Operator's Manual

The Bullet Blender® Field Model

Models: Bullet Blender® Field Model; Bullet Blender® Field Model Blue

Congratulations!

Congratulations on your purchase of a Bullet Blender® Field Model by Next Advance, Inc., for mixing, lysing, disrupting, and homogenizing your samples. The Field Model contains an internal rechargeable battery, capable of 25 complete 5-minute runs between charging. It comes with a battery recharging adaptor plug, a sample pack of beads, and a spatula.

Please read this operator's manual which explains proper operation of the instrument. This manual is posted on our website, www.nextadvance.com. Click on SUPPORT in the left window 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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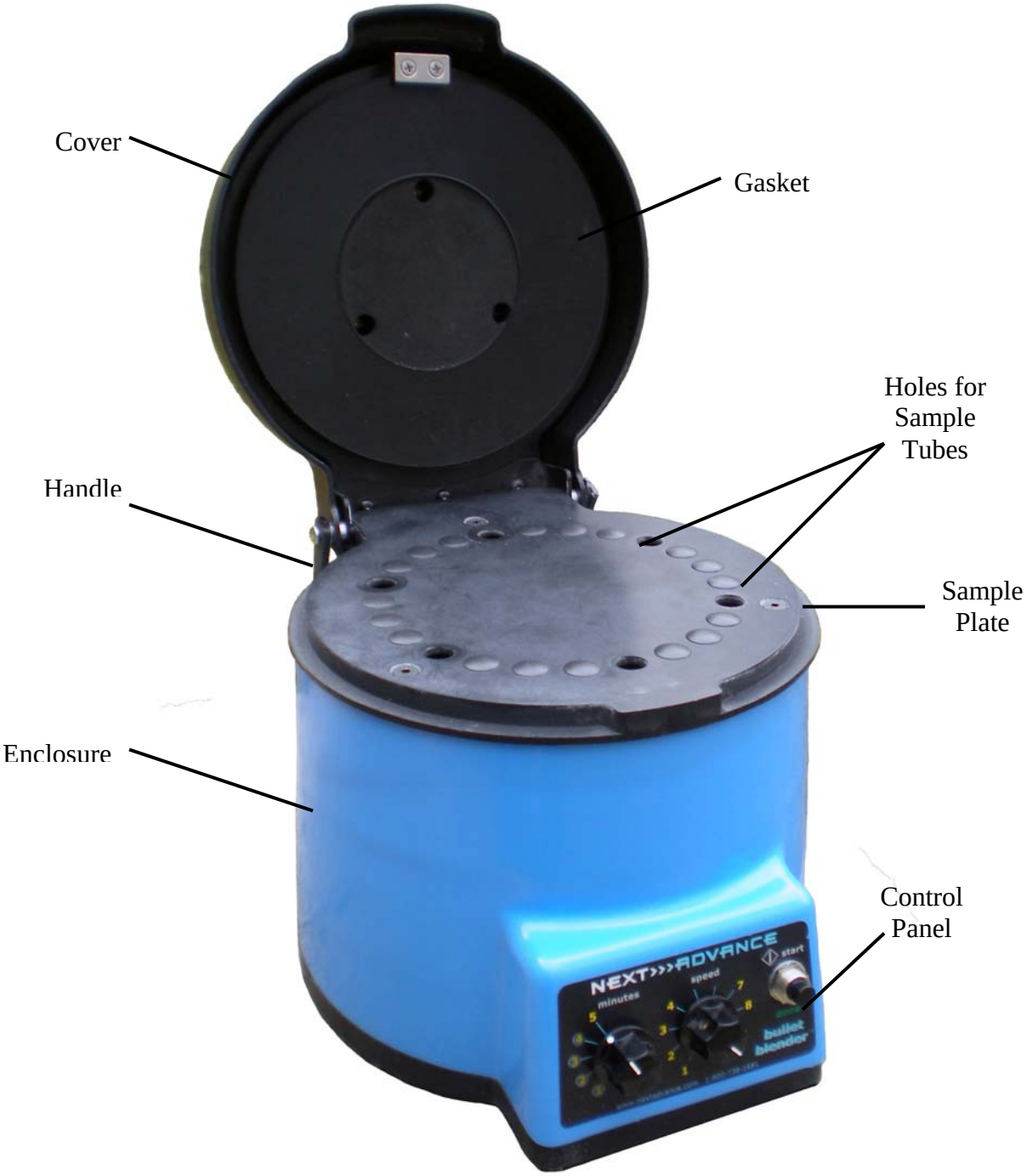
Parts of the Bullet Blender® Field Model



SETUP

Check to make sure that the switch on the back of the Bullet Blender® Field Model is in the "off" position. Plug the battery charger into the back of the Bullet Blender® Field Model and then plug it into a wall outlet. Allow to charge for at least 5 hours. It is now ready for use in the field. Turn the switch on the back of the unit to the "on" position prior to use. Turn switch to "off" position when not in use to save battery power.

OPERATION

To use your Bullet Blender® Field Model lift open the cover, insert the appropriate tubes, and close the cover. For the BBX24 models (FBBX and FBBXB) place up to 6 closed 1.5mL to 2.0mL polypropylene high quality snap-top (e.g. Eppendorf® Safe-Lock®) microcentrifuge tubes containing samples in the sample plate, and close the cover. For the screw-cap models (FBBXW and FBBXBW) use 1.5ml conical, polypropylene Corning or Axygen tubes (other tubes may work, but we can not assure good results with other tubes). The snap caps on the microcentrifuge tubes must be on securely. **The threads on all screw-cap tubes must be dry and the caps must be screwed on very tightly.** Do not operate a Bullet Blender® Field Model loaded with any empty tubes, as this may result in breakage of the tubes. If their use is necessary, "blank" tubes should be filled partially with water. For best results, the tubes should be evenly spaced. Set the duration, in minutes, and the speed to the desired value. Push the "START" button. As each minute passes, an LED will light up indicating its progress. On the BLUE models, the air cooling will continue for half a minute after the motor times out.

Do not operate with the cover open. There will be excess noise and your samples will not be properly processed and the tubes might be knocked entirely out of the instrument and could cause injury.

If you turn the "minutes" knob to "0", the instrument will stop.

Example:

The figure above shows the Bullet Blender® Field Model 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 light by the number 1 will light up. After the second minute, the second LED light by the number 2 will light up. And so on. At the settings shown above, after 4 minutes, the Bullet Blender® Field Model will stop. In the Blue versions, the words "Air Cooling™" will light up in blue during operation and for about one half minute afterward as the fan continues to operate.

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

As the sample amount becomes smaller, that ratio will differ due to the limitations of handling of the small volumes. With microtubes, we recommend using a minimum of 30µL of buffer regardless of your sample size.

With microtubes, the maximum sample mass is 300mg of sample or 300µL of pelleted cell culture per microtube in the Bullet Blender® Field Model, and the tube should not be filled more than two-thirds of the way (this includes sample, beads, and buffer). This is because the mechanics of homogenization require empty space in the tube.

Cutting the sample into smaller pieces will generally yield better results. As a general rule, best results will be achieved when cutting the sample into sections that are ½ of the maximum size or less. Sample with a high aspect ratio (long, thin strips) will homogenize better than sample that is round or cubic.

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

Protocols for many types of samples are posted on our website, at www.nextadvance.com/FAQs/protocols.htm

Notes:

Use extra caution when operating the Bullet Blender® Field Model around water- submersion will damage the electrical components and void the warranty.

Use high quality polypropylene snap top tubes, such as Eppendorf® Safe-Lock® microtubes.

At high speed settings there may be some flaking of the tubes. This is normal and intentional. The higher speed enables homogenization of tougher sample.

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® Field Model 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

In addition to the tips given below, a thorough list of troubleshooting tips is at http://www.nextadvance.com/FAQs/FAQs-Bullet_Blender.htm.

If nothing happens, the battery may have

run out of power. Battery charger might not have been in a live wall outlet or the connector plug might not be fully in the jack on the back of the Bullet Blender® Field Model. Make sure the switch on the back of the unit is turned to "on".

If the unit stops working, turn the system off for 15 minutes to allow the electronics to reset. If the Bullet Blender® Field Model does not turn on after this period, contact customer service.

If the caps on the microcentrifuge tubes pop open or screw caps 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 is 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 techsupport@nextadvance.com or by telephone at 1.518.674.3510 or (800) 738-1681.

SPECIFICATIONS

Size: all FBBX units: 11 in. (28 cm) deep x 8 in (20 cm) wide x 8.5 in. high (15 cm).

Weight: 4.1 to 4.4 kg (9 to 9.8 lbs.), depending upon model.

Power Requirement: all FBBX units come equipped with a 2.4 amp hour, rechargeable gel pack battery. Requires 500 milliamp charger.

Capacity: 6 of 1.5 - 2.0mL poly-propylene high quality (e.g. Eppendorf) sample tubes, or 6 1.5ml conical, polypropyleme Corning or Axygen screw cap tubes depending upon model.

Relative Humidity: 5 - 90% non-condensing

Operating Temperature: 4 - 50°C

Storage Temperature: -40 to 50°C

Meets CE requirements (-CE models only).

WARRANTY

The Bullet Blender® Field Model comes with a 30 day money back guarantee (less shipping charges) and a two year warranty. There is a 3 year warranty on the motor. Next Advance will replace, free of charge, any part which is defective due to workmanship or materials.

For further information, go to http://www.nextadvance.com/legal_terms.htm.

Warranty is void if

Product has defect or damage due to product accident, alteration, connection to an improper electrical supply, fire, flood, lightning, or other conditions beyond the control of Next Advance.

Product is improperly installed or used.

Operator's Responsibility

Provide proof of purchase and provide normal care and maintenance.

WARNINGS AND CAUTIONS

Read the user's manual before operating.

Do not immerse in liquid.

Do not operate Bullet Blender® Field Model units with empty tubes.

Do not open lid when Bullet Blender™ Field Model is in use.

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

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

Use recommended tubes only.

No user serviceable parts are inside.

To dispose of battery, follow your local regulations for disposal.

Pollution Degree 2 per EN 61010-1.

Sound Pressure Level: up to 90dBA. Use hearing protective devices that reduce exposure to below 85 dBA during prolonged exposure.

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

DISCLAIMER

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statutory or implied, regarding the fitness or merchantability of this product for any particular purpose. In no event shall Next Advance be liable for incidental or consequential damages. Next Advance, Inc. is not liable for any damages, including but not limited to, lost profits, lost savings, or other incidental or consequential damages arising from ownership or use of this product, or for any delay in the performance of its obligations under the warranty due to causes beyond its control.

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