

Life Scope *VS*

Bedside Monitor

BSM-3000 series

All for specialists



Fighting Disease with Electronics

 NIHON KOHDEN

All for specialist

Common issues at acute care environment

- Fluid optimization
- Sepsis
- Respiratory-related harms

Nihon Kohden provides the solution

Intelligible fluid optimization

Fluid optimization is essential for reducing the risk of complications. Nihon Kohden's innovative esCCO gives accurate flow information with a very simply and totally non-invasive process.

Improving the mortality rate in sepsis

Sepsis is common cause of death in ICU. Infusion solution within 6 hours is essential from sever sepsis or septic shock. Blood pressure and CVP target graphs can support therapy according to the guidelines for initial resuscitation of sever sepsis and septic shock.

Save the patients from respiratory-related harms

Respiratory-related claims may cause irreversible brain damage or death. ETCO₂ is the most effective parameter to detect the trouble in breathing or ventilator.

Nihon Kohden innovative mainstream CO₂sensor, cap-ONE provides reliable ETCO₂ monitoring for both intubated/non-intubated patients.



Intelligible fluid optimization

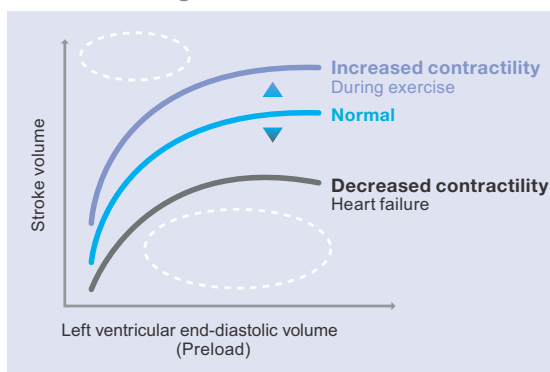
Fluid optimization

Too low fluid or too much fluid, both increase patient risk of complications. The best fluid volume that fits to each patient is necessary.

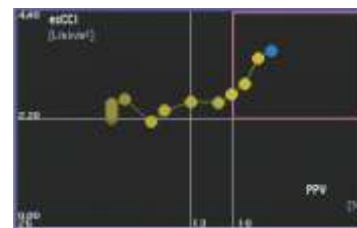
Visualizing volumetric information

Nihon Kohden's hemodynamics graph provides a more intuitive approach to diagnostic and therapeutic decision making in hemodynamic management. This new tool provides a visual Frank-Starling curve to help the clinician easily see the direction and trend of hemodynamics change.

Frank-Starling curve



Hemodynamics graph



PPV/SPV Less-invasive preload indicator

PPV (Pulse Pressure Variability) and SPV (Systolic Pressure Variability) show intravascular volume. This is a useful indicator in guiding fluid therapy for patients on mechanical ventilation.

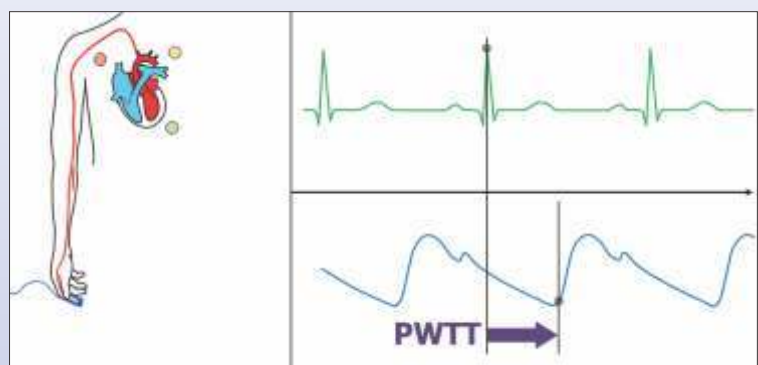


Redefining quality of care with non-invasive hemodynamics monitoring

Nihon Kohden is redefining Quality of Care with new non-invasive technologies like PWTT (pulse wave transit time) and esCCO (estimated continuous cardiac output) by introducing volumetric information to all care levels.

esCCO provides real-time, continuous non-invasive cardiac output measurement alongside the familiar vital sign parameters of ECG and SpO₂.

esCCO is very cost-saving solution because it has no additional running costs or accessories.



Pulse Wave Transit Time derived from ECG and pulse oximetry signal

Improving the mortality rate in sepsis

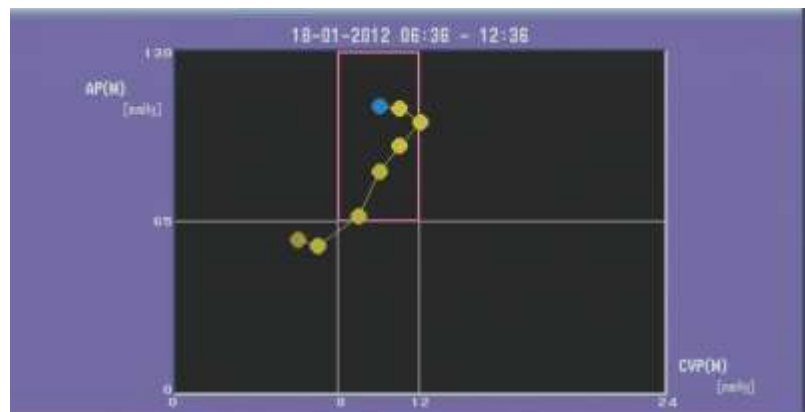
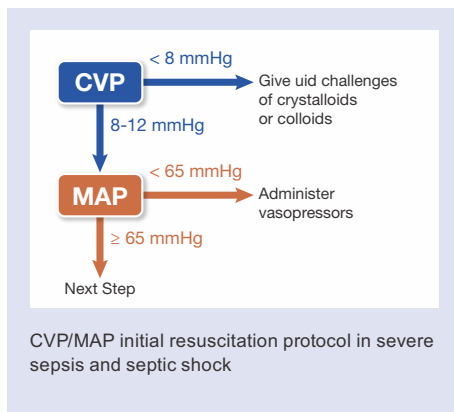
Sepsis is an infection caused by bacteria invading the body and can be widespread in the bloodstream (often called “septicemia” or “blood poisoning”).

Sepsis is a medical emergency just like a heart attack because there is an interruption of oxygen and nutrients to the tissues including the vital organs such as the brain, intestines, liver, kidneys and lungs.

Sepsis is common cause of death in ICU. Infusion solution within 6 hours is essential from severe sepsis or septic shock.

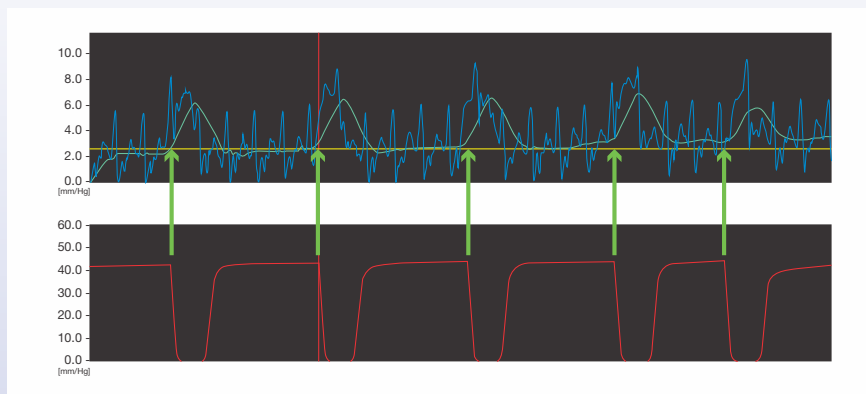
Hemodynamics graph for sepsis treatment

Blood pressure and CVP (Central Venous Pressure) target graphs can support therapy according to the guidelines for initial resuscitation of severe sepsis and septic shock.



CVP_ET

Respiration affects intrapleural pressure and CVP value becomes unstable. Nihon Kohden original technology CVP_ET used the CQ signals to calculate the end tidal mean CVP. CVP_ET provides stable and physiologically-correct value of CVP.



Save the patients from respiratory-related harms

ETCO₂ measuring for safer monitoring

Respiratory-related claims may cause irreversible brain damage or death.

Guidelines recommend to measure CO₂ for all patients receiving deep sedation and for patients whose ventilation cannot be directly observed during moderate sedation. Nihon Kohden innovative main stream CO₂ sensor, cap-ONE, realizes ETCO₂ monitoring for both intubated/non-intubated patients.

CO₂ monitoring is also effective for the patients prescribed Opioid (Pain relief medication), especially with oxygen administration. Impedance respiration may miss the arrest of breathing.

cap-ONE



Non-intubated



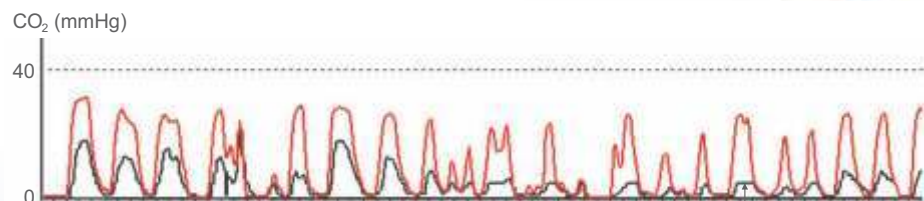
This unique design adapter catches both nasal/oral expiration.

Durable and reliable CO₂ sensor

- Fast response with no lag time
- No warm-up time
- No heater or motor
- No sampling tube
- Compact and lightweight



Intubated

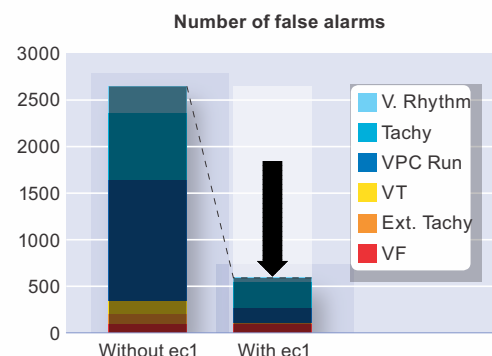


Comparison of **mainstream** (cap-ONE) and sidestream
Sidestream causes false alarms

High quality monitoring increases accuracy

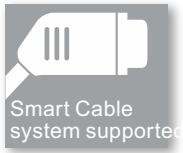
High accurate ec1 arrhythmia analysis

If there are too many false alarms, you may miss the critical situation of patients. Nihon Kohden's ec1 arrhythmia analysis provides superior elimination of false alarms. ec1 has been evaluated arrhythmia databases as well as Nihon Kohden's ECG database, with a result of 80% reduction of false alarms.



Cutting edge technologies

Smart Cable system - new modular technology



When you plug a Smart Cable into a MULTI connector, it automatically detects the type of parameter and starts measuring. The combination of fixed basic parameters and flexible MULTI connector parameters allows flexible monitoring for different patient conditions. You get complete modular flexibility at a significantly reduced cost and without the inconvenience associated with traditional modular systems.

The diagram illustrates the Smart Cable system. On the left, a Smart Cable is shown being plugged into a MULTI connector. A legend lists supported parameters: IBP (Intra-Aortic Blood Pressure), APCO (Arterial Pressure CO₂), CO₂ (End-Tidal CO₂), BIS (Bispectral Index), CO (Cardiac Output), and TOF (Train-of-Four). The central image shows the MULTI connector with its ports highlighted. Below, two screenshots of the patient monitor display show the change in parameters after the Smart Cable is connected. The 'Before' screen shows IBP (80), CO₂ (97), and CO (19). The 'After' screen shows IBP (80), APCO (103, 61), CO₂ (42), and BIS (75).

Smart data review

- Up to 72 hours of 5 selected full disclosure waveforms
- Time is synchronized across all trend screens
- Trend table and trend graph can be customized for each patient condition
- Vital sign trend table, NIBP trend table, trend graph, arrhythmia recall, full disclosure, and alarm history provide comprehensive review



Full disclosure



Trend table



Trend graph



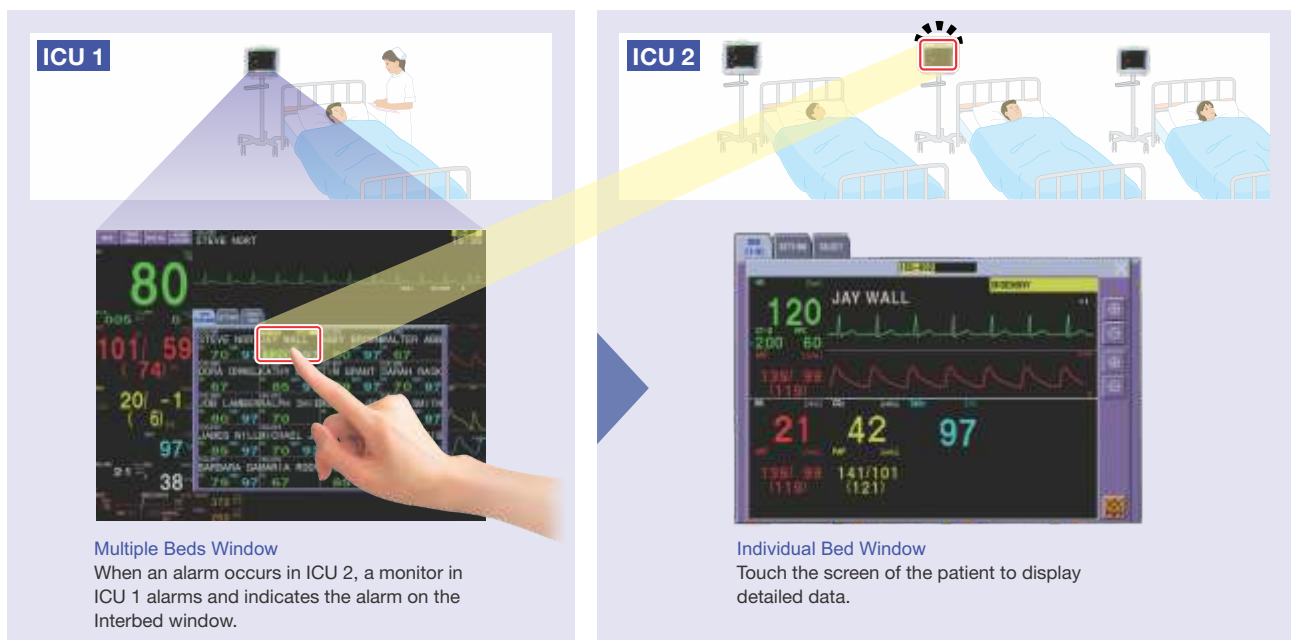
Arrhythmia recall

Monitoring system network

Interbed monitoring

You can use any bedside monitor to check the vital information and alarm status of another monitor in the network, even if there is no central monitor.

Numeric data for 20 patients or numeric data and 2 waveforms for one patient can be displayed on the Interbed screen.



ViTrac™

Nihon Kohden's Unified Gateway is a client/server based application which provides a secure method for monitoring and viewing a wide range of patient data from Nihon Kohden monitors and devices. Patient data can be viewed in near real-time on an Apple's mobile iOS device within the hospital network or remotely via a VPN connection.



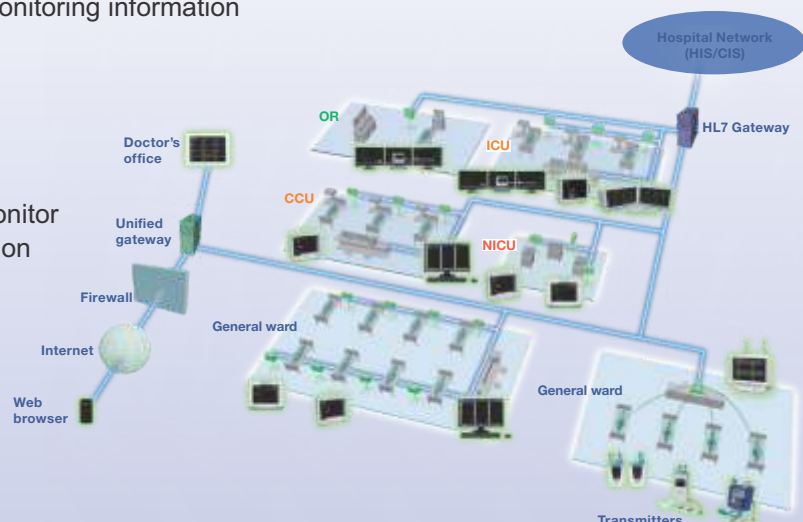
Apple is a trademark of Apple Inc. iOS is a trademark of Cisco.

ViTrac provides medical personnel with monitoring information on multiple patients, any place any time.

HL7 Gateway

An HL7 gateway connects the LS-NET monitor network to the hospital or clinical information system (HIS, CIS). Vital sign data, alarm history, arrhythmia and ST recall, 12-lead analysis reports, and waveforms in the bedside monitor can be transferred using HL7 protocol.

□Some limitations apply to transferring waveforms.



Major options

	 Multigas unit GF-210R Multigas/flow unit GF-220R	 Neuro unit AE-918P
<ul style="list-style-type: none"> • Input unit (MULTI connector) • AA-372P / 374P** • AA-372P (2 MULTI connector) • AA-374P (4 MULTI connector) <p>** To use optional AA-372P/374P, QI-374P, interface is required.</p>	<p>BSM-3000 series</p>	 BIS processor QE-910P
<p>Ventilator*</p> <ul style="list-style-type: none"> • Dräger • Puritan Bennett • MAQUET • Hamilton • GE • Newport Medical • Air Liquide • ResMed • Metran • Care Fusion • Heinen+Löwenstein 		 NMT Module (TOF) AF-101P
<p>Anesthesia workstation*</p> <ul style="list-style-type: none"> • Dräger • MAQUET • Heinen+Löwenstein • GE • Air Liquide 		 Regional saturation of oxygen* (rSO₂) • Covidien INVOS 5100C
<p>Transcutaneous monitor* (tcpO₂ /tcpCO₂)</p> <ul style="list-style-type: none"> • Radiometer • MicroGas 7650 rapid, TCM4, TCM40, TCM Combi M 	 CCO monitors* <ul style="list-style-type: none"> • Edwards Lifesciences Vigilance, Vigilance II, Vigileo • ICU Medical Q2, Q2 Plus, Q-Vue • PULSION Medical Systems PiCCO monitor 	

For the complete list of device, please contact your Nihon Kohden representatives

Consumables

<p>CO₂ sensor</p> <p>CO₂ Sensor kit TG-920P</p>	<p>Airway adapter R804</p>	<p>Oral/nasal adapter V923, with oxygen cannula adapter</p>	<p>SpO₂ sensor</p> <p>P225F, finger</p>	<p>P225G, Multisite Type Neonate to Adult use</p>
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NIHON KOHDEN INDIA PVT. LTD.

308, Tower-A Spazedge, Sector-47,
 Sohna Road, Gurgaon - 122 002, Haryana
 Phone : +91 124 493 1000 Fax: +91 124 493 1029
 Email : info_nki@nkc.co.jp
 CIN No.: U33110HR2011PTCO41863

Customer Care Toll Free No.: 1800-103-8182

NIHON KOHDEN CORPORATION

1-31-4 Nishiochiai, Shinjuku-ku, Tokyo 161-8560, Japan
 Phone +81 (3) 5996-8036 Fax +81 (3) 5996-8100
 www.nihonkohden.com