NKV-550

Series Ventilator System

Treasure Every Breath®

Nihon Kohden's overriding philosophy inherent to the NKV-550 design is to Treasure Every Breath®. Our focus is to provide clinically relevant innovations and solutions for patients requiring mechanical ventilation.

Workflow Optimization

- Highly customizable screen configurations enabling the ventilator to fit into your paradigm rather than requiring you to adapt to it
- App based design provides guided processes to help create a more streamlined, systematic way for clinicians to optimize care of their ventilated patients

Lung Protection

- Created on the lung protective approach to ventilation
- Features the Gentle Lung® Suite of applications to provide clinically relevant, easy to use tools for the open-lung approach to ventilation

Seamless Care

- Patients can be transitioned seamlessly between invasive and non-invasive ventilation and high flow oxygen therapy
- Designed for use with all patient sizes

Protective Control®

- Protective Control® provides the clinician a safe, fully functional second user interface
- Easily implemented changes to ventilator settings when treating patients with contagious diseases or who are undergoing a radiologic procedure while remaining within sight of the clinician

Connectivity

- Transfer of critical patient ventilation data to the hospital information system for charting and/or data analytics purposes

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Specifications NKV-550 Series Ventilator System

Patient Type

Adult, Pediatric, Neonate

Patient Data

ID	0 - 9999
Gender	Male / Female
Height	130 cm - 200 cm
Body Weight (BW)	0.30 kg or higher
Predicted Body Weight (PBW)	Calculated from Gender and Height Inputs

Ventilation Modes

Invasive Ventilation	A/CMV-PC, A/CMV-VC, A/CMV-PRVC SIMV-PC-PS, SIMV-VC-PS, SIMV-PRVC-PS SPONT-CPAP, SPONT-PS, SPONT-VS, APRV
Non-invasive Ventilation	A/CMV-PC, SIMV-PC-PS, SPONT-CPAP SPONT-PS, APRV, nCPAP
Oxygen Therapy	O_2 Therapy

Gases

O_2 Supply	Input: 25 to 87 psi	Vmax: 180 L/min
Air Supply	Input: 25 to 87 psi	Vmax: 180 L/min

Physical Specifications

Display (not including mount)	**Height:** 46.7 cm (18 25/64 in) **Width:** 34.4 cm (13 1/2 in) **Depth:** 58.0 cm (2 9/32 in)
Breath Delivery Unit	**Height:** 27.3 cm (10 3/4 in) **Width:** 43.5 cm (17 1/8 in) **Depth:** 48.4 cm (19 in)
Standard Configuration (Display mounted on BDU)	**Height:** 69.8 cm (27 1/2 in) Max. tilt **Width:** 43.5 cm (17 1/8 in) **Depth:** 53.5 cm (21 in) Max. tilt

Powers

Mains (AC Power)	100 to 240 V, 50/60 Hz Power consumption: 50 - 200 W Fuse 1 & 2: T3.15A, (250V), H
Extended Battery	Li-ion, 14.4 V, 9.0 Ah Run time: 2 hr. 10 min (new and fully charged)
Backup Battery	Li-ion, 14.4 V, 4.1 Ah Run time: 50 min. (new and fully charged)

Alarm Audio Pause

Audio Pause	120 sec (max)

Adjustable Alarms

Airway Pressure (Paw), High	**Neonate/Pediatric:** 5 - 100 cmH_2O **Adult:** 5 - 120 cmH_2O
Minute Ventilation (MV), High	**Neonate:** 0.02 - 20.0 L **Pediatric:** 0.03 - 40.0 L **Adult:** 0.03 - 60.0 L
Minute Ventilation (MV), Low	**Neonate:** 0.01 - 19.0 L **Pediatric:** 0.02 - 39.0 L **Adult:** 0.02 - 59.0 L OFF available, NIV only
Tidal Volume mL/kg (VT), High	2 - 30 L, OFF
Tidal Volume mL/kg (VT), Low	OFF, 1 - 29 L

Institutional Settings

System Settings	Language Pressure units Patient height units Communication protocol Nurse call settings

Quick Access Buttons

Home	**Inspiratory Hold**
Panel Lock	**Expiratory Hold**
Elevated O_2	**Screen Brightness**
Manual Breath	**Help**

Applications (Apps)

Standby	**Data Retrieval**
Open Airway Suctioning	**Camera**
In-line Airway Suctioning	**Sensors**
NIF/PiMax Maneuver	**Custom Settings**
P0.1 Measurement	**Video**
Low Flow PV Maneuver	
Volumetric Capnography	

Optional Apps

Spontaneous Breathing Trial	**Recruitability Assessment**
Auxiliary Pressure	**Recruitment Maneuver**
Trends	**PEEP Titration**
Logs	**Transpulmonary Pressure**

Waveforms

Pressure Waveform	**Flow Waveform**
Volume Waveform	**Auxiliary Pressure Waveform**

Loops

Pressure-Volume Loop	**Flow-Volume Loop**

Ventilation Settings

Tidal Volume (VT)	**Neonate (PRVC/VS):** 2 to 100 mL **Neonate:** 5 to 100 mL **Pediatric:** 20 to 1000 mL **Adult:** 100 to 3000 mL
Pressure Control (P_{INSP} or ΔPC)	**Neonate (60-PEEP):** 2 to 60 cmH_2O **Pediatric (70-PEEP):** 2 to 70 cmH_2O **Adult (80-PEEP):** 2 to 80 cmH_2O
Pressure Support (PS)	**Neonate (60-PEEP):** 0 to 60 cmH_2O **Pediatric (70-PEEP):** 0 to 70 cmH_2O **Adult (80-PEEP):** 0 to 80 cmH_2O
PEEP	**Neonate:** 0 to 30 cmH_2O **Pediatric:** 0 to 40 cmH_2O **Adult:** 0 to 50 cmH_2O
CPAP	**Neonate:** 0 to 30 cmH_2O **Pediatric:** 0 to 40 cmH_2O **Adult:** 0 to 50 cmH_2O
P_{HIGH}	1 to 50 cmH_2O
P_{LOW}	0 to 49 cmH_2O
T_{HIGH}	0.1 to 30 sec
T_{LOW}	0.1 to 30 sec
Flow Type	Square, Descending 50%
Flow Rate (Flow)	**Volume Control:** **Neonate:** 1 to 30 L/min **Pediatric:** 1 to 60 L/min **Adult:** 1 to 150 L/min **PC, PS, PRVC, VS, Spont:** Up to 180 L/min
	O2 Therapy: **Neonate:** OFF, 1 to 15 L/min **Pediatric:** OFF, 1 to 30 L/min **Adult:** OFF, 1 to 60 L/min
Tube Compensation (Tube Comp)	OFF, ON Tube type: ETT or Trach Tube ID: 2.0 to 10.0 mm Comp%: 0 to 100%

Inspiratory Pause (Pause)	OFF, 0.1 to 2.0 sec
Inspiratory Time (T_I)	**Neonate / Pediatric (VC):** 0.20 to 3.0 sec **Adult (VC):** 0.20 to 5.0 sec **All patient sizes (PC):** 0.20 to 10.0 sec
I:E Ratio (I:E)	4.0:1 to 1:299
Respiratory Rate (RR)	**Neonate:** 1 to 150 bpm **Pediatric:** 1 to 120 bpm **Adult:** 1 to 80 bpm
Oxygen % (FiO_2)	21 to 100%
Trigger Type (P_{TRIG} or F_{TRIG}):	**Pressure Trigger:** 0.1 to 20 cmH_2O **Flow Trigger:** **Adult:** 0.1 to 20 L/min **Pediatric:** 0.1 to 15 L/min **Neonate:** 0.1 to 10 L/min
Slope	5% (Slowest) to 100% (Fastest)
Expiratory Trigger (ET%)	1 to 80%
Maximum Inspiratory Time of PS (T_IMax PS)	**Neonate:** 0.3 to 1.0 sec **Pediatric:** 0.5 to 1.5 sec **Adult:** 0.8 to 2.0 sec
Sigh	OFF, ON Factor: 1.1 to 1.5 Interval: 30 to 100 (control breaths)
Apnea Ventilation	OFF, ON VT apn RR apn
Leak Compensation	**Invasive:** ON/OFF **Neonate:** up to 10 L/min **Pediatric:** up to 15 L/min **Adult:** up to 25 L/min **Non-invasive:** ON only **Neonate:** up to 15 L/min **Pediatric:** up to 40 L/min **Adult:** up to 65 L/min Max Vol LC (VC only) **Neonate:** 0 - 50 mL **Pediatric / Adult:** 0 - 100% of set VT

Monitored Parameters

Peak Inspiratory Pressure (P_{PEAK})	0 - 140 cmH_2O
Plateau Pressure (P_{PLAT})	0 - 100 cmH_2O
Plateau Pressure, Estimated ($P_{PLAT-EST}$)	0 - 100 cmH_2O
Mean Pressure (P_{MEAN})	0 - 140 cmH_2O
PEEP	0 - 99.9 cmH_2O
Total PEEP ($PEEP_{TOT}$)	0 - 99.9 cmH_2O
Intrinsic or auto-PEEP ($PEEP_I$)	0 - 99.9 cmH_2O
Intrinsic or auto-PEEP, Estimated ($PEEP_{I-EST}$)	0 - 99.9 cmH_2O
Occlusion Pressure (P0.1)	<0.5 or 0.5 - 10.0 or >10 cmH_2O
Negative Inspiratory Pressure (NIF/PiMax)	0 to -60 cmH_2O
Mean P_{HIGH} for APRV (P_{H-MEAN})	0 - 99.9 cmH_2O
Mean P_{LOW} for APRV (P_{L-MEAN})	0 - 99.9 cmH_2O
Driving Pressure ($P_{DRIVING}$)	0 - 99.9 cmH_2O
Driving Pressure, Estimated ($P_{DRIVING-EST}$)	0 - 99.9 cmH_2O
Inspiratory Tidal Volume (VT_I)	0 – 3,500 mL
Tidal Volume (VT)	0 – 3,500 mL
Tidal Volume per Kg (VT/kg)	0 – 50 mL/kg
Minute Volume (MV)	0.00 - 99.9 L
Spontaneous Minute Volume (MV_{SPONT})	0.00 - 99.9 L
Leak at PEEP	0 to 200 L/min
Leak Volume % (Leak %)	0 - 100%
Leak Volume (V_{LEAK})	0 – 3,000 mL

Total Respiratory Rate (RR_{TOT})	0 – 200 bpm
Spontaneous Respiratory Rate (RR_{SPONT})	0 – 150 bpm
Mandatory I:E Ratio (I:E)	16.0:1 to 1:299
APRV TH and TL Ratio (T_H:T_L)	150:1 to 1:150
Spontaneous Inspiratory Time ($T_{I\ SPONT}$)	0.10 - 9.99 s
Spontaneous Duty Cycle (T_I/T_{TOT})	10 – 90%
Static Inspiratory Resistance (R_{I-STAT})	1 - 200 cmH2O/L/s
Static Compliance (C_{STAT})	0.1 - 120 mL/cmH_2O
Static Compliance per kg (C_{STAT}/kg)	0.00 - 5 mL/cmH_2O/kg
Expiratory Resistance (R_E)	1 – 200 cmH_2O/L/s
Dynamic Resistance, Estimated (R_{EST})	1 - 200 cmH_2O/L/s
Dynamic Compliance, Estimated (C_{EST})	0.1 - 120 mL/cmH_2O
Exhalation Time Constant (TC_E)	.01 – 6 s
Imposed Work of Breathing (WOB_{IMP})	0 - 99.9 J/min
C20/C	0.1 – 3.0
Rapid Shallow Breathing Index (RSBI)	0 - 9999 bpm/L
Rapid Shallow Breathing Index per kg (RSBI/kg)	0 - 300 bpm/mL/kg
Oxygen Concentration FiO_2	18 – 100%
Oxygen Pulse Saturation (SpO_2) and SQI bar graph	0 - 100%
Pulse Rate (PR)	30 – 300 bpm
Pulse-Amplitude Index (PI)	0.01 - 100 %
End tidal CO_2 ($EtCO_2$)	0 to 150 mmHg

For 24/7 ventilator support,
please call **1-855-550-VENT** or
email **ventilator@nihonkohden.com**

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