Ventilators

MEDTRONIC PURITIAN BENNETT 980

ABOUT

The **Covidien Puritan Bennett 980** ventilator offers comprehensive mechanical ventilation for a wide range of patients, from neonates to adults who require respiratory support. The Puritan Bennett 980 supports intra-hospital transport, delivering continuous ventilation using oxygen and compressed medical air via its built-in air compressor or an external air source. This Medtronic **ventilator** allows precise oxygen delivery with adjustable concentrations from 21% to 100%. Designed for invasive and non-invasive applications, the PB980 offers positive pressure ventilation and supports assist/control, SIMV, and spontaneous ventilation modes. Suitable for use in various clinical settings like general care areas, operating rooms, and ICUs, this ventilator also includes a battery backup, ensuring uninterrupted operation if AC power fails.

FEATURES

Simple, easy-to-use, and highly customizable touchscreen user interface.

15” display that rotates 170° about a vertical axis in either direction.

The display shows ventilator, apnea, alarm settings, patient data, waveforms, and current alarm banners.

Unique ventilator assurance feature that will continue to deliver ventilatory support as close to the preset setting in the event of certain system failures.

Medtronic Puritan Bennett 980

SPECIFICATIONS

DIMENSIONS

Height: 58" (147 cm)

Width: 12.5" (31.75 cm)

Depth: 11.5" (29.21 cm)

Weight: 113 lb (51.26 kg)

DISPLAYS

The PB 980 features a primary 15" display with 170° rotation and a 45° tilt for optimal viewing. It also has a smaller fixed status display.

FILTRATION CAPABILITIES

Internal Inspiratory Filter Bacterial/Viral Filtration Efficiency: > 99.999%

Internal Inspiratory Filter Particle Filtration Efficiency: >99.97% retention of particles 0.3 µm nominal at 100 L/min flow

Exhalation Filter Resistance (Adult/Pediatric, Disposable): <0.7 cmH2O at 30 L/min (new); <0.35 cmH2O at 15 L/min

Expiratory Filter Bacterial/Viral Filtration Efficiency: > 99.999%

Exhalation Filter Particle Filtration Efficiency, Pediatric/Adult, Disposable: Maximum of 0.03% penetration of particles 0.3 µm nominal at 30 L/min flow

MEASURING DEVICES

The PB 980 utilizes a solid-state differential pressure transducer for pressure measurements, a hot film anemometer for flow and volume, and a galvanic cell for oxygen. All sensors are positioned at the inspiratory and expiratory modules.

Oxygen Sensor Life: Up to one year; operating life varies depending on oxygen usage and ambient temperature

PNEUMATIC SPECIFICATIONS

Oxygen and Air Inlet Supplies: Pressure: 241 to 600 kPa (35 psi to 87 psi); Flow: Maximum of 200 L/min.

Gas Mixing System: Up to 80 L/min for pediatric circuit type; Up to 150 L/min for adult patients.; Additional flow is available (peak flow to 200 L/min) for compliance compensation.

Maximum Limited Pressure (PLIM max): Limits circuit pressure to < 125 cmH2O (123 hPa) at the patient wye.

Maximum Working Pressure (PW max): PW max is ensured by the high-pressure limit when PI is 90

cmH2O (88.26 hPa)

PARAMETERS

Modes: Assist Control (A/C), Synchronized Intermittent Mandatory Ventilation (SIMV), Spontaneous (SPONT), BiLevel, Continuous PositiveAirway Pressure (CPAP)

Ventilation Type: Invasive and Noninvasive (NIV)

Pressure Support (PSUPP): 0 cmH2O to 70 cmH2O

Rise Time %: 1% to 100%

Expiratory Sensitivity (ESENS): 1% to 80%; 1 L/min to 10 L/min with PAV+

Tidal Volume (VT): 25 mL to 2,500 mL; Resolution: 0.1 mL for values <5 mL; 1 mL for values 5 mL to 100 mL; 5 mL for values 100 mL to 395 mL; 10 mL for values =400 mL

Medtronic Puritan Bennett 980

SPECIFICATIONS

Respiratory Rate: 1.0 1/min to 100 1/min; 1.0 1/min to 150 1/min with Puritan Bennett 980 Universal ventilator

Peak Inspiratory Flow (VMAX): 3 L/min to 150 L/min

Plateau Time (TPL): 0.0 to 2.0 seconds

Inspiratory Pressure (PI): 5 to 90 cmH20

Inspiratory Time (TI): 0.2 to 8.0 seconds

I:E Ratio: 1:299 to 149:1

Expiratory time (TE): = 0.20 seconds; Resolution: 0.01 s

Trigger Type: Pressure-triggering (P-TRIG) or flow-triggering (V-TRIG)

Pressure sensitivity (PSENS): 0.1 cmH2O to 20 cmH2O

Flow sensitivity (VSENS): 0.2 L/min to 20 L/min

O2%: 21% to 100%

Positive end-expiratory pressure (PEEP): 0 cmH2O to 45 cmH2O

Disconnect Sensitivity (DSENS): 20% to 95% or Off (when Puritan Bennett™ ventilator with Leak Sync software is disabled); 1 L/min to 65 L/min (when Puritan Bennett ventilator with Leak Sync software is enabled)

Humidification Type: Heat-moisture exchanged (HME), non-heated expiratory tube, heated expiratory tube

Humidifier Volume: 100 mL to 1,000 mL

Patient Circuit Type: Pediatric and adult

RESPIRATORY MANEUVERS

0Negative Inspiratory Force (NIF): = 0 cmH2O to = -50 cmH2O

P0.:1 = -20 cmH2O to 0 cmH2O

Vital capacity (VC): 0 mL to 6,000 mL

BREATH TYPES

Mandatory Breath Types: Volume Control (VC), Pressure Control (PC), and Volume Control Plus (VC+)

Spontaneous Breath Types: Pressure Support (PS), Volume Support (VS), Tube Compensation (TC), and Proportional Assist Ventilation PAV+ software

ADVANCED DISPLAYED PATIENT DATA

% Leak: 0% to 100%

Inspiratory Leak Volume (VLeak): 0 mL to 9,000 mL

Leak: 0 L/min to 200 L/min

Spontaneous Rapid Shallow Breathing Index (f/VT): 0.1 1/min-L to 600 1/min-L

Dynamic Resistance (RDYN): 0 cmH2O/L/s to 100 cmH2O/L/s

Dynamic Compliance (CDYN): 0 mL/cmH2O to 200 mL/cmH2O

Inspiratory Compliance (C20/C): 0 to 1.00

APNEA PARAMETERS

Apnea settings on the PB 980 include Peak Inspiratory Flow (3-150 L/min), Tidal Volume (25-2,500 mL), and adjustable respiratory rates from 2 to 40 1/min. Oxygen percentage (21%-100%) and inspiratory times (0.2 to 8 seconds) can be set to respond to patient needs, with both PC and VC mandatory breath types available during apnea.