

LANDAUER METROPOLITAN

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Respiratory Care Manual

BILEVEL Devices

BILEVEL Devices

Patients Name: _____

Physician Name: _____

Address: _____

Phone Number: _____

Setup Date: _____

Your Current Prescription

Pressure Setting: IPAP Setting: _____ EPAP Setting: _____

Pressure Support Back up Rate (when applicable): _____

Model Received: _____

Mask Appliance Received: _____

Headgear Size and Type: _____

Ramp Setting: _____

Humidification System: _____

Oxygen Prescription (If applicable): _____ LPM _____ Hrs. / Day

Sleep Study Performed at: _____ Date: _____

BILEVEL (Bi Level Devices) is a medically prescribed device which requires proper adjustments by medically trained personnel. If your physician prescribes a change in your pressure settings, please contact ***Landauer Metropolitan Inc.*** immediately at **1-800-631-3031**.

This equipment is **NOT A LIFE SUSTAING DEVICE**. In the event of a life threatening problem, seek emergency medical assistance immediately.

Landauer Metropolitan Inc. 1-800-631-3031 24hrs/day
7 days/week.

Why should you utilize BILEVEL?

Positive pressure has been utilized in conjunction with obstructive sleep apnea since 1981. Positive pressure can be delivered either through a CPAP (Continuous Positive Airway Pressure) same continuous pressure during both inhalation and exhalation or BILEVEL (Bi Level Positive Airway Pressure) device. One pressure during inhalation and a separate pressure exerted during exhalation.

Obstructive Sleep apnea is the result of an obstructive (blocked) airway. This can occur any where in the respiratory system, starting at the nose, and continuing down through the terminal (base) bronchial portions of the lungs. Your Respiratory muscles may continue to work, but because of the obstruction, no air movement is able to occur either into or out of the lungs.

Control of breathing is more difficult during sleep than during wake. The muscles have the tendency to relax, and the body will exert less effort to breathe. As a result of this the tongue may fall back or the soft palate may collapse thereby blocking the airway. There may be areas within the airway itself where there is collapse when in a supine (lying flat) position.

You may experience an episode of either apnea (no breathing) and or hypopnea (very small volumes). This may occur hundreds of times throughout the night. These apneic episode may last anywhere from a second to over a minute. Trapping of air in the lungs causes the carbon dioxide levels in your body to rise which in turn will stimulate you to awaken.

During apneic episodes, your brain causes you to awaken slightly to make it easier for you to breathe. Although you may be unaware of these constant interruptions of your sleep, they prevent you from having restful, productive sleep.

This lack of deep restful sleep will cause excessive daytime sleepiness and will put extra stress on your heart and other major organs.

BILEVEL Therapy Continued

Your ***BILEVEL*** machine requires that you wear either a mask over your nose or possibly over your mouth and nose, there are appliances which are called pillows and will be placed directly into your nostrils. A blower in the unit gently pushes a prescribed amount of air through the mask or pillows then into your lungs. The air which is delivered causes a slight build up of pressure in your airways and down into your lungs during your inspiratory efforts, when you begin to exhale the pressure will drop to yet again another prescribed pressure. This will prevent your lungs from completely collapsing during sleep and causing another obstruction. The delivery of these two separate pressures will assist in eliminating the obstructive and will keep your airway and lung open. This will enable you to breathe normally and will return you to a normal nights sleep pattern.

Your physician has prescribed two separate pressures for you one while you inhale and a second pressure when you exhale. These pressures were determined during the sleep study (polysomnogram) you had at the sleep lab while you slept. The ***BILEVEL*** unit which ***Landauer Metropolitan Inc.*** provided for you has been preset by a Respiratory Therapist and is ready for use. If you have any difficulties with the mask provided for you please notify ***Landauer Metropolitan Inc.*** at **1-800-631-3031 extension 3368**. The therapist will provide you with detailed instruction on the proper use and maintenance of your unit. Please feel free to ask any and all questions you may have.

Landauer Metropolitan Inc. will call you through an automated system at an interval of 30, 60, 90 days, 6 months and one (1) year to check for compliance, skin and eye irritation problems and supply issues.

You may call ***Landauer Metropolitan Inc.*** with any and all questions at any time. We will also continue to provide you with

BILEVEL Therapy Continued

Any and all new and improved technologies which may be introduced to the market place. We provide your physician with all correspondence as well.

There are currently many different types of ***BILEVEL*** systems on the market today. They basically all work the same however.

All units contain the following:

- On / Off switch – this will be used to turn the unit on and off.
- Air inlet filters – they are located on the back of most units, where the external air enters the unit to keep the motor cool. The filters are needed to prevent any environmental particles such as dust and dirt from entering the unit. They will need to be changed and cleaned periodically, the frequency where vary depending on the environment the unit is used in.
- Air outlet port – at this outlet you will connect one end of your tubing, the other end of the tubing will then in turn be connected to the mask appliance you are using.

SETTING UP THE BILEVEL UNIT

Place the ***BILEVEL*** unit on a flat, sturdy surface near an area where you will be sleeping. Make sure that the inlet filter is free from obstructions, (cloths, drapes, etc.). Do not place the unit on a carpet or pad; this may prevent the flow of air needed to cool the unit down. Keep the unit away from heaters, and or air conditioners this will have a tendency to draw that air into the unit which in turn may affect the operations of the unit.

ASSEMBLY OF YOUR HEADGEAR

Today there are many different styles of headgear out on the market, with new devices coming out all the time.

ASSEMBLY OF YOUR HEADGEAR

Your Respiratory Care Practitioner will go over with you in detail exactly how to assemble and take apart the headgear you were provided along with the facial appliance.

Nasal Pillows

- Place the headgear on your head as described by your practitioner and adjust it to a comfortable fit.
- Remove the headgear off without unfastening the straps. Insert the pillows into place and attach to the tubing.
- Place the pillows and tubing back over your head. Insert pillows into your nostrils and lightly pull the tubing back over your head until the pillows are secure.
- Adjust any and all straps to comfortable fit and a good seal.
- Connect the tubing to the outlet port of your unit.

Face Mask (Full or Nasal)

- Depending on the mask supplied to you, connect all the straps into their appropriate connections. Your practitioner will show you initially.
- Most masks have either 3 or 4 straps, depending on the system provided.
- Some mask also require a whisper swivel valve (exhalation port), sometimes this is incorporated (built) directly into the mask provided. This valve or port will allow for your exhaled (CO₂) gas to escape. Please prevent this port from obstruction of any kind.

- Make sure that your mask has a snug fit, not so tight that it causes irritations, but tight enough so that you have no leaks of air.
- Each strap should be adjusted so that it will form a secure fit. Try not to tighten one strap more than another. This will prevent the mask from sitting properly.

FINAL ASSEMBLY

Complete setup

- Connect your tubing to your mask
- The second end of the tubing should then be connected to the outlet port of your unit.
- Turn the unit on. Adjust your mask until there are no leaks; again keep in mind that all the straps should be pulled at the same time with the same tension.
- Once you have adjusted your mask or pillows system and there are no leaks you may want to mark your straps with a marker to identify the position for the future.
- Position the tubing so that it will loop over the top of your bed, chair, or anything which will allow you to rest comfortably while not pulling on your mask or headgear
- Find a comfortable position in your bed which you will be sleeping in.
- Take a few deep breathes through your nose and relax.
- You may be using a humidifier, make sure it is full with clean fresh water and set to the correct temperature setting for you.

OXYGEN AND YOUR BILEVEL UNIT

Your physician may have prescribed oxygen to be utilized in conjunction with your BILEVEL therapy. If this is the case then

your Respiratory Care practitioner will go over in detail with you all you will need to know about oxygen.

They will provide you with an O₂ entrainment adapter which will be connected at the outlet portion of your ***BILEVEL*** device. The O₂ should be used as prescribed by your physician. Please ask your practitioner any and all questions you may have.

Never turn your *BILEVEL* unit on or off with oxygen running through it. After utilizing your therapy, remove mask turn oxygen off, and then turn your *BILEVEL* device off.

HUMIDIFIERS

Your physician may have prescribed a humidification system to be used with your unit. Literature today has shown that Positive pressure devices used in conjunction with heated humidifiers yield better patient comfort and compliance. If you have been experiencing dryness in your nose or throat this may be the reason why your physician has ordered this therapy. If you are experiencing this problem and you do not currently have a humidifier incorporated with your unit inform your therapist or call ***Landauer Metropolitan Inc.*** and we will contact your physician for you.

In order to utilize your ***BILEVEL*** unit system with a humidifier system please follow the steps below.

There are two different types of systems you can use. A heated humidifier which can be used with or without heat, or a plain simple cool mist humidifier which act as a Passover humidifier system. Your therapist will instruct you on the best therapy for you to use.

- The therapist will setup your unit and instruct you on the proper techniques required to maintain your system. They will show you how to assemble and disassemble the unit for cleaning purposes.

- Fill the humidifier to the fill line only with either sterile or distilled water (boiled water will do just fine). Please do not overfill the system; this will prevent water from blowing into the tubing.
- Never place any medications into the chamber itself
- Always remember to turn your unit off when not in use, or when you are refilling your chamber.
- Along with the humidifier came an 18 inch hose, this hose should be connected from the outlet of the unit to the inlet of the humidifier. The longer tubing will now be connected to the outlet of the humidifier and then the mask.

CLEANING PROCEDURE

Daily Procedure

Humidifier chamber, Mask, Pillows, Tubing:

- Wash hands thoroughly. This is very important for infection control purposes.
- Remove headgear from the mask, or pillows. Disconnect the mask from the tubing (if using pillows remove from shell), remove chamber from heating unit.
- With mild soap and warm water gently wash your mask, tubing, humidifier and any adapters provided thoroughly. Be sure to rinse with warm soapy water as well.
- Rinse all with warm clean water and allow to air dry through the entire day.
- Reassemble when completely dry.

Note: if your mask and appliance continue to feel greasy repeat the above mentioned procedures once again. Never wipe down anything with alcohol this will cause skin and eye irritations and will decrease the life expectancy of your supplies.

CLEANING PROCEDURES CONTINUED:

These procedures should be done weekly:

- Wash tubing and headgear in warm soapy water, do not put into washing machine
- Disinfect tubing as well as all supplies in an organic solution of one part white vinegar and two parts water solution. Allow all parts to sit in the solution for approximately 30 – 45 minutes.
- Rinse all parts well with warm water and allow to air dry.
- Check all filters to see if they also need to be changed, remember it is very important to either change or clean filters when needed.
- Humidifier chambers must be drained daily and rinsed with soap and water as well as disinfected in a solution of white vinegar and water weekly. After disinfection please remember to completely rinse well with warm water. Allow to air dry, use secondary chamber while primary dries.

Filters

Cleaning of your units filters will depend on the system which you were provided. There are usually two filters the first is usually disposable on a predetermined interval, your practitioner will inform you as to when to change. The second filter is usually a permanent filter which should be cleaned following the procedure outlined above. Disposable normally replaced 4 – 6 weeks, and the non – disposable cleaned a minimum of once per week.

Frequently asked questions:

- ***When should I use my unit?***, you normally use your unit when you sleep, but your practitioner will explain exactly

when and how to use your unit based on a prescription provided us from your physician.

- ***How many hours a day should I use device?*** You should use your device every day and for as many hours as you sleep. It may take as much as 3 – 6 weeks to become completely comfortable using your device. You may never feel 100 % comfortable using your device, but your physical symptoms will subside over time and you will start to feel more rested.
- ***Should I call my doctor if I have problems with equipment?*** No, if you are experiencing any problems with your equipment please contact ***Landauer Metropolitan Inc.*** at 1-800- 631- 3031 extension: 3368
- ***Should I call my physician for supplies?*** No you can call ***Landauer Metropolitan Inc.*** at 1-800-631-3031 extension: 3300 and they will confirm if your insurance will cover supply requirements, if a prescription is needed they will contact your physician for you.
- ***Contact Landauer Metropolitan Inc.*** with the following issues:

Dry Mouth, Nose, Throat	Machine issues
Irritations around mouth, nose	Billing concerns
When to use device	Supply questions
Cleaning of equipment	Mask, Tubing, Filters
- ***When should I contact my physician?*** , you should contact your physician if you begin to experience any of the following symptoms or problems.

○ Fever or chills	Loss of Appetite
○ Wheezing	Chest pain
○ Increased mucus production	Weight gain
○ Headaches	Swelling in ankles
○ Increased irritability	Dizzy or sleepy
○ Audible grunting	Swelling in eyes
○ Increased shortness of breath	Change in mucus

Safety Precautions

Never try to clean your unit by placing it directly into water. The electrical components will be damaged and will create a shock to the user the next time it is plugged into an electrical outlet.

Never plug the unit in if it has any water on it at all. Moisture always increases the potential for electrical shock.

Plug your **BILEVEL** unit into an outlet that is not being used to supply electricity to other appliances. If you need to use the same outlet that is being shared by other equipment make sure the other appliances are not being used at the same time. Never try to repair your unit yourself. Your unit is considered medical equipment and needs to be repaired by qualified medical repair professional. If you are renting this machine please contact **Landauer Metropolitan Inc. 1-800-631-3031** And your unit will be replaced immediately. If this unit has been purchased either through **Landauer Metropolitan Inc.** or another home care provider we will be able to assist and service your needs, if we can not we will guide you as to where to go for assistance.

Never use your **BILEVEL** machine with an extension cord
Never place your **BILEVEL** machine directly near a window or heater.