Chest Cuirass Ventilator

Patient Criteria

Partial List of Indications

Acute Respiratory Failure	Neuromuscular Disease	Bronchiectasis/Cystic Fibrosis
Problems with Weaning from PPV	Asthma/Bronchiolitis/Bronchitis	Cor Pulmonale
Atelectasis/Retained Secretions	Hypoxemia, V/Q Mismatch	Fatigues Easily Post Extubation
Increased WOB/Dyspnea	Low CO State or High Potential with PPV	Post Fontan/Fallot
Cardiogenic Pulmonary Edema	Bridge to Lung Transplant Needed	Lung Protection and/or Recruitment in high MAP/Pplat PPV Situations
AIDS Related Lung Disease	Head and Spinal Injuries	Ventilation During ENT & Bronchoscopic procedures
Chronic Obstructive Pulmonary Disease (COPD)	Post-op/Recovery Ventilation	Pulmonary Artery Hypertension

Contact RT for assistance when the patient is ready to come off therapy or needs placed on!

What is it?

Cuirass ventilators are designed to apply equal pressure throughout the thorax, which allows for even expansion of the lungs and uniform ventilation. It is an adaptation of the sensationalized “iron lung” albeit compacted into a much smaller device. It subsequently provides positive pressure around the thorax to induce expiration. This latter function makes it efficient at clearing carbon dioxide (CO2), weaning patients from dependence on external ventilatory support, increasing cardiac output, and re-expanding areas of collapsed lung.

How does it work?

Apply the cuirass shell to the patient’s chest, this creates suction and results in negative pressure. This suction draws your diaphragm downward, causing your ribs to expand, inducing a breath in. During the expiratory phase, positive pressure is applied through the cuirass, which causes your diaphragm to move back up, providing a breath out. This in turn causes a decrease in intrapulmonary pressure and ambient air to flow into the lungs.

This mode of respiratory support offers portability and comfort and, since the patient’s face is not covered, conversation, eating, and even coughing can proceed unhindered.

A common complication of cuirass ventilation is skin irritation and abrasions. The cuirass should not be applied directly to exposed skin but should be fitted over a loose garment, like a hospital gown. RN and RT should preform a skin assessment prior to use and assess after each use.