

# Inspiration<sup>®</sup> 7i Ventilator

*“Clinician Focused Products is not just a tag line, rather a belief system.”*

- Low cost of ownership
- High performance PSOL and active exhalation
- Comprehensive graphics and trending with event markers
- Neonate through adult
- Invasive and noninvasive
- Feedback-controlled NCPAP and NCPAP+
- Automatic Tube Compensation
- Intra-hospital patient transport
- Intranet and Internet remote viewing
- Outstanding Heliox Management
- 2ml Tidal Volume
- Capnography ready





## PRVC / VS

Pressure Regulated Volume Control (PRVC) and Volume Support (VS) adapt breathing support in response to the patient's dynamic compliance and changes in respiratory drive. PRVC and VS are "volume targeted" forms of Pressure Control and Pressure Support respectively.

With PRVC (control breaths), the caregiver sets the inspiratory time and "target" tidal volume. Target pressure is adjusted breath by breath in response to volume discrepancies, up to a maximum pressure of 5 cmH<sub>2</sub>O below the High Paw alarm setting.

With VS (spontaneous breaths), the caregiver sets the "target" tidal volume. Inspiratory time is controlled by the Expiratory Sensitivity setting (same as for Pressure Support breaths). Target pressures are adjusted the same as described for PRVC breaths.

## Auto Control

Auto-Control is a respiratory muscle conditioning tool that through sophisticated software and algorithms provides seamless transition between a control mode of ventilation and a spontaneous mode when certain parameters are met or not met by the patient's breathing pattern. As compared to SIMV, Auto-control helps to simplify the weaning process in an efficient and safe way. Additionally, monitoring of the % of time the patient is breathing spontaneously allows the caregiver to readily access the patient's ability to adequately sustain their ventilation in anticipation of extubation.



## SPAP - Spontaneous Positive Airway Pressure

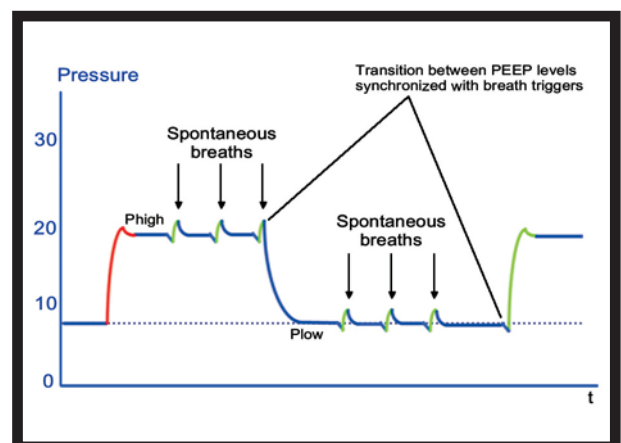
Regardless of your ventilation strategy (Volume or Pressure), the Inspiration Ventilators provide modalities that afford your patient the ultimate in control and synchrony.

SPAP is a pressure-based breathing mode that allows patients to breathe spontaneously at two user-selected levels of PEEP. The user sets the high and low PEEP (Phigh and Plow) and independent levels of pressure support (if desired) at each PEEP level (Psup high, Psup low).

The user also selects how much time the patient breathes at each PEEP level. Setting selections can be based on I:E ratio or time including:

- Cycle + time at high pressure (Phigh)
- Cycle + ratio of time high to time low (Thigh and Tlow)
- Time only at high and low pressures (Phigh and Plow)

At each PEEP level, the ventilator delivers a spontaneous breath when the patient triggers a breath (based on the trigger setting). These breaths can be pressure supported or not. Transitions between high and low PEEP levels are synchronized with the patients' spontaneous efforts such that "T-high" may be slightly lengthened to allow patients to finish the inspiration before dropping to the low pressure level. The time at low pressure is preferentially maintained when I:E settings are inverted.





## Nasal CPAP+

In today's NICU and delivery rooms, intubation leads to a higher risk of airway trauma and infections. Stand-alone nasal CPAP (NCPAP) machines with proprietary interfaces may mean higher costs...not better care.

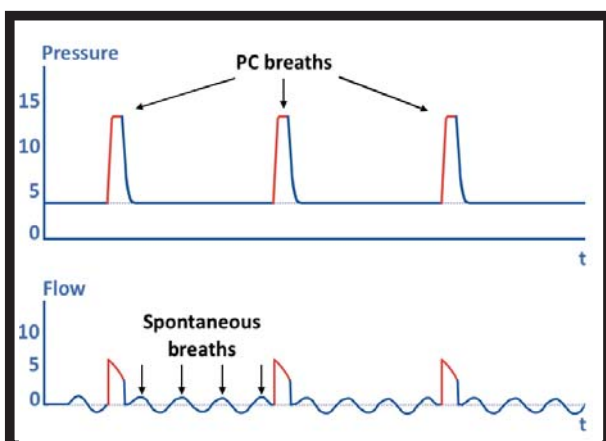
eVent Medical's Inspiration 7i ventilator with NCPAP+ provides a full solution. Offering an alternative to more invasive forms of respiratory support, the Inspiration's advanced pneumatic and exhalation systems with unique NCPAP modalities – provide a gentle, noninvasive, proven method of breathing support for the respiratory-compromised neonate.

Sophisticated, yet simple, the Inspiration's NCPAP+ mode is built upon the exceptional performance of its original NCPAP mode, allowing caregivers to provide customized, noninvasive care to their patients.

NCPAP+ makes it possible to deliver a set pressure control level above PEEP at a user defined rate, inspiratory time, flow and FIO2. Alarms are set automatically and provide peace of mind against disconnections, occlusions and low or high pressure.

The Inspiration's internal batteries and compressor provide an excellent and versatile transport solution.

With the Inspiration's NCPAP+ mode, you get the best of both worlds – a full-featured, highly capable neonate ventilation platform with a state-of-the-art NCPAP system capable of accepting most any nasal interface.



## Volumetric Capnography (VCO<sub>2</sub>)

Capnography has become an important tool to evaluate the adequacy of ventilation. The use of conventional time-based capnography only measures the concentration of CO<sub>2</sub> within the body, and this can sometimes be misleading in practice. Volumetric capnography, on the other hand, has emerged as the preferred method to assess both the quality and quantity of ventilation.

To this end, The Inspiration 7i Ventilator provides:

- CO<sub>2</sub> elimination (VCO<sub>2</sub>) provides continuous feedback regarding ventilation and perfusion.
- The end-tidal CO<sub>2</sub> (PetCO<sub>2</sub> and FetCO<sub>2</sub>) measurement provides a proper assessment of arterial CO<sub>2</sub>.
- The dead space and minute ventilation measurements permit a proper assessment of actual alveolar ventilation.
- The physiological dead space (Vd/Vt) measurement permits the assessment of total deadspace to tidal volume ventilation in support of the weaning process.



# CliniNet® Virtual Report™ Viewing System

## Features

- Remote ventilator viewing
- View up to 8 ventilators simultaneously
- Improve patient care with centralized, real-time data
- View settings, monitor, waves/loops, trends, alarms
- Three levels of user access and password protection
- Easy system integration and easy to use
- Wired or wireless solutions



## Feature Comparison Chart

Feature	Flagship Model (F7300000-7i-F)	17" Screen (F7300000-7i-L)	12.1" Screen (F7300000-7i-S)
17" Screen	✓	✓	
12.1" Screen			✓
VC02 & EtCO2 Monitoring	✓	Optional	Optional
Tube Compensation	✓	Optional	Optional
Recruitment Maneuvers	✓	Optional	Optional
SBT Mode	✓	Optional	Optional
Suction Support	✓	Optional	Optional
Internal Compressor	✓	✓	✓
Deluxe III Cart	✓	✓	✓
Loop Study	✓	✓	✓
Loop Save Feature	✓	✓	✓
Event Markers	✓	✓	✓
Trend Tabs	✓	✓	✓
CliniNet Remote Viewing System	✓	✓	✓
72 Hr Trend Time	✓	✓	✓
Ideal Body Weight (IBW) Calculator	✓	✓	✓
Graphics Panel Maximize/Minimize	✓	✓	✓
Heliox Ready	✓	✓	✓
VTV Modes (PRVC, VS)	✓	✓	✓
PRVC-VS	✓	✓	✓
SPAP	✓	✓	✓
NCPAP+	✓	✓	✓
NIV in all modes	✓	✓	✓
Gender Specific Colors (Neo/Ped)	✓	✓	✓
Auto Control	✓	✓	✓
PO.1 Maneuver	✓	✓	✓
PiMax Maneuver	✓	✓	✓

✓ Standard

All Models Available without Internal Compressor

## Interface

Our friendly graphic user-interface design has been optimized to help reduce the number of operational failures.<sup>1</sup> The Inspiration 7i Ventilator graphic user-interface makes navigation and parameter changes intuitive. Its color coded parameters and settings highlight changes and makes viewing simple. This translates into less time spent making ventilator changes, and more time to treat your patient.



## Alarm Log

- 1000 event log with time and date stamp
- Filter by time, event type, and settings changes
- Event log window provides a detailed view of an individual event

## Graphics and Trending

- One, two or three waveforms viewable on main screen
- Loops, waveforms or trending adjustable scale from 6 seconds up to 72 hours
- Color graphics allow for easy analysis of spontaneous and mechanical breaths
- Freeze function on all graphs, loops and waveforms

## Ideal Body Weight (IBW)

- Automatic IBW calculator based on patient height and gender
- IBW calculator provides a quick and safe start to ventilation
- Pre-populated ventilator parameter settings based on IBW

## Modes

- A complete array of ventilation modes – Controlled, Synchronized or Spontaneous
- A complete array of ventilator breath types – Pressure (P), Volume (V), Pressure Support (PS), Volume Support (VS), Spontaneous Positive Airway Pressure (SPAP), or Pressure Regulated Volume Control (PRVC)
- Tidal volume ranging 2 to 2000 ml ventilation of neonatal to adult patients

## Auto Control

- Auto Control - automatically transitions from full ventilatory support by the ventilator to full ventilatory control by the patient
- Allows for a very easy, automatic and seamless transition between mandatory or spontaneous support in either pressure or volume modes
- Auto Control assists in weaning the patient from mechanical ventilation

## Non-Invasive Ventilation (NIV)

- The Inspiration provides multi dimensional ventilation through NIV available in all modes
- With up to 60 L/min of leak compensation available, fitting masks and increasing patient comfort is made easier
- An increasing body of evidence suggests that NIV can effectively reduce the number of ventilator days improving outcomes and decreasing risk.<sup>2</sup>

## User Defined Custom Default Configuration Profiles

- The Inspiration allows clinicians to use the factory default configuration settings or users can to define up to four (4) custom default setting configuration profiles.
- Users are able to save, rename and or select / load a default setting profile during Standby from the Config screens Defaults page.
- This feature means users can configure the ventilators mode, apnea backup mode, main graph display, monitors, trend graphs display and various other non-IBW related setting / features and then save that specific configuration as a user defined custom default profile.

1. Uzawa, Y. Et al. Evaluation of the User Interface simplicity in the Modern Generation of Mechanical Ventilators. Resp Care 2008;53(3):329-337

2. Keenan SP. Et al; Canadian Critical Care Trials Group/Canadian Critical Care Society Noninvasive Ventilation Guidelines Group. Clinical practice guidelines for the use of noninvasive positive-pressure ventilation and noninvasive continuous positive airway pressure in the acute care setting. CMAJ. 2011 Feb 22;183(3):E195-214

# INSPIRATION®

## Highlights

The Inspiration Ventilators are highly versatile and designed with the clinician in mind.

Our patented Swiss pneumatic design allows high performance PSOL valves to provide outstanding breath delivery to neonate through adult patients.

We offer one of the most comprehensive platforms on Inspiration ventilators, including—as standard—Heliox delivery, 2 hour battery backup, volume targeted modes, APRV (SPAP), noninvasive ventilation, NCPAP+, auto-weaning modes with Auto Control and remote monitoring.

Inspiration ventilators feature an intuitive and easy-to-learn, comprehensive graphical user interface with user configurable screens.

Ideal Body Weight start up settings gives the clinician a quick and safe initiation to ventilation.

With proven reliability, the Inspiration offers one of the best warranty periods, as a standard, along with one of the lowest costs of ownership in the industry.



Specifications subject to change.

ML0179 Rev. E, Int'l Version

## Additional Features

### Recruitment Maneuver Tools

*(PVL Tool (p), PVL Tool (v) and Step Tool)*

- PVL Tools: PVL Tool (p) and PVL Tool (v)
  - The PVL Tool options allow clinicians to perform a pressure PVL Tool (p) or volume PVL Tool (v) Slow Inflation / Deflation Maneuver
  - The Inspiration ventilator's PVL Tools are automated respiratory mechanics maneuvers that capture, analyze, record and display a quasi-static P/V (pressure/volume) curve. The PVL Tools Curve Analysis feature measures and displays the inflation and deflation pressure-volume curves of the lungs and automatically determines the lower and upper inflection points as well as the deflation limb de-recruitment point which can be manual adjusted by the user.
- Step Tool
  - The Step Tool allows clinicians to perform either a single or multiple Step Recruitment Maneuver (RM) via continuous ventilation at user defined Step settings.
  - The Step tool allows a maximum recruitment strategy to be applied using the automated RM Step & Rest Step maneuver process via pressure-control ventilation. The Step Tool when active provides continuous breath-by-breath display of static and dynamic compliance as well as inspired and expired volumes which are displayed above pre-maneuver values and allows P/V curves to be captured.

### Spontaneous Breathing Trial (SBT) Mode

- The Inspiration ventilator's SBT mode is used to test a patient's ability to tolerate spontaneous breathing with minimal support in an effort to determine if the patient is ready for additional weaning and or extubation. SBT mode can be activated during any mode of ventilation and is available for adult and pediatric patients only. Users set the duration of time the SBT mode will be active from 15 to 120 minutes and once the SBT time elapses, normal ventilation resumes.

### Automatic Tube Compensation

- Tube Compensation (TC) when enabled (turned ON) automatically calculates the pressure drop across the endotracheal tube (ETT) and allows the ventilator to compensate for the resistance associated with an ETT or Tracheostomy Tube via closed-loop control of continuously calculated tracheal pressure. This calculation takes into account flow, gas composition (Heliox or Nitrogen/Oxygen), Fraction of Inspired Oxygen (FIO<sub>2</sub>), tube diameter, length, and pharyngeal curvature based on patient size (Neonatal, Pediatric, Adult). The ventilator then (breath-to-breath) adjusts the airway pressure to deliver the set inspiratory pressure to the distal (carina) end of the endotracheal tube.

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