

## Hospital and Transport for Controlled Breathing



**When transporting a** critically ill patient you need a ventilator that can go anywhere in any situation. Smiths Medical Pneupac® small portable gas powered ventilators are easy to use and a dependable alternative to large or complex ICU ventilators. Pneupac® ventilators are MR compatible, with an alarm option specifically designed for patient transports and noisy environments. These ventilators take the guess work out of providing respiratory support, and provide you with the feedback you need to make life-saving decisions.

For more information visit [smiths-medical.com/pneupac](http://smiths-medical.com/pneupac) or [smiths-medical.com/bci](http://smiths-medical.com/bci).

Pneupac™

BCI™

# Portable Gas Powered Ventilators

Transport ventilators must provide a level of ventilatory support comparable with larger ventilators, but must also offer the flexibility to be moved with the patient for the length of the planned transport. This may be a few yards away in the same hospital, or a considerable distance by road or air.

**For controlled breathing** of patients on the move, transport ventilators provide a reliable and cost-effective solution. Continued improvements to the design, while keeping the simplicity and reliability of operation, have made the devices invaluable in all areas of clinical practice.

## Standard Features

**Adjustable pneumatic pressure relief with audible alarm**  
Adjustable range to accommodate all patients.

**Ventilation powered by gas**  
Eliminates the need for electrical connections or battery supply.

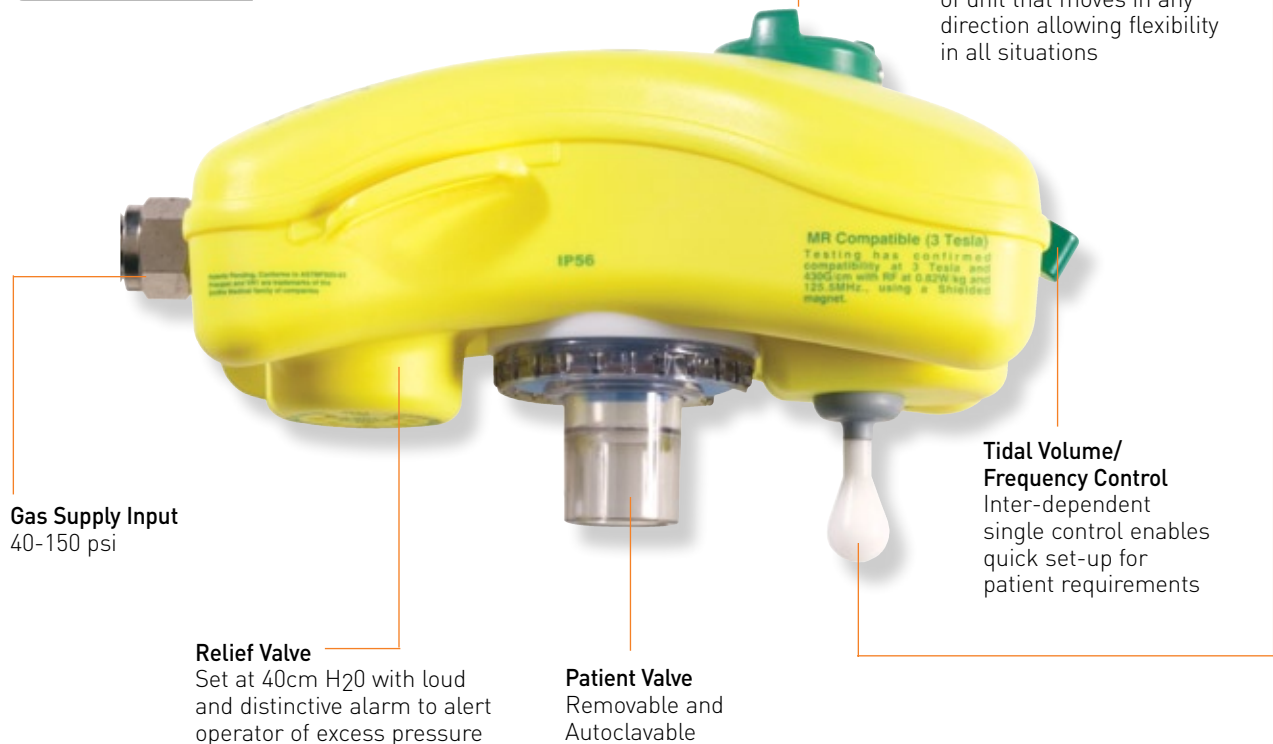
**Lightweight and durable for use in the toughest of situations**  
Drop, vibration and water resistant tested.

**Inflation pressure monitor**  
Provides visualization of ventilator inflation pressure.

## Pneupac® VR1

The VR1 emergency ventilator is a simple, safe, portable ventilator packaged into a lightweight, palm-sized unit. Rapid set-up, ease of use, and key clinical features make the VR1 ideal for managing airway emergencies wherever they occur: in transport situations, industrial or commercial settings, hospitals or remote locations.

- MR compatible
- Optional PEEP capability
- Optional Air Mix feature



## paraPAC with Integrated Alarms

Designed specifically for use by trained emergency personnel, the paraPAC enables greater control of breathing parameters. The dual controls allow easy selection of tidal volume and frequency to match your patient's ventilatory requirements. Suitable for ventilation during CPR and emergency transportation of adults, children and infants.

- MR compatibility gives maximum flexibility for transport within the hospital
- Optional PEEP capability

### Integrated Pressure Monitoring/Alarm System

Incorporating inflation pressure monitor and visual and audible alarms for high pressure, continuous pressure, low pressure/disconnect, low gas supply pressure and other safety features

### Separate Controls for Setting Tidal Volume and Frequency

Ensures easy selection of ventilation breathing parameters

### Adjustable Pressure Relief with Audible Alarm

**Low Gas Supply Indicator**  
Eye-ball indicator changes color as gas supply depletes

**Air Mix (100% or 50% O<sub>2</sub>)**  
Selection of 50% O<sub>2</sub> triples cylinder life

**Click Stop CPR Setting (protected airway)**  
Independent setting allows instant selection of CPR ventilation frequency, in line with the latest ILCOR guidelines (2000)

### Unique SMMV/Demand Function

Ventilation ON: Continuously monitors and automatically responds to your patient's inspiratory efforts  
Ventilation OFF: Allows administration of 100% oxygen therapy



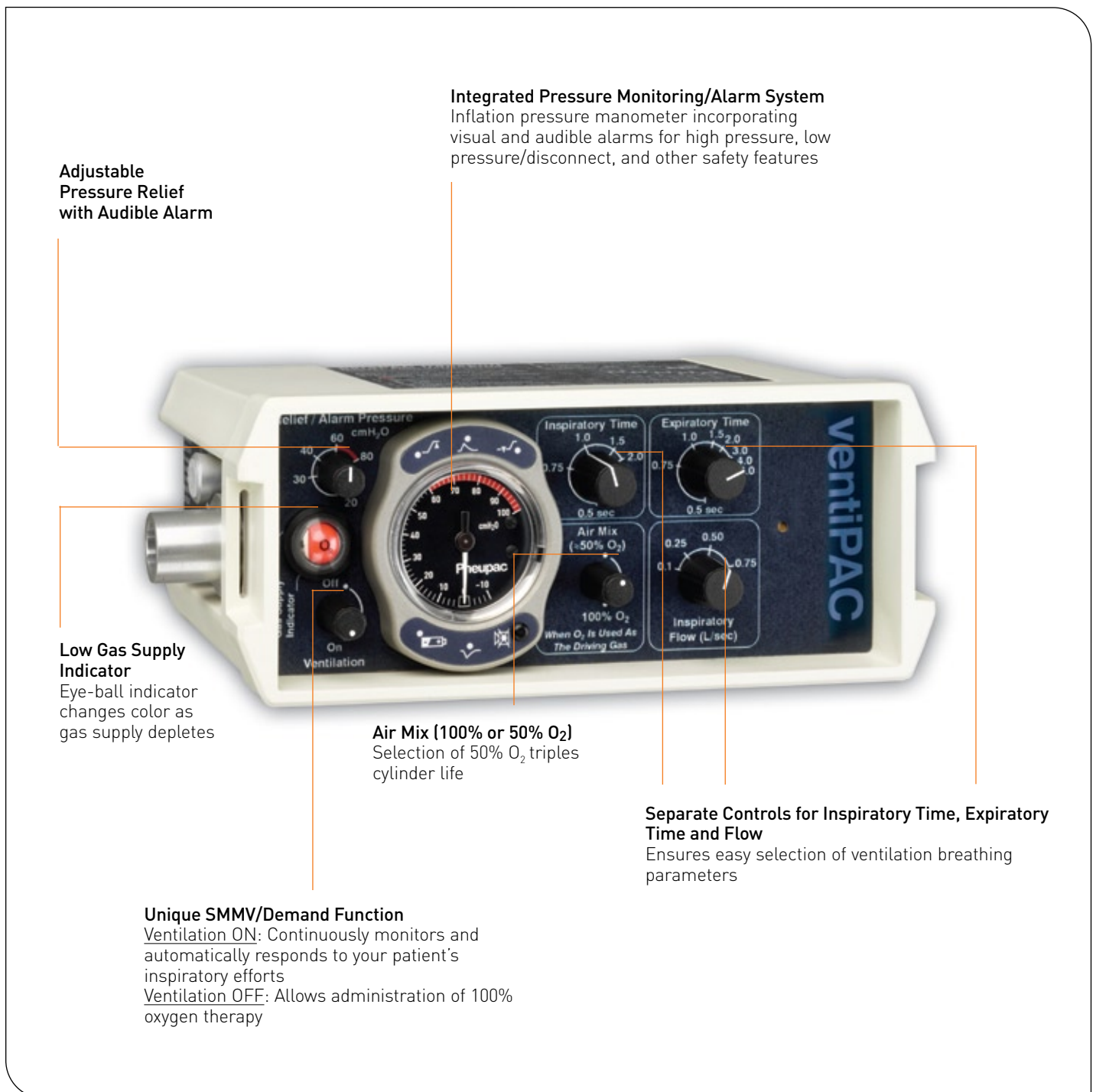
## ventiPAC with Integrated Alarms

In transport ventilation, the patient is usually in a critical but stable condition. The accompanying clinician is tasked to deliver the patient to their destination in the same or better ventilation state. The ventiPAC is portable, compact, light-weight and easy to use in this often difficult situation. It operates reliably and provides alarms and monitoring similar to those found throughout the hospital. The clinician is able to alter the inspiratory and expiratory phases of ventilation to allow for patient comfort, and can also provide essential

ventilatory support options such as positive end expiratory pressure (PEEP).

Covering the widest range of ventilation parameters, the ventiPAC is designed for varied applications ranging from recovery rooms to ICU to inter-and intra-hospital transport.

- MR compatibility gives maximum flexibility for transport within the hospital
- Optional PEEP capability



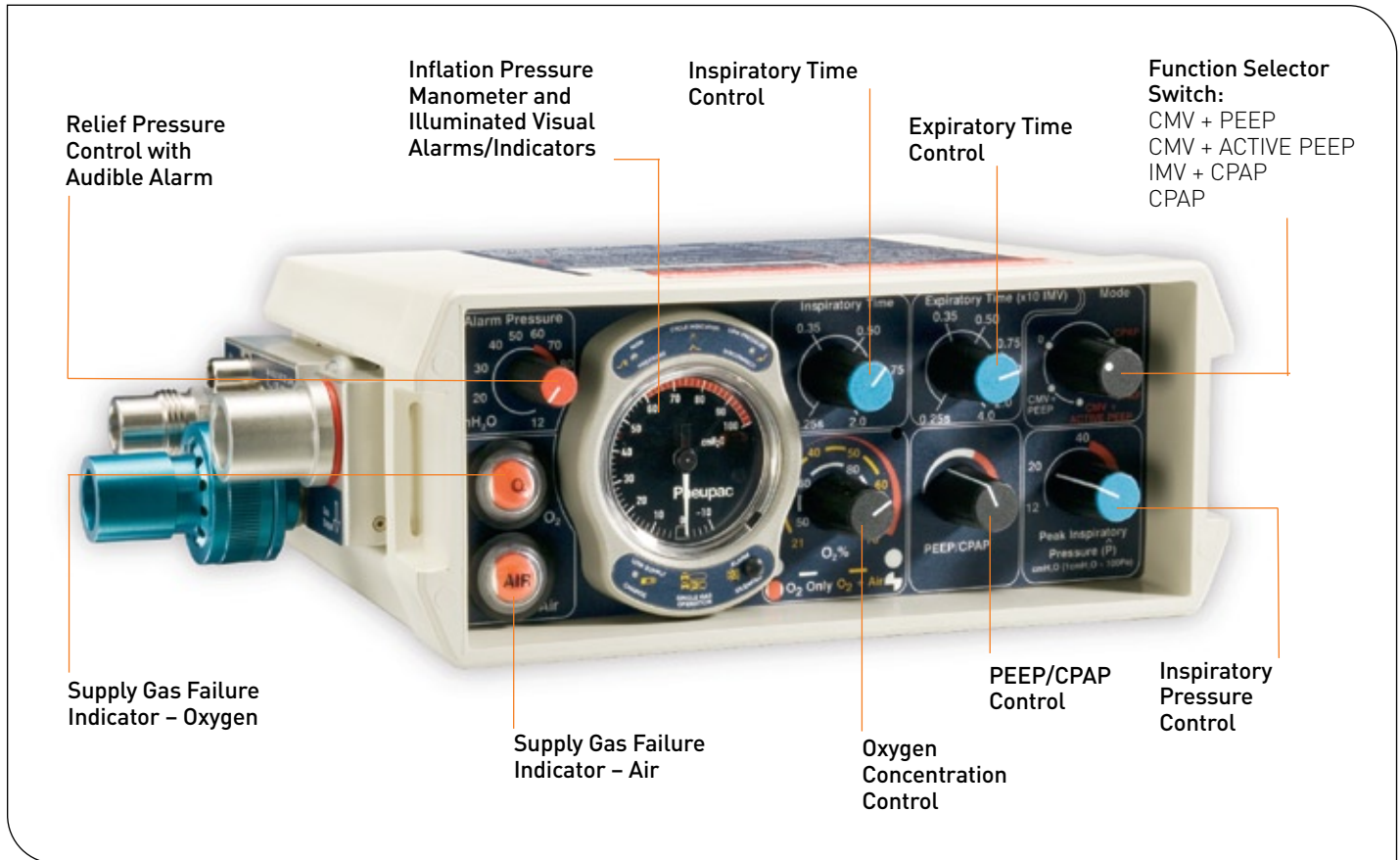
## babyPAC™ with Integrated Alarms

Ventilation for neonates and infants requires a special approach. The ventilator used must be suitable for small, sensitive lungs and should generate a limited pressure to avoid over-inflation and potential harm. The babyPAC™ is designed to provide this type of ventilation rather than to deliver a preset tidal volume, as in the case of most adult PGPVs. This ventilator has a sophisticated range of ventilation controls including CPAP, variable I:E ratio and variable oxygen concentration. The latter is particularly important in the transport of neonates

since high oxygen concentrations over a prolonged period can be harmful.

The special design of the babyPAC™ makes it ideal for delivering ventilation to fragile lungs with precision and confidence, whether in routine care, or in the difficult circumstances of transport ventilation.

- **MR compatibility gives maximum flexibility for transport within the hospital**



## Smiths Medical also provides a solution for monitoring ETCO<sub>2</sub> data through each phase of patient care

### Capnocheck® Capnometer

- Small, portable quantitative capnometer that monitors carbon dioxide concentrations and respiratory rate.
- Fully quantitative mainstream technology accommodates intubated and non-intubated pediatric to adult patients.
- No calibration or warm-up time required and is available with or without alarms.
- Used in conjunction with a Pneupac® ventilator.



## Specifications/Technical Data

	Pneupac® VR1	paraPAC	ventiPAC	babyPAC™
<b>Principle of Operation</b>	Oxygen powered, hand-held control unit with patient valve including automatic and manual modes with demand breathing	Time/Volume Cycled	Time/Volume Cycled	Time Cycled Pressure Generator
<b>User Type</b>	Patients above 10kg with and without spontaneous breathing	Adults, children & infants greater than 11 lbs (5 kg)	Adults, children & infants greater than 11 lbs (5 kg)	Neonates & infants up to 44 lbs (20 kg)
<b>Ventilation Mode</b>	Demand – Auto/Manual	Demand – SMMV/Demand	Demand – SMMV/Demand	CMV+PEEP; CMV+ACTIVE PEEP; IMV+CPAP, CPAP
<b>Tidal Volume</b>	1050 - 150 ml	1300 - 70 ml	1500 - 50 ml	330 - 0 ml
<b>Inspiratory Time</b>	-	-	0.5 - 2.0 secs	0.25 - 2.0 secs
<b>Expiratory Time</b>	-	-	0.6 - 6.0 secs	0.25 - 4.0 secs; IMV 2.5 - 40 secs
<b>Frequency</b>	10 - 25 b/min (12 b/min at click stop)	8 - 40 b/min (12 b/min at click stop)	7 - 60 b/min	10 - 80 b/min (I:E 1:2); 12 - 96 b/min (I:E 1:1.5); 15 - 120 b/min (I:E 1:1)
<b>Flow Range</b>	11 - 32 L/min	6 - 60 L/min	6 - 60 L/min	Preset at 10 L/min
<b>I:E Ratio</b>	1:2	1:3 at 8 b/min to 1:1.3 at 40 b/min	variable over a wide range	variable over a wide range
<b>Air Mix</b>	No	100 or 50% O <sub>2</sub>	100 or 50% O <sub>2</sub>	45 - 100% O <sub>2</sub> oxygen only as supply 21 - 70% O <sub>2</sub> oxygen and air supply
<b>Inspiratory Pressure Control</b>	-	-	-	10 to 70 cm H <sub>2</sub> O (10 to 70 x100 Pa) with click action warning above 40 cm H <sub>2</sub> O
<b>Pressure Relief with Pneumatic Audible Alarm</b>	40 cm H <sub>2</sub> O standard 60 cm H <sub>2</sub> O optional when purchased	20 - 80 cm H <sub>2</sub> O (20 - 80 x 100 Pa)	20 - 80 cm H <sub>2</sub> O (20 - 80 x 100 Pa)	10 - 80 cm H <sub>2</sub> O (10 - 80 x 100 Pa)
<b>Electronic Pressure Monitoring/Alarm System</b>	N/A	Optional	Optional	Optional
<b>Inflation Pressure Monitor</b>	N/A	-10 to +100 cm H <sub>2</sub> O (-10 to +100 (x100) Pa)	-10 to +100 cm H <sub>2</sub> O (-10 to +100 (x100) Pa)	-10 to +100 cm H <sub>2</sub> O (-10 to +100 (x100) Pa)
<b>PEEP Capability</b>	Optional 0 - 20 cm H <sub>2</sub> O (0 - 20 x 100 Pa)	Optional 0 - 20 cm H <sub>2</sub> O (0 - 20 x 100 Pa)	Optional 0 - 20 cm H <sub>2</sub> O (0 - 20 x 100 Pa)	0 - 20 cm H <sub>2</sub> O (0 - 20 x 100 Pa) with click action warning above 10 cm H <sub>2</sub> O
<b>Active PEEP</b>	-	-	-	2/3 - 20 cm H <sub>2</sub> O (2/3 - 20 x 100 Pa) with click action warning above 10 cm H <sub>2</sub> O
<b>MR Compatible</b>	3 Tesla actively shielded magnet with a max gradient of 430 G/cm and RF of 0.82 W/kg at 125.5 Mhz	3 Tesla actively shielded magnet with a max gradient of 430 G/cm and RF of 0.82 W/kg at 125.5 Mhz	3 Tesla actively shielded magnet with a max gradient of 430 G/cm and RF of 0.82 W/kg at 125.5 Mhz	3 Tesla actively shielded magnet with a max gradient of 430 G/cm and RF of 0.82 W/kg at 125.5 Mhz
<b>Dimensions</b>	3.9H x 3.7W x 6.6D in (100H x 95W x 170D mm)	3.7H x 8.7W x 6.4D in (92H x 220W x 162D mm)	3.7H x 8.7W x 6.4D in (92H x 220W x 162D mm)	3.7H x 8.7W x 6.4D in (92H x 220W x 162D mm)
<b>Weight</b>	14.82 ounces 420 grams	6.6 lbs (3.0 kg) without integrated alarms 6.8 lbs (3.1 kg) with integrated alarms	6.6 lbs (3.0 kg) without integrated alarms 6.8 lbs (3.1 kg) with integrated alarms	8.3 lbs (3.75 kg)
<b>Standards</b>	EN60601-1, EN794-3: 1999	EN60601-1, EN794-3: 1999	EN60601-1, EN794-3: 1999	EN60601-1, EN794-3: 1999

Information subject to change without notice. Please read the instructions for use supplied with the product for detailed instructions, warnings and cautions.

For more information, please call Smiths Medical PM, Inc., at 262-542-3100 or 800-558-2345, or your Smiths Medical distributor.

### Smiths Medical PM, Inc.

Patient Monitoring and Ventilation

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