



# Instrument User Manual

Research Use Only

HBH-A01

# Product Description

The Autolab HBH system utilizes hyperbaric heating (HBH) conditions (i.e. internal temperature  $>100^{\circ}\text{C}$  in a pressurized system) to prepare specimens within minutes. It effectively lysis organisms and inactivates macromolecular PCR inhibitors such as nucleases by leveraging extreme heat and HBH reagents that are optimized to inactivate PCR inhibitors and protect free nucleic acids.

## Before You Begin

Important: Read the Autolab HBH Instrument User Manual for complete information prior to using the instrument.

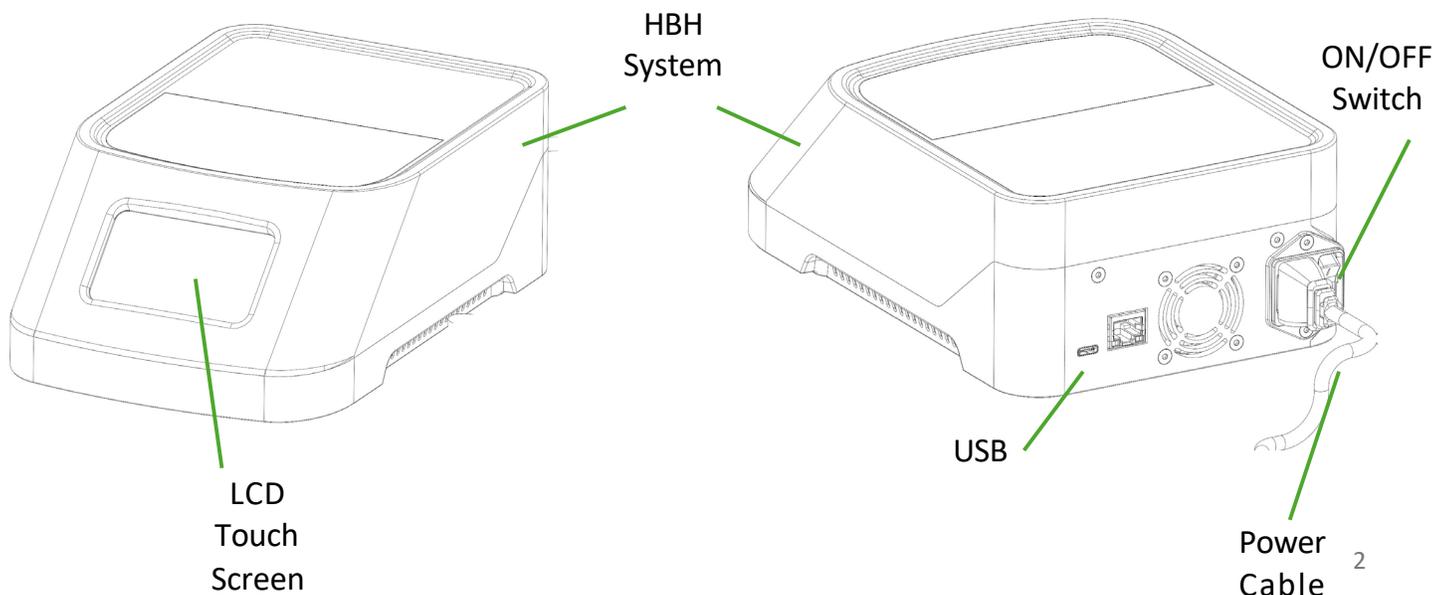
## Provided Materials

### Hardware:

Autolab HBH Instrument  
Power Cable

### Documentation:

Autolab HBH User Manual



# Precautions for Use and Safety Symbols

Symbol	Description
	Caution: Pay Attention
	Research Use Only
	Keep away from water
	RoHS and Lead-Free Compliance
	Operating Temperature Range
	CE Mark

## Warning

**WARNING:** HBH Bullets are intended for single-use only. Reuse is strictly prohibited.

These bullets have been engineered and manufactured for **one-time use only in accordance with the design and safety specifications provided by AMDI**. Any attempt to reuse, repurpose, or reload HBH bullets may result in mechanical failure, which may cause loss of sample, damage to property, and/or personal injury (**including the possibility of serious bodily injury or death**). Accordingly, any such misuse will void all warranties, guarantees, and safety assurances associated with this product.

**AMDI disclaims all liability for any harm, damage, or loss resulting from the use of HBH bullets in a manner inconsistent with the instructions provided herein.**

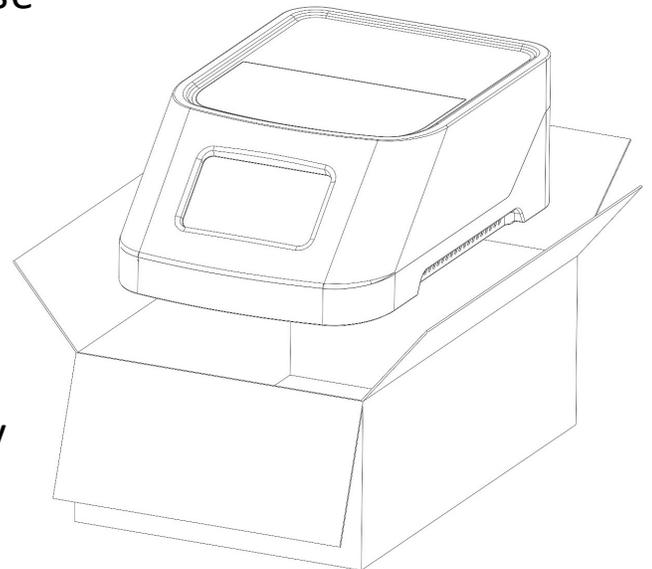
By using the product, the user (i) agrees to abide by all instructions, warnings and limitations set forth in this manual, (ii) acknowledges that reuse of the HBH Bullets constitutes **misuse of the product**, and (iii) assumes all risk associated with any such misuse.

# Unpacking the Instrument

Important: Retain the shipping container and packing materials in case you need to return the instrument to AMDI for any reason.

1. Unpack the instrument from the shipping container.
2. Unpack the Power Cable.
3. Inspect the outer case, front and back panels and rear ports for any damage.

To report any problems, contact Autonomous Medical Devices Customer Service at: +1-657-660-6800 or [customerservice@amdilabs.com](mailto:customerservice@amdilabs.com) or contact your local distributor.



# Set up the Instrument

## Instrument location and operating environment

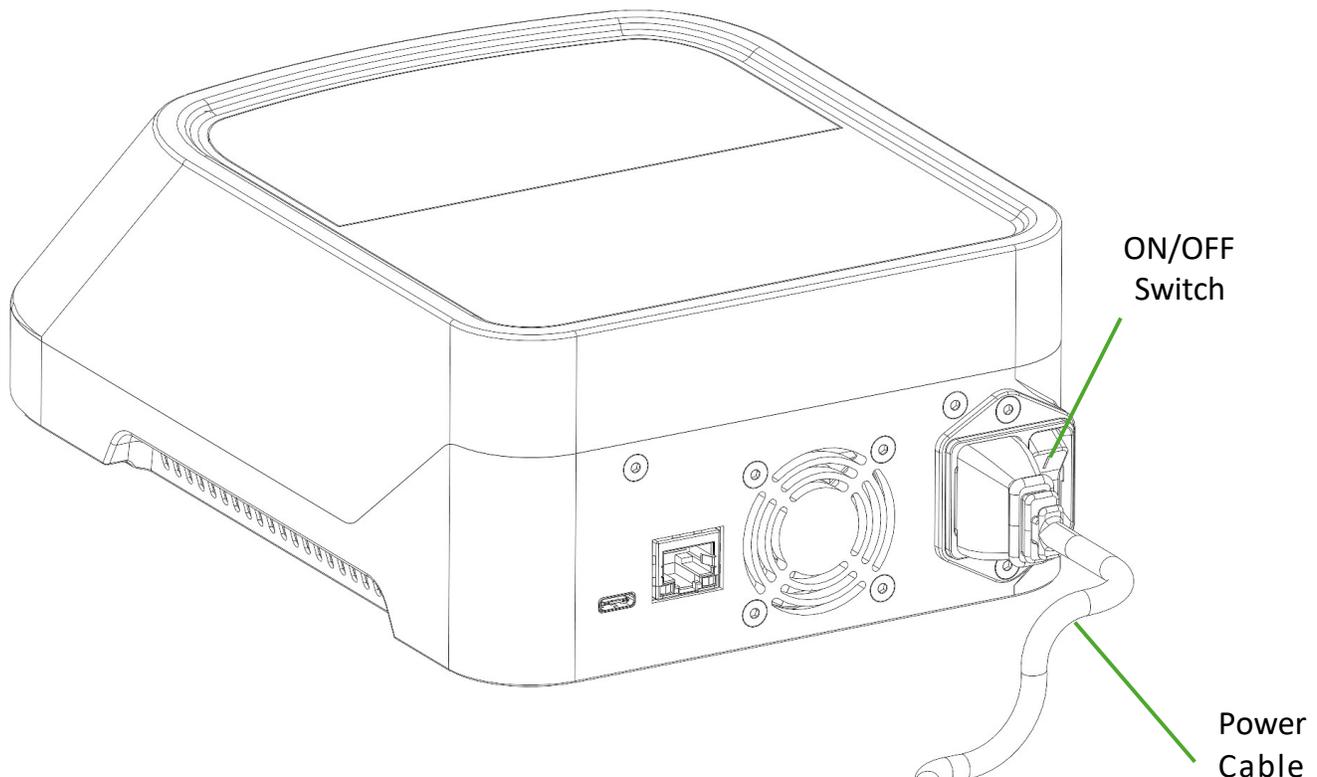
1. Place on a level, vibration-free surface away from direct sunlight
2. Allow at least 10 cm (4 inch) rear clearance for ventilation.
3. Operating temperature is between (15°C to 30°C) and relative humidity 5% - 90% with an operating altitude up to 7500 feet above sea level.
4. Locate the instrument near a grounded outlet to avoid power cable from becoming a trip hazard.

# Connect the Power Supply

**Caution:** Using an inappropriate power cable may cause a malfunction.

Only use power cable provided with the Autolab HBH instrument and connect to a voltage of 100-240V, 50-60Hz.

1. Insert power cable into the Autolab HBH power connector located in the rear of the unit.
2. Connect the power cable to the properly grounded power outlet.
3. Once plugged in, flip the Power button to the ON position.



# Cleaning and Disinfection

Cleaning of the exterior surfaces of the Autolab HBH instrument and the immediate work area should be performed, as necessary.

1. Unplug the power cord from the wall outlet and the instrument.
2. Carefully wipe down the outside, interior of the lid, and where the Autolab HBH sits with either a) water, b) 10% v/v household bleach diluted with water, or c) 70% v/v alcohol (ethanol or isopropanol) diluted with water.
  - The receptacle the HBH bullet goes in can also be wiped down, as needed.

## Caution

### Caution:

1. Ensure there is the minimum amount of sample volume ( $\geq 300\mu\text{L}$ ) in an Autolab HBH bullet when using the HBH system.

NOTE: heating an empty bullet may lead to damage of the system

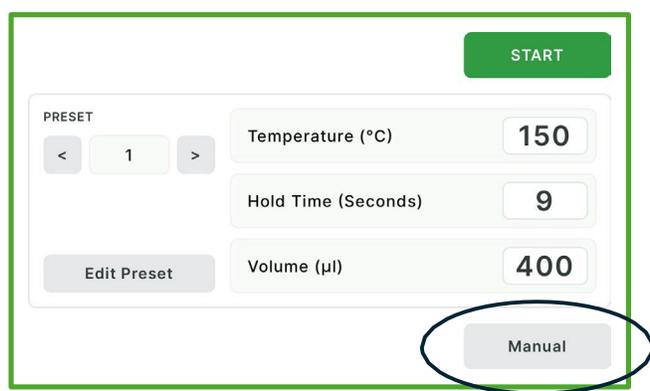
2. Ensure sample volume in Autolab HBH bullet matches the sample volume setting for the instrument prior to running. The instrument may exceed the programmed temperature and may lead to injury if they do not match.
3. The Autolab HBH system is designed to cool down the HBH bullet prior to allowing removal but still may be hot to touch.

# Autolab HBH Instrument Settings

The Autolab HBH instrument has two settings, **Manual** and **Presets**. To optimize temperature, hold time and volume for a specific sample type utilize the manual setting. The desired settings can be saved as presets for future use.

## Manual Settings

1. From the home page select Manual



2. Set the temperature in 10 °C increments, 100 – 150°C, using the slider or the +/- buttons.



3. Set hold time in 1 second increments, 0 - 60 seconds, using the slider or the +/- buttons.



3. Set volume in 100uL increments, 300 – 1000uL, using the slider or the +/- buttons.

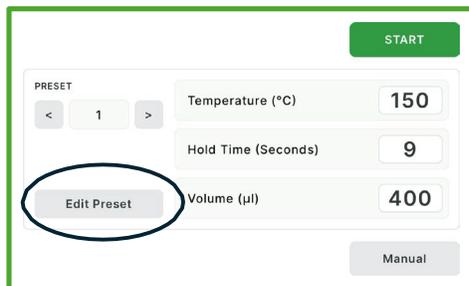


Sample can be run at this stage by pressing the start button. See Running Samples, page 8.

# Autolab HBH Instrument Settings (cont.)

## Preset Settings

1. From the home page select Edit Preset



2. Set the temperature in 10 °C increments, 100 – 150°C, using the slider or the +/- buttons.



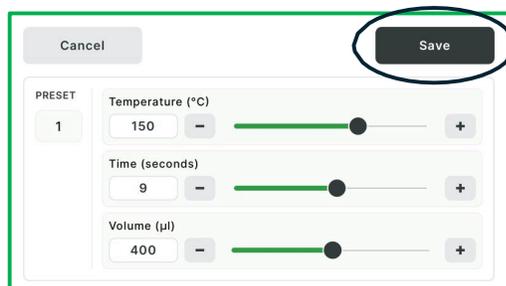
3. Set hold time in 1 second increments, 0 - 60 seconds, using the slider or the +/- buttons.



3. Set volume in 100uL increments, 300 – 1000uL, using the slider or the +/- buttons.



4. Press Save to save the preset. Up to five presents can be saved.



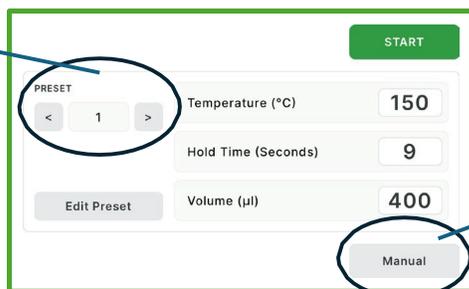
Return to home screen by pressing home and samples can be run using any of the presets.

# Run the Autolab HBH Instrument

**NOTE:** Disposable gloves and safety glasses are recommended when running this instrument. Wash hands thoroughly after handling samples.

1. From the home screen either press one of the presets or manual

Presets



Manual

2. Load the desired volume of sample into the Autolab HBH bullet

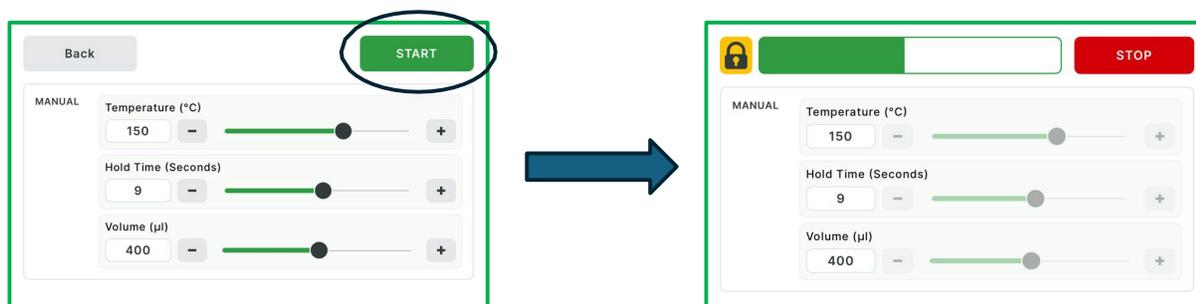
- Sample volume range:
  - If using HBH-K01, 300 – 600uL
  - If using HBH-K02, 700 – 1000uL
- After adding sample to the Autolab HBH bullets, it can be stored on a rack at room temperature up to an hour prior to heating.

**NOTE:** Ensure Autolab HBH bullet is tightly capped prior to loading onto the Autolab HBH instrument

3. Load the Autolab HBH bullet on the Autolab HBH instrument and close the lid

**CAUTION:** Ensure sample was added to the bullet prior to loading on the Autolab HBH instrument as heating an empty bullet can lead to overheating of the system

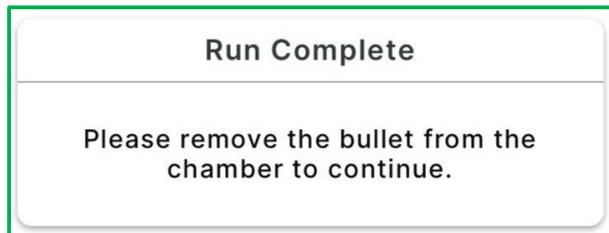
4. To start heating press START. Once heating starts the progress bar will be active.



**CAUTION:** Do not attempt to open lid during run.

# Run the Autolab HBH Instrument (cont.)

5. When the run is complete, open instrument lid, take Autolab HBH bullet out and place on a rack. Avoid touching the metal part of the bullet as it can be hot to touch. Heat resistant gloves can be utilized (not provided).

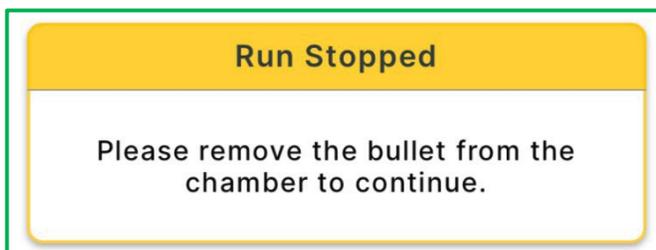


## Aborting a Run

A run can be aborted at any time during the run by pressing STOP.



Once the run stops, remove bullet and dispose of in appropriate waste container.



# Error Codes

See below for known error codes and resolutions

Error Text	Resolution
Error 1: Open lid detected. Refer to the user manual.	<ol style="list-style-type: none"><li>1. Power off the instrument.</li><li>2. Inspect the lid for any damage or malfunction.</li><li>3. Power on the instrument and insert a new bullet to continue.</li></ol> If the start button does not turn green or the message repeats, contact customer service.
Error 2: Instrument temperature is out of range. Refer to the user manual.	<ol style="list-style-type: none"><li>1. Keep the instrument powered on. As the internal temperature may be high, do not open the lid or remove the HBH bullet.</li><li>2. Check the air vents and remove any dust or obstructions.</li><li>3. Wait 5 minutes.</li><li>4. Power off, then power on and resume use.</li></ol> If the error appears during startup or recurs, please contact customer service for assistance

# Customer Support

If you have any questions regarding the use of this product or if you want to report a test problem, please contact Autonomous Medical Devices Incorporated Customer Support at +1-657-660-6800 or [customerservice@amdilabs.com](mailto:customerservice@amdilabs.com)

# Intellectual Property

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