

# Operator's Manual



## The Bullet Blender® Gold BB24-AU, BB5E-AU, BB50-AU

### Thank you!

Thank you for your purchase of a Bullet Blender®Gold by Next Advance, Inc., for lysing, disrupting, and homogenizing your samples.

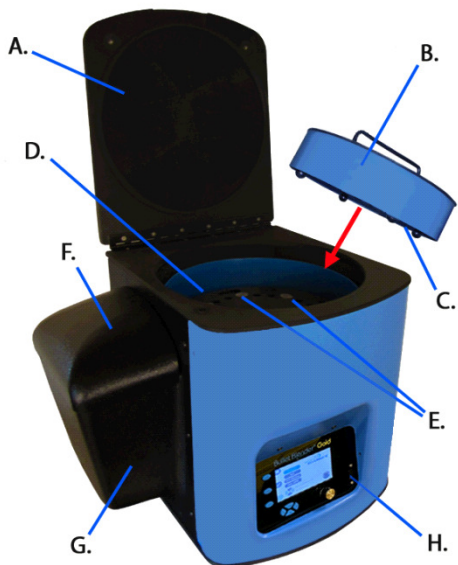
Please read this operator's manual which explains proper operation of the instrument. This manual is posted on our website, [www.nextadvance.com](http://www.nextadvance.com). Click the SUPPORT button on the menu bar at the top of the page. Then select *Bullet Blender Support* from the drop down.

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® Gold



- A.** instrument Cover
- B.** Sample Plate Cover
- C.** Gasket
- D.** Sample Plate
- E.** Sample Tubes
- F.** Dry Ice Compartment Lid
- G.** Dry Ice Compartment
- H.** Operator Panel

### SYMBOLS USED ON THE BULLET BLENDER GOLD



Caution: Follow the instructions in the Operator's Manual



This product complies with European Low Voltage and EMC Directives



Please dispose of the test tubes and the Bullet Blender in accordance with local regulations

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### SETUP

Place the Bullet Blender Gold on a stable, level lab bench. Carry it by grasping the bottom sides. Plug the AC power supply cord connector into the AC input receptacle on the right side of the Bullet Blender and then insert the plug into a wall outlet. Flip the switch located next to the AC input receptacle to turn the instrument on, the screen will illuminate.

### OPERATION

To use your Bullet Blender Gold, lift open the instrument cover, twist the handle of the sample plate cover counter clock-wise until the white arrow is in the unlocked position (see figure below) and lift the sample plate cover out of the instrument. Insert the sample tubes evenly spaced, re-place the sample plate cover, twist the handle clock-wise until it is in the locked position and close the instrument cover.



The figure above shows labels

that indicate if the sample plate cover is in the locked or unlocked position. In the figure, it is shown in the locked position. The Bullet Blender Gold will not start until the sample plate cover is properly locked.

BB24-AU model: Use only 1.5 mL RINO® screw-cap tubes or Eppendorf® Safe-Lock® snap-cap tubes. The BB24-AU 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. Only RINO screw-cap tubes are recommended for use in the Bullet Blender outfitted with the RINO gasket; other screw-cap tubes may break or result in sub-optimal homogenization. Only Eppendorf Safe-Lock snap-cap tubes are recommended for use in the Bullet Blender outfitted with the Eppendorf gasket.

BB5E-AU model: Use only 5 mL Eppendorf tubes. Note that 5 mL screw-cap tubes cannot be used in this model. This model can hold up to twelve tubes. For best results, the tubes should be evenly spaced.

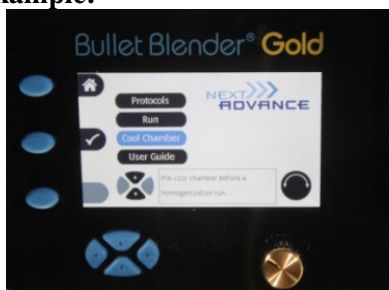
BB50-AU model: Use only 50

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mL TPP® skirted (self standing) tubes and place them in the white sleeves.

To use 4°C cooling, fill the side compartment to the top with 5/8" (1.5 cm) dry ice pellets. Make sure that the dry ice compartment lid is properly sealed. Note: be sure not to block airflow by overfilling. Use cryogenic gloves when handling dry ice. Do not use the inner portion of the dry ice cooling compartment to transport the ice. Do not fill the dry ice cooling compartment with water or regular ice. We recommend pre-cooling the instrument to reduce heat generation during homogenization. To do this, fill the side compartment with dry ice, lock the inner cover and select "Cool Chamber" from the main menu.

### Example:



The example above shows the "Cool Chamber" selection from the main menu. It is crucial to pre-cool the instrument to ensure the chamber achieves 4°C before adding temperature sensitive samples. Once the chamber is sufficiently cooled, the Bullet Blender will indicate

"COOLING COMPLETE". The instrument is now ready to run samples.

To use only the Air Cooling™ feature in your Gold instrument, operate the Bullet Blender Gold with the dry ice compartment empty and with the lid open to allow ambient air (laboratory or cold room air) to be drawn into the instrument.

### PROTOCOLS AND SETTINGS

To set homogenization settings, select "Run" from the main menu and use the arrow pad and knob to select duration and speed. Push the ">" button to start the run. The screen will count down the time remaining throughout the run. If you press "X" before time is up, the run will end prematurely. Select "II" during a run if you wish to pause.

After the run is finished, you can select the "save protocol" option to save the settings you just used. The instrument will then prompt you to name the protocol settings. Use the arrow keys and scroll knob to navigate through the character list. When you are finished naming the protocol select the check mark to continue. The instrument will automatically assign this protocol to the first empty slot in your saved protocols list.

Custom homogenization protocols can be uploaded to your Bullet Blender using a USB flash drive. Contact customer support to obtain the necessary protocol files. Once the files

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have been obtained load them onto your USB flash drive. Plug the flash drive into the USB outlet and power cycle (turn off and on again) the instrument. The instrument will recognize the protocol file on the flash drive and prompt you to save. If you choose to save the protocol file, the instrument will automatically assign the next empty slot for the new protocol in the saved protocols list.

The following sample, bead to buffer ratio should be used as a general guideline for achieving optimal homogenization quality - 1X volume/mass of tissue: 1X volume of beads: 2X volumes of buffer. For more specific information regarding specific protocol information, please contact customer support at [customersupport@nextadvance.com](mailto:customersupport@nextadvance.com).

As the tissue amount becomes smaller, the above recommended ratio may differ due to the limitations of handling of the small volumes. We recommend using a minimum of 25  $\mu\text{L}$  of buffer in microcentrifuge tubes. For the 5 mL tubes, we recommend a minimum volume of 100  $\mu\text{L}$ . Volumes can be slightly adjusted to meet the needs of your downstream application.

With microcentrifuge tubes, the recommended maximum sample mass is 300 mg of tissue or 300  $\mu\text{L}$  of pelleted cell culture per tube. The sample, beads, and buffer combined should not exceed 1 mL. The rest of the tube needs to be empty so that the

contents can be vigorously shaken in the homogenization process.

With 5 mL tubes, the recommended maximum sample mass is 1 g of tissue or 1mL of pelleted cell culture per tube. Do not operate with more than a total of 3mL combined buffer, sample and beads per tube. Cutting the tissue into thinner pieces may significantly decrease homogenization time.

For 50 mL tubes, do not operate with more than 3.5g of sample, or a total of 20 mL of buffer, tissue, and beads (per tube).

Do not operate the Bullet Blender Gold using the same tubes for longer than 10 minutes in BB5E-AU and BB24-AU models, and no longer than 30 minutes in the BB50-AU model.

**Note:** At high speed settings it is normal for some plastic flaking off the outside of the tubes.

### 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 Gold should never need to be disassembled for cleaning. In the case of a large spill; unplug the instrument, remove the sample tube plate with an 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.**

### TROUBLESHOOTING

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Provided below is a list of troubleshooting tips. Additional tips can be found in the User Guide.

**If the Bullet Blender doesn't start**, make sure the power switch is in the ON (I) position. Make sure that the sample plate lid is in the "locked" position. Make sure that the plug of the power supply cord is in a live wall outlet and the power supply connector is fully inserted in the AC input receptacle of the Bullet Blender.

**If the unit stops working**, turn the system off for 15 minutes to allow the electronics to reset. Contact customer service if the Bullet Blender does not turn on after this period.

**If the caps on the tubes pop open**, make sure that the caps and the top of the tube where the cap contacts the tube are dry when you close the caps or screw them on, so that there is enough friction for the caps to remain tight. Also, be sure to use the recommended tubes.

**If the chamber is not cooling properly**, frost from condensation may be blocking the air passage, thus preventing cold air from cooling the sample tubes. Remove the inner dry ice compartment and gently agitate it or replace with fresh dry ice.

**If mist coming out of the dry ice cooling container seems excessive**, make sure that the lid of the dry ice container is securely closed.

### SUPPORT

FAQs, protocols, and other

helpful information are available on our website, [www.nextadvance.com](http://www.nextadvance.com). For additional help, please contact customer service by email at: [customersupport@nextadvance.com](mailto:customersupport@nextadvance.com) or by telephone at (518) 674-3510.

### SPECIFICATIONS

**Size:** 35 cm (14 in.) deep x 46 cm (18 in.) wide x 38 cm (15 in.) high.

**Weight:** 30 – 33 lbs. (14 – 15 kg)

**Power Requirement:** 100 - 240 V, 50 -60 Hz, 2.5 - 4.5 A

#### Capacity:

- BB24-AU: up to 24 of 1.5 mL RINO® tubes or Eppendorf® Safe-lock® tubes.
- BB5E-AU: up to 12 of 5 mL Eppendorf® tubes.
- BB50-AU: up to 8 of 50 mL TPP® or (self standing) tubes.

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

**Operating Temp.:** 4 to 40°C

**Altitude:** <2000m

**Storage Temperature:** -40 to 50°C  
-CE models meet **CE** requirements.

### 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. The Bullet

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Blender warranty is two years for all models.

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

Next Advance makes no other warranty, express 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, or consequential damages of any nature. Recovery for any claim shall be limited to the original purchase price for the product. **Operator is Responsible for:** providing proof of purchase and providing normal care and maintenance.

### WARNINGS AND CAUTIONS

Please read the following warnings and precautions before operating:

- Do not carry the instrument by the dry ice compartment. Instead, lift from the bottom sides of the instrument.
- Do not operate Bullet Blender with empty tubes.
- Do not open lid or cover when the Bullet Blender is in use.
- Wear cryogenic gloves when handling dry ice.
- Do not use the inner container of the dry ice cooling compartment to transport ice.
- Do not use regular ice or water in the dry ice cooling compartment.
- Do not insert fingers or objects other than recommended tubes into sample tube holes.
- Do not immerse in liquid.
- Take precaution to avoid static discharge before touching the Bullet Blender.
- Use caution when closing Bullet Blender lid - do not close on fingers.
- Use recommended tubes only.

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- For indoor use only.
- Pollution Degree 2 per EN 61010-1.
- Over voltage Category II per EN 61010-1.
- Enclosure: Not protected against the ingress of moisture.

### DISCLAIMER

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as system components intended to support or sustain human life, as a clinical medical device for humans, or for an application device in which the failure of the product could create a situation where personal injury or death may occur. All brand and product names used in this manual are the trademarks of their respective owners.

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 WHEN USED IN THE BULLET BLENDER. Next Advance optimizes the Bullet Blender to specific tube types and brands and cannot guarantee the quality of other tubes being sold on the market.

### CONTACT INFO

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