



High capacity, versatility

J6 SERIES

HIGH-CAPACITY CENTRIFUGE



The J6 Series High-Capacity Centrifuge: One Exceptional Instrument for All Your Application Needs

A versatile, high-capacity centrifuge, the J6 continues our tradition of rugged reliability in a quiet floor centrifuge. With a wide range of rotors—including the ARIES™, featuring self-balancing technology—carriers, adapters and other accessories, the J6 can handle all of your high-capacity centrifuge applications.

In addition, the J6 Series offers important safety features with special diagnostics built in, and accessories designed to contain aerosols in the event of tube breakage.

Available in three models — from the basic, easy-to-operate analog to the sophisticated digital models — the J6 maximizes your throughput in a wide range of applications:

- **One instrument for *all* your application needs**

A variety of rotors, innovative MultiDisc™ adapters and cups handle everything from tubes to blood bags and 1-liter bottles. And the J6 can spin the full range of J2 high-speed rotors.

- **ARIES Smart Balance Technology provides unmatched performance**

ARIES (Automatic Rotor Imbalance Equilibrating System) technology simplifies processes by eliminating manual sample balancing. ARIES rotors are designated by the letter “A.”

- **Maximum uptime for increased productivity**

Rugged, belt-drive motors provide higher torque and faster acceleration and offer low wear and long motor life.

Added Lab Safety through Product Innovations

- Sophisticated detection systems prevent operation in the event of rotor imbalance, overspeed or overtemperature conditions.
- For operator protection, an electronic door interlock ensures that the chamber door is securely closed before a run can begin, and remains locked during the course of the run.
- Unique AeroSeal™ rotor bucket covers are designed to protect against hazardous aerosol emissions.
- All-steel chamber construction surrounded by a steel barrier ring and steel plate in the chamber door provides three levels of physical containment.



Choose from three different J6 models. All fit nicely in nearly any laboratory, due to their rear-mounted intake and exhaust ducts, allowing instruments to operate side-by-side. And with superior sound suppression and low heat output, you may not even know they're there—even with several instruments running simultaneously.

The J6-MI — Simply the Best High-capacity Centrifuge You Can Get

To all the advanced features standard to J6 Series instruments, we've added even more to the J6-MI.

The brushless induction drive, based on Beckman Coulter's legendary ultracentrifuge technology, virtually eliminates maintenance for the ultimate in throughput and productivity. Plus microprocessor control with ten different acceleration and deceleration profiles gives you the utmost control over run conditions.

With the top-of-the-line J6-MI, you enjoy:

- **Worry-free performance for years of outstanding throughput**

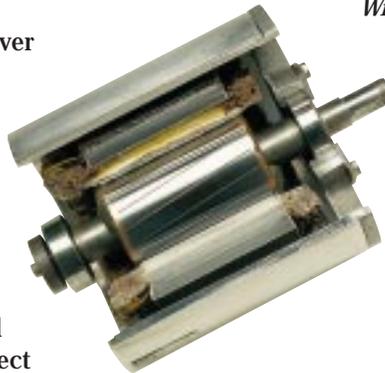
With its advanced induction drive, you'll never have to change brushes, because there are none. This innovative drive provides outstanding performance and long drive life. It's so reliable we warrant it for a full three years.

- **Accel/decel profile for your every application need**

Choose from 10 dual-ramp acceleration and deceleration settings that allow you to protect your delicate gradients from abrupt speed changes in the crucial range between 0 and 500 rpm. For maximum flexibility and control over accel/decel conditions, the acceleration profiles are independent of the deceleration profiles.

- **Cool, quiet operation for a comfortable lab environment**

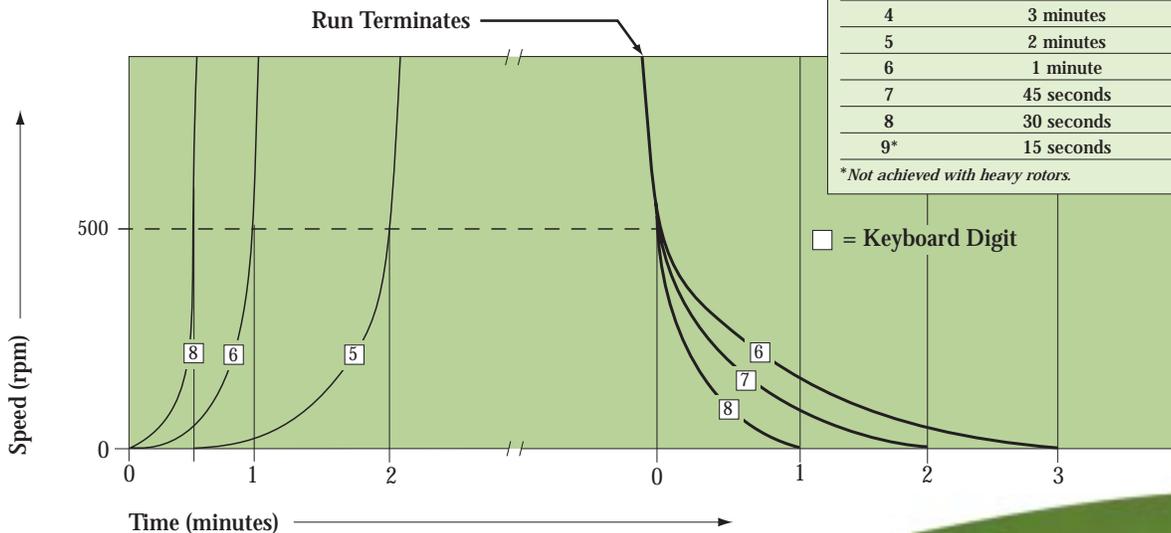
The J6-MI generates less than 7,000 Btu/h and 59 dBA — a fraction of the heat and sound levels of typical high-capacity centrifuges. You'll see increased productivity as laboratory personnel work with greater efficiency in a quiet, comfortable lab.



With the J6-MI, carbon brushes, which are the primary source of drive wear, have been eliminated. Like Beckman Coulter ultracentrifuge drives, this innovative drive uses a rotating magnetic field to induce torque-producing current. With no brushes to wear out, you get high performance that is virtually maintenance-free.

| Keyboard Digit | ACCEL time from 0 to 500 rpm | DECEL time from 500 to 0 rpm |
|----------------|------------------------------|------------------------------|
| 1 | 10 minutes | 15 minutes |
| 2 | 6 minutes | 12 minutes |
| 3 | 4 minutes | 9 minutes |
| 4 | 3 minutes | 6 minutes |
| 5 | 2 minutes | 4 minutes |
| 6 | 1 minute | 3 minutes |
| 7 | 45 seconds | 2 minutes |
| 8 | 30 seconds | 30 seconds |
| 9* | 15 seconds | 30 seconds |

*Not achieved with heavy rotors.



So you have complete control over how gently your rotor starts and stops, the J6-MI offers ten profiles each for acceleration and deceleration. When you press ACCEL followed by a number on the keypad, you choose the time it will take to reach 500 rpm. On DECEL, you choose how much time it will take to come to rest from 500 rpm. This table shows the accel/decel times you can select. If no rates are selected, maximum rates will automatically be used.

The Economical J6-HC or the Precise J6-MC With Advanced Brush Drive for High Throughput and Maximum Uptime

A high-performance dc drive will give you excellent throughput with the J6-HC. And, when routine maintenance calls for a brush replacement, the job is quick and easy, thanks to the drive's advanced design that simplifies maintenance. You'll be up and running in no time!

Like the other J6 Series instruments, it can also spin both high-capacity J6 rotors and high-speed J2 rotors, providing excellent applications versatility. Other benefits include:

- **Substantial return on your investment**
Handles a broad range of applications by virtue of its large selection of rotors and adapters.
- **Easy to operate**
Analog controls make the J6-HC simple to understand.
- **High throughput**
Spins up to six liters of sample or 222 tubes.
- **Minimum downtime**
The rugged drive system and flexible spindle assembly of the J6 sets the industry standard for reliability and serviceability.

A toggle switch for speed calibration of the J6-HC, a periodic procedure important when duplicating runs, is easily accessible on a circuit board at the rear of the control panel. Operators are protected from high-voltage electronics by a metal safety plate.



With simple dials for setting speed, time and braking mode, you'll have no trouble learning to enter run parameters. Easy-to-read analog gauges indicate both rotor speed and rotor temperature. Embossed on the temperature gauge are green and red scores that tell you at a glance the desired temperature and maximum allowable temperature, respectively. Diagnostic lights alert you to rotor imbalance, overtemperature or brush failure conditions.



With the same dc drive as the J6-HC, the J6-MC offers the same performance advantages, plus the added precision, convenience and separation efficiency provided by microprocessor control:

- **Low heat output**

Because of the belt-drive motor design, motor load is minimized, providing low heat output (less than 7,000 Btu/h).

- **Precise control over run parameters**

The microprocessor control system provides you with parameters that are within ± 20 rpm of set speed; $\pm 1^\circ\text{C}$ of set temperature after dynamic calibration (no more freezing of samples due to poor temperature control!).

- **Easy programming**

You can quickly and easily program and recall up to 10 run protocols, virtually eliminating erroneous settings when doing repetitive runs.

- **Higher-quality separations**

Three dual-ramp settings provide controlled accel/decel between 0 and 500 rpm, protecting gradients from abrupt speed transitions that might damage the separation. A unique rotor identification system adjusts temperatures to compensate for each individual rotor's windage.

- **Safety**

A rotor recognition/overspeed protection system prevents setting speeds that are higher than the maximum speed of the rotor.



The smooth, rugged drive of the J6-HC and the J6-MC minimizes downtime because its belt drive allows it to be positioned near the front of the instrument, where it is readily accessible for periodic brush changes. Throughput is maximized due to its high-torque performance and its favorable drive ratio, giving it a significant mechanical advantage over the rotors it spins.

Because of their similarity in design, when you learn one digital Beckman Coulter centrifuge control panel—all others quickly become second nature. Use the keypad to identify the rotor; set speed, time, and temperature; choose accel/decel profiles; program up to 10 run protocols and recall runs already programmed. To check displayed conditions against those programmed, simply press ENTER/RECALL, and set conditions appear for three seconds. If desired, a key lock can be used to fix parameters, so settings cannot be accidentally altered during a run.





JS-5.2



JS-4.2SMA



JS-4.0



JS-4.2A

J6 Rotors for Maximum Applications Versatility

Beckman Coulter rotors are designed to help you get the most from your J6 Series instrument.

Workhorse swinging-bucket rotors were designed with versatility in mind. By choosing the necessary adapter(s), these rotors can spin everything from tissue culture in 1-liter bottles to blood bags. The JS-4.2SM, JS-4.2SMA, JS-4.2, JS-4.2A and JS-5.2 are windshielded swinging-bucket rotors that can spin blood bags.

Special carriers for microtiter plates slip right into the rotor yokes that hold swinging buckets, quickly converting the rotor to a special-purpose separation tool.



Rotors

| Rotor type | Max. speed (rpm) | Maximum force | | Rotor capacity | Approx. accel./decel. time | Part number |
|--------------------------------------|------------------|-------------------------------|-------------------------------|---|----------------------------|-------------|
| | | At <i>r</i> min. (<i>g</i>) | At <i>r</i> Max. (<i>g</i>) | | | |
| Swinging Bucket | | | | | | |
| JS-5.2 (Windshielded) | 5,200 | 2,600 (86 mm) | 6,835 (226 mm) | 4 Liters 4 blood bags 12 microplates 148 RIA tubes | 2.0/2.5 min. | 339087 |
| JS-4.2A* (Windshielded) | 4,200 | 2,248 (114 mm) | 5,010 (254 mm) | 6 Liters 6 blood bags 18 microplates 336 RIA tubes | 2.5/3.0 min. | 366695 |
| JS-4.2 (Windshielded) | 4,200 | 2,248 (114 mm) | 5,010 (254 mm) | 6 Liters 6 blood bags 18 microplates 336 RIA tubes | 2.5/3.0 min. | 339080 |
| JS-4.0 (Unshielded) | 4,000 | 1,539 (86 mm) | 4,044 (226 mm) | 4 Liters 4 blood bags 12 microplates 148 RIA tubes | 1.5/2.0 min. | 339086 |
| JS-3.0 (Unshielded) | 3,000 | 1,147 (114 mm) | 2,556 (254 mm) | 6 Liters 6 blood bags 18 microplates 336 RIA tubes | 2.0/1.5 min. | 339081 |
| Microplate Carriers, 6-bucket Rotors | 2,500 | 1,302 (186 mm) | 1,498 (214 mm) | 18 plates | ** | 358682 |
| Microplate Carriers, 4-bucket Rotors | 2,600 | 1,241 (164 mm) | 1,453 (192 mm) | 12 plates | ** | 358680 |
| Special Blood Bag | | | | | | |
| JS-4.2SMA* (Windshielded) | 4,200 | 2,297 (116 mm) | 4,907 (248 mm) | 6 blood bags 18 Microplates | 2.5/3.0 min. | 366670 |
| JS-4.2SM (Windshielded) | 4,200 | 2,297 (116 mm) | 4,907 (248 mm) | 6 blood bags 18 Microplates | 2.5/3.0 min. | 348394 |

* Use of sealed plates in ARIES rotors is recommended.

** Accel/Decel times will vary depending on whether carriers are used in an unshielded or a windshiled rotor, and the number of microplates being used.

Carriers to spin microtiter plates used in serum studies are interchangeable with the buckets of the horizontal rotors. Each carrier holds up to three plates for a total of 18 plates per run in the six-place rotor and 12 plates per run in the four-place rotors.

Beckman Coulter Rotor Accessories

Beckman Coulter adapters, AeroSeal™ covers and other accessories bring added utility and safety to the J6 rotor line.

Eleven color-coded Multi-Disc™ adapters fit inside the J6's swinging-buckets, accommodating tube and bottle diameters ranging from 10 mm to 98 mm. The adapters are autoclavable and can serve as handy storage racks. Special rubber bases are shaped to support individual tubes/bottles, and can be obtained for both conical and round-bottom shapes.

Special AeroSeal™ covers work with swinging buckets, using an o-ring seal designed to protect against biohazardous aerosol emission. Blood bag cups support blood bags of all sizes and shapes.

Modular Adapters

| Color Code | Typical tube/bottle sizes used | Max. tube diameter | No. discs per adapter* | Number per adapter | Number per JS-5.2 or JS-4.0 rotor | Number per JS-4.2 or JS-3.0 rotor | Adapter assembly part number |
|--|--------------------------------|--------------------|------------------------|--------------------|-----------------------------------|-----------------------------------|------------------------------|
|  Blue | 3- and 5-mL | 12 mm | 5 | 37 | 148 | 222 | 339100 |
|  Orange | 10-mL | 14 mm | 6 | 24 | 96 | 144 | 339101 |
|  Purple | 12-mL | 16 mm | 8 | 19 | 76 | 114 | 341977 |
|  Green | 20-mL | 18 mm | 8 | 14 | 56 | 84 | 339102 |
|  Yellow | 50-mL | 28 mm | 7 | 7 | 28 | 42 | 339103 |
|  Lt. Green | 50-mL conical | 29 mm | 5 | 4 | 16 | 24 | 345386 |
|  Dark Blue | 50-mL | 35 mm | 7 | 4 | 16 | 24 | 341794 |
|  Brown | 100-mL | 44 mm | 4 | 2 | 8 | 12 | 339104 |
|  Red | 250-mL | 62 mm | 8 | 1 | 4 | 6 | 339108 |
|  Yellow | 500-mL | 70 mm | 9 | 1 | 4 | 6 | 339109 |
| Bottle Sleeve | | | | | | | |
|  Blue | 1 liter | 98 mm | — | 1 | 4 | 6 | 344040 |
| Double-Stacking Adapter | | | | | | | |
|  Blue/White | 3- and 5-mL | 12 mm | — | 19 | — | 114 | 339119 |
| Tube Retaining/Decanting Device | | | | | | | |
|  White | 3- and 5-mL | 12 mm | 1 | 37 | 148 | 222 | 343108 |

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

Rotor Accessories

Aerosol Covers

AeroSeal™ Covers for round buckets **343686**

Blood Bag Cups

Blood Bag Cup, yellow, for JS-5.2, JS-4.2, JS-4.2A, JS-4.0, JS-3.0 **339127**

Blood Bag Cup, orange, for JS-5.2, JS-4.2, JS-4.2A, JS-4.0, JS-3.0 **339129**

Blood Bag Cup, for JS-4.2SM*, JS-4.2SMA* **348359**

*Included in Rotor Assembly





Ordering Information

| | J6-HC | J6-MC | J6-MI |
|-------------|--------|--------|--------|
| 60 Hz/208v | 360271 | 360281 | 360291 |
| 60 Hz/240 V | 360272 | 360282 | 360292 |
| 50 Hz/220 V | 360273 | 360283 | 360293 |

Specifications

| | J6-HC | J6-MC | J6-MI |
|---------------------------|-----------------------|-----------------------|-----------------------|
| Performance Capabilities | 6,000 rpm/6,835 g | 6,000 rpm/6,835 g | 6,000 rpm/6,835 g |
| Heat Output | Less than 7,000 Btu/h | Less than 7,000 Btu/h | Less than 7,000 Btu/h |
| Speed Accuracy | 200 rpm | 20 rpm | 20 rpm |
| Weight | 235 kg (558 lb.) | 235 kg (558 lb.) | 235 kg (558 lb.) |
| Width | 710 mm (28 in.) | 710 mm (28 in.) | 710 mm (28 in.) |
| Depth | 710 mm (28 in.) | 710 mm (28 in.) | 710 mm (28 in.) |
| Height to Work Surface | 910 mm (35.5 in.) | 910 mm (35.5 in.) | 910 mm (35.5 in.) |
| Height to Top of Controls | 1,270 mm (50 in.) | 1,270 mm (50 in.) | 1,270 mm (50 in.) |
| Height with Door Open | 1,600 mm (63 in.) | 1,600 mm (63 in.) | 1,600 mm (63 in.) |
| Circuit Breaker | 25A | 30A | 30A |

| | J6-HC | J6-MC | J6-MI |
|--|-------|-------|-------|
| Imbalance Protection | • | • | • |
| Refrigeration | • | • | • |
| Door Interlock | • | • | • |
| Rotor Overspeed Protection | • | • | • |
| Steel Chamber Containment | • | • | • |
| 6,000 rpm/6,835 x g | • | • | • |
| Rear Intake/Exhaust | • | • | • |
| Full Range of J6 and J2 Rotors | • | • | • |
| Selectable Deceleration Profiles | • | • | • |
| Selectable Acceleration Profiles | | • | • |
| Microprocessor Control | | • | • |
| Programmable Memory | | • | • |
| Rotor Identification | | • | • |
| Sample Temperature Protection | | • | • |
| Key Lock to Fix Parameters | | • | • |
| High-Torque, Brushless Induction Drive | | | • |

Beckman Coulter instruments include automated liquid handling, capillary electrophoresis, centrifugation, ultracentrifugation, chromatography data systems, DNA sequencing, electrochemistry, HPLC, integrated core systems, laboratory data management, scintillation counting and spectrophotometry.



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