




Instructions for Use

StatSpin Express 2 Centrifuge Model Number M501-22

This manual is intended for

SSX2 - Express 2 for 100 to 240 VAC, 50/60 Hz

55-003910-001FE
December 2021

 Beckman Coulter, Inc.
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Instructions for Use**StatSpin Express 2 Centrifuge Model Number M501-22**

PN 55-003910-001FE (December 2021)

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www.beckmancoulter.com

Original Instructions

Revision History 55-003910-001

FE (December, 2021)

- Added: Product Description section
- Updated the following:
 - Copyright page
 - Symbols and Definitions
 - Safety Notices Warning and Cautions throughout
 - Accessories
 - Confirming the Contents
 - Error Indicators
 - Inspecting the Rotor Speed
 - Installing the System
 - Intended Use
 - Limited Warranty and Disclaimer
 - Opening and Closing the Cover
 - Removing and Installing the Rotor
 - Spinning the Sample

FD (September,2018)

- Moved: Symbol/Regulatory Mark and a link to the website in the California Proposition 65 statement

FC (March, 2018)

- Added: Symbols and Definitions table
- Updated: Manufacturer address, Warning and Cautions, Limited Warranty statement
- Deleted: CE, and EC Rep

FB (September, 2016)

- Converted the Express 2 Operator's Manual to a Beckman Coulter Instructions for Use (IFU)
- Made general clarifications to the IFU
- Updated Logo
- Added CE, and EC Rep
- Deleted "In Vitro Diagnostics", and IVD symbol
- Added warning and caution statements, and updated existing warning and caution statements
- Added the Recycling Label information
- Updated information in specification, symbol table, and troubleshooting sections

Revision History 55-003910-001

- Updated specifications, symbol tables, error codes, troubleshooting and maintenance sections
- Updated the limited warranty statement

Safety Notice

Read all product manuals and consult with Beckman Coulter-trained personnel before you operate the system. Do not perform any procedure before you carefully read all instructions. Always follow the product labels and the manufacturer's recommendations. If you have any questions:

- Visit <http://www.beckmancoulter.com>.
- US customers: Contact Beckman Coulter Customer Support at 1-800-854-3633.
- International customers: Contact your local distributor.

Alerts for Warning, Caution, Important, Note, and Tip



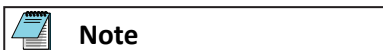
Warning indicates a potentially hazardous situation which can cause death or serious injury. Warning can indicate the possibility of erroneous data that could cause an incorrect diagnosis.



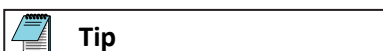
Caution indicates a potentially hazardous situation which can cause minor or moderate injury. Caution can also alert against unsafe practices, or indicate the possibility of erroneous data that could cause an incorrect diagnosis.



Important indicates important information to follow.



Note indicates notable information to follow.



Tip indicates information to consider.

Safety Notice

Warnings and Cautions

Warnings and Cautions

Pay close attention to the instructions that accompany the notes and symbols and the standard laboratory procedures outlined by your facility and local regulatory agencies.



Warning

Always operate the system with all shields in place and covers closed to avoid injury.

Perform system operations with caution.

Wear Personal Protective Equipment (PPE) such as gloves, eye shields, and lab coats.

Wash hands thoroughly after contact with sample media and all maintenance activities.

Observe all laboratory policies and procedures related to the handling of biohazardous materials.

Refer to the applicable sources (such as Safety Data Sheets) for specific hazard information.



Warning

Do not expose the rotor to strong or concentrated acids, bases, esters, aromatic or halogenated hydrocarbons, ketones, or strong oxidizing agents, or environmental influences, including natural ultra-violet radiation. Doing so will subject the rotor to corrosion or weakening of the construction.



Warning

Do not operate the centrifuge below the minimum operating temperature. Do not store the rotor below the minimum storage temperature. Doing so will subject the rotor materials to damage. See [Specifications](#).



Warning

Handle and dispose of sharp fragments according to the World Health Organization's Laboratory Biosafety Manual and relevant local and national regulations.



Warning

Safety protection may be impaired if the equipment is used in a manner not specified by the manufacturer.

 **Warning**

Inspect the instrument for cracks or any physical damage to housing, cover, and rotor upon the receipt of the unit. Damage can cause unsafe operation; if damage or cracks are found, discontinue use until repairs have been performed.

 **Warning**

Only reset the cycle counter after conducting the recommended inspections and service. Resetting the cycle counter without performing the recommended inspections and service reduces the reliability and safety of the instrument.

 **Warning**

Only use the external power supply (Beckman Coulter Part Number B95657) included with the centrifuge. This power supply is only for use with centrifuges that have a marked input current rating of 3A (shall not be used on units rated 1.7A). Use of any other external power supply can cause damage to the centrifuge and will void the warranty.

 **Warning**

Outside of North America: do not use the power cord supplied. Use power cord for at least 2.0 Amp with an IEC320/CEE22 female connector and male connector suitable for the power outlet to be used.

 **Warning**

Picking up or moving the centrifuge during operation can cause injury to the operator and/or damage to the centrifuge.

 **Warning**

Electromagnetic Compatibility

This device complies with the emissions and immunity requirements as specified in the EN/IEC 61326 series of Product Family Standards for a "basic electromagnetic environment." Such equipment is supplied directly at low voltage from public mains network. This equipment is not intended for residential use.

This device generates, uses, and can radiate unintentional radio-frequency (RF) energy. If this device is not installed and operated correctly, this RF energy can cause interference with other equipment. It is the responsibility of the end user to be sure

Safety Notice

Warnings and Cautions

that a compatible electromagnetic environment for the device can be maintained so that the device operates as intended.

This equipment is designed for use in a PROFESSIONAL HEALTHCARE FACILITY ENVIRONMENT. It is likely to perform incorrectly if used in a HOME HEALTHCARE ENVIRONMENT. If it is suspected that performance is affected by electromagnetic interference, correct operation may be restored by increasing the distance between the equipment and the source of the interference.

In addition, other equipment can radiate RF energy to which this device is sensitive. If one suspects interference between this device and other equipment, Beckman Coulter recommends the following actions to correct the interference:

- Evaluate the electromagnetic environment before installation and operation of this device.
- Do not operate this device close to sources of strong electromagnetic radiation (for example: unshielded intentional RF sources), as these can interfere with proper operation. Examples of unshielded intentional radiators are handheld radio transmitters, cordless phones, and cellular phones.
- Do not place this device near medical electrical equipment that can be susceptible to malfunctions caused by close-proximity to electromagnetic fields.
- This device has been designed and tested to CISPR 11, Class A emission limits. In a domestic environment, this device can cause radio interference, in which case, you need to take measures to mitigate the interference.

Caution

Disconnect the power cord of the external power supply from the electrical outlet before performing maintenance or inspection.

Caution

Do not spray cleaning solutions directly onto the centrifuge bowl or housing. Overspray can reach the motor bearings or internal circuitry, causing harm to the electronics and could also cause corrosion or weakening of the construction of the protective casing.

Before using any cleaning or decontamination methods other than those recommended by the manufacturer, users should check with the manufacturer that the proposed method will not damage the equipment. Cleaning and decontamination may be necessary as a safeguard before laboratory centrifuges, rotors, and any accessories are maintained, repaired, or transferred.

Caution

During operation maintain a 30 cm (12 inch) clearance around the centrifuge. The clearance must be free from obstruction and away from the edge of the surface that the centrifuge is on. The appliance coupler on the external power supply is considered the power source disconnect device, ensure that it is accessible after installation.

 **Caution**

Follow Universal Precautions with all biological specimens, regardless of whether the specimen is known to contain an infectious agent. (See [References](#))

 **Caution**

Use the same size and style tubes in opposite positions. Balance liquid in tubes to within 0.5mL. If glass tubes are used to balance rotor load, replace the glass balance tube every ten cycles to prevent possible breakage caused by the repeated stress of centrifugation. Replace the tube inserts immediately if a tube breaks during centrifugation.

 **Caution**

Inspect rotor on a routine basis. Rotor lifespan depends on usage. Inspect the rotor for cracks and replace the rotor immediately when any crack or visible wear occurs.

 **Caution**

Never operate the centrifuge without the rotor properly mounted and the locking nut tightened. Failure to install and secure the rotor correctly can damage the centrifuge.

 **Caution**

Replace a tube insert immediately if a tube breaks during centrifugation. Wear Personal Protective Equipment (PPE) such as gloves, eye shields, and lab coats.

 **Caution**

Running the centrifuge repeatedly with an unbalanced load condition can cause excessive vibrations and premature equipment failure.

 **Caution**

The cover interlock bypass is for emergency use only. Disconnect the power cord of the external power supply from the electrical outlet and ensure the rotor has come to a complete stop before using the interlock bypass. If the equipment is not used correctly, safety can be impaired.

 **Caution**

The instructions prohibit use of the specified materials within the centrifuge

Safety Notice

Symbols and Definitions

- flammable or explosive materials.
- materials which could react chemically with sufficient vigor to cause a hazard.



Caution

Ensure to replace the fuse with the correct type and rating for continued protection against risk of fire and/or improper instrument operation.



Caution

If the fuse continues to blow after being replaced, contact service for additional assistance.

Please use the instrument as intended. Improper use may cause damage to the instrument, inaccurate results, or potentially nullify warranties.

Symbols and Definitions

Table 1 Express 2 Symbols Glossary








| Symbol | Description |
|---|--|
|  | <p>Warning; Biological hazard</p> <p>This symbol indicates a warning of a biological hazard.</p> <p><i>ISO 7010. Graphical Symbols - Safety colors and safety signs. #W009</i></p> <p>Supplemental Product-Specific Manufacturer Information</p> <p>This symbol indicates a caution to operate only with all covers in position to decrease risk of personal injury or biohazard.</p> <p>This symbol indicates the use of biohazardous materials in the area. Use caution when working with possible infectious samples.</p> <p>Wear Personal Protective Equipment (PPE) such as gloves, eye shields, and lab coats. Handle and dispose of biohazardous materials according to your laboratory procedures.</p> |
|  | <p>Consult instructions for use</p> <p>This symbol indicates the need for the user to consult the instructions for use.</p> <p><i>ISO 15223-1. Medical devices - Symbols to be used with medical device labels, labelling and information to be supplied - Part 1: General Requirements. #5.4.3</i></p> |

Table 1 Express 2 Symbols Glossary (Continued)

| Symbol | Description |
|---|--|
|  | <p>Caution</p> <p>This symbol indicates the need for the user to consult the instructions for use for important cautionary information such as warnings and precautions that cannot, for a variety of reasons, be presented on the medical device itself.</p> <p><i>ISO 15223-1. Medical devices - Symbols to be used with medical device labels, labelling and information to be supplied - Part 1: General Requirements. #5.4.4</i></p> |
|  | <p>Warning; Crushing of hands</p> <p>This symbol indicates a warning of a closing motion of mechanical parts of equipment.</p> <p><i>ISO 7010. Graphical Symbols for electrical equipment in medical practices. #W024</i></p> <p>Supplemental Product-Specific Manufacturer Information</p> <p>Use caution to avoid injury to hands when close to equipment with moving mechanical parts.</p> |
|  | <p>Moving Parts Symbol</p> <p>This symbol indicates that there are moving parts in the area. Only operate the system when all covers are in position and use caution to reduce the risk of personal injury. While the system is operating, do not touch the moving parts of the system. Do not insert fingers or hands into any system opening.</p> |
|  | <p>cNRTLus Certification Mark</p> <p>This symbol indicates recognition by a Nationally Recognized Testing Laboratory (NRTL) that the system has met the relevant product safety standards for the United States and Canada.</p> <p><i>OSHA, CEC</i></p> |
|  | <p>RCM Symbol</p> <p>This symbol indicates compliance with the Australian Communications Media Authority (ACMA) requirements (safety and EMC) for Australia and New Zealand.</p> |

Safety Notice

Symbols and Definitions

Table 1 Express 2 Symbols Glossary (Continued)









| Symbol | Description |
|---|---|
|  | <p>Recycling Symbol</p> <p>This symbol is required by the Waste Electrical and Electronic Equipment (WEEE) Directive of the European Union. This symbol indicates that:</p> <ol style="list-style-type: none"> 1. The device was put on the European Market after August 13, 2005. 2. The device is not to be disposed of via the municipal waste collection system of any member state of the European Union. <p>Customers must understand and follow all laws regarding the correct decontamination and safe disposal of electrical equipment. For Beckman Coulter products bearing this label, contact your dealer or your local Beckman Coulter Representative for more information on the take-back program that facilitates the correct collection, treatment, recovery, recycling, and safe disposal of these products.</p> <p><i>EU Directive 2002-96-EC: waste electrical and electronic equipment (WEEE)</i></p> <p>For the Japan market:</p> <p>This system is considered an industrial waste, subject to special controls for infectious waste. Before disposal of the system, refer to the <i>Waste Disposal and Public Cleaning Law</i> for compliance procedures.</p> |
|  | <p>RoHS Caution Symbol</p> <p>This symbol indicates that this electronic information product contains certain toxic or hazardous elements, and can be used safely during its environmental protection use period. The number in the middle of the logo indicates the environmental protection use period (in years) for the product. The outer circle indicates that the product can be recycled. The logo also signifies that the product should be recycled immediately after its environmental protection use period has expired. The date on the label indicates the date of manufacture.</p> <p>These labels and materials declaration table (the Table of Hazardous Substance's Name and Concentration) meet People's Republic of China Electronic Industry Standard SJ/T11364-2006 <i>Marking for Control of Pollution Caused by Electronic Information Products</i> requirements.</p> |
|  | <p>"OFF" (power)</p> <p>This symbol indicates disconnection from the mains, at least for mains switches or their positions, and all those cases where safety is involved.</p> <p><i>IEC 60417: Graphical symbols for use on equipment - Overview and application, #5008</i></p> <p>Supplemental Product-Specific Manufacturer Information</p> <p>This symbol indicates the off position.</p> |

Table 1 Express 2 Symbols Glossary (Continued)

| Symbol | Description |
|---|--|
|  | <p>"ON" (power)</p> <p>This symbol indicates connection to the mains, at least for mains switches or their positions, and all those cases where safety is involved.</p> <p><i>IEC 60417: Graphical symbols for use on equipment - Overview and application, #5007</i></p> <p>Supplemental Product-Specific Manufacturer Information</p> <p>This symbol indicates the on position.</p> |
|  | <p>Alternating current</p> <p>This symbol indicates on the rating plate that the equipment is suitable for alternating current only; to identify relevant terminals.</p> <p><i>IEC 60417: Graphical symbols for use on equipment - Overview and application, #5032</i></p> |
|  | <p>Direct current</p> <p>This symbol indicates on the rating plate that the equipment is suitable for direct current only; to identify relevant terminals.</p> <p><i>IEC 60417: Graphical symbols for use on equipment - Overview and application, #5031</i></p> |
|  | <p>Date of Manufacture</p> <p>This symbol indicates the date when the medical device was manufactured.</p> <p><i>ISO 15223-1. Medical devices - Symbols to be used with medical device labels, labelling and information to be supplied - Part 1: General Requirements. #5.1.3</i></p> |
|  | <p>Manufacturer</p> <p>This symbol indicates the medical device manufacturer.</p> <p><i>ISO 15223-1. Medical devices - Symbols to be used with medical device labels, labelling and information to be supplied - Part 1: General Requirements. #5.1.1</i></p> <p>Supplemental Product-Specific Manufacturer Information</p> <p>This symbol indicates who the legal manufacturer of the product is.</p> |

Safety Notice

Symbols and Definitions

Table 1 Express 2 Symbols Glossary (Continued)



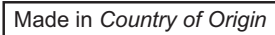












| Symbol | Description |
|---|--|
|  | <p>Catalogue Number</p> <p>This symbol indicates the manufacturer's catalogue number so that the medical device can be identified.</p> <p><i>ISO 15223-1. Medical devices - Symbols to be used with medical device labels, labelling and information to be supplied - Part 1: General Requirements. #5.1.6</i></p> |
|  | <p>Serial number</p> <p>This symbol indicates the manufacturer's serial number so that a specific medical device can be identified.</p> <p><i>ISO 15223-1. Medical devices - Symbols to be used with medical device labels, labelling and information to be supplied - Part 1: General Requirements. #5.1.7</i></p> |
|  | <p>Country of Origin Symbol</p> <p>This symbol indicates the country that the product was manufactured in.</p> |
|  | <p>Polarity of d.c. power connector</p> <p>This symbol indicates the positive and negative connections (the polarity) of a direct current power supply, or the positive and negative connections on a piece of equipment to which a direct current power supply may be connected.</p> <p><i>IEC 60417: Graphical symbols for use on equipment - Overview and application, #5926</i></p> |
|  | <p>California Proposition 65</p> <p>This symbol indicates that this product can expose you to chemicals known to the State of California to cause Cancer and Reproductive Harm. For more information go to https://www.P65Warnings.ca.gov.</p> |
|  | <p>Batch Code</p> <p>Indicates product lot number.</p> |
|  | <p>Do Not Reuse</p> <p>Indicates product is single use only.</p> |
|  | <p>Use By Date</p> <p>Indicates product expiration date</p> |

Table 1 Express 2 Symbols Glossary (Continued)

| Symbol | Description |
|---|---|
|  | <p>Contents</p> <p>Indicates product contents.</p> |
|  | <p>Temperature limitation</p> <p>Indicates storage requirements limit.</p> |
|  | <p>Start button</p> <p>The Start button initiates the pre-timed cycle at a fixed speed.</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p> Note</p> <p style="text-align: center;">The Express 2 has no on-off switch, and therefore is normally left plugged in and on.</p> </div> |
|  | <p>Stop or Open button</p> <p>The Stop or Open button interrupts the cycle and stops the centrifugation. This button can also be used to release the cover.</p> |
|  | <p>Cycle Selector</p> <p>The Cycle Selector button allows for selection of the cycle.</p> |
|  | <p>Error or Service Indicator</p> <p>The red indicator with an adjacent wrench symbol flashes to signal an error condition or remains continuously illuminated when service is needed.</p> |

Safety Notice

Symbols and Definitions

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Inspecting the Packaging

The StatSpin Express 2 and its accessories are delivered in one carton. If the centrifuge or accessories have suffered any damage in transport, inform your carrier immediately.



Note

Save shipping carton and components to simplify return if service is required.

Confirming the Contents

The package contains:

- One Express 2 centrifuge (Model No. M501-22)
- One centrifuge rotor (Product No. RTX4A)
- Four tube inserts for 13x75-mm tubes (Product No. SV01)
- One external power supply (Beckman Coulter Part No. B95657)
- One grounded power cord (for North American use only)
- One Instructions for Use
- One tool for removing rotor, 7/16" Nut Driver
- Warranty Card - Complete the warranty registration card as directed.

Installing the System

- 1 Place the StatSpin Express 2 on a level surface suitable for laboratory instrumentation.



Caution

During operation maintain a 30 cm (12 inch) clearance around the centrifuge. The clearance must be free from obstruction and away from the edge of the surface that the centrifuge is on. The appliance coupler on the external power supply is considered the power source disconnect device, ensure that it is accessible after installation.

- 2 Position the StatSpin Express 2 away from direct sunlight and sources of heat or cold. For the acceptable range of operating temperature and humidity, refer to [Specifications](#).
 - 3 Remove the foam packaging around the rotor and in the cover before operating the centrifuge.
-

Installation

Connecting the Power

Connecting the Power

Plug the external power supply into a grounded outlet supplying the voltage and frequency indicated on the power supply. When power is connected, the 30s LED illuminates, two beeps sound, and the cover lock releases. To turn the system off completely, disconnect the power located at the rear of the unit.



Warning

Only use the external power supply (Beckman Coulter Part Number B95657) included with the centrifuge. This power supply is only for use with centrifuges that have a marked input current rating of 3A (shall not be used on units rated 1.7A). Use of any other external power supply can cause damage to the centrifuge and will void the warranty.



Warning

Outside of North America: do not use the power cord supplied. Use power cord for at least 2.0 Amp with an IEC320/CEE22 female connector and male connector suitable for the power outlet to be used.

Intended Use






The StatSpin Express 2 is a microprocessor controlled, high-speed bench top centrifuge designed to rapidly separate whole blood in the original evacuated or syringe type collection tubes.

Product Description

The four-place 30° angle rotor included with the centrifuge is designed to provide rapid separation while minimizing potential re-suspension of cells. The speed is fixed at 8500 rpm ($\pm 5\%$), producing a centrifugal force of 4440 xg at the maximum tube radius of 5.5 cm. The operator may select three factory-set timed cycles of 30, 120, and 180 seconds.

Operator Controls

Table 2 Express 2 Operator Controls

| Symbol | Description |
|---|---|
|  | <p>Start button</p> <p>The Start button initiates the pre-timed cycle at a fixed speed.</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p> Note</p> <p>The Express 2 has no on-off switch, and therefore is normally left plugged in and on.</p> </div> |
|  | <p>Stop or Open button</p> <p>The Stop or Open button interrupts the cycle and stops the centrifugation. This button can also be used to release the cover.</p> |
|  | <p>Cycle Selector</p> <p>The Cycle Selector button allows for selection of the cycle.</p> |
|  | <p>Error or Service Indicator</p> <p>The red indicator with an adjacent wrench symbol flashes to signal an error condition or remains continuously illuminated when service is needed.</p> |

System Overview

Error Indicators



Note

Buttons should be depressed with finger tips only. Never press buttons with a sharp object such as a pen, screwdriver, centrifuge insert, fingernail, etc. The buttons are membrane switches designed to be activated by finger actuation. Use with any hard or sharp object can cause damage to the tactile layer of the button, rendering the button unstable and prone to premature failure.

Error Indicators

The combination of the Error / Service indicator and the cycle LEDs on the front panel specify the error code.


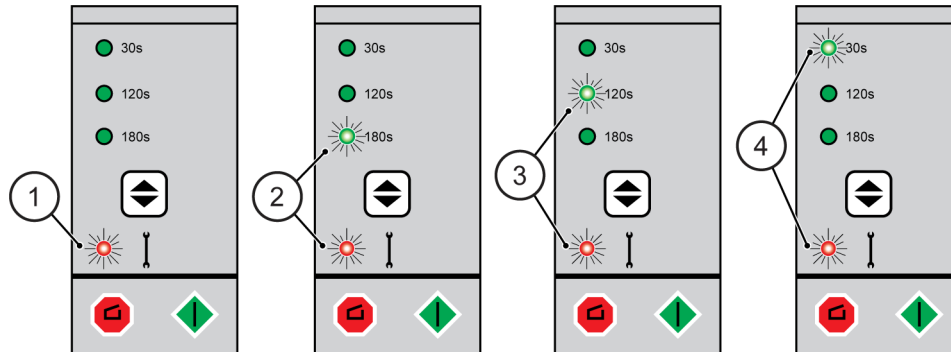
Error/Service = 
Quick Spin = 30 seconds
Normal Spin = 120 seconds
Hard Spin = 180 seconds

Figure 1



1. Error/Service indicator.
2. When 180s cycle LED and Error/Service indicator flash, it indicates the centrifuge is unable to maintain target rotor speed.
3. When 120s cycle LED and Error/Service indicator flash, it indicates cover opened or cycle changed during operation.
4. When 30s cycle LED and Error/Service indicator flash, it indicates the centrifuge is unable to reach target rotor speed.
5. The system beeps continuously if one of the following conditions are present:
 - Centrifuge is over operating temperature
 - Short circuit of the motor drives, fan, or solenoid

- Reduction in the availability of electrical power
- Short-term power failures

To stop the beeps, press the **Stop** button.

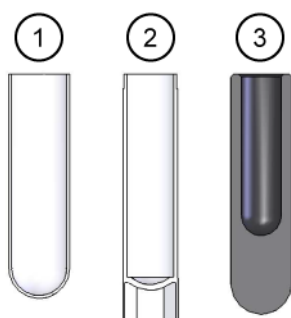
Error/Service light will continuously illuminate when the centrifuge has achieved a total run time of 150 hours, which is the useful life of the drive system. Drive mechanism needs replacing. Contact Beckman Coulter Customer Support.

Accessories

Table 3 Accessories

| Product No. | Description |
|-------------|--|
| SV01 | Inserts compatible with 5 mL (13 x 75 mm or 10.25 x 82 mm) blood collection tubes. 4 inserts / package |
| SV02 | Inserts compatible with 3 mL (10.25 x 64 mm) blood collection tubes. 4 inserts / package |
| SV05 | Inserts for 1.5-2 mL microtubes, 10.25 x 47 mm, and BD Microtainers. |
| DL01 | Disposable bowl liners. 10 / package. |
| RTX4A | Express 2 Rotor. Includes SV01 inserts. |

Figure 2 StatSpin Express 2 Tube insert Guide



1. SV01 13 x 75 mm
2. SV02 10.25 x 64 mm
3. SV05 1.5-2 mL microtubes, 10.25 x 47 mm, and BD Microtainers®

System Overview

Accessories

Opening and Closing the Cover

To close the cover, firmly apply pressure on the cover directly above the latch until the gasket compresses completely and the latch engages with the cover. The electronically operated cover interlock mechanism prevents operation until the cover is completely closed and locked, and prevents the cover from being opened while the centrifuge is in operation. When the cover is completely closed and locked, an operating cycle can be initiated.

The centrifuge has a manually operated latch that holds the cover down after spinning is complete. The interlock is automatically released at the end of the operating cycle or by pushing the **Stop** or **Open** button. Squeeze the black latch pieces together to open cover.

Cover Interlock By-pass



The cover interlock bypass is for emergency use only. Disconnect the power cord of the external power supply from the electrical outlet and ensure the rotor has come to a complete stop before using the interlock bypass. If the equipment is not used correctly, safety can be impaired.

To release the electronically operated cover interlock mechanism, insert the straightened end of a large paper clip or similar object into the small hole in the center of the front membrane panel. If you press the **Stop** or **Open** button and the cover does not release, push the lock lever inward about one inch (25 mm) to release the interlock mechanism.

Removing and Installing the Rotor

The StatSpin Express 2 is shipped with the rotor installed. To prevent possible damage to the motor mount of the centrifuge, remove the rotor whenever the centrifuge is shipped to another location.



Inspect rotor on a routine basis. Rotor lifespan depends on usage. Inspect the rotor for cracks and replace the rotor immediately when any crack or visible wear occurs.

- 1 Remove the tube inserts from the rotor.
- 2 Remove the rotor, retaining nut, and washer from the rotor holder using a 7/16" nut driver.

Operating Instructions

Spinning the Sample

- 3 Gently rock the rotor back and forth until the mounting pins on the rotor holder release.
 - 4 Remove the rotor.
-

Reinstalling the Rotor



Never operate the centrifuge without the rotor properly mounted and the locking nut tightened. Failure to install and secure the rotor correctly can damage the centrifuge.

- 1 Remove the tube inserts from rotor. Place rotor on rotor holder, being sure the two mounting pins on the rotor holder are aligned with two of the four small holes near the center of the rotor.
 - 2 Gently rock the rotor back and forth to be sure the rotor seats correctly on the rotor holder.
 - 3 Install washer, then nut and secure the rotor by tightening the nut with the 7/16" nut driver provided.
 - 4 Reinstall the tube inserts into the rotor cavities. The centrifuge is ready for use.
-

Spinning the Sample

Loading



The Express 2 has no on-off switch, and therefore is normally left plugged in and on.

The operator should experiment with different settings to achieve optimum performance for specific applications. The following are general guidelines:

Table 4 Express 2 Cycle Settings

| Setting | Description | Speed | Time |
|---------|--|----------|-------------|
| 30 s | Intended to provide a short spin to separate red cells from plasma/serum. | 8500 rpm | 30 seconds |
| 120 s | Intended to separate plasma/serum from whole blood for most chemistry or coagulation applications. | 8500 rpm | 120 seconds |
| 180 s | Intended to provide better separation of red cells from plasma/serum. The 180 second cycle can be used for gel separator tubes. (PST/SST) | 8500 rpm | 180 seconds |

- 1 Be sure that the correct tube inserts are installed. The Express 2 centrifuge is provided with four tube inserts for 13 x 75 mm tubes (Product No. SV01). Other sizes are available. For more information, refer to [Accessories](#).
- 2 Two or four tubes can be processed simultaneously. The rotor must be correctly balanced for smooth operation.
- 3 Use the same size and style tubes in opposite positions. Balance liquid in tubes to within 0.5 mL.



Caution

Use the same size and style tubes in opposite positions. Balance liquid in tubes to within 0.5 mL. If glass tubes are used to balance rotor load, replace the glass balance tube every ten cycles to prevent possible breakage caused by the repeated stress of centrifugation. Replace the tube inserts immediately if a tube breaks during centrifugation.

- 4 To close the cover, firmly apply pressure on the cover directly above the latch until the gasket compresses completely and the latch engages with the cover.
- 5 Select the cycle by pressing the cycle selector until the desired LED is illuminated. For more information, refer to [Express 2 Cycle Settings](#).
- 6 Press the **Start** button.

Unloading

- 1 When the cycle completes, the rotor decelerates to a complete stop in 25 seconds and the latch interlock automatically unlocks.
- 2 Squeeze the black latch pieces together to open cover.
- 3 Remove tubes carefully to not resuspend the sediment.

Operating Instructions

Spinning the Sample

Overview

Beckman Coulter recommends that instrument operators perform periodic inspections and preventative maintenance on all devices. Contact Beckman Coulter at any time if the instrument is not functioning correctly.



Disconnect the power cord of the external power supply from the electrical outlet before performing maintenance or inspection.



Do not expose the rotor to strong or concentrated acids, bases, esters, aromatic or halogenated hydrocarbons, ketones, or strong oxidizing agents, or environmental influences, including natural ultra-violet radiation. Doing so will subject the rotor to corrosion or weakening of the construction.

Cleaning

The Express 2 is supplied with a disposable bowl liner to simplify routine cleaning. Additional bowl liners are available. (Product No. DL01). The liner should be replaced monthly or whenever a spill occurs. Clean the outside surfaces and the control panel with a water-dampened cloth and mild detergent. Clean the inner surface of bowl, with a mild detergent and if necessary, a disinfectant, wiping with a cloth dampened with 70% alcohol or 10% bleach solution.



Do not spray cleaning solutions directly onto the centrifuge bowl or housing. Overspray can reach the motor bearings or internal circuitry, causing harm to the electronics and could also cause corrosion or weakening of the construction of the protective casing.

Before using any cleaning or decontamination methods other than those recommended by the manufacturer, users should check with the manufacturer that the proposed method will not damage the equipment. Cleaning and decontamination may be necessary as a safeguard before laboratory centrifuges, rotors, and any accessories are maintained, repaired, or transferred.

General Cleaning

- 1 Open the centrifuge cover.
- 2 Unplug the power cord of the external power supply from the electrical outlet.

Maintenance

Inspecting the Rotor Speed

-
- 3** Remove all the tubes and inserts.

 - 4** Remove the rotor. For more information, refer to [Removing and Installing the Rotor](#).

 - 5** Remove the black gasket surrounding the chamber by pulling up one end of the gasket. Inspect the gasket for tears and excessive flattening.

 - 6** Remove the bowl liner and dispose. Install a new bowl liner.

 - 7** Reinstall the black gasket around the chamber opening.

 - 8** Inspect rotor for cracks or damage.

 - 9** Reinstall the rotor. For more information, refer to [Reinstalling the Rotor](#).

 - 10** Plug the power cord into the electrical outlet.
-

Disinfecting the Rotor

-
- 1** Open the centrifuge cover.

 - 2** Unplug the power cord of the external power supply from the electrical outlet.

 - 3** Remove all the tubes and inserts.

 - 4** Remove the rotor. For more information, refer to [Removing and Installing the Rotor](#).

 - 5** The rotor and inserts can be soaked in detergent and warm water or a 10% bleach solution.

 - 6** Do not attempt to clean an insert that has a broken tube. Dispose of the insert immediately.

 - 7** Dry the rotor and inserts with a clean absorbent paper towel or allow to air dry.

 - 8** Inspect rotor for cracks or damage.

 - 9** Reinstall the rotor. For more information, refer to [Reinstalling the Rotor](#).

 - 10** Plug the power cord of the external power supply into the electrical outlet.
-

Inspecting the Rotor Speed

The rated speeds can be inspected with a stroboscope or photoelectric tachometer. Point the tachometer through the transparent cover at the reflective patch located near rotor center. Do not defeat any safety interlocks while performing the test. If the StatSpin Express

2 fails to achieve an operating speed of 8,500 rpm \pm 5% in the 120s and 180s settings, contact Beckman Coulter Customer Support.

Troubleshooting

Table 5 No Power Light

| No Power Light | |
|--|--|
| Is the instrument completely plugged into the electrical outlet? | No → Plug power cord of the external power supply into the electrical outlet. |
| Yes ↓ | |
| Is the electrical outlet working correctly? | No → Try another electrical outlet. |
| Yes ↓ | |
| Is the barrel connector from the power adaptor completely plugged into the centrifuge? | No → Plug the barrel connector of the external power supply into the centrifuge. |
| Yes ↓ | |
| Contact Beckman Coulter Customer Support. | |

Table 6 Centrifuge Will Not Spin or Shuts Off

| Centrifuge Will Not Spin/Shuts Off Prematurely | |
|---|----------------------------------|
| Is the cover completely closed and cannot be opened manually? | No → Completely close the cover. |
| Yes ↓ | |
| Contact Beckman Coulter Customer Support. | |

Table 7 Centrifuge Does not Open at the End of the Cycle

| Centrifuge Does not Open at the End of the Cycle |
|--|
| Follow Cover Interlock By-pass in Chapter 3 to open the cover and retrieve samples, then contact Beckman Coulter Customer Support. |

Maintenance

Service

Service

Refer all service to qualified service personnel or Contact Beckman Coulter Customer Support at 1-800-854-3633.

Be sure to complete and return the warranty card as directed.

Decontamination before returning for service:

Any instrument or accessory containing accumulated blood or other biological or chemical deposits must be cleaned before shipment for service. This decontamination is required by Federal Law (Title 48 and 49 of the Federal Regulations) and according to the Environmental Protection Agency's Regulations for Biohazard Waste Management. Beckman Coulter cannot perform decontamination.

Limited Warranty and Disclaimer:

Subject to the below exceptions and conditions, Beckman Coulter warrants to the original purchaser that the Equipment will be free from substantial defects in material, under normal use and service, for the period expiring twelve (12) months and (ii) Services will be performed in a workmanlike manner. As exclusive and sole remedy for breach of the warranty, Beckman Coulter will, at its discretion, repair or replace any Equipment unit or part covered under this warranty returned to Beckman Coulter or an authorized repair center. Repaired or replaced instruments supplied under this warranty carry only the remaining portion of the original warranty and repairs shall not interrupt or prolong this warranty. No warranty extended hereby shall apply to any instrument that has been damaged due to misuse, negligence, accident, or damage resulting from unauthorized repairs, alterations, or improper installation.

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Maintenance

Service

APPENDIX A
Specifications

Specifications

| | |
|-------------------|--|
| Product Number | SSX2 |
| Model Number | M501-22 |
| Speed | 8,500 rpm \pm 5% |
| Force | 4,440 x <i>g</i> |
| Cycle Times | 30s: 30 seconds |
| | 120s: 120 seconds |
| | 180s: 180 seconds |
| Acceleration Time | Approximately 20 seconds |
| Deceleration Time | Approximately 25 seconds |
| Electrical | 24Vdc, 3.0A Includes switching power supply for 100 to 240 VAC, 50/60 Hz |
| Dimensions | Height: 6.0 in (15.2 cm) |
| | Diameter: 6.6 in (16.8 cm) |
| | Weight: 5 lbs (2.3 kg) |
| Environmental | Indoor use (IP20) |
| | Altitude up to 2,000 m |
| | Operating temperature: 15°C - 32°C |
| | Storage temperature: 0°C - 60°C |
| | Maximum relative humidity 80% for temperatures up to 31°C decreasing linearly to 50% relative humidity at 40°C |
| | Main supply voltage fluctuations not to exceed \pm 10% of the nominal voltage |
| | Transient over-voltages according to installation category II |
| | Pollution degree 2 |

Specifications

Specifications

References

1. CLSI. "Protection of Laboratory Workers from Occupationally Acquired Infections; Approved Guideline-Second Edition." CLSI document M29-A4 [ISBN 1-56238-453-8]. CLSI, 940 West Valley Rd, Suite 1400, Wayne, Pennsylvania 19087-1898 USA, 2001.
2. CDC. Recommendations for prevention of HIV transmission in health care settings. MMWR (Suppl. No. 2S):2S-18S, 1987.
3. CDC. Updated: US Public Health Service Guidelines for the Management of Occupational Exposures to HBV, HCV and HIV and Recommendations for Post Exposure Prophylaxis. Appendix A and B. MMWR 50 (RR-11): 1-42, June 29, 2001.

References

References

www.beckmancoulter.com



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