



— NEXT GenWorks —  
Defining tomorrow, *today.*



# Product Catalogue

**COMeN**

# FOR ALL CARE AREAS

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Comprehensive Patient Monitoring System



Comprehensive ICU Solution



Comprehensive OR Solution



Comprehensive NICU Solution

# Comprehensive Patient Monitoring System



## K Pro series

# Modular Patient Monitor



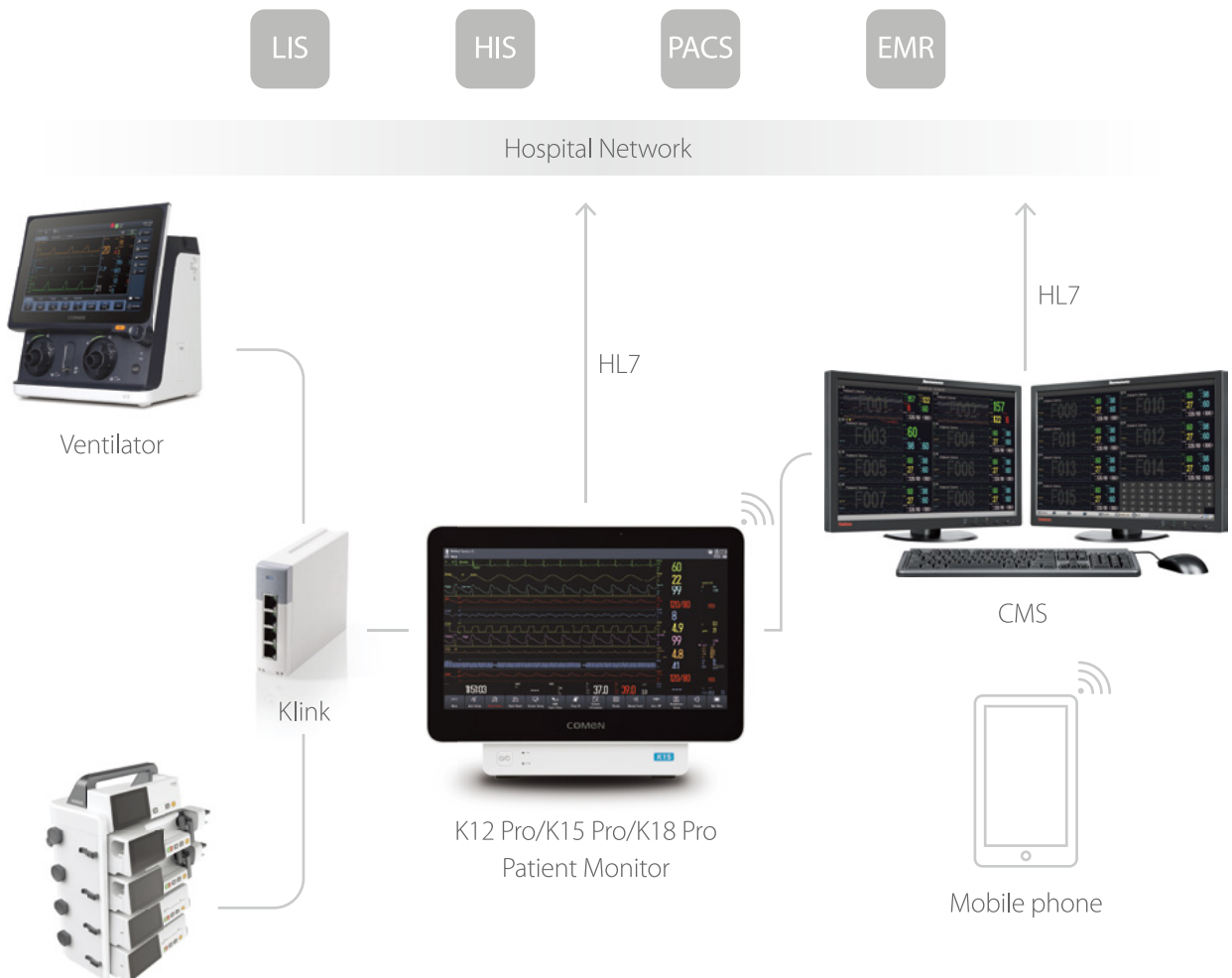
## Designed for Critical Care.

The critical care demand is immense in hospitals, especially for patient monitoring. By meeting these challenges today, we have launched the advanced monitoring solution K Pro series and aim to provide better care for the patient.



# Crystal Clear Monitoring with Comen's High-end K Pro Series.

- Our refined capacitive screens come installed with multiple user-friendly designs to facilitate operations in most clinical settings.
- Bundled with high-end monitoring parameters including NMT, Masimo Rainbow Set, rSO2, apnea wake-up and O2, the K Pro series provides more tools for diagnostic accuracy.
- The K18 Pro is equipped with a dual system which incorporates a patient monitoring system with iCM system that is developed based on Windows®, which allows clinicians to have direct access to hospital databases on the monitor such as HIS, EMR and PACS.
- The K Pro Series can also be connected to other clinical equipment such as anesthesia machines, ventilators and infusion & syringe pumps, to integrate and display comprehensive patient data, thus creating one-stop monitoring platform that is furthered by the inclusion of centralized monitoring and multiple functions for the processing of physiological parameters during critical patient care.



K1

## Specialized Transport Patient Monitor



### Concise, Intuitive, Powerful

- Compact size 148.4x79.2x96.5mm, Light weight 2.5kg
- Fixed handle and modular rack, carry with ease
- 5.5-inch capacitive touchscreen 1280x720 high resolution
- Supports multi-touch operation, easy to learn and operate
- IP44 Ingress Protection, 1.2m Drop Endurance and 10-hour Battery Life



## Seamless Integration, Just Dock It.

- With the certification of EN1789, the K1 can be used as a specialized ambulance transport patient monitor.
- Couples as plug-and-play multi-parameter module for the K Pro series patient monitors to achieve seamless transmission of patient data from transport straight to the ICU.
- Compact and flexible, the K1 also functions perfectly as a bedside patient monitor when equipped with a module rack and docking station that enables connection to an external display.



## Diagnostic Excellence through Reliability and Versatility

- K1 delivers basis measurements including 3/5/6/12-lead ECG with ST and QT analysis, respiration, NIBP, SpO<sub>2</sub>, temperature, built-in sidestream EtCO<sub>2</sub> and dual IBP.
- With modular rack, K1 supports one extended module and provides advanced measurements including mainstream or sidestream EtCO<sub>2</sub>, dual IBP, invasive cardiac output(C.O.), BIS, AG, NMT, RM, Rainbow Set and apnea wake-up function for infants.
- Alarm Event 2000 groups, NIBP 2000 groups, ARR Event 48 hours, Full Disclosure 48 hours, Trend Graph and Table 160 hours.
- Clinical Assistive Application(CAA) including Early Warning Score (EWS), Glasgow Coma Scale (GCS), SpesisGuide and 24 hours ECG summary.
- WIFI and wired connection to central monitoring system on the move or at the bedside. Seamless and offline data transmission to K Pro Series when working as a module.

# K22Pro Patient Monitor

See More,  
From Another  
Perspective

For clinicians, viewing more vital signs from the monitor is significant. Especially, when the patient is under severe condition, a great monitor able to provide more insights can help the clinicians to make informed decisions.





# C90

## Multi-parameter Patient Monitor

C90 monitor is integrated with the world-leading vital signs parameter monitoring technology and IT application technology to make a high-end vital signs monitoring platform and provide a comprehensive monitoring solution.

- 17" high resolution LCD touch screen 1280 X 1024
- Rotary knob, buttons and touch screen operation.
- Built-in lithium battery; to ensure keeping continuity of patient's data during operation with its running time over 2 hours
- Bracket solutions: Trolley
- Supporting built-in thermal printer and external laser printer
- Module conductive contact: gold-plating technology, excellent conductivity
- Infrared transmission for module data transfer



# C70

## Multi-parameter Patient Monitor

Classic Continuation  
Continuous Innovation

C70 inherited the outstanding character of our Patient Monitor C90 and adopted with highly integrated modular mechanical structure, it efficiently combines the structure, function and maintenance management.



# C30

## Transport Patient Monitor

- 4.3-inch touch screen with 16:9 colorful LCD display.
- With only 1.5kg weight for transportation.
- Automatic data exchange with C70 / C90.
- Three-level sound and light intelligent alarm.
- Adjustable alarm volume.
- Dual lithium batteries: C30 has a built-in 2200mAh lithium battery, and the special rescue bag has a built-in 4400mAh lithium battery. Can support more than 8 hours of continuous work.
- Extensive data storage capability for alarms, events, NIBP measurement, and up to 48 hours of trend storage and review.

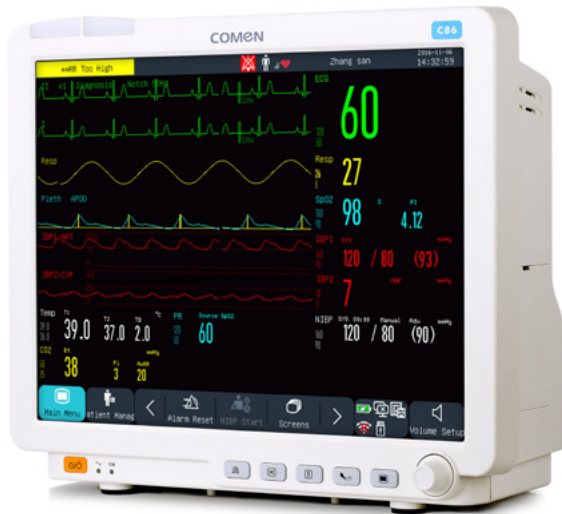


# C60

## Neonatal Patient Monitor

- 8.4-inch touchscreen.
- Lightweight, compact, and a built-in battery can support at least 2 hours of continuous work.
- Standard Masimo SpO2, and support apnea wake-up function & oxygen concentration direction monitoring function which are specially designed for neonatal.
- C60 enhances the anti-interfere capability of NIBP measurement to ensure data accuracy even in neonate's movement.
- According to the symptom of low perfusion, COMEN® uses the Adap-DSP system to provide more accurate measurements for neonates.
- Specialized neonatal measurement mode, software & hardware over-pressure protection.

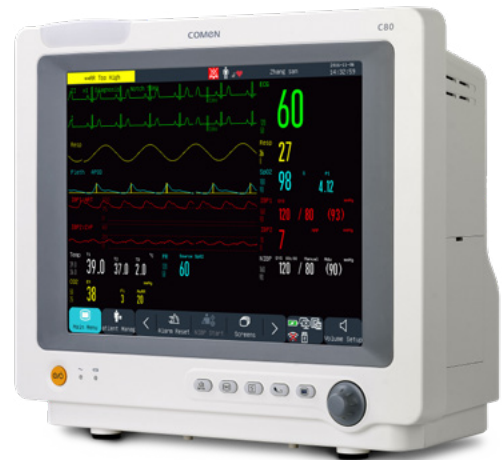




C86

## Multi-parameter Patient Monitor

15" LCD touch screen



C80

## Multi-parameter Patient Monitor

12.1" LCD touch screen

C80/C86 is the new generation of patient monitor designed and developed by COMEN. C80/C86 is equipped with USB port, convenient handle, multiple mounting solutions, IPX1 level waterproof cabinet design and sturdy housing to withstand rough handling.

C80/C86 fulfills the hardware requirements for intensive care monitoring in multiple environments, efficiently caring for human life every second.



C50

## Multi-parameter Patient Monitor

- 10.4" LCD touch screen
- Support rotary knob, buttons and touch screen operation
- Perfect patient information management system
- 5° inclination screen makes bedside monitoring easier
- Fan-less design, avoid cross contamination on laminar, ultra quiet;
- IPX1 waterproof
- Intelligent alarm technique, automatic recognition alarm level



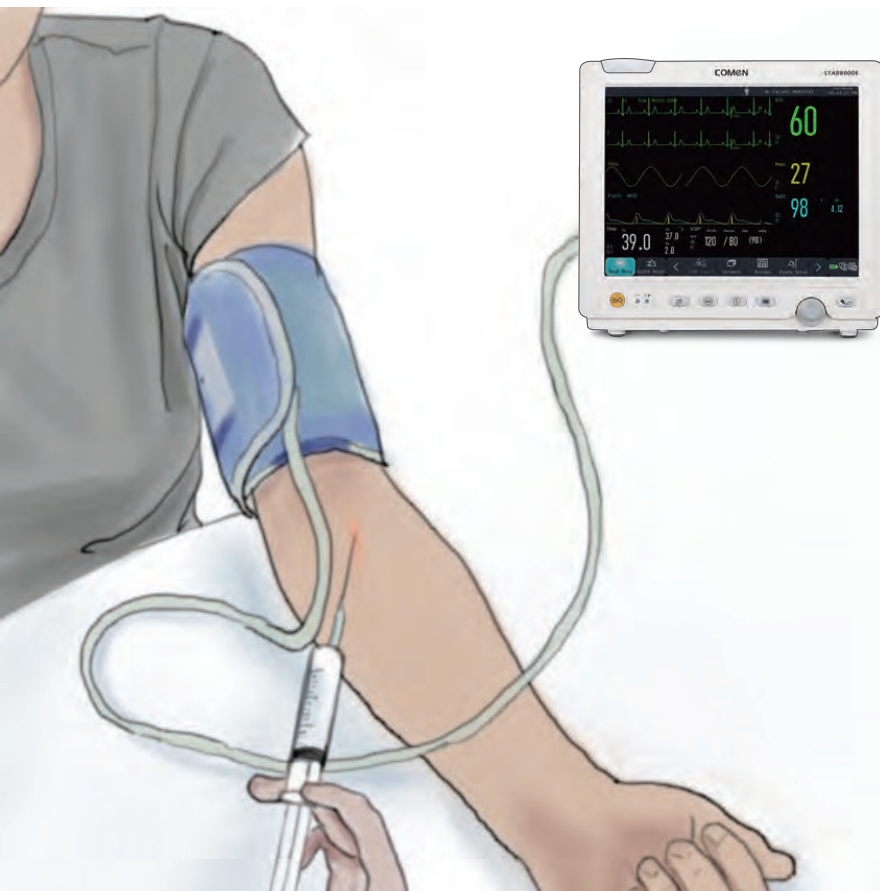
## STAR8000E

## STAR8000F

# Multi-parameter, Pre-configured Patient Monitor

### Functions and performances

- 12.1" LCD non-touch / touch screen with low power consumption and longer battery life.
- Support mouse, keyboard operation, it's more humanized.
- Fan-less design, ultra quiet.
- Comen patent blood pressure interface, more convenient to plug.
- Support external laser printer with A4 paper reports; support alarm trigger print function.
- Large capacity storage, support data saving.
- Built-in high capacity lithium battery, increasing battery life.
- High-lighting and independent blood pressure buttons, more convenient.
- System software can be upgraded without disassembling the machine.



### Multiple Working Modes Options

- Standby mode
- Privacy mode
- Night mode
- CPB mode

### NIBP Assisted Venipuncture

The nurse can use the NIBP cuff to inflate and create a pressure close to the diastolic pressure, thus block the venous vessels and assist in the completion of the venipuncture.

NC5

Vital Signs Monitor



## Ingenious and Minimalistic, Smart and Lightweight

Applied to outpatient, emergency and general wards.

As a spot check monitor and bed side monitor, it integrates NIBP, SpO2, ECG, Ear Temp. It is simple, tasteful, compact and lightweight, a perfect combination of technology and aesthetics.

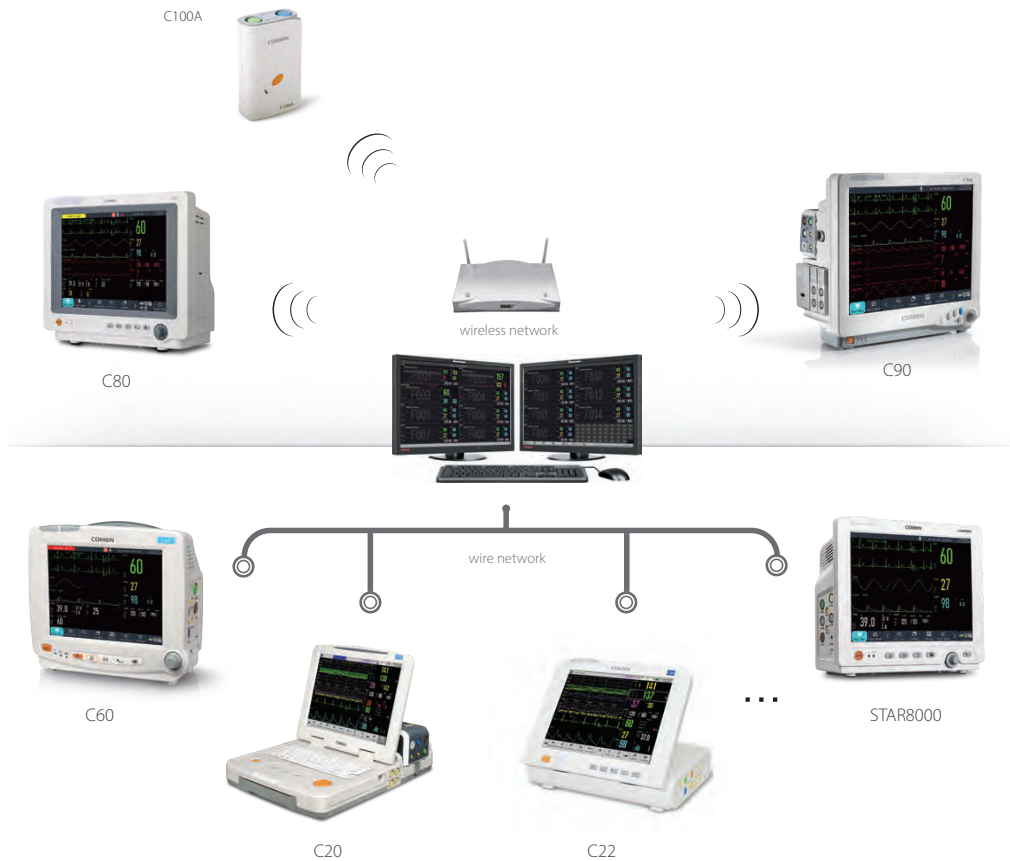
# STAR8800

## Central Monitoring System Software

The perfect combination of network technology and life monitoring, provide infinite care and love to patient.



## Monitoring system consisted of varies of specialized monitors



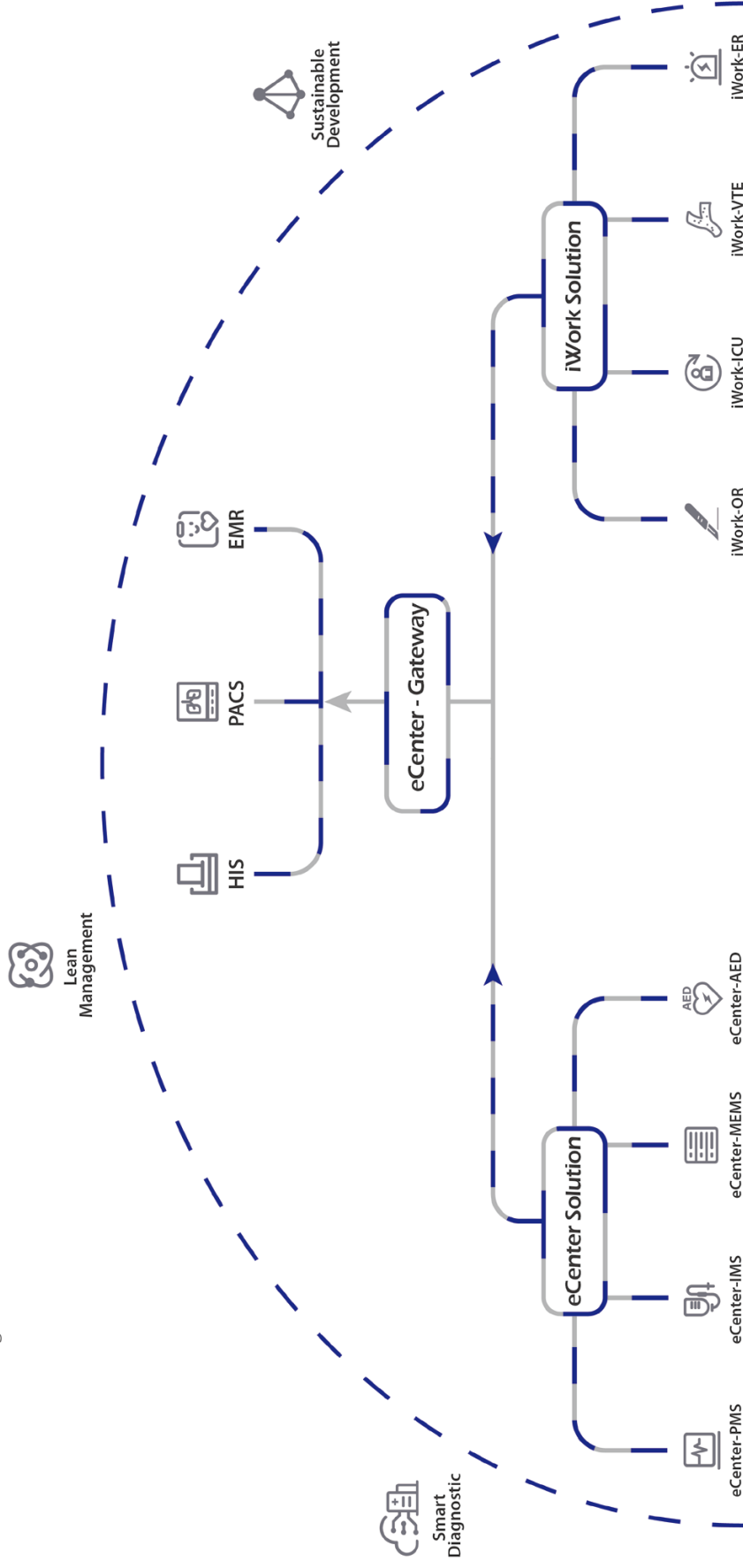
- Support any size of screen, single screen for monitoring 32 beds, and dual screen for monitoring 64 beds, maximum 128 beds.
- Standard equipped with high-performance computer and laser printer.
- Powerful anti-interference network signal.
- Pure central operating system, no software interference.
- Humanized operating interface, simple and clear.
- Fetal monitor, multi- parameters monitor together form the central monitoring system.

# eCenter Solution

The eCenter IT solution unleashes the restraint of individual patient monitoring to create a universal central monitoring platform, offering greater visibility, streamlining workflow, and improving clinical decision-making.

# iWork Solution

The iWork IT solution provides unique electronic medical records for different clinical departments and clinical records based on actual demand, improving clinical decision-making.



## C21/C22

### Fetal & Maternal Monitor



- 12.1" LCD touch screen
- Screen can be adjusted for multi-angle observation
- Suitable for antepartum and postpartum applications
- Fetal interface, fetal and maternal interface, big font interface
- High sensitive waterproof FHR transducer
- Auto/Manual fetal movement marker
- Built-in 152mm Thermal Printer
- Compatible with COMEN central monitoring system
- Automatic fetal status scoring system: NST, FISCHER, IMPROVED FISCHER, KREBS

## C11

### Fetal Monitor



- 5.7" screen
- Built-in 112mm thermal printer
- Quick release button for paper replacement
- Built-in Lithium-ion battery , up to 4 hours
- Auto/manual fetal movement marker
- Automatic fetal status scoring system
- FHR signal strength indicator, twins cross channel verification
- Power-off data protection for 300 cases.
- 60 hours real-time waveform replay & storage
- Timing monitoring function to avoid over time monitoring
- Support timing printing
- Compatible with COMEN central monitoring system



S8/S5

## Defibrillator Monitor



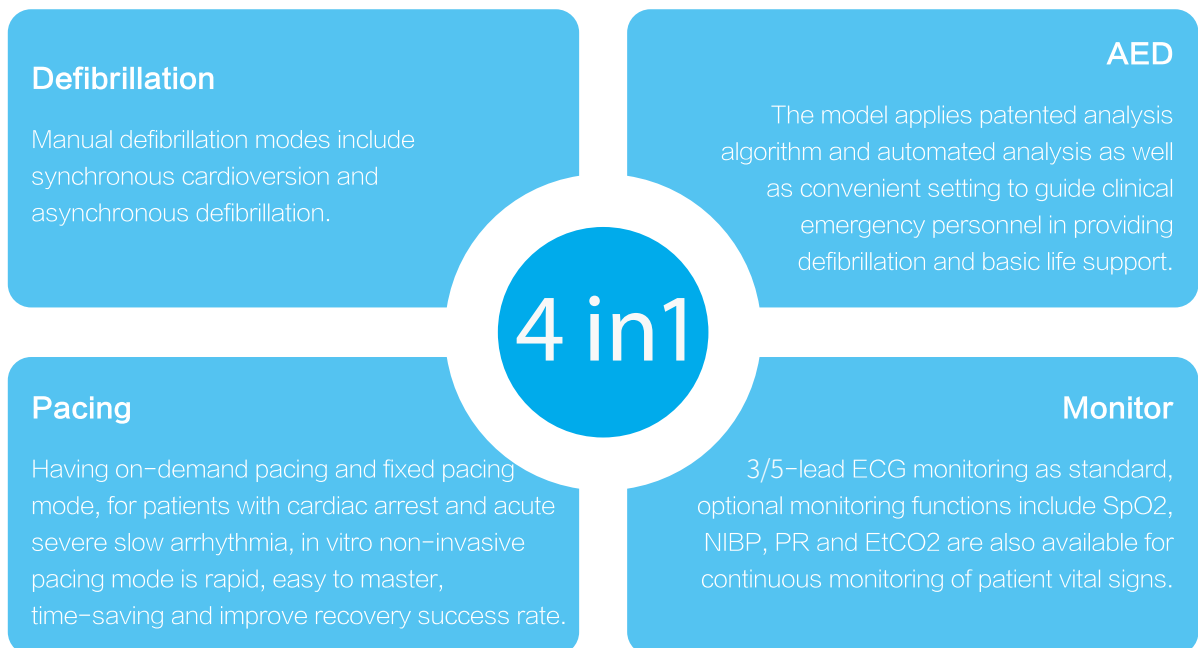
## Advanced BTE Technology

Higher efficiency with Advanced Biphasic Truncated Exponential (BTE) waveform technology and automatic impedance compensation.

Up to 360J energy selection, for patients with high defibrillation thresholds such as myocardial infarction, obesity, high impedance, higher energy selection indicates greater defibrillation success rate.



## Comprehensive operation modes



## Fast Defibrillation

1 knob

Mode can be switched among manual defibrillation, pacing and AED. In manual defibrillation, the user can complete the energy selection within 1 second.

3 seconds

Defibrillator charge to 200J and shock in 3 seconds, rescue time is guaranteed fully.

3 steps

Fulfill defibrillation operation (Energy selection – Charging – Discharging).



S1

## Defibrillator Monitor

**This easy-to-use, lightweight, and rugged defibrillator monitor give you the power to respond quickly and act confidently when you meet some emergency situations.**



### Lighter Weight

Outdoor rescue often means a complex and changeable environment, which requires the rescue team members to have super physical fitness and extremely high requirements for rescue equipment. To meet outdoor use needs, the Comen S1 defibrillator monitor adopts an ultra-light design, weighing only 4.5kg, and has passed the strict EN1789 ambulance standard test. It can guarantee excellent performance in complex outdoor environments.

### Portable and compact

Based on lightweight, the S1 also provides a portable design that meets clinical needs, such as handles and bedside hooks, enabling the machine to be quickly transferred in a variety of usage scenarios.



# Faster



## Faster Charging Time

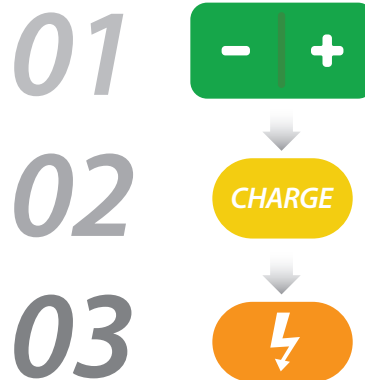
Authoritative organizations such as the AHA and the European Resuscitation Council have pointed out that when a patient suffers from cardiac arrest and ventricular fibrillation, every minute of delay reduces the probability of the patient being rescued by 12%. Therefore, rapid defibrillation is particularly important in emergency care.

To meet this clinical need, Comen focuses on the development of defibrillation fast charging technology, which can achieve 3 seconds to charge to 200J and 7s to charge to 360J. It has reached the fastest charging speed in the industry, effectively improving the efficiency of emergency care.

## Faster Operation Speed

With a 7-inch large multi-color display, Comen S1 can support viewing of up to 4 waveforms. As well as numeric data, alarm events, and patient information. And Comen also focuses on fast operation, the defibrillation as easy as only 3 steps:

Select energy, press the Charge button to charge the defibrillator and press the Shock button to deliver therapy.



## Faster Reaction

The multifunctional defibrillator paddle design enables the defibrillation operation to be completed on a pair of electrode paddles. And the electrode pads can be divided into large electrode pads and small electrode pads within 1 second, both adults and children can be defibrillated.



# SCD600

## Sequential Compression System

For preventing DVT and PE



Comen disposable sleeve is designed with thin and fine TPU material, it ensures the comfort of patients during compression by addressing sweat and heat. Moreover, to improve the patient acceptance, Comen disposable sleeves can minimize sweat pooling, irritation and itching.

In addition, to provide a more durable experience for single-patient use, Comen disposable sleeve can inflate up to 5,000 circles.



<b>FO-01-F</b>		040-00001100-00
Non-woven fabrics+TPU	Leg/Three channel/Disposable/Adult	725*600mm±20mm 900*600±20mm



<b>FO-02-F</b>		040-0001102-00
Non-woven fabrics+TPU	Calf/Three channel/Disposable/Adult	660*340mm±20mm 800*340±20mm



<b>FO-03-F</b>		040-00001159-00
Non-woven fabrics+TPU	Left foot/Single- channel/Disposable	360*420*206mm ±20mm



<b>FO-04-F</b>		040-00001160-00
Non-woven fabrics+TPU	Right foot/Single- channel/Disposable	360*420*206mm ±20mm



## Light and Comfortable

Flexible and efficient workflow, SCD600 features a light body and unique clip design for handy and intuitive control experience. All of this allows for greater flexibility and comfort for both clinicians and patients.



## Powerful and intelligent

Focus on patients, providing personalized treatment with intelligent compression, dynamic and visualized treatment.

## Accurate and reliable

Medical-grade dual pressure sensor features real-time pressure collection and provides double overpressure protection to ensure patient safety.

The Dual CPU processor gives real-time monitoring of the entire treatment process to ensure safe and reliable treatment.

# Electrocardiograph (ECG) System

CM1200A

## Electrocardiograph

- 8.4 inch LED touch screen
- Alphanumeric keyboard and hidden handle
- Lead status display
- Manual/ Auto/ Rhythm working modes selectable
- Support 4 hours working time
- 300 ECG internal memory
- 210mm. 216mm roll and 7-folded paper for options



CM1200B

## Electrocardiograph

- 5.7" Screen
- Lead status display
- Numeric keyboard, backlight design for night use
- 300 ECG internal memory
- 120 seconds 12-lead waveforms reviewable and recordable
- Support 210mm rolling paper, Z- folded paper
- External printer and data transmission support by USB port
- Optional ECG working station
- Basic economic model

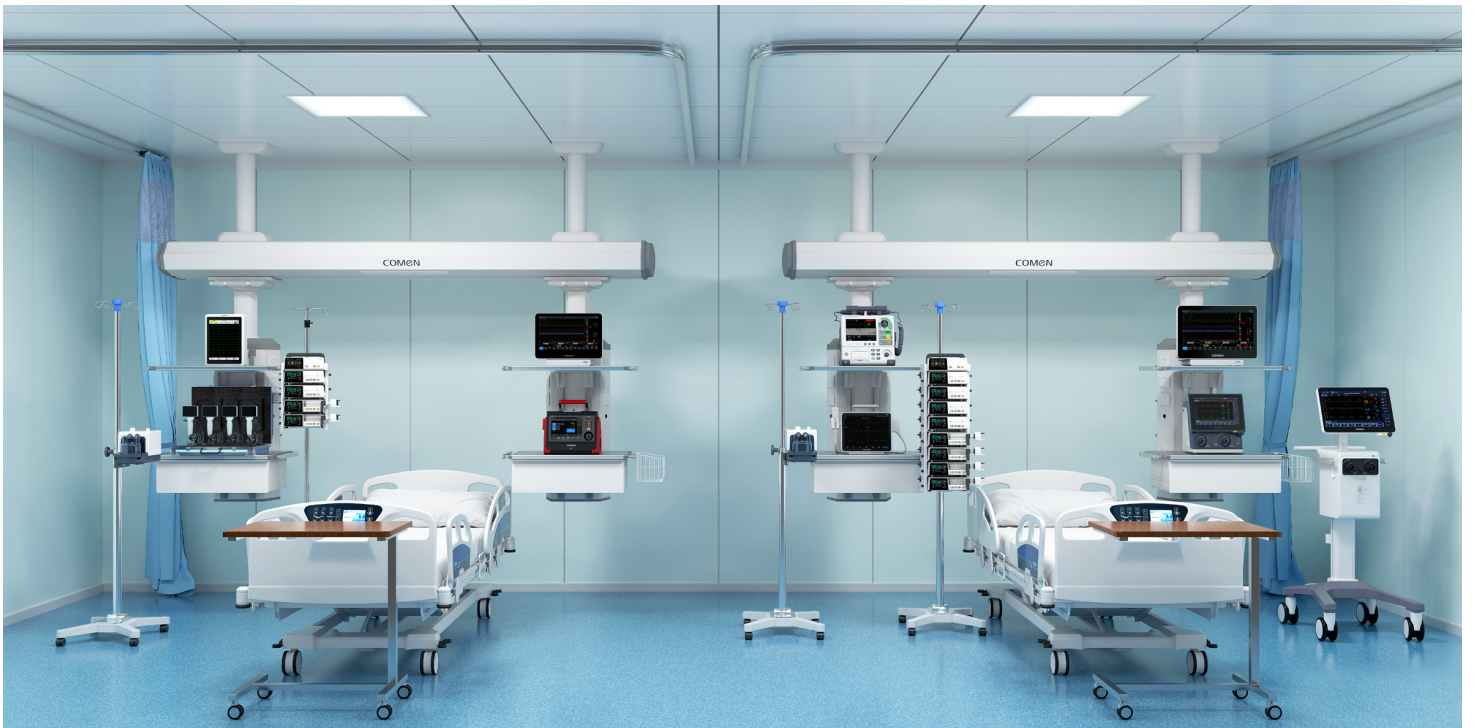


H3

## Electrocardiograph

- 6.2" LCD touch screen
- Screen brightness auto- adjustment with ambient light sensor
- 3x4 and 6x2 display format, 12- lead display simultaneously
- 10000 patient case storage, support JPG format storage
- FTP service allows patient case download in a remote network

# Comprehensive ICU Solution





# V8 Ventilator



## Efficacious Oxygenation Precise Evaluation

### **ROX**

Provide accurate evaluation for patient who is receiving HFNC treatment

### **OSI**

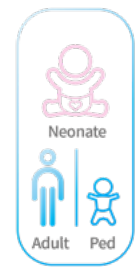
Provide accurate evaluation for ARDS

### **RSS**

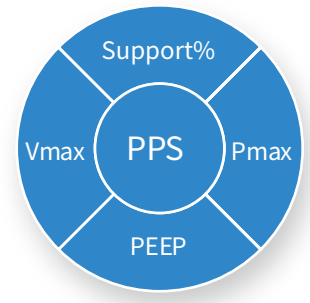
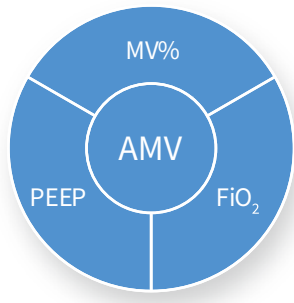
Important reference for respiratory disease

### **S/F**

Assist oxygenation index assessment in the absence of arterial blood gas analyzer

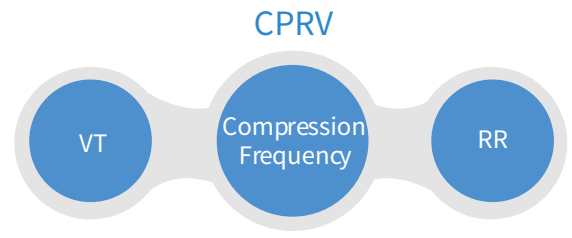


## Advanced Breathing Support



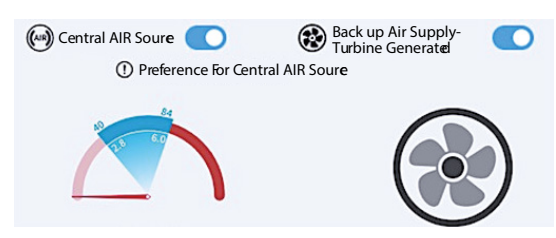
## CPR Assisting Tool

- Facilitate clinical CPR process**
- Two-step Activation
  - Shield non-related alarm



## Double Drive System

Peumatic Driven + Electric Driven  
 Powerful Gas Delivery System



Standby AIR Gas source  
 High-performance VS-10 Turbine

- Faster response
- Lower noise
- Longer life span
- Maximum flow rate  $\geq 210\text{L/min}$



## V2/V5 Ventilator

Technology Guides Greatness

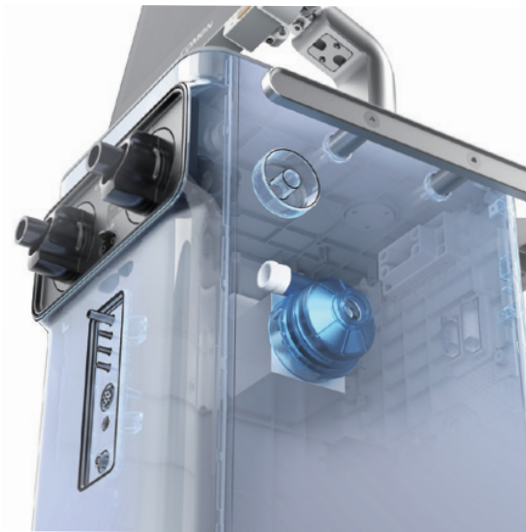


# Redefining the ICU Ventilator

To cope with present and potential clinical challenges, V5 is equipped with a turbine-driven system. Advanced ventilation modes and comprehensively monitored parameters allow medical providers to step closer to the complete clinical picture of patients. A 15.6-inch TFT touchscreen with an intuitive UI system facilitates a smooth workflow: V5, a solution for modern respiratory support.

# Turbine-driven System, Flexible Options

Rather than connecting an air compressor or a central air supply system, the ventilator with a turbine unleashes its mobility and flexibility. Upgraded control algorithms of the turbine ensure strong power.



- Ultra-sensitive response
- Noise ° 45dB
- Maximum flow rate, 210L/min
- Minimum lifespan, 20,000 hrs



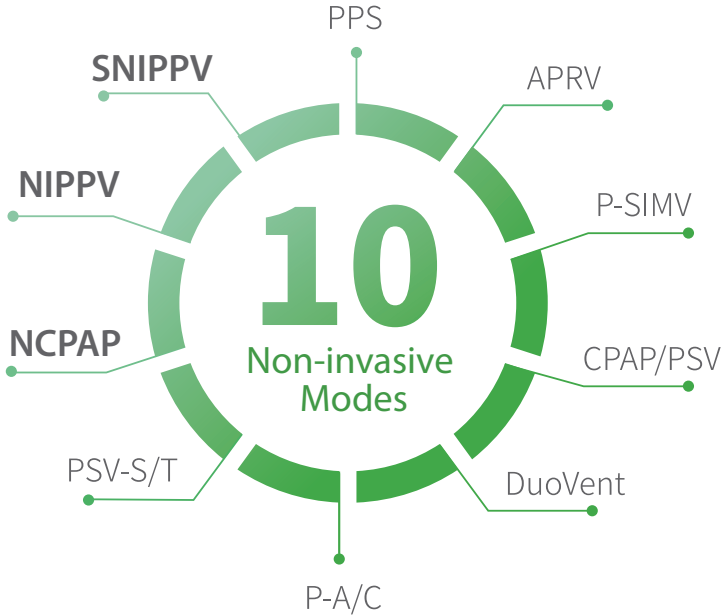
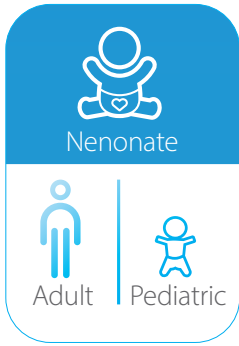
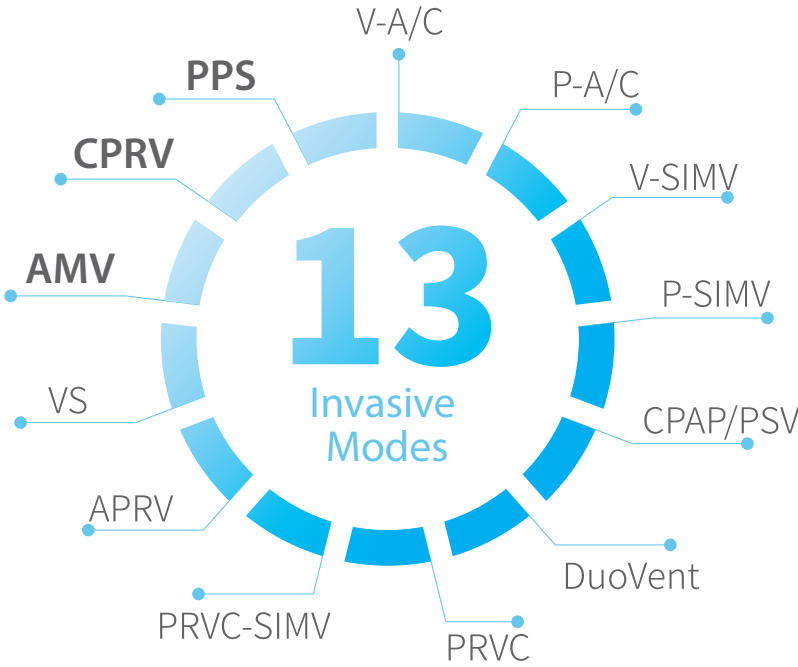
The screen can be installed on the ceiling pendant to save space on the floor between bed intervals. For the infectious department, the screen can be put outside the ward. The medical providers can control the screen outside, and the main unit works beside the patient.



Equipped with a trolley, two-cylinder brackets, and built-in lithium batteries with 300 minutes capacity. V5 meets the needs of intra-hospital transportation.

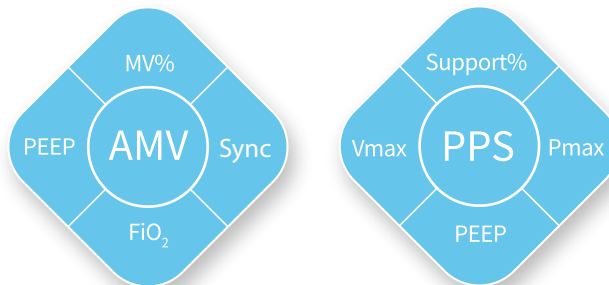
# Sequential Treatments

With 18 ventilation modes available, V5 provides full patient support throughout their treatment journey, from admission to discharge. Our ventilators can assist patients in various stages, from intubation to weaning, invasive to non-invasive ventilation, and even during high-flow oxygen therapy. Our V5 ventilator will meet all your needs without switching between different devices during recovery.



## Advanced Breathing Support

Upgraded synchronization technologies highly reduce the incidence rate of patient-ventilator asynchrony (PVA). More straightforward operation for therapists, more comfortable treatment for patients.

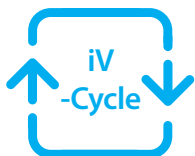
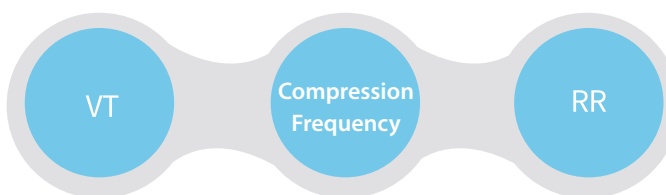


- Adaptive Minute Ventilation
- Proportional Pressure Support

## CPR Assisting Tools

Facilitate the clinical CPR process  
 Two-step activation  
 Shield non-related alarms, minimize interference  
 High-quality CPR ventilation support

## CPRV



Brand new iV-Cycle technology gives V5 the ability to sense a patient's demand for both of inspiration and expiration intelligently and improves human-machine synchronization.



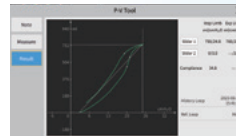
# All-round Monitoring, Better Diagnosing

100+ parameters monitoring guarantees patient safety.



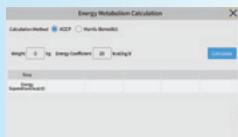
## Weaning Tools

SBT, P0.1, NIF, RSBI  
To prevent reintubation by referring highly accurate weaning index.



## Lung Protective Tools

The Stress Index, the C20/C Index, the Transpulmonary Pressure, the PV tool, and Lung Recruitment tool (SI)  
To reduce ventilation associated lung injuries (VALI) and length of stay.



## Energy Metabolism Calculation

Calculating a patient's energy expenditure guides rational nutritional support and prevents under- or over-nutrition.



## Alveoli Ventilation Calculation

Measuring alveolar dead space, alveolar tidal volume, oxygenation index and helping medical providers to assess patient ventilation, respiration, and oxygenation.



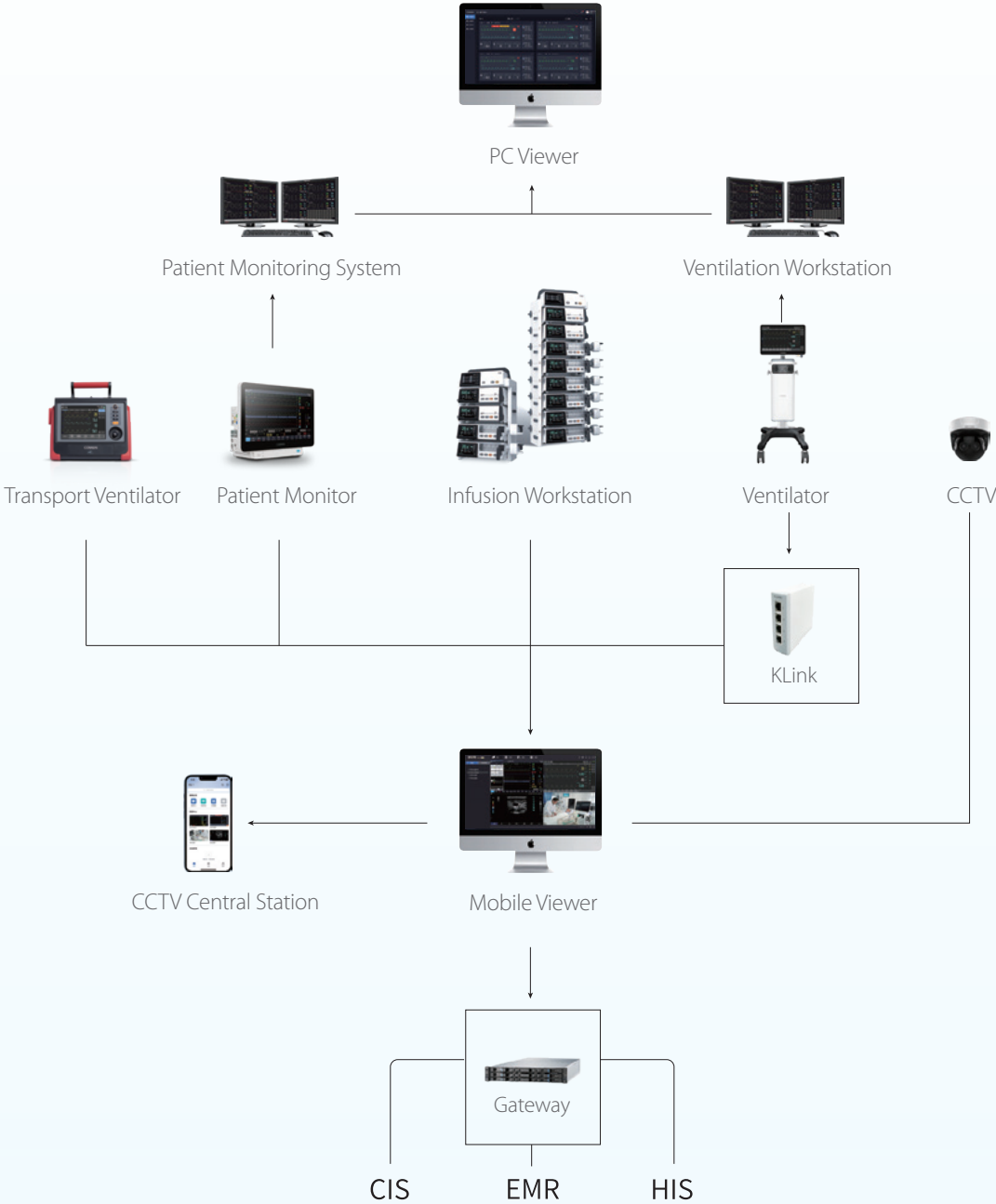
## Accurate Oxygenation, Smart Assessment

Collecting data from high-flow oxygen therapy patients for accurately assessing the prognosis status of ARDS. When there is no arterial blood gas analysis, the oxygenation index will assist in the prediction and prognosis judgment of respiratory diseases.



# Efficient Communication, Intelligent Interconnection

Ventilators connect with syringe pumps, monitors, and intensive care information systems, forming a critical care solution. Such a network will energize hospital clinical service, research, and management and bring hospitals to a new level.





V3

Ventilator



Patient type



Waveform easurement tool



Automatic alarm limit

Benefit from the intuitive UI design of V3, it only takes two steps to adjust ventilation parameters.

# Extensive Respiratory Management

V3 has a comprehensive range of ventilation modes and special features that meet the requirements of intensive care respiratory therapy.

It fully supports the various treatment needs of ICU, PACU, RICU, EICU, PICU and other wards.

Ventilation modes:	Invasive ventilation mode	<ul style="list-style-type: none"> <li>V- A/C</li> <li>V- SIMV</li> <li>P- A/C</li> <li>P- SIMV</li> <li>CPAP/PSV</li> </ul>	Non-invasive ventilation mode	<ul style="list-style-type: none"> <li>P- A/CP</li> <li>- SIMV</li> <li>CPAP/PSV</li> <li>High flow oxygen therapy</li> </ul>
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Respiratory Respiration Assisting tools:	Assisted ventilation	<ul style="list-style-type: none"> <li>Manual breathing</li> <li>Exhalation- hold</li> <li>Inhalation- hold</li> <li>Nebulizer</li> <li>Oxygen enrichment (+O<sub>2</sub>)</li> <li>Sputum suction</li> </ul>	Smart ventilation	<ul style="list-style-type: none"> <li>Compliance compensation</li> <li>Leakage compensation</li> <li>IntelliSynTec</li> <li>Apnea ventilation mode</li> </ul>
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Monitoring function:	Waveform monitoring	<ul style="list-style-type: none"> <li>P- T waveform</li> <li>F- T waveform</li> <li>V- T waveform</li> <li>Wavefrom chart</li> <li>P- V loop</li> <li>F- V loop</li> <li>F- P loop</li> <li>Wavefrom chart</li> </ul>
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## Easy to Use

Screen can be flipped to obtain the best viewing angle for operation.



# ICU Ventilator Portfolio – COMEN

Configuration/Model		V3	V2/5	V6	V8
Display		12.1"	V2: 12.1" V5: 15.6"	15.6"	18.5"
Patient type & TV	Adult, Ped, Infant, more than 3kg 20–2200ml	Adult, Pediatric, Neonate 2–4000ml	Adult, Ped, Neo 2–4000ml	O2 & Air inlet Optional Additional Turbine	O2 & Air inlet Standard Additional Turbine
Gas source	O2 inlet, Air from turbine	O2 inlet, Air from turbine	O2 inlet, Air from turbine	O2 & Air inlet Optional Additional Turbine	O2 & Air inlet Standard Additional Turbine
Module	Optional Integrated SpO2 & EtCO2	Optional Integrated SpO2 & EtCO2	Optional Integrated SpO2 & EtCO2	Optional Module Slot (3 slots)	Standard Module Slot (3 slots)
Ventilation mode (including both standard modes and optional modes)	V-A/C P-A/C PRVC V-SIMV P-SIMV SIMV-PRVC CPAP/PSV APRV DuoVent VS PSV-ST	V-A/C P-A/C PRVC V-SIMV P-SIMV SIMV-PRVC CPAP/PSV APRV DuoVent VS PSV-ST	V-A/C P-A/C PRVC V-SIMV P-SIMV SIMV-PRVC CPAP/PSV APRV DuoVent VS PSV-ST	V-A/C P-A/C PRVC V-SIMV P-SIMV SIMV-PRVC CPAP/PSV APRV DuoVent VS PSV-ST AMV, PPS, CPRV NIPPV, SNIPPV	V-A/C P-A/C PRVC V-SIMV P-SIMV SIMV-PRVC CPAP/PSV APRV DuoVent VS PSV-ST AMV, PPS, CPRV NIPPV, SNIPPV
O2 sensor	Chemical oxygen sensor	Chemical oxygen sensor	Chemical oxygen sensor Optional Paramagnetic oxygen sensor	Chemical oxygen sensor Optional Paramagnetic oxygen sensor	Chemical oxygen sensor Optional Paramagnetic oxygen sensor
Intelligent synchronization technology	Expiratory Trigger	Expiratory Trigger	Inspiratory Trigger Expiratory Trigger	Inspiratory Trigger Expiratory Trigger	Inspiratory Trigger Expiratory Trigger
Weaning Tool	NIF, PO.1, RSBI	NIF, PO.1, RSBI, SBT	NIF, PO.1, RSBI, SBT	NIF, PO.1, RSBI, SBT	NIF, PO.1, RSBI, SBT
HFNC evaluation	/	ROX, OSI, RSS, S/F	ROX, OSI, RSS, S/F	ROX, OSI, RSS, S/F	ROX, OSI, RSS, S/F
Transpulmonary pressure	/	Yes	Yes	Yes	Yes

## EV5

### EV Series

## Emergency & Transport Ventilator



### Advanced Parameters Monitoring

EV5 supports real time monitoring of SpO2 and EtCO2 during emergency transport ensures much safer and consistent ventilation.



### Elaboration Improves Usability

Comen's EV5 provides responders with an in-depth overview of the patient's current ventilation status and respiratory functions through spirometry loops, establishing a reliable data basis for when prompt decision-making is required.

#### 5 waveforms:



#### 3 pulmonary loops:



### EN 1789 Certified






EV Series passed 0.75M drop test and acquires EN 1789 certificate. The EV Series accompanies your patients seamlessly whether in or outside the hospital.

### IP34 Rating

Equipped with IP34 Ingress protection, the EV Series effectively prevents the ingress of liquids from any direction, especially crucial in complex outdoor environments.





## EV3



-  Lightweight with only 1.4KG
-  3.5" Intuitive Interface
-  One Step Setting
-  Intelligent Voice Guidance
-  Waveform Display

## EV2



-  Lightweight with only 0.7KG
-  One Step Setting
-  Continuous monitoring of airway pressure
-  Intelligent Voice Guidance



### Extreme Cold Test

EV Series successfully passed the operation test in the extreme environment, and can be working even in the  $-16^{\circ}\text{C}$  extreme cold environment.



### Long-lasting Operation Support

**EV3&EV5:** supports up to 10 hours of continuous operation.

**EV2:** 130 hours with a disposable battery, and 60 hours with a rechargeable battery

## NF5

# High Flow Heated Respiratory Humidifier



## Simple and practical

- Ultra-Large touch screen: NF5 is equipped with a 4.3-inch touch screen, which allows easy and quick operation by touch and navigation knob.
- Electronic Air-O<sub>2</sub> mixer system: easy to set up flow rate and O<sub>2</sub> concentration.
- Intuitive UI design: large font, easy for caregiver to operate and observe.
- Optional SpO<sub>2</sub> monitoring, ease evaluation of the effectiveness of HFNC.

## Safe and comfortable

- High performance turbine, no need for compressed air supply
- Integrated battery for transportation
- Light and compact medical trolley ease intra-hospital transport



## Safe and comfortable

- Multi-position temp monitoring: NF5 is equipped with 3 temp sensors, which enable real-time temp monitoring, synchronized closed-loop feedback, joint high temp alarm, smart water level management and over-temp protection function to ensure safer heating.
- High-performance nasal cannula: ergonomic design, soft and comfortable, free of constriction.
- Ultra-quiet design: The ultra-quiet turbine significantly reduces noise, provides a quiet O<sub>2</sub> therapy environment, reduces irritability.

# NF1

## High Flow Heated Respiratory Humidifier



### Simple and practical

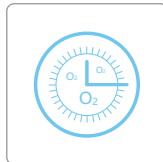
- Ultra- Large touch screen: NF1 is equipped with a 4.3- inch touch screen, which allows easy and quick operation by touch and navigation knob.
- Intuitive UI design: large font, easy for caregiver to operate and observe.



### Safe and comfortable

- Multi- position temp monitoring: NF1 is equipped with 3 temp sensors, which enable real-time temp monitoring, synchronized closed- loop feedback, joint high temp alarm, smart water level management and over- temp protection function to ensure safer heating.
- High- performance nasal cannula: ergonomic design, soft and comfortable, free of constriction.
- Ultra- quiet design: The ultra- quiet turbine significantly reduces noise, provides a quiet O<sub>2</sub> therapy environment, reduces irritability.

### Efficient and precise



#### High precision O<sub>2</sub> concentration control

Adopts high-precision electronic air-O<sub>2</sub> mixer system and precise O<sub>2</sub> concentration monitoring module. Realizes accurate control and real-time monitoring of O<sub>2</sub> concentration



#### Smart temp and humidity control

Through smart temp and humidity monitoring and closed-loop feedback mechanism, NF1 provides patients with accurate high-flow O<sub>2</sub> therapy close to the natural body temp (37°C) and 100% relative humidity (44mg/L), optimizes mucus and cilia function.



## Mechanical Flowmeter

NF1 adopts a mechanical flowmeter for Air&O<sub>2</sub> mixing, it provides maximum 50L/min gas flow for flushing the anatomic dead space of the nose effectively, which help to reduce CO<sub>2</sub> retention of patient.

## Clinical application

- Mild respiratory distress (respiratory rate >24 bpm)
- ARDS and other Type I Respiratory Failure  
(100 mmHg ≤ PaO<sub>2</sub>/FiO<sub>2</sub> < 300 mmHg)
- Type II Respiratory Failure
- Invasive Ventilation Weaning



## SpO<sub>2</sub> monitoring

- Optional Comen, Masimo or Nellcor SpO<sub>2</sub> monitoring function, real- time monitoring of the patient's O<sub>2</sub> concentration, ease evaluation of the effectiveness of high- flow O<sub>2</sub> therapy, so that doctors can optimize the treatment plan in real time.

## Intra- hospital transport

- High performance turbine, no need for compressed air supply
- Integrated battery for transportation
- Light and compact medical trolley ease intra- hospital transport





# MX8900/M800/ME900

## Infusion Workstation System Syringe Pump / Infusion Pump



### Flexible Combination, Various Applications

The modular, plug-and-play design brings the greatest flexibility of combination for various infusion scenarios, with expansion of slots from 2-24 infusion pumps.



Wards



Transfer



NICU

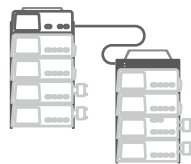


ICU/OR



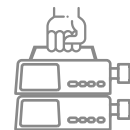
**Main controller**

Easier operation by centralized management



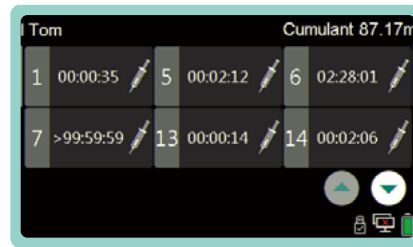
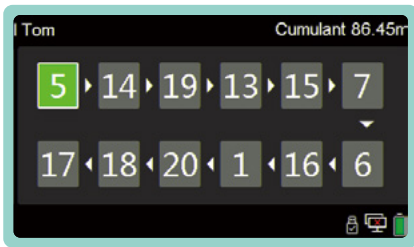
**Slave controller**

Receives order from main controller, and provides one-cord charging



**Portable Handle**

Allows to be carried by hand



### Seamless Multi-channel Relay

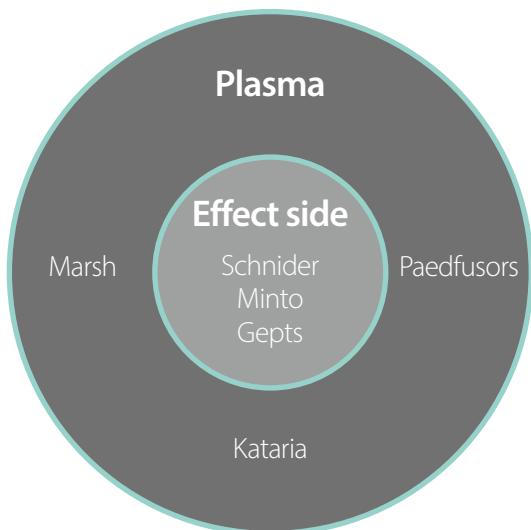
The user-defined sequence portfolios (S1-S12), realizes auto multi-channel relay in order. Sequences are able to be activated synchronously, allowing different drugs delivery at the same time.

### One-stop Management

Support collective calculation of total volume.  
 Support occlusion pressure, bubble size, accumulative bubble alarm unified setting.  
 Support nurse call and file export.

### Pharmacokinetic Models:

- Marsh & Schnider for Propofol administration on adults.
- Kataria & Paedfusor for Propofol administration on pediatrics.
- Minto, for Remifentanil and Gepts for Sufentanil.
- Administration in delivery targets: TCI Effect or Plasma Control Modes.



# M260/ME660 Syringe/Infusion Pump



Capable of blood transfusion, medication and nutrition infusions.



Bigger screen. Lighter Weight



Wider flow rate ranges



Higher sensitivity and accuracy



Larger storage capacity



Longer battery endurance



EN1789

Meet the requirements for the equipping of road ambulances used for the transport and care of patients.



IP44

Have protection against solid objects bigger than 1 mm and prevent splashing water from all directions.

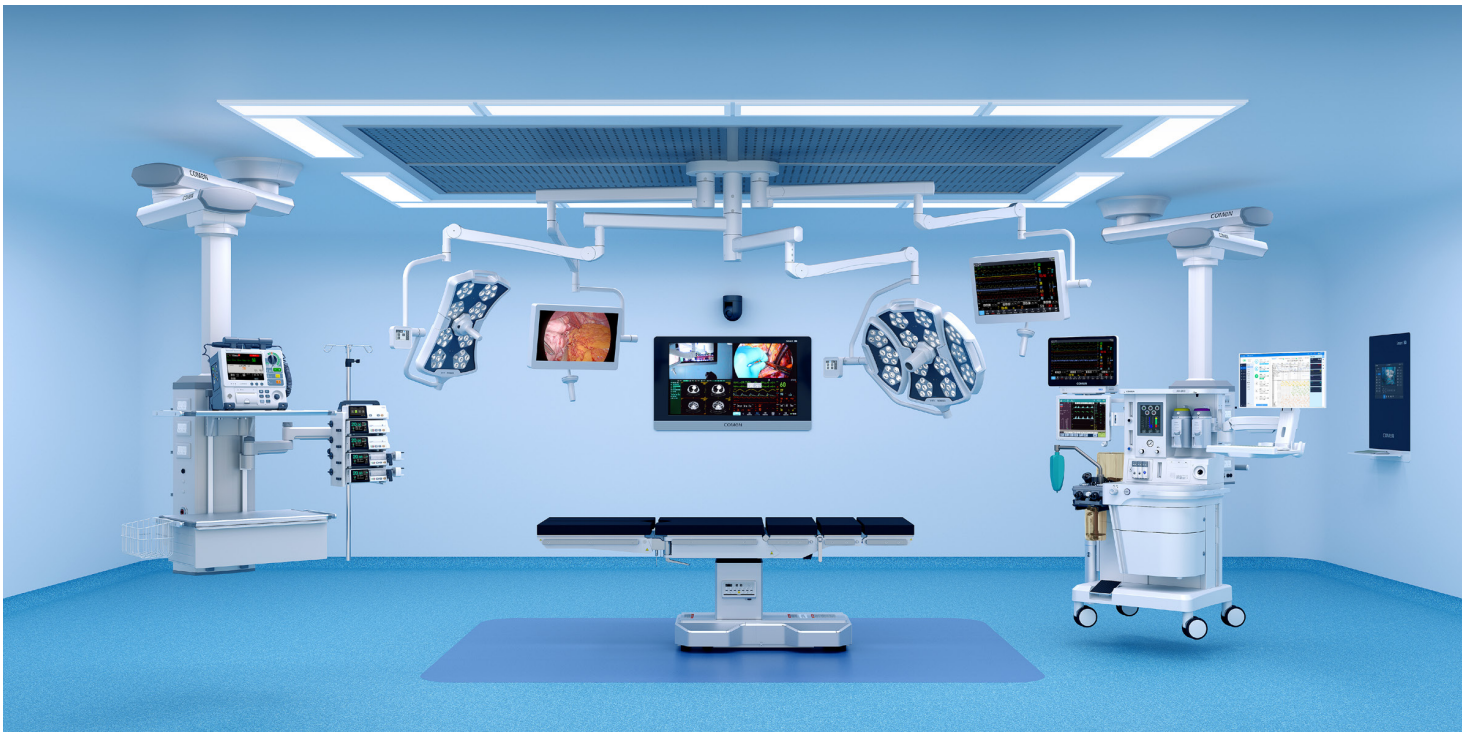
## Functionally Extensive. Clinically Inclusive.

10 different working modes with wider setting ranges:

*Rate/Time/Weight/Drip/Dose Time/Intermittent/Ramp/Micro/First Dose/Sequential*

- Safer for pediatric/neonatal use
- Smooth & flexible workflow - up to **9** phases of ramp up/down and up to **10** sequential setups available
- Rates of up to **2000**ml/h, applicable for large-volume fluids administration
- Infusion Time up to ~**100**hrs

# Comprehensive OR Solution



## Anesthesia Machine Family

From economical options to high-end choices, Comen has the capability to support all types of respiratory demands and provide all range of anesthesiology solutions.



## AX-900 Anesthesia Workstation



### Dual-Screen Design

- 15- inch four- way rotating touch screen: Facilitates operators of different heights to observe in real time and operate accordingly.
- Reasonable partitions of configuration parameters and monitoring parameters; all the observations and operations can be completed within 2- level menu.
- 8-inch integrated screen solely for electronic flow meter.
- Bookmark menu that is self-explanatory and easy to use.

# Full electronic flow control system

- Full electronic flow control system
- Fully electronically controlled fresh gas flow greatly improves accuracy of flow and oxygen concentration.
- Closed- loop oxygen concentration control technology: The user directly configures the oxygen concentration and total volume of flow. The system automatically matches the ratio and dynamically calibrated it in real time.
- Best flow indicator tool: scientifically guide the clinical implementation of low- flow anesthesia while saving costs.
- Fully electronic gas source control system: electronic monitoring of gas source pressure; once there is overpressure or underpressure, the electronic system would respond quickly.
- Negative pressure expectionation system: no need of negative pressure source; the equipment is converted to negative pressure through the Venturi effect and positive air pressure, and the flow can be adjusted independently.
- A brand new auxiliary oxygen supply system: support off-line operation; fast oxygen therapy; can produce gas of any volume of oxygen concentration.
- The high pressure oxygen source can support the rescue ventilator.



The minimum tidal volume down to **5ml**  
under PCV mode

**7%** high accuracy ventilation

Breathing circuit leakage  
as low as **75ml/min**

## Breathing circuit

- Compact and integrated design with circuit leakage volume of less than 75ml/min.
- Improve the safety and convenience of system use.
- Made of PPSU material that is corrosion resistant, durable and autoclavable.
- Easy disassembly and disinfection and hence less maintenance time required.
- With by-pass technology, the CO<sub>2</sub> canister can be changed during the operation without leakage problems and the built-in heater can eliminates internal water condensation effectively.

# AX-600 / 700 Anesthesia Workstation

## Performance



The minimum tidal volume down to **5ml**,  
the first one in China

- Incredible Digital Proportional Valve , imported from NORGREN
- Closed-loop control and real-time feedback
- Automatic tidal volume compensation technology, including fresh gas flow rate, system compliance and system leakage compensation
- With calibration system, heating system and drainage system, the transducer is more accurate, with longer service life
- A Wide range of clinical applications: It can be used on all kinds of complicated diseases form neonates to adults



**7%** high-precision sensor

- The majority of manufacturers only use one sensor to monitor aspiration, while Comen's Anesthesia Machine adopts high precision flow sensor to monitor both inspiration and aspiration at the same time with its accuracy reaches to 7%, guarantee monitoring accuracy and reliability

Below to **65ml/min** low  
breathing circuit leakage

- Integrated design, more compact and light weighted
- Compact and integrated breathing circuit, easy to install and sterilize
- Leakage rate is less than 65ml/min; fully satisfy the requirement of the low flow rate anesthesia surgery and reduce environmental pollution



# Configuration

## Screen

- 12.1" four-way rotating touch screen, more comfortable for doctors of different heights in different positions to observe and operate, reducing work fatigue

## Ventilator

- Proportional Solenoid valve control technology and precise volume sensor detection technology
- SIMV/SIMV+PS simplify the monitoring of patient with spontaneous breath and extend clinical applications
- Advanced pressure support ventilation (PSV+ apnea backup) determines inspiratory velocity based on patient's condition
- Compliance, fresh air and leakage compensation functions ensure exact tidal volume transferred as preset
- Comprehensive respiratory mechanics monitoring, real-time display of waveforms and P-V, F-V and P-F loop
- Electronic PEEP



## Electronic Flow Meter

- Instantly know the fresh gas flow to your patient.
- Identifying key information quickly and easily is critical to your practice.

## Flow meter back light

- Providing a quick reference even in a darkened environment.

## Excellent breathing system

- Compact and integrated design; Closed and semi-closed system
- PPSU plastic circuit, corrosion resistance, long service life and fully autoclavable at 134°C
- Easy to disassemble and convenient to clean, save more maintenance time
- Built-in heater and the medium copper plate eliminate the condensation of the internal water vapor effectively
- CO<sub>2</sub> bypass facilitates soda lime exchange during operating without any care about leakage

## One-hand installation and dismantling of soda lime canister

- Can be replaced during operation
- Quick, convenient and hygienic
- Directly pull the handle without rotation
- Compared with double-hand, one-hand operation keeps doctors further away from the canister waste

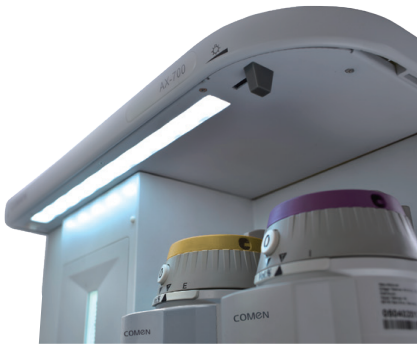


## Roomy workbench

- 1170cm<sup>2</sup> working space, fully satisfy various kinds of needs

## Modular design (optional)

- Incorporate anesthesia related monitoring functions like AG, EtCO<sub>2</sub>, BIS; Modular design in anesthesia machine to achieve resources sharing; Plug and play, flexible configuration; Reduce medical costs, facilitate clinical work



### Brightness adjustable deck light

- Provides work area illumination.



### Rotatable and lockable roomy drawer



### Auxiliary Oxygen supply



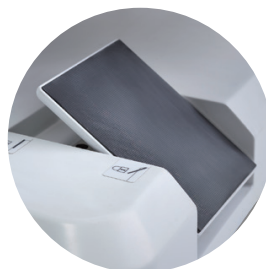
### AGSS (Optional)

- Effective removal of anesthesia gases from the working area.



### Central brake system (AX-700)

- Time-saving, convenient and easy to use



## Integration and promotion (Optional)

- Support external GCX bracket
- Comen's modular monitor optional, such as C90
- Auxiliary power supply, easier and more convenient



## ACGO (Optional)

- The cover has the function of a switch, once it was open, the gas would flow automatically

## Quick O<sub>2</sub>

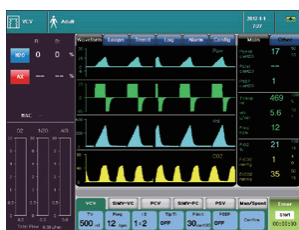
- The pressure against evaporator is less than 1.6kPa under quick O<sub>2</sub> supply condition, no influence to anesthetic gases concentration hence to guarantee stability and safety

## Clean and neat interface

Bookmark menu

- Easy to read and operate

- Reasonable division of parameter setting and parameter monitoring zone; Max 2-level menu to complete all observation and operation



Comprehensive loop and waveform display. Anesthesia Gas Monitoring, auto gas identification and Mac calculation



Real time measuring for airway pressures, flow, volumes, compliance and resistance of breath or a intuitive tool to detect leaking, airway obstruction and optimal ventilated parameters adjustment



2000 event records of settings, technical and physiologic alarm



Alarm setting interface



60 Hours trends review



Easy to observation by Big Font Display



A7

## Anesthesia Workstation

### Ergonomic Operation Platform

- 8.4-inch touch screen displays up to five waveforms simultaneously.
- Three-drawer design provides caregivers with a larger medical accessories storage space.
- 0-15 l/min Dual-channel mechanical flowmeter allows a wider flow adjustment
- Three-slot modular design supports more high-end parameters monitoring including AG+O<sub>2</sub>, AG, BIS, CO<sub>2</sub> and NMT.
- A7 includes advanced auxiliary tools to facilitate operation: Flush O<sub>2</sub>, ACGO, AGSS etc.

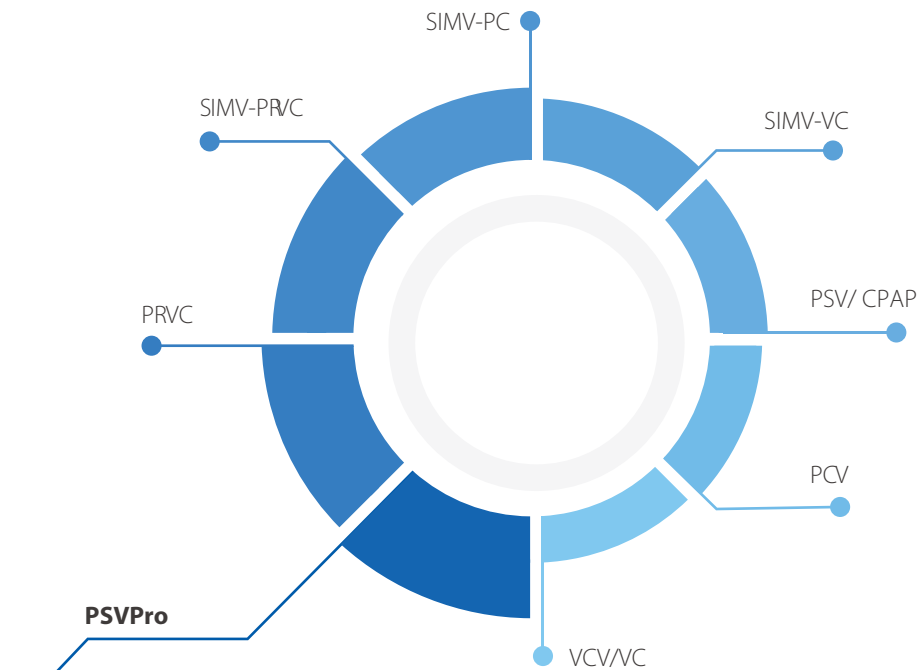
## Compact & Precise Breathing Circuit

- The highly integrated breathing circuit design reduces the air resistance of the breathing circuit effectively.
- APL valve can quickly exhausts the pressure in the circuit to the lowest value, which ensures patient's safety under manual ventilation.
- With by-pass technology, the CO2 canister can be changed during the operation without leakage problems.



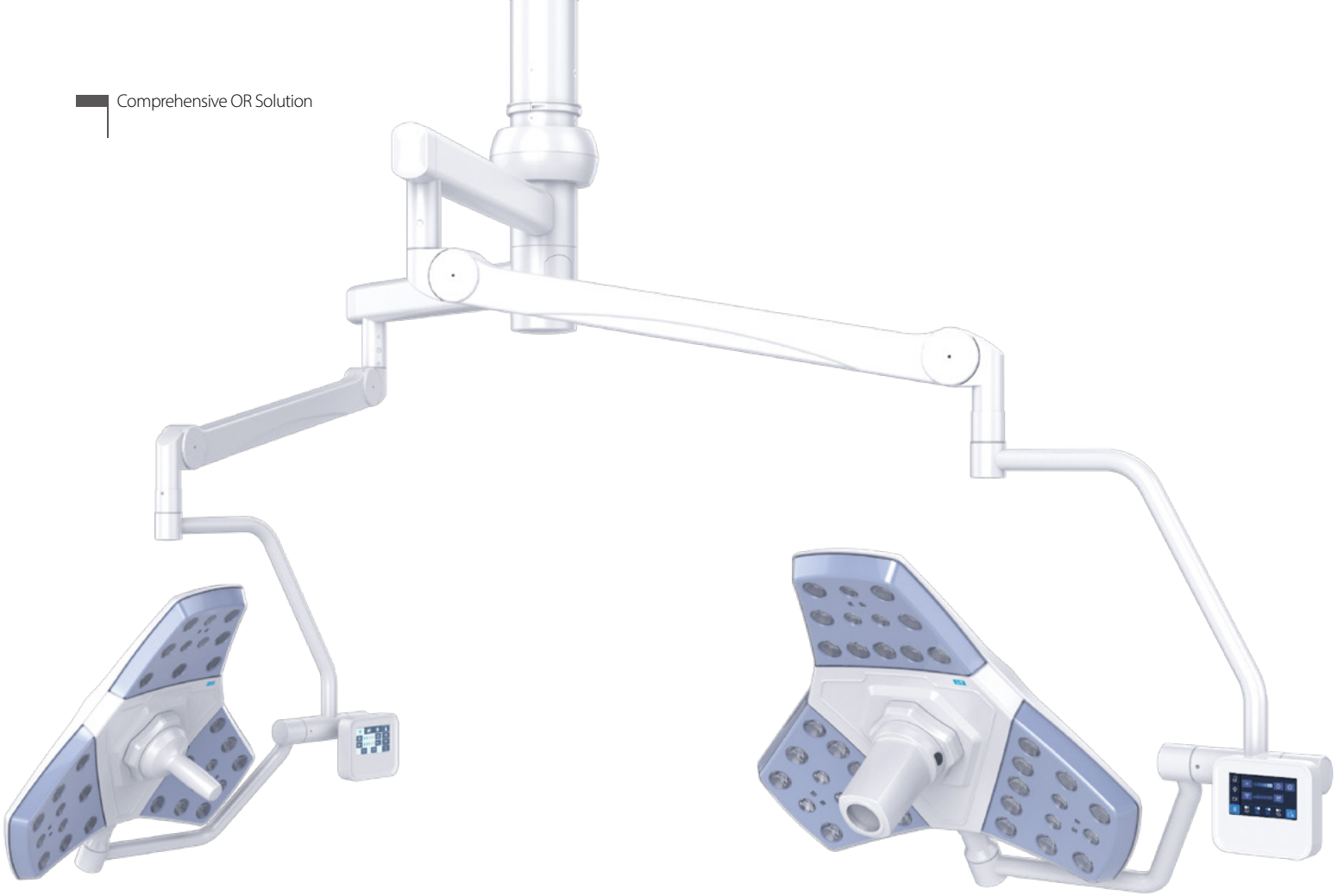
## Comprehensive Ventilation Support

Extensive ventilation mode selections can satisfy clinical demands for entire perioperative period and provide safe, efficient and comfortable ventilation support for the patients.



**PSVPro:** Advanced and high-end ventilation mode, is designed to give smarter and more efficient pressure support for the patient.





L5

## Surgical Light

Compact and Efficient

### Powerful independent working function

- Lamps' Lifespan up to 70,000 hours, , more durable than ever
- Central Illumination: 160,000 lux/120,000 lux, 3 modes meet various of surgery requirements
- Max. depth of Illumination : 1,300 mm
- Lower power consumption

## Unique Function

- **Adaptive Lighting Technology**

25cm up/down movement of the surgical lamp will no change the illumination under the specified illuminance

- **Illumination stabilization technology**

L5 adopts DC dimming technology, that means it can protect the surgeon's eyes from the flickers of the traditional PWM dimming, what's more, it will no cause the waves during filming

- **Illumination capacity technology**

Spot size will not change while the illuminance was changing, to make it more convenient for medical staff operation.

- **Customized configuration**

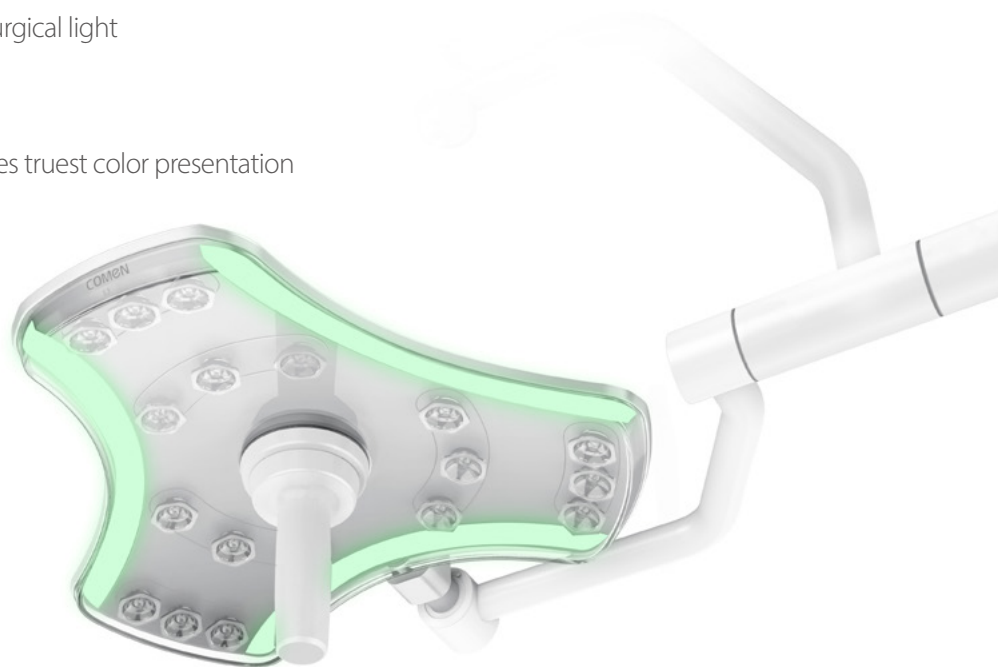
L5 allows operator to save 3 customized settings to reduce unnecessary adjustment.

## L3

### Surgical Light

Economically Quality-Ensured Choice surgical light

- The Ra of L3 is up to 98, which enables truest color presentation of the wound.
- Lamp lifespan is up to 70,000 hours, more durable than ever
- Endoscopy mode with optional green light or white light selection based on surgeon's operating preference.







## LM Series

### Mobile Surgical Light

L5-AM/L5-BM/L6SC-AM



#### Adjustable Angle

LM series is equipped with a flexible rotatable mechanical arm to better accommodate different operating demands.



#### Smooth Movement

Eliminates the hassles for installation.

Slim and streamlined stand design can be easily fit into any tight workspaces.



#### Built-in Battery

All LM series models are equipped with built-in battery, so they can provide up to 4 hours of illumination even without power supply. Therefore, LM series can greatly facilitate intra-hospital transport in case of unexpected power outages.

# Comprehensive NICU Solution



## BQ80 Infant Radiant Warmer



### New Neonatal Nursing and ResusCare Platform

This is by far the most powerful 4 in1 neonatal resuscitation and open caring platform. The BQ80 integrates four key systems to achieve one-stop operation and management throughout the whole transition and stabilization period. At the same time, it scientifically optimizes the workflow, helps medical staff to easily respond to urgent medical needs, effectively saves the valuable rescue time, and provides comprehensive and meticulous care for newborns.



## Warming

Quick pre-warm, heat evenly distributed, effective radiant warming

Dual ceramic heating tube with and reflector with higher light utilization rate



## Monitoring

Integrated multi-parameter monitor for better concentration and organization

Plug-and-play modular monitor, also suitable for transport and incubators



## Resuscitation

3 independent outlet of PPV+Suction+Oxygen therapy for efficient resuscitation

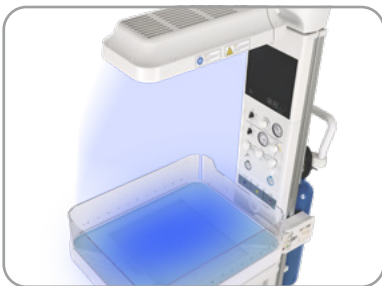
Pure mechanical, override pressure prevention, wall/cylinder gas inlet available



## Transport

Gas cylinder holders and UPS mounting solution for intrahospital mobility

~30mins of transport running time



## Phototherapy

Integrated phototherapy for continuous jaundice treatment in open care environment

3 level adjustable, optimal intensity, long life span, large effective treatment area

# BQ20

## Infant Radiant Warmer



# BQ20, the modest design integrated with ThermalCube™

The choicest infant radiant warmer with finest quality, providing optimal heating performance and exceptional utilitarian value through exclusive premium heater, ThermalCube™.



**Futuristic Craftsmanship**



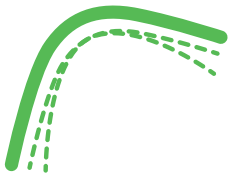
**High-grade Materials**

- ✓ Three control modes -prewarm within 4 minutes
- ✓ Low operating noise level < 45 dbm
- ✓ Low power consumption
- ✓ High temperature uniformity



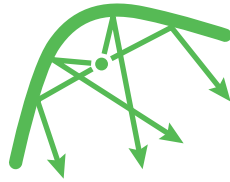
# Preeminent Reflector

## Hyperboloid



Contribute to effective uniform heating

## Seamless



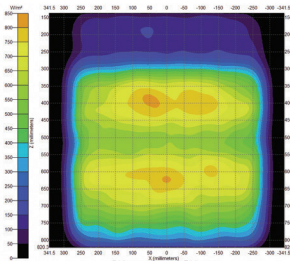
Enlarge light reflected surface and enhances efficiency

## ALANOD\*

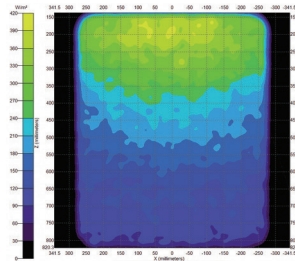


Great properties in reflecting 98% of light more efficiently

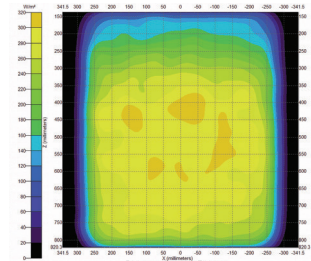
## Comparison among other mainstream designs



Paraboloid



Hyperboloid with crease mark



COMEN Seamless Hyperboloid

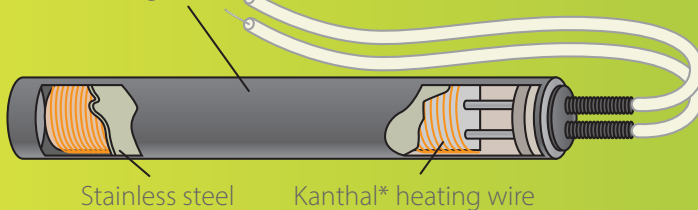
## High Endurance Heating Tube

**Cartridge structural** heating tube capable for rapid heat generating with longer life extension.

### Ceramic Coating

- Prevent oxidation
- Filter harmful near infrared lights

### Cartridge heater



Stainless steel

Kanthal\* heating wire



\*Imported Materials, Alanod from Germany, Kanthal from Sweden

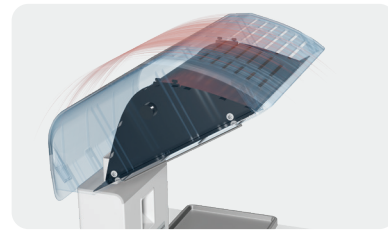
# Safety

- Anti-scald for medical staff
- Double protection for neonates



## HeatCast™

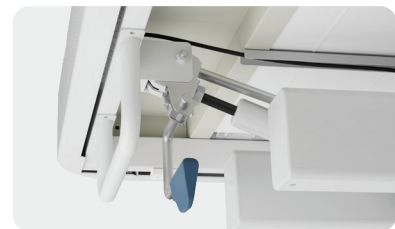
Comen only



Comen patented heat transfers design, distribute heated air uniformly

## SafeShield™

Comen only



Dual structure give extra support during accidents



### **APGAR & Timer**

Reminder and recorder of time for clinical assessments after birth



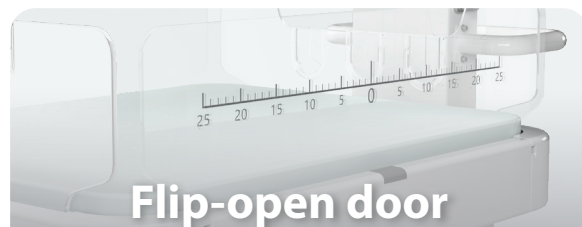
### **Examination light**

Direct illumination on specific areas during diagnostic & examination



### **Tilting**

Double-sided bed tilting with with bubble level indicator level available



### **Flip-open door**

Foldable silent design transparent side panels for easy access to neonates



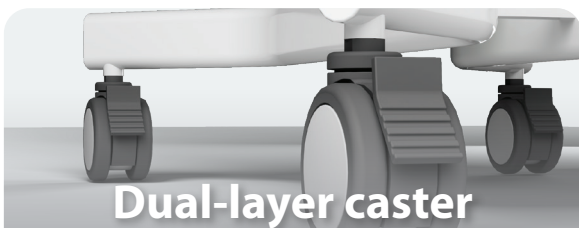
### **Mattress**

Sponge Mattress/Gel Mattress  
Anti-decubitus and biocompatible



### **IV stand, X-ray tray**

Positioning for infusion equipment, x-ray film cassettes & other medical supplies



### **Dual-layer caster**

High reliability and stability which also great for protecting floors



### **Drawer**

Functional drawer for storage of medical supplies



## B Series Neonatal Incubator



B6/B8

B5/B3

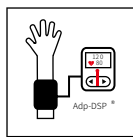
B2

## Specialized Modular Monitor

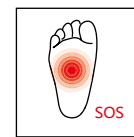
- Plug & play transportational monitor for seamless data from birth to discharged
- Integrated display with interconnection to increase working convenience
- Specialized algorithm for neonatal ECG/NIBP/SpO2 detection sensitivity and accuracy
- Patented apnea detect and wake-up solution to safeguard neonates' spontaneous breath and nourish future growth



ExNeo®



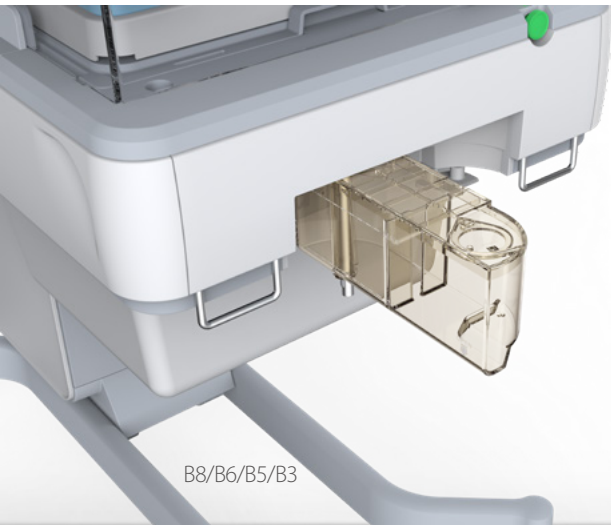
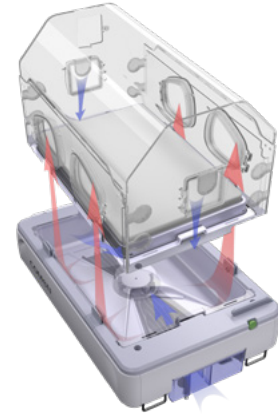
Adap- DSP®



Apnea self- saving

## Sufficient and accurate thermal regulation

- World-class precise temperature and humidity control to ensure better temperature uniformity  $\leq 0.5^{\circ}\text{C}$
- Get ready for new admission quickly with swift warm-up and humidifying rate
- 7 temperature sensors, thinner probes, cascade PID algorithm and fine-tuned air delivery chamber for excellent monitoring and control accuracy narrow to  $\pm 0.2^{\circ}\text{C}$



B8/B6/B5/B3

## Humidity Control Technology

Efficient Humidity Control System

Maximum humidity setting: up to 99%

Accuracy:  $\pm 5\%$



B2

## Oxygen Control Technology

### Servo Oxygen Supply and SpO2 Monitoring

Closed-Loop Servo Oxygen Control supplements neonates with  $\text{O}_2$  enrichment within the incubator through real-time feedback of Oxygen parameters.



# BL70

## Infant Phototherapy Equipment



### High-intensity irradiance

- Equipped with high-intensity LED cold light source, with less heat production, BL70 supports long-time treatment.
- With the maximal irradiance level of  $63\mu\text{W}/\text{cm}^2/\text{nm}$ , BL70 enhances the bilirubin breakdown ability and shortens the treatment time.
- With five levels irradiance adjustment, BL70 allows treatment tailored to each patient's need.

### Precise Treatment for Neonatal Jaundice

Equipped with an irradiance probe to accurately measure the irradiance value and ensures that the baby receives enough irradiance, achieving precise treatment.



### Irradiance probe

After height adjustment, current phototherapy irradiance value of 5 levels can be displayed on the screen.

### Precise positioning

Using unique red light precise positioning, BL70 ensures correct position of the baby.



### Ward round assistance

When doctor doing ward checking, it is unnecessary to take off the cover, and check neonates condition through the screen in real time.

P3/P6

## Temperature control system



### New Neonatal Nursing and Rescue Platform

#### Induction<sup>①</sup>

Rapid cooling through the use of cooling blankets to reach a core body temperature of 33°C to 34°C within 2 hours. The P6 utilises innovative Semiconductor Cooling Technology to rapidly meet target temperatures.

#### Maintenance<sup>①</sup>

Maintains newborns' core body temperature at 33.5°C to 34°C for 72 hours.

Safety through Real-Time Monitoring to reduce the accidental occurrence of complications.

#### Rewarming<sup>①</sup>

Recovers newborns core body temperature to 37°C at 0.5°C/ 2 hours with normothermia maintenance.

The P6's exceptional Intelligent Gradient Warming System accommodates most clinical settings to provide Comfort and Ease of Access.

① : Seetha Shankaran . Therapeutic Hypothermia for Neonatal Encephalopathy 2013 Dec 1. Curr Treat Options Neurol. 2012 Dec; 14(6): 608–619.

# New Neonatal Nursing and Rescue Platform

P3/P6's intelligent closed-loop temperature control system automatically adjusts water temperature based on the monitored patient's core temp. The monitoring of the patient (both skin & core), water temperature ensures the safety throughout treatment, rewarming and maintenance while also avoiding other complications caused by long-term hypothermia.

Quick access buttons on the side of the screen allows caregivers to easily switch between Hypothermia mode and Normothermia mode, tailored for versatility without the hassle when attending to patients' needs.

- Hypothermia Mode comes with an Intelligent Automatic Transition from Cooling-Maintenance treatment to Rewarming when Auto Mode is selected.
- Normothermia Mode is applicable during surgery to help patients maintain stable temperatures, tailored to best meet every unique surgical situation.



Hypothermia mode



Normothermia mode

## Round-the-clock Protection through Modular Monitoring

Unexpected complications in newborns receiving therapeutic hypothermia can be overwhelming and stressful due to the influence it has on their cardiopulmonary system, which is why, to lighten caregivers' load, we provide constant monitoring of vital signs to ensure that nothing goes unnoticed.



# NV10 Neonatal/Pediatric Non-invasive high-frequency ventilator

## Neonatal Ventilator



- **The most complete NIV modes to grow decision tree**  
nHFO · (S)NIPPV · DuoVent · nCPAP · HFNC
- **Oscillation revolution providing an NIV safety net**  
Patented diaphragm oscillator for powerful, smoother, quieter nHFO
- **2 Sync methods to catch the breath earlier at all times**  
Abdominal/Proximal pressure sensor for respiratory detection, synchronization and apnea auto-relief
- **HFNC+ROX & VentGuide indicators to assist clinical decision**  
ROX · OSI · S/F · RSS to indicate oxygenation level  
SpO2 · CLFO for better oxygen management

# Increases NIV Confidence Further than Ever

COMEN NV10 includes a complete NIV set with specialized ventilation tools for neonates and children, expanding the ventilation strategies to protect each spontaneous breath. It offers a robust ventilation system and elevates oxygenation level at all stages.



## HFNC + ROX

ROX index to optimize ventilation strategy.



## nCPAP + Apnea Auto-relief

Preset compulsory pressure-controlled ventilation after apnea detected



## DuoVent

Increase mean airway pressure (MAP) while maintain free breath.



## 2 Sync SNIPPV + Back Up Vent

Selectable synchronization method to catch the breath at all times.



## NIPPV

Sustained alveolar ventilation during episodes of apnea



## Single-limb nHFO

Patented diaphragm oscillator with single-limb ventilation to create a safety net for NIV



# Oscillation Therapy Revolution

## Multiple Benefits of nHFO Raises Profile in Clinical Research and Practice

The advantages of noninvasive high-frequency oscillation encompass enhanced carbon dioxide elimination, reduced dead space during ventilation, and effective treatment of persistent pulmonary hypertension (PPHN) when used with nitric oxide. There is a growing amount of academic research focusing on the benefits of noninvasive high frequency ventilation in newborn.

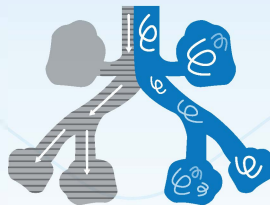


Lung Protection



PPHN

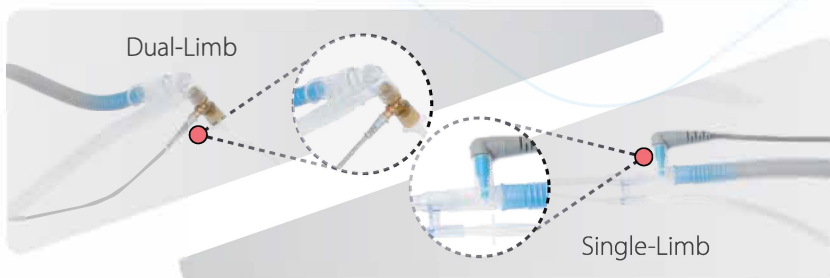
PPHN Treatment



CO2 Removal w/o Deadspace

■ NV10 nHFO Mode  
■ Other Ventilation Mode

## Minimization of Work of Breathing in Every Detail



A single-limb setup, as opposed to a dual-limb configuration with a Y-piece and doubled tubing cavity, effectively reduces dead space, thereby decreasing the work of breath of patients.

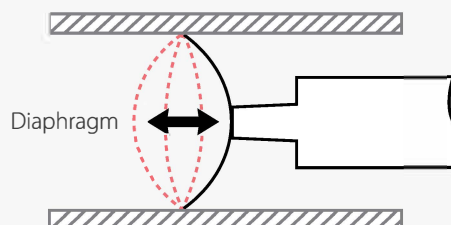
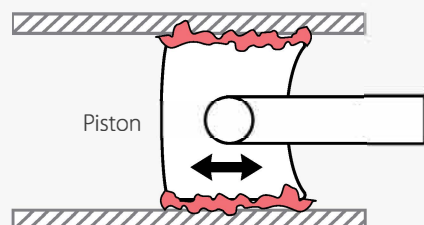


# Unique Oscillator Design

NV10 adopts the most recognized method, diaphragm oscillation, and applied Comen's unique and advance design which provide a quieter and more powerful oscillator increasing the service life of the product every time through material upgrading in an original way.

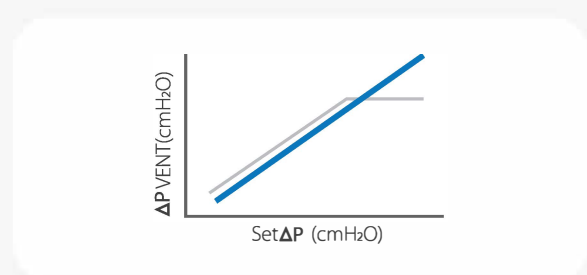


## 1. Friction cancellation



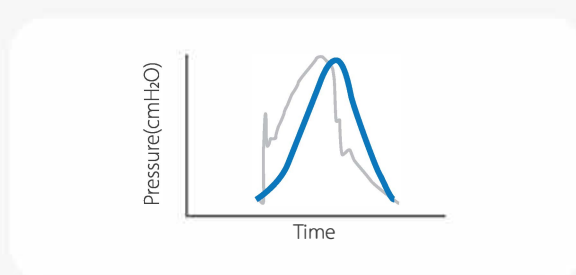
Diaphragm oscillation enables the NV10 to achieve higher frequency by reducing friction against cavity wall, making it suitable for use in neonates with lower body weights and patients with lower lung compliance.

## 2. Linear amplitude



Compared with flow interrupter oscillator ( — ), Diaphragm oscillator have a linear relationship between real pressure difference and set pressure. The higher amplitude allows for better removal of trapped carbon dioxide from the lungs.

## 3. Smooth sine wave



Compared with square waveform ( — ) oscillation, Diaphragm oscillation (sine waveform) is able to help the patients get used to the high frequency ventilation. It also improves the patient's tolerance.

## 4. Patented noise reduction

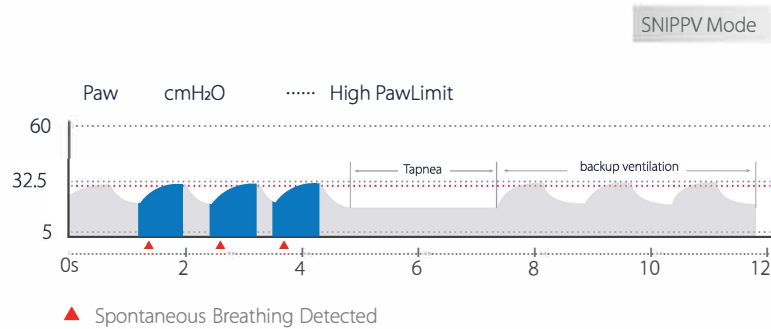
< 45 dB

The NV 10 leverages a unique patented rolling motion design and finely-tuned weight distribution within the oscillator to minimize operational noise.

# Sensitively Respond to Patients Every Breath

## 2 Sync Modes with Unique Algorithm

By providing sensitive abdominal and pressure sensors with unique algorithms, the NV10 can detect a patient's weak breathing in extreme situations. Timeliness and synchronization of patient ventilation is maximized.

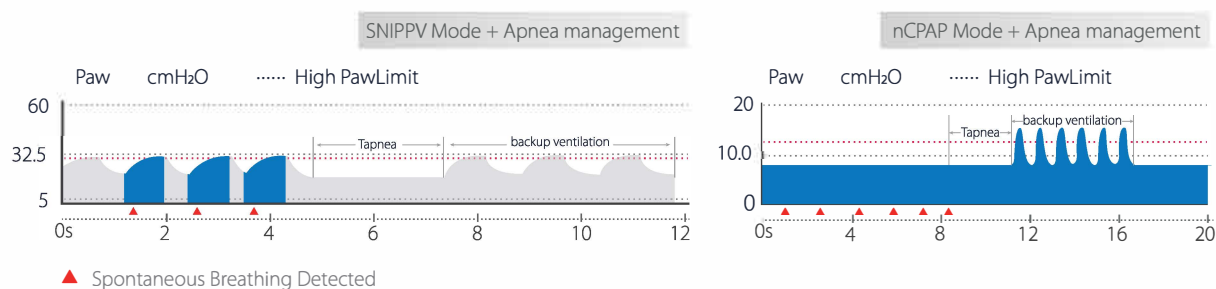


The abdominal sensor is designed for quick response and cost-effectiveness. The pressure sensor minimizes false activations due to the newborn's restlessness. Both sensors are non-invasive, ensuring reduced discomfort for patients.

## Apnea Management



Data indicates that preterm infants with a gestational age of less than 29 weeks have an asphyxia risk nearing 100%. The NV10's NCPAP mode employs dual methods with a variety of parameters to closely monitor a patient's respiratory condition, ensuring timely detection of any signs of apnea from all monitored parameters.



# Targeted Pressure as Needed

## Leakage Compensation System

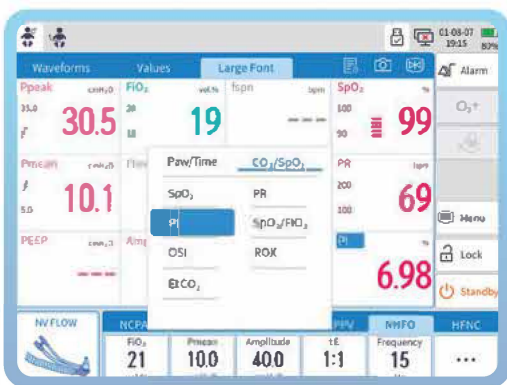
The NV 10 is equipped with a leakage compensation system up to 100% flow rate increment, ensuring that patients receive the set pressure in the event of leakage.



# Tailor your NIV Strategies with VentGuide assist

VentGuide, a set of indicators derived from multi monitoring parameters that can be seen as the early warnings for ventilation failure, helping medical staff to adjust strategies earlier.

## Manage Oxygenation Level at Hand with Continuous Real-time Parameters Monitored



NV10 provides a customizable dashboard to monitor respiratory parameters at all times.

### ROX Index

$$ROX = SpO_2 / FiO_2 \times RR$$

### Oxygen Saturation Index (OSI)

$$OSI = \frac{FiO_2 \times MAP \times MAP \times 100}{SpO_2}$$

### S/F

$$SpO_2 / FiO_2 = \frac{SpO_2}{FiO_2}$$

### Respiratory Severity Score (RSS)

$$RSS = MAP \times FiO_2$$

**HFNC+ROX Index:** Dynamic assessment of the ROX index helps in the early identification of the risk of HFNC failure and the day-to-day clinical decision-making on when to perform stronger ventilation strategies.

**Respiratory status index:** Automatically calculate and display oxygenation parameters (OSI, S/F, RSS), continuous real-time monitoring respiratory status, effectively prompt the severity of hypoxic respiratory failure and predict adverse outcomes of patients.

# All COMEN, with Well-Rounded Consideration

COMEN provide its own brand of ventilation accessories, protecting gas flow in every step. Fine-tuned structure with carefully selected material, increase comfortness, reducing dead space and work of breath (WOB).

## Patient Interface



### *NV Flow*

- Flow driver w/ nasal prongs or masks
- Applicable for nCPAP/(S)NIPPV/ nHFO
- Sensible for synchronization



### *Nasal prongs and masks*

- Effective seal and minimize leaks while prevent nasal injuries
- Ergonomically design and soft silicon for best position and comfort



### *Headgear*

- Prevent nasal damage: Prong/ mask are fixed by straps horizontal to nostrils, reducing upward pulling force on the infant's nose.



### *Neo.flow*

- Soft, anatomically curved cannula to lower airflow resistance and has a tendency for reduced nasal trauma



# Breathing Circuit

**RN2-201H**

**RN2-101H**

*Disposable heated neonatal breathing circuit with disposable humidification chamber*

*Disposable neonatal breathing circuit (water cup included) with disposable humidification chamber*

Single limb and dual-limb adaptable

Optimal structure with less dead space



# Humidification

**CM-V20-001 /CM-V21-001R**

*Reusable neonatal humidification chamber*

*Disposable neonatal humidification chamber  
(Auto feeding)*



**HT50/HT30**

Non-invasive heated humidifier

Invasive heated humidifier

Less condensation

Sensible detection of small air flow

Easy operation



## NV7/8/9 Neonatal Ventilator

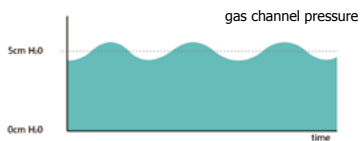
### The Epitome of Neonatal Non-invasive Ventilation

- NCPAP+apnea wakeup function
- SNIPPV+backup ventilation
- One button for fast oxygen ventilation
- NIPPV
- HFNC+pressure monitoring function
- Manual ventilation

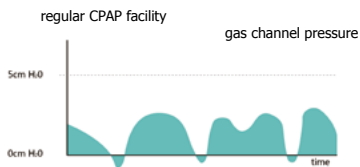
**Exceptional apnea wakeup function:** apnea monitoring and alarm function, providing positive airway pressure to lower the risk of neonatal apnea.

### iFlow Intelligent Closed-loop Control System

NV9 system



The most stable respiratory waveform



**Fast and simple pressure setting:** easy to setting the pressure through touch screen in one step.

**Coanda-effect pressure generator:** Providing stable pressure to settle neonate's weak resilience, and near the nose monitoring is more accurate and read.

**Real-time leakage compensation:** iFlow system can automatically compensate leakage to guarantee ventilation treatment efficiency.

### O<sub>2</sub> Concentration Control System

**Fast and easy Fio<sub>2</sub> setting:** adopt electronic control of air-oxygen blending to directly set Fio<sub>2</sub>, more precise and accurate.

**Accurate O<sub>2</sub> concentration monitoring:** CITY O<sub>2</sub> concentration sensor, short react time and instant monitoring.

**One key calibration:** one key to calibrate the O<sub>2</sub> concentration, automatically success after a moment.

**SpO<sub>2</sub> Monitoring:** NV9 is configured with Masimo/Nellcor SpO<sub>2</sub>. The effect of non-invasive ventilation is judged by the changes of SpO<sub>2</sub>.



KL-20

## Medical Air / Oxygen Blender

An independent gas mixer receiving separate oxygen source and air source, and delivering mixed gas with adjustable oxygen concentration and volume;

Incorporate humidifier and oxygen tube/pressure generator into oxygen apparatus/CPAP machine.



NV6

## Neonatal Ventilator

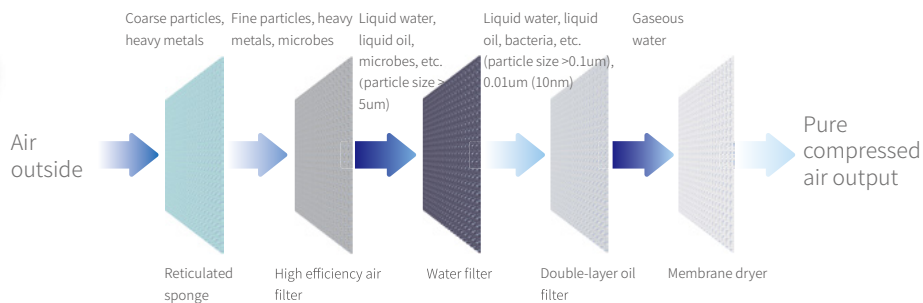
Bubble CPAP not only provides CPAP ventilation therapy, but also its unique care for patients lies in that the high frequency vibration bubble makes the airflow of entering into patient's respiratory system produce high frequency oscillation, so that it gives a quick tap for the lung of patient, hence to improve the respiratory function, reduce the amount of dead space, advance expectoration and speed recovery.

With HFNC high flow O2 therapy, NV6 is easier to use and able to avoid damage to the patients.

VS-20

## Pure And Ultra-quiet

VS-20 applies high-effective filtering technology to provide pure compressed air.







— NEXT GenWorks —  
Defining tomorrow, *today*.

# COMEN

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