



a breath of fresh care™

# A Patient Guide to BiWaze® Cough System

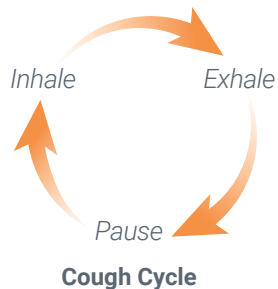
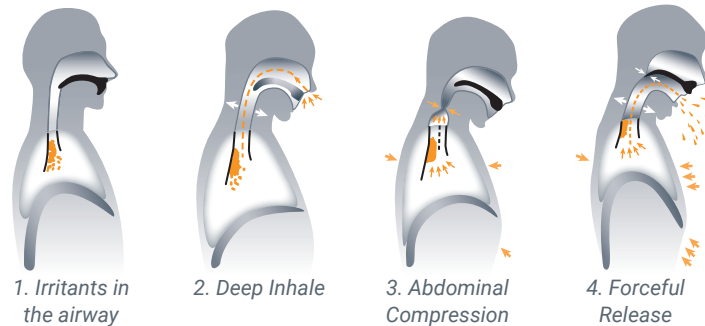
# Why is coughing important?



Coughing is a natural and important reflex to help clear your throat and airway of germs, mucus and dust. Coughing can propel air and particles out of your lungs and throat at high speeds (over 50 miles per hour).

Some infrequent coughing helps mobilize mucus and has no damaging effects on your body. When you are unable to cough, unwelcome particles and mucus can collect in the lungs which may lead to an infection.

In order for a cough to occur, several events need to take place in sequence. First, you must inhale deeply, so additional air passes into your lungs. Then close your glottis to block the inhaled air from escaping and contract your abdominal muscles, to increase the pressure behind the glottis. When the air is forcefully released, the rushing air dislodges the mucus making it possible to breathe comfortably again.



When coughing becomes difficult due to muscle weakness or loss of diaphragm control, your physician may prescribe a manual or mechanical assisted cough therapy. A manual cough assist involves applying firm and rapid pressure to the upper abdomen and forcing the air out of the lungs.

A mechanically assisted cough involves a therapy device that mimics a cough by delivering a strong inhale breath, followed by a strong exhale breath, and then pauses. This is considered a cough cycle and a complete therapy will consist of several cycles. A typical therapy will consist of 4 to 6 cough cycles.

# How does BiWaze<sup>®</sup> Cough help with airway clearance?

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BiWaze Cough combines hygiene and personalization into a unique therapy experience. It helps people clear their airways by mimicking a natural cough as well as mobilizing mucus with its oscillations and lung expansion therapy options. It is a non-invasive therapy that is a safe alternative to invasive suctioning and other airway clearance therapies.

BiWaze Cough was designed for use by health care providers, caregivers, or patients to simulate a cough to clear mucus from people's lungs who are unable to clear them with a natural cough.

Visit our website to learn more: [www.abmrc.com](http://www.abmrc.com)

# Overview of BiWaze<sup>®</sup> Cough

## TOP AND FRONT PANEL

**1. Touch Screen** Allows you to view settings, system status information, therapy settings, and logs. You can also modify settings from the touch screen.

**2. Device Mode LED Light** Provides different color code lights.

**Green** = Manual Mode

**Blue** = Auto Mode

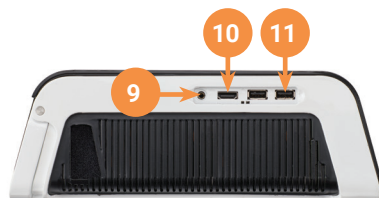
**Red** = Error or Shutdown Mode

**3. Patient Port** Connection point for the patient breathing circuit. The patient port adapter is used to connect a standard 22 mm viral/bacterial filter to the patient port. The Dual Lumen filter connects directly to the Patient Port.

## SIDE PANEL

**4. Air Inlet Filter** Filters air being brought into the control unit for the therapy.

**5. Cooling Fan** Cools the main control board.



## BACK PANEL

**6. Power Switch** Turns the control unit on and off.

**7. AC Power Inlet** Connection port for the AC power cord to power the control unit and charge the battery. The red light to the right of the connection port indicates if the power cord is fully connected in the port.

**8. Handle** Allows easy carrying of the control unit.

## SIDE PANEL

**9. Foot Pedal Port** Connection port for a foot pedal (optional accessory).

**10. HDMI Port** Allows external display of the touch screen through an HDMI cable.

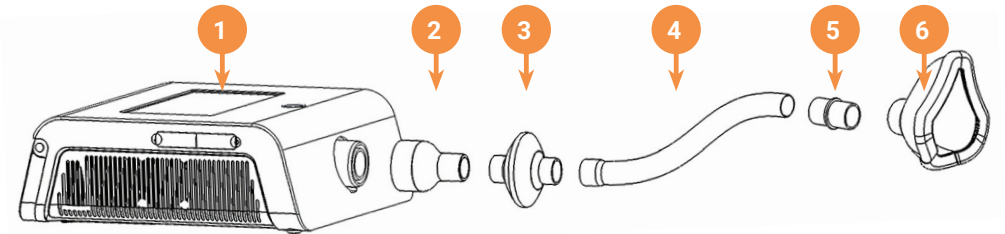
**11. USB Ports** Connection port for USB flash drives and SpO2 external sensors.

**Caution: Do not attach any unapproved devices. Failure to do so may damage the system.**



# Setup the Patient Breathing Circuit

- 1. BiWaze Cough** Main therapy control unit.
- 2. Patient Port Adapter** Connects a 22mm standard viral/bacteria filter to the BiWaze Cough control unit. The adapter isn't used with the Dual Lumen Breathing Circuit.
- 3. Viral/Bacterial Filter** Used to filter viral and bacterial particles from flowing into and out of the control unit.
- 4. Breathing Tube** Standard 22 mm breathing tube 6 ft. in length.
- 5. Adapter** Standard 22 mm straight adapter.
- 6. Face Mask** Patient interface for therapy delivery. Other optional interfaces available include a mouthpiece and a flexible trach



## PATIENT INTERFACES

Leaks in the patient interface can decrease the effectiveness of the therapy.

Some people may need to have their head supported from behind to prevent leaks when using a face mask.

When using a mouthpiece, you may need to use a nose clip to prevent leaks.

*Note: Always follow the prescribed therapy protocol from your physician.*

The Dual Lumen Breathing Circuit is an optional patient breathing circuit which separates the inhale and exhale pathways to help ensure the inhaled air is not contaminated with mucus from the exhaled air. This optional breathing circuit doesn't require the Patient Port Adapter, so the viral/bacterial filter connects directly to the BiWaze Cough control unit's patient port.

# Prepare for Therapy

## SYSTEM SETUP

1. Assemble the Patient Breathing Circuit.
2. Ensure the patient port adapter is firmly connected to the patient port on the front of the device and the patient breathing circuit is connected to the patient port adapter if using a standard breathing circuit. The patient port adapter isn't used with the Dual Lumen Breathing Circuit.



3. Switch on the power at the back of the control unit and plug in the control unit to AC power if necessary.  
**Note:** During each startup the control unit self-calibrates.
4. The screen will display the last therapy completed. You may have different therapy options as pre-programmed therapies in the drop-down list under Auto.
5. Position the control unit on a firm, flat surface within arm's length of the patient. The control unit should be placed below elbow level for the best visibility of the screen.  
**Note:** Make sure the air inlet areas of the control unit are not blocked. Air must flow freely around the control unit.



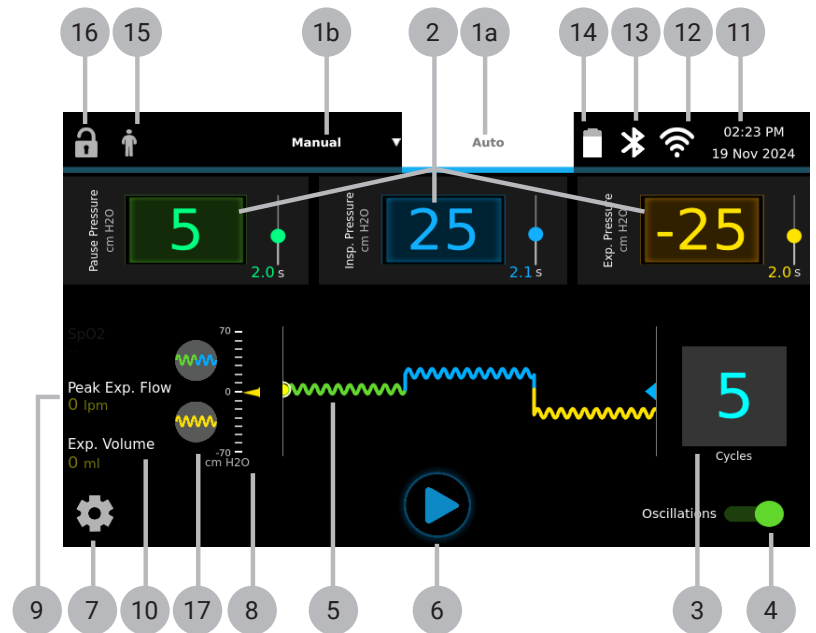
# Therapy Screen

When the BiWaze Cough system powers on the screen will display the last therapy completed. Below are the components of the therapy screen.

1. Therapy Mode, Auto or Manual options.
  - a. **Auto Mode:** pressures and times are preprogrammed.
  - b. **Manual Mode:** pressures are set and the therapy time is controlled by the user. Manual Mode may be hidden.

2. Auto therapy pressures and times
  3. Cycle count
  4. Oscillation toggle
  5. Progress Bar
  6. Start or Pause button
  7. Settings
  8. Pressure Manometer (may be hidden)
  9. Peak Expiratory Flow (may be hidden)
  10. Expiratory Volume (may be hidden)
  11. Date and Time
- Note: BiWaze Cough has a lock feature which can be set by the healthcare team. When the system is locked, some therapy components may be hidden.*
12. WIFI allows data transmission to Arc Connect and date/time synchronization with BiWaze Cough location.

13. Bluetooth
14. Battery status
15. Patient Name or ID (optional)
16. Lock (red is locked and grey is unlocked)
17. Enable or disable oscillations independently for each phase of the cough cycle: pause/inhalation, exhalation, or both.



# Run Therapy

## AUTO THERAPY

1. Select Auto on the top menu bar. You may have pre-programmed therapy options to choose from in the drop-down list under Auto.
2. Oscillations can be turned on or off by pressing the toggle on the bottom right. When the toggle is green, the oscillations are On and when gray, the oscillations are Off.



3. Ensure the patient interface is securely in place.
  - **Face mask**—tightly, but comfortably, cover the mouth and nose of the patient. Make sure the narrow end of the mask is over the patient's nose.
  - **Mouthpiece**—put the mouthpiece lightly in the patient's mouth. Make sure that the patient maintains a tight seal on the mouthpiece during the therapy.
  - **Flexible tracheostomy adapter**—if the patient has a tracheostomy tube or endotracheal tube, use the flexible tracheostomy adapter to connect the tracheal tube to the breathing tube.
4. Press Start to begin therapy.



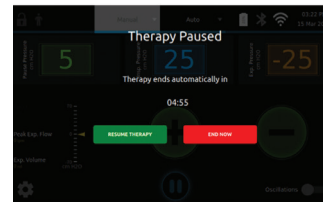
5. Use the progress bar and cycle countdown on the screen to follow along with the therapy.



6. Press Pause to halt the therapy if needed.

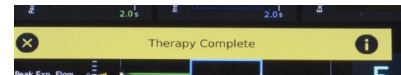


7. Press RESUME THERAPY to continue the therapy or END NOW to stop the therapy.



*Note: The therapy will remain in a pause state for 5 minutes before automatically ending.*

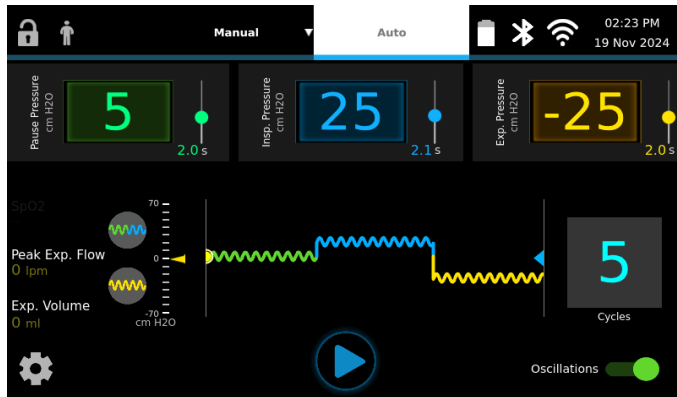
8. When the therapy is complete, you'll see a therapy completed ribbon across the screen. The ribbon contains details of the therapy delivered and can be closed by pressing the X.





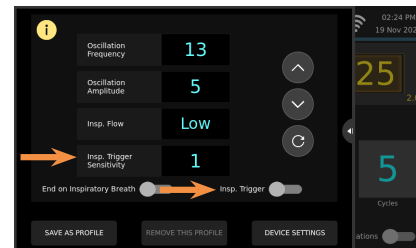
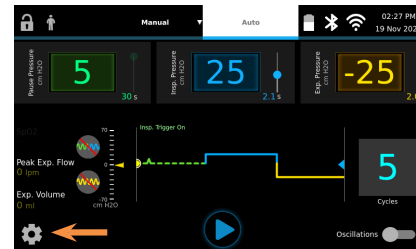
## TYPICAL THERAPY

A typical cycle is composed of an inhale pressure and time, an exhale pressure and time, and a pause pressure and time. The typical cough therapy is a sequence of 4 to 6 cough cycles. If needed, repeat the cough sequence until all the secretions are cleared from the patient's lungs. It is a good idea to rest between sequences.



## INSPIRATORY TRIGGER

An inspiratory trigger can be set to allow you to control when the inhalation breath will start, instead of a preset time. There is also a range of sensitivity settings, with 1 being the least sensitive and 10 the most sensitive. Adjust sensitivity as necessary. The inspiratory trigger is available under Settings on the bottom left of the touch screen. As with the Oscillations, green toggle means the Inspiratory Trigger is ON and gray toggle means the Inspiratory Trigger is OFF. Press the toggle to switch between ON and OFF.



# Cleaning and Maintenance

## CONTROL UNIT AND BREATHING CIRCUIT

1. Switch off the power at the back of the control unit and unplug the power cord.
2. Disconnect the breathing circuit from the control unit.
3. Wipe the exterior of the control unit, the patient port adapter, and power cord with an approved cleaning agent (see the BiWaze Cough User Manual BC21084 for a list of approved cleaning agents).

*Note: Allow the device to completely dry before plugging in the power cord.*



4. Disconnect all the components of the breathing circuit including the viral/bacterial filter, breathing tube, and patient interface.
5. Examine the viral/bacterial filter and discard if it is damaged by sputum or trapped moisture. If it is not damaged, gently wipe the exterior with an approved cleaning agent and set aside. Do not wash the viral/bacterial filter.



6. The breathing tube, adapter, and patient interface should be washed thoroughly with liquid dishwashing soap and warm water.
7. Let the components air dry completely before reuse.

*Note: Replace the breathing circuit after 30 days or 90 therapy cycles, whichever comes first.*

*Note: The patient port adapter is not replaced with a new breathing circuit. Do not throw away the patient port adapter.*



## PREVENTATIVE MAINTENANCE

BiWaze Cough does not require routine servicing. The system performs a self-calibration upon every startup.

## AIR INLET FILTER

Under normal usage, you should clean the inlet air filter at least once every month and replace it with a new one every six months. If BiWaze Cough is used in an environment with animal hair or high amount of dust, it is recommended to clean the air inlet filter more frequently.

1. Switch off the power at the back of the control unit and unplug the power cord.
2. Remove the filter from the enclosure by pinching it with your fingers.
3. Examine the filter for integrity. Replace the filter if it is torn or damaged.
4. Wash the filter in warm water with a mild detergent like liquid dish soap.
5. Rinse thoroughly to remove all detergent residue.
6. Reinstall the filter after it is completely dry.

*Note: Only Air Inlet Filters (BC21274) from ABM Respiratory Care should be used as replacement filters. The filter package includes 3 filters but only use one filter at a time.*



## STORAGE AND TRANSPORTATION

Store in a dust free location outside the reach of children.

Use the carrying bag provided with the system to protect the control unit and the accessories. When traveling, the carrying bag is for carry-on luggage only. The carrying bag will not protect the system if it is put through checked baggage. Do not place other baggage on top of the system.



This Patient Guide contains information extracted from the BiWaze Cough user manual (BC21084). For complete instructions for use please refer to the BiWaze Cough user manual.

If you have questions about your BiWaze Cough system or therapy, please contact your local Home Health Equipment company or healthcare team.



website



overview video



training video



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