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Multi-Functional
Non-Invasive Respira
Care System

HFT500

OmniOx

OmniOx, a full featured NIV

From High Flow Nasal Cannula Therapy to BiPAP S/T

Monitoring

SpO_2, RR

Humidifier

R.H. 100 %

O_2 Blender

21 ~ 100 %

HF

2 ~ 60 LPM

S/T

4 ~ 4 0 cmH_2O

Multi-Functional Non-Invasive Respiratory Therapy System

OmniOx, leading solution

Compact

Design for mobility and easy-installation

3-in-1 device : HF, CPAP, S/T
Built in oxygen blender and humidifier
4.3" color TFT LCD touch-screen

Comfort

Improve patient's comfort and safety

HFNC is a proven therapy for hypoxia, which is more patient friendly because it uses a lightweight and comfortable interface compared to other NIVs. OmniOx's CPAP and BiPAP S/T modes allow leak compensation up to 60 LPM, so any kind of NIV mask can be used.

EasyCare

Refocus on clinician's easy of operation

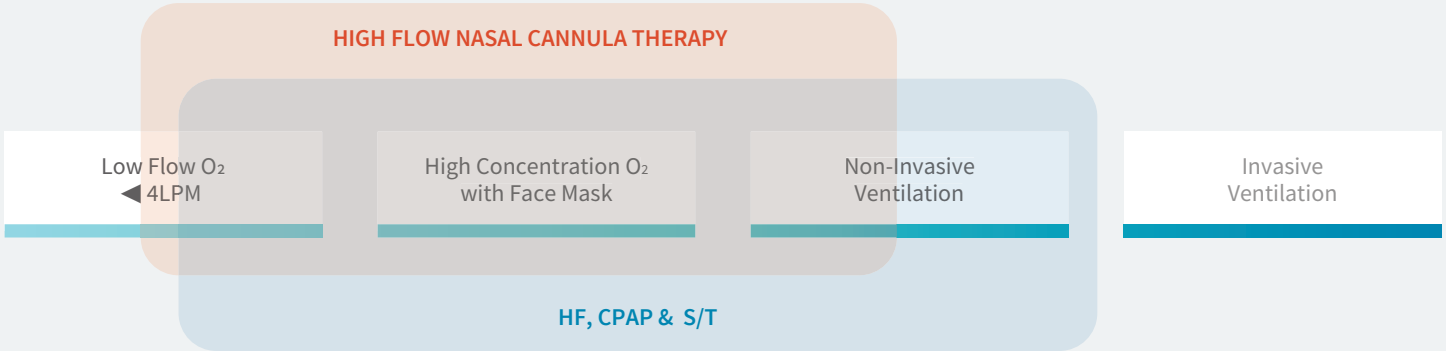
One device for a variety of applications

It is essential to have a reliable device that is versatile and applicable to all level of patient acuity while meeting various respiratory care requirements. MEKICS makes respiratory care easier for patient by helping a wide range of ventilation therapies from High Flow Oxygen Therapy to Non-invasive ventilation. The patient can be maintained on the same ventilator as long as respiratory care is needed.

Patient monitoring

It is to monitor patient's vital information continuously for the quality of respiratory care. Clinician easily checks the essential vital information the FiO_2, RR, and SpO_2 by OmniOx's real time display and helps clinician ensure that patient's interface is properly placed.

All levels of respiratory patient acuity



OmniOx HFNC

OmniOx, With the excessive flow of inspiratory requirement, the heated and humid oxygen is delivered via nose and reduces the unnecessary inspiratory work. And it optimizes the mucosal state within nasal and upper airway with appropriate humidity. In anatomical dead space, there is a lower possibility of not fully exhaled gas. In the end, it is a non-invasive respiratory therapy, which reduces the patient's ventilatory work and improves the oxygenation in blood.[1]

OmniOx is a device for high-flow nasal cannula therapy

This warm, humidified constant flow improves gas exchange and reduces work of breathing. [1][2]

- Eliminate most of the anatomic dead space
- Create a reservoir with high FiO_2 in the nasal cavity
- Improve gas exchange
- Significantly reduce the work of breathing

How oxygenation & ventilation improves with OmniOx?

Washout of anatomical dead space:

In normal ventilation, about 30% of the tidal volume occupies the anatomical dead space.

High-Flow Nasal Cannula (HFNC) therapy provides the excessive oxygen flow of inspiratory requirement and washes out the anatomical dead space in short expiratory pause just before inhalation phase.

Alveolar ventilation may benefit from the minute ventilation due to the washout of dead space. Therefore, ventilation process such as carbon dioxide exhalation and lung oxygenation through alveolar sacs would get better effective.[3]

Why bronchial hygiene improves with OmniOx?

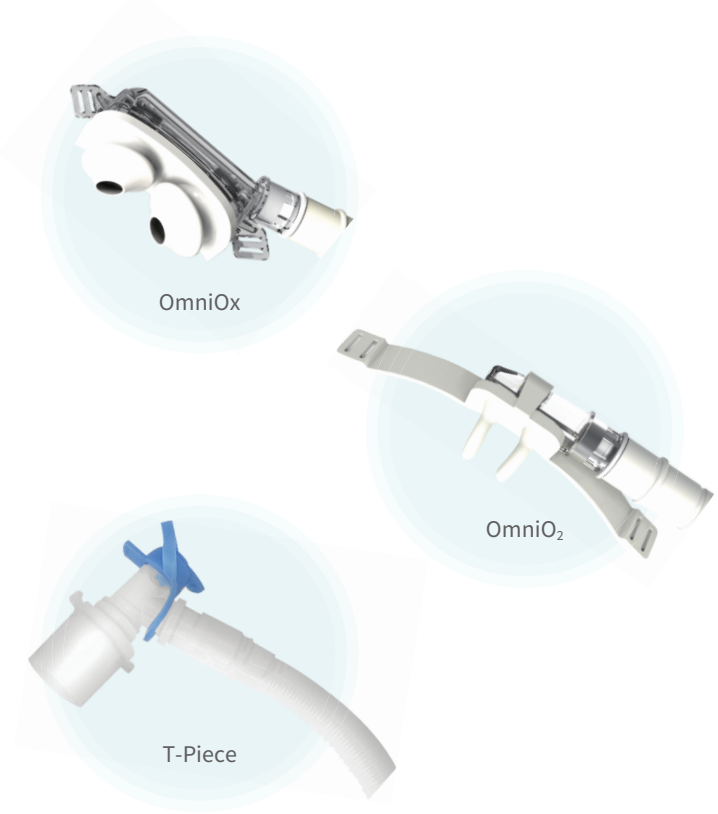
The heated and humid oxygen generated by High Flow Nasal Cannula can improve the elasticity of lung and airway conductance when compared with typical oxygen therapy.[4]

Reference

1. Dysart K et al. Research in high flow therapy: mechanisms of action. Respir Med. 2009 Oct;103(10):1400-5.
2. Gotera C et al. Clinical evidence on high flow oxygen therapy and active humidification in adults. Rev Port Pneumol. 2013; 19(5):217–227.
3. Dewan, N.A. and C.W. Bell, Effect of low flow and high flow oxygen delivery on exercise tolerance and sensation of dyspnea. A study comparing the transtracheal catheter and nasal prongs. Chest, 1994. 105(4): p. 1061-5.
4. On, L.S., et al., Function of pulmonary neuronal M(2) muscarinic receptors in stable chronic obstructive pulmonary disease. Am J Respir Crit Care Med, 2001. 163(6): p. 1320-5.

Built-in blower & oxygen blender

Built-in blower which is a flow generator, it can be used in places where high-pressure air is not supplied. The oxygen blender is built in, it can be set the oxygen concentration from 21 to 100% independently of the flow rate setting.



OmniO$_2$ High Flow Nasal Cannula

The OmniO$_2$ High Flow Nasal Cannula provides high flow oxygen therapy for adult patients with hypoxic respiratory failure. It is designed to deliver continuous high flow nasal cannula therapy up to a maximum flow of 60 L/min.

The OmniO$_2$ High Flow Nasal Cannula is for single-patient use (maximum seven days) in the hospital/clinical environment. It has been designed to provide superior comfort and easy of use to patients requiring high flow nasal cannula therapy.

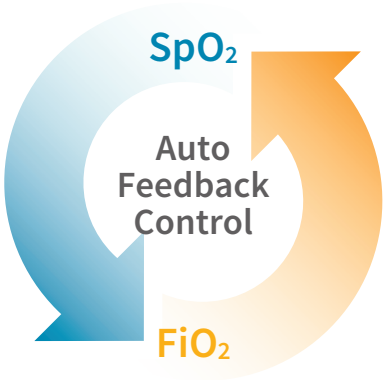
OmniOx Jet Flow Cannula (nCPAP generator)

OmniOx Jet Flow Cannula combines the advantages of high flow nasal cannula with the benefits of a CPAP generator. Compared to HFNC, WOB remains relatively low while maintaining high positive end-expiratory pressure at the same flow rate.

T-piece interface

It is an interface designed to be used effectively for mechanical ventilator weaning because it provides air with temperature and humidity maintained oxygen.

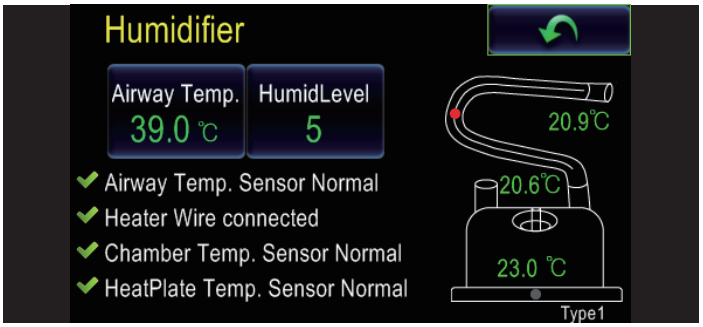
Pulse Oximetry with Target SpO$_2$ Feedback control by FiO$_2$



Goal of TSF (Auto FiO$_2$)

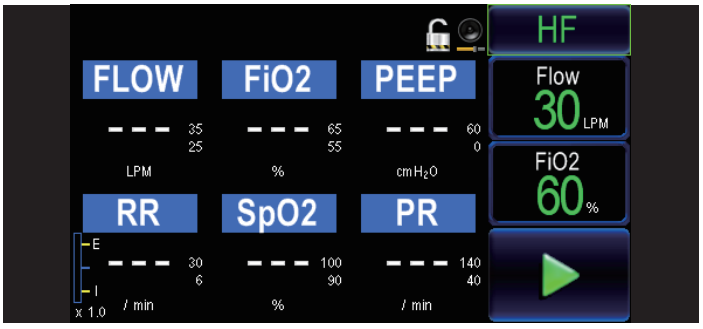
- Maximize time within the target SpO$_2$ range
- Especially minimizing high/Low SpO$_2$ episodes
- Reduce modulation of SpO$_2$
- Reduce the workload of the bedside caregiver

Built-in Heated Humidifier



You can check each connection and operation status related to humidifier in one screen at a glance, and you can change settings easily.

Respiration Rate & PEEP



Monitoring the patient's respiratory rate and the applied PEEP in HFNC treatment will help in proper treatment.

How to help physician's challenge in sub-acute respiratory care?

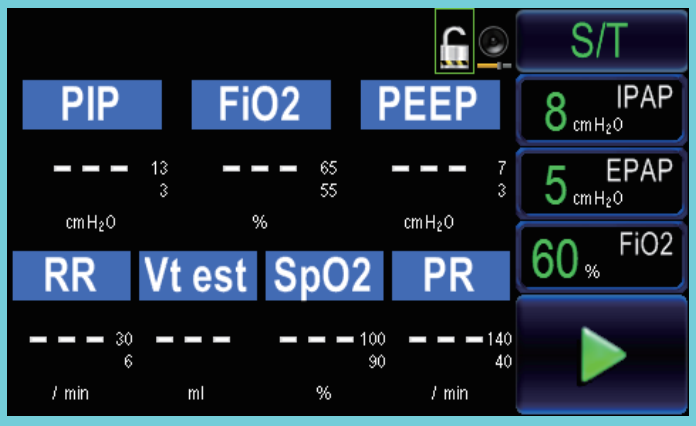
Physicians are constantly facing a dilemma, and each patient's respiratory condition needs to be constantly assigned to a proper respiratory therapy device whenever it changes. If one respiratory therapy device is applicable to all respiratory disease stages, this can be a useful solution to this problem.

Our answer is to respond to these demands.

OmniOx is a multifunctional non-invasive respiratory therapy device with HFNC, CPAP & BiPAP S/T mode. It is equipped with a humidifier and oxygen mixer, which are essential functional elements for this respiration treatment. It also has a monitoring function such as SpO_2, heart rate and respiration rate to assist the patient's safe treatment.

S/T

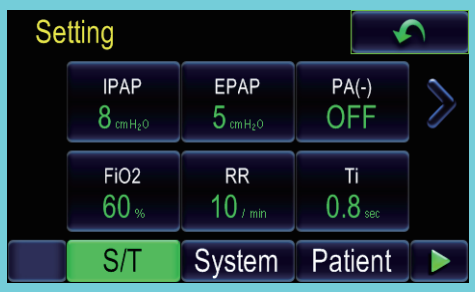
Bi-Level Positive Airway Pressure in Spontaneous / Timed mode

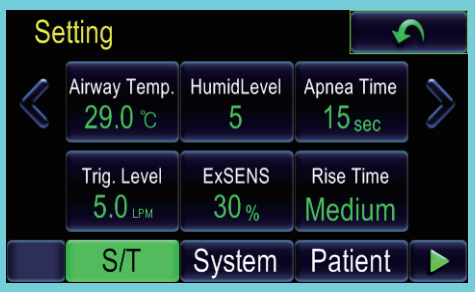


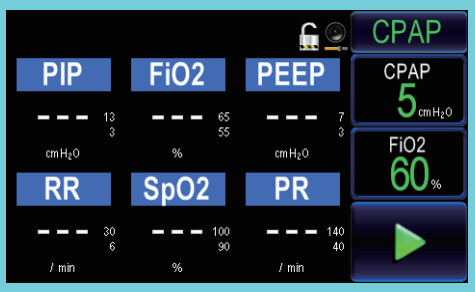
The S/T Mode of the OmniOx ventilator delivers pressure support with PEEP. The unit triggers Inspiratory Positive Airway Pressure (IPAP) in response to spontaneous inspiratory effort and cycles to Expiratory Positive Airway Pressure (EPAP) during exhalation.

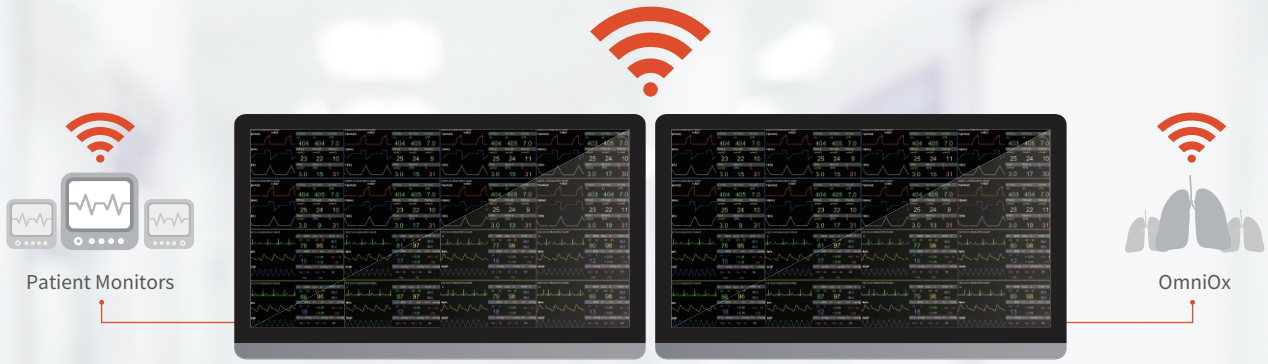
The S/T Mode ensures that patients will receive a minimum number of breaths per minute if their spontaneous breathing rate drops below the Rate setting. If the patient fails to initiate an inspiration within the interval determined by the Rate control, the unit triggers a timed breath resulting in a pressure-control(machine-triggered, pressure-limited, time-cycled) breath at the set IPAP level.

The rate of timed breaths can be adjusted from 2 to 60 BPM and the duration of each breath is controlled by an Inspiratory Time control.

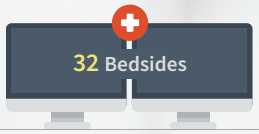




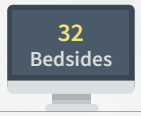




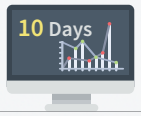
All in One Central Monitoring System



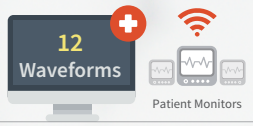
Dual LCD screen 32 bedsides patient monitoring system



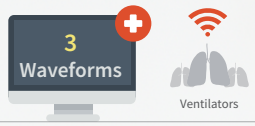
Single LCD screen 32 bedsides monitoring display



10 days graphic trend for each patient monitor



Displays 12 waveforms of patient monitoring for each patient monitor



Displays 3 waveforms of ventilator

Available wireless LAN or Cable wired network

Leak Compensation

This function compensates for baseline leaks between the patient and mask or interfaces. When the leakage amount changes, the triggering sensitivity is maintained because the base flow is re-set in consideration of the leakage amount. The maximum leak compensation is 60 LPM.

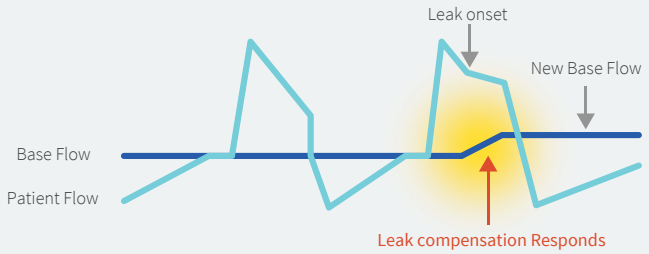
Functional goal

Under circumstances of flow leakage, the leak compensated function will minimize asynchrony by sensing stable patient trigger as possible.

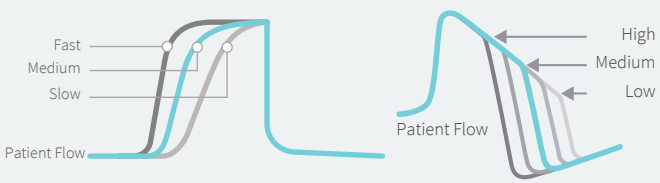
Under circumstances of flow leakage, the leak compensated function will support to be accuracy patient volume measuring.

This function provides leak flow as useful information for patient care. Under circumstances of flow leakage, the device will provide an accuracy patient flow and volume as possible.

Trigger-Sync with Leak compensation



Reset baseline leak flow rate



Rise Time & Flow Cycle control

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