HIGH-PERFORMANCE & HIGH-CAPACITY CENTRIFUGES

INGENUITY MEETS PRACTICALITY.

Brilliance
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BECKMAN COULTER
Life Sciences

HIGH-PERFORMANCE & HIGH-CAPACITY CENTRIFUGES PRODUCT CATALOG

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ENHANCES YOUR WORKFLOW
EASY TO USE POWERFUL
TIME-SAVERS SUSTAINABLE
STREAMLINED MORE THROUGHPUT
MORE CONTROL

Since the introduction of the first commercial ultracentrifuge in 1947 — the classic Beckman Model L — Beckman Coulter has been at the forefront of centrifuge 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 laboratory.

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 BioSafe instruments and accessories are available across our centrifuge product line and are identified with these icons:

Biosafety BioSafe and BioSafety are terms intended to describe the enhanced biocontainment features of our products.

BIOC BioCertified is a term used to describe our products which have been tested and validated to demonstrate containment of microbiological aerosols by an independent, third-party facility (Health Protection Agency, Porton Down, UK or USAMRIID, Ft. Detrick, MD, USA). Improper use or maintenance may affect seal integrity and, thus, containment.

BIOE BioEnhanced is a term intended to describe our products' enhanced level of biocontainment by design.

Rotors with the BioCertified symbol and 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, as well as frequently used formulas.

Contact your local Beckman Coulter office

Please visit us at www.beckmancoulter.com/contact

Additional centrifugation resources:

www.beckmancoultercentrifugation.com

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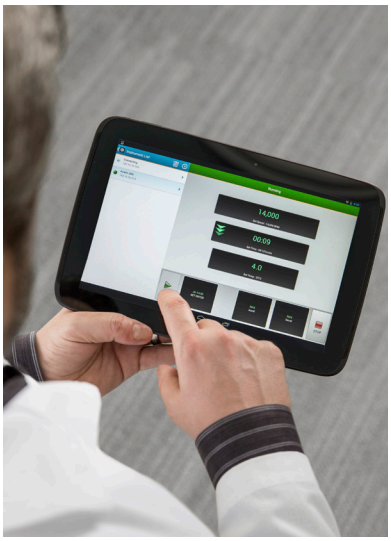


Avanti JXN Series

A new level of freedom and high performance.

Whatever your application, from simple pelleting to rate zonal separations, the Avanti JXN Series offers newfound momentum. Rely on the Avanti JXN-26 to boost your productivity, or reach speeds of up to 30,000 rpm with the Avanti JXN-30.

Flexibility reaches a whole new level with the MobileFuge remote application for Avanti centrifuges. Users can easily monitor and control centrifuge functions via computer, using Virtual Network Computing (VNC) software or mobile device using the custom MobileFuge app available for Apple® iOS and Android™ devices. Whether you are across the lab or across the campus, you can always keep an eye on your centrifuge. Work has never been so flexible.

1 Ergonomic design
- Low work surface height for easier installation and unloading of rotors
- Foot pedal for hands-free door operation
- Door swings up and out of the way for easy access to the rotor chamber
- Large digital readouts make operation simpler

2 Gain flexibility with MobileFuge
- Set and monitor run parameters and email diagnostic results
- Control and monitor the centrifuge from your Apple® iOS and Android™ device with MobileFuge
- Get alerts and diagnostics remotely

3 Intuitive interface
- User-friendly, large LCD screen
- View set and actual run conditions simultaneously
- Select rotor by name, not by arcane number code
- 11 accel/12 decel rates
- Delay start
- Run times to 99:59, Hold, and ω^{2t} integrator for applications that require exquisite reproducibility

4 Safe and sustainable
- Friction Reduction System (FRS) allows quicker, quieter, and cooler runs
- Uses less energy than traditional centrifuges
- BioSafe† options
- Dynamic rotor inertia check
- High-torque, Switched Reluctance (SR) drive cycle shortens cycle times*

5 Advanced, easy-to-use data management
- Perfect to support shared lab or GMP environments
- On-screen text sensitive "help" screen
- Up to 1,000 user-defined programs
- Set up and store numerous protocols
- Password protection for up to 50 unique user profiles
- Network multiple instruments
- Data logging and real-time run graphing

6 Versatile across rotors and applications
- Compatible with an extensive library of rotors
- Fixed-angle and swinging bucket options available
- Fully compatible with lightweight J-Lite rotors
- Dynamic Rotor Inertia Check (DRIC) and rotor recognition provide redundant safety checks to assure no rotor can be run above its rated speed
- Temperature control is optimized ensuring sample quality and avoiding unwanted artifacts
- SW and FA rotors capable of greater than 100,000 x *g*

Specifications	Avanti JXN-26	Avanti JXN-30
Maximum Speed/g-Force	26,000 rpm / 81,770 x *g*	30,000 rpm / 110,500 x *g*
Maximum Capacity	6 Liters	4 Liters
Speed Control	Low Speed (1,000 to 10,000): ± 10 rpm High Speed (10,001 to max): ± 0.1% rpm	Low Speed (1,000 to 10,000): ± 10 rpm High Speed (10,001 to max): ± 0.15% rpm
Set Temperature	–10°C to 40°C in 1° increments	-20° to 40° C in 1° increments
Temperature Control	± 2°C of chamber temperature after equilibration[a]	±2° C of chamber temperature after equilibration[a]
Ambient Operating Range	16°C to 38°C[b]	16° C to 38° C[b]
Accel Decel	Maximum, timed (1 to 10 min from 0 to 500 rpm) Maximum, timed (1 to 10 min from 500 to 0 rpm) or coast	Maximum, timed (1 to 10 min from 0 to 500 rpm) Maximum, timed (1 to 10 min from 500 to 0 rpm) or coast
Heat Output	5,120 BTU/hr (1.5 kW)[c]	5,120 BTU / hr (1.5 kW)
Drive Type / Cooling	SR* drive / Air-cooled	SR* drive / Air-cooled
Refrigeration	Refrigerant 404A (HVC)	Refrigerant 404A (HVC)
Noise output (1 m in front of instrument, 1.5 m above the floor)	62 dBa[d]	62 dBa
Dimensions (with door closed)	71 W x 86 D x 86 H cm (28 W x 34 D x 34 H in)	71 W x 86 D x 86 H cm (28 W x 34 D x 34 H in)
Weight	290 kg (640 lbs)	310 kg (680 lbs)
HEPA Filter	Pharmaceutical-grade sterilizing filter system	Pharmaceutical-grade sterilizing filter system

Part Numbers**

Model	230 V, 50 Hz, 24A	200–240 V, 50/60 Hz, 24A	220 V, 3-Phase, 50 Hz, 12A
Avanti JXN-26 IVD	B38623	B38619	B38618
Avanti JXN-26 Non-IVD	B37912	B34183	B34182
Make BioSafe† with HEPA filter kit for Avanti JXN-26 (external mount)	B37916	B37916	B37916

Model	230 V, 50 Hz, 24A	200–240 V, 50/60 Hz, 24A	220 V, 3-Phase, 50 Hz, 12A
Avanti JXN-30 IVD	B38624	B38621	B38620
Avanti JXN-30 Non-IVD	B37913	B34193	B34192

a: Proprietary algorithm applied to provide an estimated sample temperature.

b: To reach temperatures above ambient, the centrifuge is dependent on the frictional heat generated inside the chamber during operation. At low run speeds or low ambient temperatures, the centrifuge may not be able to achieve some higher temperatures.

c: JA-20 rotor running at 20,000 rpm at 4°C.

d: JA-30.50 Ti rotor with chamber precooled and running at 26,000 rpm.

* SR drives are manufactured by Beckman Coulter, Inc. with technology licensed from Switched Reluctance Drives Limited.

**Availability varies by geography. Contact your local sales representative to determine the correct part numbers for ordering.

† BioSafe is a term intended to describe the enhanced biocontainment features of our products.

Avanti J-26S XP Series High Performance Centrifuge

One instrument with many possibilities.

The Avanti J-26S combines high performance, complete BioSafety* systems and long-term durability, making it an incredibly capable choice for any lab environment. Along with high speed, it offers low heat output, imbalance tolerance and low noise.

Versatility is delivered by a vast range of separations. Plus, ergonomic design features, such as lower instrument height and hand-free door operation, makes it easy to use. For extra peace of mind, the Avanti J-26S has an impact-resistant lid, a full containment barrier and automatic rotor identification.

Specifications

Maximum Speed/g-Force	26,000 rpm / 81,800 x *g*
Maximum Capacity	6 Liters
Speed Control	Low Speed ± 10 rpm of set speed High Speed ± 0.1% rpm of set speed
Set Temperature	–10°C to 40°C in 1° increments
Temperature Control	± 2°C of set temperature
Ambient Operating Range	16°C to 38°C
Accel / Decel Profiles	2 / 3
Heat Output	6900 BTU/hr (2.0 kW)
Drive Type / Cooling	SR** drive / Air-cooled
Refrigeration	Non-CFC, non-ozone depleting refrigerant
Sound Level	57 dBA (0.91 m / 3 ft from instrument at maximum speed)
Sterile Filter	Available
Dimensions (with door closed)	71 W x 86 D x 86 H cm (28 W x 34 D x 34 H in)
Weight	290 kg (640 lbs)
User-Defined Programs	None
Time Settings	1 to 180 minutes, Hold
Delayed Start	No
Key Lock-Out	No

* BioSafety is a term intended to describe the enhanced biocontainment features of our products.

** SR drives are manufactured by Beckman Coulter, Inc. with technology licensed from Switched Reluctance Drives Limited.

Part Numbers

Model	200/208/240 V 50/60 Hz	230 V 50 Hz	220/380 V 50 Hz, 3-Phase
Avanti J-26S XP	B14535	B14536	B14537
Avanti J-26S XP with Elutriation	B14541	B14542	B14543
BioSafe Package	**200/208/240 V 50/60 Hz**	**230 V 50 Hz**	**220/380 V 50 Hz, 3-Phase**
Avanti J-26S XP	B22984	B22985	B22987

Avanti J-E 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	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	< 64 dBa (3 ft. from instrument at maximum speed)
Dimensions	63.5 cm x 80 cm x 91.4 cm (25 in. W x 31.5 in. D x 36 in. H)
Weight	267.4 kg (589 lb)

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

Part Numbers

	208/240 V 50/60 Hz	230 V 50 Hz	200 V 50/60 Hz
Avanti J-E	369001	369003	369005
	200/208/240 V 50/60 Hz	**230 V 50/60 Hz**	**220/380 V 50/60 Hz**
BIOE **Avanti J-E**	969352	A20698	A20699

J6-MI High Capacity Centrifuge

It Spins Volumes

With six-liter capacity and an innovative range of rotors, carriers, and adapters, this centrifuge can handle multiple high-capacity applications. Ideal for bioprocessing, clinical and blood sample preparation, the J6-MI is the standard for quiet and convenient operation.

Its self-balancing rotor system corrects for imbalances during a run, without shutdown. Its microprocessor-controlled induction motor provides high torque, fast acceleration, and long motor life. And the J6-MI generates speeds and forces up to 6 000 rpm and 6 840 x *g*.

J6-MI High Capacity Centrifuge

Specifications

Maximum Speed	6 000 rpm
Maximum *g*-force	6 840 × *g*
Speed Control	± 20 rpm of set speed
Drive Type	High-torque, variable-frequency induction motor
Drive Cooling	Indirect drive system
Refrigeration System	Non-CFC, non-ozone-depleting refrigerant
Max. Capacity Volume	6 Liters
Ambient Temperature Range	15° to 35°C
Set Temperature Range	–20°C to 40°C in 1° increments
Temperature Control	± 2°C of set temperature after equilibration
Ambient Operating Range	16°C to 38°C
Acceleration/Deceleration Rates	9 accel/9 decel
Heat Output	< 7000 BTU/hr (1.9 kW)
Sound Level	< 68 dBa (0.91 m/3 ft. from instrument at maximum speed)
Dimensions	71 cm x 84 cm x 91 cm (25 in. W x 33 in. D x 36 in. H)
Weight	252 kg (5555 lb)

Note: Only values with tolerances or limits are guaranteed data. Values without tolerances are informative data, without guarantee.

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

Avanti J-HC Centrifuge

The capacity to impress.

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	± 25 rpm of set speed
Max. Capacity	9 000 mL
Single Bucket Volume	2 250 mL
Set Temperature Range	-10° to 40°C
Temperature Control	± 2°C
User Defined Programs	Up to 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	71 cm x 86 cm x 86 cm (28 in. W x 34 in. D x 34 in. H)

Part Numbers

	200/208/240 V 50/60 Hz	230 V 50 Hz	380 V 50 Hz, 3-Phase
Avanti J-HC	367501	367502	367503

Rotor Compatibility Chart

	Avanti JXN-30 Max. RPM/ g-Force	Avanti JXN-26 Max. RPM/ g-Force	Avanti J-26S Max. RPM/ g-Force	Avanti J-E Max. RPM/ g-Force	J6-MI	Avanti J-HC	Angle	Containment	
Fixed-Angle Rotors									
JA-30.50 Ti	30 000 *108 860*	26 000 *81 800*	26 000 *81 800*	N/A	N/A	N/A	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*	N/A	N/A	34°	Single- or dual-locking lid/fluid annulus	BIOC
JA-25.15†	25 000 *74 200*	25 000 *74 200*	25 000 *74 200*	N/A	N/A	N/A	25°	Single- or dual-locking lid/fluid annulus	BIOC
JA-21	21 000 *50 400*	21 000 *50 400*	21 000 *50 400*	21 000 *50 400*	N/A	N/A	40°		BIOC
JA-20.1†	20 000 *51 500*	20 000 *51 500*	20 000 *51 500*	20 000 *51 500*	N/A	N/A	23°		
JA-20†	20 000 *48 400*	20 000 *48 400*	20 000 *48 400*	20 000 *8 400*	N/A	N/A	34°		BIOC
JA-18.1	18 000 *42 100*	18 000 *42 100*	18 000 *42 100*	N/A	N/A	N/A	45°	N/A	
JA-18†	18 000 *47 900*	18 000 *47 900*	18 000 *47 900*	16 000 *37 800*	N/A	N/A	23°	N/A	BIOC
JA-17†	17 000 *39 800*	17 000 *39 500*	17 000 *39 500*	17 000 *39 800*	N/A	N/A	25°		BIOC
JLA-16.250†	16 000 *38 400*	16 000 *38 400*	16 000 *38 400*	16 000 *38 400*	N/A	N/A	25°	Single- or dual-locking lid/fluid annulus	BIOC
JA-14.50†	14 000 *35 000*	14 000 *35 000*	14 000 *35 000*	14 000 *35 000*	N/A	N/A	35°	Single- or dual-locking lid/fluid annulus	BIOC
JA-14†	14 000 *30 100*	14 000 *30 100*	14 000 *30 100*	14 000 *30 100*	N/A	N/A	25°		BIOC
JA-12†	12 000 *23 200*	12 000 *23 200*	12 000 *23 200*	12 000 *23 200*	N/A	N/A	35°	Single- or dual-locking lid/fluid annulus	BIOC
JLA-10.500†	N/A	10 000 *18 500*	10 000 *18 500*	10 000 *18 500*	N/A	N/A	20°	Sealing canister covers	BIOC
JA-10	10 000 *17 700*	10 000 *17 700*	10 000 *17 700*	10 000 *17 700*	6 000 *6 370*	10 000 *17 700*	25°		
JLA-9.1000	9 000 *16 800*	9 000 *16 800*	9 000 *16 800*	6 300 *8 230*	N/A	N/A	20°	Integrated bottle seal	
JLA-8.1000†	N/A	8 000 *15 970*	8 000 *15 970*	N/A	N/A	8 000 *15 970*	20°	Integrated bottle seal	BIOC

†This rotor was tested to demonstrate containment of microbiological aerosols under normal operating conditions of the associated Beckman Coulter centrifuge, when used and maintained as instructed. Validation of the microbiological containment was done at an independent, third-party facility (CAMR, Porton Down, UK or USAMARIID, Ft. Detrick, MD, USA). Improper use or maintenance may affect seal integrity and, thus, containment.

Rotor Compatibility Chart *(continued)*

	Avanti JXN-30 Max. RPM/ g-Force	Avanti JXN-26 Max. RPM/ g-Force	Avanti J-26S Max. RPM/ g-Force	Avanti J-E Max. RPM/ g-Force	J6-MI	Avanti J-HC	Angle	Containment
Swinging Bucket Rotors								
JS-24.38	24 000 *103 900*	10 000 *18 000*	10 000 *18 000*	N/A	N/A	N/A	Horz.	Cap, O-ring
JS-24.15	24 000 *110 500*	10 000 *19 200*	10 000 *19 200*	N/A	N/A	N/A	Horz.	Cap, O-ring
JS-13.1	13 000 *26 500*	13 000 *26 500*	13 000 *26 500*	N/A	N/A	N/A	Horz.	
JS-7.5	7 500 *10 400*	7 500 *10 400*	7 500 *10 400*	N/A	N/A	N/A	Horz.	N/A
JS-5.3	N/A	5 300 *6 130*	5 300 *6 130*	5 300 *6 130*	N/A	N/A	Horz.	N/A
JS-4.3	N/A	4 300 *4 220*	4 300 *4 220*	N/A	N/A	N/A	Horz.	Bucket Covers
JS-4.0	N/A	4 000 *4 050*	4 000 *4 050*	N/A	N/A	N/A	Horz.	Aeroseal Cover BIOC
JS-5.2	N/A	N/A	N/A	N/A	5 200 *6 840*	N/A	Horz.	Aeroseal Cover BIOC
JS-5.0	N/A	N/A	N/A	N/A	N/A	5 000 *7 480*	Horz.	
JS-4.2	N/A	N/A	N/A	N/A	4 200 *5 020*	4 200 *5 020*	Horz.	Aeroseal Cover
JS-4.2A	N/A	N/A	N/A	N/A	4 200 *5 020*	N/A	Horz.	Aeroseal Cover
JS-4.2SM	N/A	N/A	N/A	N/A	4 200 *4 900*	N/A	Horz.	
JS-4.2SMA	N/A	N/A	N/A	N/A	4 200 *4 900*	N/A	Horz.	
JS-4.0	N/A	N/A	N/A	N/A	4 000 *4 050*	N/A	Horz.	Aeroseal Cover
JS-3.0	N/A	N/A	N/A	N/A	3 000 *2 560*	N/A	Horz.	Aeroseal Cover
	Avanti JXN-30 Max. RPM/ g-Force	**Avanti JXN-26 Max. RPM/ g-Force**	**Avanti J-26S Max. RPM/ g-Force**	**Avanti J-E Max. RPM/ g-Force**				
Elutriation, Continuous Flow, and Zonal Rotors								
JE-5.0	N/A	N/A	5 000 *4 700*	N/A				
JCF-Z Std. Core	20 000 *39 900*	20 000 *39 900*	20 000 *39 900*	N/A				
JCF-Z Large Core	20 000 *39 900*	20 000 *39 900*	20 000 *39 900*	N/A				
JCF-Z Small Core	20 000 *36 300*	20 000 *36 300*	20 000 *36 300*	N/A				
JCF-Z Reograd Core	20 000 *39 900*	20 000 *39 900*	20 000 *39 900*	N/A				
JCF-Z Zonal Core	20 000 *39 900*	20 000 *39 900*	20 000 *39 900*	N/A				

High Performance and High Capacity 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 363421 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 Single Lock Lid	25 000	26 950	75 600	418	8 x 50 mL 29 x 104 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 Single Lock Lid	25 000	36 400/ 22 400	74 200/ 60 200	265/ 380	24 x 15 mL 18 x 100 mm (0.75 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	769	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[c]	34 500[c]	42 100[c]	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	369679	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	369691	17 000	18 180	39 800	1 060	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	38 400	1090	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-14.50	B19955 Biosafety Lid B19956 Single Lock Lid	14 000	19 000	35 000	787	16 x 50 mL 30 x 115 mm	800 mL	2:00	Pelleting and density gradient separations, proteins, nucleic acids, cells, viruses and blood.
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[b]	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 JXN-30.*
b *Typical accel time in Avanti J-25 Series.*
c *At a 45° angle.*

High Performance and High Capacity 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	369681 with Canisters	10 000	6 050	18 600	2 850	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	369687	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	2 544	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	15 970	2 482	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-5.3 (AllSpin)	368690	2 920	5 170	6 870	various	4 x 500 mL conical 24 microplates	2 L	2:00[d]	Sucrose/glycerol gradients, centrifugal filtration, binding studies, clearing debris/large particles, pelleting, plasma protein precipitates.
JS-5.2*	339087	5 200	2 600	6 840	9 051	4 Liters 4 Blood Bags 12 Microplates 148 RIA-Tubes	4 L	2:30	Rapid sedimentation of protein precipitates, large particles, cells, and cell debris. It can be used for binding studies and separating serum from whole blood.
JS-5.0	367820	5 000	3 020	7 480		4 x 2.25 L	9 L	3:30	Separating bacterial yeast, and tissue homogenates; harvesting cultures.
JS-4.3	362734	3 250	1 532	4 220	11 800	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.

[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-26 XP Series.

** Only for J6-MI.*

c Typical accel time in Avanti JXN-30 (JS rotors using mandatory slow accel setting).

d Typical accel time in Avanti J-E.

High Performance and High Capacity 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	Comments
Swinging-Bucket Rotors (continued)									
JS-4.2	339080	4 200	2 250	5 020	11 504	6 Liters, 6 Blood Bags, 18 Microplates, 336 RIA-Tubes	6 L	2:30	Rapid sedimentation of protein precipitates, large particles, cells, and cell debris. It can be used for binding studies and separating serum from whole blood.
JS-4.2A**	366695	4 200	2 250	5 020	11 504	6 Liters, 6 Blood Bags, 18 Microplates, 336 RIA-Tubes	6 L	2:30	Rapid sedimentation of protein precipitates, large particles, cells, and cell debris. It can be used for binding studies and separating serum from whole blood.
JS-4.2/SM**	348394	4 200	2 290	4 900		6 Blood Bags 18 Microplates		2:30	Separation of serum from whole blood, blood component separation.
JS-4.2/SMA**	366670	4 200	2 290	4 900		6 Blood Bags 18 Microplates		2:30	Separation of serum from whole blood, blood component separation.
JS-4.0	339086	4 000	1 540	4 050	15 296	4 x 000 97 x 167 (3.82 x 6.57 in.)	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-3.0*	339086	3 000	1 150	2 560		6 x 1000 97 x 167	6L		
Continuous-Flow Rotor									
JCF-Z	335140 (standard core)	20 000	32 000	39 900	100	N/A	660 mL		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	N/A	240 mL		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.
	336283 (large pellet core)	20 000	22 850	39 900	293	N/A	1 250 mL		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	1 900 mL		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		No rotating seal. Static loading and unloading. Gradient reorients in rotor. Especially useful for fragile material such as DNA strands.
Elutriation									
JE-5.0	356900	5 000	2 410	4 700	6 785	———	40 mL		The counterflow centrifugation elutriation system is a gentle, yet powerful technique for harvesting large populations of living cells, resulting in high viability rates.

**JS-3.0 rotor is for use in Beckman Coulter J6 Series centrifuges only per IFU J6-TB-0075C.*
***Only for J6.*

ROTOR SELECTION BY APPLICATION†

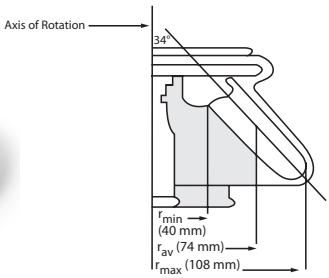
Bioseparation	Specific Application	JA-30.50 Ti	JA-25.50	JA-25.15	JA-21	JA-20.1	JA-20	JA-18	JA-18.1	JA-17	JLA-16.250	JA-14.50	JA-14	JA-12	JLA-10.500	JA-10	JLA-9.1000	JLA-8.1000	JS-24.38	JS-13.1	JS-5.3	JS-4.2
Protein	Pelleting ammonium sulfate precipitation	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
	Sucrose/glycerol gradient	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■			■	■		
	Centrifugal filtration 1-50 mL	■	■	■	■	■			■		■	■	■	■					■		■	
Subcellular Fractions	Centrifugal filtration <1.0 mL																			■	■	
Chromatin/ Nucleosomes	Sucrose gradient isolation	■	■	■	■	■	■	■	■	■		■							■			
Microsomes	Pelleting	■	■	■	■	■	■		■			■							■			
	Microsomal membrane fraction	■	■	■	■	■	■	■	■	■		■							■			
Mitochondria	Pelleting	■	■	■	■	■	■	■	■			■							■			
	Sucrose gradient isolation	■	■	■	■	■	■	■	■	■		■							■			
Nucleic	Pelleting	■	■	■	■	■	■	■	■	■		■							■			
Cell Membranes	Pelleting	■	■	■	■	■	■	■	■	■		■							■			
	Sucrose gradient isolation	■	■	■	■	■	■		■			■							■			
	Binding studies	■	■	■	■	■	■	■	■	■		■							■	■	■	
Ribosomes/ Polysomes	Pelleting	■	■	■	■	■	■	■	■	■	■	■	■		■	■			■			
	Sucrose gradient isolation	■	■	■	■	■	■		■			■							■			
Cytosol	Clarification	■	■	■	■	■	■	■	■	■		■							■			
Lysate/Tissue Homogenates	Clearing debris and large particles	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Clearing Media	Clearing debris and large particles	■	■								■	■	■		■	■	■	■	■		■	■
Nucleic Acids	Pelleting alcohol precipitation	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■			■	■		
	Phenol/chloroform extraction	■																	■	■	■	■
	Minipreps in 96-well plates																				■	■
	Spin columns																				■	
Cells	Pelleting bacteria	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
	Pelleting mammalian cells	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
	Density gradient separation	■	■	■	■	■	■	■	■	■	■	■	■	■					■	■	■	
Viruses	Pelleting	■	■	■	■	■	■		■			■							■			
	PEG precipitates	■	■	■	■	■	■	■	■	■		■	■	■					■	■	■	■
	Density gradient isolation	■	■	■	■	■	■		■			■							■		■	
Blood	Pelleting	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
	Plasma protein precipitation	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■			■	■		
	Blood sample preparation										■		■		■	■	■	■	■	■	■	■
	Density gradients to isolate blood cells														■	■			■	■	■	■

◆Maximum rotor speeds may differ between instrument models. For complete rotor specifications, please refer to our High Performance and High Capacity centrifuge catalog or visit beckmancoulter.com.

[3]BioSafe when used with Aeroseal covers. [4]BioSafe when used with Aerosolve canisters. [5]J6-MI must have door and strobe.

†Selected rotor has the capability (x *g*, volume, labware) to accommodate the application, but may not be the most optimal/efficient choice for the specific application.

All labware sold separately.



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 and J-HC) centrifuges.

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

Tubes and Bottles

Tube Style/Material	Nominal Volume per Tube (mL)	Part No.	Quantity	Cavity Diameter (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Bottles with Screw-On Caps									
Polypropylene	50.0	357003	25	29 x 104	——	——	75 600	403	25 000
Polycarbonate	10.0	355672	25	16 x 80	361703 (qty. of 2)	1	91 000	244	30 000
	50.0	357002	25	29 x 104	——	——	75 600	403	25 000
Bottles with Cap Assemblies									
Polypropylene	50.0	357001	6	29 x 104	——	——	108 800	280	30 000*
Polycarbonate	50.0	357000	6	29 x 104	——	——	108 800	280	30 000
Tubes with Snap-On Caps									
Polypropylene	1.5	357448	500	11 x 38	361705 (qty. of 2)	3	73 400	126	30 000
Thickwall Polycarbonate	50.0	363664	25	29 x 104	——	——	75 600	403	25 000
Polypropylene	1.5	356090	500	11 x 38	361705 (qty. of 2)	3	73 400	126	30 000
Thickwall Polypropylene	50.0	357005	25	29 x 104	——	——	75 600	403	25 000
Open-Top Tubes									
Thickwall Polycarbonate	50.0	363647	25	29 x 104	——	——	108 800	280	30 000*
Thickwall Polypropylene	50.0	357007	25	29 x 104	——	——	108 800	280	30 000
Adapters for Non-Beckman Coulter Tubes/Bottles									
Round Bottom	5.0	——	——	12 x 75	356970 (qty. of 1)	1	——	——	——
	8.0	——	——	13 x 100	356976 (qty. of 1)	1	——	——	——
	10.0	——	——	16 x 80	342327 (qty. of 1)	1	——	——	——
	15.0	——	——	18 x 80	870329 (qty. of 1)	1	——	——	——
	30.0	——	——	29 x 104	870331 (qty. of 1)	1	——	——	——

**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.*

***Reaches 30,000 rpm in the Avanti JXN-30 centrifuge only. Reaches 26,000 rpm, 81 770 RCF in the Avanti JXN-26.*

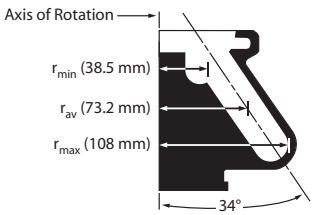
Rotor Replacement Parts

870612	O-ring for Rotor Lid
11757	Small O-ring for Rotor Lid
363424	Lid Assembly, Biosafety (tie-down assembly included)
363430	Lid Assembly, Single-locking
363431	Tie-down for Single-locking Lid

Adapters

361703 361705

JA-25.50 BIOC 8 x 50 mL JA-25.50



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 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	Nominal Volume per Tube (mL)	Part No.	Quantity	Cavity Diameter (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Bottles with Screw-On Caps									
Polypropylene	50.0	357003	25	29 x 104	——	——	75 600	418	25 000
Polycarbonate	10.0	355672	25	16 x 80	361703 (qty. of 2)	1	63 240	350	25 000
	50.0	357002	25	29 x 104	——	——	75 600	418	25 000
Bottles with Cap Assemblies									
Polypropylene	50.0	361694	24	29 x 104	——	——	75 600	418	25 000
Polycarbonate	50.0	361693	24	29 x 104	——	——	75 600	418	25 000
Tubes with Snap-On Caps									
Thickwall Polycarbonate	50.0	363664	25	29 x 104	——	——	75 600	418	25 000
Thickwall Polypropylene	1.5	356090	500	9.5 x 38	361705 (qty. of 2)	3	50 960	182	25 000
	50.0	357005	25	29 x 104	——	——	75 600	418	25 000
Open-Top Tubes									
Polypropylene	1.5	357448	500	9.5 x 38	361705 (qty. of 2)5	3	50 960	182	25 000
Thickwall Polycarbonate	50.0	363647	25	29 x 104	——	——	75 600	418	25 000
Thickwall Polypropylene	50.0	357007	25	29 x 104	——	——	75 600	418	25 000
Adapters for Non-Beckman Coulter Tubes/Bottles									
Round Bottom	5.0	——	——	12 x 75	356970 (qty. of 1)	1	——	——	——
	8.0	——	——	13 x 100	356976 (qty. of 1)	1	——	——	——
	10.0	——	——	16 x 80	342327 (qty. of 1)	1	——	——	——
	15.0	——	——	18 x 80	870329 (qty. of 1)	1	——	——	——
	30.0	——	——	29 x 104	870331 (qty. of 1)	1	——	——	——

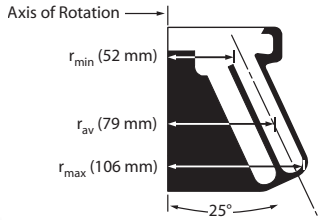
* *Order cap separately (pkg. of 25): 356264 (natural), 357359 (red), 357360 (green), 357361 (yellow), or 357362 (blue).*

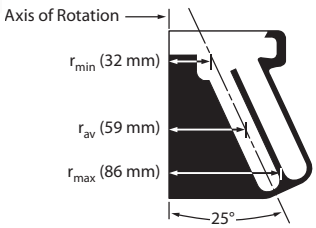
Rotor Replacement Parts

870612	O-ring for Rotor Lid
11757	Small O-ring for Rotor Lid
363023	Lid Assembly, Biosafety (Tie-down Assembly included)
363053	Lid Assembly, Single Lock (Tie-down Assembly included)

Adapters

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
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) centrifuges.

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	Nominal Volume per Tube (mL)	Part No.	Quantity	Cavity Diameter (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed (Outer Row)
Bottles with Screw-On Caps									
Polycarbonate	10.0	355672	25	16 x 80	342327	1	60 200	204	25 000
Open-Top Tube									
Thickwall Polypropylene	4.0	355644	25	13 x 64	303313	1	49 000	120	25 000
	10.0	355640	25	16 x 75	342327	1	56 700	180	25 000
Thickwall Polycarbonate*	4.0	355645	25	13 x 64	303313	1	49 000	120	25 000
	10.0	355630	25	16 x 75	342327	1	56 700	180	25 000
	15.0	342080	100	18 x 98	———	———	74 200	265	25 000
Thickwall Polyethylene*	15.0	342081	100	18 x 98	———	———	74 200	265	25 000
Thickwall Polypropylene*	15.0	342082	100	18 x 98	———	———	74 200	265	25 000
Adapters for Non-Beckman Coulter Tubes/Bottles									
Round Bottom	3.0	———	———	12 x 75	342329 (qty. of 1)	1	———	———	———

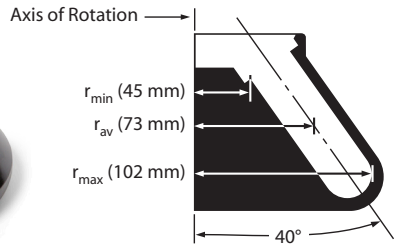
* *To order caps for 15-mL tubes 342080, 342081, and 342082, use part number 343656 for a package of 50.*

Rotor Replacement Parts

964911	Large O-ring for Rotor Lid
11757	Small O-ring for Rotor Lid
363024	Lid Assembly, Biosafety (Tie-down Assembly included)
363052	Rotor Lid Assembly, Single Lock (Tie-down Assembly included)

Adapters

303313 342327



Fixed-Angle Rotor, Aluminum

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 Series centrifuges.

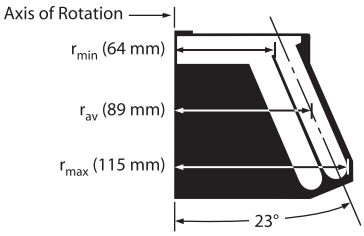
No. 334845. JA-21 Fixed-Angle Rotor for 21 000 rpm operation.

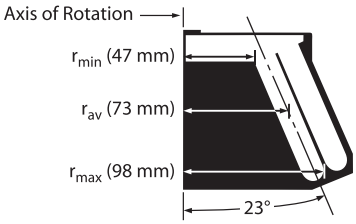
Tubes and Bottles

Tube Style/Material	Nominal Volume per Tube (mL)	Part No.	Quantity	Cavity Diameter (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Bottles with Screw-On Caps									
Polycarbonate	10.0	355672	25	16 x 80	———	———	50 400	470	21 000
Open-Top Tubes									
Thickwall Polypropylene	10.0	355640	25	16 x 76	———	———	50 400	470	21 000
Thickwall Polycarbonate	10.0	355630	25	16 x 76	———	———	50 400	470	21 000
Adapters for Non-Beckman Coulter Tubes/Bottles									
Round Bottom	5.0	———	———	12 x 75	356972 (qty. of 1)	1	———	———	———

Rotor Replacement Parts

870612	O-ring for Rotor Lid
870980	O-ring for Rotor Hub
335107	Rotor Lid
343631	Lid Attachment Bolt Assembly
369349	Rotor Lid Assembly (Tie-down Assembly included)





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 Series centrifuges.

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

Tubes and Bottles

Tube Style/Material	Nominal Volume per Tube (mL)	Part No.	Quantity	Cavity Diameter (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor*	Maximum Speed (Outer Row)
Bottles with Screw-On Caps									
Polycarbonate	10.0	355672	25	16 x 80	342327	1	47 900	325	20 000
Open-Top Tubes									
Thickwall Polypropylene	10.0	355640	25	16 x 76	342327	1	47 900	325	20 000
Thickwall Polycarbonate	10.0	355630	25	16 x 76	342327	1	47 900	325	20 000
	15.0	342080	100	18 x 98	———	———	51 500	371	20 000
Thickwall Polyethylene	15.0	342081	100	18 x 98	———	———	51 500	371	20 000
Thickwall Polypropylene	15.0	342082	100	18 x 98	———	———	51 500	371	20 000
Adapters for Non-Beckman Coulter Tubes/Bottles									
Round Bottom	3.0	———	———	12 x 75	342329 (qty. of 1)	1	———	———	———
	5.0	———	———	12 x 75	356971 (qty. of 1)	1	———	———	———
	8.0	———	———	13 x 100	356977 (qty. of 1)		———	———	———
	15.0	———	———	16 x 99	342348 (qty. of 1)	1	———	———	———
	15.0	———	———	18 x 99	342643 (qty. of 1)	1	———	———	———

Caps for 15-mL Tubes

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

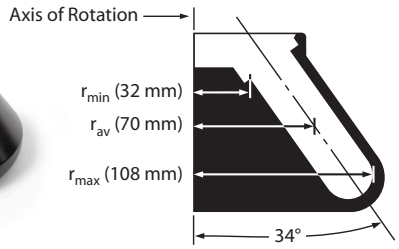
Rotor Replacement Parts

834301 O-ring for Rotor Lid
811656 O-ring for Rotor Body
358368 Lid Attachment Bolt Assembly
341976 Rotor Lid
364915 Tie-down Kit
392889 Hold-down Knob, for use with filtration tubes regularly run without lid (in J2/J6 centrifuges only)
338896 Rotor Removal Tool
338689 Adapter Collar for 338896 Rotor Removal Tool

* *Measured using the outer row of tubes.*

Adapters

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	769	8 x 50 mL 29 x 104 mm 1.125 x 4 in	400 mL

For use in Avanti J Series centrifuges.

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

Tubes and Bottles

Tube Style/Material		Minimum Volume per Tube (mL)	Part No.	Quantity	Cavity Diameter (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Bottles with Screw-On Caps										
Polyethylene		50.0	357003	25	29 x 104	———	———	48 400	769	20 000
Polycarbonate		10.0	355672	25	16 x 80	342327/870329	1	43 500	650	20 000
		50.0	357002	25	29 x 104	———	———	48 400	769	20 000
Bottles with Cap Assemblies										
Polypropylene		50.0	357001	6	29 x 104	———	———	48 400	769	20 000
Polycarbonate		50.0	357000	6	29 x 104	———	———	48 400	769	20 000
Tubes with Snap-On Caps										
Polypropylene	Natural	1.5	357448	500	11 x 38	344497*	6	48 400	769	20 000
Thickwall Polycarbonate		50.0	363647	25	29 x 104	———	———	48 400	769	20 000
Polyethylene		1.8	340196	500	11 x 39	344497*	6	48 400†	769	20 000
Thickwall Polypropylene		50.0	357005	25	29 x 104	———	———	48 400	769	20 000
	Orange	1.5	356094	500	11 x 38	344497*	6	48 400	769	20 000
	Yellow	1.5	356093	500	11 x 38	344497*	6	48 400	769	20 000
	Blue	1.5	356091	500	11 x 38	344497*	6	48 400	769	20 000
	Natural	1.5	356090	500	11 x 38	344497*	6	48 400	769	20 000
Open-Top Tubes										
Thickwall Polypropylene		50.0	357007	25	29 x 104	———	———	48 400	769	20 000
Adapters for Non-Beckman Coulter Tubes/Bottles										
Round Bottom		5.0	———	———	12 x 75	356970 (qty. of 1)	1	———	———	———
		8.0	———	———	13 x 100	356976 (qty. of 1)	1	———	———	———
		15.0	———	———	18 x 80	870329 (qty. of 1)	1	———	———	———
		30.0	———	———	29 x 104	870331 (qty. of 1)	1	———	———	———

Rotor Replacement Parts

870612 O-ring for Rotor Lid
811656 O-ring for Rotor Hub
364914 Tie-down Kit
368998 Rotor Lid
392889 Hold-down Knob, for use with filtration tubes regularly run without lid (in J2/J6 centrifuges only)
338896 Rotor Removal Tool
338689 Adapter Collar for 338896 Rotor Removal Tool

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

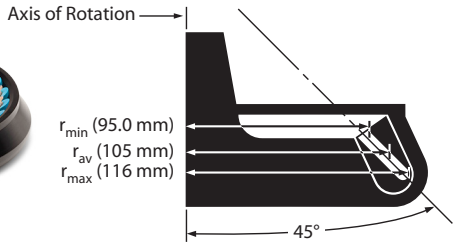
† *Calculated at rmax, g-force will be less for tubes located in upper adapter when adapters are stacked. Force will also vary depending on tube position in adapter.*

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

Adapters

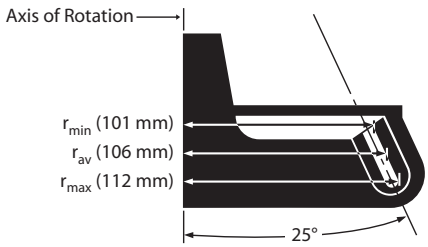
342327 344497 870329



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.

Tubes and Bottles

Tube Style/Material		Minimum Volume per Tube (mL)	Part No.	Quantity	Cavity Diameter (mm)	Required Adapters*	Tubes per Adapter†	*g*-Force	*k* Factor	Maximum Speed*
Tubes with Snap-On Caps										
Polypropylene	Natural	1.5	357448	500	11 x 38	347562	1	42 100	——	18 000
Polyethylene		1.8	340196	500	11 x 39	347562	1	42 100	——	18 000
Polypropylene	Orange	1.5	356094	500	11 x 38	347562	1	42 100	——	18 000
	Yellow	1.5	356093	500	11 x 38	347562	1	42 100	——	18 000
	Blue	1.5	356091	500	11 x 38	347562	1	42 100	——	18 000
	Natural	1.5	356090	500	11 x 38	347562	1	42 100	——	18 000
	Natural‡	1.5	343169	500	11 x 38	347562	1	42 100	——	18 000

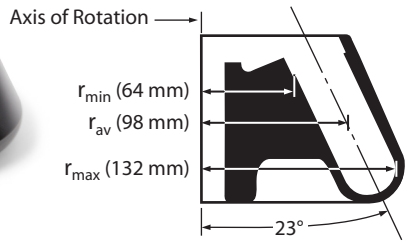
* *Adapters included with rotor. Adapters are reversible, so that tube angle can be set at either 45° or 25°, depending on application requirements.*

Rotor Replacement Parts

11921	O-ring
347821	Rotor Knob Assembly
364918	Tie-down Kit

Adapters

347562



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 1.5 x 4 in	1 L

For use in Avanti J Series centrifuges.

No. 369679. JA-18 Fixed-Angle Rotor for 18 000 rpm operation.

Tubes and Bottles

Tube Style/Material		Nominal Volume per Tube (mL)	Part No.	Quantity	Cavity Diameter (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Quick-Seal Tubes										
Polypropylene		100.0	345776	25	38 x 102	——	——	47 900	566	18 000
Ultra-Clear		100.0	345778	25	38 x 102	——	——	47 900	566	18 000
Bottles with Cap Assemblies										
Polycarbonate		70.0	355620	6	38 x 102	——	——	47 900	566	18 000
Polypropylene		94.0	355624	6	38 x 102	——	——	47 900	566	18 000
Bottles with Screw-On Caps										
Polypropylene		50.0	357003	25	29 x 104	347539	1	44 000	——	18 000
Polycarbonate		50.0	357002	25	29 x 104	347539	1	44 000	——	18 000
Tubes with Snap-On Caps										
Polypropylene	Orange	1.5	356094	500	11 x 38	344497/347539†**	6	35 000	——	18 000
	Yellow	1.5	356093	500	11 x 38	344497/347539†**	6	35 000	——	18 000
	Blue	1.5	356091	500	11 x 38	344497/347539†**	6	35 000	——	18 000
	Natural	1.5	356090	500	11 x 38	344497/347539†**	6	35 000	——	18 000
	Polypropylene	1.5	357448	500	11 x 38	344497/347539†**	6	35 000	——	18 000
	Natural‡	1.5	343169	500	11 x 38	344497/347539†**	6	35 000	——	18 000
Polyethylene		1.8	340196	500	11 x 39	344497/347539†**	6	35 000	——	18 000
Open-Top Tubes										
Thickwall Polycarbonate*		50.0	363647	25	29 x 104	347539	1	44 000	——	18 000
Thickwall Polypropylene*		50.0	357007	25	29 x 104	347539	1	44 000	——	18 000
Adapters for Non-Beckman Coulter Tubes/Bottles										
Round Bottom		5.0	——	——	12 x 75	356969 (qty. of 1)	3	——	——	——
Round Bottom		10.0	——	——	13 x 100	356975 (qty. of 1)	3	——	——	——
Conical		15.0	——	——	17 x 120	356962 (qty. of 1)	1	——	——	——
Round Bottom		15.0	——	——	18 x 80	870329/347539 (qty. of 1)	1	——	——	——
Round Bottom		30.0	——	——	29 x 104	870331/347539 (qty. of 1)	1	——	——	——
Conical		50.0	——	——	30 x 115	356963 (qty. of 1)	1	——	——	——

* *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.*

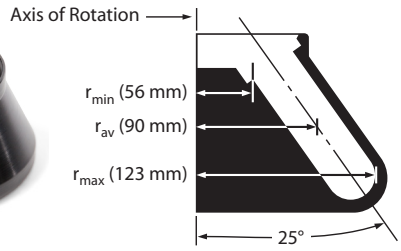
.** *These adapters fit inside one another to accommodate smaller bottles and tubes.*

Rotor Replacement Parts

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

Adapters

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 Series centrifuges.

No. 369691. JA-17 Fixed-Angle Rotor.

Tubes and Bottles

Tube Style/Material	Nominal Volume per Tube (mL)	Part No.	Quantity	Cavity Diameter (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Bottles with Cap Assemblies									
Polypropylene	50.0	357001	6	29 x 104	——	——	39 800	690	17 000
	50.0	361694	24	29 x 104	——	——	39 800	690	17 000
Polycarbonate	50.0	357000	6	29 x 104	——	——	39 800	690	17 000
	50.0	361693	24	29 x 104	——	——	39 800	690	17 000
Bottles with Screw-On Caps									
Polypropylene	50.0	357003	25	29 x 104	——	——	39 800	690	17 000
Polycarbonate	10.0	355672	25	16 x 80	342327/870329	1	32 000	500	17 000
	50.0	357002	25	29 x 104	——	——	39 800	690	17 000
Tubes with Snap-On Caps									
Polypropylene	50.0	357005†	25	29 x 104	——	——	39 800*	690	17 000
Open-Top Tubes									
Thickwall Polycarbonate	50.0	363647	25	29 x 104	——	——	39 800	690	17 000
Thickwall Polypropylene	50.0	357007	25	29 x 104	——	——	39 800	690	17 000
Adapters for Non-Beckman Coulter Tubes/Bottles									
Round Bottom	5.0	——	——	12 x 75	356970 (qty. of 1)	1	——	——	——
	8.0	——	——	13 x 100	356976 (qty. of 1)	1	——	——	——
	10.0	——	——	16 x 80	342327/870329 (qty. of 1)	1	——	——	——
	15.0	——	——	18 x 80	870329 (qty. of 1)	1	——	——	——
	30.0	——	——	29 x 104	870331 (qty. of 1)	1	——	——	——

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

† *A maximum of seven tubes can be used, placed in every other rotor hole (tubes placed in adjacent holes will hit one another).*

Rotor Replacement Parts

878951 O-ring for Rotor Lid
811656 O-ring for Rotor Hub
369760 Lid Assembly
364913 Tie-down Kit
392889 Hold-down Knob (used to run filtration tubes without lid)

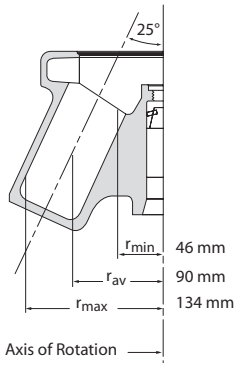
Rotor Supplies

338896 Rotor Removal Tool
338689 Adapter Collar for 338896 Rotor Removal Tool
356970 Acetal Adapter (qty. 1), fits 12 mm tubes
356976 Acetal Adapter (qty. 1), fits 13 mm tubes

Adapters

342327 870329

JLA-16.250 BIOC 6 x 250 mL JLA-16.250



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	38 400	1 090	6 × 250 mL 62 × 120 mm 2.5 × 5.5 in	1.5 L

For use in Avanti J 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	Nominal Volume per Tube (mL)	Part No.	Quantity	Cavity Diameter (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Bottles with Screw-On Caps									
Polypropylene	50.0	357003	25	29 x 104	356997	1	32 200	650	16 000
Polycarbonate	50.0	357002	25	29 x 104	356997	1	32 200	660	16 000
Bottles with Cap Assemblies									
Polypropylene	50.0	357001	6	29 x 104	356997	1	32 200	650	16 000
Polycarbonate	50.0	357000	6	29 x 104	356997	1	32 400	660	16 000
Wide-mouth Polycarbonate	250.0	356013	6	62 x 120	—	—	38 500	1 090	16 000
Wide-mouth Polypropylene	250.0	356011	6	62 x 120	—	—	38 500	1 070	16 000
Tubes with Snap-On Caps									
Polycarbonate	50.0	363664	25	29 x 104	356997	1	32 100	400	16 000
Polypropylene	50.0	357005	25	29 x 104	356997	1	32 100	400	16 000
BioVials									
Polypropylene	4.0	566353	1000	14 x 55	342098	9	2 300	10 700	4 000
Adapters for Non-Beckman Coulter Tubes/Bottles									
Round Bottom	5.0	—	—	12 x 75	356968 (qty. of 1)	9	—	—	—
Round Bottom	7.0	—	—	13 x 100	356974 (qty. of 1)	8	—	—	—
Conical	15.0	—	—	17 x 119	356964 (qty. of 1)	4	—	—	—
Conical	50.0	—	—	30 x 104	356966 (qty. of 1)	1	—	—	—
Round Bottom	50.0	—	—	30 x 104	356997 (qty. of 1)	1	—	—	—

Rotor Replacement Parts

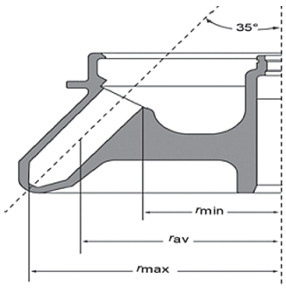
363931	Double-locking Lid Assembly
363935	Single-locking Lid Assembly
893502	Large O-ring for Lid Assembly (5.987 dia.)
893503	Small O-ring for Lid Assembly (1.046 dia.)

Adapters

342098

356997

356964



Fixed-Angle Rotor, Aluminum

Major applications: Pelleting and Density Gradient Separations. Proteins, lysate/tissue homogenates, nucleic acids, cells, viruses and blood.

Max. RPM	Max. *g*	*k* Factor	Number of Tubes Volume/Size	Rotor Capacity
14 000	35 000	787	16 x 50 mL Conical 30 x 115 mm	800 mL

For use in Avanti J Series centrifuges.

No. B19956. JA-14.50 Fixed-Angle Rotor with Single-Locking Lid for 14000 rpm operation. Tubes and bottles not included.
No. B19955. *JA-14.50 Fixed-Angle Rotor for BioSafe Dual-Locking Lid for 14000 rpm operation. Tubes and bottles not included.*

Tubes and Bottles

Tube Style/Material	Nominal Volume per Tube (mL)	Part No.	Quantity	Size (mm) / volume (mL)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Bottles with Screw-On Caps									
Polycarbonate Round Bottom	40.0	357002	25	29 x 104/50	B40155 (qty 2)	1	34 520	563	14 000
Polypropylene Round Bottom	40.0	357003	25	29 x 104/50	B40155 (qty 2)	1	34 520	563	14 000
Bottles with Cap Assemblies									
Polycarbonate Round Bottom	40.0	361693	24	29 x 104/50	B40155 (qty 2)	1	34 520	563	14 000
Polypropylene Round Bottom	40.0	361694	24	29 x 104/50	B40155 (qty 2)	1	34 520	563	14 000
Polycarbonate Round Bottom	10.0	355672	25	16 x 80/10	361703 and B40155 (qty 2)	1	30 900	445	14 000
Tubes with Snap-On Caps									
Polycarbonate Round Bottom	36.5	363664	25	29 x 104/50	B40155 (qty 2)	1	34 520	563	14 000
Polypropylene Round Bottom	36.5	357005	25	29 x 104/50	B40155 (qty 2)	1	34 520	563	14 000
Open-Top Tubes									
Polycarbonate Round Bottom	35.0	363647	25	29 x 104/50	B40155 (qty 2)	1	34 520	563	14 000
Polypropylene Round Bottom	35.0	357007	25	29 x 104/50	B40155 (qty 2)	1	34 520	563	14 000
Polycarbonate Round Bottom	15.0	342080	100	18 x 100/15	B40157 (qty 2)	1	33 400	665	14 000
Polypropylene Round Bottom	15.0	342081	100	18 x 100/15	B40157 (qty 2)	1	33 400	665	14 000
Polyethylene Round Bottom	15.0	342082	100	18 x 100/15	B40157 (qty 2)	1	33 400	665	14 000
Microfuge Tubes									
Polypropylene tube	1.5	357448	500	11 x 38/1.5	361705 and B40155 (qty 2)	3	27 000	449	14 000
Polypropylene tube	1.5	356090	500	11 x 38/1.5	361705 and B40155 (qty 2)	3	27 000	449	14 000
Adapters for Non-Beckman Coulter Tubes/Bottles[a]**									
Polypropylene Conical Tube w/ Cap[b,c,d,e,g]	50.0	——	——	——	N/A	——	——	——	**
Polypropylene Conical Tube w/ Cap[b,c,d,e,g]	15.0	——	——	——	B40156 (qty 2)	——	——	——	**
Polypropylene Conical Tube w/ Tethered Cap[h]	5.0	——	——	——	B40158 (qty 2)	——	——	——	**
Spin Filtration Conical[i,j]	50.0	——	——	——	N/A	——	——	——	**
Spin Filtration Conical[i,j]	15.0	——	——	——	B40156 (qty 2)	——	——	——	**

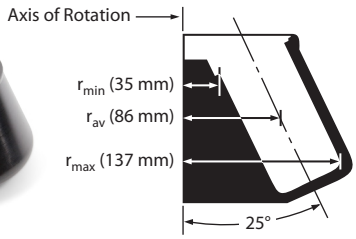
a. Use only the items listed here and observe fill volumes and maximum run speeds.
b. Manufactured by Greiner.
c. Manufactured by BD Falcon.
d. Manufactured by VWR.
e. Manufactured by Corning.
g. Manufactured by NUNC.
h. Manufactured by Eppendorf.
i. Manufactured by Pall.
j. Manufactured by Millipore.
*** Use manufacturer's recommendations for tube and bottle RCF limits. The corresponding RPM and k factor can be calculated using the equations on pages 1 and 15 of the JA-24.50 rotor manual.*

Rotor Replacement Parts

B19947	Dual-Locking Lid
B19952	Single-Locking Lid
885501	Lid O-Ring (ethylene propylene rubber)
961696	Rotor Body O-Ring (ethylene propylene rubber)

Supplies

360998	Rotor removal tool
339558	Rotor Cleaning Kit
335148	Silicone vacuum grease (1 oz)
339555	Solution 555 (1 qt)
306812	Spinkote lubricant (2 oz)
338765	Stem Lifter (adapter removal) tool



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	1 764	6 x 250 mL 62 x 120 mm 2.5 x 4.8 in	1.5 L

For use in Avanti J Series centrifuges.

No. 339247. JA-14§ Fixed-Angle Biosafety Rotor for 14 000 rpm operation.

Tubes and Bottles

Tube Style/Material	Nominal Volume per Tube (mL)	Part No.	Quantity	Cavity Diameter (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Bottles with Screw-On Caps									
Polypropylene	50.0	357003	25	29 x 104	356997	1	30 100	1 764	14 000
Polycarbonate	50.0	357002	25	29 x 104	356997	1	30 100	1 764	14 000
Conical Polypropylene	230.0	356989	4	60 x 120	356983 (qty. of 4)	1	8 600	6 158	7 500
Conical Polycarbonate	230.0	356987	4	60 x 120	356983 (qty. of 4)	1	8 600	6 158	7 500
Bottles with Cap Assemblies									
Polypropylene	50.0	357001	6	29 x 104	356997	1	30 100	1 764	14 000
Polypropylene	50.0	361694	24	29 x 104	356997	1	30 100	1 764	14 000
Polycarbonate	50.0	357000	6	29 x 104	356997	1	30 100	1 764	14 000
Wide-mouth Polycarbonate	250.0	356013	6	62 x 120	——	——	30 100	1 764	14 000
Wide-mouth Polypropylene	250.0	356011	6	62 x 120	——	——	30 100	1 764	14 000
Tubes with Snap-On Caps									
Polycarbonate	50.0	363664	25	29 x 104	356997	1	30 100	1 764	14 000
Thickwall Polypropylene	50.0	357005	25	29 x 104	356997	1	30 100	1 764	14 000
Open-Top Tubes									
Thickwall Polycarbonate	50.0	363647	25	29 x 104	356997	1	30 100	1 764	14 000
Thickwall Polypropylene	50.0	357007	25	29 x 104	356997	1	30 100	1 764	14 000
BioVials									
Polypropylene	4.0	566353	1000	14 x 55	342098*	9	20 000	——	14 000
Adapters for Non-Beckman Coulter Tubes/Bottles									
Round Bottom	5.0	——	——	12 x 75	356968 (qty. of 1)	9	——	——	——
Round Bottom	7.0	——	——	13 x 100	356974 (qty. of 1)	8	——	——	——
Conical	15.0	——	——	17 x 119	356964 (qty. of 1)	4	——	——	——
Round Bottom	30.0	——	——	29 x 104	356997/870331 (qty. of 1)	1	——	——	——
Conical	50.0	——	——	30 x 104	356966 (qty. of 1)	1	——	——	——
Round Bottom	50.0	——	——	30 x 104	356997 (qty. of 1)	1	——	——	——
Round Bottom	150.0	——	——	53 x 114	339362 (qty. of 1)	1	——	——	——
Conical	230.0	——	——	60 x 120	356983 (qty. of 4)	1	——	——	——

* *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
811656	O-ring for Rotor Body
360473	Rotor Lid Assembly (includes Tie-down Kit)

Adapters

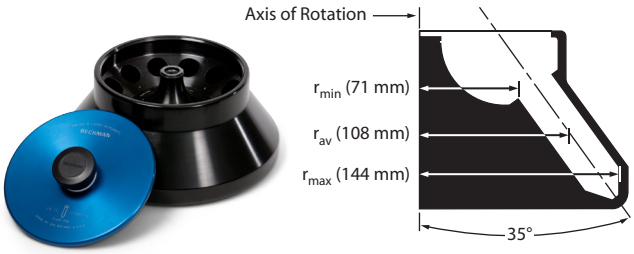
342098

356983

356997

356995

1



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 Series centrifuges.

No. 360992. JA-12§ Fixed-Angle Rotor with Dual-locking Biosafety Lid
No. 360993. JA-12 Fixed-Angle Rotor with Single-locking Lid

Tubes and Bottles

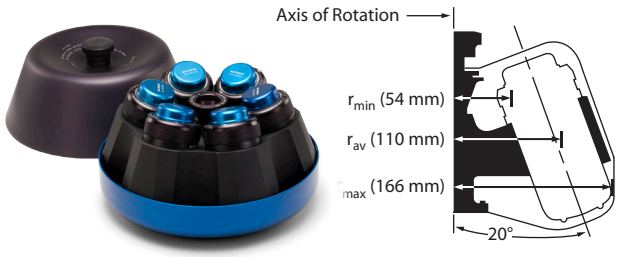
Tube Style/Material	Nominal Volume per Tube (mL)	Part No.	Quantity	Cavity Diameter (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Conical*	50.0	—	—	—	—	—	23 200	—	12 000
Adapters for Non-Beckman Coulter Tubes/Bottles									
Conical	15.0	—	—	17 x 119	393088 (qty. of 1)	1	—	—	—

* *Tested using Corning and Falcon 50-mL conical tubes.*

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 Body
961697	O-ring for Rotor Lid
364919	Tie-down Kit (Single)
364922	Tie-down Kit (Dual-lock)
360998	Rotor Removal Tool

JLA-10.500 Biosafety 6 x 500 mL JLA-10.500



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	18 600	2 850	6 x 500 mL 69 x 160 mm 2.75 x 6.5 in	3 L

For use in Avanti J Series centrifuges (excluding Avanti JXN-30).

No. 369681. J-LITE JLA-10.500 Rotor Assembly. Includes 6 canisters with secondary Biosafety liquid closures.
No. 360828. JLA-10.500 canisters with secondary BioSafety liquid closures (set of 2).

Tubes and Bottles

Tube Style/Material	Nominal Volume per Tube (mL)	Part No.	Quantity	Cavity Diameter (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Bottles with Cap Assemblies									
Polypropylene	50.0	357001	6	29 x 104	356996	1	12 000	2 840	10 000
Polycarbonate	50.0	357000	6	29 x 104	356996	1	12 000	2 840	10 000
	500.0	361690	6	69x 160	———	———	18 600	2 840	10 000
Polypropylene	500.0	361691	6	69 x 160	———	———	11 900	4 440	8 000
Wide-mouth Polycarbonate	250.0	356013	6	62 x 122	362750** (set of 2)	1	17 700	2 840	10 000
Wide-mouth Polypropylene	250.0	356011	6	62 x 122	362750** (set of 2)	1	17 700	2 840	10 000
Bottles with Screw-On Caps									
Polypropylene	50.0	357003	25	29 x 104	356996	1	12 000	2 840	10 000
Polycarbonate	50.0	357002	25	29 x 104	356996	1	12 000	2 840	10 000
Tubes with Snap-On Caps									
Polycarbonate	50.0	363664	25	29 x 104	356996	1	12 000	2 840	10 000
Polypropylene	50.0	357005	25	29 x 104	356996	1	12 000	2 840	10 000
Open-Top Tubes									
Thickwall Polycarbonate	50.0	363647	25	29 x 104	356996	1	12 000	2 840	10 000
Thickwall Polypropylene	50.0	357007	25	29 x 104	356996	1	12 000	2 840	10 000
BioVials									
Polypropylene	4.0	566353	1000	14 x 55	362750/342098**	9	———	———	10 000
Adapters for Non-Beckman Coulter Tubes/Bottles									
Round Bottom	4.0	———	———	12 x 75	356967 (qty. of 1)	11	———	———	———
Round Bottom	7.0	———	———	13 x 100	356973 (qty. of 1)	8	———	———	———
Round Bottom	15.0	———	———	17 x 100	356994 (qty. of 1)	5	———	———	———
Conical	15.0	———	———	17 x 120	356995 (qty. of 1)	5	———	———	———
Round Bottom	30.0	———	———	25 x 105	359398 (qty. of 1)	1	———	———	———
Conical	50.0	———	———	29 x 115	356965 (qty. of 1)	1	———	———	———

* *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.*

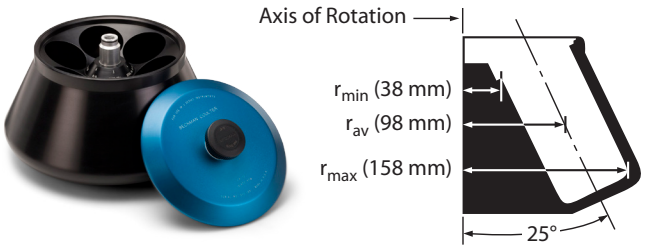
** *These adapters fit inside one another to accommodate smaller bottles and tubes.*

Rotor Replacement Parts

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

Adapters

342098 356996 362750 356995



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 Series centrifuges.

No. 369687. JA-10 Fixed-Angle Rotor for 10 000 rpm operation.
Includes carrying handle.

Tubes and Bottles

Tube Style/Material	Nominal Volume per Tube (mL)	Part No.	Quantity	Cavity Diameter (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Bottles with Cap Assemblies									
Polypropylene	50.0	357001	6	29 x 104	356996	1	12 000	———	10 000
Polycarbonate	50.0	357000	6	29 x 104	356996	1	12 000	———	10 000
Wide-mouth Polycarbonate	250.0	356013	6	62 x 120	362750** (set of 2)	1	17 700	———	10 000
	500.0	355605	6	69 x 160	———	———	17 700	———	10 000
Wide-mouth Polypropylene	250.0	356011	6	62 x 120	362750** (set of 2)	1	17 700	———	10 000
	500.0	355607	6	69 x 160	———	———	11 300	———	8 000
Bottles with Screw-On Caps									
Polypropylene	50.0	357003	25	29 x 104	356996	1	12 000	———	10 000
Tubes with Snap-On Caps									
Polycarbonate	50.0	363664	25	29 x 104	356996	1	12 000	———	10 000
Polypropylene	50.0	357005	25	29 x 104	356996	1	12 000	———	10 000
Open-Top Tubes									
Thickwall Polycarbonate	50.0	363647	25	29 x 104	356996	1	12 000	———	10 000
Thickwall Polypropylene	50.0	357007	25	29 x 104	356996	1	12 000	———	10 000
BioVials									
Polypropylene	4.0	566353	1000	14 x 55	362750/342098**	9	———	———	10 000
Adapters for Non-Beckman Coulter Tubes/Bottles									
Round Bottom	4.0	———	———	12 x 75	356967 (qty. of 1)	11	———	———	———
Round Bottom	7.0	———	———	13 x 100	356973 (qty. of 1)	8	———	———	———
Round Bottom	15.0	———	———	17 x 100	356994 (qty. of 1)	5	———	———	———
Conical	15.0	———	———	17 x 120	356960 (qty. of 1)	5	———	———	———
Round Bottom	30.0	———	———	25 x 105	359398 (qty. of 1)	1	———	———	———
Conical	50.0	———	———	29 x 115	356965 (qty. of 1)	1	———	———	———

* *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.*

** *These adapters fit inside one another to accommodate smaller bottles and tubes.*

Rotor Replacement Parts

334827	Rotor Removal Tool
870139	O-ring for Rotor Lid
811656	O-ring for Rotor Body
364911	Tie-down Kit
392122	Rotor Lid

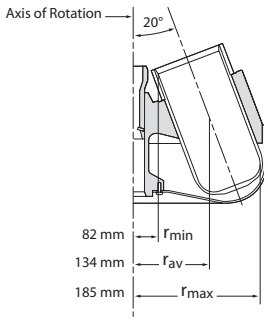
Adapters

342098

356996

362750

JLA-9.1000 4 x 1000 mL JLA-9.1000



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	2 544	4 x 1000 mL 95 x 191 mm 3.8 x 7.65 in.	4 L

For use in Avanti J Series centrifuges.

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

No. 969330. J-LITE JLA-9.1000 Rotor Package. Includes rotor body, lid, carbon fiber canisters, labware kit 392574, and 4 polycarbonate bottles with cap assemblies (two A98812).

No. 969331. J-LITE JLA-9.1000 Rotor Package. Includes rotor body, lid, carbon fiber canisters, labware kit 392574, and 4 polypropylene bottles with cap assemblies (two A98813).

Tubes and Bottles

Tube Style/Material	Nominal Volume per Tube (mL)	Part No.	Quantity	Cavity Diameter (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed*
Bottles with Cap Assemblies*									
J-LITE PC-1000† (Polycarbonate)	1000.0	A98812	2	95 x 191	———	———	16 800	2 544	9 000
J-LITE PP-1000‡ (Polypropylene) with Polyphenylsufone Cap	1000.0	A98813	2	95 x 191	———	———	16 800	2 544	9 000
J-LITE PP-1000‡ (Polypropylene) with Polyphenylene Sulfide Cap	1000.0	B29896	2	95 x 191	———	———	16 800	2 544	9 000
Polypropylene	50.0	357001	6	29 x 104	356996/363683**	1	———	———	9 000
Polycarbonate	50.0	357000	6	29 x 104	356996/363683**	1	———	———	9 000
Wide-mouth Polycarbonate	250.0	356013	6	62 x 120	362750/363683**	1	———	———	9 000
	500.0	355605	6	69 x 160	363683	1	———	———	9 000
Wide-mouth Polypropylene	250.0	356011	6	62 x 120	362750/363683**	1	———	———	9 000
	500.0	355607	6	69 x 160	363683	1	———	———	8 000
Bottles Only									
J-LITE PC-1000 (Polycarbonate)	1000.0	366751	2	95 x 191	———	———	16 800	2 544	9 000
J-LITE PP-1000 (Polypropylene)	1000.0	A98814	2	95 x 191	———	———	16 800	2 544	9 000
J-LITE PP-1000‡ (Polypropylene)	1000.0	B29048	12	95 x 191	———	———	16 800	2 544	9 000
Bottles with Screw-On Caps									
Polypropylene	50.0	357003	25	29 x 104	356996/363683**	1	———	———	9 000
Tubes with Snap-On Caps									
Polycarbonate	50.0	363664	25	29 x 104	356996/363683**	1	———	———	9 000
Polypropylene	50.0	357005	25	29 x 104	356996/363683**	1	———	———	9 000

* *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 canister 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.*

** *These adapters fit inside one another to accommodate smaller bottles and tubes.*

Patented HarvestLine System Liners

Disposable liners provide easy-to-use, low-cost sample containment, and storage

Adapters

356996

362750

342098

Continued on next page.

Tubes and Bottles

Tube Style/Material	Nominal Volume per Tube (mL)	Part No.	Quantity	Cavity Diameter (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed*
Open-Top Tubes									
Thickwall Polycarbonate	50.0	363647	25	29 x 104	356996/363683**	1	——	——	9 000
Thickwall Polypropylene	50.0	357007	25	29 x 104	356996/363683**	1	——	——	9 000
BioVials									
Polypropylene	4.0	566353	1000	14 x 55	342098/362750/363683**	1	——	——	9 000

** *These adapters fit inside one another to accommodate smaller bottles and tubes.*

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)
363646 Spatula
A99028 Polyphenylsufone Cap/Closure Assembly (set of 2)
(Includes cap/closure, O-ring, plug, and plug O-ring)
B29895 Polyphenylene Sulfide Cap/Closure Assembly (set of 2)
(Includes cap/closure, O-ring, plug, and plug O-ring)
393898 Plug Assembly, AutoVent Polycarbonate (set of 2)
366749 Plug Assembly, AutoVent polyetherimide (PEI)(set of 2)
366770 Tool Kit (includes one bottle grip and one wrench)
366772 Polytetrafluoroethylene (PTFE) Spray
369264 HarvestLine System Liner Kit
(Includes 369256 one-liter bottle liners (qty 120), 368740 filling rack, 977472 funnel, and 369267 instructional CD.)
369256 HarvestLine System Liners
Fits JLA-8.1000 or JLA-9.1000 one-liter bottles (qty. 120).

Rotor Replacement Parts

363583 Rotor Lid Assembly
363686 J-LITE 1000 Removable Canister (set of 2)
363601 Canister Sleeve Washer (set of 6)
B10317 Polyphenylsufone Cap/Closure Replacement Assembly (set of 6)
B29894 Polyphenylene Sulfide Cap/Closure Replacement Assembly (set of 6)
B10319 Cap/Closure Replacement O-rings (set of 6)
B10320 AutoVent Plug Replacement O-rings (set of 6)
Includes six large plug O-rings and six AutoVent plug O-rings.

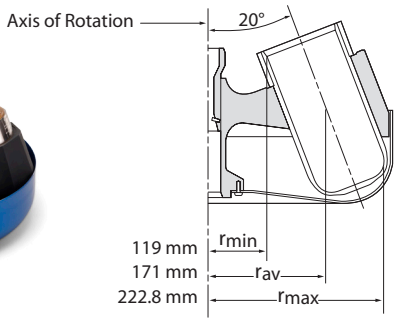
Adapters

356996

362750

342098

JLA-8.1000 BIOC 6 x 1000 mL JLA-8.1000



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	15 970	2 482	6 x 1000 mL 95 x 191 mm 3.8 x 7.65 in.	6 L

For use in Avanti JXN-26, Avanti J-26XP Series centrifuges and Avanti J-HC.

No. 363688. J-LITE JLA-8.1000 Rotor Package . Includes rotor body, Biosafety lid, carbon fiber canisters, and labware kit 392574.

No. 969328. J-LITE JLA-8.1000 Rotor Package. Includes rotor body, lid, carbon fiber canisters, labware kit 392574, and 6 polycarbonate bottles with cap assemblies (three A98812).

No. 969329. J-LITE JLA-8.1000 Rotor Package. Includes rotor body, lid, carbon fiber canisters, labware kit 392574, and 6 polypropylene bottles with cap assemblies (three A98813).

Tubes and Bottles

Tube Style/Material	Nominal Volume per Tube (mL)	Part No.	Quantity	Cavity Diameter (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Bottles with Cap Assemblies*									
J-LITE PC-1000† (Polycarbonate)	1000.0	A98812	2	95 x 191	———	———	15 970	2 482	8 000
J-LITE PP-1000‡ (Polypropylene) with Polyphenylsufone Cap	1000.0	A98813	2	95 x 191	———	———	15 970	2 482	8 000
J-LITE PP-1000 (Polypropylene) with Polyphenylene Sulfide Cap	1000.0	B29896	2	95 x 191	———	———	15 970	2 482	8 000
Polypropylene	50.0	357001	6	29 x 104	356996/363683**	1	———	———	8 000
Polycarbonate	50.0	357000	6	29 x 104	356996/363683**	1	———	———	8 000
Wide-mouth Polycarbonate	250.0 500.0	356013 355605	6 6	62 x 120 69 x 160	362750/363683** 363683	1 1	——— ———	——— ———	8 000 8 000
Wide-mouth Polypropylene	250.0 500.0	356011 355607	6 6	62 x 120 69 x 160	362750/363683** 363683	1 1	——— ———	——— ———	8 000 8 000
Bottles Only									
J-LITE PC-1000 (Polycarbonate)	1000.0	366751	2	95 x 191	———	———	15 970	2 482	8 000
J-LITE PP-1000 (Polypropylene)	1000.0	A98814	2	95 x 191	———	———	15 970	2 482	8 000
J-LITE PP-1000 (Polypropylene)	1000.0	B29048	12	95 x 191	———	———	15 970	2 482	8 000
Bottles with Screw-On Caps									
Polypropylene	50.0	357003	25	29 x 104	356996/363683**	1	———	———	8 000
Tubes with Snap-On Caps									
Polypropylene	50.0	363664	25	29 x 104	356996/363683**	1	———	———	8 000
Polypropylene	50.0	357005	25	29 x 104	356996/363683**	1	———	———	8 000

* *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 canister 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.*

** *These adapters fit inside one another to accommodate smaller bottles and tubes.*

Patented HarvestLine System Liners

Disposable liners provide easy-to-use, low-cost sample containment, and storage

Adapters

356996 362750 342098

Continued on next page.

Tubes and Bottles

Tube Style/Material	Nominal Volume per Tube (mL)	Part No.	Quantity	Cavity Diameter (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Open-Top Tubes									
Thickwall Polycarbonate	50.0	363647	25	29 x 104	356996/363683**	1	——	——	8 000
Thickwall Polypropylene	50.0	357007	25	29 x 104	356996/363683**	1	——	——	8 000
BioVials									
Polypropylene	4.0	566353	1000	14 x 55	342098/362750/363683**	1	——	——	9 000

** *These adapters fit inside one another to accommodate smaller bottles and tubes.*

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
A99028 Polyphenylsufone Cap/Closure Assembly (set of 2) *(Includes cap/closure, O-ring, plug, and plug O-ring)*
B29895 Pohlyphenylene Sulfide Cap/Closure Assembly (set of 2) *(Includes cap/closure, O-ring, plug, and plug O-ring)*
393898 Plug Assembly, AutoVent Polycarbonate (set of 2)
366749 Plug Assembly, AutoVent polyetherimide (PEI) (set of 2)
366770 Tool Kit (includes one bottle grip and one wrench)
366772 Polytetrafluoroethylene (PTFE) Spray
369264 HarvestLine System Liner Kit (includes 369256 one-liter bottle liners (qty. 120), P/N 368740 filling rack, P/N 977472 funnel, and P/N 369267 instructional CD.)
369256 HarvestLine System Liners (fits JLA-8.1000 or JLA-9.1000 one-liter bottles (qty. 120).

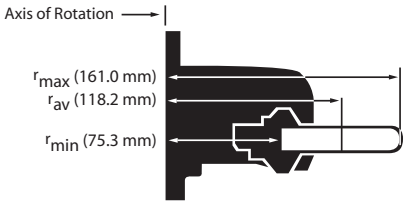
Rotor Replacement Parts

363563 Rotor Lid Assembly
363686 J-LITE Removable Canister (set of 2)
363601 Canister Sleeve Washer (set of 6)
B10317 Polyphenylsufone Cap/Closure Replacement Assembly (set of 6)
B29894 Polyphenylene Sulfide Cap/Closure Replacement Assembly (set of 6)
B10319 Cap/Closure Replacement O-rings (set of 6)
B10320 AutoVent Plug Replacment O-rings (set of 6) (*Includes six large plug O-rings and six AutoVent plug O-rings)*

Adapters

356996 362750 342098

JS-24.38 6 x 38.5 mL JS-24.38



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

* *Reaches 24 000 rpm in the Avanti JXN-30 centrifuge only. Not recommended for use in Avanti J-25 Series (max. speed 10 000 rpm), or Avanti J-26 XP Series (max. speed 10 000 rpm). Incompatible with all J2 Series.*

† *Modified polyphenylene oxide Floating Spacer.*

Rotor Replacement Parts

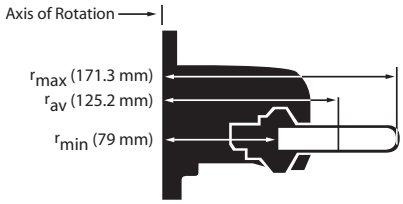
362397 Bucket Set - 38 mL (set of 6 with caps and O-rings)
812715 Bucket O-ring
362785 Rotor Stand

Adapters

355536

358156

JS-24.15 6 x 15 mL JS-24.15



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	Nominal Volume per Tube (mL)	Part No.	Quantity	Cavity Diameter (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed*
Quick-Seal Bell-Top Tubes									
Polypropylene	4.2	356562	50	16 x 38	355579†	1	110 500	193	24 000
	6.3	345830	50	16 x 45	355579†	1	110 500	215	24 000
	8.0	344621	50	16 x 58	355579†	1	110 500	261	24 000
	10.0	344622	50	16 x 67	355579†	1	110 500	293	24 000
Open-Top Tubes									
Polypropylene	15.0	361707	50	16 x 96	—	—	110 500	376	24 000
***k*onical Polypropylene**	12.5	361708	50	16 x 93	358155	1	108 500	368	24 000
Ultra-Clear	15.0	361706	50	16 x 96	—	—	110 500	376	24 000

* *Reaches 24 000 rpm in the Avanti JXN-30 centrifuge only. Not recommended for use in Avanti J-25 Series (max speed 10 000 rpm), or Avanti J-26 XP Series (max. speed 10 000 rpm). Incompatible with all J2 Series.*

† *Modified polyphenylene oxide Floating Spacer.*

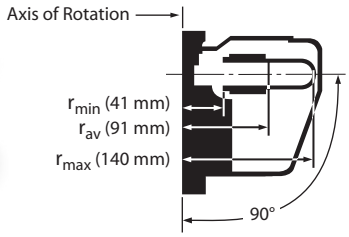
Rotor Replacement Parts

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

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 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		Nominal Volume per Tube (mL)	Part No.	Quantity	Cavity Diameter (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Bottles with Screw-On Caps										
Polypropylene		50.0	357003	25	29 x 104	——	——	26 500	1 840	13 000
Polycarbonate		10.0	355672	25	16 x 80	342327/870329	1	26 500	1 840	13 000
		50.0	357002	25	29 x 104	——	——	26 500	1 840	13 000
Tubes with Snap-On Caps										
Polypropylene		50.0	357005†	25	29 x 104	——	——	26 500	1 840	13 000
Polycarbonate		50.0	363664†	25	29 x 104	——	——	26 500	1 840	13 000
Polyethylene		1.8	340196	500	11 x 39	344497*	3	26 500	1 840	13 000
Polypropylene	Natural	1.5	357448	500	11 x 38	344497*	3	26 500	1 840	13 000
Polypropylene	Orange	1.5	356094	500	11 x 38	344497*	3	26 500	1 840	13 000
	Yellow	1.5	356093	500	11 x 38	344497*	3	26 500	1 840	13 000
	Blue	1.5	356091	500	11 x 38	344497*	3	26 500	1 840	13 000
	Natural	1.5	356090	500	11 x 38	344497*	3	26 500	1 840	13 000
Open-Top Tubes										
Thickwall Polycarbonate		10.0	355630	25	16 x 76	342327/870329	4/1	8 000	——	13 000
Adapters for Non-Beckman Coulter Tubes/Bottles										
Round Bottom		5.0	——	——	12 x 75	356970 (qty. of 1)	1	——	——	——
		8.0	——	——	13 x 100	356976 (qty. of 1)	1	——	——	——
		15.0	——	——	18 x 80	870329 (qty. of 1)	1	——	——	——
		30.0	——	——	29 x 104	870331 (qty. of 1)	1	——	——	——

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

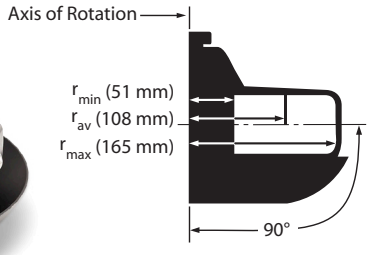
† *Cannot be run with caps in this rotor.*

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

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

Tubes for 250-mL Bucket

Tubes and Bottles

Tube Style/Material	Nominal Volume per Tube (mL)	Part No.	Quantity	Cavity Diameter (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Bottles with Screw-On Caps									
Polycarbonate	250.0	355673	6	62 x 136	336389	1	10 400	5 290	7 500
Polypropylene	50.0	357003	25	29 x 104	356997	1	9 000	———	7 500
Bottles with Cap Assemblies									
Polycarbonate	50.0 50.0	355603 357000	6 6	16 x 76 29 x 104	356997 356997	1 1	9 000 9 000	——— ———	7 500 7 500
Conical Polycarbonate	230.0	356987	6	62 x 141	356983 (qty. of 4)	1	10 400	5 290	7 500
Wide-mouth Polycarbonate	250.0	356013	6	62 x 120	———	———	10 400	5 290	7 500
Conical Polypropylene	230.0	356989	6	62 x 141	356983 (qty. of 4)	1	10 400	5 290	7 500
Wide-mouth Polypropylene	250.0	356011	6	62 x 120	———	———	10 400	5 290	7 500

Tubes for 250-mL Bucket *(continued)*

Tubes and Bottles

Tube Style/Material	Nominal Volume per Tube (mL)	Part No.	Quantity	Cavity Diameter (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Tubes with Snap-On Caps									
Polycarbonate	50.0	363664	25	29 x 104	356997	1	9 000	———	7 500
Polypropylene	50.0	357005	25	29 x 104	356997	1	9 000	———	7 500
Open Top Tubes									
Polycarbonate (Graduated)	50.0	363647	25	29 x 104	356997	———	10 080	5 290	7 500
Polypropylene (Graduated)	50.0	357007	25	29 x 104	356997	4	9 000	———	7 500
BioVials									
Polypropylene	4.0	566353	1000	14 x 55	342098*	9	———	———	7 500

Tubes for 4-place Carrier

Tubes and Bottles

Tube Style/Material	Nominal Volume per Tube (mL)	Part No.	Quantity	Size (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Bottles with Screw-On Caps									
Polypropylene	50.0	357003	25	29 x 104	356997	1	10 400	———	7 500
Polycarbonate	50.0	357002	25	29 x 104	356997	1	10 400	———	7 500
Tubes with Snap Caps									
Polycarbonate	50.0	363664**	25	29 x 104	———	———	10 400	———	7 500
Polypropylene	50.0	357005**	25	29 x 104	———	———	10 400	———	7 500
Open-Top Tubes									
Thickwall Polycarbonate	50.0	363647	25	29 x 104	———	———	10 400	———	7 500
Adapters for Non-Beckman Coulter Tubes/Bottles									
Round Bottom	5.0	———	1	12 x 75	356968	9	———	———	———
Round Bottom	7.0	———	1	13 x 199	356974	8	———	———	———
Conical	15.0	———	1	17 x 118	356964	4	———	———	———
Round Bottom	15.0	———	1	18 x 98	356995	5	———	———	———
Round Bottom	15.0	———	1	18 x 80	870329	1	———	———	———
Round Bottom	30.0	———	1	29 x 104	870331	1	———	———	———
Round Bottom	30.0	———	1	29 x 103	356997/ 870331	1	———	———	———
Conical	50.0	———	1	30 x 104	356996	1	———	———	———
Round Bottom	50.0	———	1	30 x 104	356997	1	———	———	———
Round Bottom	150.0	———	1	53 x ___	339362	1	———	———	———

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

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

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

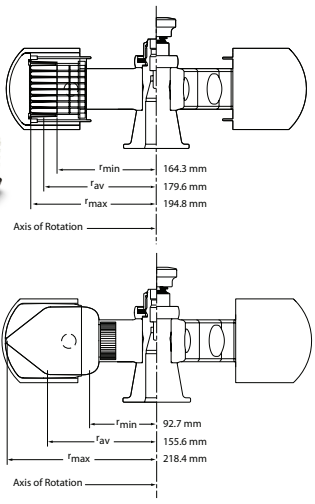
336389

342098

356964

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
5 300	6 130	24 microplates 8 deep-well microplates	2 L

For use in Avanti J-E and J-26S 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 (368914).

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)
368914 Microplate Carrier (set of 4)
368417§ Aeroseal Covers for JS-5.3 AllSpin Rotor (set of 2) BIOC
368706 Bucket Upgrade Kit (set of 4 blue buckets)***

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	4	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.*

** *Use this adapter inside the 250-mL adapter (392077)*

*** *Rotors with black buckets require Bucket Upgrade Kit 368706*

† *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.*

◊ *When used with optional Aeroseal Covers, P/N 368417.*

£ *Cannot be used with bucket cover*

Continued on next page.

Adapters

392071 392072 392073 392074 392075 392076 392079 392077 392078 356966 356964

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

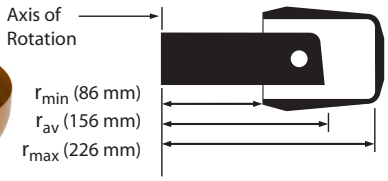
‡ *Requires 4-inch soft-rubber roller (538618) for installation.*

Rotor Replacement Parts

368690 JS-5.3 rotor assembly
368410 Rotor tie-down knob
368706 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



Swinging-Bucket Rotor (Windshielded), Anodized Aluminum

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	2:30/3:00

For use in J6-MI centrifuge.

No. 339087. JS-5.2§ Swinging-Bucket Biosafety 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.

Tubes and Bottles

Tube Style/Material	Nominal Volume per Tube (mL)	Part No.	Quantity	Cavity Diameter (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Bottles with Screw-On Caps									
Polycarbonate	10.0	355672	25	16 x 80	341977	19	——	——	5 200
	50.0	357002	25	29 x 104	339103	7	——	——	5 200
	250.0	355673	6	62 x 136	339108	1	——	——	5 200
	500.0	355664	6	69 x 160	339109	1	——	——	5 200
	750.0	358299	6	96 x 130	356096 (set of 6)	1	——	——	5 200
	1000.0	355675	6	97 x 167	356096 (set of 6)	1	——	——	5 200
Polypropylene	50.0	357003	25	29 x 104	339103	7	——	——	5 200
	100.0	355624	6	38 x 102	339104	2	——	——	5 200
	500.0	355665	6	69 x 159	339109	1	——	——	5 200
	750.0	356855	6	96 x 130	356096 (set of 6)	1	——	——	5 200
	1000.0	355676	6	97 x 167	356096 (set of 6)	1	——	——	5 200
Bottles with Cap Assemblies									
Polypropylene	50.0	361694	6	29 x 104	356997	1	——	——	5 200
Polypropylene	50.0	357001	6	29 x 104	339103	7	——	——	5 200
Polycarbonate	50.0	357000	6	29 x 104	339103	7	——	——	5 200
	70.0	355620	6	38 x 102	339104	2	——	——	5 200
Wide-mouth Polycarbonate	250.0	356013	6	62 x 120	339108	1	——	——	5 200
	500.0	355605	6	69 x 160	339109	1	——	——	5 200
Wide-mouth Polypropylene	250.0	356011	6	62 x 120	339108	1	——	——	5 200
	500.0	355607	6	69 x 160	339109	1	——	——	5 200
Bottles with Screw-On Caps									
Polycarbonate	70.0	355655	6	38 x 102	339104	2	——	——	5 200
	500.0	355649	6	69 x 160	339109	1	——	——	5 200
Wide-mouth Polycarbonate	250.0	358275	25	62 x 122	339108	1	——	——	5 200
Polypropylene	100.0	355626	6	38 x 102	339104	2	——	——	5 200
	500.0	355650	6	69 x 159	339109	1	——	——	5 200
Wide-mouth Polypropylene	250.0	358326	25	62 x 122	339108	1	——	——	5 200
Conical Polycarbonate	230.0	356987	4	60 x 120	356983 (4-pk)/339108**	1	——	——	5 200
Conical Polypropylene	230.0	356989	4	60 x 120	356983 (4-pk)/339108**	1	——	——	5 200

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

** *These adapters fit inside one another to accommodate smaller bottles and tubes.*

§ *This rotor was tested to demonstrate containment of microbiological aerosols under normal operating conditions of the associated Beckman Coulter centrifuge, when used and maintained as instructed. Validation of microbiological containment was done at an independent, third-party facility (CAMR, Porton Down, UK or USAMRIID, Ft. Detrick, MD, USA). Improper use or maintenance may affect seal integrity and, thus, containment.*

Continued on next page.

Adapters

339100 339101 339102 339103 339104 339108 339109 341977 354511 356096 356983

Tubes and Bottles *(continued)*

Tube Style/Material		Nominal Volume per Tube (mL)	Part No.	Quantity	Cavity Diameter (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Tubes with Snap-On Caps										
Polypropylene	Natural	1.5	357448	500	11 x 38	339100/354511**	26	———	———	5 200
	Orange	1.5	356094	500	11 x 38	339100/354511**	26	———	———	5 200
	Yellow	1.5	356093	500	11 x 38	339100/354511**	26	———	———	5 200
	Blue	1.5	356091	500	11 x 38	339100/354511**	26	———	———	5 200
	Natural	1.5	356090	500	11 x 38	339100/354511**	26	———	———	5 200
	Natural*	1.5	343169	500	11 x 38	339100/354511**	26	———	———	5 200
Polyethylene		1.8	340196	500	11 x 39	339100/354511**	26	———	———	5 200
Polycarbonate		50.0	363664	25	29 x 104	339103	7	———	———	5 200
Polypropylene		50.0	357005	25	29 x 104	339103	7	———	———	5 200
Open-Top Tubes										
Thickwall Polypropylene		10.0	355640	25	16 x 76	341977	19	———	———	5 200
Thickwall Polycarbonate		10.0	355630	25	16 x 76	341977	19	———	———	5 200
		15.0	342080	100	18 x 98	339102	14	———	———	5 200
		50.0	363647	25	29 x 104	356997	7	———	———	5 200
Thickwall Polyethylene		15.0	342081	100	18 x 98	339102	14	———	———	5 200
Thickwall Polypropylene		15.0	342082	100	18 x 98	339102	14	———	———	5 200
		50.0	357007	25	29 x 104	339103	7	———	———	5 200
BioVials										
Polypropylene		4.0	566353	1000	14 x 55	339101	24	———	———	5 200
Adapters for Non-Beckman Coulter Tubes/Bottles										
Round Bottom		3.0 & 5.0	———	———	12 x 75	339119 (qty. of 1) (double stacked adapter)	19	———	———	———
Round Bottom		3.0 & 5.0	———	———	12 x 133	339100 (qty. of 1)	37	———	———	———
Round Bottom		10.0	———	———	14 x 133	339101 (qty. of 1)	24	———	———	———
Round Bottom		12.0	———	———	16 x 133	341977 (qty. of 1)	19	———	———	———
Conical		15.0	———	———	17 x 119	356995 (qty. of 1)	5	———	———	———
Round Bottom		20.0	———	———	18 x 133	339102 (qty. of 1)	14	———	———	———
Conical		50.0	———	———	30 x 136	345386 (qty. of 1)	4	———	———	———
Round Bottom		50.0	———	———	35 x 136	341794 (qty. of 1)	4	———	———	———

* *Cap separate.*

** *These adapters fit inside one another to accommodate smaller bottles and tubes.*

Adapters

339100 339101 339102 339103 339104 339108 339109 341977 354511 356096 356983

Blood-Bag Cups

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

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

Aeroseal Covers § BIOC

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. Quantity 1.

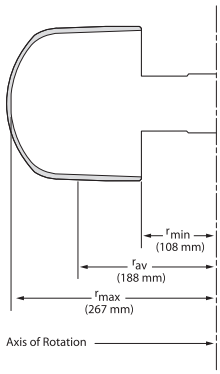
Microplate Carriers

No. 358680. 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*). Set of two.

§ *Validation of microbiological containment was done at an independent, third-party facility (CAMR, Porton Down, UK or USAMRIID, Ft. Detrick, MD, USA). Improper use or maintenance may affect seal integrity and, thus, containment.*

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-26 XP Series centrifuge



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.

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.

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 compliant).

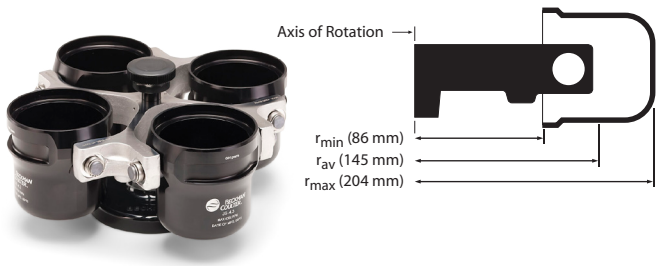
Rotor Accessories

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)

Rotor Replacement Parts

346965	Rotor Removal Tool
367824	Tie-down Bolt
368521	Tie-down Tool
369258	Plug, cover, set of 4

JS-4.3 BIOC ** 4 x 750 mL JS-4.3



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-26 XP Series.

No. 362734. JS-4.3 Swinging-Bucket Biosafety 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 Canisters 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 Canisters

BIOC **No. 359232**. Set of four.
BIOC **No. 359481**. Set of two.
Aerosolve Canisters fit in JS-4.3 Rotor Buckets. These canisters feature an O-ring seal and are completely transparent so a broken tube can be seen and proper precautions taken before the seal is broken. Canisters can also be used as 500-mL wide-mouth bottles. Specially-designed adapters accommodate most popular tubes within the canister (see table at end of this rotor section).

Tubes and Bottles

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

* *Use adapter 356983 with adapter 349946.*
** *When used with optional Aerosolve Canisters, P/N 359232 and 359481.*

Continued on next page.

Adapters

344517 349846 349945 349946 354495 354511 356983 356985 359469 359470 359471 359473 359474 359484 359486

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)
361291	Rubber Pads (set of 4)
361304	MicroPlus Carriers (set of 2)

Tubes and Bottles *(continued)*

Tube Style/Material	Nominal Volume per Tube (mL)	Part No.	Quantity	Cavity Diameter (mm)	Required Adapters Set of 2/Set of 4	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Bottles with Cap Assemblies									
Polypropylene	50.0	357001	6	29 x 104	359474/359153	7	——	——	4 300
					359486/359164	4			
	50.0	361694	6	29 x 104	359474/359153	7	——	——	4 300
					359486/359164	4	——	——	4 300
Polycarbonate	50.0	357000	6	29 x 104	359474/359153	7	——	——	4 300
					359486/359164	4			
	50.0	361693	24	29 x 104	359474/359153	7	——	——	4 300
					359486/359164	4	——	——	4 300
Wide-mouth Polypropylene	500.0	355607	6	69 x 160	349945 (ea.)	1	——	——	4 300
Wide-mouth Polycarbonate	250.0	358275	25	62 x 122	349946 (ea.)	1	——	——	4 300
Wide-mouth Polypropylene	250.0	358326	25	62 x 120	349946 (ea.)	1	——	——	4 300
Bottles									
Polypropylene	500.0	355650	6	69 x 159	349945 (ea.)	1	——	——	4 300
Open-Top Tubes									
Thickwall Polypropylene	10.0	355640	25	16 x 76	359471/359150	19	——	——	4 300
					359484/359162	12			
Thickwall Polycarbonate	10.0	355630	25	16 x 76	359471/359150	19	——	——	4 300
					359484/359162	12			
	15.0	342080	100	18 x 98	359473/359152	14	——	——	4 300
	50.0	363664	25	29 x 104	359474/359153	7	——	——	4 300
					359486/359164	4			
Thickwall Polyethylene	15.0	342081	100	18 x 98	359473/359152	14	——	——	4 300
Thickwall Polypropylene	15.0	342082	100	18 x 98	359473/359152	14	——	——	4 300
	50.0	357007	25	29 x 104	359474/359153	7	——	——	4 300
					359486/359164	4			
Graduated Polycarbonate	50.0	363075	8	29 x 104	359474/359153	7	——	——	4 300
					359486/359164	4			
Tubes with Snap-On Caps									
Polypropylene	1.5	357448	500	11 x 38	359469/359148	26	——	——	4 300
					354511 (ea.)*				
					354495 (ea.)	**26**			
Polyethylene White	1.8	340196	500	11 x 39	359469/359148	26	——	——	4 300
					354511 (ea.)*				
					354495 (ea.)	**26**			
Polypropylene	50.0	357005	25	29 x 104	359474/359153	7	——	——	4 300
					359486/359164	**4**			
Natural†	1.5	343169	500	11 x 38	359469/359148	26	——	——	4 300
					354511 (ea.)*				
					354495 (ea.)	**26**			
Natural†	1.5	356090	500	11 x 38	359469/359148	26	——	——	4 300
					354511 (ea.)*				
					354495 (ea.)				

Adapters

344517 349846 349945 349946 354495 354511 356983 356985 359469 359470 359471 359473 359474 359484 359486

Tubes and Bottles *(continued)*

Tube Style/Material		Nominal Volume per Tube (mL)	Part No.	Quantity	Cavity Diameter (mm)	Required Adapters Set of 2/Set of 4	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Tubes with Snap-On Caps *(continued)*										
Polypropylene	Blue	1.5	356091	500	11 x 38	359469/359148 354511 (ea.)* **354495 (ea.)**	26 **26**	———	———	4 300
	Yellow	1.5	356093	500	11 x 38	359469/359148 354511 (ea.)* **354495 (ea.)**	26 **26**	———	———	4 300
	Orange	1.5	356094	500	11 x 38	359469/359148 354511 (ea.)* **354495 (ea.)**	26 **26**	———	———	4 300
BioVials										
Polypropylene		4.0	566353	1 000	14 x 55	359470/359149 **344517 (ea.)**	24 **10**	———	———	4 300

Aerosolve Canisters

	Part No.
Aerosolve Canisters for JS-4.3	343686

Aerosolve Canister Adapters

Color Code	Typical Tube/Bottle Volume (mL)	Maximum Tube Diameter (mm)	Tubes per Adapter	Tubes per JS-4.3 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 4	16 16	359488	358992
Yellow	50 3 and 5	29 12	4 4	16 16	359486	359164
Orange	230	62	1	4	—	356985
Canister Kit	500	—	—	—	359481	359232

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

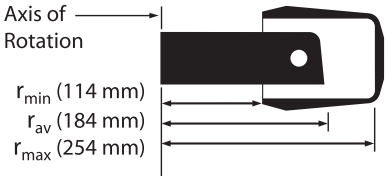
† *Cap separate.*

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)
362737	Knob Assembly

Adapters

344517 349846 349945 349946 354495 354511 356983 356985 359469 359470 359471 359473 359474 359484 359486



Swinging-Bucket Rotor (Windshielded), Anodized Aluminum

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

Max. RPM	Max. *g* Capacity	Rotor	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-MI centrifuges only.

No. 339080. JS-4.2[§] Swinging-Bucket Biosafety 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.

Tubes and Bottles

Tube Style/Material	Nominal Volume per Tube (mL)	Part No.	Quantity	Cavity Diameter (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Bottles with Screw-On Caps									
Polycarbonate	10.0	355672	25	16 x 80	341977	19	5 020	——	4 200
	50.0	357002	25	29 x 104	339103	7	5 020	——	4 200
	250.0	355673	6	62 x 136	339108	1	5 020	——	4 200
	500.0	355664	6	69 x 160	339109	1	5 020	——	4 200
	750.0	358299[‡]	6	96 x 130	356096 (set of 6)	1	5 020	——	4 200
	1000.0	355675	6	97 x 167	356096 (set of 6)	1	5 020	——	4 200
Polypropylene	50.0	357003	25	29 x 104	339103	7	5 020	——	4 200
	500.0	355665	6	69 x 159	339109	1	5 020	——	4 200
	750.0	356855**	6	96 x 130	356096 (set of 6)	1	5 020	——	4 200
	1000.0	355676**	6	97 x 167	356096 (set of 6)	1	5 020	——	4 200
Teflon	50.0	363076	8	28.5 x 107	339103	7	5 020	——	4 200
Wide-mouth Polycarbonate	250.0	356013	6	62 x 120	339108	1	5 020	——	4 200
	500.0	355605	6	69 x 160	339109	1	5 020	——	4 200
Wide-mouth Polypropylene	250.0	356011	6	62 x 120	339108	1	5 020	——	4 200
	500.0	355607	6	69 x 160	339109	1	5 020	——	4 200
Conical Polycarbonate	230.0	356987*	6	62 x 120	356983(4-pk)/339108[$]	1	5 020	——	4 200
Conical Polypropylene	230.0	356989*	6	62 x 141	356983(4-pk)/339108[$]	1	5 020	——	4 200
Bottles with Cap Assemblies									
Polypropylene	50.0	357001	6	29 x 104	339103	7	5 020	——	4 200
	50.0	361694	6	29 x 104	356997	1	5 020	——	4 200
Polycarbonate	50.0	357000	6	29 x 104	339103	7	5 020	——	4 200
	70.0	355620	6	38 x 102	339104	2	5 020	——	4 200
Polypropylene	100.0	355624	6	38 x 102	339104	2	5 020	——	4 200
Bottles									
Polycarbonate	70.0	355655	6	38 x 102	339104	2	5 020	——	4 200
	500.0	355649	6	69 x 160	339109	1	5 020	——	4 200
Wide-mouth Polycarbonate	250.0	358275	25	62 x 122	339108	1	5 020	——	4 200
Polypropylene	100.0	355626	6	38 x 102	339104	2	5 020	——	4 200
	500.0	355650	6	69 x 159	339109	1	5 020	——	4 200
Wide-mouth Polypropylene	250.0	358326	25	62 x 120	339108	1	5 020	——	4 200

Tubes and Bottles *(continued)*

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

† *Adapter used in Aerosolve Canister (P/N 359232).*

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

$ *These adapters fit inside one another to accommodate smaller bottles and tubes.*

Adapters

339100 339101 339102 339103 339104 339108 339109 341977 354511 356096 356983 356997

Tube Style/Material		Nominal Volume per Tube (mL)	Part No.	Quantity	Cavity Diameter (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Tubes with Snap-On Caps										
Polypropylene	Natural	1.5	357448	500	11 x 38	339100/354511**	26	5 020	——	4 200
Polycarbonate		50.0	363664	25	29 x 104	356997	1	5 020	——	4 200
Polyethylene	Natural	1.8	340196	500	11 x 39	339100/354511**	26	5 020	——	4 200
Polypropylene	Natural‡	1.5	343169	500	11 x 38	339100/354511**	26	5 020	——	4 200
	Natural	1.5	356090	500	11 x 38	339100/354511**	26	5 020	——	4 200
	Blue	1.5	356091	500	11 x 38	339100/354511**	26	5 020	——	4 200
	Yellow	1.5	356093	500	11 x 38	339100/354511**	26	5 020	——	4 200
	Orange	1.5	356094	500	11 x 38	339100/354511**	26	5 020	——	4 200
		50.0	357005	25	29 x 104	339103	7	5 020	——	4 200
BioVials										
Polypropylene		4.0	566353	1 000	14 x 55	339101	24	5 020	——	4 200
Open-Top Tubes										
Polypropylene		10.0	355640	25	16 x 76	341977	19	5 020	——	4 200
Polycarbonate		10.0	355630	25	16 x 76	341977	19	5 020	——	4 200
		15.0	342080	100	18 x 98	339102	14	5 020	——	4 200
		50.0	363647	25	29 x 104	339103	7	5 020	——	4 200
Polyethylene		15.0	342081	100	18 x 98	339102	14	5 020	——	4 200
Polypropylene		15.0	342082	100	18 x 98	339102	14	5 020	——	4 200
		50.0	357007	25	29 x 104	339103	7	5 020	——	4 200

* *These tubes cannot be run with bucket covers in place.*

‡ *Cap separate.*

** *These adapters fit inside one another to accommodate smaller bottles and tubes.*

Blood-Bag Cups

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

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

Aeroseal Covers§ BIOC

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. Quantity 1.

Microplate Carriers

No. 358682. 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, max RCF 1 500 x g. Set of two.

§ *Validation of microbiological containment was done at an independent, third-party facility (CAMR, Porton Down, UK or USAMRIID, Ft. Detrick, MD, USA). Improper use or maintenance may affect seal integrity and, thus, containment.*

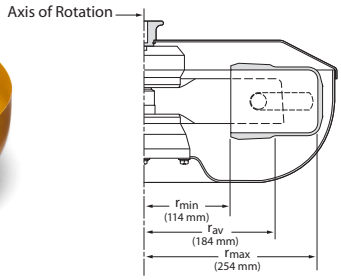
Rotor Replacement Parts

367045	Rotor Tie-down Kit
348392	Cover Assembly
368575	Buckets (qty: 6, blue-anodized)
339096	Bail for Adapter (curved arm at top)
349817	Bail for Adapter (straight arm at top)

Adapters

339100 339101 339102 339103 339104 339108 339109 341977 354511 356096 356983 356997

JS-4.2A BIOC ** 6 x 1000 mL JS-4.2A



Swinging-Bucket Rotor (Windshielded), 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*	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 J6-MI centrifuges only.

No. 366695. JS-4.2A§ Swinging-Bucket Biosafety 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	Nominal Volume per Tube (mL)	Part No.	Quantity	Cavity Diameter (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Bottles with Screw-On Caps									
Polycarbonate	10.0	355672	25	16 x 80	341977	19	5 020	——	4 200
	50.0	357002	25	29 x 104	339103	7	5 020	——	4 200
	750.0	358299*	6	96 x 130	356096 (set of 6)	1	5 020	——	4 200
	1000.0	355675*£	6	97 x 167	356096 (set of 6)	1	5 020	——	4 200
Polycarbonate	250.0	355673	6	62 x 136	339108	1	5 020	——	4 200
	500.0	355664	6	69 x 160	339109	1	5 020	——	4 200
Polypropylene	500.0	355665	6	69 x 159	339109	1	5 020	——	4 200
	750.0	356855*	6	96 x 130	356096 (set of 6)	1	5 020	——	4 200
	1000.0	355676* £	6	97 x 167	356096 (set of 6)	1	5 020	——	4 200
Wide-mouth Polycarbonate	250.0	358275	25	62 x 122	339108	1	5 020	——	4 200
	250.0	356013	6	62 x 120	339108	1	5 020	——	4 200
	500.0	355605	6	69 x 160	339109	1	5 020	——	4 200
Wide-mouth Polypropylene	250.0	358326	25	62 x 122	339108	1	5 020	——	4 200
	250.0	356011	6	62 x 120	339108	1	5 020	——	4 200
	500.0	355607	6	69 x 160	339109	1	5 020	——	4 200
Conical Polycarbonate	230.0	356987	4	60 x 120	356983 (4-pk)/339108+	1	5 020	——	4 200
Conical Polypropylene	230.0	356989	4	60 x 120	356983 (4-pk)/339108+	1	5 020	——	4 200
Bottles									
Polycarbonate	70.0	355655	6	38 x 102	339104	2	5 020	——	4 200
	500.0	355649	6	69 x 160	339109	1	5 020	——	4 200
Polypropylene	50.0	357003	25	29 x 104	339103	7	5 020	——	4 200
	100.0	355626	6	38 x 102	339104	2	5 020	——	4 200
	500.0	355650	6	69 x 159	339109	4	5 020	——	4 200
Bottles with Cap Assemblies									
Polypropylene	50.0	357001	6	29 x 104	339103	7	5 020	——	4 200
	50.0	361694	6	29 x 104	356997	1	5 020	——	4 200
Polycarbonate	50.0	357000	6	29 x 104	339103	7	5 020	——	4 200
	70.0	355620	6	38 x 102	339104	2	5 020	——	4 200
Polypropylene	100.0	355624	6	38 x 102	339104	2	5 020	——	4 200

‡ *Microplate carriers cannot be run in the Avanti J-HC centrifuge.*
* *These bottles require a sleeve rather than an adapter.*
** *When used with optional Aeroseal Covers, P/N 343686*
\+ *These adapters fit inside one another to accommodate smaller bottles and tubes.*
£ *can't be used with the Aeroseal covers*

Adapters

339103 339104 339108 339109 341977 356096

Tubes and Bottles *(continued)*

Tube Style/Material		Nominal Volume per Tube (mL)	Part No.	Quantity	Cavity Diameter (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Tubes with Snap-On Caps										
Polypropylene	Natural	1.5	357448	500	11 x 38	339100/354511**	26	5 020	——	4 200
Polycarbonate	50.0	363664	25	29 x 104	356997	1			4 200	
Polyethylene	Natural	1.5	340196	500	11 x 39	339100/354511**	26	5 020	——	4 200
Polypropylene	Natural	1.5	356090	500	11 x 38	339100/354511**	26	5 020	——	4 200
	Natural	1.5	343169	500	11 x 38	339100/354511**	26	5 020	——	4 200
	Blue	1.5	356091	500	11 x 38	339100/354511**	26	5 020	——	4 200
	Yellow	1.5	356093	500	11 x 38	339100/354511**	26	5 020	——	4 200
	Orange	1.5	356094	500	11 x 38	339100/354511**	26	5 020	——	4 200
		50.0	357005	25	29 x 104	339103	7	5 020	——	4 200
BioVials										
Polypropylene		4.0	566353	1 000	14 x 55	339101	24	5 020	——	4 200
Open-Top Tubes										
Polypropylene		10.0	355640	25	16 x 76	341977	19	5 020	——	4 200
Polycarbonate		10.0	355630	25	16 x 76	341977	19	5 020	——	4 200
		15.0	342080	100	18 x 98	339102	14	5 020	——	4 200
		50.0	363647	25	29 x 104	356997	7	5 020	——	4 200
Polyethylene		15.0	342081	100	18 x 98	339102	14	5 020	——	4 200
Polypropylene		15.0	342082	100	18 x 98	339102	14	5 020	——	4 200
		50.0	357007	25	29 x 104	339103	7	5 020	——	4 200

** *These adapters fit inside one another to accommodate smaller bottles and tubes.*

Blood-Bag Cups

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

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

Aeroseal Covers§ BIOC

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. Quantity 1.

Microplate Carriers

No. 358682. 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. Set of two.

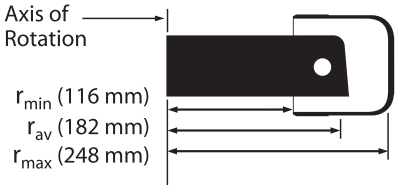
§ *Validation of microbiological containment was done at an independent, third-party facility (CAMR, Porton Down, UK or USAMRIID, Ft. Detrick, MD, USA). Improper use or maintenance may affect seal integrity and, thus, containment.*

Rotor Replacement Parts

367045	Rotor Tie-down Kit
348392	Cover Assembly
368575	Buckets (qty: 6, blue-anodized)
339096	Bail for Adapter (curved arm at top)
349817	Bail for Adapter (straight arm at top)

Adapters

339100 339101 339102 339103 339108 339109 354511 356983 356997



Swinging-Bucket Rotor (Windshielded), Anodized Aluminum

Major applications: Separation of serum or plasma 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-MI centrifuge 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

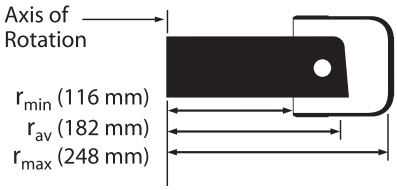
No. 358682. Special carriers, interchangeable with buckets, slip onto yoke of JS-4.2SM Rotor. Each carrier holds three microplates for a total capacity of 18 per run. Maximum speed 2 500 rpm. Set of two.

Blood-Bag Cups

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

Rotor Replacement Parts

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



Swinging-Bucket Rotor (Windshielded), Anodized Aluminum

Major applications: Separation of serum or plasma 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-MI centrifuge 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

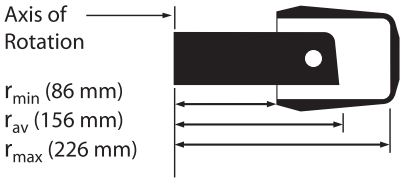
No. 358682. Special carriers, interchangeable with buckets, slip onto yoke of JS-4.2SMA Rotor. Each carrier holds three microplates for a total capacity of 18 per run. Maximum speed 2 500 rpm. Set of two.

Blood-Bag Cups

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

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 or plasma 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	2:00/1:30 min.

For use in Avanti J-26S and J6-MI centrifuges.

No. 339086. JS-4.0 Swinging-Bucket Biosafety 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-26S Series centrifuges.

Tubes and Bottles

Tube Style/Material	Nominal Volume per Tube (mL)	Part No.	Quantity	Cavity Diameter (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Bottles with Screw-On Caps									
Polycarbonate	10.0	355672	25	16 x 80	341977	19	——	——	4 000
	50.0	357002	25	29 x 104	339103	N/A	——	——	4 000
	250.0	355673	6	62 x 136	339108	1	——	——	4 000
	500.0	355664	6	69 x 160	339109	1	——	——	4 000
	750.0	358299	6	96 x 130	356096 (set of 6)	1	——	——	4 000
	1000.0	355675	6	97 x 167	356096 (set of 6)	1	——	——	4 000
Polypropylene	50.0	357003	25	29 x 104	339103	7	——	——	4 000
	500.0	355665	6	69 x 159	339109	1	——	——	4 000
	750.0	356855	6	96 x 139	356096 (set of 6)	1	——	——	4 000
	1000.0	355676	6	97 x 167	356096 (set of 6)	1	——	——	4 000
Wide-mouth Polycarbonate	250.0	356013	6	62 x 120	339108	1	——	——	4 000
	500.0	355605	6	69 x 160	339109	1	——	——	4 000
Wide-mouth Polypropylene	250.0	356011	6	62 x 120	339108	1	——	——	4 000
	500.0	355607	6	69 x 160	339109	1	——	——	4 000
Conical Polycarbonate	230.0	356987	4	60 x 120	356983 (4-pk)/339108**	1	——	——	4 000
Conical Polypropylene	230.0	356989	4	60 x 120	356983 (4-pk)/339108**	1	——	——	4 000
Bottles with Cap Assemblies									
Polypropylene	50.0	357001	6	29 x 104	339103	N/A	——	——	4 000
	50.0	361694	6	29 x 104	356997	1	——	——	4 000
Polycarbonate	50.0	357000	6	29 x 104	339103	N/A	——	——	4 000
	70.0	355620	6	38 x 102	339104	2	——	——	4 000
Polypropylene	100.0	355624	6	38 x 102	339104	2	——	——	4 000
Bottles									
Polycarbonate	70.0	355655	6	38 x 102	339104	2	——	——	4 000
	500.0	355649	6	69 x 160	339109	1	——	——	4 000
Wide-mouth Polycarbonate	250.0	358275	25	62 x 122	339108	1	——	——	4 000
Polypropylene	100.0	355626	6	38 x 102	339104	2	——	——	4 000
	500.0	355650	6	69 x 159	339109	1	——	——	4 000
Wide-mouth Polypropylene	250.0	358326	25	62 x 122	339108	1	——	——	4 000

* *When used with optional Aeroseal Covers P/N 343686.*
** *These adapters fit inside one another to accommodate smaller bottles and tubes.*

Adapters

339100 339101 339102 339103 339104 339108 339109 341977 354511 356096 356983

Tubes and Bottles *(continued)*

Tube Style/Material		Nominal Volume per Tube (mL)	Part No.	Quantity	Cavity Diameter (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Tubes with Snap-On Caps										
Polypropylene	Natural	1.5	357448	500	11 x 38	339100/354511**	26	———	———	4 000
Polycarbonate		50.0	363664	25	29 x 104	365997	7	———	———	4 000
Polyethylene		1.8	340196	500	11 x 39	339100/354511**	26	———	———	4 000
Polypropylene	Orange	1.5	356094	500	11 x 38	339100/354511**	26	———	———	4 000
	Yellow	1.5	356093	500	11 x 38	339100/354511**	26	———	———	4 000
	Blue	1.5	356091	500	11 x 38	339100/354511**	26	———	———	4 000
	Clear	1.5	356090	500	11 x 38	339100/354511**	26	———	———	4 000
	Natural*	1.5	343169	500	11 x 38	339100/354511**	26	———	———	4 000
		50.0	357005	25	29 x 104	339103	7	———	———	4 000
Open-Top Tubes										
Polypropylene		10.0	355640	25	16 x 76	341977	19	———	———	4 000
Polycarbonate		10.0	355630	25	16 x 76	341977	19	———	———	4 000
		15.0	342080	100	18 x 98	339102	14	———	———	4 000
		50.0	363647	25	29 x 104	339103	7	———	———	4 000
Polyethylene		15.0	342081	100	18 x 100	339102	14	———	———	4 000
Polypropylene		15.0	342082	100	18 x 98	339102	14	———	———	4 000
		50.0	357007	25	29 x 104	356997	7	———	———	4 000
BioVials										
Polypropylene		4.0	566353	1000	14 x 55	339101	24	———	———	4 000
Adapters for Non-Beckman Coulter Tubes/Bottles										
Round Bottom		3.0 & 5.0	———	———	12 x 75	339119 (double stacked) adapter) (qty. of 1)	19	———	———	———
Round Bottom		3.0 & 5.0	———	———	12 x 133	339100 (qty. of 1)	37	———	———	———
Round Bottom		10.0	———	———	14 x 133	339101 (qty. of 1)	24	———	———	———
Round Bottom		12.0	———	———	16 x 133	341977 (qty. of 1)	19	———	———	———
Conical		15.0	———	———	17 x 119	356995 (qty. of 1)	5	———	———	———
Round Bottom		20.0	———	———	18 x 133	339102 (qty. of 1)	14	———	———	———
Conical		50.0	———	———	30 x 136	345386 (qty. of 1)	4	———	———	———
Round Bottom		50.0	———	———	35 x 136	341794 (qty. of 1)	4	———	———	———

* *Cap separate.*

** *These adapters fit inside one another to accommodate smaller bottles and tubes.*

Adapters

339100 339101 339102 339103 339104 339108 339109 341977 354511 356096 356983

Blood-Bag Cups

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

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

Aeroseal Covers BIOC

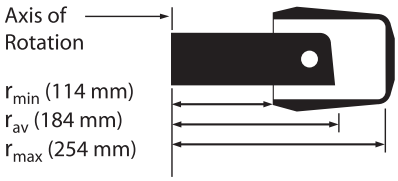
No. 343686. Cover for round buckets of JS-4.0. Features O-ring seal to provide added aerosol protection. Transparent so broken tubes can be detected and proper precautions taken before breaking seal. Quantity 1.

Microplate Carriers

No. 358680. 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*). Set of two.

Rotor Replacement Parts

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-26S XP Series centrifuges



Swinging-Bucket Rotor (Unshielded), 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*	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-MI centrifuge only.

No. 339081. JS-3.0§ Swinging-Bucket Biosafety 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.

Tubes and Bottles

Tube Style/Material	Nominal Volume per Tube (mL)	Part No.	Quantity	Cavity Diameter (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Bottles with Screw-On Caps									
Polycarbonate	10.0	355672	25	16 x 80	341977	19	2 560	——	3 000
	50.0	357002	25	29 x 104	339103	7	2 560	——	3 000
	250.0	355673	6	62 x 136	339108	1	2 560	——	3 000
	500.0	355664	6	69 x 160	339109	1	2 560	——	3 000
	750.0	358299	6	96 x 130	356096* (set of 6)	1	2 560	——	3 000
	1000.0	355675	6	97 x 167	356096* (set of 6)	1	2 560	——	3 000
Polypropylene	50.0	357003	25	29 x 104	339103	7	2 560	——	3 000
	500.0	355665	6	69 x 159	339109	1	2 560	——	3 000
	750.0	356855	6	96 x 130	356096* (set of 6)	1	2 560	——	3 000
	1000.0	355676	6	97 x 167	356096* (set of 6)	1	2 560	——	3 000
Wide-mouth Polycarbonate	250.0	356013	6	62 x 122	339108	1	2 560	——	3 000
	500.0	355605	6	69 x 160	339109	1	2 560	——	3 000
Wide-mouth Polypropylene	250.0	356011	6	62 x 120	339108	1	2 560	——	3 000
	500.0	355607	6	69 x 160	339109	1	2 560	——	3 000
Conical Polycarbonate	230.0	356987	4	60 x 120	356983 (4-pk)/339108+	1	2 560	——	3 000
Conical Polypropylene	230.0	356989	4	60 x 120	356983 (4-pk)/339108+	1	2 560	——	3 000
Bottles with Cap Assemblies									
Polypropylene	50.0	357001	6	29 x 104	339103	7	2 560	——	3 000
	50.0	361694	6	29 x 104	356997	1	5 020	——	4 200
Polycarbonate	50.0	357000	6	29 x 104	339103	7	2 560	——	3 000
	70.0	355620	6	38 x 102	339104	2	2 560	——	3 000
Polypropylene	100.0	355624	6	38 x 102	339104	2	2 560	——	3 000
Bottles									
Polycarbonate	70.0	355655	6	38 x 102	339104	2	2 560	——	3 000
	500.0	355649	6	69 x 160	339109	1	2 560	——	3 000
Wide-mouth Polycarbonate	250.0	358275	25	62 x 122	339108	1	2 560	——	3 000
Polypropylene	100.0	355626	6	38 x 102	339104	2	2 560	——	3 000
	500.0	355650	6	69 x 159	339109	1	2 560	——	3 000
Wide-mouth Polypropylene	250.0	358326	25	62 x 122	339108	1	2 560	——	3 000

+ These adapters fit inside one another to accommodate smaller bottles and tubes.

Adapters

339100 339101 339102 339103 339104 339108 339109 341977 354511 356096 356983 356997

Tubes and Bottles *(continued)*

Tube Style/Material		Nominal Volume per Tube (mL)	Part No.	Quantity	Cavity Diameter (mm)	Required Adapters	Tubes per Adapter	*g*-Force	*k* Factor	Maximum Speed
Tubes with Snap-On Caps										
Polypropylene	Natural	1.5	357448	500	11 x 38	339100/354511**	26	2 560	———	3 000
Polycarbonate		50.0	363664	25	29 x 104	356997	1	2 560	———	3 000
Polyethylene	Natural	1.8	340196	500	11 x 39	339100/354511**	26	2 560	———	3 000
Polypropylene	Natural*	1.5	343169	500	11 x 38	339100/354511**	26	2 560	———	3 000
	Clear	1.5	356090	500	11 x 38	339100/354511**	26	2 560	———	3 000
	Blue	1.5	356091	500	11 x 38	339100/354511**	26	2 560	———	3 000
	Yellow	1.5	356093	500	11 x 38	339100/354511**	26	2 560	———	3 000
	Orange	1.5	356094	500	11 x 38	339100/354511**	26	2 560	———	3 000
		50.0	357005	25	29 x 104	339103	7	2 560	———	3 000
BioVials										
Polypropylene		4.0	566353	1 000	14 x 55	339101	24	2 560	———	3 000
Open-Top Tubes										
Polypropylene		10.0	355640	25	16 x 76	341977	19	2 560	———	3 000
Polycarbonate		10.0	355630	25	16 x 76	341977	19	2 560	———	3 000
		15.0	342080	100	18 x 98	339102	14	2 560	———	3 000
		50.0	363647	25	29 x 104	356997	7	2 560	———	3 000
Polyethylene		15.0	342081	100	18 x 98	339102	14	2 560	———	3 000
Polypropylene		15.0	342082	100	18 x 98	339102	14	2 560	———	3 000
		50.0	357007	25	29 x 104	339103	7	2 560	———	3 000
Adapters for Non-Beckman Coulter Tubes/Bottles										
Round Bottom		3.0 & 5.0	———	———	12 x 75	339119 (double stacked) adapter) (qty. of 1)	19	———	———	———
Round Bottom		3.0 & 5.0	———	———	12 x 133	339100 (qty. of 1)	37	———	———	———
Round Bottom		10.0	———	———	14 x 133	339101 (qty. of 1)	24	———	———	———
Round Bottom		12.0	———	———	16 x 133	341977 (qty. of 1)	19	———	———	———
Conical		15.0	———	———	17 x 119	356995 (qty. of 1)	5	———	———	———
Round Bottom		20.0	———	———	18 x 133	339102 (qty. of 1)	14	———	———	———
Conical		50.0	———	———	30 x 136	345386 (qty. of 1)	4	———	———	———
Round Bottom		50.0	———	———	35 x 136	341794 (qty. of 1)	4	———	———	———

** *These adapters fit inside one another to accommodate smaller bottles and tubes.*

Adapters

339100 339101 339102 339103 339104 339108 339109 341977 354511 356096 356983 356997

Blood-Bag Cups

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

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

Aeroseal Covers BIOC

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. Quantity 1.

Microplate Carriers

No. 358682. 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, max RCF 1 500 x g. Set of two.

Rotor Replacement Parts

367045	Rotor Tie-down Kit
368575	Buckets (set of 6, blue-anodized)

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 Avanti J Series centrifuge (excluding J-E).

Continuous-Flow Rotors

No. 335140. JCF-Z Continuous-Flow Rotor, Titanium, Standard Pellet Core. Includes Standard continuous-flow core (pellet size 400 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-26 XP 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).

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	1 900 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.

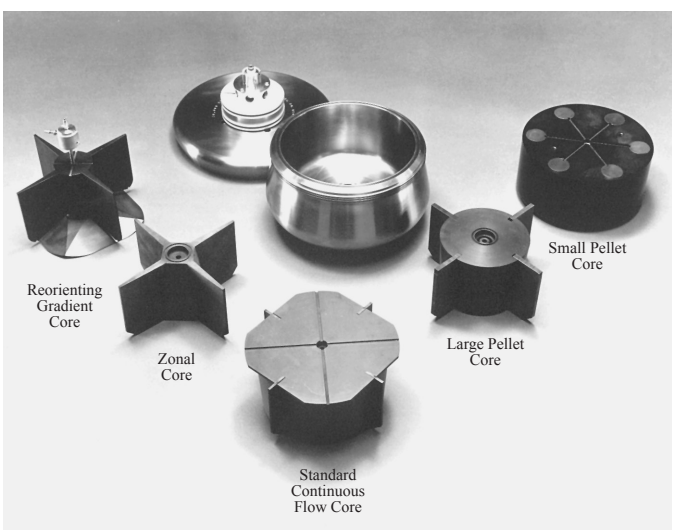
Max. RPM	Max. *g*	*k* Factor	Rotor Capacity
20 000	39 900	779	1 750 mL

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, 5/8" O.D. (Min. order 6)
824412	O-ring for JCF-Z Rotating Seal, 3/4" 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



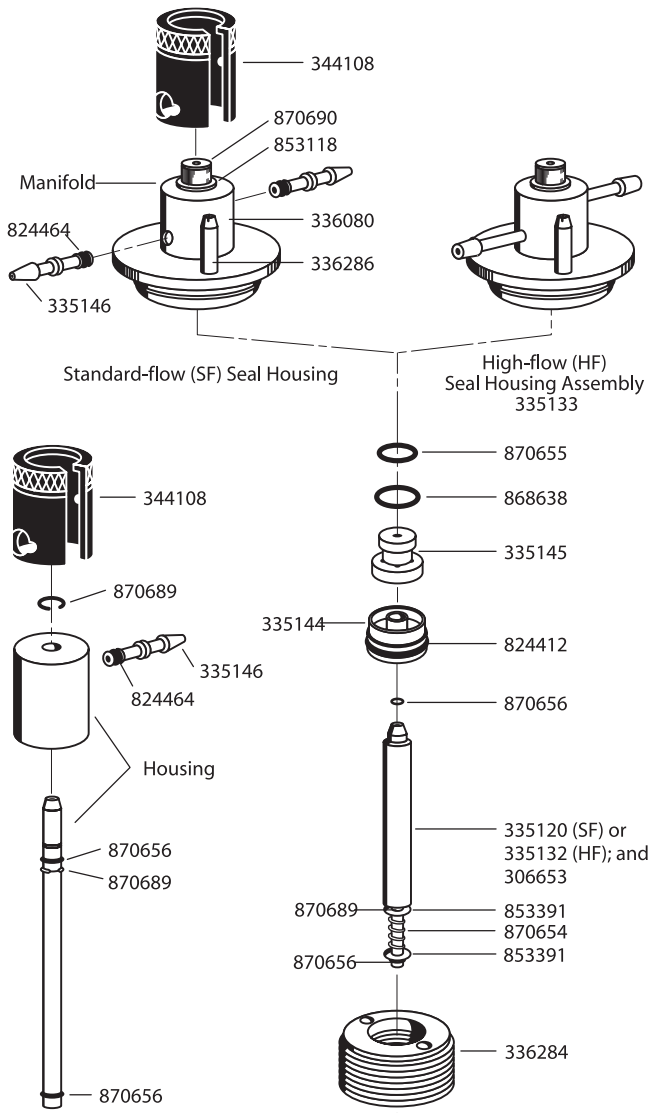
For use in Avanti J Series centrifuges (except Avanti J-E).

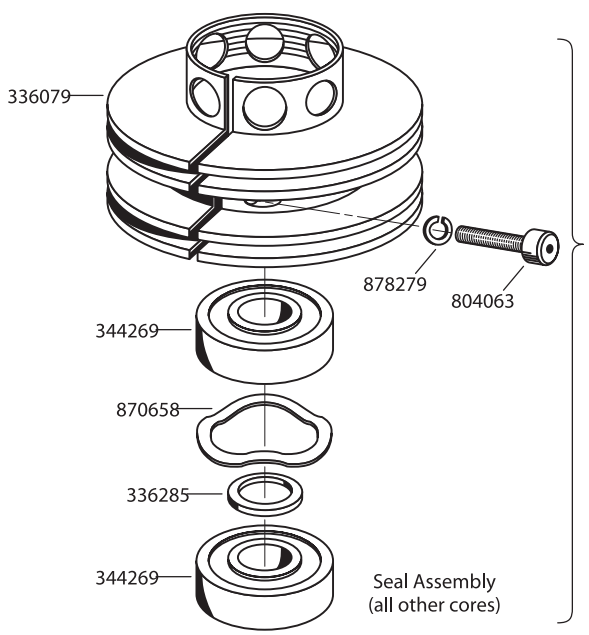
Many of the parts on this list are pictured for easy identification.

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 (modified polyphenylene oxide)
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[13]), Continuous-flow Lid
824412	O-ring, Rotating Seal
824464	O-ring, Seal Housing Feed Fitting
870656	O-ring, (Viton[13]), 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)

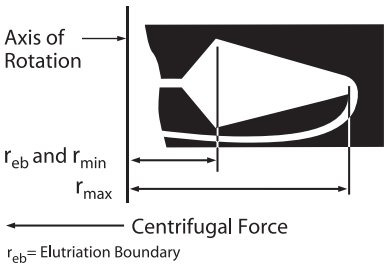
* *Use Loctite grade "T" primer and #35 retaining compound to bond fitting to seal housing.*





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.



Elutriator Rotor

For use in Avanti J-26S XP Series and J6-MI 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-26S XP centrifuge.**

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. 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-26S XP centrifuges can be ordered as Elutriation Centrifuges fully equipped with the appropriate door and strobe assembly. See Section 1 for ordering information.

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-26S XP Series, order the appropriate kit listed below (order only one kit):

No. 366562. 50/60 Hz. For use with Avanti J-26S XP. 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 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)

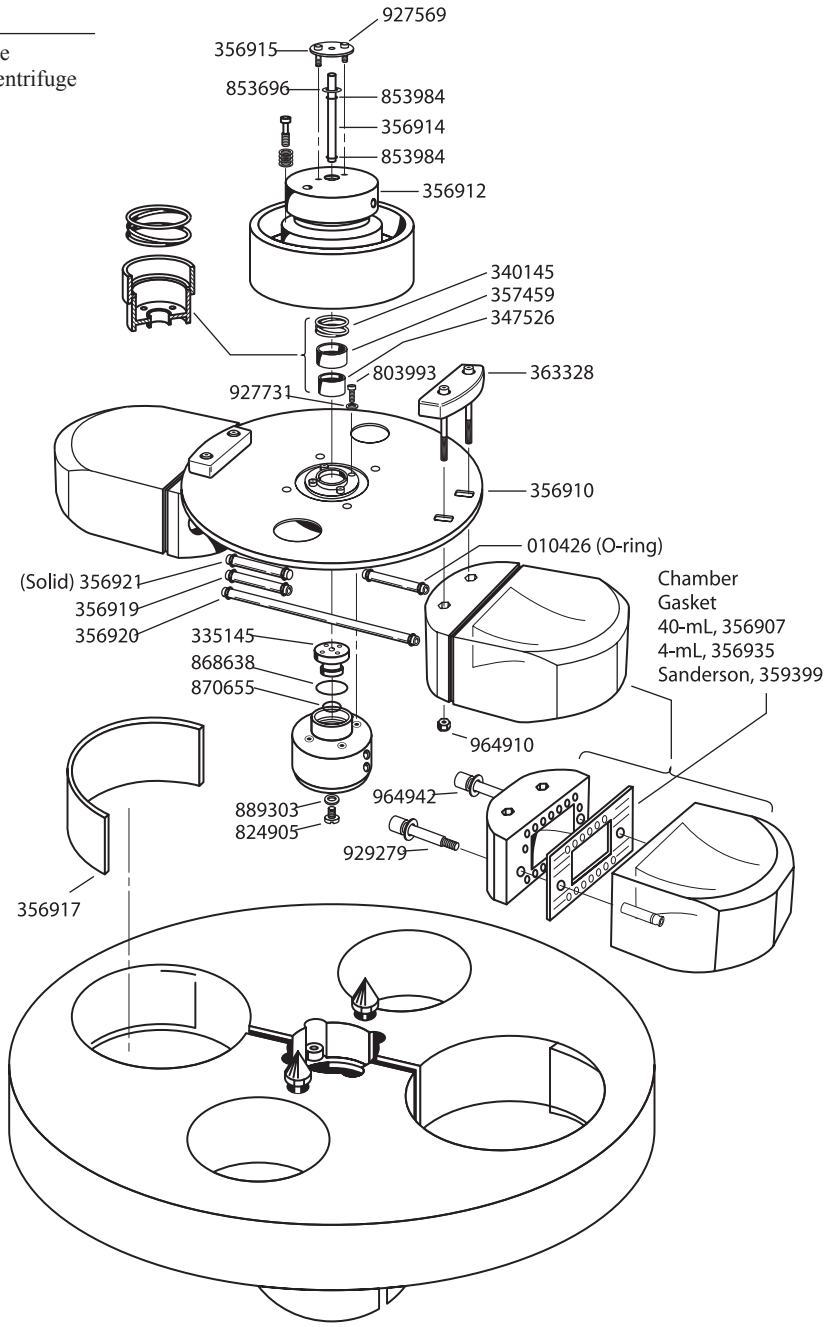
Tools

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

* When properly equipped for elutriation.

Replacement Parts

358291	Quick-release Seal Assembly 5.0 with counterbalance
366922	Anchor Cable Assembly for Avanti J-26 XP Series centrifuge
358182	Anchor Cable Assembly for J6-MI 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, 75-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

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.

2

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. Polycarbonateand Ultra-Clear tubes are incompatible with DMSO, so polypropylene tubes should be used.

The last column of the "Quick Reference Chart to Tube Materials and Their Properties" on page 2-3 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 www.beckmancoultercentrifugation.com) 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. Polypropylene 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 2-4.

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 polypropylene. 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 polypropylene 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 www.beckmancoultercentrifugation.com).

The method chosen for sterilization has direct bearing on the number of reuses one can expect from a tube. Tubes and bottles of polypropylene, 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 polypropylene (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.

A Quick-Reference Chart to Tube Materials and Their Properties

Property	Thinwall Polypropylene	Thickwall Polypropylene	Ultra-Clear	Polycarbonate	Polypropylene	Polyethylene	Cellulose Propionate
Optical	transparent	translucent	transparent	transparent	translucent	transparent/translucent	transparent
Autoclaveable	yes	yes	no	yes**	yes	no	no
Puncturable	yes	no	yes	no	no	yes	no
Sliceable	yes	no*	yes	no	no*	no	no*
Reusable	no	yes	no	yes	yes	yes	no
Acids (dilute or weak)	S	S	S	M	S	S	S
Acids (strong)	U	S	U	U	S	S	U
Alcohols (aliphatic)	U	S	U	U	S	S	U
Aldehydes	M	M	S	M	M	S	U
Bases	S	S	U	U	S	S	U
Esters	U	M	U	U	M	S	M
Hydrocarbons (aliphatic)	U	M	U	U	S	U	S
Hydrocarbons (aromatic and halogenated)	U	U	U	U	M	M	S
Ketones	U	M	U	U	M	M	U
Oxidizing Agents (strong)	U	U	U	M	M	M	M
Salts	S	S	M	M	S	S	S

S = satisfactory resistance M = marginal resistanceU = unsatisfactory resistance

** Polypropylene, polycarbonate, and cellulose propionate tubes with diameters of 5 to 13 mm may be sliced using the CentriTube Slicer (PN 34796O) and appropriate adapter plate.*
*** Table life will be significantly reduced by autoclaving.*

Note: This information has been consolidated from a number of sources and is provided only as a guide to the selection of tube materials. Soak tests at 1 g (at 20°C) established the data for most of the materials; reactions may vary under the stress of centrifugation, or with extended contact or temperature variations. To prevent failure and loss of valuable sample, ALWAYS TEST SOLUTIONS UNDER OPERATING CONDITIONS BEFORE USE.

Warning: Do not use flammable substances in or near an operating centrifuge.

2

General Filling and Sealing Requirements for Tubes and Bottles

	Tube or Bottle	Swinging-Bucket Rotors	Fixed-Angle Rotors
Polypropylene	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
Polytetrafluoroethylene (Teflon)	Tubes and bottles	At least 1/2 full	1/2 full to max. capless level or full with cap
Polyphenylsulfone (PPSU)	Container	At least 1/2 full	N/A

High-Performance and High-Capacity Bottles

Nominal Capacity	Size mm	Material	Bottle & Cap Assy	Bottle with Screw-On Caps	Bottle Only	Insert Only	O-ring	Screw-On 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	PE	N.A.	364695	N.A.	N.A.	N.A.	N.A.
10 mL	16.1 x 81.1	PTFE	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	PE	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.
40 mL	29 x 104	PC	N.A.	355628	N.A.	N.A.	N.A.	N.A.
50 mL	28.5 x 107	PTFE*	N.A.	363076	N.A.	N.A.	N.A.	N.A.
50 mL	29 x 104	PE	357001 361694	357003	N.A.	358627	961582	356284
50 mL	29 x 104	PC	357000 361693	357002	N.A.	358627	961582	356284
70 mL	38 x 102	PC	355620	N.A.	355655	334545	870384	334547
85 mL	38 x 104	PC	363081	N.A.	N.A.	N.A.	N.A.	N.A.
85 mL	38 x 104	PP	N.A.	364719	N.A.	N.A.	N.A.	N.A.
				363082	N.A.	N.A.	N.A.	N.A.
100 mL	38 x 102	PP	355624	355624	355626	N.A.	N.A.	355625
180 mL	55 x 104	PE	N.A.	361245	N.A.	N.A.	N.A.	N.A.
230 mL	62 x 141	PE	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	355673	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	W PC	361690	N.A.	355649	N.A.	927860	360954
500 mL	69 x 160	W 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	A98812	N.A.	366751	393898	A98817	B10317
1000 mL	95 x 191	PP	A98813	N.A.	A98814	393898	A98817	B10317
1000 mL	95 x 191	PP	B29896	N.A.	A98814	393898	A98817	B29894
1000 mL	97 x 167	PC	N.A.	355675	341984	N.A.	N.A.	344693
1000 mL	97 x 167	PP	N.A.	355676	341985	N.A.	N.A.	344693

PA = Polyallomer PC = Polycarbonate PE = Polyethylene PP = Polypropylene PPSU = Polyphenylsulfone
PTFE = Polytetrafluoroethylene C = Conical W = Wide-Mouth N.A. = Not Available

** With high-speed screw-on caps.*

2

Adapters and Sleeves for Non-Beckman Coulter Tubes/Bottles*

Rotor	Tube Vol. mm	Size	# of Places Number	Part
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
JLA 16.250/ 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	5	356995
	50 mL	Conical	1	356966
	50 mL	Round-bottom	1	356997
JLA-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
JS-4.2 & JS-4.2A	3 mL	Conical	26	339100
	15 mL	Conical	14	339102
	250 mL	Conical	1	349849

Adapters for Glass Tubes in Beckman Coulter Rotors*

Rotor Volume	Tube	Tube Material Part Number	Adapter
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 & JS-4.2A	3 mL	Pyrex Conical	339100
	15 mL	Corex, Pyrex, Corex & Pyrex Conical and Conical Graduated	339102
	30 mL	Corex	341977
	150 mL	Corex	339108/ 339362

* *Check with tube manufacturer for maximum allowable g-force.*

Tubes and Bottles Used in High-Performance and High-Capacity Rotors

Nominal Filling Capacity (mL)	Nominal Size (mm)	Inches	Part No.	Rotors
Quick-Seal Polypropylene Tubes				
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, Polypropylene				
4.3	16 x 38	0.65 x 2.5	356562	JS-24.15
6.3	16 x 45	0.65 x 1.8	345830	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 (*k*onical)	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 (*k*onical)	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
Open-Top Tubes, Polypropylene				
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
Open-Top Tubes, Polypropylene, Thickwall				
4.0	13 x 64	0.5 x 2.5	355644	JA-25.15
10.0	16 x 76	0.65 x 3.0	355640	JA-25.15, JA-21, JA-20.1, JS-5.2, JS-4.3, JS-4.2, JS-4.2A, JS-4.0, JS-3.0
12.5	16 x 95	0.625 x 3.75	361708 (*k*onical)	JS-24.15
32.0	25 x 89	1.0 x 3.5	355642	JS-24.38
Open-Top Tubes, Polycarbonate				
15.0	18 x 100	0.725 x 4.0	342080	JA-25.15, JA-20.1, JS-5.2, JS-4.3, JS-4.2, JS-4.2A, JS-4.0, JS-3.0
50.0	29 x 104	1.125 x 4.0	363647	JA-30.50, JA-25.50, JA-20, JA-18, JA-17, JA-14, JLA-10.500, JA-10, JLA-9.1000, JLA-8.1000, JS-7.5, JS-5.2, JS-4.3, JS-4.2, JS-4.2A, JS-4.0, JS-3.0
Open-Top Tubes, Polycarbonate, Thickwall				
4.0	13 x 64	0.5 x 2.5	355645	JA-25.15
10.0	16 x 76	0.65 x 3.0	355630	JA-25.15, JA-21, JA-20.1, JS-13.1, JS-5.2, JS-4.3, JS-4.2, JS-4.2A, JS-4.0, JS-3.0
32.0	25 x 89	1.0 x 3.5	355631	JS-24.38
Open-Top Tubes, Polyethylene, Thickwall				
15.0	18 x 100	0.725 x 4.0	342081	JA-25.15, JA-20.1, JS-5.2, JS-4.3, JS-4.2, JS-4.2A, JS-4.0, JS-3.0

Tubes and Bottles

Nominal Filling Capacity (mL)	Nominal Size (mm)	Inches	Part No.	Rotors
Open-Top Tubes, Polypropylene, Thickwall				
4.0	13 x 64	0.5 x 2.5	355645	JA-25.15
15.0	18 x 100	0.725 x 4.0	342082	JA-25.15, JA-20.1, JS-5.2, JS-4.3, JS-4.2, JS-4.2A, JS-4.0, JS-3.0
50.0	29 x 104	1.125 x 4.0	357007	JA-30.50 Ti, JA-25.50, JA-20, JA-18, JA-17, JLA-16.250, JA-14, JLA-10.500, JA-10, JLA-9.1000, JLA-8.1000, JS-7.5, JS-5.2, JS-4.3, JS-4.2, JS-4.2A, JS-4.0, JS-3.0
Open-Top Tubes, Ultra-Clear				
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
Tubes with Snap-On Caps, Polypropylene				
1.5	11 x 38	0.4 x 1.5	357448 - Natural	JA-30.50 Ti, JA-25.50, JA-20, JA-18.1, JA-18, JS-13.1, JS-5.2, JS-4.3, JS-4.2, JS-4.2A, JS-4.0, JS-3.0
Tubes with Snap-On Caps, Polycarbonate				
50.0	29 x 104	1.125 x 4.0	363664	JA-30.50 Ti, JA-25.50, JLA-16.250, JA-14, JLA-10.500, JA-10, JLA-9.1000, JLA-8.1000, JS-13.1, JS-7.5, JS-5.2, JS-4.3, JS-4.2, JS-4.2A, JS-4.0, JS-3.0
Tubes with Snap-On Caps, Polypropylene				
1.5	11 x 38	0.4 x 1.5	356090 - Natural	JA-30.50 Ti, JA-25.50, JA-20, JA-18, JA-18.1, JS-13.1, JS-5.2, JS-4.2, JS-4.3, JS-4.2A, JS-4.0, JS-3.0
1.5	11 x 38	0.4 x 1.5	356091 - Blue	JA-20, JA-18, JA-18.1, JS-13.1,JS-5.2, JS-4.3, JS-4.2, JS-4.2A, JS-4.0, JS-3.0
1.5	11 x 38	0.4 x 1.5	356093 - Yellow	JA-20, JA-18, JA-18.1, JS-13.1,JS-5.2, JS-4.3, JS-4.2, JS-4.2A, JS-4.0, JS-3.0
1.5	11 x 38	0.4 x 1.5	356094 - Orange	JA-20, JA-18, JA-18.1, JS-13.1,JS-5.2, JS-4.3, JS-4.2, JS-4.2A, JS-4.0, JS-3.0
1.5	11 x 38	0.4 x 1.5	343169- Natural (cap separate)	JA-18.1, JA-18, JS-5.2, JS-4.3, JS-4.2, JS-4.2A, JS-4.0, JS-3.0
50.0	29 x 103	1.125 x 4.0	357005 - Natural (cap separate)	JA-30.50 Ti, JA-25.50, JA-20, JA-17, JLA-16.250, JA-14, JLA-10.500, JA-10, JLA-9.10000, JLA-8.1000, JS-13.1, JS-7.5, JS-5.2, JS-4.3, JS-4.2, JS-4.2A, JS-4.0, JS-3.0
Tubes with Snap-On Caps, Polyethylene				
1.8	11 x 39	0.4 x 1.5	340196 - Natural	JA-20, JA-18.1, JA-18, JS-13.1, JS-5.2, JS-4.3, JS-4.2, JS-4.2A, JS-4.0, JS-3.0
Bio-Vial Tubes				
4.0	14 x 55	.5625 x 2.25	566353 - Polypropylene	JLA-16.250, JA-14, JLA-10.500, JA-10, JLA-9.1000, JLA-8.1000, JS-7.5, JS-5.2, JS-4.3, JS-4.2, JS-4.2A, JS-4.0, JS-3.0
Bottles Only				
70.0	38 x 102	1.5 x 4.0	355655 - Polycarbonate	JS-5.2, JS-4.2, JS-4.2A, JS-4.0, JS-3.0
100.0	38 x 102	1.5 x 4	355626 - Polypropylene	JS-5.2, JS-4.2, JS-4.2A, JS-4.0, JS-3.0
500.0	69 x 160	2.75 x 6.5	355649 - Polycarbonate	JS-5.2, JS-4.2, JS-4.2A, JS-4.0, JS-3.0
500.0	69 x 160	2.75 x 6.5	355650 - Polypropylene	JS-5.2, JS-4.3, JS-4.2, JS-4.2A, JS-4.0, JS-3.0
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	A98814 - Polypropylene	JLA-9.1000, JLA-8.1000

Tubes and Bottles

Nominal Filling Capacity (mL)	Nominal Size (mm)	Inches	Part No.	Rotors
Bottles with Cap Assemblies, Polypropylene				
50.0	29 x 104	1.25 x 4.0	357001	JA-30.50 Ti, JA-20, JA-17, JLA-16.250, JA-14, JLA-10.500, JA-10, JLA-9.1000, JLA-8.1000, JS-5.2, JS-4.3, JS-4.2, JS-4.2A, JS-4.0, JS-3.0
50.0	29 x 104	1.25 x 4.0	361694	JA-25.50, JA-17, JA-14, JS-5.2, JS-4.3, JS4.2, JS-4.2A, JS-4.0, JS-3.0
Bottles with Cap Assemblies, Polycarbonate				
50.0	29 x 104	1.25 x 4.25	361693	JA-25.50, JA-17, JS-4.3
50.0	29 x 104	1.25 x 4.25	357000	JA-30.50 Ti, JA-20, JA-17, JLA-16.250, JA-14, JLA-10.500, JA-10, JLA-9.1000, JLA-8.1000, JS-7.5, JS-5.2, JS-4.3, JS-4.2, JS-4.2A, JS-4.0, JS-3.0
70.0	38 x 102	1.5 x 4.0	355620	JA-18, JS-5.2, JS-4.2, JS-4.2A, JS-4.0, JS-3.0
500.0	62 x 166	2.75 x 6.5	361690	JLA-10.500
250.0	62 x 122	2.5 x 4.75	358275 (wide mouth)	JS-5.2, JS-4.2, JS-4.3, JS-4.2A, JS-4.0, JS-3.0
500.0	69 x 160	2.75 x 6.5	355605 (wide mouth)	JA-10, JLA-9.1000, JLA-8.1000, JS-5.2, JS-4.2, JS-4.2A, JS-4.0, JS-3.0
1000.0	95 x 191	3.8 x 7.65	A98812	JLA-9.1000, JLA-8.1000
Bottles with Cap Assemblies, Polypropylene				
10.4	16 x 76	0.6 x 3.0	355603	JS-7.5
250.0	62 x 120	2.5 x 4.75	358326 (wide mouth)	JS-5.2, JS-4.3, JS-4.2, JS-4.2A, JS-4.0, JS-3.0
500.0	69 x 160	2.75 x 6.5	355607 (wide mouth)	JA-10, JLA-9.1000, JLA-8.1000, JS-5.2, JS-4.3, JS-4.2, JS-4.2A, JS-4.0, JS-3.0
500.0	69 x 160	2.75 x 6.5	361691	JLA-10.500
1000.0	95 x 191	3.8 x 7.65	A98813	JLA-9.1000, JLA-8.1000
1000.0	95 x 191	3.8 x 7.65	B29896	JLA-9.1000, JLA-8.1000
Bottles with Screw-On Caps, Polypropylene				
50.0	29 x 104	1.25 x 4.0	357003	JA-30.50 Ti, JA-25.50, JA-20, JA-18, JA-17, JLA-16.250, JA-14, JLA-10.500, JA-10, JLA-9.1000, JLA-8.1000, JS-13.1, JS-7.5, JS-5.2, JS-4.3, JS-4.2, JS-4.2A, JS-4.0, JS-3.0
Bottles with Screw-On Caps, Polycarbonate				
10.0	16 x 80	0.6 x 3.2	355672	JA-30.50 Ti, JA-25.50, JA-25.15, JA-21, JA-20.1, JA-20, JA-17, JS-13.1, JS-5.2, JS-4.2, JS-4.2A, JS-4.0, JS-3.0
50.0	29 x 104	1.25 x 4.0	357002	JA-30.50 Ti, 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-5.2, JS-4.3, JS-4.2, JS-4.2A, JS-4.0, JS-3.0
230.0	62 x 141	2.5 x 5.25	356987 (conical)	JA-14, JS-7.5, JS-5.2, JS-4.3, JS-4.2, JS-4.2A, JS-4.0, JS-3.0
250.0	62 x 120	2.5 x 4.75	356013 (wide mouth)	JLA-16.250, JA-14, JLA-10.500, JA-10, JLA-9.1000, JLA-8.1000, JS-7.5, JS-5.2, JS-4.3, JS-4.2, JS-4.2A, JS-4.0, JS-3.0
250.0	62 x 136	2.5 x 5.5	355673	JS-7.5, JS-5.2, JS-4.3, JS-4.2, JS-4.2A, JS-4.0, JS-3.0
500.0	69 x 160	2.75 x 6.5	355664	JS-5.2, JS-4.2, JS-4.2A, JS-4.0, JS-3.0
750.0	96 x 130	3.75 x 5.25	358299	JS-5.2, JS-4.3, JS-4.2, JS-4.2A, JS-4.0, JS-3.0
1000.0	97 x 167	3.75 x 6.75	355675	JS-5.2, JS-4.2, JS-4.2A, JS-4.0, JS-3.0
Bottles with Screw-On Caps, Polypropylene				
100.0	38 x 102	1.5 x 4.0	355624	JA-18, JS-5.2, JS-4.2, JS-4.2A, JS-4.0, JS-3.0
230.0	62 x 141	2.5 x 5.5	356989 (conical)	JA-14, JS-7.5, JS-5.2, JS-4.3, JS-4.2, JS-4.2A, JS-4.0, JS-3.0
250.0	62 x 120	2.5 x 4.75	356011 (wide mouth)	JLA-16.250, JA-14, JLA-10.500, JA-10, JLA-9.1000, JLA-8.1000, JS-7.5, JS-5.2, JS-4.3, JS-4.2, JS-4.2A, JS-4.0, JS-3.0
500.0	69 x 159	2.75 x 6.5	355665	JA-10, JS-5.2, JS-4.3, JS-4.2, JS-4.2A, JS-4.0, JS-3.0
750.0	96 x 130	3.75 x 5.25	356855	JS-5.2, JS-4.3, JS-4.2, JS-4.2A, JS-4.0, JS-3.0
1000.0	97 x 167	4.0 x 6.75	355676	JS-5.2, JS-4.2, JS-4.2A, JS-4.0, JS-3.0
Bottles with Screw-On Caps, Polytetrafluoroethylene (PTFE)				
50.0	28.5 x 107	1.25 x 4.25	363076	JS-4.2

HarvestLine System Liners

Unique design enhances productivity

HarvestLine disposable bottle liners provide a significant improvement in the centrifugation of biological material. HarvestLine System Liners save time in the handling and retrieval of sample. Used in Avanti Series centrifuges, these unique liners provide a convenient method of loading, recovering, and storing samples.

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.

JLA-8.1000 and JLA-9.1000 Fixed Angle Rotor with Liners

The 6 x 1 liter JLA-8.1000 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 4 x 1 liter JLA-9.1000 rotor provides up to 16 800 x *g* for high throughput.

JS-5.0 Swinging Bucket Rotor with Liners

The 4 x 2.25 liter JS-5.0 rotor with liners is ideal for greater sample throughput. Use this system to separate bacterial, yeast, and tissue homogenates. At 7 480 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).

HarvestLine System for JLA-8.1000 and JLA-9.000 Rotors

HarvestLine System for JS-5.0 Rotor

Specifications

Maximum Speed	
in the JS-5.0 rotor	5 000 rpm
in the JLA-8.1000 rotor	8 000 rpm
in the JLA-9.1000 rotor	9 000 rpm
Maximum *g*-force	
in the JS-5.0 rotor	7 480 × *g*
in the JLA-8.1000 rotor	15 970 × *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** Includes 369256 one-liter bottle liners (qty 120), 368740 filling rack, 977472 funnel, and 369267 instructional CD.
369256	**HarvestLine System Liners** Fits JLA-8.1000 or JLA-9.1000 one-liter bottles (qty. 120).
368735	**HarvestLine System Liners** Fits JS-5.0 J-Wide Cups (qty. 50).

Tools and Supplies

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		
		Avanti J	J6-MI	Avanti J-HC
Proteins	Ammonium sulfate precipitates	●		
	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 *(continued)*

Materials to Be Isolated	Specific Application	Centrifuges Typically Used		
		Avanti J	J6-MI	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:

$$S = 10^{-13} \text{ seconds}$$

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

Field Service Support

Most of us appreciate the need for careful design, handling, and maintenance of certain kinds of laboratory equipment—the optics of a spectrophotometer, for example. It may not be obvious, however, that anything as substantial looking as a centrifuge rotor must be properly maintained during use in order for it to fulfill its life expectancy.

If you consider that, during rotation, a High-Performance Centrifuge Rotor may experience more than 110,000 times the force of gravity, it becomes apparent that seemingly minor flaws will assume much greater significance at these *g*–forces. In effect, one gram will "weigh" 110 kilograms, and a tiny flaw in a critical part may generate stresses greater than the rotor was designed to withstand.

We at Beckman Coulter maintain stringent quality standards and rigorously test every rotor design. Specific instructions for care and maintenance are included in the rotor manual that accompanies each rotor. And our Field Rotor Inspection Program is available at no charge to all users of Beckman Coulter High-Performance Centrifuges and Ultracentrifuges.

Field Rotor Inspection Program. What Is It?

Our Field Rotor Inspection Program (FRIP) has two purposes: to prevent premature rotor failures by detection of stress corrosion, metal fatigue, wear or damage to anodized coatings; and to instruct laboratory personnel in the proper care of rotors.

Contact your local Beckman Coulter Service Office for details on the Field Rotor Inspection Program. Using nondestructive methods (fiber optics borescopy and dye-penetrant analysis), they may find signs of corrosion or other damage. If so, they will recommend repair or replacement, and a potentially costly failure may be prevented.

To give a fuller understanding of rotors, a comprehensive slide presentation is also offered. Centrifuge users are informed about maintenance procedures, rotor damage, and its significance. The stress corrosion of aluminum rotors, in particular, can be greatly reduced by good laboratory practice.

For more information about the Field Rotor Inspection Program (FRIP), please go to: http://www.beckmancoulter.com/FRIP.

Sometimes rotor corrosion is so bad it can be seen by the naked eye, while at other times it is not so apparent. If you have doubt about the condition of a single Beckman Coulter rotor, you may return it to the factory where it will be inspected free of charge by our metallurgists. The rotor will be examined by a variety of nondestructive methods, including ultrasound which is capable of detecting internal flaws. Before shipping the rotor, you must contact the nearest Beckman Coulter Sales and Service office for specific instructions. A written statement must accompany each rotor, indicating that it is safe to handle, (*i.e.* free of any pathogenic or radioactive contamination).

Rotor Safety Seminars

To help you get the most from your Beckman Coulter rotors, Rotor Safety Seminars are frequently presented by our Field Service engineers. Seminars are designed to remind centrifuge users about the importance of proper rotor care and maintenance.

When you attend a Beckman Coulter Rotor Safety Seminar, you will have an opportunity to ask questions that are specific to your particular situation, and you will learn:

- What causes corrosion in a rotor, where it starts, what it does to the rotor, and how to avoid it
- The proper way to clean and store rotors
- How to get longer life from your rotor

On-Site Rotor Inspection and Maintenance

Specially trained Beckman Coulter Field Service engineers are available at your request for on-site inspection and minor rotor maintenance. Rotors that are free of biological and radiological contamination can be brought to these sessions for immediate inspection so you can continue operating your centrifuge with confidence in the condition of your rotors.

A Comprehensive Approach to Centrifuge System Care

Throughout the world, Beckman Coulter Field Service engineers are on hand to provide the support you need. So you can operate your centrifuges worry-free, a number of programs are in place that cover preventive maintenance of your system, including parts, labor, drive systems, and rotors. It all adds up to a comprehensive approach to maximizing your system investment.

Contact your local Beckman Coulter Sales and Service office to find out the specifics about the program available in your area.

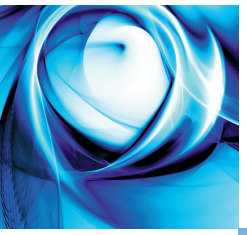
High-Performance & High-Capacity Centrifugation

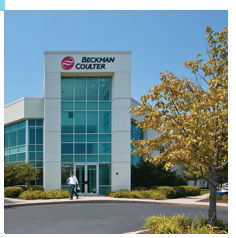
The power to accomplish more.

In the footsteps of our founder, Arnold O. Beckman, Ph.D., we at Beckman Coulter remain dedicated to your resourcefulness—helping to create productive and efficient laboratories, by providing high-quality centrifuges.

And with our high-performance and high-capacity solutions, we've set an all-new standard for enhanced power, speed and flexibility. As a result, you can achieve more throughput and greater control over your lab's workflow.

When you experience firsthand the quality built into our high-performance and high-capacity centrifuges, you'll see just how far innovation can lead.





A global presence. Focused on individuals.

Our innovations happen behind the scenes. Yet we touch people the world over by developing, manufacturing and marketing discovery systems and products that improve human health.

For over 75 years, we've been building a global reputation in hospitals, labs, and universities, where our life science research instruments are relied upon to perform vital roles day in and day out. Whether helping to solve complex biological problems, investigate the causes of disease, or find potential new cures, Beckman Coulter is focused on innovations that ultimately lead to healthier lives.

www.beckmancoultercentrifugation.com

Biosafety § **BioSafe** and **BioSafety** are terms intended to describe the enhanced biocontainment features of our products.

BIOC ¥ **BioCertified** is a term used to describe our products which have been tested and validated to demonstrate containment of microbiological aerosols by an independent, third-party facility (Health Protection Agency, Porton Down, UK or USAMRIID, Ft. Detrick, MD, USA). Improper use or maintenance may affect seal integrity and, thus, containment.

BIOE ¤ **BioEnhanced** is a term intended to describe our products' enhanced level of biocontainment by design.

BECKMAN COULTER

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