

# 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

# Specifications NKV-550 Series Ventilator System

## Patient Type

<b>Adult, Pediatric, Neonate</b>	

## Ventilation Modes

<b>Invasive Ventilation</b>	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
<b>Non-invasive Ventilation</b>	A/CMV-PC, SIMV-PC-PS, SPONT-CPAP SPONT-PS, APRV, nCPAP
<b>Oxygen Therapy</b>	O <sub>2</sub> Therapy

## Gases

<b>O<sub>2</sub> Supply</b>	Input: 25 to 87 psi    Vmax: 180 L/min
<b>Air Supply</b>	Input: 25 to 87 psi    Vmax: 180 L/min

## Physical Specifications

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

## Powers

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

## Alarm Audio Pause

<b>Audio Pause</b>	120 sec (max)
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## Adjustable Alarms

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

## Institutional Settings

<b>System Settings</b>	Language Pressure units Patient height units Communication protocol Nurse call settings
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## Quick Access Buttons

<b>Home</b>	<b>Inspiratory Hold</b>
<b>Panel Lock</b>	<b>Expiratory Hold</b>
<b>Elevated O<sub>2</sub></b>	<b>Screen Brightness</b>
<b>Manual Breath</b>	<b>Help</b>

## Applications (Apps)

<b>Standby</b>	<b>Data Retrieval</b>
<b>Open Airway Suctioning</b>	<b>Camera</b>
<b>In-line Airway Suctioning</b>	<b>Sensors</b>
<b>NIF/PiMax Maneuver</b>	<b>Custom Settings</b>
<b>P0.1 Measurement</b>	<b>Video</b>
<b>Low Flow PV Maneuver</b>	
<b>Volumetric Capnography</b>	<b>Optional Apps</b>
<b>Spontaneous Breathing Trial</b>	<b>Recruitability Assessment</b>
<b>Auxiliary Pressure</b>	<b>Recruitment Maneuver</b>
<b>Trends</b>	<b>PEEP Titration</b>
<b>Logs</b>	<b>Transpulmonary Pressure</b>

## Waveforms

<b>Pressure Waveform</b>	<b>Flow Waveform</b>
<b>Volume Waveform</b>	<b>Auxiliary Pressure Waveform</b>

## Loops

<b>Pressure-Volume Loop</b>	<b>Flow-Volume Loop</b>
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## Ventilation Settings

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

<b>Inspiratory Pause (Pause)</b>	OFF, 0.1 to 2.0 sec
<b>Inspiratory Time (T<sub>i</sub>)</b>	<b>Neonate / Pediatric (VC):</b> 0.20 to 3.0 sec <b>Adult (VC):</b> 0.20 to 5.0 sec <b>All patient sizes (PC):</b> 0.20 to 10.0 sec
<b>I:E Ratio (I:E)</b>	4.0:1 to 1:299
<b>Respiratory Rate (RR)</b>	<b>Neonate:</b> 1 to 150 bpm <b>Pediatric:</b> 1 to 120 bpm <b>Adult:</b> 1 to 80 bpm
<b>Oxygen % (FiO<sub>2</sub>)</b>	21 to 100%
<b>Trigger Type (P<sub>TRIG</sub> or F<sub>TRIG</sub>):</b>	<b>Pressure Trigger:</b> 0.1 to 20 cmH <sub>2</sub> O <b>Flow Trigger:</b> <b>Adult:</b> 0.1 to 20 L/min <b>Pediatric:</b> 0.1 to 15 L/min <b>Neonate:</b> 0.1 to 10 L/min
<b>Slope</b>	5% (Slowest) to 100% (Fastest)
<b>Expiratory Trigger (ET%)</b>	1 to 80%
<b>Maximum Inspiratory Time of PS (T<sub>i</sub>Max PS)</b>	<b>Neonate:</b> 0.3 to 1.0 sec <b>Pediatric:</b> 0.5 to 1.5 sec <b>Adult:</b> 0.8 to 2.0 sec
<b>Sigh</b>	OFF, ON Factor: 1.1 to 1.5 Interval: 30 to 100 (control breaths)
<b>Apnea Ventilation</b>	OFF, ON    VT apn    RR apn
<b>Leak Compensation</b>	<b>Invasive:</b> ON/OFF <b>Neonate:</b> up to 10 L/min <b>Pediatric:</b> up to 15 L/min <b>Adult:</b> up to 25 L/min  <b>Non-invasive:</b> ON only <b>Neonate:</b> up to 15 L/min <b>Pediatric:</b> up to 40 L/min <b>Adult:</b> up to 65 L/min  Max Vol LC (VC only) <b>Neonate:</b> 0 - 50 mL <b>Pediatric / Adult:</b> 0 - 100% of set VT

## Monitored Parameters

<b>Peak Inspiratory Pressure (<math>P_{PEAK}</math>)</b>	0 - 140 cmH <sub>2</sub> O	<b>Total Respiratory Rate (<math>RR_{TOT}</math>)</b>	0 - 200 bpm
<b>Plateau Pressure (<math>P_{PLAT}</math>)</b>	0 - 100 cmH <sub>2</sub> O	<b>Spontaneous Respiratory Rate (<math>RR_{SPONT}</math>)</b>	0 - 150 bpm
<b>Plateau Pressure, Estimated (<math>P_{PLAT-EST}</math>)</b>	0 - 100 cmH <sub>2</sub> O	<b>Mandatory I:E Ratio (I:E)</b>	16.0:1 to 1:299
<b>Mean Pressure (<math>P_{MEAN}</math>)</b>	0 - 140 cmH <sub>2</sub> O	<b>APRV TH and TL Ratio (<math>T_H:T_L</math>)</b>	150:1 to 1:150
<b>PEEP</b>	0 - 99.9 cmH <sub>2</sub> O	<b>Spontaneous Inspiratory Time (<math>T_{I SPONT}</math>)</b>	0.10 - 9.99 s
<b>Total PEEP (<math>PEEP_{TOT}</math>)</b>	0 - 99.9 cmH <sub>2</sub> O	<b>Spontaneous Duty Cycle (<math>T_I/T_{TOT}</math>)</b>	10 - 90%
<b>Intrinsic or auto-PEEP (<math>PEEP</math>)</b>	0 - 99.9 cmH <sub>2</sub> O	<b>Static Inspiratory Resistance (<math>R_{I-STAT}</math>)</b>	1 - 200 cmH <sub>2</sub> O/L/s
<b>Intrinsic or auto-PEEP, Estimated (<math>PEEP_{I-EST}</math>)</b>	0 - 99.9 cmH <sub>2</sub> O	<b>Static Compliance (<math>C_{STAT}</math>)</b>	0.1 - 120 mL/cmH <sub>2</sub> O
<b>Occlusion Pressure (<math>P_{0.1}</math>)</b>	<0.5 or 0.5 - 10.0 or >10 cmH <sub>2</sub> O	<b>Static Compliance per kg (<math>C_{STAT}/kg</math>)</b>	0.00 - 5 mL/cmH <sub>2</sub> O/kg
<b>Negative Inspiratory Pressure (NIF/PiMax)</b>	0 to -60 cmH <sub>2</sub> O	<b>Expiratory Resistance (<math>R_E</math>)</b>	1 - 200 cmH <sub>2</sub> O/L/s
<b>Mean <math>P_{HIGH}</math> for APRV (<math>P_{H-MEAN}</math>)</b>	0 - 99.9 cmH <sub>2</sub> O	<b>Dynamic Resistance, Estimated (<math>R_{EST}</math>)</b>	1 - 200 cmH <sub>2</sub> O/L/s
<b>Mean <math>P_{LOW}</math> for APRV (<math>P_{L-MEAN}</math>)</b>	0 - 99.9 cmH <sub>2</sub> O	<b>Dynamic Compliance, Estimated (<math>C_{EST}</math>)</b>	0.1 - 120 mL/cmH <sub>2</sub> O
<b>Driving Pressure (<math>P_{DRIVING}</math>)</b>	0 - 99.9 cmH <sub>2</sub> O	<b>Exhalation Time Constant (<math>TC_E</math>)</b>	.01 - 6 s
<b>Driving Pressure, Estimated (<math>P_{DRIVING-EST}</math>)</b>	0 - 99.9 cmH <sub>2</sub> O	<b>Imposed Work of Breathing (<math>WOB_{IMP}</math>)</b>	0 - 99.9 J/min
<b>Inspiratory Tidal Volume (<math>VT_I</math>)</b>	0 - 3,500 mL	<b>C20/C</b>	0.1 - 3.0
<b>Tidal Volume (<math>VT</math>)</b>	0 - 3,500 mL	<b>Rapid Shallow Breathing Index (RSBI)</b>	0 - 9999 bpm/L
<b>Tidal Volume per Kg (<math>VT/kg</math>)</b>	0 - 50 mL/kg	<b>Rapid Shallow Breathing Index per kg (RSBI/kg)</b>	0 - 300 bpm/mL/kg
<b>Minute Volume (MV)</b>	0.00 - 99.9 L	<b>Oxygen Concentration <math>FiO_2</math></b>	18 - 100%
<b>Spontaneous Minute Volume (<math>MV_{SPONT}</math>)</b>	0.00 - 99.9 L	<b>Oxygen Pulse Saturation (<math>SpO_2</math>) and Sqi bar graph</b>	0 - 100%
<b>Leak at PEEP</b>	0 to 200 L/min	<b>Pulse Rate (PR)</b>	30 - 300 bpm
<b>Leak Volume % (Leak %)</b>	0 - 100%	<b>Pulse-Amplitude Index (PI)</b>	0.01 - 100 %
<b>Leak Volume (<math>V_{LEAK}</math>)</b>	0 - 3,000 mL	<b>End tidal CO<sub>2</sub> (EtCO<sub>2</sub>)</b>	0 to 150 mmHg

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



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