HFNC OmniOx **NIV**

3in1 HF / bi-level / CPAP

Respiratory Care

Intelligent Respiratory
Care Solution

QmniOx
From Infant to Adult *HFT 700*

M3K

ΩmniOx

Together with from the beginning and to the end of respiratory care

Omni : Every, All
Ox   : Oxygen

OmniOx is a compound word of the Latin prefix "Omni" meaning "All" or "Every" and the abbreviation "Ox" for oxygen and has various meanings. And the OmniOx logo embodies the meaning of beginning and end, or "Everything" as it signifies the first letter of the Greek alphabet, "alpha (α)" and the last letter "omega (Ω)."

OmniOx embodies the meaning of alpha and omega, and our original integrated technology for oxygen treatment transcends the limitations of traditional respiratory treatment to provide tailored ventilation treatment from initial respiratory care to weaning, suited to every person and space in need. Our beginning and end aim is for satisfactory results are intended for all patients suffering from respiratory diseases and healthcare professionals who care for the growing number of patients requiring respiratory treatment.

MEKICS strives to have a good understanding of the diseases to be treated and the usage environment of hospitals, and based on clinical issues, endeavors to develop new features and products with the potential to improve such issues and to create a better treatment environment.

OmniOx units built with blower, heated humidifier, and built-in oxygen blender was developed as the world's first equipment that integrates heated humidified high oxygen nasal flow cannula treatment with non-invasive positive-pressure ventilation mode as CPAP and bi-level, enabling safe ventilation treatment in various environments from hospital to home.

OmniOx HFT700
Leading a solution

The OmniOx HFT700 utilizes HF, CPAP and bi-level modes and includes a flow generator, humidifier, built-in oxygen blender, and supports pulse oximeter and connectivity (HL7, WiFi, Bluetooth) as options. In addition, the definition of the product as a "multifunctional non-invasive ventilation treatment device" shows that it is the best product for the environment of non-invasive ventilation treatment.

Compact Design for mobility and easy installation

Supports 3 in 1 device HF, CPAP, and bi-level modes

To meet a variety of requirements of respiratory treatment, it supports a wide range of respiratory treatments, ranging from heated humidified high flow nasal cannula (HFNC) to non-invasive positive-pressure ventilation (NIV).
Easy patient installation with medical team management methods give you the flexibility to respond to sudden changes in the patient's symptoms, allowing you to provide efficiently support the patient's respiratory treatment from HF to CPAP or bi-level depending on patient therapy needs within time.

Built-in blower & oxygen blender

It has a built-in blower that allows you to proactively respond to the medical environment, enabling you to reliably support the patient's respiratory treatment anytime, anywhere. It also allows the built-in oxygen blender to independently control oxygen concentrations from 21% to 100% to provide stable oxygen to the patient.

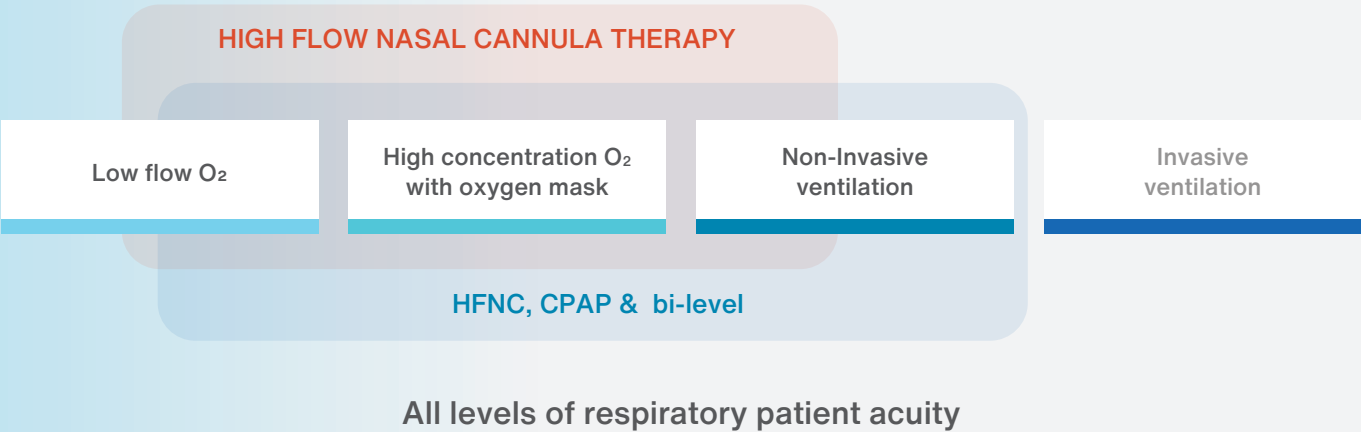## Comfort Improve patient's comfort and safety

HFNC

Heated humidified high-flow nasal cannula (HFNC) is a patient-friendly and effective treatment for hypoxia because it uses a lighter and more comfortable interface than non-invasive positive pressure ventilation (NIV). It also detects if the circuit is isolated or the cannulas clogged during treatment and sounds an alarm.

NIV

OmniOx's non-invasive positive pressure ventilation treatment compensates for leaks of up to 60 LPM and uses any type of mask.

Easy Care Focus on easy operation for clinician

Real-time monitoring of settings and measurements essential for respiratory treatment is possible, to rapidly respond to sudden changes in the patient's symptoms (FiO$_2$, Flow rate, RR, Airway temp, SpO$_2$, PR, and S/F ratio). In addition, it is possible to check the history of changes in the patient's symptoms, enabling more efficient treatment.

HIGH FLOW NASAL CANNULA THERAPY

| Low flow O$_2$ | High concentration O$_2$ with oxygen mask | Non-Invasive ventilation | Invasive ventilation |

HFNC, CPAP & bi-level

All levels of respiratory patient acuity

Fully equipped NIV device

Multi-functional non-invasive respiratory care device

Heated and humidified oxygen administration (Up to 44mg/L)

It enhances pulmonary compliance and conductance compared to traditional cold and dry oxygen-supplied treatments, reducing metabolic work by reducing the gas conditioning process. It also has the advantage of reducing the associated oxygen consumption and carbon dioxide emissions.

Cannula resistance compensation

It is designed to deliver a set flow rate to the patient by sensing increased resistance, even if the prongs are pressed or bent during heating and humidification high flow nasal cannula therapy. However, if the degree of pressed or bent is in a state where the set flow rate cannot be delivered, an alarm is generated to enable safer breathing treatment.

### Required monitoring features

It monitors the numerical values essential for respiratory treatment to respond quickly to sudden changes in the patient's symptoms. It can monitor FiO_2, Flow rate, RR, Airway temp, SpO_2, PR, and S/F ratio, allowing treatment information to be obtained in real time, and makes it possible to check the patient's history, enabling efficient treatment.

Visible graphic wave

During NIV treatment, numeric values are shown along with flow and pressure figures through graphs, allowing for real-time checking of treatment information.

Monitoring of FiO_2, PIP (IPAP), PEEP (EPAP), Vt est (estimated tidal volume), RR, SpO_2, and PR is supported.

Turn volume guarantee ON to monitor FiO_2, V delivery (Vi), PEEP (EPAP), PIP (IPAP), RR, SpO_2, and PR.
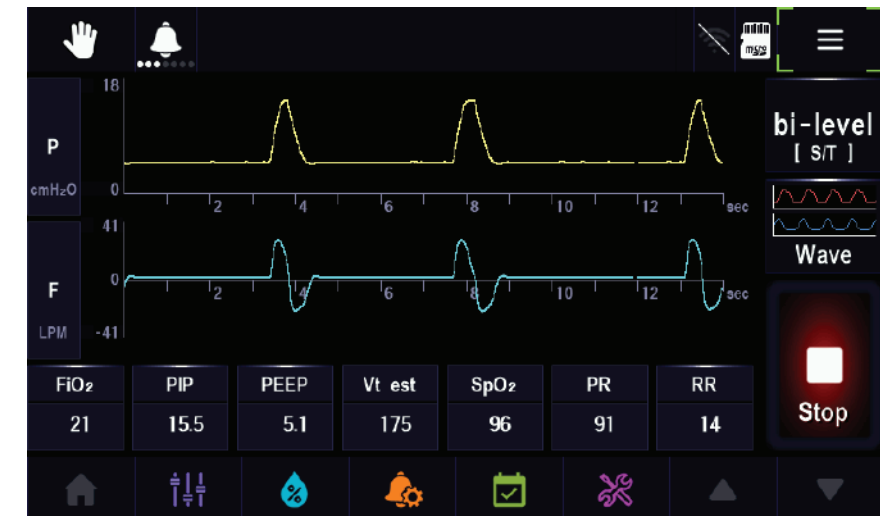
*Volume guarantee? This function is to convert the target from pressure to volume during inspiration. It can be applied in spontaneous(S), spontaneous / timed(S/T), timed(T) modes, and replaces the inspiration target set value with the tidal volume from the inspiratory positive airway pressure. The provision of tidal volume is limited only by the pressure limit set. Set range: Off, On
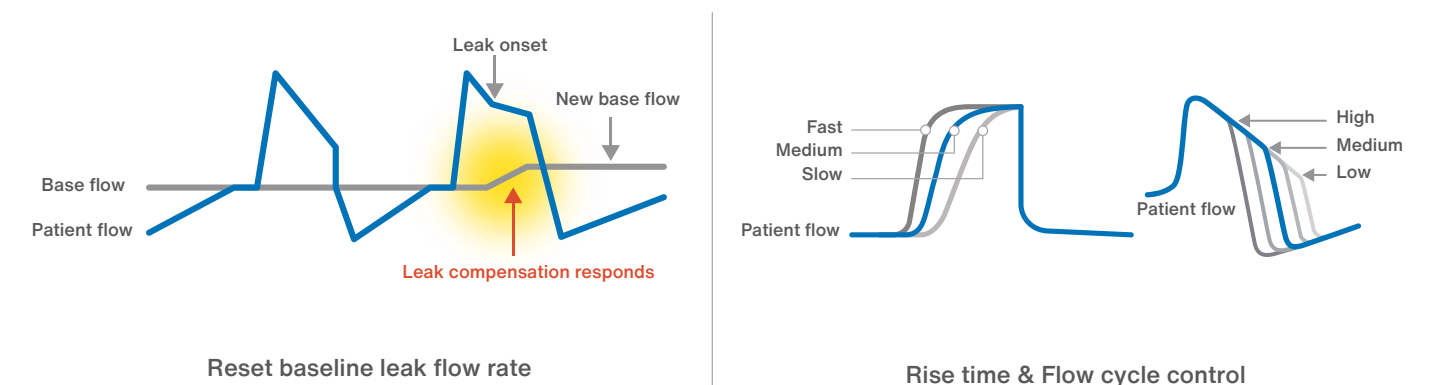
Leak compensation

NIV compensates for leaks of up to 60 LPM, eliminating unnecessary discomfort for the patient and maximizing treatment efficiency. Auto-trigger is enabled in case of an unexpected leak in the interface, or positive end-expiratory pressure (PEEP) is compensated if it is not maintained. It also reliably adjusts and modifies patient trigger sensitivity, minimizing asynchrony.

Rise time & Flow cycle control

The time to reach the intake pressure set to rise time is configurable. The shorter the setting time, the higher the peak inspiratory flow rate. In other words, it allows configuration of an intake flow suitable for the patient's inspiratory effort (demand flow).
The flow cycle determines the point at which an exhalation is possible in line with the patient's exhalation effort, and when the flow rate decreases to the set ratio (%) based on the maximum intake flow rate (100%), it terminates the intake and switches it to exhalation.

Reset baseline leak flow rate

Rise time & Flow cycle control

Easy to use, Simple to set up

| Parameters	Mode
SpO_2, Airway Temp. , RR, PR, PI, S/F ratio	HF
SpO_2, RR, PR, PI, Vt est	CPAP
SpO_2, RR, PR, PI, Vt est (Volume guarantee off), PIP(Volume guarantee on)	bi-level

All monitoring

When "All monitoring view" type is selected, four additional monitoring parameters are displayed at the bottom of the screen.

Trend submenu

Set a time scale per page. You can set the time to 15 minutes, 30 minutes, 1 hour, 3 hours, 6 hours, 12 hours, 24 hours, 72 hours.
* Regardless of the setting, the total time stored on the device is equal to 72 hours.

Event

Eight events related to alarms, settings, and systems are displayed on the screen. A list displays eight events on one screen. When the event display screen window is activated by touching the screen, pressing the ⌃ and ⌄ buttons or rotating the encoder can check eight previous events or eight next events. Events are stored up to a total of 3,000 events. If an event is exceeded, events are deleted in order of occurrence.

Go beyond limit

SmartO₂ (Target SpO₂ feedback controlled by FiO₂)
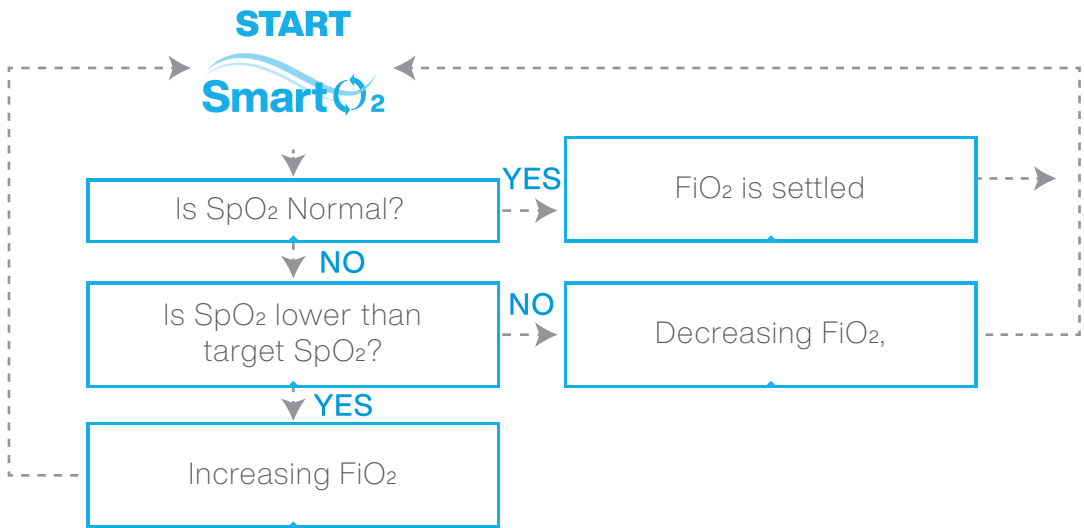
By comparing SpO_2 concentrations measured from patients within the range of FiO_2 prescribed by clinicians with the target SpO_2, it automatically adjusts FiO_2 depending on SpO_2 to provide oxygen to patients and prevent hypoxia or hyperoxia.

The system, which automatically controls the concentration of oxygen provided to patients with the target of SpO_2 set by healthcare professionals by measuring patients' oxygen saturation, reduces the time patients are exposed to a high concentration of oxygen, while supplying additional oxygen when patients are more physically active, reducing the motion load and allowing better safety and utility than traditional oxygen treatments.

CMS

Patient monitors

OmniOx

For safe use

Safeguards to minimize infection

The air flowing in from the outside is filtered through the intake filter, and the patient inhales the filtered air through the bacterial filter. Such air intake method minimizes infections. Also, air humidified in the chamber is directly transferred to the interface for patients, which has the advantage of being safe as humidified air does not re-enter the device.
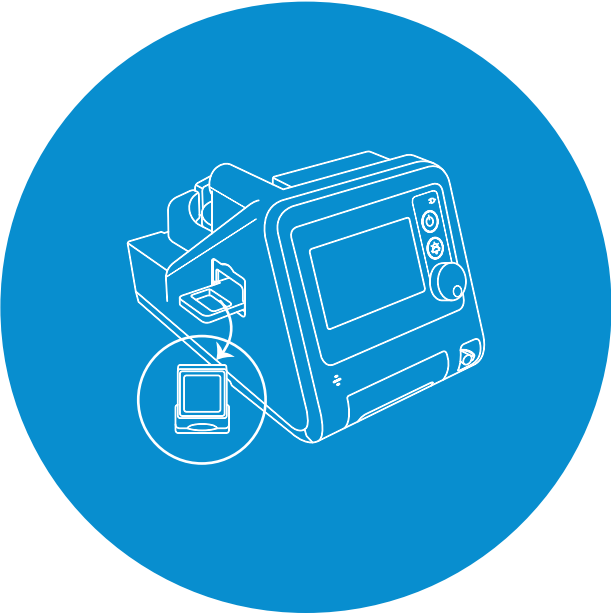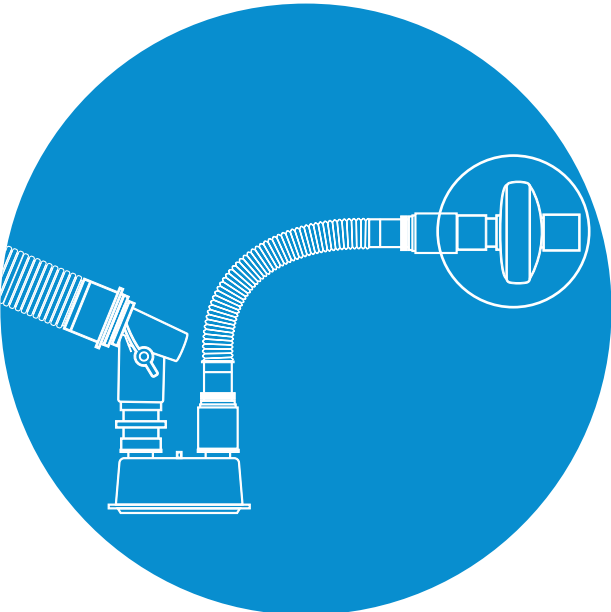
Air intake filter

Test article number	Total CFU recovered	Filtration efficiency (%)
1	9.8×10^1	99.9972
2	3.6×10^1	99.9990
3	5.3×10^1	99.9985

Test article number	Total CFU recovered	Filtration efficiency (%)
1	1.5×10^3	99.982
2	1.3×10^3	99.985
3	2.1×10^3	99.975

* Test results from Nelson Laboratories, Inc. (NLI)

Bacterial filter

Test article number	Total CFU recovered	Filtration efficiency (%)
1	3.1×10^1	99.99983
2	1.0×10^1	99.999946
3	2.6×10^1	99.99986
4	2.6×10^1	99.99986
5	2.1×10^1	99.99989

Test article number	Total CFU recovered	Filtration efficiency (%)
1	8.6×10^2	99.9952
2	8.6×10^2	99.9952
3	1.4×10^3	99.9923
4	5.3×10^2	99.9970
5	1.0×10^3	99.9943

* Test results from Nelson Laboratories, Inc. (NLI)

Specificaion

HF (High Flow)

Flow (Inspiratory flow rate)	1 ~ 60 LPM
RR Sensitivity	x0.2 ~ x3.0
RR detection	OFF
	Internal sensor
	Respiratory detection Line (With an external RR detection accessory)

CPAP (Continuous Positive Airway Pressure)

CPAP	4 ~ 20 cmH2O ±(1.7 + 4 % of the set value) cmH2O
Pressure Assist + (PA(+))	OFF, 1 ~ 3 cmH2O
Pressure Assist - (PA(-))	OFF, -3 ~ -1 cmH2O
Trigger Level	3 ~ 20 lpm
Rise time	Fast(0.2 sec), Medium(0.3 sec), Slow(0.4 sec)
Auto Start	ON, OFF

bi-level Positive Airway Pressure (Spontaneous, Spontaneous / Timed, Timed)

IPAP	4 ~ 40 cmH2O ±(1.7 + 4 % of the set value) cmH2O
EPAP	4 ~ 20 cmH2O ±(1.7 + 4 % of the set value) cmH2O
Pressure Assist - (PA(-))	OFF, -3 ~ -1 cmH2O
Respiration Rate	2 ~ 60 bpm
Inspiratory Time(Ti)	0.3 ~ 3.0 seconds
Trigger Level	3 ~ 20 lpm
Trigger Type	S/T, T, S
Rise time	Fast(0.2 sec), Medium(0.3 sec), Slow(0.4 sec)
Auto Start	ON, OFF

Common

FiO2 %	High pressure	21, 25 ~ 100 %, Electronic controlled blender (built-in system) Accuracy : ± 5 %
	Low flow	Device does not support oxygen concentration control. (Only FiO2 monitoring)

- Pulse oximeter can be provided with the two options: MEK, Masimo

$C\epsilon$ 2460

MEK

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