	——	3,750
Conical Polycarbonate		356987	6	230.0	62 x 141	349946	1	2,910	——	3,750
Polyethylene		340196	500	1.8	11 x 38	359469/359148	37	2,910	——	3,750
Polypropylene		357005	25	50.0	29 x 103	359474/359153	7	2,910	——	3,750
	Orange	356094	500	1.5	11 x 38	359469/359148	37	2,910	——	3,750
	Yellow	356093	500	1.5	11 x 38	359469/359148	37	2,910	——	3,750
	Green	356092	500	1.5	11 x 38	359469/359148	37	2,910	——	3,750
	Blue	356091	500	1.5	11 x 38	359469/359148	37	2,910	——	3,750
	Natural	356090	500	1.5	11 x 38	359469/359148	37	2,910	——	3,750
	Natural	343169*	500	1.5	11 x 38	359469/359148	37	2,910	——	3,750
BioVials										
Polypropylene		566353	1,000	4.0	14 x 55	359470/359149	24	2,910	——	3,750

** Separate cap.*

Adapters

349946 356983 359469 359471 359473 359474

Blood-Bag Cups

No. 356856. Yellow cup with inner diameter of 90 mm for single- or double-packs.

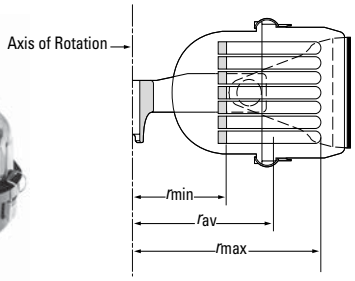
No. 356857. Orange cup with inner diameter of 97 mm for triple- or quad-packs.

MicroPlus Multiwell Plate Carriers

No. 362394. Set of two. Special carriers, interchangeable with buckets, slip onto yoke of GH-3.8A Rotor. Each carrier holds one deep-well plate or up to three 96-well microplates for a total capacity of up to 12 per run. Maximum speed 3,250 rpm (1,928 x *g*).

Rotor Supplies

366642	Rotor Tie-down Nut
927571	O-ring for Rotor Tie-down Nut
366654	Bucket Set (set of 4)
356036	Torquing Bar



Swinging-Bucket Rotor (Unshielded)

Major applications: Separate serum or plasma from red blood cells.

Max. RPM	Max. *g*	Number of Tubes Volume/Size	Approximate Accel/Decel Time (min:sec)
3,250	2,010	4 x 80 x 10 mL 16 x 100 mm 0.65 x 4 in	1:44/1:05

For use in Allegra™ 6 Series centrifuges only.

No. 362158. PTS-2000 Swinging-Bucket Rotor.

Sector and Tube Cannisters

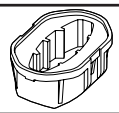
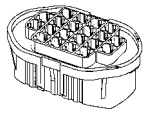
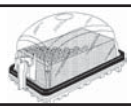
Description	Part No.	Maximum Number of Tubes	Tube Volume (mL)	
Sector Cannister Set* Includes base, cover, gasket, and clip/latches (pkg. 2)	360479	7	10	
Blue Cannister Assembly, 16-mm Tube Includes base, cover, gasket, and clip/latches (pkg. 2)	360593	20	10	
Gray Cannister Assembly, 13-mm Tube Includes base, cover, gasket, and clip/latches (pkg. 2)	360592	20	10	
Microplate Cannister Set Includes base, cover, gasket, and rubber pad (set of 2)	361301			

Plate or Tube Style/Material		Part No.	Quantity	Nominal Volume per Well/Tube	No. of Wells or Tube Size (mm)	Required Rack or Accessory	Plates per Cannister/ Tubes per Rack	*g*-Force	*k* Factor	Maximum Speed
Multiwell Plate, Nonsterile		373660*	100	300 µL	96 wells	——	——	2,010	——	3,250
Deep-well Plate, Polystyrene	Nonsterile	267001	25	1 mL	96 wells	——†	——	2,010	——	3,250
Deep-well Plate, Polystyrene	Sterile	267004	25	1 mL	96 wells	——†	——	2,010	——	3,250
Deep-well Plate, Polypropylene	Nonsterile	267006	25	1 mL	96 wells	——†	——	2,010	——	3,250
Deep-well Plate, Polypropylene	Sterile	267007	25	1 mL	96 wells	——†	——	2,010	——	3,250
Square-well Plate, Polypropylene		140504	25	2 mL	96 wells	——†	——	2,010	——	3,250
Microfuge® Tube, Polyallomer	Clear	357448	500	1.5 mL	11 x 39	373696**, 373661	24	——	——	3,250
Microfuge Tube, Polypropylene	Clear	356090	500	1.5 mL	11 x 38	373696**, 373661	24	——	——	3,250
	Blue	356091	500	1.5 mL	11 x 38	373696**, 373661	24	——	——	3,250
	Green	356092	500	1.5 mL	11 x 38	373696**, 373661	24	——	——	3,250
	Yellow	356093	500	1.5 mL	11 x 38	373696**, 373661	24	——	——	3,250
	Orange	356094	500	1.5 mL	11 x 38	373696**, 373661	24	——	——	3,250

* *Caps are optional.*

† *Optional accessories: Cap Strip (nonsterile), P/N 267002, pkg. 10; Cap Strip (sterile), P/N 267005, pkg. 10; Aluminum Foil Lid, P/N 538619 [requires 4-in soft rubber roller (538618) for installation].*

‡ *Optional accessory: Aluminum Foil Lid, P/N 538619 [requires 4-in soft rubber roller (538618) for installation].*

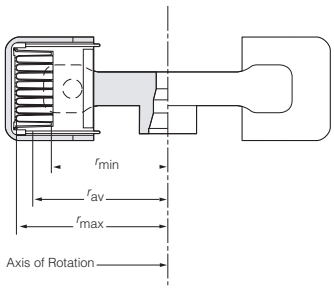
** *Rack Insert, White (pkg. of 25) fits into 373661 Rack.*

Rotor Supplies

757621 Sector, 13 x 75 mm
757622 Sector, 13 x 100 mm
757623 Sector, 16 x 75 mm
757620 Sector, 16 x 100 mm

Rotor Replacement Parts

356035 Rotor Tie-down Nut
927571 Tie-down Nut O-ring
356036 Torquing Bar
360479 Sector Cannister Assembly (set of 2)
360593 Tube Cannister Assembly, 16-mm (set of 2)
360592 Tube cannister Assembly, 13-mm (set of 2)
362160 Cannister Cover, includes clip/latches and gaskets (set of 2)
362169 Cannister Cover Gasket
362171 Cannister Cover Clip/Latch
361301 Microplate Cannister Set (set of 2)
Includes base, cover, gasket, and rubber pad.
361303 Microplate Cannister Base, including rubber pad (set of 2)
361305 Microplate Cannister Cover Assembly (set of 2)
Includes cover gasket and latch.
362392 Microplate Cannister Cover Gasket (set of 4)
362391 Microplate Cannister Cover Latch (set of 4)
362390 Microplate Cannister Replacement Rubber Pad (set of 4)



Swinging-Bucket Rotor, Aluminum

Major applications: DNA sample preparation in microplates, deep-well plates, 96-well filtration kits, and PCR plates.

Max. RPM	Max. *g*	Number of Plates Volume/Size	Approximate Accel/Decel Time (min:sec)
5,700	6,130	960 mL	0:47/0:20

For use in the Allegra™ 25R centrifuge only.

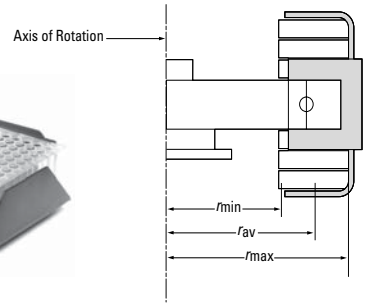
No. 368954. S5700 Swinging Bucket Rotor.

Microplates

No. of Wells	Description	Part No.	Quantity	*g*-Force	Maximum Speed
96	Multiwell Polystyrine plate	609844	pkg. 100	1,110	3,000
96	Deep-well (1-mL/well) Polystyrene Titer Plates, nonsterile	267001	25/ctn.	1,110	3,000
96	Deep-well (1-mL/well) Polystyrene Titer Plates, sterile	267004	25/ctn.	1,110	3,000
96	Deep-well (1-mL/well) Polypropylene Titer Plates, nonsterile	267006	25/ctn.	1,110	3,000
96	Deep-well (1-mL/well) Polypropylene Titer Plates, sterile	267007	25/ctn.	1,110	3,000
96	Square-well Polypropylene Titer Plates	140504	25/ctn.	1,110	3,000

Rotor Replacement Parts

369330	S5700 Buckets (set of 2)
368920	S5700 Microplate Carrier (set of 2)
368245	Tie-down Screw
368246	T-handle Rotor Wrench
368957	Support Pad for Microplates (set of 4)
538618	Rubber Roller, 4 in., for Sealing Foil Microplate Lids



Swinging-Bucket Rotor (Unshielded), Anodized Aluminum

Major applications: Serial dilution of small liquid volumes.

Max. RPM	Max. *g*	Number of Plates Volume/Size	Approximate Accel/Decel Time (min:sec)
3,000	1,107	2 x 96 wells	0:21/0:20

For use in Allegra™ 21 Series centrifuges only.

No. 361111. S2096 Microtiter Rotor Assembly, for 3,000 rpm operation. Unshielded, two-place rotor, designed to accommodate 96-well and deep-well microplates. Racks are available that accommodate 1-mL MiniTubes.

Microplates

No. of Wells	Description	Part No.	Quantity	*g*-Force	Maximum Speed
96	Microplates	373660	pkg. 100	1,110	3,000
96	Deep-well (1-mL/well) Polystyrene Titer Plates, nonsterile	267001	25/ctn.	1,110	3,000
96	Deep-well (1-mL/well) Polystyrene Titer Plates, sterile	267004	25/ctn.	1,110	3,000
96	Deep-well (1-mL/well) Polypropylene Titer Plates, nonsterile	267006	25/ctn.	1,110	3,000
96	Deep-well (1-mL/well) Polypropylene Titer Plates, sterile	267007	25/ctn.	1,110	3,000
96	Square-well Polypropylene Titer Plates	140504	25/ctn.	1,110	3,000

Accessories for Microplates

No. 267002. Caps for 96-well Deep-well Titer Plates, Nonsterile (10/ctn).

No. 267005. Caps for 96-well Titer Plates, Sterile (10/ctn).

MiniTube Racks, Tubes, and Accessories

No. 265272. MiniTube Rack.

No. 265270. MiniTube Test Tubes (1-mL), Polystyrene, Nonsterile (400 strips of 12).

No. 265200. MiniTube Test Tubes (1-mL), Polypropylene, Nonsterile (400 strips of 12).

No. 265201. Caps for MiniTubes, Polyethylene, Nonsterile (80 strips of 12).

No. 265202. Caps for MiniTubes, Polyethylene, Sterile (80 strips of 12).

Rotor Replacement Parts

361367 Tie-down Screw
361371 T-handle Rotor Wrench

Microcentrifugation

Microfuge® 18 Microcentrifuge

The Microfuge® 18 fast and powerful—for optimal pelleting on the bench or in the cold room. Perfect for DNA, RNA, proteins, and virus cell isolation. Its maintenance-free motor spins up to 14,000 rpm (18,000 x *g*). Easy-to-read interface displays both speed (rpm) and force (rcf). Comes complete with a 24-place, aerosol-tight, autoclavable, fixed angle rotor. A convenient snap-on rotor lid is available as an accessory to the rotor. Select timed, hold, or pulse (short) run times.

Microfuge 18 Microcentrifuge

Specifications

Maximum Speed	14,000 rpm
Maximum *g*-force	18,000 x *g*
Drive Type	Brushless
Time Setting	0–30 minutes, and hold
Accel/Decel Rates	18 sec. accel/19 sec. decel to/from max. speed
Maximum Heat Output	170 BTU/hr (50 W)
Maximum Noise Output	< 58 dBa
Dimensions	24.5 cm (9.7 in.) H x 32.0 cm (12.6 in.) D x 24.5 cm (9.7 in.) W
Weight	13.0 kg (28.7 lb)

Part Numbers

367160	50/60 Hz, 100/120 V
367161	50 Hz, 230 V

Microfuge® 22R Microcentrifuge

The Microfuge® 22R refrigerated microcentrifuge offers high *g*-force (21,920 x *g*) for optimal pelleting. its maintenance-free motor spins up to 14,000 rpm and maintains 4°C at maximum speed to protect precious samples. Perfect for DNA, RNA, proteins, and virus cell isolation. Available with six interchangeable rotors, all of which feature aerosol-tight lids to minimize contamination from broken or leaking tubes. A convenient snap-on rotor lid is available as an accessory to the F241.5, F241.5P, and F40.25 rotors. All rotors are also autoclavable at 121°C. Easy-to-use control knobs and easy-to-read display.

Microfuge 22R

Specifications

Maximum Speed	14,000 rpm
Maximum *g*-force	21,920 x *g*
Drive Type	Brushless induction
Time Setting	0–30 minutes, continuous, pulse (short run)
Accel/Decel Rates	18 sec. accel/19 sec. decel to/from max. speed
Maximum Heat Output	2150 BTU/hr
Maximum Noise Output	58 dBa
Dimensions	36.5 cm (14.4 in.) H x 58.5 cm (23.0 in.) D x 30.0 cm (11.8 in.) W
Weight	41.0 kg (90.4 lb)

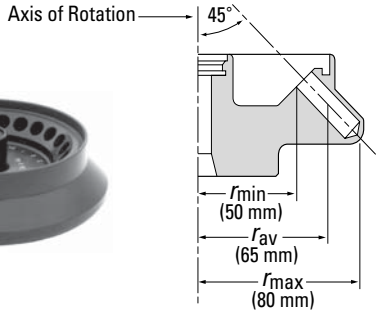
Part Numbers

368826	60 Hz, 120 V
368827	50 Hz, 230 V
368828	50/60 Hz, 100 V
368830	60 Hz, 120 V with F241.5P rotor
368831	50 Hz, 230 V with F241.5P rotor
368832	50/60 Hz, 100 V with F241.5P rotor

Microfuge® Centrifuges Rotor Summary

Rotor Type	Part Number	Maximum Speed (rpm)	Maximum Force at r_{min} (*g*)	Maximum Force at r_{max} (*g*)	*k* Factor	Number Tubes/Bottles and Size (diameter x length) mm / in.	Rotor Capacity (mL)	Approx. Accel. Time[1] (min:sec)	Comments
Fixed-Angle Rotors									
F241.5	365630	15,300				24 x 1.8 11 x 39 0.44 x 1.5	43.2	0:19	Pellet subcellular organelles, DNA, viruses, bacteria, or chloroplasts. For use in the Microfuge® 22R microcentrifuge only.
F241.5P	367187	14,000				24 x 1.8 11 x 39 0.44 x 1.5	43.2	0:18	Pellet subcellular organelles, nucleic acids, viruses, bacteria, or chloroplasts. For use in the Microfuge 18 and 22R microcentrifuges only.
F301.5	368894	14,000				30 x 2.2 11 x 39 0.44 x 1.8	66	0:40	Pellet subcellular organelles, viruses, bacteria, chloroplasts, mitochondria, or algae. For use in the Microfuge 22R microcentrifuge only.
F40.25	368898	14,000				40 x 0.25/0.45 7 x 40 0.25 x 1.5	43.2	0:19	Pellet subcellular organelles, DNA, viruses, bacteria, or chloroplasts. For use in the Microfuge 22R microcentrifuge only.
F12x8.2	369534	14,000				12 x 8 (200 µL) PCR strip	19.2	0:38	Minimize condensation, post-PCR, post-reaction cleanup. For use in the Microfuge 22R microcentrifuge only.
S241.5	368882	14,000				24 x 2.2 11 x 45 0.44 x 1.8	52.8	0:30	Pellet subcellular organelles, viruses, bacteria, chloroplasts, mitochondria, or algae. For use in the Microfuge 22R microcentrifuge only.

1 To maximum speed, rotor fully loaded.



Fixed Angle Rotor, Aluminum

Major applications: Pelleting subcellular organelles, DNA, viruses, bacteria, or chloroplasts.

Max. RPM	Max. *g*	Number of Tubes Volume/Size	Approximate Accel/Decel Time (min:sec)
15,300	20,937	24 x 1.8 mL 11 x 39 mm 0.44 x 1.5 in	0:19/0:23

For use in the Microfuge® 22R microcentrifuge only.

No. 365630. F241.5 Rotor Assembly. Transparent high-impact plastic lid.

Tubes and Bottles

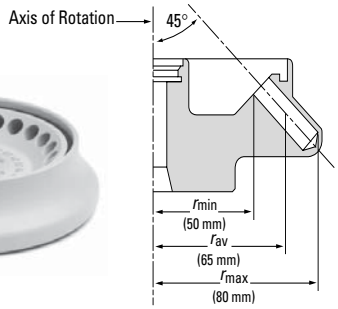
Tube Style/Material		Part No.	Quantity	Nominal Volume per Tube (mL)	Size (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Polyallomer	Natural	357448	500	1.5	11 x 38	———	———	20,937	509	15,300
Polyethylene		340196	500	1.8	11 x 39	———	———	8,960	1,190	10,000
		652824	1000	400 µL	7 x 40	361247	1	———	———	11,500
		652825	1000	400 µL	7 x 40	361247	1	———	———	11,500
		314326	1000	400 µL	7 x 40	361247	1	———	———	11,500
		652821	1000	250 µL	5 x 45	361247	1	———	———	11,500
		652822	1000	250 µL	5 x 45	361247	1	———	———	11,500
		652823	1000	250 µL	5 x 45	361247	1	———	———	11,500
Polypropylene	Natural	343169	500	1.5	11 x 38	———	———	20,937	509	15,300
		342867	1000	400 µL	7 x 40	361247	1	———	———	11,500
		342865	1000	250 µL	7 x 30	361247	1	———	———	11,500

Rotor Replacement Parts

369549	Convenient Snap-on Lid
365629	Rotor Lid Assembly
366746	Rotor Lid Knob
361164	O-ring
365806	Tie-down Screw
365636	T-handle Rotor Wrench

Adapters

361247



Fixed Angle Rotor, High-Impact Thermoplastic

Major applications: Pelleting subcellular organelles, nucleic acids, viruses, bacteria, or chloroplasts.

Max. RPM	Max. *g*	Number of Tubes Volume/Size	Approximate Accel/Decel Time (min:sec)
14,000	17,500	24 x 1.8 mL 11 x 39 mm 0.44 x 1.5 in	0:18/0:19

For use in the Microfuge® 18 and 22R microcentrifuges only.

No. 367187. F241.5P Rotor Assembly. Rotor is made of high-impact thermoplastic and lid is polycarbonate.

Tubes and Bottles

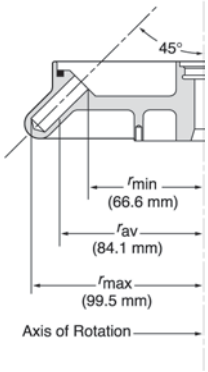
Tube Style/Material		Part No.	Quantity	Nominal Volume per Tube (mL)	Size (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Polyallomer	Natural	357448	500	1.5	11 x 38	———	———	17,600	607	14,000
Polyethylene		340196	500	1.8	11 x 39	———	———	8,960	1,190	10,000
		652824	1000	400 µL	7 x 40	361247	1	———	———	11,500
		652825	1000	400 µL	7 x 40	361247	1	———	———	11,500
		314326	1000	400 µL	7 x 40	361247	1	———	———	11,500
		652821	1000	250 µL	5 x 45	361247	1	———	———	11,500
		652822	1000	250 µL	5 x 45	361247	1	———	———	11,500
		652823	1000	250 µL	5 x 45	361247	1	———	———	11,500
Polypropylene	Natural	343169	500	1.5	11 x 38	———	———	17,600	607	14,000
		342867	1000	400 µL	7 x 40	361247	1	———	———	11,500
		342865	1000	250 µL	7 x 30	361247	1	———	———	11,500

Rotor Replacement Parts

369547	Convenient Snap-on Lid
367207	Lid Assembly
365969	Tie-down Screw
365636	T-handle Rotor Wrench

Adapters

361247



Fixed Angle Rotor, Aluminum

Major applications: Pelleting subcellular organelles, viruses, bacteria, mitochondria, chloroplasts, or algae.

Max. RPM	Max. *g* Volume/Size	Number of Tubes Accel/Decel Time	Approximate (min:sec)
14,000	21,920	30 x 2.2 mL 11 x 45 mm 0.44 x 1.8 in.	0:40/0:38

For use in the Microfuge® 22R microcentrifuge only.

No. 368894. F301.5 Rotor Assembly.

Tubes and Bottles

Tube Style/Material		Part No.	Quantity	Nominal Volume per Tube (mL)	Size (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Polyallomer	Natural	357448	500	1.5	11 x 40	364701	1	——	——	14,000
Polyethylene		340196	500	1.8	11 x 45	364701	1	——	——	10,000
		652824	1000	400 µL	7 x 40	361247	1	——	——	11,500
		652825	1000	400 µL	7 x 40	361247	1	——	——	11,500
		314326	1000	400 µL	7 x 40	361247	1	——	——	11,500
		652821	1000	250 µL	5 x 45	361247	1	——	——	11,500
		652822	1000	250 µL	5 x 45	361247	1	——	——	11,500
		652823	1000	250 µL	5 x 45	361247	1	——	——	11,500
Polypropylene	Natural	343169	500	1.5	11 x 38	364701	1	——	——	14,000

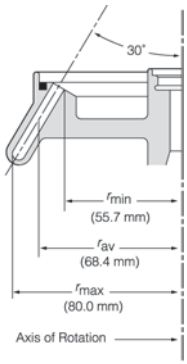
Rotor Replacement Parts

368895	Rotor Lid Assembly
368896	Lid O-ring
368991	Rotor O-ring
365806	Tie-down Screw
365636	T-handle Rotor Wrench

Adapters

361247 364701

Contents



Fixed Angle Rotor, Aluminum

Major applications: Pelleting subcellular organelles, viruses, bacteria, mitochondria, chloroplasts, or algae.

Max. RPM	Max. *g* Volume/Size	Number of Tubes Accel/Decel Time	Approximate (min:sec)
14,000	17,500	40 x 0.40 mL 7 x 40 mm 0.25 x 1.5 in.	0:40/0:38

For use in the Microfuge® 22R microcentrifuge only.

No. 368898. F40.25 Rotor Assembly.

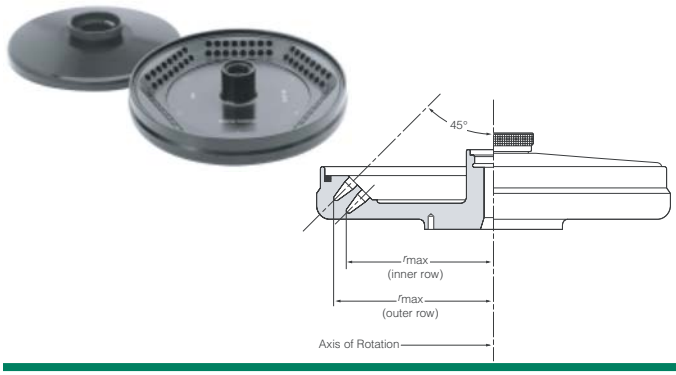
Tubes and Bottles

Tube Style/Material	Part No.	Quantity	Nominal Volume per Tube (mL)	Size (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Polyethylene	652824	1000	400 µL	7 x 40	361247	1	——	——	11,500
	652825	1000	400 µL	7 x 40	361247	1	——	——	11,500
	314326	1000	400 µL	7 x 40	361247	1	——	——	11,500
	652821	1000	250 µL	5 x 45	361247	1	——	——	11,500
	652822	1000	250 µL	5 x 45	361247	1	——	——	11,500
	652823	1000	250 µL	5 x 45	361247	1	——	——	11,500

Rotor Replacement Parts

369549	Convenient Snap-on Lid
368899	Rotor Lid Assembly
368896	Lid O-ring
368990	Rotor O-ring
365806	Tie-down Screw
365636	T-handle Rotor Wrench

Contents



Fixed Angle Rotor, Aluminum

Major applications: Minimizing post-PCR* condensation, post-reaction clean-up.

Max. RPM	Max. *g*	Number of Tubes Volume/Size	Approximate Accel/Decel Time (min:sec)
14,000	20,800 (outer row) 19.590 (inner row)	12 x 8 200 µL	0:38/0:35

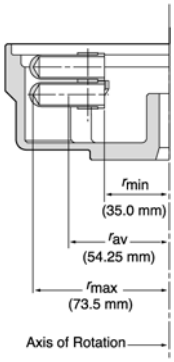
For use in the Microfuge® 22R microcentrifuge only.

No. 369534. F12x8.2 Rotor Assembly.

Rotor Replacement Parts

369535	Rotor Lid Assembly
368896	Rotor O-ring
369537	Lid O-ring
365806	Tie-down Screw
365636	T-handle Rotor Wrench

* *PCR is covered by patents owned by F. Hoffman-La Roche, Inc.*



Swinging Bucket Rotor, Aluminum

Major applications: Pelleting subcellular organelles, viruses, bacteria, mitochondria, chloroplasts, or algae.

Max. RPM	Max. *g* Volume/Size	Number of Tubes Accel/Decel Time	Approximate (min:sec)
14,000	16,220	24 x 2.2 mL 11 x 45 mm 0.44 x 1.8 in.	0:30/0:33

For use in the Microfuge® 22R microcentrifuge only.

No. 368894. F301.5 Rotor Assembly.

Tubes and Bottles

Tube Style/Material		Part No.	Quantity	Nominal Volume per Tube (mL)	Size (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Polyallomer	Natural	357448	500	1.5	11 x 40	364701	1	——	——	14,000
Polyethylene		340196	500	1.8	11 x 45	364701	1	——	——	10,000
		652824	1000	400 µL	7 x 40	361247	1	——	——	11,500
		652825	1000	400 µL	7 x 40	361247	1	——	——	11,500
		314326	1000	400 µL	7 x 40	361247	1	——	——	11,500
		652821	1000	250 µL	5 x 45	361247	1	——	——	11,500
		652822	1000	250 µL	5 x 45	361247	1	——	——	11,500
		652823	1000	250 µL	5 x 45	361247	1	——	——	11,500
Polypropylene	Natural	343169	500	1.5	11 x 38	364701	1	——	——	14,000

Rotor Replacement Parts

368883	Rotor Lid Assembly
368888	O-ring
368887	Bucket (set of 2)
365806	Tie-down Screw
365636	T-handle Rotor Wrench

Adapters

361247 364701

Contents

Tubes and Bottles

Tubes and Bottles for Every Application

No single tube design or material will meet all application requirements. A number of factors should be considered when a supply of tubes is ordered: the particular technique to be used, the nature of the sample and any solvent or gradient media, the desirability of reusing the tubes, and certain convenience factors. The properties listed below provide a guide for anyone involved in the tube selection process.

- **Strength and Flexibility**, to resist permanent deformation even when run in fixed angle rotors without tube caps
- **Chemical Resistance** to a wide range of bases, acids, and solvents
- **Transparency**, to permit a clear view of fractions and bands after centrifugation
- **Thin** enough to be sliced or punctured after centrifugation for fraction collection
- **Impermeable to Water**, to prevent aqueous solutions from permeating the tube wall and reaching the rotor cavity
- **Surface Properties** that prevent the adherence of nucleic acids and proteins
- **Temperature Tolerance** throughout a wide range of operating temperatures, without deforming at high temperatures or cracking when used close to 0°C
- **Autoclavable**, for convenient sterilization and reuse
- **Contaminant-free**, to avoid leaching extraneous materials into the sample, especially materials visible in the sensitive 240-280 nm range
- **Odor-free**, for pleasant handling

The full line of Beckman Coulter tubes includes a number of tube materials, each with its own distinct combination of properties to meet a variety of application requirements. Available are transparent, translucent, and opaque tubes; tubes that can be sliced or punctured; tubes that can be sterilized and reused; and tubes that are resistant to a variety of chemical compounds.

Tube Selection Considerations

Compatibility of Tube Material with Solvents and Sample

The chemical compatibility of the tube materials with the gradient-forming medium or other solvent is a prime consideration. Neutral sucrose and salt solutions cause no problem. But alkaline solutions, such as those frequently used for the separation of single-stranded forms of DNA, cannot be used in Ultra-Clear™ tubes or polycarbonate tubes and bottles. Sometimes DMSO is used in preparation of sucrose gradients for sedimentation of denatured RNA. Polycarbonate and Ultra-Clear tubes are incompatible with DMSO, so polyallomer tubes should be used.

The last column of the "Quick Reference Chart to Tube Materials and Their Properties" on page 2-6 gives some guidelines to the chemical resistances of the various tube materials. It must be emphasized, however, that other conditions of centrifugation (*g*-force, duration of run, etc.) have considerable effect on how well a tube material will withstand a particular solvent. Beckman Coulter publication IN-175, "Chemical Resistances for Beckman Coulter Centrifugation Products" (found on the Beckman Coulter web site at http:www.beckman.coulter.com/Beckman/biorsrch/prodinfo/cntrifug/pdf/chemres.pdf) provides more detailed information about the chemical resistances of the various tube materials. The wisest course is to test any questionable combination under operating conditions before making the actual run.

The type of sample, in some cases, will affect selection of a specific tube material. DNA, in its denatured or single-stranded form, will adhere to the surface of some tube materials. Polyallomer would be the best choice. (Most of this work is done in highly alkaline media which are incompatible with polycarbonate.)

Lipoprotein separations are most often done in Ultra-Clear tubes because they are clear and sliceable; these properties simplify fraction location and recovery by tube slicing. When small lipoprotein samples are to be recovered by a fractionating device and clear tubes are desirable, there are alternatives: cellulose propionate, polycarbonate, and Ultra-Clear tubes.

Hazardous materials, either pathogenic or radioactive, should be centrifuged with extreme care. All possible precautions must be taken to avoid leakage of the sample into the rotor cavity during centrifugation.

To determine the optimum tube material for your specific sample and gradient medium, refer to the quick reference chart on page 2-6.

Gradient Formation and Fractionation

When choosing a tube for a density gradient run, some thought should be given to gradient formation and fractionation. If the bands or zones formed during centrifugation are indistinct, they may not be visible through a translucent material such as polyallomer. If optimum band visualization is important, Ultra-Clear tubes or tubes of polycarbonate or cellulose propionate should be used. Whenever collection of bands or zones must be done by puncturing the tube or slicing, a thin, flexible tube wall is required. Ultra-Clear or polyallomer tubes should be used, depending on the need for transparency.

As there are currently no wettable plastic centrifuge tubes available, gradients should be loaded into plastic tubes from the bottom up to avoid mixing.

High Temperature Centrifugation

Although modern centrifuges and rotors can operate at temperatures as high as 45°C, one cannot assume that every tube can be safely run over 25°C. Stainless steel and glass are the only materials which will not experience some deformation when subjected to high temperatures and long centrifugation times. Plastic tubes undergo some degree of softening at temperatures higher than 25°C. Whether or not this will cause permanent deformation is not a question of temperature alone. The centrifugal force field used, the duration of the centrifugation, the type of rotor, and even the tube angle all have an effect.

It's obviously impossible to give exact temperature limits for plastic tubes when so many other variables are involved. The safest policy is to pretest the tubes under the actual experimental conditions, but with water, rather than a valuable sample.

Tube Sizes

Tube sizes as indicated in the following charts are nominal sizes, and may vary somewhat from actual filling capacities. If a thickwall tube is run uncapped, the maximum filling volume will depend on the tube angle of the rotor to be used. See appropriate rotor instruction manuals for maximum filling levels of tubes.

Tube Cleaning, Sterilization, and Reuse

If tubes are to be reused, special care must be taken during cleaning and sterilization. All tubes can be washed by hand with a mild detergent such as Solution 555™ diluted 5-to-1 or 10-to-1 with water. This is particularly important for polycarbonate tubes and bottles which should not be exposed to a detergent with a pH higher than 8. Tubes and bottles should not be washed in commercial dishwashers as the detergents and high temperatures are too harsh. Solvents such as alcohol or acetone react unfavorably with many tube materials.
If an organic solvent must be used in the cleaning procedure, consult bulletin IN-175 for a table of tube material/solvent compatibilities (or review the same document on the Beckman Coulter web site at http:www.beckman.coulter.com/Beckman/biorsrch/prodinfo/cntrifug/pdf/chemres.pdf).

The method chosen for sterilization has direct bearing on the number of reuses one can expect from a tube. Tubes and bottles of polyallomer, polyethylene, and glass can all be autoclaved, although in general, cold sterilization methods are not as harsh as autoclaving. Cold sterilization is recommended for both polycarbonate and Ultra-Clear.

If maximum reuse is a major consideration, either polyallomer (preferably thickwall) or polycarbonate tubes and bottles should be selected, and cold sterilization methods used. If these tubes are run completely filled in swinging bucket rotors, most of them can be reused a number of times. Chances of permanent deformation will be greater whenever the tubes are run in fixed angle rotors, without caps, and/or partially filled. All of these conditions tend to stress the centripetal edge of the tube unduly. All tubes that have been used or autoclaved previously must be individually examined for signs of deformation or cracking before using them again.

Tube Closures

When other considerations have been resolved, convenience may be a deciding factor. Without a doubt, the most convenient tube closure is none at all; none are required for tubes run in swinging bucket rotors.

For tubes run in fixed angle rotors, alternatives to the standard tube cap assemblies are available. Bottles have three-piece cap assemblies which are easier to use than the more complex tube cap assemblies. Polycarbonate bottles are available for general-purpose fixed angle rotors, and are used frequently for differential centrifugation where band recovery is not a problem. Thickwall tubes can be run in all fixed angle rotors without caps, provided they are partially filled. (Refer to rotor manuals for more information on fill volumes.)

When closed tubes are required, Beckman Coulter offers some innovative and convenient options.

General Filling and Sealing Requirements for Tubes and Bottles

	Tube or Bottle	Swinging-Bucket Rotors	Fixed-Angle Rotors
Polyallomer	Thinwall tubes	Within 2 to 3 mm of top	Full with cap
	Thickwall tubes	At least 1/2 full	1/2 full to max. capless level or full with cap
	Quick-Seal tubes	Full and heat-sealed	Full and heat-sealed
	Bottles	Min. to max. (see rotor manual) with screw-on cap or cap assembly	1/2 full to max. (see rotor manual) with screw-on cap assembly
Ultra-Clear	Open-top tubes	Within 2 to 3 mm of top	Full with cap
	Quick-Seal tubes	Not used	Full and heat-sealed
Polycarbonate	Thickwall tubes	At least 1/2 full	1/2 full capless level or full with cap or cap assembly
	Bottles	At least 1/2 full	Min. to max. (see rotor manual) with screw-on cap or cap assembly
Stainless Steel	Tubes	Any level	Any level with cap or cap assembly
Polypropylene	Tubes and bottles	At least 1/2 full	1/2 to max. capless level or full with cap or cap assembly
Polyethylene	Tubes	At least 1/2 full	1/2 to max. capless level or full with cap or cap assembly
Cellulose Propionate	Tubes and bottles	At least 1/2 full	1/2 to max. capless level
Teflon	Tubes and bottles	At least 1/2 full	1/2 full to max. capless level or full with cap
Radel	Container	At least 1/2 full	N/A

High-Performance, High-Capacity, and Benchtop Bottles

Nominal Capacity	Size mm	Material	Bottle & Cap Assy	Bottle with Screw Cap	Bottle Only	Insert Only	O-ring	Screw Cap Only
10 mL	16 x 80	PC	N.A.	355672	N.A.	N.A.	N.A.	N.A.
10 mL	16.1 x 81.1	PA	N.A.	364695	N.A.	N.A.	N.A.	N.A.
10 mL	16.1 x 81.1	T	N.A.	364693	N.A.	N.A.	N.A.	N.A.
26.3 mL	25 x 89	PC	355616	N.A.	340382	335258	870385	335259
30 mL	25.3 x 92	PA	363073	N.A.	N.A.	N.A.	N.A.	N.A.
30 mL	25.3 x 92	PC	N.A.	363070	N.A.	N.A.	N.A.	N.A.
30 mL	25.3 x 92	T	N.A.	364699	N.A.	N.A.	N.A.	N.A.
40 mL	29 x 104	PC	N.A.	355628	N.A.	N.A.	N.A.	N.A.
50 mL	28.5 x 107	T*	N.A.	363076	N.A.	N.A.	N.A.	N.A.
50 mL	29 x 104	PA	357001 361694	357003	N.A.	358627	870655	356284
50 mL	29 x 104	PC	357000 361693	357002	N.A.	358627	961582	N.A.
70 mL	38 x 102	PC	355620	N.A.	355655	334545	870384	334547
85 mL	38 x 104	PC	363081	364718	N.A.	N.A.	N.A.	N.A.
85 mL	38 x 104	PP	N.A.	364719 363082	N.A. N.A.	N.A. N.A.	N.A. N.A.	N.A. N.A.
100 mL	38 x 102	PP	355624	355624	355626	N.A.	889633	355615
180 mL	55 x 104	PE	N.A.	361245	961896	N.A.	N.A.	N.A.
230 mL	62 x 141	PA	356989	N.A.	356988	N.A.	N.A.	344691
230 mL	62 x 141	PC	356987	N.A.	356986	N.A.	N.A.	344691
250 mL	62 x 120	W PC	356013	N.A.	358275	N.A.	927860	358977
250 mL	62 x 122	W PP	356011	N.A.	358326	N.A.	927860	358977
250 mL round bottom	62 x 136	PC	N.A.	355673	N.A.	N.A.	N.A.	356261
500 mL	69 x 160	W PC	355605	355664	355649	334419	870411	356260
500 mL	69 x 160	W PP	355607	355665	355650	334419	870411	356260
500 mL	69 x 160	PC	361690	N.A.	355649	N.A.	927860	360954
500 mL	69 x 160	PP	361691	N.A.	355650	N.A.	927860	360954
750 mL	96 x 130	PC	N.A.	358299	358297	N.A.	N.A.	344693
750 mL	96 x 130	PP	N.A.	356855	349815	N.A.	N.A.	344693
1000 mL	95 x 191	PC	363676	355675	366751	N.A.	970883	970884
1000 mL	95 x 191	PP	363678	355676	366752	N.A.	970883	970884
1250 mL	———	Radel†	367883	N.A.	367895	N.A.	367886	N.A.

PA = Polyallomer PC = Polycarbonate PE = Polyethylene PP = Polypropylene T = Teflon C = Conical W = Wide-Mouth N.A. = Not Available

** With high-speed screw cap.*

† A registered trademark of Union Carbide Corporation.

Adapters and Sleeves for Non-Beckman Coulter Tubes/Bottles*

Rotor	Tube Vol.	Size mm	# of Places	Part Number
JA-30.50	5 mL	12 x 75	1	356970
	7 mL	13 x 100	1	356976
JA-25.50	5 mL	12 x 75	1	356970
	7 mL	13 x 100	1	356976
JA-21	5 mL	12 x 75	1	356972
JA-20.1	5 mL	12 x 75	1	356971
	7 mL	13 x 100	1	356977
JA-20	5 mL	12 x 75	1	356970
	7 mL	13 x 100	1	356976
JA-18	5 mL	12 x 75	3	356969
	7 mL	13 x 100	3	356975
	15 mL	Conical	1	356962
	50 mL	Conical	1	356963
JA-17	5 mL	12 x 75	1	356970
	7 mL	13 x 100	1	356976
JA-14	5 mL	12 x 75	9	356968
	7 mL	13 x 100	8	356974
	15 mL	Conical	4	356964
	15 mL	Round-bottom	4	356995
JA-12	50 mL	Conical	1	356966
	50 mL	Round-bottom	1	356997
JA-10.500	5 mL	12 x 75	10	356967
	7 mL	13 x 100	9	356973
	15 mL	Conical	5	356960
	15 mL	Round-bottom	5	356994
	50 mL	Conical	1	356965
	50 mL	Round-bottom	1	356996

Rotor	Tube Vol.	Size mm	# of Places	Part Number
JA-10	5 mL	12 x 75	10	356967
	7 mL	13 x 100	9	356973
	15 mL	Conical	5	356960
	15 mL	Round-bottom	5	356994
	50 mL	Conical	1	356965
	50 mL	Round-bottom	1	356996
JS-13.1	5 mL	12 x 75	1	356970
	7 mL	13 x 100	1	356976
JS-7.5	5 mL	12 x 75	9	356968
	7 mL	13 x 100	8	356974
	15 mL	Conical	4	356964
	50 mL	Conical	1	356966
GA-6	15 mL	Conical	4	356964
JS-4.2 &	3 mL	Conical	37	339100
JS-4.2A	15 mL	Conical	14	339102
	250 mL	Conical		349849
GH-3.8 &	3 mL	10 x 75	37	359469
GH-3.8A	5 mL	12 x 75	37	359469
	7 mL	13 x 100	24	359470
	10 mL	16 x 100	19	359471
	12 mL	17 x 117	19	359471
	15 mL	16 x 130	14	359473
	15 mL	17 x 120	14	359473
	40 mL	29 x 116	7	359474
	50 mL	29 x 118	7	359474

Adapters for Glass Tubes in Beckman Coulter Rotors*

Rotor	Tube Volume	Tube Material	Adapter Part Number
JA-30.50	15 mL	Corex, Pyrex†	870329
	30 mL	Corex	870331
JA-25.50	15 mL	Corex, Pyrex	870329
	30 mL	Corex	870331
JA-20.1	15 mL	Pyrex	342643
JA-20/JA-17	15 mL	Corex, Pyrex	870329
	30 mL	Corex	870331
JA-18	15 mL	Corex, Pyrex	870329/347539
	30 mL	Corex	870331/347539
JA-14	150 mL	Corex	339362
	30 mL	Corex	356997/870331
	15 mL	Corex	356995
	15 mL	Corex, Pyrex Conical	356964
JA-10.500	150 mL	Corex	362750/339362
	30 mL	Corex	356996/870331
	15 mL	Corex, Pyrex Conical	356960
JA-10	150 mL	Corex	362750/339362
	30 mL	Corex	356996/870331
	15 mL	Corex, Pyrex Conical	356960

Rotor	Tube Volume	Tube Material	Adapter Part Number
JS-13.1	30 mL	Corex	870331
	15 mL	Corex, Pyrex	870329
JS-7.5	150 mL	Corex	339362
	30 mL	Corex	356997/870331
	15 mL	Corex, Pyrex	356995
JS-4.2 &	3 mL	Pyrex Conical	339100
JS-4.2A	15 mL	Corex, Pyrex, Corex & Pyrex Conical and Conical Graduated	339102
	30 mL	Corex	341977
	150 mL	Corex	339108/ 339362
GH-3.8 &	3 mL	Pyrex	359469
GH-3.8A	5 mL	Pyrex	359469
	10 mL	Pyrex	359471
	12 mL	Pyrex	359471
	15 mL	Corex, Pyrex	359473
	40 mL	Pyrex	359474
	50 mL	Pyrex	359474

* *Check with tube manufacturer for maximum allowable g-force.*

† *Corex and Pyrex are registered trademarks of Corning Glass Works, Inc.*

Nominal Filling Capacity (mL)	Nominal Size (mm)	Inches	Part No.	Rotors
Quick-Seal™ Polyallomer Tubes				
4.2	16 x 32	0.65 x 1.25	356562	JS-24.15
8.0	16 x 58	0.65 x 2.25	344621	JS-24.15
8.5	25 x 38	0.65 x 2.5	358652 (*konical*)	JS-24.38
10.0	16 x 67	0.65 x 2.5	344622	JS-24.15
15.0	25 x 38	1 x 1.5	343664	JS-24.38
23.0	25 x 76	1 x 1.5	358654 (*konical*)	JS-24.38
27.0	25 x 64	1 x 2.5	343665	JS-24.38
33.0	25 x 83	1 x 3.25	344623	JS-24.38
100.0	38 x 102	1.5 x 4.0	345776	JA-18
Quick-Seal Ultra-Clear™ Tubes				
100.0	38 x 102	1.5 x 4.0	345778	JA-18
Quick-Seal Bell-Top Tubes				
6.3	16 x 45	0.65 x 1.8	345830	JS-24.15
Thickwall Polyallomer Open-Top Tubes				
4.0	13 x 64	0.5 x 2.5	355644	JA-25.15
4.0	13 x 64	0.5 x 2.5	355645	JA-25.15
10.0*	16 x 64	0.65 x 2.5	355646	F1010, S0410
10.0	16 x 76	0.65 x 3.0	355640	JA-25.15, JA-21, JA-20.1, JS-4.3, JS-4.0, F1010, S0410, TS-5.1-500, JS-5.2, JS-4.2, JS-4.2A, JS-3.0, GH-3.8, GH-3.8A
12.5	16 x 95	0.625 x 3.75	361708 (*konical*)	JS-24.15
32.0	25 x 89	1.0 x 3.5	355642	JS-24.38, F0630
94.0	38 x 102	1.5 x 4.0	355643	F0485, F0685
Thickwall Polycarbonate Open-Top Tubes				
6.5	16 x 64	0.65 x 2.5	355647	F1010, S0410, TS-5.1-500
10.0	16 x 76	0.65 x 3.0	355630	JA-25.15, JA-21, JA-20.1, JS-13.1, JS-4.3, JS-4.0, F1010, S0410, TS-5.1-500, JS-5.2, JS-4.2, JS-4.2A, JS-3.0, GH-3.8, GH-3.8A
32.0	25 x 89	1.0 x 3.5	355631	JS-24.38
94.0	38 x 102	1.5 x 4.0	355628	F0485, F0685, GA-6
Polyethylene Open-Top Tubes				
0.25	5 x 45	0.2 x 1.8	652823 (plain)	F1202, F2402H, F3602, H6002, TA-15-1.5, F241.5, F241.5P, F1802B
0.25	5 x 45	0.2 x 1.8	652822 (heparin/lithium coated)	F1202, F2402H, F3602, H6002, TA-15-1.5, F241.5, F241.5P, F1802B
4.0	7 x 40	0.25 x 1.5	652825 (heparin/lithium coated)	F1202, F2402H, F3602, H6002, TA-15-1.5, F241.5, F241.5P, F1802B
4.0	7 x 40	0.25 x 1.5	652821 (heparin/ lithium/fluoride coated)	F1202, F2402H, F3602, H6002, TA-15-1.5, F241.5, F241.5P, F1802B
4.0	7 x 40	0.25 x 1.5	652824 (heparin/ lithium/fluoride coated)	F1202, F2402H, F3602, H6002, TA-15-1.5, F241.5, F241.5P, F1802B
4.0	7 x 40	0.25 x 1.5	314326 (plain)	F1202, F2402H, F3602, H6002, TA-15-1.5, F241.5, F241.5P, F1802B
15.0	18 x 100	0.725 x 4.0	342081	JA-25.15, JA-20.1, JS-4.3, JS-4.0, JS-5.2, JS-4.2, JS-4.2A, JS-3.0, GH-3.8, GH-3.8A

** Nominal fill volume for this tube can vary from 6.0 to 10.0 mL, depending on the rotor in which it is used due to different tube angles.*

Nominal Filling Capacity (mL)	Nominal Size (mm)	Inches	Part No.	Rotors
Polyallomer Open Top Tubes				
15.0	16 x 96	0.65 x 3.85	361707	JS-24.15
25.0	25 x 76	1.0 x 3.0	358125 (*k*onical)	JS-24.38
30.0	25 x 89	1.0 x 3.5	358126 (*k*onical)	JS-24.38
38.5	25 x 89	1.0 x 3.5	326823	JS-24.38
34.0	25 x 76	1.0 x 3.0	326825	F0630
94.0	38 x 102	1.5 x 4.0	345775	F0485, F0685
Polycarbonate Open Top Tubes				
15.0	18 x 100	0.725 x 4.0	342080	JA-25.15, JA-20.1, JS-4.3, JS-4.0, JS-5.2, JS-4.2, JS-4.2A, JS-3.0, GH-3.8, GH-3.8A
50.0	29 x 104	1.125 x 4	363647	JA-30.50, JA-25.50, JA-20, JA-18, JA-17, JA-14, JLA-10.500, JA-10, JS-7.5, JS-4.3, JS-4.0, F0650, F0485, F0850, F0685, TA-14-50, TA-10-250, JS-5.2, JS-4.2, JS-4.2A, JS-3.0, GH-3.8, GH-3.8A
50.0	29 x 104	1.25 x 4	363075 (conical, grad.)	F0650, F0850, GH-3.8
1000.0	95 x 191	3.8 x 7.65	363676	JLA-9.1000, JLA-8.1000
Polypropylene Open Top Tubes				
15.0	17 x 120	0.625 x 4.8	355663 (conical, grad.)	JLA-16.250, JA-14, JLA-10.500, JA-10, JS-4.0, F0650, F0850, GA-6, JS-5.2, JS-4.2, JS-4.2A, JS-3.0, GH-3.8
15.0	18 x 100	0.725 x 4	342082	JA-25.15, JA-20.1, JS-4.3, JS-4.0, JS-5.2, JS-4.2, JS-4.2A, JS-3.0, GH-3.8, GH-3.8A
50.0	29 x 104	1.125 x 4	357007	JA-30.50, JA-25.50, JA-18, JA-17, JA-14, JLA-10.500, JA-10, JS-7.5, JS-4.3, JS-4.0, F0650, F0485, F0850, F0685, TA-14-50, TA-10-250, JS-5.2, JS-4.2, JS-4.2A, JS-3.0, GH-3.8, GH-3.8A
100.0	38 x 102	1.5 x 4	355626	JS-4.0, JS-5.2, JS-4.2, JS-4.2A, JS-3.0
500.0	69 x 160	2.75 x 6.5	355650	JS-4.3, JS-4.0, JS-5.2, JS-4.2, JS-4.2A, JS-3.0, GH-3.8, GH-3.8A
1000.0	95 x 191	3.8 x 7.65	363678	JLA-9.1000, JLA-8.1000
Ultra-Clear Open Top Tubes				
13.5	16 x 76	0.65 x 3.0	344085	F1010, S0410
15.0	16 x 96	0.65 x 3.8	361706	JS-24.15
38.5	25 x 89	1.0 x 3.5	344058	JS-24.38, F0630
Polyallomer Tubes with Snap-On Caps				
1.5	11 x 38	0.4 x 1.5	357448 - Natural	JA-30.50, JA-25.50, JA-20, JA-18.1, JA-18, JS-13.1, JS-4.0, F1202, F2402H, F3602, H6002, TA-15-1.5, TS-5.1-500, JS-5.2, JS-4.2, JS-4.2A, JS-3.0, GH-4.7, GH-3.8, GH-3.8A
1.5	11 x 39	0.4 x 1.5	357444 - Orange	JS-4.2, JS-4.2A, JS-3.0
1.5	11 x 39	0.4 x 1.5	357445 - Yellow	JS-4.2, JS-4.2A, JS-3.0
1.5	11 x 39	0.4 x 1.5	357446 - Green	JS-4.2, JS-4.2A, JS-3.0
1.5	11 x 39	0.4 x 1.5	357447 - Blue	JS-4.2, JS-4.2A, JS-3.0
Polycarbonate Tubes with Snap-On Caps				
50.0	29 x 104	1.125 x 4	363664	JS-30.50, JA-25.50, JA-20, JLS-16.250, JA-14, JLA-10.250, JA-10, JS-13.1, JS-7.5, JS-4.3, JS-4.0, F0850, GA-6, TA-14-50, TA-10-250, JS-5.2, JS-4.2, JS-4.2A, JS-3.0, PTS-2000, GH-3.8, GH-3.8A, F241.5, F241.5P, F1802B

Nominal Filling Capacity (mL)	Nominal Size (mm)	Inches	Part No.	Rotors
Polypropylene Tubes with Snap-On Caps				
0.25	7 x 30	0.25 x 1.25	342865	F1202, F2402H, F3602, H6002, F241.5, F241.5P, F1802B (cap separate)
0.4	7 x 40	0.25 x 1.5	342867	F1202, F2402H, F3602, H6002, F241.5, F241.5P, F1802B (cap separate)
0.5	8 x 28	0.25 x 1.25	344319	F1202, F2402H, H6002 (cap separate)
1.5	11 x 38	0.4 x 1.5	356090 - Natural	JA-30.50, JA-25.50, JA-20, JA-18, JS-13.1, JS-4.0, S4180, JS-5.2, JS-4.2, JS-4.2A, JS-3.0, PTS-2000, GH-3.8, GH-3.8A
1.5	11 x 38	0.4 x 1.5	356091 - Blue	JA-20, JA-18, JS-13.1, JS-4.0, S4180, JS-5.2, JS-4.2, JS-4.2A, JS-3.0, PTS-2000, GH-3.8, GH-3.8A
1.5	11 x 38	0.4 x 1.5	356092 - Green	JA-20, JA-18, JS-13.1, JS-4.0, S4180, JS-5.2, JS-4.2, JS-4.2A, JS-3.0, PTS-2000, GH-3.8, GH-3.8A
1.5	11 x 38	0.4 x 1.5	356093 - Yellow	JA-20, JA-18, JS-13.1, JS-4.0, S4180, JS-5.2, JS-4.2, JS-4.2A, JS-3.0, PTS-2000, GH-3.8, GH-3.8A
1.5	11 x 38	0.4 x 1.5	356094 - Orange	JA-20, JA-18, JS-13.1, JS-4.0, S4180, JS-5.2, JS-4.2, JS-4.2A, JS-3.0, PTS-2000, GH-3.8, GH-3.8A
1.5	11 x 38	0.4 x 1.5	343169- Natural (cap separate)	JA-18.1, JA-18, JS-4.0, F1202, F2402H, F3602, H6002, S4180, TA-15-1.5, JS-5.2, JS-4.2, JS-4.2A, JS-3.0, GH-3.8, GH-3.8A, F241.5, F241.5P, F1802B
1.8	11 x 39	0.4 x 1.5	340196 - Natural	JA-20, JA-18.1, JA-18, JS-13.1, JS-4.0, F1202, F2402H, F3602, H6002, TA-15-1.5, JS-5.2, JS-4.2, JS-4.2A, PTS-2000, GH-3.8, GH-3.8A, F241.5, F241.5P, F1802B
50.0	29 x 103	1.125 x 4	357005 (cap separate)	JA-30.50, JA-25.50, JA-20, JA-17, JLA-16.250, JA-14, JLA-10.500, JA-10, JS-13.1,JS-7.5, JS-4.0, F0850, GA-6, TA-14-50, TA-10-250, JS-5.2, JS-4.2, JS-4.2A, JS-3.0, GH-3.8, GH-3.8A
500.0	69 x 160	2.75 x 6.5	361691	JLA-10.500
Conical Tubes				
8.5	25 x 38	0.65 x 2.5	358652 (*k*onical Quick-Seal polyallomer)	JS-24.38
12.5	16 x 95	0.625 x 3.75	361708 (*k*onical thickwall polyallomer)	JS-24.15
15.0	17 x 120	0.625 x 4.8	355663 (polypropylene, graduated)	JLA-16.250, JA-14, JLA-10.500, JA-10, JS-7.5, JS-4.3, JS-4.0, F0650, F0850, GA-6, JS-5.2, JS-4.2, JS-4.2A, JS-3.0, GH-3.8, GH-3.8A
23.0	25 x 76	1 x 1.5	358654 (*k*onical Quick-Seal polyallomer)	JS-24.38
25.0	25 x 76	1.0 x 3.0	358125 (*k*onical polyallomer)	JS-24.38
30.0	25 x 89	1.0 x 3.5	358126 (*k*onical) polyallomer)	JS-24.38
50.0	29 x 104	1.25 x 4	363075 (polycarbonate, graduated)	F0650, F0850, GH-3.8, GH-3.8A
230.0	62 x 141	2.5 x 5.25	356987 (polycarbonate bottle with screw cap)	JA-14, JS-7.5, JS-4.3, JS-4.0, TA-10-250, JS-5.2, JS-4.2, JS-4.2A, JS-3.0, GH-3.8, GH-3.8A
230.0	62 x 141	2.5 x 5.5	356989 (polypropylene bottle with screw cap)	JA-14, JS-7.5, JS-4.3, JS-4.0, TA-10-250, JS-5.2, JS-4.2, JS-4.2A, JS-3.0, GH-3.8, GH-3.8A
Stainless Steel Tubes				
13.5	16 x 76	0.6 x 3	301108	JA-21, JA-20.1, JS-4.3, JS-4.2, JS-4.2A, JS-3.0, GH-3.8, GH-3.8A
Bio-Vial Tubes				
4.0	14 x 55	.5625 x 2.25	566353 - Polypropylene	JLA-16.250, JA-14, JLA-10.500, JA-10, JS-7.5, JS-4.0, GA-6, JS-5.2, JS-4.2, JS-4.2A, JS-3.0, GH-3.8, GH-3.8A

Nominal Filling Capacity (mL)	Nominal Size (mm)	Inches	Part No.	Rotors
Bottles Only				
1000.0	95 x 191	3.75 x 7.5	366751 - Polycarbonate	JLA-9.1000, JLA-8.1000
1000.0	95 x 191	3.75 x 7.5	366752 - Polypropylene	JLA-9.1000, JLA-8.1000
Bottles with Caps				
70.0	38 x 102	1.5 x 4.0	355655 - Polycarbonate	JS-4.0, JS-5.2, JS-4.2, JS-4.2A, JS-3.0
500.0	69 x 160	2.75 x 6.5	355649 - Polycarbonate	JS-4.0, JS-5.2, JS-4.2, JS-4.2A, JS-3.0, GH-3.8
500.0	69 x 160	2.75 x 6.5	361690 - Polycarbonate	JLA-10.500
500.0	69 x 160	2.75 x 6.5	361691 - Polypropylene	JLA-10.500
Bottles with Cap Assemblies, Polyallomer				
50.0	29 x 104	1.25 x 4	357001	JA-30.50, JA-20, JA-17, JLA-16.250, JA-14, J:A-10.500, JA-10, JS-4.3, JS-4.0, F0650, F0850, GA-6, TA-14-50, TA-10-250, JS-5.2, JS-4.2, JS-4.2A, JS-3.0, GH-3.8, GH-3.8A
50.0	29 x 104	1.25 x 4	361694	JA-25.50, JA-17, JA-14, GH-3.8, GH-3.8A
Bottles with Cap Assemblies, Polycarbonate				
26.3	25 x 89	1.0 x 3.5	355616	F0630
50.0	29 x 104	1.25 x 4.25	355600	JS-7.5
50.0	29 x 104	1.25 x 4.25	361693	JA-25.50, JA-17, GH-3.8, GH-3.8A
50.0	29 x 104	1.25 x 4.25	357000	JA-30.50, JA-20, JA-17, JLA-16.250, JA-14, J:A-10.500, JA-10, JS-4.3, JS-4.0, F0650, F0850, GA-6, TA-14-50, TA-10-250, JS-5.2, JS-4.2, JS-4.2A, JS-3.0, GH-3.8, GH-3.8A
70.0	38 x 102	1.5 x 4.0	355620	JA-18, JS-4.0, F0485, F0685, JS-5.2, JS-4.2, JS-4.1A, JS-3.0
85.0	38 x 104	1.5 x 4.2	363081 (high-speed cap)	F0485, F0685, S4180
250.0	62 x 122	2.5 x 4.75	358275 (wide mouth)	JS-4.3, JS-4.0, JS-5.2, JS-4.2, JS-4.2A, JS-3.0, GH-3.8
500.0	69 x 160	2.75 x 6.5	355605 (wide mouth)	JA-10, JS-4.0, JS-5.2
Bottles with Cap Assemblies, Polypropylene				
250.0	62 x 120	2.5 x 4.75	358326 (wide mouth)	JS-4.3, JS-4.0, JS-5.2, JS-4.2, JS-4.2A, JS-3.0, GH-3.8
500.0	69 x 160	2.75 x 6.5	355607	JA-10, JS-4.3, JS-4.0, JS-5.2, JS-4.2, JS-4.2A, JS-3.0, GH-3.8
Bottles with Screw Caps, Polyallomer				
10.0	16 x 81	0.75 x 3.25	364695	F1010, S0410, S4180, TS-5.1-500
30.0	25.3 x 92	1.0 x 3.75	363073	F0630
50.0	29 x 104	1.25 x 4.0	357003	JA-30.50, JA-25.50, JA-20, JA-18, JA-17, JLA-16.250, JA-14, JLA-10.500, JA-10, JS-13.1, JS-7.5, JS-4.3, JS-4.0, F0650, F0850, GA-6, TA-14-50, TA-10-250, JS-5.2, JS-4.2, JS-4.2A, JS-3.0, GH-3.8, GH-3.8A
Bottles with Screw Caps, Polycarbonate				
10.0	16 x 80	0.6 x 3.2	355672	JA-30.50, JA-25.50, JA-21, JA-20.1, JA-20, JA-17, JS-13.1,JS-4.0, F1010, S0410, S4180, TS-5.1-500, JS-5.2, JS-4.2, JS-4.2A, JS-3.0
30.0	25.3 x 92	1.0 x 3.75	363070	F0630
50.0	29 x 104	1.125 x 4.0	357002	JA-30.50, JA-25.50, JA-20, JA-18, JA-17, JLA-16.250, JA-14, JLA-10.500, JA-10, JS-13.1, JS-7.5, JS-4.3, JS-4.0, F0650, F0485, F0850, F0685, TA-14-50, TA-10-250, JS-5.2, GH-3.8A
85.0	38 x 104	1.5 x 4.0	364718	F0485
100.0	38 x 102	1.5 x 4.0	355624	JA-18, JS-4.0, F0485, F0685, JS-5.2, JS-4.2, JS-4.2A, JS-3.0
230.0	62 x 141	2.5 x 5.25	356987 (conical)	JA-14, JS-7.5, JS-4.3, JS-4.0, TA-10-250, JS-5.2, JS-4.2, JS-4.2A, JS-3.0, GH-3.8, GH-3.8A
250.0	62 x 120	2.5 x 4.75	356013 (wide mouth)	JLA-16.250, JA-14, JLA-10.500, JA-10, JS-7.5, JS-4.3, JS-4.0, GA-6, TA-10-250, TS-5.1-500, JS-5.2, JS-4.2, JS-4.2A, JS-3.0, GH-3.8, GH-3.8A
250.0	62 x 136	2.5 x 5.5	355673	JS-7.5, JS-4.3, JS-4.0, JS-5.2, JS-4.2, JS-4.2A, JS-3.0, GH-3.8
500.0	69 x 160	2.75 x 6.5	355664	JA-10, JS-4.0, JS-5.2, JS-4.2, JS-4.2A. JS-3.0
500.0	69 x 160	2.75 x 6.5	368454	TS-5.1-500
750.0	96 x 130	3.75 x 5.25	358299	JS-4.3, JS-4.2, JS-4.2A, JS-3.0, GH-3.8
1000.0	97 x 167	3.75 x 6.75	355675	JS-4.0, JS-5.2, JS-4.2, JS-4.2A, JS-3.0

Nominal Filling Capacity (mL)	Nominal Size (mm)	Inches	Part No.	Rotors
Bottles with Screw Caps, Polypropylene				
180.0	55 x 104	2.25 x 4.15	361245	S4180
Bottles with Screw Caps, Polypropylene				
50.0	29 x 104	1.25 x 4.0	355603	JS-7.5
85.0	38 x 104	1.5 x 4.0	363082	F0685
85.0	38 x 104	1.5 x 4.0	364719	F0485, S4180
100.0	38 x 102	1.5 x 4.0	355624	JA-18, JS-4.3, JS-4.0, F0485, F0685, JS-5.2, JS-4.2, JS-4.2A, JS-3.0
230.0	62 x 141	2.5 x 5.5	356989	JA-14, JS-7.5, JS-4.3, JS-4.0, TA-10-250, JS-5.2, JS-4.2, JS-4.2A, JS-3.0, GH-3.8, GH-3.8A
250.0	62 x 120	2.5 x 4.75	356011 (wide mouth)	JLA-16.250, JA-14, JLA-10.500, JA-10, JS-7.5, JS-4.3, JS-4.0, GA-6, TA-10-250, TS-5.1-500, JS-5.2, JS-4.2, JS-4.2A, JS-3.0, GH-3.8
500.0	69 x 159	2.75 x 6.5	355665	JA-10, JS-4.3, JS-4.0, JS-5.2, JS-4.2, JS-4.2A, JS-3.0, GH-3.8
500.0	85 x 135	3.5 x 5.5	368453	TS-5.1-500
750.0	96 x 130	3.75 x 5.25	356855	JS-4.3, JS-4.0, JS-5.2, JS-4.2, JS-4.2A, JS-3.0, GH-3.8
1000.0	97 x 167	4.0 x 6.75	355676	JS-4.0, JS-5.2, JS-4.2, JS-4.2A, JS-3.0
Bottles with Screw Caps, Teflon				
10.0	16 x 81	1.25 x 3.25	364693	F1010, S0410
30.0	25.3 x 92	1.0 x 3.75	364699	F0630
50.0	28.5 x 107	1.25 x 4.25	363076	F0650, F0850, GH-3.8

Tools and Supplies

Cordless Tube Topper

358312 Tube Topper Kit, 60 Hz (for US and Japan)
358313 Tube Topper Kit, 50 Hz (for Europe)
358314 Tube Topper Kit, 50 Hz (for Great Britain)
358315 Tube Topper Kit, 50 Hz (for Australia)

Each Kit Contains:

1 each 348117 Heat Sink, 2 each 348643 Seal Guide, 8 each 348120 Seal Former (domed top), 1 each Tube Topper and Charging Unit, 1 each 361668 Tube Extractor.

Replacement Parts

348117 Heat Sink
348120 Seal Former (domed top) for Tube Topper
357442 Flat-top Seal Former for Tube Sealer
348643 Seal Guide
889676 Plastic Box for Holding Accessories
342419 Removal Tool for Tubes and Metal Spacers
342415 Funnels (two)
338765 Removal Tool for Plastic Spacers and Floating Spacers
342694 Sample Application Block
343890 Fraction Recovery System
348114 Replacement Instruction Label
347960 CentriTube Slicer Kit (for TL-series tubes)
358317 Tip
961597 Battery
961601 Lamp

Rotor Cleaning Kit

339558 Rotor Cleaning Kit. Contains two 946-mL bottles of Solution 555™ Rotor Cleaning Concentrate, 339379 Rotor Cleaning Brush, and 339380 Rotor Cleaning Brush

Replacement Parts/Supplies

339555 Solution 555 Rotor Cleaning Concentrate (min. order two Bottles)
339379 Rotor Cleaning Brush, ⅝-in. (16 mm) and 1-in. (25.4 mm), for Rotor Cavity diameters from 7/16-in. (11 mm) to 1-in. (25.4 mm) (min. order three Brushes)
339380 Rotor Cleaning Brush, 1¼-in. (32 mm) and 1½-in. (38 mm), for Rotor Cavity diameters from 1-in. (25.4 mm) to 1½-in. (38 mm) (min. order three Brushes)

Reference

Guide to Centrifuge Selection

Centrifugation is a basic separation technique that is utilized at multiple stages in the study of sample components. Flexible rotor and adapter systems for each Beckman Coulter centrifuge allow them to be used across multiple application areas. To help you select the most appropriate centrifuge for your work, the following charts provide brief descriptions of the kinds of separations typically achieved using various centrifuges. These charts list frequent separation requirements for each sample type, and identify the centrifuges that are typically used to meet those requirements.

In addition to the separation and isolation of sample particles, centrifugation is increasingly being used as an analytical technique for the study of macromolecular interactions and the determination of molecular weights. Instruments for these applications are also listed below.

Quick-Reference Guide to Centrifuge Selection

Materials to Be Isolated	Specific Application	Centrifuges Typically Used							
		J2 and Avanti® J	Allegra™ 64R	Allegra 21 Series	Allegra 6	TJ-25	Microfuge®	J6	Avanti J-HC
Proteins	Ammonium sulfate precipitates	●	●				●		
	Sucrose/glycerol gradient isolation								
	Centrifugal filtration	●	●					●	
Subcellular Fractions									
Chromatin/Nucleosomes	Sucrose gradient isolation	●							●
Microsomes	Pelleting	●							
	Sucrose gradient isolation	●							
	Microsomal membrane fractionation	●							
Mitochondria	Pelleting	●							●
	Sucrose gradient isolation	●							
Nuclei	Pelleting	●						●	●
Membranes	Pelleting	●							●
	Sucrose/Percoll gradient fractionation	●							●
	Binding studies	●							●
Ribosomes/Polysomes	Pelleting	●							
	Size fractionation in sucrose gradients	●							
Cytosol	Clarification	●							●

Quick-Reference Guide to Centrifuge Selection (cont'd)

Materials to Be Isolated	Specific Application	Centrifuges Typically Used							
		J2 and Avanti® J	Allegra™ 64R	Allegra 21 Series	Allegra 6	TJ-25	Microfuge®	J6	Avanti J-HC
Preparative Centrifugation									
Lysates/Homogenates	Clearing debris and large particles	●	●					●	
Nucleic Acids									
DNA	Alcohol precipitation	●	●				●		
	Phenol/$CHC1_3$ extraction	●	●				●		
	Size fractionation in sucrose gradients	●							
	Minipreps in 96-well plates		●					●	
	Spin columns	●	●					●	
RNA	Phenol/$CHC1_3$ extraction	●	●				●		
	Alcohol precipitation	●	●				●		
	Lithium precipitation	●	●				●		
Cells	Isolation of mononuclear cells on Ficoll-Hypaque		●					●	
	Pelleting bacteria	●	●					●	
	Pelleting mammalian cells		●					●	
	Elutriation of viable cells	●	●					●	
	Other density gradient separations	●	●					●	
Viruses	Pelleting	●	●						
	PEG precipitates	●	●						
	Density gradient isolations	●							
Blood	Plasma preparation							●	
	Blood-cell products							●	

Useful Formulas

_k_ Factor

To determine *k* factor

$$k = \frac{\ln (r_{max}/r_{min})}{\omega^2} \times \frac{10^{-13}}{3600} \quad \text{OR} \quad k = \frac{2.53 \times 10^5 \ln (r_{max}/r_{min})}{(\text{RPM}/1000)^2}$$

To determine pelleting time *(t)*

$$t = \frac{k}{s}$$ where *s* = sedimentation coefficient in Svedbergs

To relate pelleting time between rotors

$$\frac{k_1}{t_1} = \frac{k_2}{t_2}$$

To adjust *k* factor for runs less than maximum rotor speed

$$k_{adj} = k \left(\frac{\text{maximum rated speed of rotor}}{\text{actual run speed}} \right)^2$$

To relate relative centrifugal force (RCF) to speed (RPM):

$$\text{RCF}_{max} = 1.12\, r_{max} \left(\frac{\text{RPM}}{1000} \right)^2 \quad \text{OR} \quad \text{RPM} = 10^3 \sqrt{\frac{\text{RCF}}{1.12 r_{max}}}$$

To relate the sedimentation coefficient (s) to rotational speed:

$$s = \frac{dr}{dt} \times \frac{1}{\omega^2 r}$$

Svedberg unit (*S*) equivalent:

$S = 10^{-13}$ seconds

Reduced run speed for dense solutions:

$$\text{reduced run speed} = \text{max rated speed of rotor} \times \sqrt{\frac{A}{B}}$$

where A = max. permissible density of rotor tube contents, and
B = actual density of the tubes to be centrifuged

Support Services

Beckman Coulter simplifies and automates your laboratory processes. From consultation in choosing products and services, through installation, training and support, we are committed to making your laboratory the most efficient and cost-effective operation it can be. Advancements in communications technology, system diagnostics and our field network makes it even easier for you to get the system support you need. With a variety of new programs in place, Beckman Coulter can bring your lab the most streamlined, intelligent and customer-focused service in the industry.

Whether your system service is provided on-call, on-line or on-site, you'll get the world class customer support you expect from a technology leader.

ON-CALL: System Experts at Your Fingertips

Our customer call centers provide the first line of support in resolving your technical issues. As soon as you provide your unique System Identification Number, your call will be routed automatically to system and scientific specialists. The specialist who receives your call will have immediate access to your system's complete service history and your experience with the system. These qualified specialists can then immediately identify, isolate and resolve most technical issues – preventing simple problems from becoming more complicated. If the problem can't be resolved, our computer system will forward the information to the Beckman Coulter dispatch group for immediate assignment to a field system engineer.

ON-LINE: Product Support on Your Schedule

Our web-based information resource provides you with 24-hour-a-day access to a wide array of helpful information.

- FAQs, troubleshooting, MSDSs
- How to place service requests
- Part numbers
- Catalogs, product selection guides, rotor calculations and selection
- Customer Technical Support contact information

ON-SITE: Factory Trained Field System Engineers

When the need arises for on-site support, one of Beckman Coulter's professional field system engineers is always available to service your system on-site. Through our global network of system and process experts, a Beckman Coulter field system engineer is available to provide hands-on support and keep your lab processes running smoothly. To meet the various needs of the scientific laboratory, Beckman Coulter offers a wide range of on-site technical solutions for your lab.

- Support agreement options
- Regulatory compliance programs (installation and operational qualification)
- Centrifuge rotor inspection programs
- Training
- Technical services on a time and material basis

Regardless of the support agreement selected, you are assured that Beckman Coulter provides only the finest quality support and is certified under ISO 9001 quality standards.

ON-FILE: Your System Identification Number

Your instrument's System Identification Number is your key to Beckman Coulter service and support. Use it to identify yourself whenever you call for technical assistance. Don't worry about a model or serial number – all the information we need is contained in the System Identification Number. If you have several instruments, each one will have a unique number. Please keep your System Identification Number accessible and readily available. It's just one more way we strive to give you the best customer support possible. If you do not already have a System Identification Number, contact the Beckman Coulter Customer Technical Support department.

CUSTOMER TECHNICAL SUPPORT

U.S.: (800) 551-1150

Canada: (800) 387-6799

www.beckmancoulter.com/biosupport