

Operator's Manual



The Bullet Blender[®] Gold⁺ BB24AUP, BB5EAUP, BB50AUP

Thank you!

Thank you for your purchase of a Bullet Blender[®] Gold⁺ by Next Advance, Inc., for lysing, disrupting, and homogenizing your samples, WHILE MAINTAINING the sample temperature at or near 4°C. The cooling can be accomplished with either the use of dry ice or liquid nitrogen (LN₂).

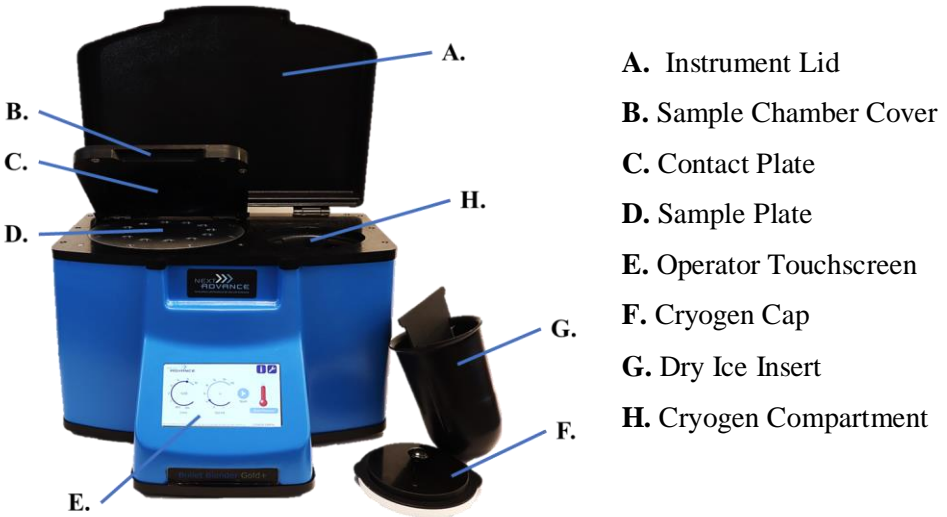
Please read this operator's manual which explains proper operation of the instrument.

We are 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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Operator's Manual for the Bullet Blender®
**Parts of the Bullet Blender®
Gold⁺**



**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 power supply into an outlet, and then plug the power supply jack into the right side of the Bullet Blender and then insert the plug into a wall outlet. Flip the switch located next to the power jack to turn the instrument on, the screen will illuminate.

OPERATION

To use your Bullet Blender Gold⁺, lift open the instrument lid. The sample chamber cover is on the left (A) and the round cryogen cap is on the right (B). The cap covers the cryogen compartment for dry ice or liquid nitrogen and must be in place to achieve adequate sample cooling.



4°C Cooling with Dry Ice:

Remove the cryogen cap and place the dry ice insert into the cryogen compartment. Fill both sides of the dry ice insert with 5/8" (1.5 cm) dry ice pellets. Follow standard laboratory safety precautions while handling dry ice. Make sure that the cryogen cap is properly seated. Note:

be sure not to block airflow by



overflowing.

4°C Cooling with Liquid Nitrogen:

If you are using liquid nitrogen, remove the cryogen cap then remove the dry ice insert, if stored inside. Using a spout, pour the liquid nitrogen DIRECTLY into the cryogen compartment.

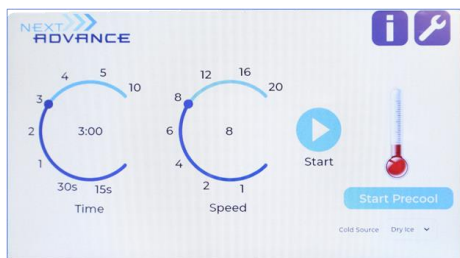


NEVER pour the liquid nitrogen into the dry ice insert. Follow standard laboratory safety precautions while handling liquid nitrogen. Make sure that the compartment cap is properly seated.

To cool the sample chamber, first select the appropriate cooling source. Choose either dry ice or liquid nitrogen from the pop-up screen and then confirm your selection.

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Select "START PRECOOL" from the main menu, as seen in the image below.



We recommend pre-cooling the instrument to maintain the sample temperature and therefore its integrity during the entire homogenization procedure. Pre-cooling the instrument ensures the chamber achieves 4°C before adding temperature sensitive samples. Once the chamber is sufficiently cooled, the Bullet Blender will indicate "PRECOOL COMPLETE" and the thermometer will turn blue. The instrument is now ready to run your samples.

Open the sample chamber cover and insert the sample tubes evenly spaced. Close the cover and then close the instrument lid.

BB24AUP model: Use only 1.5 mL [RINO®](#) screw-cap tubes or [GATOR™](#) or [Eppendorf® Safe-Lock](#) snap-cap tubes. Note that the screw-cap tubes have taller caps than snap-cap tubes, so they require more clearance room and do not require the GATOR™ snap-cap tube contact plate. When using screw cap tubes, the additional contact plate labeled

with "GATOR™" should be stored, mounted to the top side of the sample chamber cover.

When using the snap-cap tubes, mount the GATOR™ contact plate to the underside of the sample plate cover to reduce the clearance room above the tubes. Make sure that the contact plate is screwed on securely, or else homogenization efficiency may be affected. The contact plate is held in place by three Phillips head screws.

To remove the GATOR™ contact plate, simply remove the screws, place the contact plate in the storage location on the top side of the sample plate cover, or on the underside of the sample chamber cover, then fasten the contact plate in place with the three screws.

Only use [RINO®](#) screw-cap tubes,



[GATOR™](#), or [Eppendorf® Safe-Lock](#) snap-cap tubes. Other tubes may break or result in sub-optimal homogenization.

BB5EAUP model: This model works with the 5 mL snap-cap tubes, 1.5 mL snap-cap tubes with our tube adapters [SLVIE5A](#), or 1.5- or 2-mL screw-cap tubes, with our tube

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adapters [SLV2A](#). The only 5 mL tubes we suggest using are [GATOR™](#) or [Eppendorf® Safe-Lock](#) snap-cap



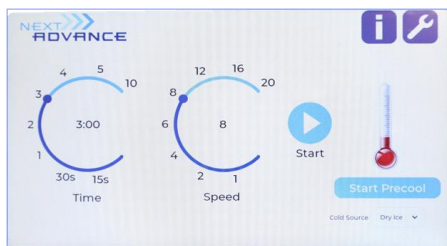
tubes.

Note that 5 mL screw-cap tubes cannot be used in this model. This model can hold up to twelve tubes. For best results, evenly space the tubes.

BB50AUP model: This model works with most skirted 50 mL tubes. We recommend our 50 mL [HIPPO™](#) tubes. Place the tubes in the white sleeves.

PROTOCOLS AND SETTINGS

Set the homogenization setting to the preferred speed and time by moving the two dials.



For recommendations on settings, refer to the [protocol page](#) or contact customer support at customersupport@nextadvance.com.

Push the "▶" button to start the run. The screen will count down the time remaining throughout the run. If you press "□" before time is up, the run will end prematurely.

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.

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 60 µL of buffer in microcentrifuge tubes. For the 5 mL tubes, we recommend a minimum volume of 150 µL. 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 µL 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 can significantly decrease homogenization time.

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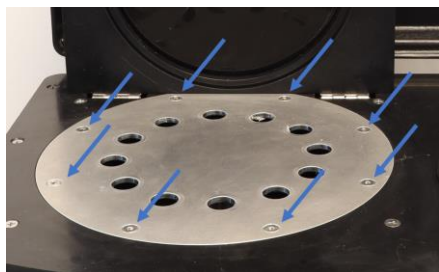
For 50 mL tubes, do not operate with more than 3.5g of sample, or a total of 20 mL of buffer, tissue, and beads (per tube).

Do not operate the Bullet Blender Gold⁺ using the same tubes for longer than 10 minutes in BB5EAUP and BB24AUP models, and no longer than 30 minutes in the BB50AUP 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 plate by unscrewing the flathead screws (as seen in image below) with a Phillips screw driver, wipe out the spill using standard laboratory safety precautions, and then replace the sample plate. **Do not touch or tamper with the electronics.**



TROUBLESHOOTING

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 plugs are fully inserted.

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. Turn the instrument off and allow complete decondensation before operating the instrument. If using dry ice, make sure that dry ice powder is not blocking the flow of air through the dry ice insert.

SUPPORT

FAQs, protocols, and other helpful information are available on our website, www.nextadvance.com. For additional help, please contact customer service by email at: customersupport@nextadvance.com or

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by telephone at (518) 674-3510.

SPECIFICATIONS

Size: 48 cm (19 in.) deep x 46 cm (18 in.) wide x 38 cm (15 in.) high.

Weight: 30 – 33 lbs. (14 – 15 kg)

Power Requirement: 24V DC, 3.75 A

Capacity:

- BB24AUP: up to 24 of 1.5 mL [RINO®](#) screw-cap tubes, [GATOR™](#) or [Eppendorf®](#) [Safe-lock](#) snap-cap tubes.
- BB5EAUP: up to 12 of 5 mL [GATOR™](#) or [Eppendorf®](#) [Safe-Lock](#) screw-cap tubes or tube adapters.
- BB50AUP: up to 8 of 50 mL HIPPO™ or skirted (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 warranties 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 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

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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:

- Carry the instrument only by lifting 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 or liquid nitrogen.
- Do not use the dry ice insert to transport ice.
- Do not use regular ice or water in the cooling chamber.
- 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.
- 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

Next Advance, Inc. reserves the right to make any improvements or modifications to the product described in this manual at any time, without notice of these changes. Next Advance, Inc. products are not designed, intended, or authorized for use in applications or 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.

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CONTACT INFO

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