




Operation and Maintenance Instructions





BTV Series Digital Tabletop Ultrasonic Cleaner


SAFETY WARNINGS


You will find various types of safety information on the following pages and on the labels attached to Graymills equipment. The following Safety Statements explain their meaning:


 This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

 **DANGER** indicates a hazardous situation which, if not avoided, will result in death or serious injury.

 **WARNING** indicates a hazardous situation which, if not avoided, could result in death or serious injury.

 **CAUTION**, used with the safety alert symbol, indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

 **CAUTION**, used without the safety alert symbol, is used to address practices not related to personal injury.

 **CAUTION**
Never work with equipment you feel may be unsafe. Contact your Supervisor immediately if you feel a piece of equipment is in an unsafe condition.

INTRODUCTION

Ultrasonic cleaning is based on a cavitation effect caused by high frequency ultrasonic wave vibrations in fluid. Microscopic bubbles are formed and implode (cavitation) which provides an intense scrubbing action on the surface of the item being cleaned. Additionally, the bubbles are small enough to penetrate even microscopic crevices, cleaning them thoroughly and consistently.

CAUTION

Although this digital series of ultrasonic cleaners is very easy to use, to get the best performance from your new purchase we recommend you read this manual before beginning cleaning. It contains important safety information as well as practical hints for usage.

GENERAL GUIDELINES

- Only use the AC power cord supplied with the product. Replace if it becomes damaged in any way.
- Do not operate the unit next to heat sources.
- Do not allow objects or liquids to enter the unit anywhere except the tank.
- If the unit gets damaged, has been dropped, or appears to have developed a fault, refer to the warranty information for details.

UNPACKING

Remove your cleaner from its packaging and ensure that along with Operations and Maintenance Instructions, you have been supplied with a power cord.

SAFETY INSTRUCTIONS

WARNING

Read this before using your product.

- Never operate unit without the safety ground (earth) from the AC power cord intact.
- Do NOT operate this unit if the cord or plug is damaged.
- To avoid electric shock, do NOT touch the cord or socket with wet hands.
- Unplug unit before filling. Do NOT fill with boiling cleaning solution as damage to the unit may occur. Always fill the unit above the "MIN" marker line before use.
- Always unplug the unit before emptying.

CAUTION

- Do NOT attempt to remove screws or panels on the unit as there are no serviceable parts inside. Doing so will void warranty.
- Do NOT fill the tank with abrasives or corrosive chemicals.
- Always turn off power when not in use.
- Do NOT operate the unit without cleaning solution in the cleaning tank as damage may occur.
- The unit should not be left unattended when running.
- Do NOT clean items that are incompatible with your cleaning solution or are delicate/fragile as damage may occur.

UNIT SET UP

- 1 Place the unit on a stable and flat working surface.
- 2 Before connecting the power cord, add cleaning solution to the tank, sufficient to completely immerse the items to be cleaned.
- 3 Always fill the unit above the "MIN" marker line indicated on the inside of the tank.
- 4 Replace cover. Connect the power cable and turn on the power switch on the rear of the unit. Press the ON/OFF button on the front panel to turn the cleaner ON.
- 5 **The cleaning fluid needs to be de-gassed prior to cleaning your parts.** Set the timer to 10 minutes (see "Setting the Timer") and allow the ultrasonic cleaning function to run without parts in the tank.
- 6 Place the items to be cleaned in tank or optional stainless steel basket and replace cover. You are now ready to set the timer and temperature to your desired cleaning process.

OPERATING INSTRUCTIONS

Setting the Timer

Press the ▲ and ▼ buttons to increase or decrease the desired cleaning time. Once the timer is set, press "ON" to start the ultrasonic cleaning function. The timer display will count down the remaining time in minutes and seconds. Once the timer reaches 00, the cleaning process will stop. Timer adjustment can be made while the unit is in operation.

The unit will enter 'standby' mode 60 seconds after the cleaning cycle has finished. To re-start the unit, press the ON/OFF button.

Setting the Temperature

When power is connected, the temperature of the cleaning solution in the tank is displayed in the "ACTUAL TEMPERATURE" window.

Press the "HEATER TEMPERATURE" ▲ button to increase, or the ▼ button to decrease the desired temperature.

While heating is occurring, the red "HEATING" light will illuminate. The "ACTUAL TEMPERATURE" display shows the current cleaning solution temperature. If cleaning solution temperature is higher than the setting temperature, the heating process stops automatically and the red indicator light goes off. If cleaning solution temperature is lower than the setting temperature, the heating process carries on and the red indicator light remains on. For best results, the temperature should be between 130° to 160°F (55° to 70° C).

CAUTION

Excessive heat or prolonged cleaning times can cause damage to your items. If necessary, test clean your items at a temperature lower than 130°F until you are sure they can withstand the higher temperature. If you need assistance determining cleaning times for your specific application, please call Customer Service at 888-472-6455.

WARNING

Hot cleaning solution can cause scalding. Wear appropriate personal protective equipment when operating the unit with cleaning solution above 110°F. Take care not to splash cleaning solution on yourself or bystanders when loading and unloading the unit. If cleaning solution is splashed on you, follow the instructions on the chemical manufacturer's MSDS.

CAUTION

When finished using the ultrasonic cleaner:

- Ensure unit is in 'standby' mode by pressing the ON/OFF button and checking that the displays turn off.
- Turn off the power switch on the rear of unit and disconnect the unit from the electrical supply.

CLEANING THE UNIT

WARNING

Before cleaning, unit must be unplugged.

Allow cleaning solution to cool. Drain unit and wipe the stainless steel tank and housing with a clean dry cloth. DO NOT wash the unit with cleaning solution.

STORAGE

The unit should be stored in a cool dry place.

SPECIFICATIONS

MODEL	CAPACITY	TANK SIZE	ULTRASONIC POWER	HEATING POWER	FREQ	TIMER RANGE
BTV-020	0.5 gal 2.0 L	5.9 x 5.3 x 3.9 inch 150 x 135 x 100 mm	70W	50W	40KHz	0-30mins
BTV-032	0.8 gal 3.2 L	9.4 x 5.3 x 3.9 inch 240 x 135 x 100 mm	120W	100W	40KHz	0-30mins
BTV-065	1.7 gal 6.5 L	11.8 x 5.9 x 5.9 inch 300 x 150 x 150 mm	180W	200W	40KHz	0-30mins
BTV-150	4.0 gal 15 L	13.0 x 11.8 x 5.9 inch 330 x 300 x 150 mm	360W	300W	40KHz	0-30mins
BTV-300	7.9 gal 30 L	19.7 x 11.8 x 7.9 inch 500 x 300 x 200 mm	600W	500W	40KHz	0-30mins

WARRANTY

Graymills Corporation warrants that the equipment manufactured and delivered hereunder when properly installed and maintained shall be free from defects in workmanship. This warranty does not apply to damages or defects caused by operator carelessness, misuse, abuse, improper application, or abnormal use; the use of add-on parts or equipment which damages or impairs the proper function of the unit and modifications made by Buyer.

Graymills' obligation under this warranty shall be limited to:

1. Replacing or repairing pumps, motors, tanks and structural parts within one year from the date of installation or 13 months from the date of shipment, whichever occurs first. The decision to replace rather than repair shall be made by **Graymills Corporation**;
2. Replacing or repairing components supplied by but not manufactured by **Graymills**, to the extent such components are warranted by the original manufacturer's warranty and provided that Buyer gives **Graymills** prompt written notice within ninety days of any defect or failure and satisfactory proof thereof.

Before **Graymills** can repair or replace a defective part under warranty, call **Graymills** for a Return Merchandise

Authorization number (RMA number must appear on outside of package or it will be refused and returned). Upon prepaid return to **Graymills'** factory, **Graymills'** examination must disclose such part to be defective.

This warranty does not apply to expendable parts needing replacement periodically due to normal wear. A new warranty period shall not be established for repaired or replaced materials, or products. Such items shall remain under warranty for only the remainder of the warranty period of the original materials or products. **Graymills** warrants that the equipment will function mechanically as quoted in the published specification. **Graymills** does not warrant process performance nor does **Graymills** assume any liability for equipment selection, adaptation, or installation.

The foregoing warranties are in lieu of all other warranties whether oral, written, expressed, implied, or statutory. Implied warranties of fitness for a particular purpose and merchantability shall not apply. **Graymills'** warranty obligations and Buyer's remedies thereunder (except to title) are solely and exclusively stated herein. In no case will **Graymills** be liable for consequential damages, loss of production or any other loss incurred due to interruption of service.



3705 N Lincoln Avenue Chicago, IL 60613
773-477-4100 fax 773-477-4133
info@graymills.com www.graymills.com