

# Operator's Manual



## The Bullet Blender®

Models: Bullet Blender®; Bullet Blender® Storm; Bullet Blender® Blue; Bullet Blender® 5 Storm and Bullet Blender® 5 E

### Congratulations!

Congratulations on your purchase of a Bullet Blender® by Next Advance, Inc., for lysing, disrupting, and homogenizing your samples.

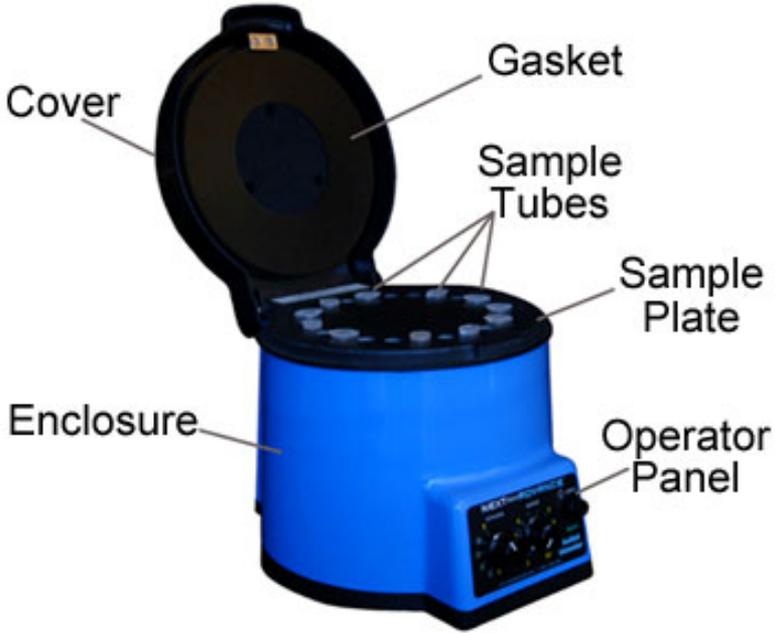
Please read this operator's manual which explains proper operation of the instrument. This manual is posted on our website, [www.nextadvance.com](http://www.nextadvance.com). Click the SUPPORT button on the left-hand menu bar and then on the appropriate link to the manual.

We're confident that your Bullet Blender will become an essential tool in your laboratory and we wish you success with your work.

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## Parts of the Bullet Blender®



### SYMBOLS USED ON THE BBX AND BBY MODEL BULLET BLENDERS



Start Operation



Caution: Follow the Instructions in the Operator's Manual



This product complies with European Low Voltage and EMC Directives



Please dispose the test tubes and the BBX or BBY Bullet Blender in accordance with local regulations

# Operator's Manual for the Bullet Blender<sup>®</sup>

## SETUP

Place the Bullet Blender on a stable, level lab bench. Plug the cord from the AC/DC power adapter into the 24V socket on the back of the Bullet Blender and then insert the plug into a wall outlet. You should see lights on the time setting flash for several seconds, indicating that the unit is receiving power. It is now set up.

## OPERATION

To begin using your BBX- or BBY series Bullet Blender, lift open the cover and insert the appropriate tubes. For BBX24 models (BBX24 and BBX24B), place up to twenty four closed 1.5 mL to 2.0 mL polypropylene high quality snap-cap (e.g. Eppendorf<sup>®</sup> Safe-Lock<sup>™</sup>) microcentrifuge tubes containing samples into the sample plate, and close the cover. When using 2.0 mL tubes we recommend using at least two tubes per homogenization cycle.

In the Bullet Blender 5 Storm (BBY5M), load up to twelve 5 mL Axygen<sup>®</sup> brand screw-cap tubes. In the Blender 5 E (BBY5E), load up to twelve 5 mL Eppendorf<sup>®</sup> tubes.

For the Bullet Blender Storm (BBY24M), use up to 24 Next Advance RINO<sup>®</sup> screw-cap tubes or 1.5 mL Eppendorf<sup>®</sup> Safe-Lock snap-cap tubes. In order to use these tubes, the Bullet Blender must be fitted with the appropriate gasket corresponding to the tube type. Each gasket is clearly labeled

“RINO” or “Eppendorf”. The gasket is removed by unscrewing the three screws with a Phillips head screw driver and lifting the gasket off of the lid. Attach the proper gasket by aligning the holes in the gasket with the holes in the lid and inserting the screws. Make sure that the gasket is screwed on securely, or else homogenization efficiency may be affected. Do not over-tighten the screws. Only RINO<sup>®</sup> screw-cap tubes are recommended for use in the Bullet Blender outfitted with the RINO<sup>™</sup> gasket; other screw-cap tubes may break or result in sub-optimal homogenization.

The snap-caps on the microcentrifuge tubes must be closed securely before using in the Bullet Blender. The threads on all screw-cap tubes must be dry and the caps must be screwed on very tightly before using in the Bullet Blender.

Do not operate with the cover open. There will be excess noise, your samples will not be properly processed and the tubes may be knocked entirely out of the instrument potentially causing injury. If you turn the “minutes” knob to “0”, the instrument will stop.

## EXAMPLE:



The figure above shows the Bullet Blender set to run for 4 minutes at a speed of 8, after running for 2 minutes. To operate, press the “START” button. After the first minute, the LED behind the number 1 on the “minutes” dial will light up. After the second minute, the second LED behind the number 2 will light up, and so on. At the settings shown above, after 4 minutes, the Bullet Blender will stop. In the Blue and Storm modes, the words “Air Cooling™” will light up in blue during operation and for about one half minute afterward as the fan continues to operate.

Note that the Bullet Blender Storm models have additional time settings for 15 and 30 second pulses. In addition, the Bullet Blender Storm has an additional, more powerful speed setting of 12.

## PROTOCOLS AND SAMPLE SETTINGS

The following ratio should be used as a guideline for determining the amount of beads and buffer to use given a certain sample size - 1 volume/mass of tissue: 1 volume of beads: 2 volumes of buffer. For more specific information regarding the use of various beads as

well as specific protocol information, please refer to our website [www.nextadvance.com](http://www.nextadvance.com).

As the tissue amount becomes smaller, the above recommended ratio may differ due to the limitations of handling small volumes. With microcentrifuge tubes, we recommend using a minimum of 25  $\mu\text{L}$  of buffer regardless of your sample size. For the 5 mL tubes, we recommend a minimum volume of 100  $\mu\text{L}$ .

With microcentrifuge tubes, the recommended maximum sample mass is 300 mg of organ tissue or 300  $\mu\text{L}$  of plant tissue or pelleted cell culture per tube in the Bullet Blender. The tube should not be filled more than two-thirds of the way after the addition of all contents (sample, beads, and buffer). This is because the mechanics of homogenization require empty space in the tube. For 5 mL tubes, the recommended maximum sample mass is 1 g of organ tissue or 1 mL of plant tissue or pelleted cell culture per tube. Do not operate with more than a total of 3 mL combined buffer, sample and beads per tube.

Cutting the tissue into smaller pieces will generally yield better results. Tissue with a high aspect ratio (long, thin strips) will homogenize better than tissue that is round or cubic.

Do not operate the Bullet Blender using the same tubes for longer than 15 minutes.

Protocols for many types of samples are posted on our website:

<http://protocols.nextadvance.com>.

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## NOTES:

The Bullet Blender Storm 5 is designed to work with 5 mL Axygen<sup>®</sup> brand tubes only. At high speed settings, there may be some flaking of the tubes. This is a normal side effect of homogenization. The higher speed enables homogenization of tougher tissue.

## CLEANING

If you wish to clean your Bullet Blender, clean the outside of the unit only with mild soap, water and a soft cloth. Under normal conditions, the Bullet Blender should never need to be disassembled for cleaning. In the case of a large spill, unplug the instrument, remove the sample tube plate with a 1/8" hex wrench, wipe out the spill using standard laboratory safety precautions, and replace the sample tube plate. Do not touch or tamper with the electronics.

Contact tech support for a detailed protocol: [support@nextadvance.com](mailto:support@nextadvance.com)

## TROUBLESHOOTING

In addition to the tips given below, thorough list of troubleshooting tips is at <http://bbtroubleshooting.nextadvance.com>

**If the Bullet Blender doesn't start**, the plug of the power supply cord may not be in a live wall outlet or the power supply connector may not be fully inserted in the socket on the back of the Bullet Blender.

**If the unit stops working**, turn the system off for 15 minutes to allow the electronics to reset. If the Bullet

Blender does not turn on after this period, contact customer service.

**If the caps on snap-cap tubes pop open or the caps on screw-cap tubes loosen**, make sure that the interface regions or screw threads between the lids and the caps is dry when you close the caps or screw them on, so that there is enough friction for the caps to remain tight. Using recommended types of tubes will minimize cap failure.

## SUPPORT

FAQs, protocols, and other helpful information are available on our website, <http://www.nextadvance.com>. Click on the Bullet Blender, then on the appropriate link. If you cannot find an answer there, please contact customer service by email at [support@nextadvance.com](mailto:support@nextadvance.com) or by telephone at 1.518.674.3510 or (800) 738-1681.

## SPECIFICATIONS

**Size:** 28 cm (11 in.) deep x 23 cm (9 in.) wide x 21.5 cm (8.5 in.) high.

**Weight:** 4 to 5 kg (8.5 to 11 lbs.), depending upon model.

**Power Requirement:** BBX24 and BBX24B models: 24 VDC, 0.75 Amp  
BBY24M BBY5E and BBY5M models: 24 VDC, 2.5 Amp

**Capacity:** 24 of 1.5 - 2.0 mL polypropylene high quality (e.g. Eppendorf<sup>®</sup>) snap-cap tubes, 24 of 1.5 mL RINO<sup>®</sup> screwcap tubes, 12 of 5 mL Eppendorf<sup>®</sup> tubes or 12 of 5 mL Axygen<sup>®</sup> 5 mL transport tubes, depending upon model.

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**Relative Humidity:** 5 – 90% non condensing

**Operating Temperature:** 4 - 40°C

**Altitude:** <2000m

**Storage Temperature:** -40 to 50°C

Meets **CE** requirements (-CE models only)

purchase by the original purchaser is required. Next Advance may also request documentation of proper maintenance, if applicable.

Next Advance makes no other warranty, expressed or implied, with respect to its Products. **NEXT ADVANCE MAKES NO WARRANTY RESPECTING THE MERCHANTABILITY OF THE PRODUCTS OR THEIR SUITABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR USE.** Next Advance shall not be liable for indirect, special, incidental or consequential damages of any nature.

Any recovery for any claim shall be limited to the original purchase price for the product.

## OPERATOR'S RESPONSIBILITY

Provide proof of purchase and provide normal care and maintenance.

## WARRANTY

Next Advance warrants its Products against defects in materials and workmanship for time periods which vary according to the Product. Within these time periods, Next Advance will replace or repair, without charge to the original purchaser, any part which is defective.

Bullet Blender warranty = Two years

The warranty is void if the Product is defective due to product accident, product modification, exposure to radiation other than for sterilization, connection to an improper electrical supply, lack of proper maintenance, contamination, improper installation or misuse. If the product is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired. The warranty shall also not apply to defects arising from fire, flood, lightning or other conditions unrelated to correct operation of the Product.

Next Advance's liability is limited, at the company's election, to (1) refund of the original purchaser's purchase price for the Product (2) repair of the Product, or (3) replacement of the Product or defective parts. Evidence of

## WARNINGS AND CAUTIONS

Read the user's manual before operating.

Do not open lid when Bullet Blender is in use.

Do not insert fingers or objects other than recommended tubes into sample tube holes.

Use caution when closing Bullet Blender lid- do not close on fingers.

When working with hazardous or pathogenic samples, operate the Bullet Blender in a biosafety cabinet or other standard laboratory safety enclosure.

Use recommended tubes only.

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No user serviceable parts are inside of the instrument.

For indoor use only.

Pollution Degree 2 per EN 61010-1.

Overvoltage Category II per EN 61010-1.

Enclosure Protection: Not Protected Against the Ingress of Moisture.

Sound Pressure Level: up to 90dBA for BBX24 models; up to 100dBA for BBY24M, BBY5E and BBX5MB models. **Use hearing protective devices that reduce exposure to below 85 dBA during prolonged exposure.**

Do not immerse in liquid.

Before touching the Bullet Blender, touch a bare metal surface to discharge static electricity.

## DISCLAIMER

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**NEXT ADVANCE INC. DOES NOT GUARANTEE THE INTEGRITY OF THE TUBES USED IN THE BULLET BLENDER. TUBES THAT ARE NOT RECOMMENDED BY THIS MANUAL MAY CRACK OR OPEN IF USED IN THE BULLET**

**BLENDER. NEXT ADVANCE INC.  
OPTIMIZES THE BULLET  
BLENDER TO SPECIFIC TUBE  
TYPES AND BRANDS AND  
CANNOT GUARANTEE THE  
SAFE USE OF ALL TUBES BEING  
SOLD ON THE MARKET.**

### **CONTACT INFO**

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