

# Comparison of the NKV-550 and NKV-440







# Overview

## NKV-440

- Turbine powered for wall-independence of compressed air with HEPA filtered air intake.
- 12.1" tiltable GUI
- Integrated pneumatic nebulizer source.
- One model with optional features to allow flexible ordering.

## NKV-550

- Dual-PSOL (high pressure) gas source.
- 17" tilt/rotate GUI
- 17" remote secondary GUI option
- Neonatal Flow Sensor (-N, -U)
- One model with 3 configurations for flexible ordering.

# Overview

## NKV-440



# Interface



NKV-440

Size: 30.7 cm (12.1 in)

Type: TFT LCD, Capacitive touch

Graphics: XGA (1024 x 768)



NKV-550

Size: 43.2 cm (17 in)

Type: TFT LCD, Capacitive touch

Graphics: SXGA (1280 x 1024)

# Power

	NKV-440	NKV-550
Extended Battery	Li-ion, 14.4 V, 9.0 Ah Run time: 3 hr 30 min	Li-ion, 14.4 V, 9.0 Ah Run time: 2 hr 10 min
Backup Battery	Li-ion, 14.4 V, 4.1 Ah Run time: 1 hr 30 min	Li-ion, 14.4 V, 4.1 Ah Run time: 50 min
Total Runtime	<b>5 hours</b>	3 hours

New and fully charged batteries

# Configurations and Options

	NKV-440	NKV-550
Neonatal	Optional	Yes: (-N and -U)
Pediatric	Yes	Yes
Adult	Yes	Yes: (-S and -U)
Extended battery	Yes	Yes
Aerogen Nebulizer	Yes	Yes
Pneumatic Nebulizer	Yes	No
Nihon Kohden SpO <sub>2</sub>	Optional	Yes
Nihon Kohden CO <sub>2</sub>	Optional	Yes
Gentle Lung	Optional	Yes: (-U) Optional:(-N and -S)
2 <sup>nd</sup> GUI	(in development)	Optional



# Modes

	NKV-440	NKV-550
<u>Invasive</u>	Yes	Yes
A/CMV-PC    A/CMV-PRVC    A/CMV-VC		
SIMV-VC-PS    SIMV-PC-PS    SIMV-PRVC-PS		
SPONT-CPAP    SPONT-PS    SPONT-VS		
APRV		
<u>Non-Invasive</u>	Yes	Yes
A/CMV-PC		
SIMV-PC-PS		
SPONT-CPAP    SPONT-PS		
APRV		
CPAP		
O <sub>2</sub> Therapy		

# Ventilation

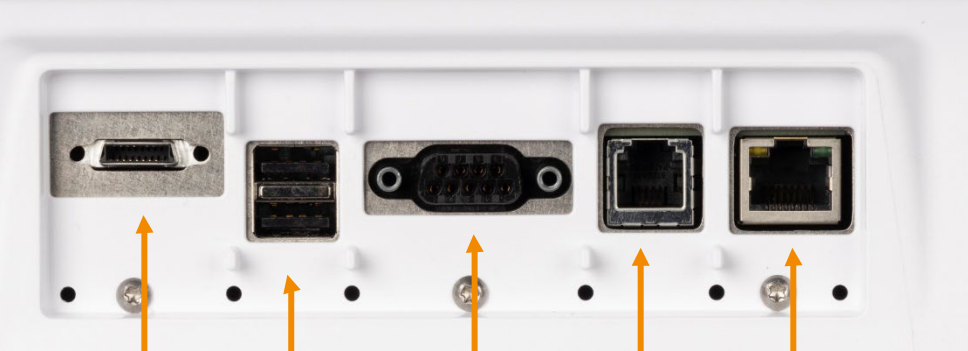
	NKV-440	NKV-550
Tidal Volume	5 to 100 mL Neonate 20 to 1000 mL Pediatric 100 to 2000 mL Adult	2 to 100 mL Neonate (PRVC/VS) 5 to 100 mL Neonate (A/CMV) 20 to 1000 mL Pediatric 100 to 3000 mL Adult
Pressure Control	2 to 60 cmH2O Neonate (60-PEEP) 2 to 70 cmH2O Pediatric (70-PEEP) 2 to 80 cmH2O Adult (80-PEEP)	2 to 60 cmH2O Neonate (60-PEEP) 2 to 70 cmH2O Pediatric (70-PEEP) 2 to 80 cmH2O Adult (80-PEEP)
Flow	Volume Control: 1 to 30 L/min Neonate 1 to 60 L/min Pediatric 1 to 150 L/min Adult  PC, PS, PRVC, VS, Spont: Up to 180 L/min	Volume Control: 1 to 30 L/min Neonate 1 to 60 L/min Pediatric 1 to 150 L/min Adult  PC, PS, PRVC, VS, Spont: Up to 180 L/min

# Connectivity

	NKV-440	NKV-550
RS-232 Serial Port	One	One
• NK, Philips, GE, Capsule, CliniComp	Yes	Yes
USB	Two	Two
• Power Aerogen, Install SW, Data download		
NK Multi-Connector	Two	Two
• SpO <sub>2</sub> /CO <sub>2</sub>	(option)	
DH60 Serial Port	One	None
RJ14	One	One
• Nurse Call		
RJ45	One	One
• 2 <sup>nd</sup> GUI port (under development)	(not enabled)	(not enabled)

# Ports

NKV-440



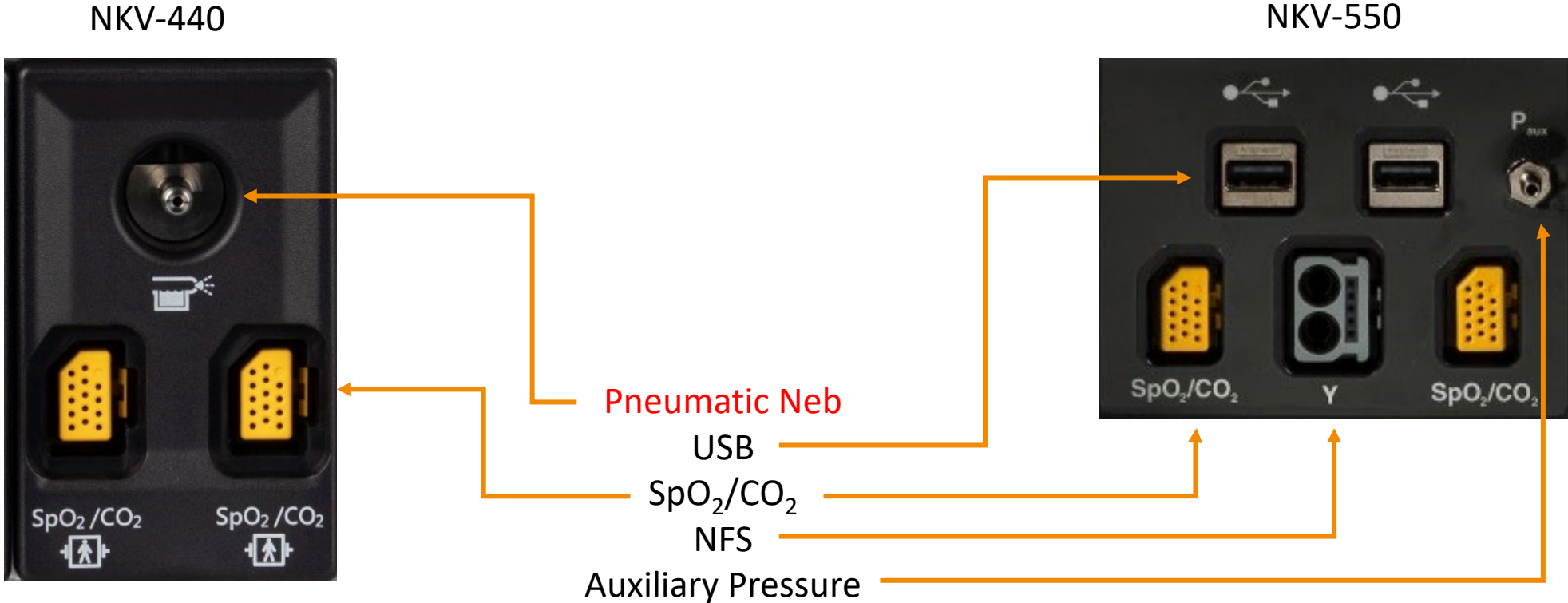
NKV-550



- 2<sup>nd</sup> GUI
- RJ45
- RJ14
- RS-232
- USB
- DH60

# Ports

## Front



# Physical Specifications

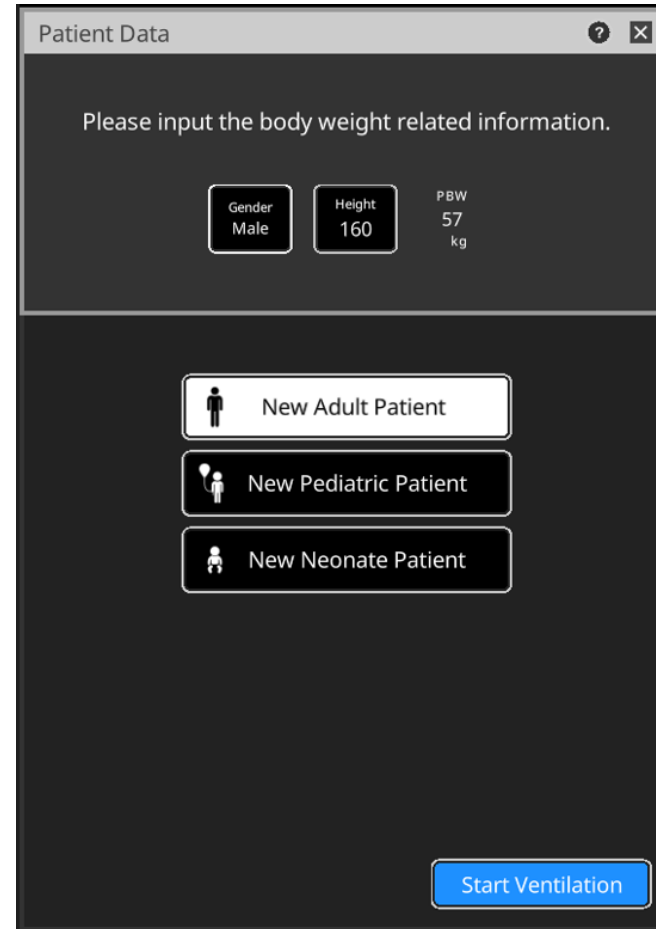
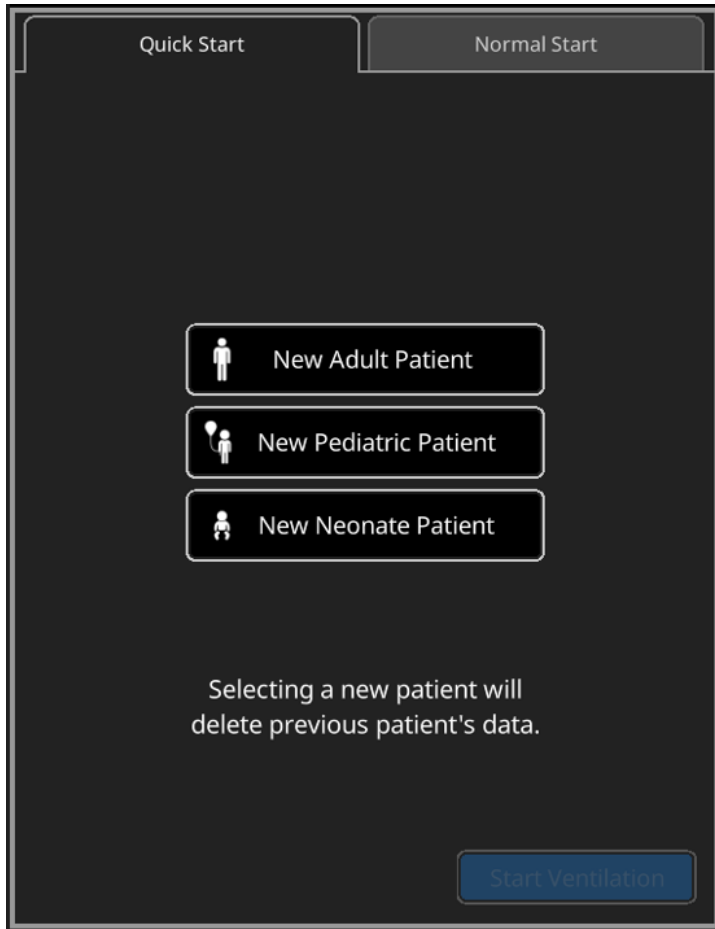
	NKV-440	NKV-550
Height (display up)	50.6 cm (19.9 in.)	69.8 cm (27.5 in)
Height (display down)	25.1cm (9.9 in.)	n/a
Width	30.8 cm (12.1 in.)	43.5 cm (17.1 in)
Depth	41.7 cm (16.4 in.)	53.5 cm (21 in)
Weight	10.1 kg (22.3 lb.)	24.2 kg (53.4 lbs)

# Key Differences

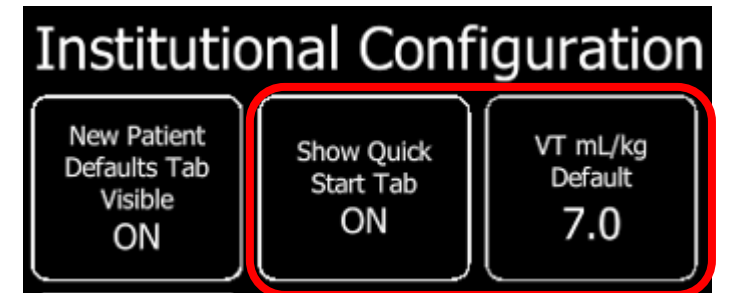
	NKV-440	NKV-550
Pneumatic	Turbine	Dual PSOL
Battery Life	5 hrs total	3 hrs total
Pneumatic Nebulizer	Standard	n/a
Nebulizer App	Standard	n/a
SpO <sub>2</sub> /CO <sub>2</sub> Connectors	Optional	Standard
Gentle Lung <sup>®</sup>	Optional	Standard or Optional
Neonatal	Optional	Standard (-N and -U)
Esophageal/Aux pressure	n/a	Standard
NIF/PiMax App	n/a	Standard
2 <sup>nd</sup> GUI	n/a	Optional


# Key Differences

## New Feature: Quick Start



## SERVICE – HOME Screen

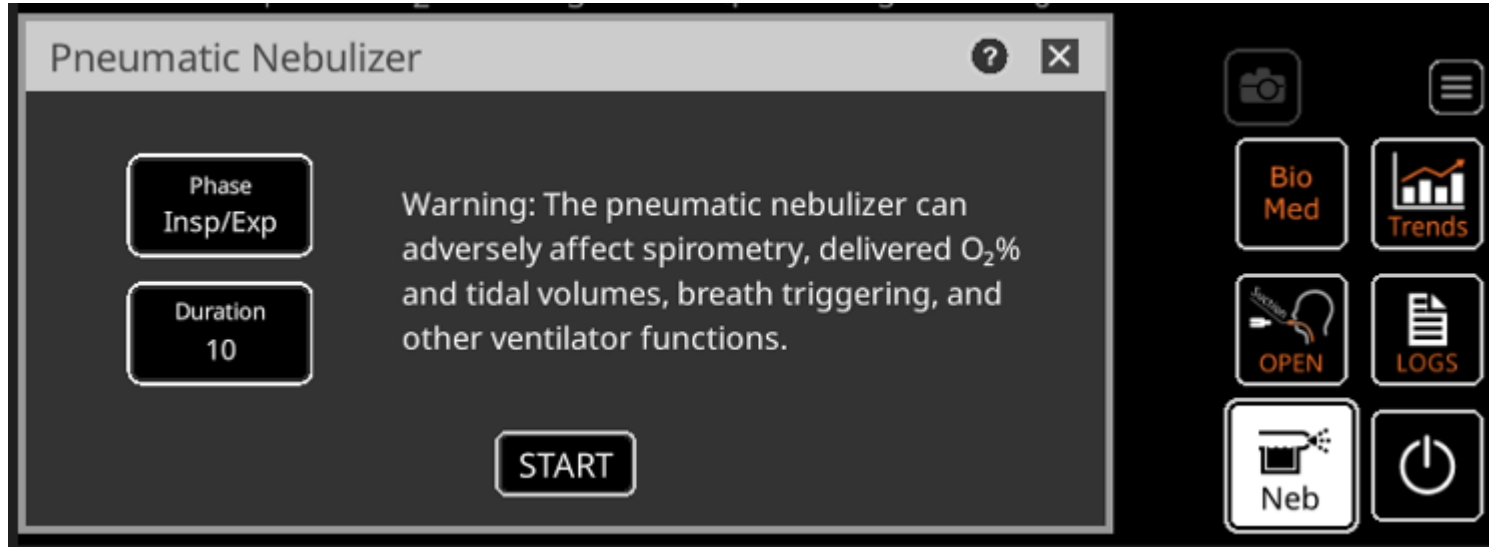


- New Patient Default Tab - ON/OFF
- Quick Start Tab – ON/OFF
- Quick Start VT mL/kg Default  
*Note: Default Mode - PRVC*
- Camera App 



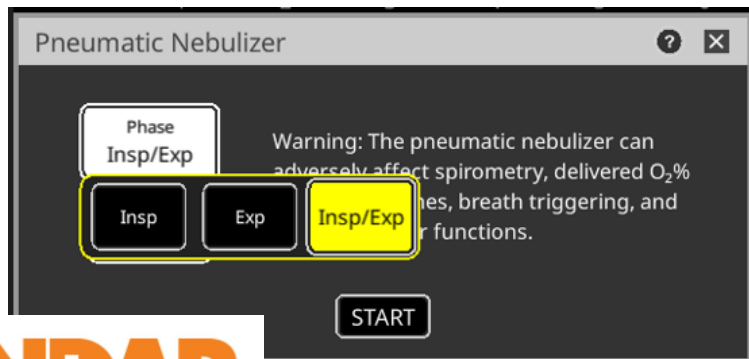
# Key Differences

## New App: Pneumatic Nebulizer



### Notes:

- Pneumatic nebulizer is powered by high pressure oxygen.
- Delivered FiO<sub>2</sub> may vary from control setting while nebulizer is in use.
- Output flow is 6 – 10 L/min depending on ventilation control settings.



# Key Differences

## New App: About This Device



About This Device

General

Maintenance

Institutional Configuration

Software Configuration

Configuration

New Patient Defaults Tab Visible:	ON
Show Quick Start Tab:	OFF
VT mL/kg Default:	7.0
$\Delta PC / P_{TNSP}$ :	$\Delta PC$
Minimum Alarm Volume:	1
Pressure Unit:	cmH <sub>2</sub> O
EtCO <sub>2</sub> Unit:	mmHg
Comm Protocol:	Nihon Kohden 2
DH60:	OFF
Remote Alarm Configuration:	Normally open
Remote Alarm Priority:	High and Medium

About This Device

General

Maintenance

Institutional Configuration

Software Configuration

Supported Patient Types:

- Adult
- Pediatric
- Neonate

Installed Options:

- Recruitability Assessment App
- Recruitment Maneuver App
- PEEP Titration App

# Key Differences

## New App: Biomed



BioMedical			
Device check history			
Date	Time	Event	Failed
2022-09-07	09:54:53	Exhalation Flow Cal Passed	
2022-09-07	09:54:09	Exhalation Valve Cal Passed - Pilot valve operating volt (mv)=3102 MIN_VOLT=-5000 MAX_VOLT=20000	
2022-09-07	09:43:36	Exhalation Flow Cal Passed	
2022-09-07	09:42:51	Exhalation Valve Cal Passed - Pilot valve operating volt (mv)=2158 MIN_VOLT=-5000 MAX_VOLT=20000	
2022-09-07	08:26:27	Exhalation Flow Cal Passed	
2022-09-07	06:11:38	Device Check Finished - Calibration	
2022-09-07	06:11:38	Exhalation Flow Cal Passed	
2022-09-07	06:10:58	Exhalation Valve Cal Passed - Pilot valve operating volt (mv)=2157 MIN_VOLT=-5000 MAX_VOLT=20000	
2022-09-07	06:10:27	O2 Sensor Cal Passed - AdcCountAt21PercentO2=3044 AdcCountAt100PercentO2=14039	
2022-09-07	06:10:27	O2 Sensor Cal Passed - Slope=0.007 Offset=-0.871	
2022-09-07	06:10:27	O2 Sensor Cal Passed - Barometric Pressure=1028.558 P1 Pressure=0.000 O2 Sensor Temp=32.667	

BioMedical			
Circuit check history			
Date	Time	Event	Failed
2022-09-07	09:56:21	Circuit Check Finished	
2022-09-07	09:56:21	Exhalation Resistance Passed - Resistance=6.173 (cmH2O/L/s)	
2022-09-07	09:56:21	Inspiratory Resistance Passed - Resistance=5.623 (cmH2O/L/s)	
2022-09-07	09:55:59	Circuit Compliance Passed - Compliance=1.972 (mL/cmH2O)	
2022-09-07	09:55:59	Leak Flow Passed - Leak Flow=0.189 (L/min)	
2022-09-07	09:55:54	Circuit Check Started	
2022-09-07	07:53:52	Circuit Check Finished	
2022-09-07	07:53:52	Exhalation Resistance Passed - Resistance=6.461 (cmH2O/L/s)	
2022-09-07	07:53:52	Inspiratory Resistance Passed - Resistance=5.623 (cmH2O/L/s)	
2022-09-07	07:53:30	Circuit Compliance Passed - Compliance=0.566 (mL/cmH2O)	
2022-09-07	07:53:30	Leak Flow Passed - Leak Flow=0.055 (L/min)	

# Key Differences

## New App: Low Pressure Oxygen



### Low Pressure Oxygen App – ON/OFF

Max Input Pressure:  $\leq 11$  psi

Max Input Flow: 15 L/min

Low pressure oxygen input may be required in non-traditional ICU or alternative care settings, whether provided by oxygen cylinder or oxygen concentrator.



# Key Differences

## Expiratory Module



- Easy Insertion/Removal of Exhalation Valve
- Easy Disconnect/Reconnect of Exhalation Flow Sensor Cable

# Key Differences

## Inspiratory Module



- Easy Insertion/Removal of Oxygen Sensor

# Maintenance

## Filters



Fan Filter - clean/replace as needed.



Dust Filter - clean/replace as needed.  
HEPA Filter – replace yearly



# Maintenance

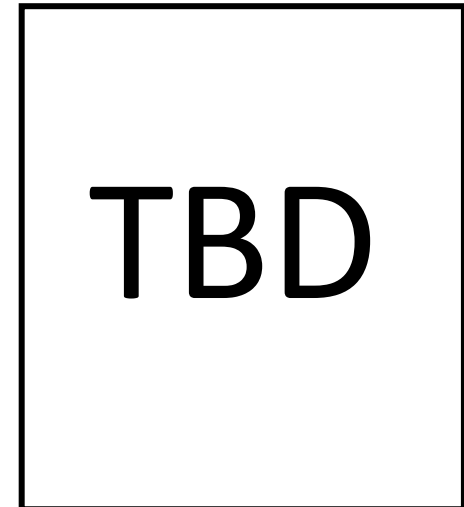
## Other



Batteries - replace every 2 yrs.



Oxygen Sensor – replace yearly



PM Kit- every 2 yrs.



Treasure Every Breath.®

NKV-440