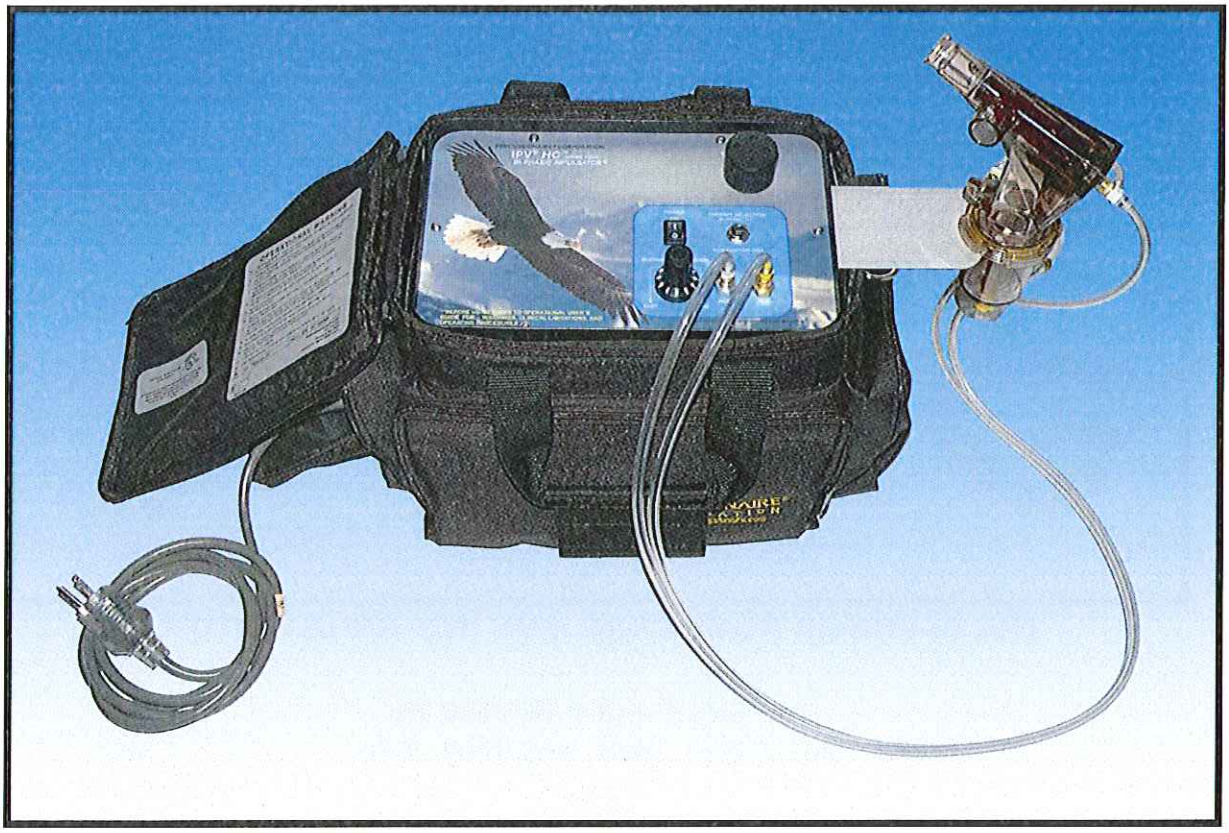
PERCUSSIONAIRE®
CORPORATION
Advanced Cardiopulmonary Dynamics

IPV®-HC® (Home Care)
BI-PHASIC™ IMPULSATOR®



Models F00012-HT/HC and Model F00012-HT2/HC2

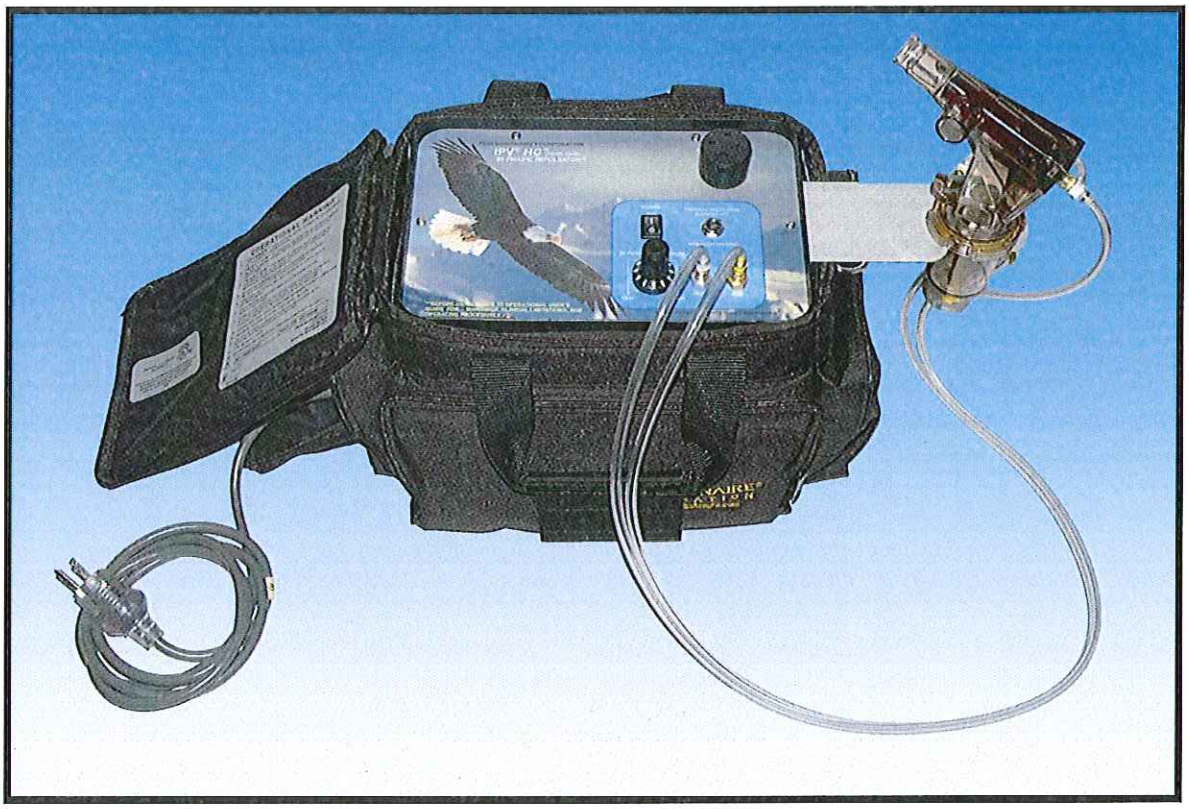
INSTRUCTION MANUAL

Universal Bi-Phasic™ Home Care (HC®) IMPULSATOR®
F00012-HT/HC & F00012-HT2/HC2

GENERAL OPERATIONAL USERS GUIDE

Edition IV- October 19, 2011

Self Contained Home-Travel pack for BI-PHASIC™ IPV®



THE BI-PHASIC HOME CARE IPV® HC® IMPULSATOR®

Invented and Patented by
Forrest M. Bird, MD, PhD, ScD
for
Cardio-respiratory lung recruitment therapy

Manufactured and distributed by
Percussionaire® Corporation, USA
www.percussionaire.com

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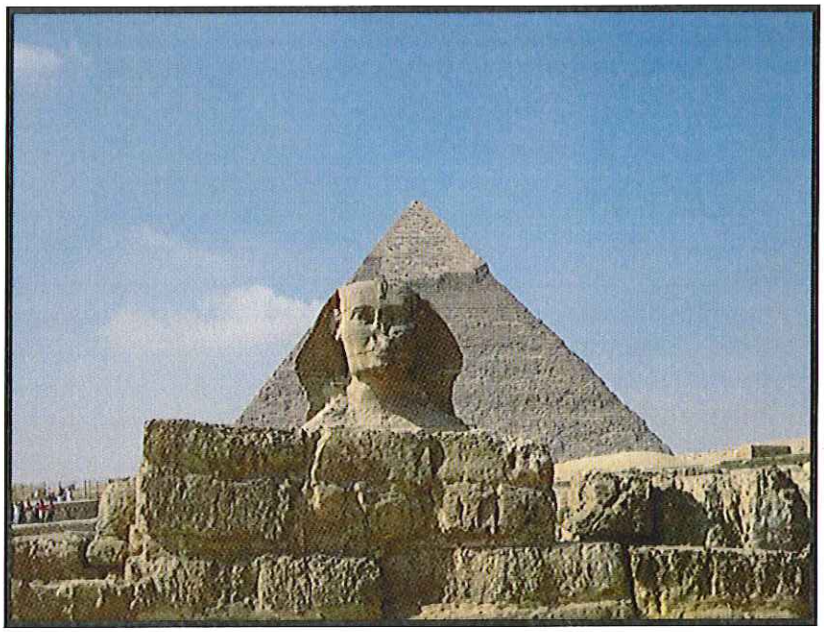
FORWARD

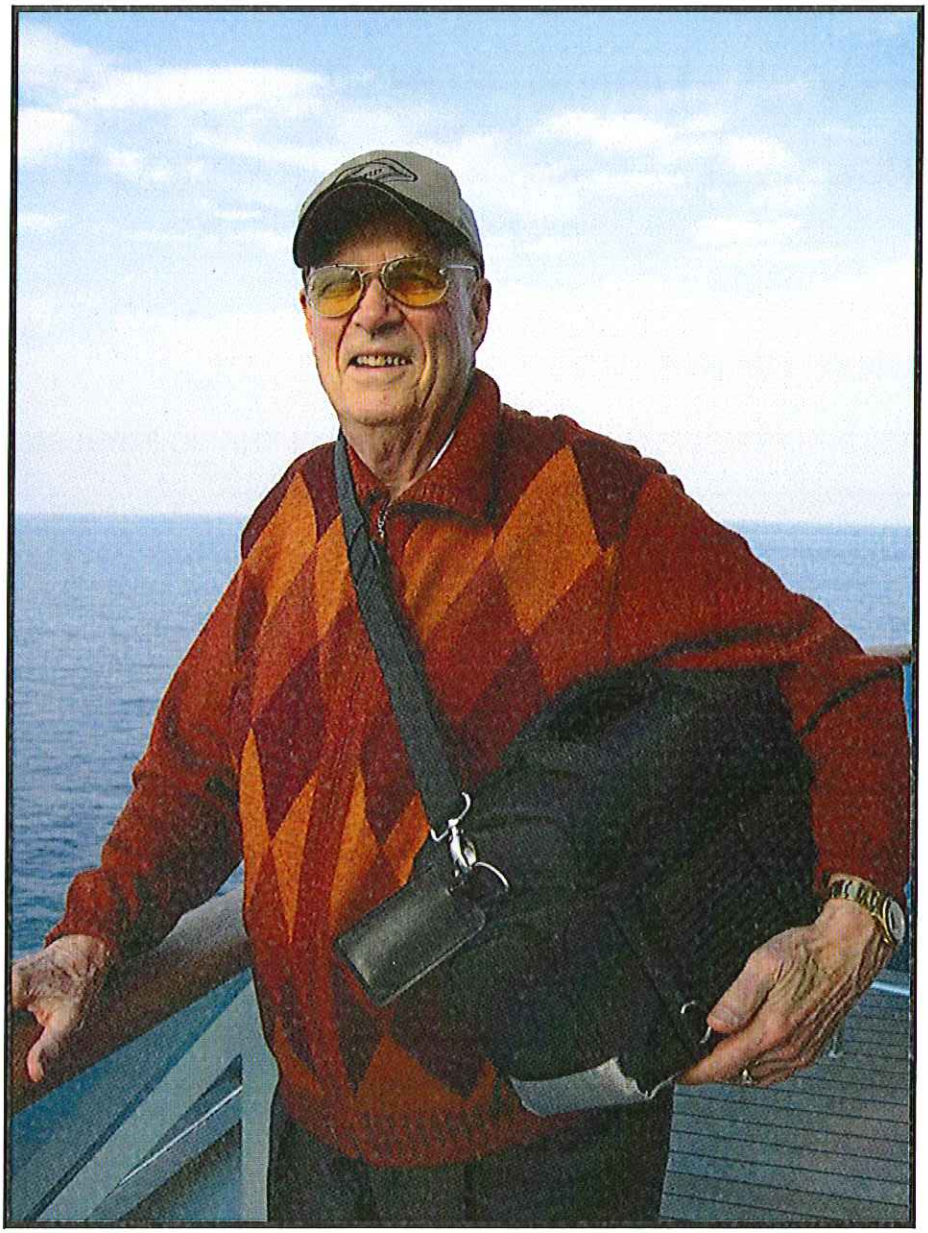
Travel the world with your IPV® HC® IMPULSATOR® Respirator discreetly contained in a protective camera–type travel case weighing less than 15 pounds (7.5 kg), available in special engineered 110 volt 60 cycle or 220 volt 50/60 cycle AC compressor models.



Your TRANSPORTABLE, self contained, Universal BI-PHASIC™ IPV® IMPULSATOR® allows you to continue your home care cardio-respiratory BI-PHASIC IPV® therapy during your land, sea or air travels such as visiting the ancient Pyramids and Sphinx at Giza, Egypt, from the comfort of your cruise ship, or visiting your grandchildren in another state.

EQUALLY IMPORTANT- your Universal HC® (home or travel) IMPULSATOR® increases your clinical independence and provides you with the same IPV® lung recruitment therapy (anywhere, anytime) you could receive in any major hospital if you were admitted with an acute cardio-respiratory infection.

Additionally, your HC® IMPULSATOR®
is the only transportable cardiopulmonary VENTILATOR
designed for bronchiolar and alveolar lung recruitment.
It may be used to recruit your lungs in the event of a
"Mass Casualty Situation"
such as a chemical release, avian type flu or other similar event.



YOUR SELF CONTAINED Universal BI-PHASIC HC® IMPULSATOR® PERCUSSIONATOR® TRAVELS WITH YOU AS A DISCRET 17 pound (7.7 Kg.) "OVER THE SHOULDER" CAMERA-TYPE PACK.

OPERATIONAL CONSIDERATIONS

for your

IPV® HC® IMPULSATOR® HOME or TRAVEL RESPIRATOR

With Universal BI-PHASIC IPV®

OPERATIONAL USERS GUIDE

THE PERCUSSIONAIRE® SERIAL NUMBER OF YOUR BI-PHASIC IMPULSATOR® IS:

_____

Patient_____

Address_____

Date_____

Administering Clinician_____

Address_____

Telephone number_____

YOUR OPERATIONAL CHECK LIST- is to be followed by you, the patient, after your clinician has instructed you on how to use your BI-PHASIC HC® IMPULSATOR® .

INDICATION OF USE

Bi-phasic™ Intrapulmonary Percussive Ventilation (IPV®) provides for mechanical intrapulmonary therapeutic lung recruitment (TLR™) which includes recruitment of the endobronchial airways and the diffuse enhancement of alveolar gas exchange.

The combined Phasitron® aerosolizing system (Nebulizer) provides for an effective Intrapulmonary Percussive Ventilation (IPV®) serving as a Respirator located at the patients proximal airway (mouth). The Phasitron® is a pneumatic clutch against the lungs providing for "a lung protective strategy".

NOTE:
The manufacture reserves the right to change these specifications without notice.

GLOSSARY OF SYMBOLS

Prescriptions required


WARNING: ATTENTION: CAUTION:

Dangerous Voltage- risk of electric shock

STOP- Read all extra care precautions


Type BF applied part

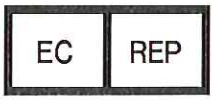

Protective Earth Ground

Power switch ON


Power switch OFF


Manufacture


Year of Manufacture



European Representative


Instructions for use

Keep dry

GENERAL WARNINGS

U.S. Federal Law restricts this device to sale by or on the order of a physician. (Impulsator®, IPV®-HT/HC™, Monitron II)

- Read these safety instructions and the entire instruction manual before using this device.
- Use these devices only for their intended use as described in this manual.
- Do not open the IPV®-HT/HC®. Repairs and servicing should only be performed by an authorized Percussionaire® Service Technician. 800.850.7205.
- Do not use bleach, chlorine, alcohol or aromatic-based solutions, moisturizing or antibacterial soaps or oils to clean air tubing. These solutions may cause damage and reduce the life of these products.

Guidance and manufacturer's declaration for –Electromagnetic immunity and emissions for all EQUIPMENT and SYSTEMS and recommended separation distance between portable and mobile RF communications equipment for the IVP®-HT/HC® models (*EMC Declarations* 60601-1-2 Table 1, 2, 4, and 6) are available by request on CD or at www.percussionaire.com

- Beware of electrocution. Do not use IPV®-HT/HC® near water, wet surfaces, or immerse any portion to clean. Always unplug these devices before cleaning and make sure they are completely dry before plugging them back in.
- Keep the power cord away from hot surfaces.
- Make sure the power cord and plug are in good condition and the equipment is not damaged.

There are two (2), non-compatible power sources available:
The outlet electrical plug will determine the voltage. **"DO NOT USE VOLTAGE CHANGE OR ADAPTER PLUGS."**
Power ratings: 120 volt 60 cycle 1.9 amp AC for USA, Canada, Japan, etc.
Power ratings: 220 volt 50-60 cycle 0.9 amp AC for Russia, Europe, etc.

Use grounded electrical power sources and take standard safety precautions as with all electrical devices.

Always use the power cord supplied with IPV®-HC® medical device. Supplied power cord should always be plugged into a grounded 3-prong outlet.

- Place IPV®-HT/HC® on a sturdy table or on the floor and at least 8 inches away from the wall before beginning treatment.

- Do not block, cover or obstruct the cooling fans, which may cause these devices to overheat.

MEDICAL ELECTRICAL EQUIPMENT needs special precautions regarding EMC and needs to be installed and put into service according to the EMC information provided in this manual; and
Portable and mobile RF communications equipment can affect **MEDICAL ELECTRICAL EQUIPMENT.**

Operations are subject to the following conditions. (1) These devices may cause interference with some electronic devices. You may have to reposition these devices to avoid the condition. (2) These devices must accept any interference received, including interference that may cause undesired operations. If potential electromagnetic conditions exist that cause interference or affect these devices, you may have to reposition these devices.

Do not place these devices on or near other electrical devices while in operation.

Equipment Classifications

Type BF applied part

This equipment is not suitable for use in the presence of a flammable anesthetic mixture with air, with oxygen, or with nitrous oxide.

NOTE:

The IPV®-HT/HC® is an ethical medical device to be introduced to you (the patient) by a qualified clinician.

HOSPITAL PERSONNEL: If you are a hospital clinician and have not received proper medical airway management training, your patient could be harmed by your lack of knowledge in attempting to attend a cardiopulmonary compromised patient.

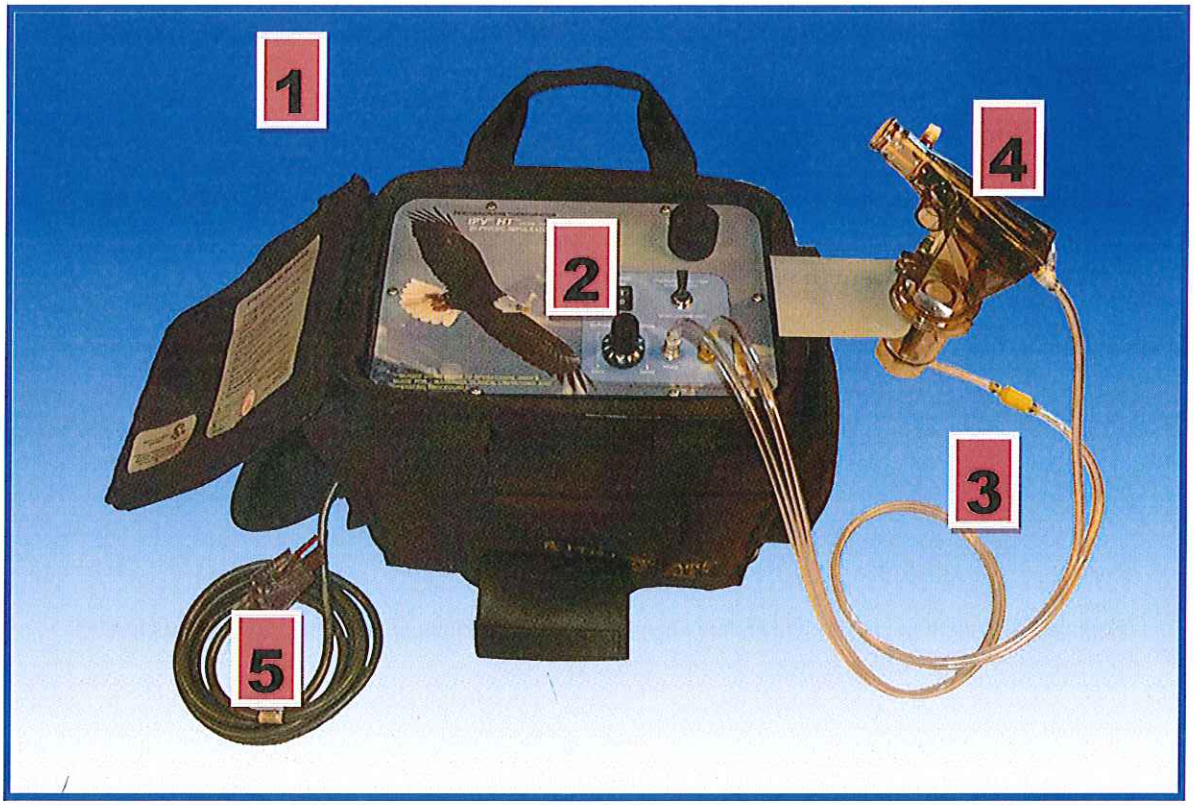
CAUTION: WHEN USING MASKS OR INDWELLING AIRWAY CATHETERS.

The hospital or home use of Therapeutic IPV® Percussionator will be restricted to a mouthpiece (with lip seal) only, unless the Phasitron® (A50110-HC-OP A Breathing Circuit) is equipped with an ambient gated Aerosol Generator A50010-3. Whenever any patient unable to breathe spontaneously is receiving IPV® therapy without a mouthpiece, a qualified clinician must be directly administering the clinical protocol while employing an aerosol generator with a sleeved pressure relieving valve. **See page 36 for photo.**

AIR TUBING WARNING

If damage to the air tubing results in air leaking STOP using the air tubing and replace.

UNDERSTANDING THE IPV® HC® IMPULSATOR® COMPONENTS



1 **IPV®-HC® - Self contained, Universal Bi-Phasic IPV® IMPULSATOR®**

2 **Control Panel - User Interface: Bi-Phasic™ Percussion control knob, ON/OFF Power Switch, Quick Connect Bulkheads, Mode Switch.**

3 **Breathing Circuit Harness - Delivers air to breathing Head.**

4 **Breathing Head, Phasitron® Duo™ -**
(Breathing Head may vary depending on application. See Accessory Appendix for more information on different breathing heads).

5 **Power Cord - Delivers required power to device.**

*** Control Panel, Breathing Harness, and Breathing head explained in detail on following pages.**

Components

Control Panel -

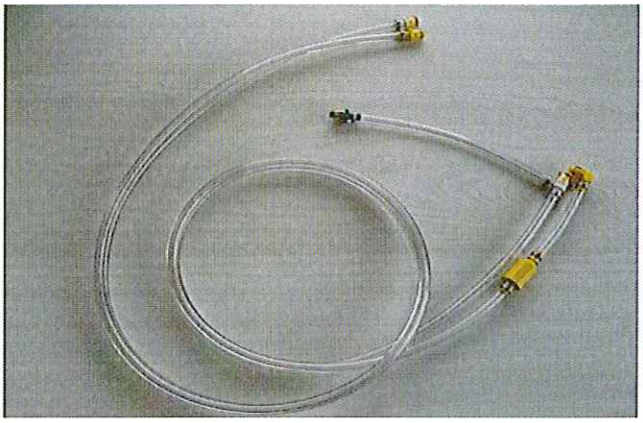
1. ON/OFF Power Switch Turns unit device on and off.
2. Air Intake Filter (Replace filter every 6 months.)
3. Therapy Selection Switch – determines mode from Bi-Phasic™ Percussion with Nebulization or Nebulization only.
4. Phasitron® white quick connect bulkhead fitting - connects to white Phasitron® breathing harness fitting.
5. Nebulizer yellow quick connect bulkhead fitting - connects to yellow nebulizer breathing harness fitting.

6 Bi-Phasic™ Percussion control knob determines frequency of delivered breaths, from easy to hard.

Components

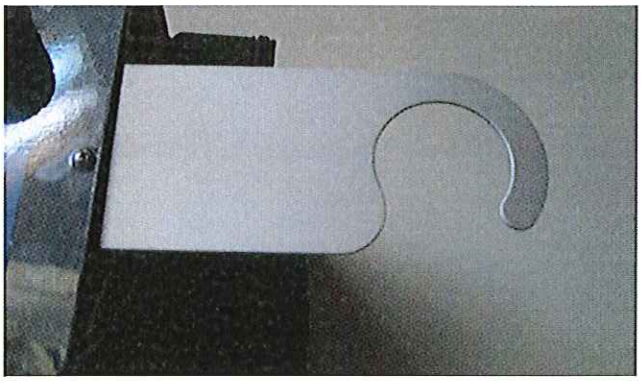
Interface Harness - P/N A99543
Accessory Platform - P/N B12726-1
Phasitron® Duo™ - P/N A50007-10-P

Interface Harness – P/N A99543



The Interface from the IPV®- HC® unit to the Breathing Head uses color coded fittings for ease of setup.

Accessory Platform – P/N B12726-1



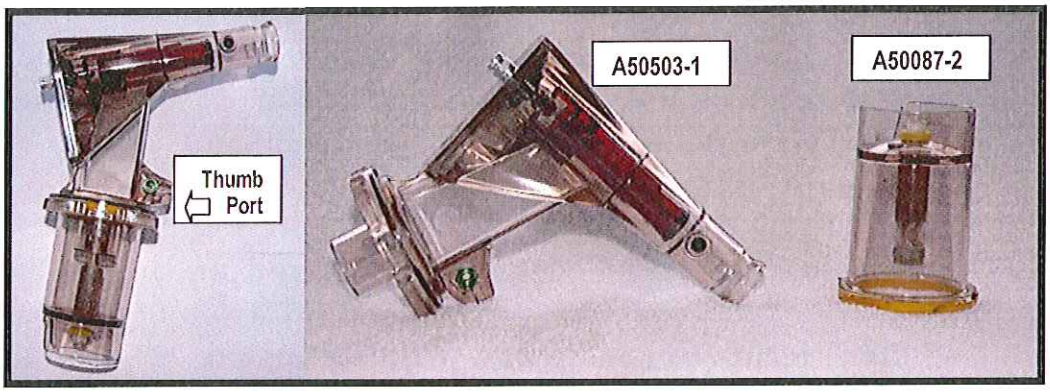
The IPV® HC® Impulsator ACCESSORY PLATFORM has a lip bent at 90 degrees that can be pushed down into a slot on the top side of the unit to the right of the faceplate.

The Phasitron® Duo™ breathing head assembly Nebulizer Bowl

can be inserted into the accessory platform for support. An accessory extension arm (refer to the accessories section) is also available.

Components

Breathing Head – P/N A50007-10-P



A50503-1 – Main Body Assembly, Phasitron Duo, Red – Non-Serviceable
A50087-2 –Bowl Assembly, Phasitron Duo

THIS DOCUMENT IS BASED UPON OVER TWENTY-FIVE YEARS OF IPV® IMPULSATOR CLINICAL DATA AND HOME PATIENT HC® IMPULSATOR® EXPERIENCE SINCE 2006.

The following text contains general discussions relating to three plus years of home patient studies which are directed toward making your BI-PHASIC IPV® operating procedures more INTUITIVE while providing typical Impulsator® scheduling.

During BI-PHASIC IPV® therapy, Nebulization is used to deliver INTRAPULMONARY aerosols deep into the pulmonary airways of the lungs.

THE NATURE AND ACTION OF TOPICAL COPD AEROSOLS-

1. **Beta Bronchodilators- Serve to relax bronchiolar smooth muscle contractions associated with asthma.**

2. **Alpha-Beta Agents such as Racemic Epinephrine-**

   A. As an Alpha serves as a vasoconstrictor (with minimal rebound effect) to reduce bronchiolar mucosal and sub mucosal edema.

   B. As a combined Beta serves to act as a Bronchodilator to relax bronchiolar smooth muscle spasm in Asthmatic patients.

   C. Using water as a diluent creates a favorable osmotic endobronchial pressure, causing a more rapid endobronchial Alpha absorption into the bronchiolar basement membranes to reduce the causes of Bronchiolar airway edema.

Note: 1. Many years of experience with aerosolized aqueous Alpha Beta Racemic Epinephrine solutions delivered during Intrapulmonary Percussive Ventilation (IPV®) have demonstrated a lengthening of the time the pulmonary bronchioles remain recruited after routine IPV® therapy.

Suggested dilution of a 2.5 Racemic Epinephrine is: .5 cc R. E. diluted (in the nebulizer) with 20 cc of clean water.

Note: 2. When water alone is used during IPV® Therapy in COPD patients with Bronchitis and Emphysema, it provides a desirable Osmotic Pressure to reduce the viscosity of retained physiological airway secretions, enhancing the mobilization and raising of endobronchial secretions.

Percussionaire® has continued to have increasing numbers of HC® Impulsators® entering the field since 2006. From this increasing patient therapeutic feed back, Percussionaire® has been able to develop a treatment regime (scheduling) based upon clinical responses "equal to or better than the non-transportable heavy IPV® Impulsator design".

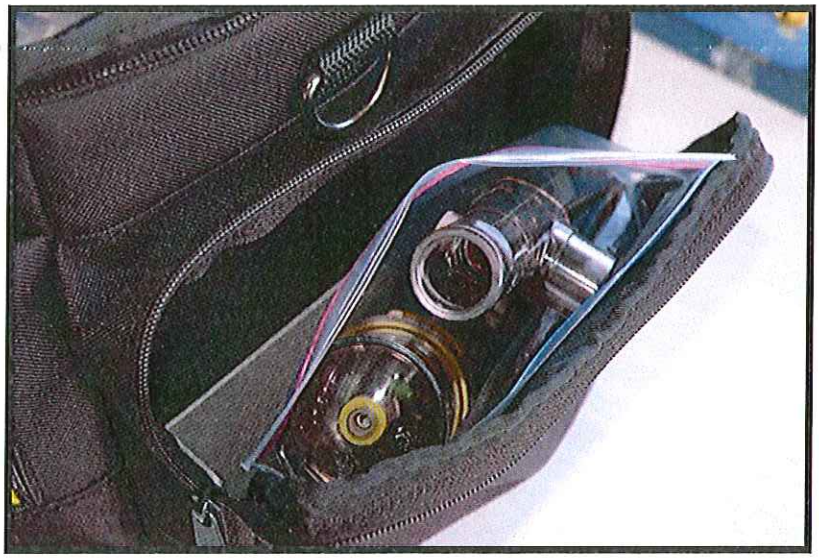
BEFORE YOU START YOUR IPV®TREATMENTS YOU MUST PREPARE YOUR HC® IMPULSATOR®.

Before using the HC® Impulsator®, the accessory NEBULIZER PLATFORM BRACKET must be inserted after pulling the paper from the HC® PERCUSSIONATOR® HOUSING SLOT BRACKET.

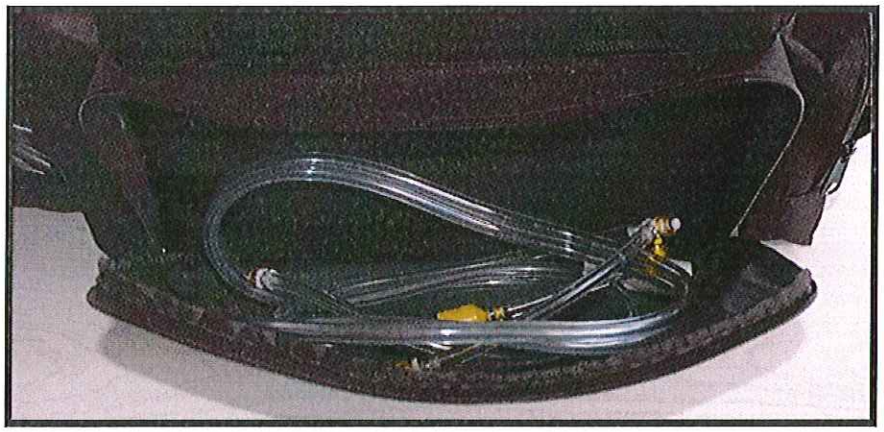
Notes:

UNDERSTANDING THE ROUTINE PREPARATION AND USE OF YOUR UNIVERSAL BI-PHASIC (HC®) IMPULSATOR®

Remove the power cord from the left facing compartment of the travel pack then plug it into a mating voltage wall electrical source.



Patient's Phasitron® Duo™ Breathing Head is stored CLEAN and DRY in a disposal plastic bag within the right end compartment of the travel pack.

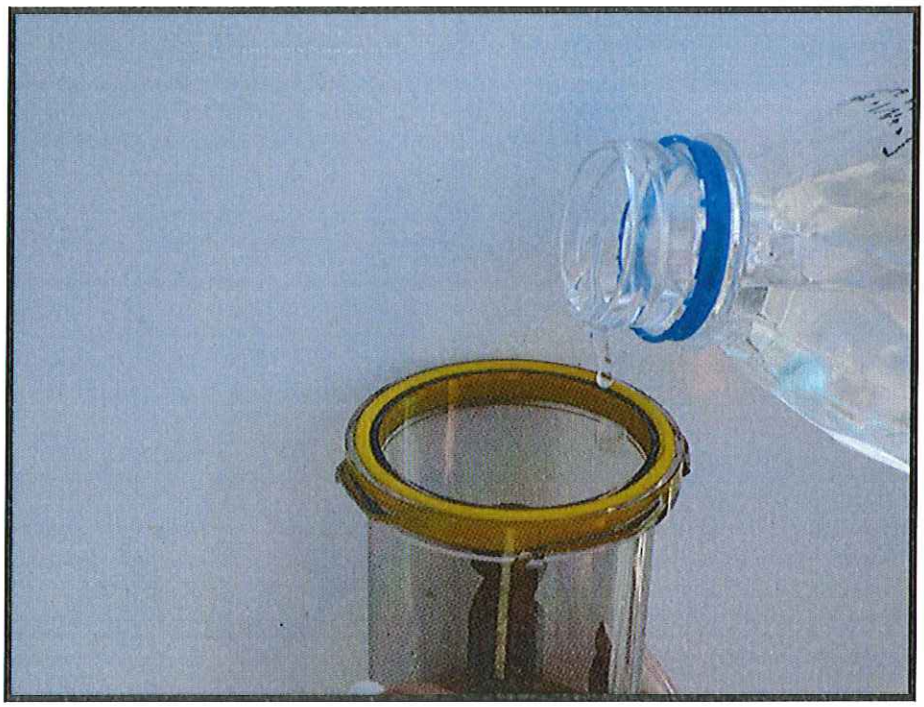


Your packaged Breathing Head interfacing tubing and medications are stored in the front compartment of your travel pack.

Drop your medication directly into the separated Phasitron® Duo™ Nebulizer bowl. DON'T SPILL MEDICATIONS.

TYPICAL EFFECTIVE MEDICATION ARE:

Install 4 drops of an ALPHA BETA Racemic Epinephrine such as "2.25% Raphon brand Racepinephrine" diluted with 20 CC of freshly opened bottled water into the nebulizer bowl. The ALPHA (vasoconstrictor) component of R.E. substantially increases the length of time an IPV® peripherally recruited lung remains open (recruited) after treatment.

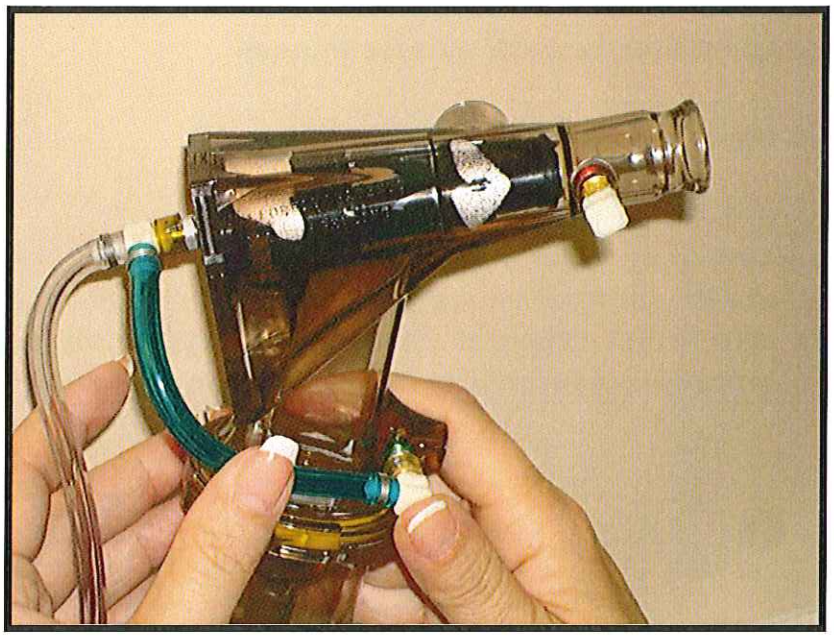


An Alpha Beta Racemic Epinephrine solution (being both a bronchodilator and a vasoconstrictor) can reduce diffuse patchy atelectasis, peripheral bronchiolar mucosal as well as bronchiolar sub mucosal edema, including the relaxation of bronchiolar smooth muscle spasm.

ALTERNATIVE NEBULIZER SOLUTIONS ARE:

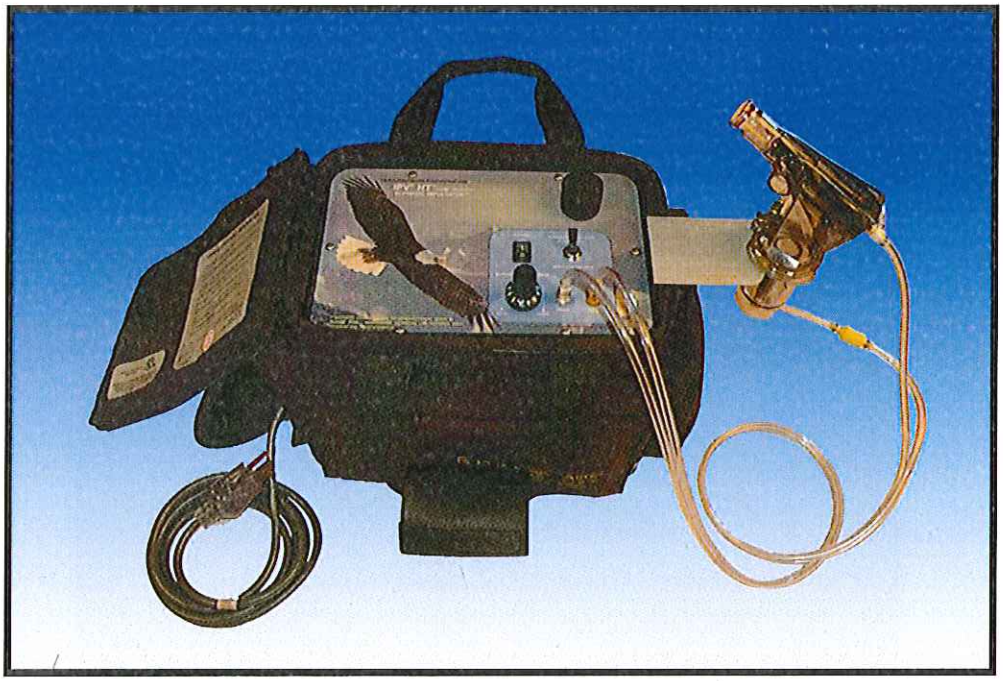
- **20 cc of NORMAL SALINE alone.**
- **Your Prescribed Beta bronchodilator (such as Albuterol) diluted with 20 CC of .85% normal saline (supplied by your pharmacist).**
- **There are other Special Intravenous type prescription solutions approved for intra-bronchial topical aerosol delivery.**

After servicing the Nebulizer with selected solutions, twist lock the Nebulizer Bowl back into the Phasitron® Duo™ top.



Attach the three yellow, white and green color-coded bayonet fittings of the interfacing tubing (matching color to color), into your combination Phasitron® Duo™ Nebulizer Breathing Head assembly.

Insert the white and yellow open-end bayonet fittings of the HC™ Interfacing Harness into the white PHASITRON and yellow NEBULIZER (color matching) Sockets in the top operations panel of the HC® IMPULSATOR® Respirator.



Stow the Breathing Head Assembly in the Nebulizer Bracket.

Rotate the BI-PHASIC PERCUSSION control knob Arrow full (clockwise) to HARD, select NEBULIZATION ONLY. The HC® Impulsator® Power switch remains OFF.

ASSUME A COMFORTABLE BREATHING POSITION

While sitting in a comfortable armchair, place the HC® IMPULSATOR® on a firm table within the reach of a wall power outlet. Connect the electric cord plug. NOTE: Medical device should be 8 inches from the wall.

Alternatively, after placing the HC® Impulsator® travel pack securely on your bed, lie down with your head and shoulders propped up.

BEFORE YOU ACTUALLY START YOUR IPV® TREATMENTS THE FOLLOWING SPECIAL HELPFUL LEARNING NOTES SHOULD BE READ-

Initially, you start with lower amplitude percussion. During your learning experiences you will breathe with both lower and higher amplitude pulsed percussion. You learn that you can inhale and exhale through any programmed percussion schedules.

You may initially allow percussive bursts of air to leak through your nose at the expense of an observable chest oscillation (shake).

Think about breathing through a soda straw as an analogy. Remember to initially forcefully breathe in and out of the Mouthpiece as if it were a Soda Straw or a Scuba mouthpiece; only until you learn not to let air out of your nose.

Observe your chest oscillation (shake) as you exhale through the mouthpiece. Remember to relax and take normal (spontaneous) breaths through the continuous Percussive Oscillations "whenever you want to".

Cheek puckering fatigue may be an early consideration, but you will soon get used to the procedure and become comfortable.

You are now ready to start scheduling your IPV® treatment.

1. **When "BI-PHASIC IPV® under THERAPY SELECTION" is selected the following IMPORTANT INITIATING control settings must be followed for initially TEACHING (you the patient) how to take BI-PHASIC IPV® therapy.**

   A. WHEN INITIALLY STARTING TO LEARN PERCUSSIVE IPV® THERAPY- DO NOT OCCLUDE THE BI-PHASIC VENT HOLE ON THE PHASITRON® DUO™ with the Thumb.

   B. The BI-PHASIC PERCUSSION control knob Arrow must be INITIALLY rotated full (counterclockwise) to EASY before starting to learn "percussive breathing".

   C. Pulsed Percussion is started by moving the "THERAPY SELECTION switch" up to BI-PHASIC IPV®.

   D. Place your lips firmly around the mouth-piece of the Phasitron® Duo™ with the nebulizer in a down non-spill position. Let the pulsed air enter your lungs. However you can take a breath through the mouthpiece whenever you desire.

   E. After the IPV® treatment becomes comfortable (natural), very gradually start rotating the BI-PHASIC PERCUSSION control knob Arrow (clockwise) up toward the AVERAGE (12:00) top position. Your goal over several treatments, is to gradually increase the Percussive amplitude to AVERAGE, as you learn to breathe with IPV® pulsed percussion.

IMPORTANT- After you feel comfortable with AVERAGE LOWER amplitude IPV® programming described earlier in A. you must learn to breathe with higher amplitude IPV®. This is done by starting over again as in A. with HIGHER AMPLITUDE pulsed Percussion, which is scheduled by "occluding the BI-PHASIC Vent Hole with your Thumb".

When you have learned to effectively take IPV® treatments with LOWER and HIGHER amplitude BI-PHASIC IPV® as in above A. through E. Daily routine sessions of BI-PHASIC IPV® will be initiated as follows:

HC® Impulsator® patients who have been successfully initiated on how to take their "LEARNING AMPLITUDE BI-PHASIC IPV® treatments" will START routine HIGHER AMPLITUDE IPV® treatment schedules "with the BI-PHASIC PERCUSSION control knob Arrow STARTING under the AVERAGE (12:00) position". MOST IMPORTANT- To obtain HIGHER amplitude Percussion "the Thumb must occlude the BI-PHASIC Vent Hole".

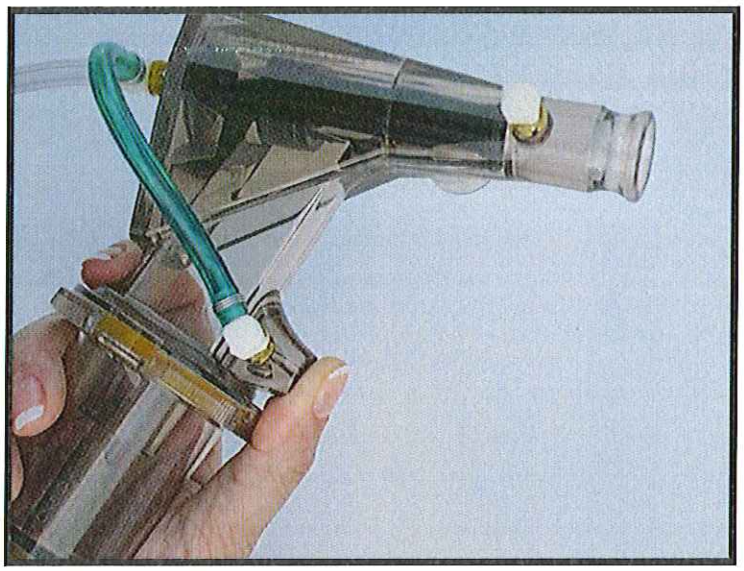
With the Bi-phasic Percussion Arrow rotated toward HARD and NEBULIZER ONLY mode selected, push the POWER switch to ON.

Before starting IPV® treatments, put your lips around the Phasitron® Duo™ mouthpiece and breathe the dense aerosol particles. Continue breathing the dense Aerosol mist through the mouthpiece for about two (2) minutes. This may make you cough.

After about two minutes of pre Aerosol breathing start your Bi-PHASIC IPV® by rotating the BI-PHASIC PERCUSSION control knob Arrow under the AVERAGE (12:00 position) then move the THERAPY SELECTION switch up to BI-PHASIC IPV®.

Seal lips firmly around the mouthpiece and allow the pulsatile HIGHER amplitude bursts of air to penetrate deeply into your lungs for about three (3) minutes.

NOTE: YOU MUST OCCLUDE THE BI-PHASIC Vent Hole ON THE PHASITRON® DUO™ with your Thumb to obtain HIGHER AMPLITUDE BI-PHASIC IPV®.



BI-PHASIC Vent Hole OCCLUDED BY THUMB

A. With the BI-PHASIC control knob Arrow rotated under AVERAGE learn to relax while allowing the rapid percussive air pulses to enter your lungs.

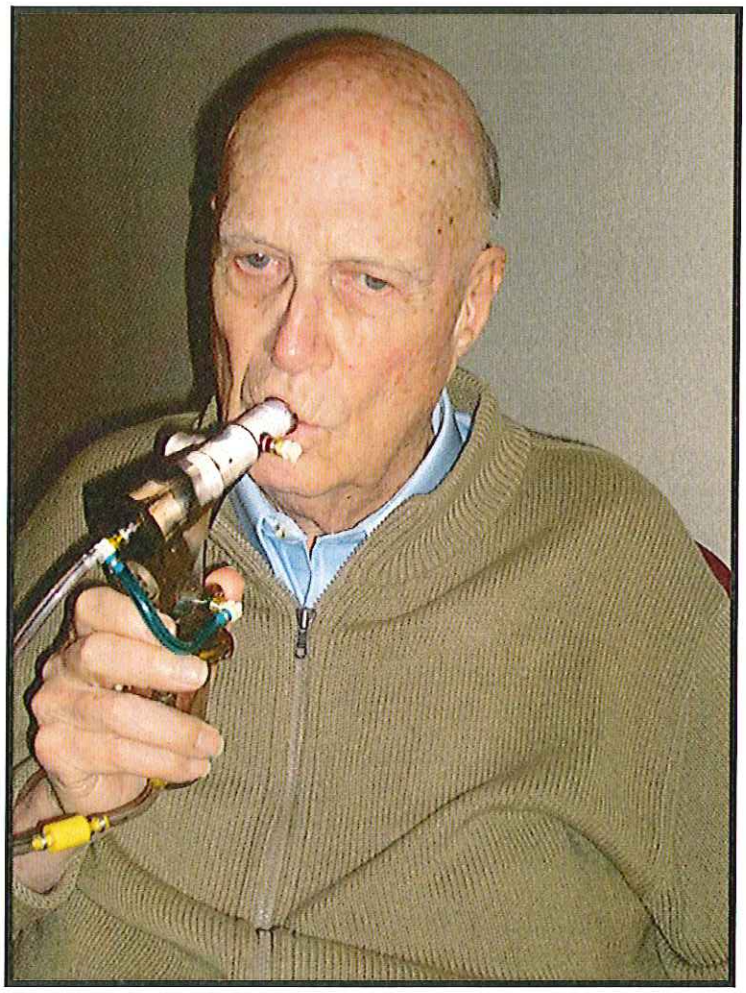
After feeling comfortable very gradually start rotating the PERCUSSION control knob Arrow (clockwise) toward the HARD position. If, during the Percussive amplitude increases you are not able to keep pulsed air from leaking out of your nose or around your mouthpiece, you are increasing the pulsed air amplitude too fast.

Rotate the Bi-PHASIC PERCUSSION control knob Arrow (counterclockwise) backward toward AVERAGE where you are again comfortable with the selected Percussive amplitude.

Only increase Percussive amplitude as you comfortably accommodate, do not increase the Percussive amplitude too fast.

B. After several HIGHER AMPLITUDE IPV® treatments when you feel comfortable with the PERCUSSION control knob Arrow rotated full (clockwise) into the HARD position, force yourself to take deep breaths through the Percussion about several times each minute.

C. The HIGHER AMPLITUDE percussive breathing during the rotation of the BI-PHASIC control knob Arrow from AVERAGE to HARD must be maintained for about five (5) minutes, with at least one minute in the HARD position.

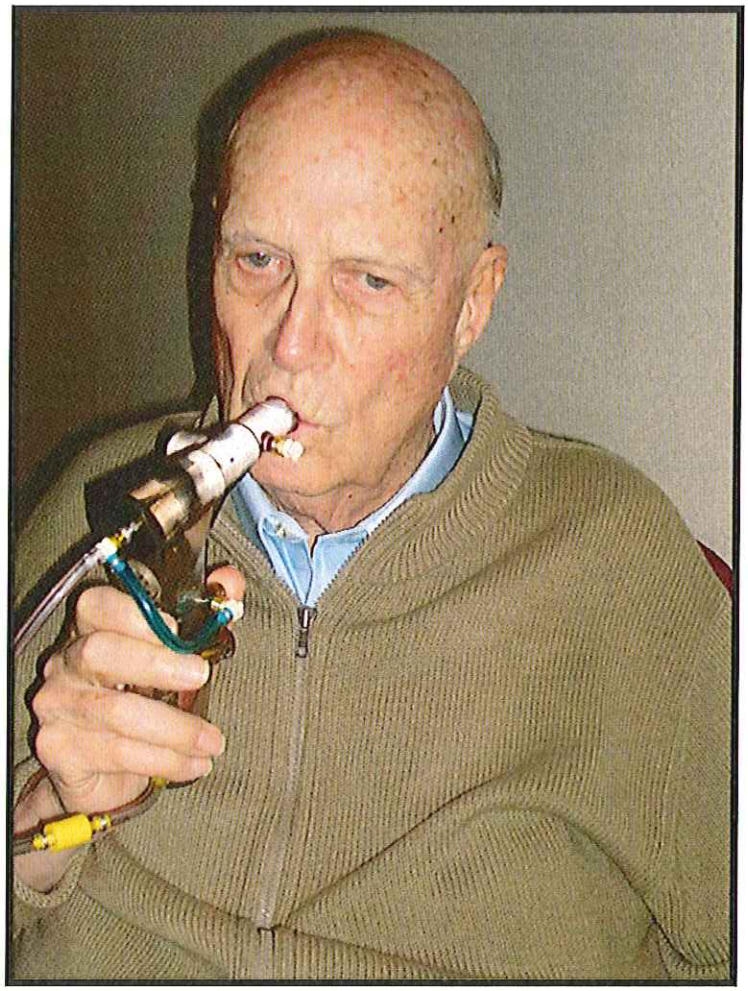


YOU CAN TAKE A NORMAL BREATH ANYTIME YOU DESIRE DURING ANY SCHEDULED PULSATILE PERCUSSION.

With the BI-PHASIC PERCUSSION Arrow rotated full (clockwise) to HARD select NEBULIZATION ONLY with the THERAPY SELECTION switch. Breathe high-density aerosol particles for about two (2) minutes.

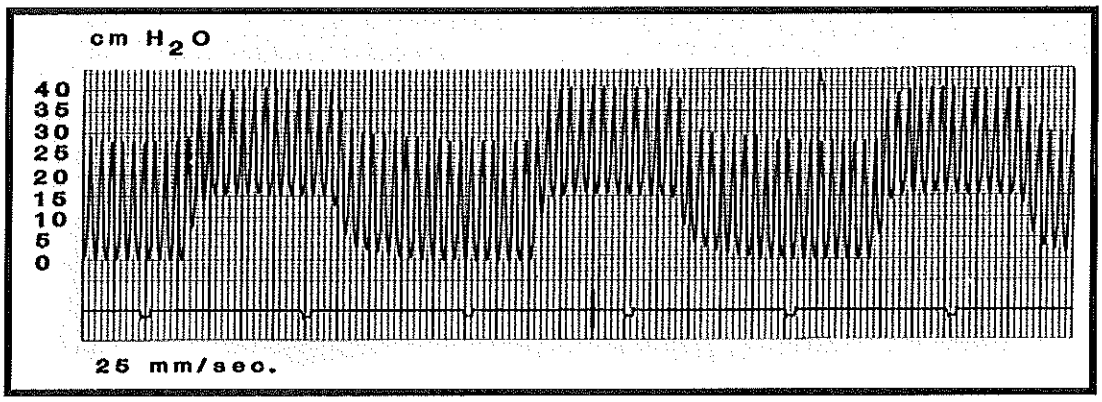
Notes:

THE INTRODUCTION OF BI-PHASIC IPV DIRECTED TOWARD THE RAISING OF RETAINED ENDOBRONCHIAL SECRETIONS



As the Thumb is held over the BI-PHASIC vent hole the lung Percussion amplitude increases. When the Thumb uncovers the BI-PHASIC Vent Hole the Percussive amplitude is decreased creating a Sinusoidal wave-format. To create an effective BI-PHASIC lung secretion clearance wave-format- REPEATEDLY COVER AND RELEASE THE THUMB FROM THE BI-PHASIC Vent Hole about every THIRTY (30) SECONDS.

Notes:



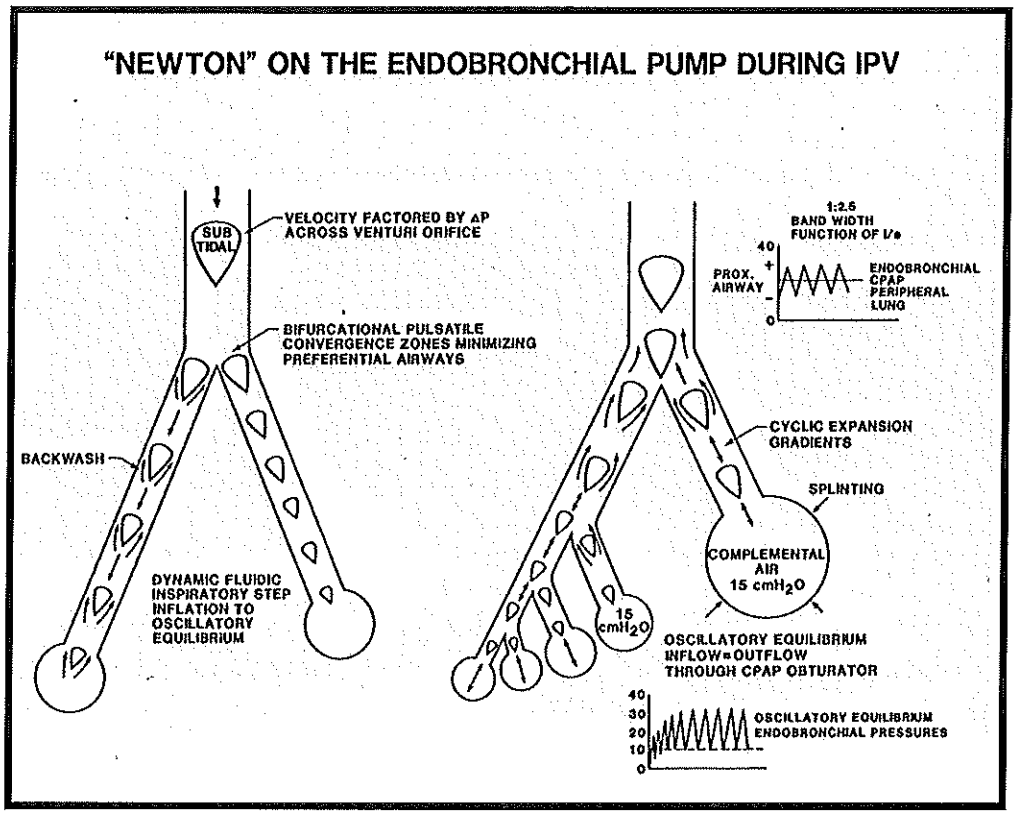
The above Sinusoidal wave-format demonstrates what happens when the (you the patient) cyclically obstructs and releases the Thumb from obstructing the BI-PHASIC Vent Hole.

By cyclically obstructing and releasing the Thumb from the BI-PHASIC Vent Hole in approximately thirty (30) second intervals, retained Pulmonary Airway and Alveolar secretions will be raised up the pulmonary airways to be expectorated (spit out) from the lungs by coughing etc.

BI-PHASIC (Sinusoidal) secretion clearance scheduling must be maintained for about five (5) minutes.

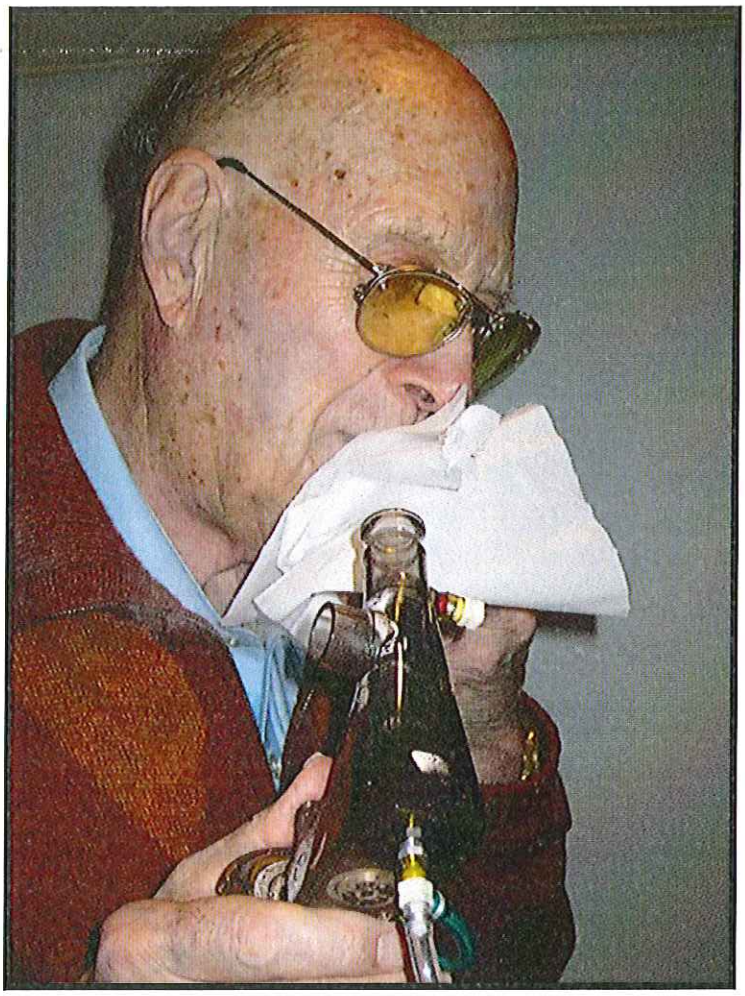
The percussive sinusoidal BI-PHASIC IPV® secretion clearance schedules can serve to increase the flow of blood through your intra-pulmonary circulations. This induced intrapulmonary blood flow is called VESICULAR PERISTALSIS, which serves to increase Blood and Lymph flow through the Intrathoracic vesicular circulations.

Notes:



Your BI-PHASIC (sinusoidal) pulmonary secretion clearance schedules serve to increase your alveolar oxygen delivery as well as "wash out' your excess carbon dioxide.

Notes:



During and after treatments when you cough up secretions have tissues available to cough secretions into.

Your scheduled BI-PHASIC IPV® treatment periods should be from fifteen (15) to twenty (20) minutes from start to finish. DO NOT "NIBBLE." TAKE A FULL TREATMENT EACH TIME.

MOST IMPORTANT YOU MUST TAKE A MINIMUM OF TWO DAILY LUNG RECRUITMENT IPV® TREATMENTS- MORNING and EVENING.

YOU CAN NOT TAKE TOO MANY IPV® TREATMENTS. WHEN YOU HAVE TRANSIENT ACUTE PULMONARY INFECTIONS YOU MUST TAKE ADDITIONAL TREATMENTS TO KEEP YOUR LUNGS RECRUITED.

Finally after completing the IPV® treatment schedules, push the Power switch to OFF with THERAPY SELECTION set to NEBULIZATION, and rotate the BI-PHASIC PERCUSSION Arrow rotated (clockwise) to HARD.

Follow the IPV® treatment sequencing schedules

TIME	TREATMENT SEQUENCE
2 minutes	Pre treatment Endobronchial aerosol mist delivery.
3 minutes	Primary Lung recruitment.
5 minutes	Secondary Peripheral Lung recruitment.
2 minutes	Endobronchial medication delivery.
5 minutes	Bi-PHASIC Lung Secretion Clearance.

CLEANSING IS A MOST IMPORTANT COMPONENT OF BI-PHASIC IPV®

After each treatment the Breathing Head must be removed from the HC™ interfacing Harness and completely washed.

At least once per week the Phasitron® Duo™ must be cleansed in a dishwasher.

After treatment disconnect the interfacing tubing from the Phasitron® Breathing Head Assembly, disassemble, cleanse and dry as per additional instructions later in this document.

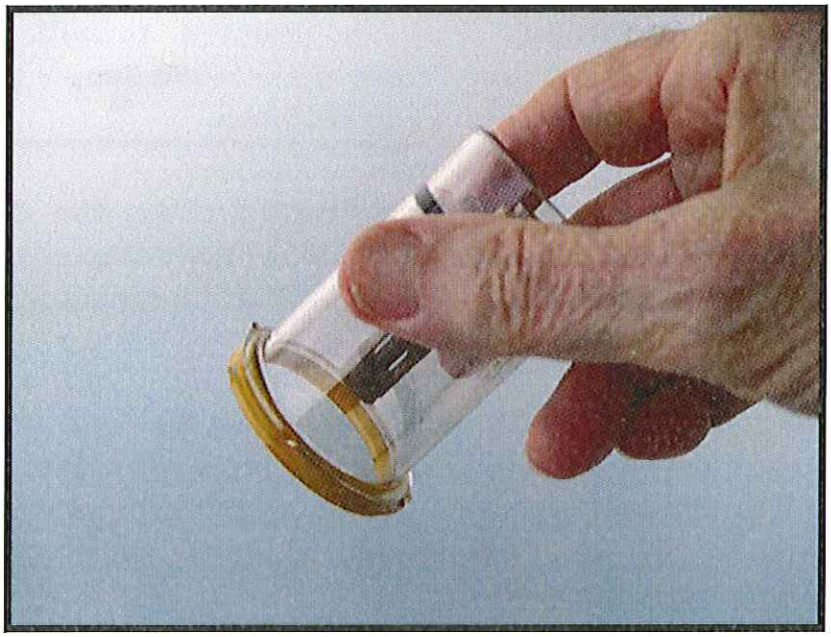
The preceding Bi-Phasic HC® IMPULSATOR® instructions provide a general profile for mobilizing and recruiting the pulmonary bronchioles and their alveoli with BI-PHASIC Intrapulmonary Percussive Ventilation (IPV®).

Peripheral lung recruitment is maintained by taking at least two daily IPV® treatments morning and evening. Your scheduled prophylactic COPD health routines must be maintained.

NOTE: You cannot take too many treatments. If you have a cold or other acute lung infections you may need treatments as often as every two hours or as necessary to keep your lungs open.

CAUTION- Your personal Breathing Circuit MUST BE mechanically cleaned and dried after each treatment and placed in a DRY clean bag before storing in your travel bag pouch pocket for travel.

Once each week the Phasitron® Duo™ should be run through a Dishwasher.



After cleaning shake Nebulizer Bowl by repeated wrist "flipping" to clear entrapped cleansing water-soap solutions from nebulization stem.

After cleaning, place Phasitron® in "kneeling" position (as shown above) and place the Nebulizer Bowl up side down, on towel to dry. Do not allow your personal Breathing Head to become un-clean, which could lead to self infection.

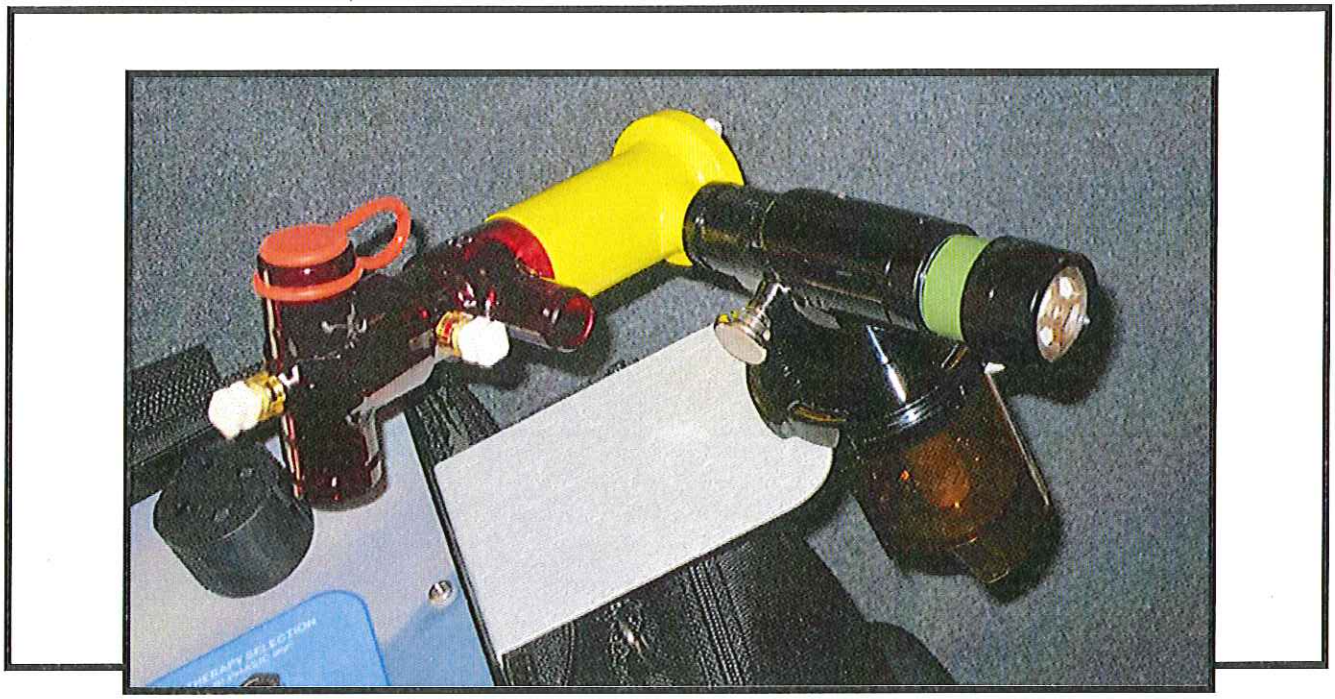
MOST IMPORTANT- BI-PHASIC IPV® is directed toward the long-term maintenance of your intrapulmonary bronchiolar blood supply in the presence of a suggested COPD health maintenance program.

To increase clinical efficacy during BI-PHASIC IPV®, the compressed air volume produced by each compression stroke of the compressor produces an impulse which impacts upon the endobronchial walls during Sub Tidal volume deliveries.

By utilizing the Sub Tidal amplitude increases as an "endobronchial airway transport vehicle," the compressor stroke volume impulses (shock waves) created by each compressive stroke volume of the air compressor facilitates dynamic elastance of the pulmonary airways enhancing Percussive Bronchiolar and Alveolar recruitment.

IPV® protocols have the same general cautions as all positive pressure breathing devices if incorrectly used.

The PERCUSSIONAIRE® Universal Home Therapy HC™ IMPULSATOR® for BI-PHASIC IPV® is listed under a US FDA marketing authority to Percussionaire® under "FAMILY OF IPV® MEDICAL DEVICES AND THEIR ACCESSORIES as K905236A issued on 4-18-1991".



THE HC® IMPULSATOR PHASITRON® BREATHING HEAD WITH THE YELLOW BODY AND SWIVEL TEE PIECE A50110-HC-OP A

THE SPECIAL HC® IMPULSATOR® BREATHING HEAD MUST BE USED FOR ALL PATIENTS WITH A MASK, ENDOTRACHEAL TUBE OR TRACHEOTOMY TUBE. THE NEBULIZER MUST HAVE A GREEN OVERPRESSURE PRESSURE RELEASE WARNING BAND. Part Number A50010-3.

THE BI-PHASIC Vent Hole on the Phasitron® Duo™ is different on the HC® Impulsator® Breathing Circuit used for connecting to patient's artificial airways. The HC® Phasitron® Breathing Circuit uses a "Thumb push button". For HIGHER amplitude percussion the BI-PHASIC Vent Button is NOT DEPRESSED (just opposite to the BI-PHASIC Vent Hole Thumb occlusion).

TROUBLESHOOTING

PROBLEM	CAUSE	FIX
Unit fails to start	Unit not connected to approved power source.	Plug unit into approved power source
	Loose wire or poor grounding	Unit must be sent to authorized service center
	Fuse not working properly	Check for integrity and proper installation of fuse located in left pocket above the power cord. For Model F00012-HT use Fuse Buss BK/MDL-5. For Model F00012-HT220 use Fuse Buss BK/MDL-2.5
Unit has delayed startup	Compressor Failure	Unit must be sent to authorized service center
	Bad Capacitor	Unit must be sent to authorized service center
Frequency of Percussions does not change as frequency control knob is rotated	Check to see if unit has been abused, fallen, etc. Check for moisture in tubing.	Unit must be sent to authorized service center
Nebulizer not aerosolizing properly	Check to see if nebulizer baffle is in place. With unit running, check yellow line for gas flow.	Replace or snap baffle back into place. (See drawing A50010-3, page 48). If there is no aerosol from yellow line while unit is running, send unit to authorized service center.
Unit fails to maintain peak pressures		Unit must be sent to authorized service center
Breathing head (Phasitron, nebulizer assembly) will not function	Breathing harness connected backwards	Disconnect harness and reconnect properly with arrows on one way valves pointing toward the breathing head.

GENERAL TECHNICAL DATA

General specifications and technical data for current Percussionaire® Cardiopulmonary Lung Recruitment Products

UNIT SPECIFICATIONS

UNIT	MODEL #	Weight lb k	Height in cm	Width in cm	Depth in cm
IPV®-HC® (115V)	F00012-HT	16.8 7.7	8.0 20.3	15.0 38.1	11.0 27.9
IPV®-HC® (220V)	F00012-HT220	17.2 7.8	8.0 20.3	15.0 38.1	11.0 27.9

SERVICE AND REPAIR

PERCUSSIONAIRE® CORPORATION recommends an annual preventive maintenance (PM) for each device. An annual PM consists of a thorough cleaning, filter change, functional evaluation, and, if necessary, recalibration.

A mandated remanufacture (overhaul) (OH) is required every three (3) years after the device is initiated into service or not later than four (4) years after first date of purchase. A factory remanufacture consists of replacing all elastomeric seals, sleeves, and diaphragms, with inspection of all components. The device is factory calibrated and receives a functional evaluation, conformance certification, and a one-year warranty on all parts installed during overhaul. If replacement parts other than those specified for overhaul or preventive maintenance are required for repair, the cost of the parts will be quoted to the customer in addition to the cost of the Preventive Maintenance (PM) or Overhaul (OH). Cleaning time allowed for OH or PM is fifteen (15) minutes, any extra cleaning time will be charged at current hourly rate. ($105.00/hour)

A device which has not received a mandated overhaul for a period of 10 years, whether in use during that period or not, will be considered to be beyond economic repair. If appropriate mandated preventive maintenance and overhauls are conducted, a device may continue to be used. If, due to damage, lack of mandated overhauls, voided warranty, or other misuse, a device is considered by the Repair Department to be beyond economic repair, a letter will be sent advising the owner of the device of the findings, and requesting disposition instructions. Under no circumstances will a device considered by Percussionaire® Corporation Repair Department to be beyond economic repair be returned to active service.

NOTE: CERTAIN BREATHING CIRCUIT COMPONENTS, BLENDERS, COMPRESSORS, FREQUENCY COUNTERS, AIRWAY PRESSURE ALARMS and MONITRON WAVEFORM ANALYZERS WILL BE SERVICED IN PERCUSSIONAIRE'S DESIGNATED MAINTENANCE CENTERS ON CONDITION.

Intervention by an unauthorized individual or repair maintenance facility will cause the immediate expiration of the clinical readiness of the device. Adulteration or invasion of any aeromedical product manufactured by Percussionaire® that violates the intent of the supervising agencies could be judged a federal offence.

To return a PERCUSSIONAIRE® MEDICAL DEVICE to factory service center for repair, overhaul or annual preventive maintenance contact: 800-850-7205 or (208) 263-2549 for a return goods authorization number (RGA #). A return goods authorization number (RGA#) will be issued for each device identified by the serial number. The device shipped must be disinfected, cleaned, placed in a plastic bag and placed in a sturdy box with packaging material thoroughly surrounding unit. A packaging slip must accompany box with information including RGA#, PURCHASE ORDER #, SERIAL# of device, name and address of packager, work requested, shipping address and phone number. If work beyond the flat rate fee is required, a PERCUSSIONAIRE® service representative will contact customer with an estimated cost for additional repair work. Work will not start until Percussionaire® receives a documented approval of Percussionaire® cost estimates. Return delays will be the responsibility of the owner of the device for not immediately advising Percussionaire®

Any device showing damage may be subject to additional charge if the repairs require parts not normally replaced during remanufacturing.

SHIPPING INFORMATION

PACKAGING AND SHIPPING

When the IPV®-HC® is shipped for repair or maintenance, the following shipping and packaging instructions are to be followed:

1. Call 208-263-2549, Ext. 134 or email us at repair@percussionaire.com to obtain a return goods authorization number (RGA #). Have the serial number of the unit available as this will be required.

2. The device(s) must be disinfected and cleaned.

3. The device(s) must be placed in a large plastic bag to protect the unit from packaging and foreign materials.

4. Packaging material must be placed around all sides, top and bottom of the unit in sufficient amount to protect the device from damage during shipment.

5. A packaging slip must come in the box with the device with information including RGA #, unit serial number, Purchase Order number if applicable, Customer's name and address, details of work requested, shipping address, and phone number.

6. The box must be securely closed and sealed with appropriate labels on the outside of the box (including the RGA number).

TELEPHONE/FAX

Phone (208) 263-2549
Fax (208) 263-0577

MAIL AND SHIPPING ADDRESS

Percussionaire® Corporation
1655 Glengary Bay Rd.
Sagle ID 83860

WEBSITE ADDRESS

www.percussionaire.com

STORAGE

The IPV®-HT/HC® should be stored in a clean environment and covered when not in use. Temperature should be maintained between -40°C and +40°C. Humidity range is 0-95% non-condensing.

DISPOSAL OF ELECTRONIC EQUIPMENT

Do not discard electronic equipment in household trash. Dispose electronic equipment in accordance with local, state, federal, and international recycling laws.

The IPV®-HT/HC® may also be packaged and shipped to an authorized Percussionaire® Service and Repair center for disposal. Call 208-263-2549, Ext. 134 for instructions.

GLOSSARY OF TERMS

TERMS AS THEY MAY RELATE TO THE DIFFUSIVE/CONVECTIVE MECHANICAL VENTILATION OF THE PULMONARY STRUCTURES.

CONTINUOUS MECHANICAL VENTILATION (CMV) – A mechanically programmed intrapulmonary tidal volume delivery. Based upon an arbitrary scheduled volume delivery; with a selected cyclic I/E delivery rate, under an arbitrary peak positive pressure limit.

CONVECTIVE TIDAL VOLUME DELIVERIES – The delivery into the pulmonary structure of programmed volumes of a respiratory gas (measured in cubic centimeters) that exceed the anatomical dead space, favoring the wash out of carbon dioxide.

DEMAND CONSTANT POSITIVE AIRWAY PRESSURE (DEMAND-CPAP)- A pneumatically energized flow accelerator that is served by a physiological proximal airway pressure change. A certain minimal proximal airway pressure is selected (such as 5 cm H_2O) for maintenance during the spontaneous physiological expiratory phase, which additionally provides a mechanically programmed inspiratory flow acceleration to accommodate physiological inspiratory demand to reduce the work of spontaneous breathing. DEMAND-CPAP is a form of Inspiratory Pressure Support.

DIFFUSIVE SUB TIDAL VOLUME DELIVERY- The mechanical programming of repetitive intrapulmonary percussive volume deliveries (measured in milliliters and/or cubic centimeters) that are less than the patient's anatomical dead space. Higher frequency sub tidal volume deliveries favor diffusive activities within the pulmonary structures, enhancing oxygen uptake.

DIGITAL FREQUENCY MONITORING- A COMPONENT OF THE VDR® MONITORING OF pulsatile frequencies generated by a VDR® Percussionator® which can be presented in a traditional format.

DYNAMIC FUNCTIONAL RESIDUAL CAPACITY (D/FRC)- The average amount of gas remaining within the pulmonary structures during oscillatory equilibrium, when the elastomeric and frictional forces within the lungs are in equilibrium with the pulsatile sub tidal volume delivery pressures, without further increase in lung volumes. (D-FRC) is resultant from either an inspiratory or expiratory oscillatory equilibrium.

EFFECTIVE ALVEOLAR VENTILATION- The amount of physiological sub tidal exchange delivered into peripheral pulmonary structures providing for an effective intrapulmonary diffusion and perfusion.

EXPIRATORY INTERVAL- A COMPONENT OF VENTILATORY PROGRAMMING, describing the scheduled time at a selected baseline between repetitive inspiratory oscillatory intervals. And/or the time at an oscillatory baseline during Volumetric Diffusive Ventilation (VDR®)

FAILSAFE SENSITIVITY- VDR® HIGH PRESSURE FAILSAFE SECURITY PROVISION, guarding against an internal ventilator failure and/or an obstructed Phasitron delivery tubing. Whenever the Phasitron delivery pressures exceed the selected pressure rise for approximately two (2) seconds, an aural alarm is sounded concomitant with a regulated drop in patient delivery pressures. The Failsafe Sensitivity selection determines the sustained pressure required (within programmable limits) within the patient servoing circuit to provoke a pressure rise alarming.

FUNCTIONAL RESIDUAL CAPACITY-The amount of gas remaining within the pulmonary structures at the end of passive exhalation, when the elastomeric forces within the lung are in equilibrium with ambient pressures.

GROSS TIDAL VOLUME- A COMPONENT OF VDR® SCHEDULING, relating to a passive convective intrapulmonary gas exchange, realized during the scheduled expiratory interval when lung volumes are decreased to their scheduled baseline.

HIGH FREQUENCY PULMONARY VENTILATION (HFPV)- A loose definition of methods employed in attempting to create a greater diffusive component of intrapulmonary ventilation than would normally be expected with conventional mechanical lung ventilation (CMV).

"i/e" PULSE RATIO- A COMPONENT OF VDR® SCHEDULING, expressing the pulsatile (sub tidal volume) flow – no flow relationships in milliseconds. Valve open = flow time/valve closed = no flow time.

INTEGRATED MANOMETER- A COMPONENT OF VDR® MONITORING, whereby a rotary switch allows the selection of a highly dampened integrated proximal airway pressure. The manometric mechanism is calibrated with a time constant well beyond repetitive (cyclic) programming. Information is clinically significant in determining the efficacy of the selected program in terms of "mean functional pressures" as they reflect upon blood gases and cardiac output.

INTERMITTENT MANDATORY VENTILATION (IMV)- A mechanical ventilatory program scheduled to deliver a certain number of controlled tidal volumes per minute while allowing the patient to breathe spontaneously with a reduced work of breathing.

INTRAPULMONARY PERCUSSION- A method of delivering repetitive (partially accumulative) high velocity bursts (sub tidal volumes) of respiratory gases into the proximal physiological airway with precise pneumatic control over pressure/flow/volume relationships for maximum bilateral intrapulmonary distribution, with impactions below "stretch receptor" threshold and barotraumatic potentials.

INTRAPULMONARY PERCUSSIVE VENTILATION (IPV® expanded)- A cyclic method of controlled percussive intrapulmonary (sub tidal) breath stacking, increasing the existing functional residual capacity of the pulmonary structures to a selected level (pulsatile equilibrium) at which point repetitive sub tidal volume delivery does not further increase lung volumes. Each percussive inspiratory interval (timed in seconds) is associated with a diffuse intrapulmonary pulsatile gas mixing concomitant with aerosol delivery, followed by a passive exhalation to a selected oscillatory baseline.

INTRAPULMONARY PERCUSSIVE VENTILATION (IPV)- A mechanical means of introducing (aerosol laden) successive sub tidal intrapulmonary breath stacking, reaching a controlled percussive apneustic plateau within the pulmonary structures for the purpose of endobronchial secretion mobilization and the resolution of associated diffuse patchy atelectasis.

JET INSUFFLATOR (VENTILATOR)- A mechanical device usually consisting of a solenoid valve with control over valve opening and closing ratios as well as over the flow rate of pulsatile gas delivery into the physiological airways, through an uncuffed indwelling airway catheter with a tip located immediately above the carina.

MANOMETRIC DAMPENING- A COMPONENT OF VDR® MONITORING – A method of dampening the needle of a manometer looking at proximal airway pressure change during VDR® programming. A standard calibration provides the clinician with a "mean pressure interpretation" of the phasic pressure alterations at the physiological proximal airway.

MECHANICAL PULSE GENERATOR (FLOW INTERRUPTER)- A pneumatically energized, diaphragm controlled, differential flow valve for the controlled cyclic interruption of a pressure/flow regulated respiratory gas.

MINUTE VENTILATION- The amount of mechanically delivered respiratory gas (measured in liters) cyclically delivered into the pulmonary structures each minute.

OSCILLATORY APNEUSTIC PLATEAU- is resultant from an oscillatory inspiratory equilibrium, after the inspiratory increase in lung volume has been satisfied, and the lung is being ventilated by percussive sub tidal volume deliveries through an inspiratory pressure wedge, without a further increase in lung volume.

OSCILLATORY DEMAND CONSTANT POSITIVE AIRWAY PRESSURE (OD-CPAP) – A COMPONENT OF VDR® PROGRAMMING, allowing the selection of an oscillatory expiratory baseline, while maintaining a positive end expiratory pressure with an inspiratory flow acceleration to assist a spontaneous inspiratory effort.

PERCUSSION/BASELINE RATIO (B/P RATIO)- A COMPONENT OF VDR® PROGRAMMING, expressing the ratio of the percussive sub tidal (inspiratory) interval in relation to the time at baseline (expiratory) interval. A method of describing the VDR® I/E ratio.

PERCUSSIONATOR® - A mechanical device providing sub tidal volume deliveries in milliseconds.

PHASING RATE- A COMPONENT OF VDR® PROGRAMMING, describing the number of cyclic inspiratory/ expiratory intervals per minute counted as returns to a programmed expiratory baseline.

PHYSIOLOGICAL DEAD SPACE- A pulmonary gas re-breathing volume that is void of blood/ gas exchange.

POSITIVE DISPLACEMENT OSCILLATOR VENTILATOR- A mechanical piston type device with a reciprocating relatively fixed stroke, causing (to and fro positive and sub ambient) potential displacements of a respiratory gas into and out of a mechanical breathing circuit. A biased proximal airway inflow and outflow is often employed to control the exchange of respiratory gases.

PRESSURE LIMITED VENTILATION- A peak inspiratory pressure limit PIP (measured in cm H_2O) established to limit the maximum inspiratory delivery pressure within the pulmonary structures during the mechanical ventilation of the lung.

PRESSURE RISE AND FALL ALARMING- VDR® HIGH and LOW PRESSURE FAILSAFE SECURITY PROVISIONS, available systems to monitor and alarm on a rapid or sustained proximal airway pressure rise.

A battery operated HI/LO SIG-ALERT selectable time related pressure drop can provoke an alarm as well as a pressure rise above a programmed value. Additionally, a Wave Form Monitor (Monitron®) can perform a similar task with programming accomplished on a CRT.

PROXIMAL AIRWAY PRESSURE- A sampling point adjacent to the proximal physiological airway where mechanical and/or physiologically altered pressures are recorded. Proximal airway pressure alterations provide the pulmonary (proximal/distal) pressure gradients for potential intrapulmonary inflow and outflow.

PROXIMAL AIRWAY WAVE FORM ANALYSIS- A COMPONENT OF VDR® MONITORING, whereby proximal airway pressures are directed against a transducer with sufficient capacities to relate the rapid (millisecond) pressure changes associated with VDR®/IPV® scheduling. Therefore, a means for presenting proximal airway pressure changes on a cathode ray tube (CRT) are enhanced. Desirable pressure scales and sweep speeds can be selected, allowing the clinician to program and interpret proximal airway pressure potentials as they may affect physiological parameters. Additionally, proximal airway pressure tracings can be documented on strip chart recorders.

PULSATILE AMPLITUDE and/or PULSATILE FLOWRATE- A COMPONENT OF VDR® SCHEDULING, describing the (proximal airway) pressure rise during selected sub tidal volume deliveries, secondary to the scheduled flow rate of respiratory gases delivered from the orifice of the Phasitron®.

PULSE FREQUENCY- A COMPONENT OF VDR® SCHEDULING, describing the number of pulsatile sub tidal volume deliveries per minute.

VDR "I/E" RATIO- A COMPONENT OF VDR® SCHEDULING, describing the ratio between the length of time (in seconds) that sub tidal volumes are intrapulmonary delivered (oscillatory inspiratory interval) to the length of time a scheduled interruption at baseline (expiratory interval) is scheduled. Oscillatory Inspiratory interval/expiratory interval.

VDR®/IPV® PERCUSSIONATOR®- A mechanical device capable of delivering sequential percussive bursts (sub tidal volumes) of a selected respiratory gas with flow generated at the proximal physiological airway for delivery into the pulmonary structures through a mechanical/physiological interface (combination injector exhalation valve) called a Phasitron®. A sinusoidal pressure change pattern can be programmed.

VENTILATOR – A mechanical device providing tidal volume deliveries in seconds.

VOLUME LIMITED VENTILATION- A selected volume (measured in milliliters) programmed for intrapulmonary delivery under a preselected pressure limit, whereby the mechanical ventilator will cycle on either the selected volume and/or pressure limit, based upon which limit is first reached.

VOLUMETRIC DIFFUSIVE RESPIRATION (VDR expanded)- A cyclic method of precisely controlling the intrapulmonary delivery of successive (aggregate) sub tidal volumes to a selected equilibrium (increase in lung volume) ultimately reaching an oscillatory apneustic plateau (oscillatory equilibrium) followed by the passive exhalation of a gross tidal volume down to a programmed static and/or pulsatile baseline.

VOLUMETRIC DIFFUSIVE RESPIRATION (VDR®)- A sinusoidal wave form applied against the physiological proximal airway to more independently (mechanically) control PaO_2, $PaCO_2$ and cardiac output.

EQUIPMENT CLEANING AND DECONTAMINATION PROCEDURES

These cleaning procedures supersede all others prior to July 1st, 2010.

All new Percussionaire® products are packaged clean. They should not be considered sterile or decontaminated. Prior to use it is recommended that breathing circuit components be disassembled then cleansed.

GENERAL CLEANSING PROTOCOLS

1. The devices may be sprayed by aerosolized CITRACE® or similar Hospital Grade Disinfectant.

   ***DO NOT USE BUTCHER'S QUEST 256, THE USE OF THIS PRODUCT WILL DAMAGE THE MACHINE AND THIS DAMAGE IS NOT COVERED UNDER WARRANTY.

2. The devices after being sprayed down and allowed to dry are re sprayed with hospital wide spectrum aerosol consisting of the same germicidal agents with a timed exposure per labeling.

3. After device has dried it is then mechanically wiped with a similar germicidal agent impregnated in a saturated wiping vehicle and allowed to dry per labeling instructions.

4. Further in-depth mechanical cleansing and rinse is accomplished with CITRACE®. As well as other germicidal household cleansers to remove any grime, dirt or other materials during the disassembly processes.

Percussionaire® does not deliver sterile devices, which are appropriately labeled per FDA.

Follow instructions below on how to disassemble Percussionaire® breathing circuits.

1. Mechanically wash and dry all parts completely.

2. Process following local institution guidelines.

3. Reassemble circuit.

OTHER TECHNIQUES

The decision to use other proven decontamination techniques should be based upon the following parameters:

1. Aerosol Generator part # A50010-3
2. Interfacing tubing made of SILICONE part # A99543-S

The above components can withstand temperatures < 280° Fahrenheit (137.8° Celsius)

The following components are not autoclavable:

1. Phasitron® Duo part # A50007-10-P
2. Interface tubing assembly part # A99543
3. These parts can withstand temperatures < 140° Fahrenheit (60° Celsius)

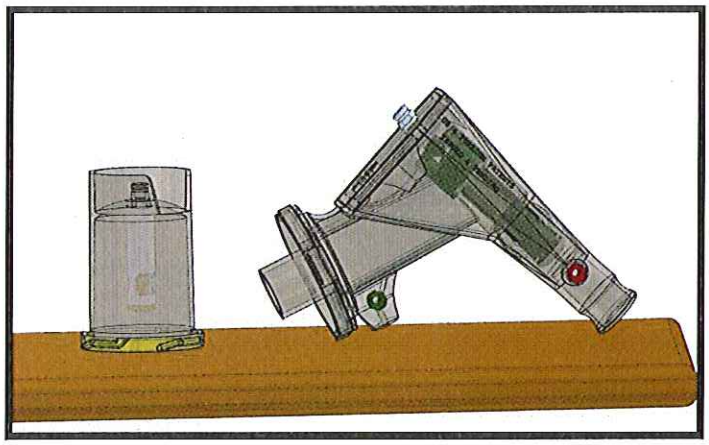
Percussionaire® medical devices are not submersible.

HOME CARE DISINFECTION

The breathing head should be disassembled and rinsed after each treatment.

The Phasitron® Duo® was designed for ease of cleansing. It is molded from LEXAN PLASTIC thus is dishwasher safe or can be cleansed with dishwashing soap and water and/or typical hospital cold sterilization means.

DO NOT AUTOCLAVE



PHASITRON® DUO® IN "KNEELING" POSITION ON COUNTER

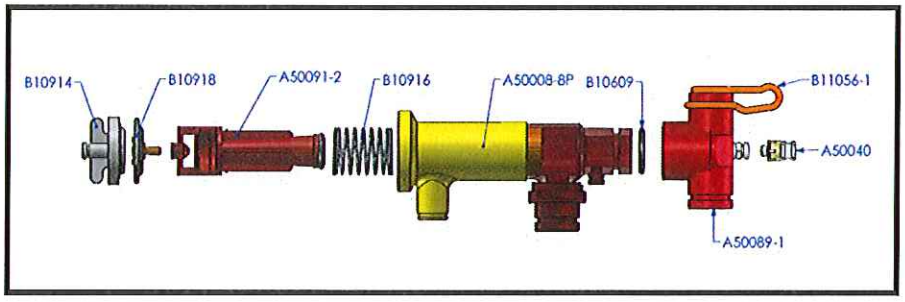
TO CLEAN-

1. Disconnect interfacing harness from Percussionator® and breathing head assembly.
2. Disassemble breathing head components following instructions below.
3. Mechanically wash, rinse and dry all components completely.
4. Before use, reassemble breathing circuit.
5. VERY IMPORTANT – At least once each week, disassemble breathing head components and disconnect the interfacing harness from the Percussionator® and breathing head assembly.
6. Install breathing head components with loosely coiled INTERFACING HARNESS in dishwasher and run a NORMAL wash and dry cycle.
7. After drying in dishwasher, re-lubricate all quick disconnect fittings, o-rings, and yellow nebulizer o-ring with Silicone wipe, then connect interfacing harness to assembled Percussionator® and turn ON to cause cyclic pulsations to blow any residual water out of interfacing harness before connection to breathing head assembly.

IMPORTANT NOTE: If home care IPV® breathing head assemblies and interfacing tubing is not dishwasher cleansed at least once a week, self contamination will occur.

DISASSEMBLY OF PERCUSSIONAIRE® PHASITRON®

Part Number A50007-R-P

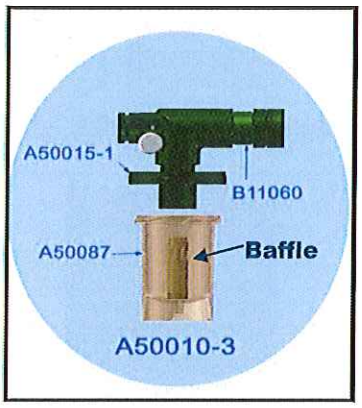


1. Disconnect colored tubing from service sockets.
2. Unscrew Phasitron® end cap part B10914.
3. Withdraw venturi assembly from Phasitron® body by pulling out upon orificed diaphragm part B10918 attached to green or alternative red venturi assembly.
4. Remove opening spring B10916 from around Venturi tube.

Phasitron Body exterior component disassembly steps.

5. Remove proximal airway Swivel Tee assembly part A50089-1 by a pulling rotation. Remove Phasitron® Outlet Plug loop assembly, from Swivel Tee assembly part A50089-1 by pulling and rotating.

DISASSEMBLY OF PERCUSSIONAIRE® AEROSOL GENERATOR



1. Disconnect colored tubing from service sockets.
2. Release nebulizer cap part # A50015-1 by holding aerosol bowl assembly part A50087, then rotating nebulizer cap counterclockwise ¼ turn.

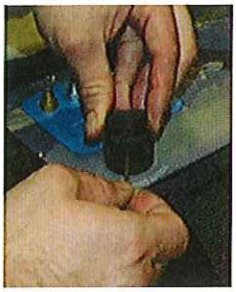
IPV®-HC 115V™ FILTER AND FUSE CHANGE INSTRUCTIONS

(from Technical Data Manual F-102909)

Please check, clean or change filters every 6 months or more often in dusty environments.

To change air intake filter: (Replacement Black Foam filter (P/N B12450, White Felt filter (P/N B12585).

Remove cap by pressing tool into slot and prying up.



Lift cap and then remove.

Remove filters.

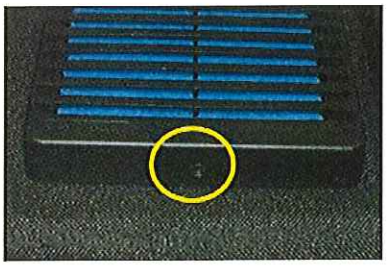
Insert new white felt filter.

Insert new black foam filter.

Replace cap: align tabs with slot, then press.

To clean/change cooling fan filter (Replacement 80mm blue filter P/N B13091):

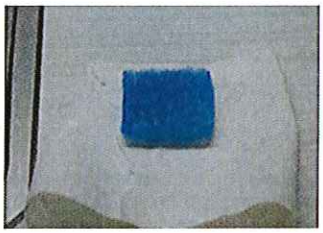
Lay unit on its face.



Locate allen retention screws.

Insert 5/64 allen tool and turn counterclockwise and remove. Remove guard and filter.

Rinse filter with plain running water or replace.



If washed, allow to air dry!

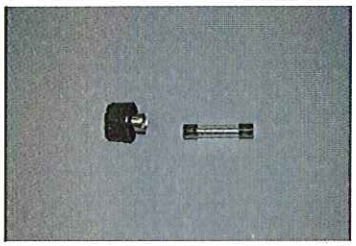
Replace filter and filter guard, making sure to hear it snap on, then replace retention screw.

TO REPLACE FUSE (Replacement fuse for IPV®-HC™ F00012-HT P/N B12792)

Locate fuse holder above power cord attachment.

Remove fuse by pushing holder in and turning to the left (counterclockwise), or open with a screwdriver if required.

Fuse holder will release. Pull to remove fuse.



Grasp fuse and cap and separate by pulling apart. Insert new fuse, and reverse steps above to replace in holder.

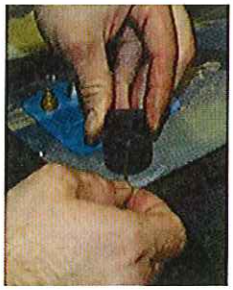
IPV HC2 220V FILTER AND FUSE CHANGE INSTRUCTIONS

(from Technical Data Manual F-102909)

Please check, clean or change filters every 6 months or more often in dusty environments.

To change air intake filter: (Replacement black foam filter (P/N B12450, white felt filter (P/N B12585).

Remove cap by pressing tool into slot and prying up.



Lift cap and remove.

Remove filters.

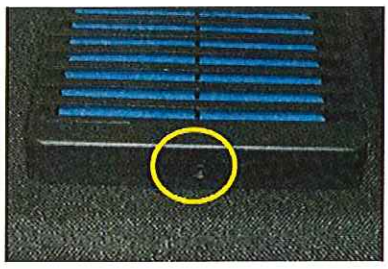
Insert new white felt filter first.

Place new black foam filter on top of white filter.

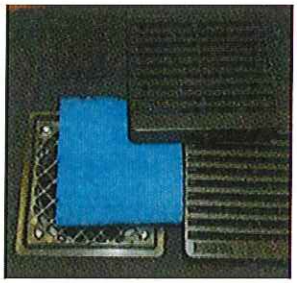
Replace cap: aligning tabs with slot and press down.

To clean/change cooling fan filter (Replacement 80mm blue filter P/N B13091):

Lay unit on its face.

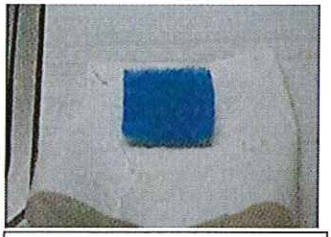


Locate allen retention screws.



Insert 5/64 allen tool and turn counterclockwise and remove. Remove guard and filter.

Rinse filter with plain running water or replace.



If washed, allow to air dry!

Replace filter and filter guard, making sure to hear it snap on, then replace retention screw.

TO REPLACE FUSE (Replacement fuse for IPV®-HC™ F00012-HT220 P/N B13260)

Locate fuse holder above power cord attachment.

Remove fuse by inserting any side of keychain into slot. Push in and turn counterclockwise.

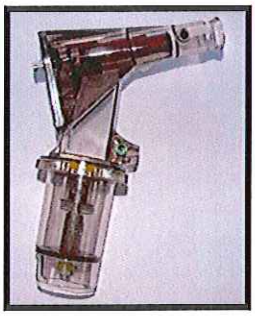
Fuse holder will release. Pull to remove fuse.

Grasp fuse and cap and separate by pulling apart. Insert new fuse, and reverse steps above to replace in holder.

Breathing Head and Optional Accessories

A50007-10-P

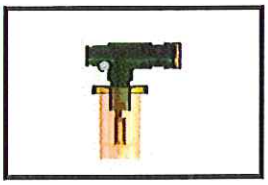
Phasitron® Duo™ Breathing Head

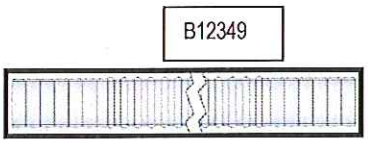


IPV®-HT/HC™ A50110-HC-OP A
Accessory Kit, Part #A50099

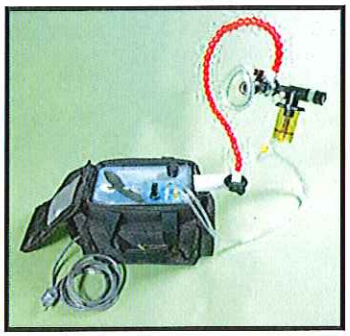
A50007-R-P

B12349





A50740 – Flexible arm kit



Suggestion:

An 

18 inch elastic cord (Bungee Cord) can be used to hold the IPV®-HC™ to wheeled luggage for easy transport through airports and hotels.

This type cord is available at most hardware stores.

Percussionaire® Corporation does not assume any responsibility for damage to unit secured in this fashion.

The world-wide Percussionaire® Corporation distribution system is generally oriented toward institutional (hospital) requirements through highly trained local distributors with qualified cardiopulmonary sales technicians.

To reach our Marketing Manager at Percussionaire® Corporation, telephone +800-850-7205, extension 160.

Federal and State as well as military requirements are managed through a direct interface with Percussionaire® special services division which can be reached at +800-850-7205, extension 133.

Other medical device manufacturers incorporating Percussionaire® medical components into their products are on a direct contract basis. Please telephone +800-850-7205, extension 111.

Home Care:

For third party pay on negotiated rentals, patient ownership programs, or direct purchase from Percussionaire® outpatient services by individuals using credit cards or prearranged payment.

Physicians may request the lengthy IPV® and VDR® PEER Journal Reviews directly from Percussionaire® Corporation. Please telephone +800-850-7205, extension 111.

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