BMC

Therapeutic Product for COVID-19 Patients

Non-invasive ventilator

Y-30T

(Target Tidal Volume Function)

Non-invasive ventilator Y-30T is Bi-level PAP (Bi-level Positive Airway Pressure) device intended to provide non-invasive ventilation for patients with Respiratory Insufficiency. It is intended for adult patients by prescription in the home or hospital/institutional environment. With its Target Tidal Volume function and other excellent comfort features and effective performance, it offers each patient personalized ventilation support.

Clinical Results

The following recommendations pertain to adult and paediatric patients with ARDS who are treated with non-invasive or high-flow oxygen systems.

High-flow nasal oxygen (HFNO) should be used only in selected patients with hypoxemic respiratory failure.

Non-invasive ventilation (NIV) should be used only in selected patients with hypoxemic respiratory failure.

Patients treated with either HFNO or NIV should be closely monitored for clinical deterioration.

--Reference *Clinical management of severe acute respiratory infection (SARI) when COVID-19 disease is suspected*

Treatment of severe and critical cases:

a. Treatment principle：

Based on symptomatic treatment, actively prevent complications, treat basic diseases, prevent secondary infections, and provide organ function support in a timely manner
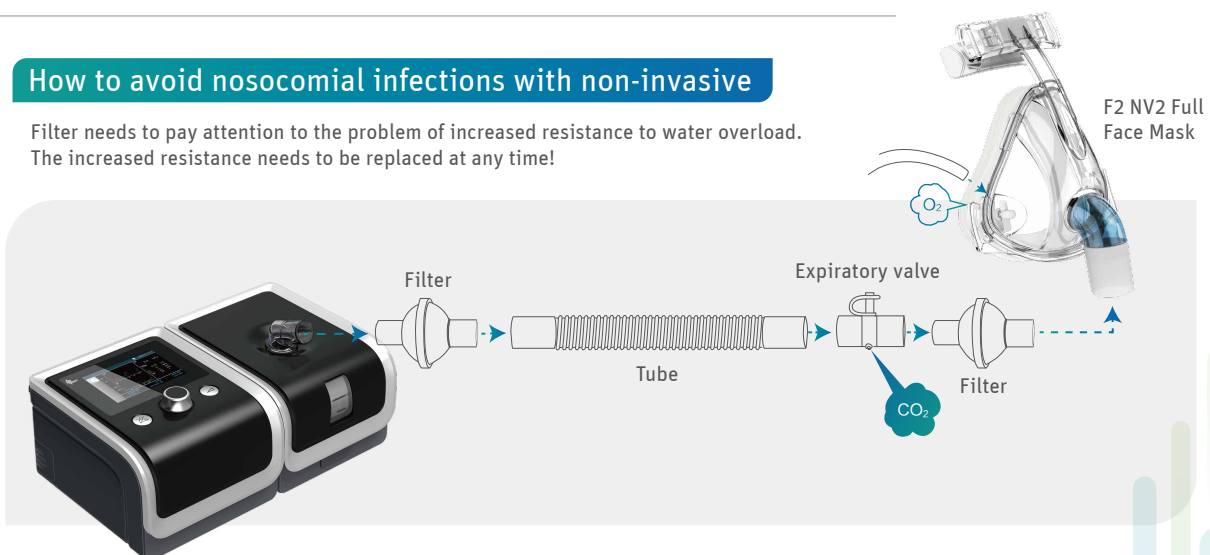
b. Respiratory support:

(a) Oxygen therapy: Severe patients should receive nasal cannula or mask to inhale oxygen and evaluate in time whether respiratory distress and / or hypoxemia is relieved.

(b) High-flow nasal cannula oxygen therapy or non -invasive mechanical ventilation: When patients have respiratory distress and / or hypoxemia cannot be relieved after receiving standard oxygen therapy, high -flow can be considered Nasal catheter oxygen therapy or non-invasive ventilation. If the condition does not improve or worsens within a short time (1 to 2 hours), tracheal intubation and invasive mechanical ventilation should be performed in time.

-- Reference *Diagnosis and treatment of pneumonitis for a new coronavirus infection (Trial Version 7)*

How to avoid nosocomial infections with non-invasive

Filter needs to pay attention to the problem of increased resistance to water overload. The increased resistance needs to be replaced at any time!
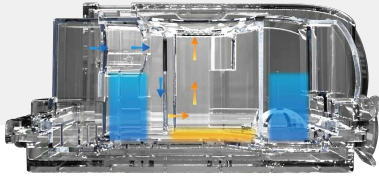
F2 NV2 Full Face Mask

O_2

Filter

Expiratory valve

Tube

CO_2

Filter

Y-3OT Non-invasive ventilator with humidifier

-- Reference *Chinese Journal of Respiratory and Critical Care medicine, Feb. 2020, Vol. 19, No. 2*

Comfortability

Humidifier

- Eco Smart heating system with innovative dual water chambers design delivers accurate water quantity control with real time compensation, ensuring excellent humidifying capacity and improves comfort.
- Easy to take off and clean.
- Function to prevent overheating when water is out.

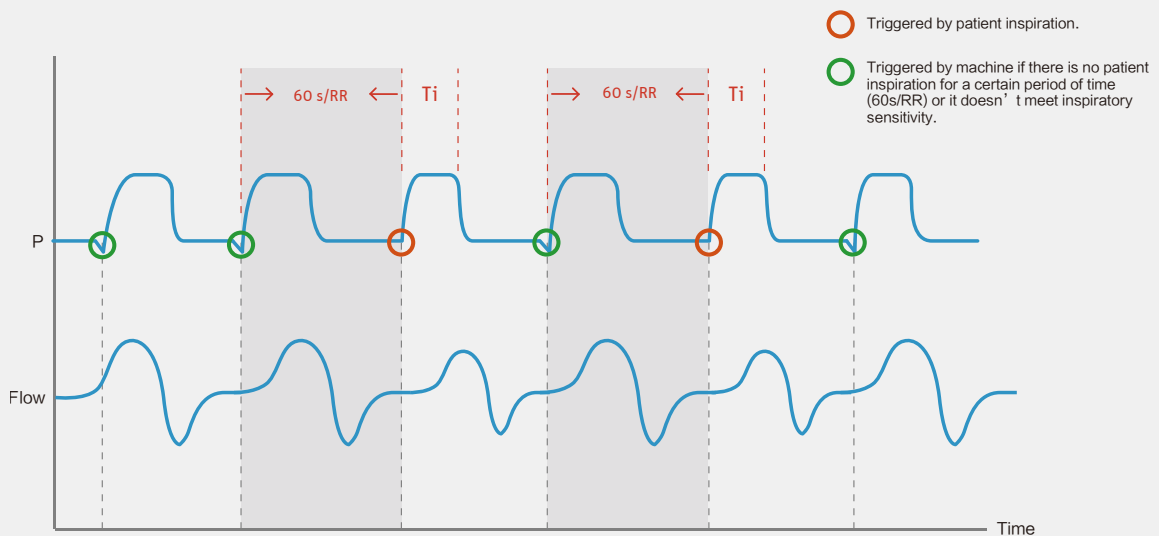## Inspiratory / Expiratory sensitivity

8 grades of I Sens and E Sens optimize the compliance of machine with the patient.

I sense   8 7 6 5 4 3 2 1

8 7 6 5 4 3 2 1   E sense

Efficiencies in Therapy

S/T Mode

Machine complies with patient breathing. However, if there is no inhalation for a certain period of time, the machine will give a forced ventilation to ensure the minimum ventilation.

○ Triggered by patient inspiration.

○ Triggered by machine if there is no patient inspiration for a certain period of time (60s/RR) or it doesn't meet inspiratory sensitivity.

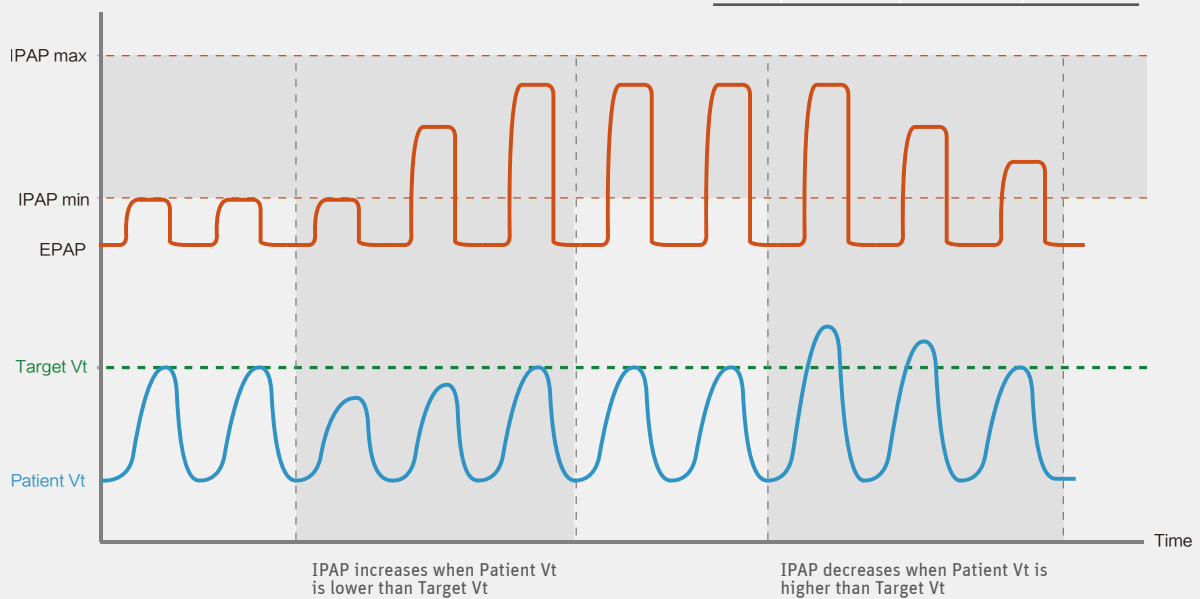60 s/RR ← | Ti   60 s/RR ← | Ti

P

Flow

Time

Target Tidal Volume Function

Optimize IPAP according to mean Vt of last 5 breathings and prescribed Target Vt. Larger difference between mean Vt and target Vt takes more evident adjustment in IPAP.
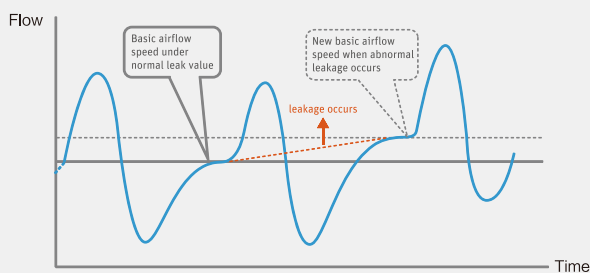
- Inspiratory pressure is between IPAP min and IPAP max.
- Larger difference between mean Vt and target Vt takes more evident adjustment in IPAP.
- Patient Vt is the mean of Vt values from patient's last 5 breathings.

Height (m)	Ideal Weight (kg) (BMI=20)	Target Vt (mL) (8 mL/kg)	Target Vt (mL) (10 mL/kg)
1.50	45	360	450
1.55	48	380	480
1.60	51	410	510
1.65	54	440	540
1.70	58	460	580
1.75	61	490	610
1.80	65	520	650
1.85	68	550	690
1.90	72	580	720

IPAP increases when Patient Vt is lower than Target Vt

IPAP decreases when Patient Vt is higher than Target Vt
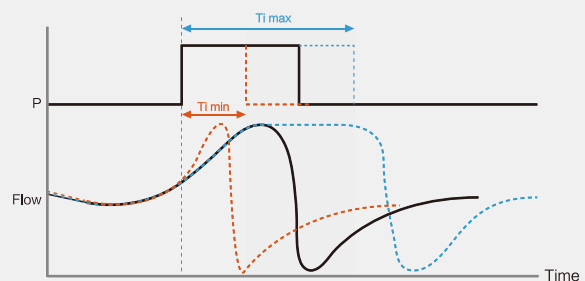
Auto Leak Compensation

The machine detects the leaks during treatment in real time and adjusts the baseline to ensure correct triggering and related functions.

Basic airflow speed under normal leak value

New basic airflow speed when abnormal leakage occurs

leakage occurs

Inspiratory time control

Tim min and Ti max could be set independently, avoiding insufficient ventilation due to short inspiratory time. At the meantime, cases can be prevented where expiratory sensitivity is unable to meet due to large leaks.

Ti max

Ti min

User Friendliness

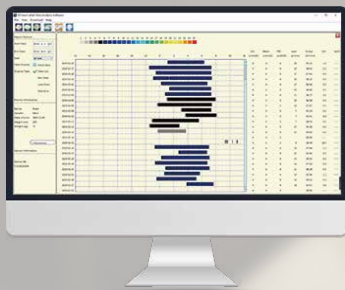## Data Management

SD Card

GPRS

Wi-Fi

iCode / iCode QR / iCode QR+

Various way of therapy report review

◉ Quick Report through Device Screen

◉ BMCares App

◉ BMCares Cloud Platform

◉ iCode web version (www.bmc-icode.com)

◉ RESmart nPAP Data Analysis Software (PC software)

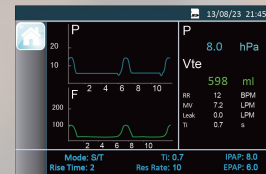◉ RESmart Software web version (www.icodeconnect.com/quick/info)

BMCares APP

Alarms to make therapy reliable

	13/08/23 21:45	
Low P	7.0	cmH₂O
High P	25.0	cmH₂O
Low MV	1	LPM
Low RR	6	BPM
High RR	40	BPM
Alarm Log		>
< Back		
< Home		

Various visual and auditory alarming - Leak, High/Low RR, High/Low Pressure, Low Minute Ventilation, Low SpO_2, Power Failure, etc.

3.5-inch LCD screen

Real time display - Pressure (waveform), Flow (waveform), Vte, Respiratory Rate, Minute Ventilation, Leak, Inspiration Time.

15 languages

English / Español / Português / Deutsch / 中文（简体）/ Français / Polski / Italiana / Türk / Русский / Nederlands / Ελληνικά / 한국어 / Magyar / ไทย

Full therapy solution

◉ Trolley

◉ Battery for power back-up

◉ Respiratory humidifier to deliver optimal outcomes

◉ 15 or 22 mm tubing

◉ Heated tubing

◉ SpO₂ Kit

◉ GPRS / Wi-Fi Kit

◉ 12/24 V DC/DC Converter

*Some parts are not produced by BMC

Benefits of monitoring & supporting through cloud platform and patient self-management

A 12-month study in the United States in disease management such as strengthened education, follow-up in patients with chronic obstructive pulmonary disease, showed that:
Reduction in hospital admission and emergency visits for COPD, particularly for cases due to non-infectious factors.

Am J Respir Crit Care Med. 2010 Oct 1;182(7):890-6

Dewen and other studies have found that multi-dimensional integrated management in patients can effectively reduce the medical cost of COPD by about 11.7% per person.

COPD.2011 Jun;8(3):153-9

*Studies and researches above are listed as clinical references only, which were not conducted with BMC products.

Specifications

Model Comparison

Y-30T	IPAP: 4 - 30 hPa EPAP: 4 - 25 hPa CPAP mode: 4 - 20 hPa	3.5-inch	CPAP, S, T, S/T

General Info

Dimensions: 170 mm × 180 mm × 118 mm

290 mm × 180 mm × 134 mm (with the humidifier)

Weight: 1.5 kg

2.5 kg (with the humidifier)

Water capacity: 350 mL at recommendedwater level

Ramp

The ramp time ranges from 0 to 60 minutes

Humidifier

Humidifier Settings: off, 1 to 5 (95°F to 167°F / 35°C to 75°C)

Humidifier Output: No less than 10 mg H_2O/L

SpO_2

Range: 0 to 100%

Pulse Rate

Range: 40 to 240 BPM

Sound Pressure Level

< 30 dB, when the device is working at the pressure of 10 hPa

Storage

SD card can record patient data and fault information

AC Power Consumption

100 - 240 V AC, 50/60 Hz, Max 2 A

Key Parameters

Target Vt: On/ Off

150~1500 mL

Reslex: Patient, Off, 1~3

I Sens.: 1~8

E Sens.: 1~8

Res Rate: 3~40 BPM

Ti: 0.3-3.0s

Rise Time: 1~4