a breath of fresh care™

A Patient Guide to BiWaze® Cough System

Why is coughing important?

Coughing is your body's built-in way of clearing germs, dust, and extra mucus from your throat and lungs. A single cough can send air out at more than 50 miles per hour—fast enough to sweep unwanted particles away.

When you cough only now and then, it actually helps keep your lungs healthy. But if you cannot cough well—because of weak muscles, illness, or loss of diaphragm control—mucus can build up and raise the risk of infection.

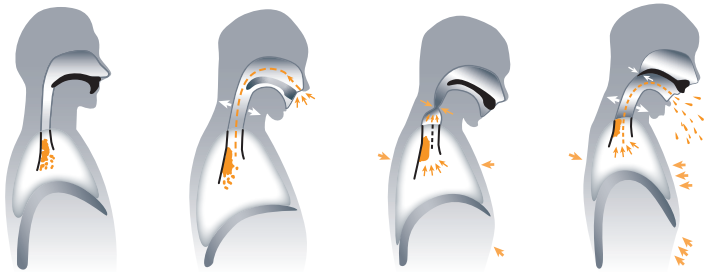
How a normal cough works:

Big breath in – Fill your lungs with air.

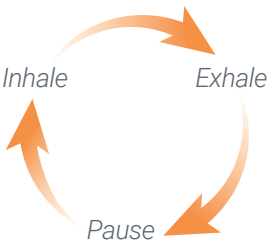
Momentary hold – A small flap in your throat (the glottis) closes to keep the air inside.

Tighten and press – Chest and belly muscles squeeze the trapped air.

Fast burst out – The flap opens and air blasts out, pushing mucus away.



1. Irritants in the airway *2. Deep Inhale* *3. Abdominal Compression* *4. Forceful Release*



Cough Cycle

If your natural cough is weak, your doctor might recommend assisted cough therapy:

Manual assist – A caregiver presses firmly and quickly on the upper belly or chest as you try to cough, helping push air out.

Mechanical assist – A device (often called a cough assist or MI-E) gently blows air into your lungs, then quickly pulls it out. One "in-and-out" is a cough cycle. A typical therapy uses 4–6 cycles in a row.

Assisted cough therapy can make breathing easier, lower infection risk, and help you feel more comfortable day to day. Always follow your healthcare team's guidance on which method and how many cycles are right for you.

How does BiWaze® Cough help with airway clearance?

BiWaze® Cough is a non-invasive airway-clearance system that helps remove mucus when your natural cough is not strong enough. The device gives you a gentle breath in, then a quick, forceful breath out. You can also add light vibrations (oscillations) to shake loose thick mucus so it's easier to cough out.

A dual-blower design with a dual-lumen breathing circuit keeps the air you inhale separate from the mucus you exhale, helping maintain good hygiene and lowering the chance of cross-contamination. (A single-limb circuit can also be used, but in that setup the air and mucus travel through the same tube.) Your healthcare provider can adjust the settings so the therapy feels right for you.

Learn more at abmrc.com.

Overview of BiWaze® Cough

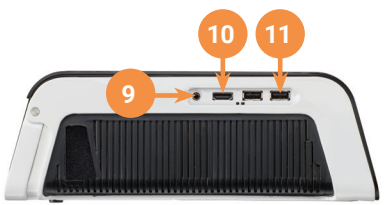
TOP AND FRONT PANEL

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.

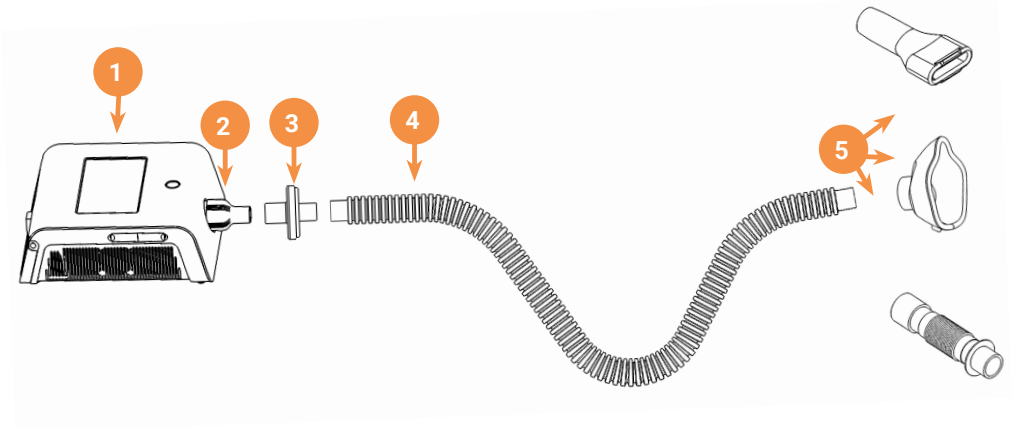
SIDE PANEL

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 standard 22 mm viral/bacterial filter to the control unit. (Not used with the Dual Lumen Breathing Circuit.)
3. **Viral/Bacterial Filter** Required. Prevents germs from entering or leaving the control unit, keeping the system clean.
4. **Breathing Tube** Standard 22 mm, 6 ft (1.8 m) tube that delivers air between the control unit and the patient interface.
5. **Patient interface** The piece that touches you during therapy (e.g., soft mask). Optional alternatives include a mouthpiece or a flexible trach adapter—ask your clinician which one is right for you.



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 (optional) is designed with a tube within a tube to separate the inhale air from the exhaled mucus. This optional circuit includes a custom viral/bacterial filter that connects directly to the BiWaze Cough control unit without the Patient-Port Adapter.

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 only. 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.*

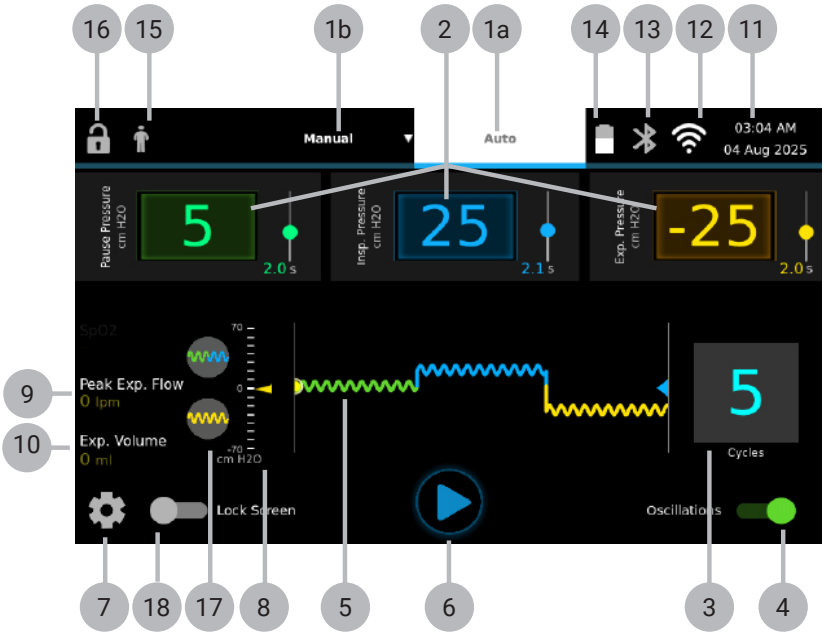
Therapy Screen

When the BiWaze Cough system powers on the screen will display the last therapy completed. Below are the elements 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. (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. Volume Measurement (may be hidden)

Note: BiWaze Cough has a lock feature which can be set by the healthcare team. When the system is locked, some elements may be hidden.

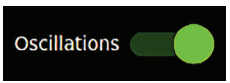
11. Date and Time
12. WI-FI allows data transmission to Arc Connect and date/time synchronization with BiWaze Cough location.
13. Bluetooth
14. Battery status
15. Patient Name or ID (optional)
16. Lock (red is locked and grey is unlocked)
17. Enable or disable oscillations independently for each phase of the cough cycle: pause/inhalation, exhalation, or both.
18. Lock screen prevents accidental button presses when enabled. (may be hiden)



Run Therapy

AUTO THERAPY

1. Select Auto on the top menu bar. You may have pre-programmed therapy options to chose 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.

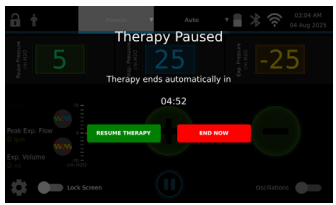


3. Ensure the patient interface is securely in place.
   - **Face mask—**tightly, but comfortably, cover the mouth and nose of the patient. Make sure the narrow end of the mask is over the patient's nose.
   - **Mouthpiece—**put the mouthpiece lightly in the patient's mouth. Make sure that the patient 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.

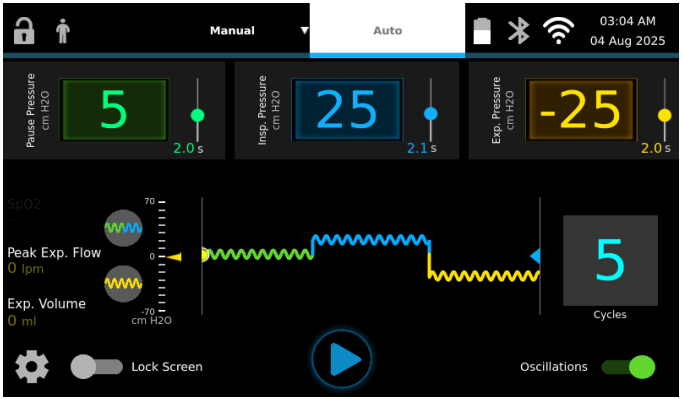


Note: The therapy will remain in a pause state for 5 minutes before automatically ending.

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.

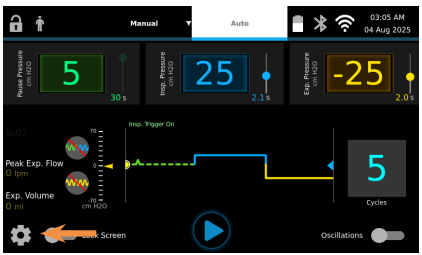
TYPICAL THERAPY

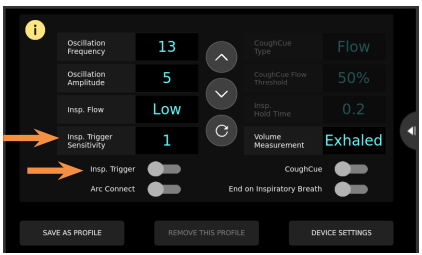
A typical cycle is composed of an inhale pressure and time, an exhale pressure and time, and a pause pressure and time. The typical cough therapy is a sequence of 4 to 6 cough cycles. If needed, repeat the cough sequence until all the secretions are cleared from the patient's lungs. It is a good idea 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 Inspirpatory 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. Wash the breathing tube, adapter, and patient interface, following the instructions in the user manual.
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.

The details in this Patient Guide are adapted from the BiWaze Cough User Manual (BC21084). For full, step-by-step instructions, please refer to the complete User Manual. If you have any questions about using your BiWaze Cough system or its therapy, reach out to your Home Health Equipment provider or healthcare team.

Website

Overview video

Training video

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