

## Carina®



The compact wonder

### **The new sub-acute ventilator "Carina®"**

Sub-acute care is a rapidly growing medical care service for patients who require diagnostics or invasive procedures, but not intensive procedures required by acute care in an ICU. It merges the sophisticated medical hospital technology and the efficiency of a skilled nursing facility to reduce the cost of services while maintaining the high quality of inpatient care.<sup>1)</sup>

Healthcare professionals around the world have been looking for an affordable, easy-to-use "Sub-acute" ventilator capable of delivering exceptional performance and versatility. At the same time, it needs to be compact enough to easily go where needed and readily adapt to changing patient care requirements. Using its more than a century of ventilation leadership, inspired R&D and ongoing dialogues with customers, Dräger Medical meets your needs with Carina®.

<sup>1)</sup> Neil R. MacIntyre et al,  
CHEST / December, 2005

#### **How you benefit:**

- Quality ventilation
- Application versatility
- Ease of use
- Quiet operation

### **Workflow-enhancing features**

This economical little marvel is loaded with user efficiency features. The intuitive rotary knob interface and well-known three-step operating concept (select/adjust/confirm) can simplify use and help in minimizing training time. Plus, the convenient single-hose system allows you to use the device with confidence. It supports optimum patient safety even in stressful situations.

### **Ultra-quiet blower**

While Carina® delivers all the performance and sophistication most ventilation situations require, it features the marvelous quiet blower. As a result, this uncompromising value offers the tranquil environment for patients and staff.

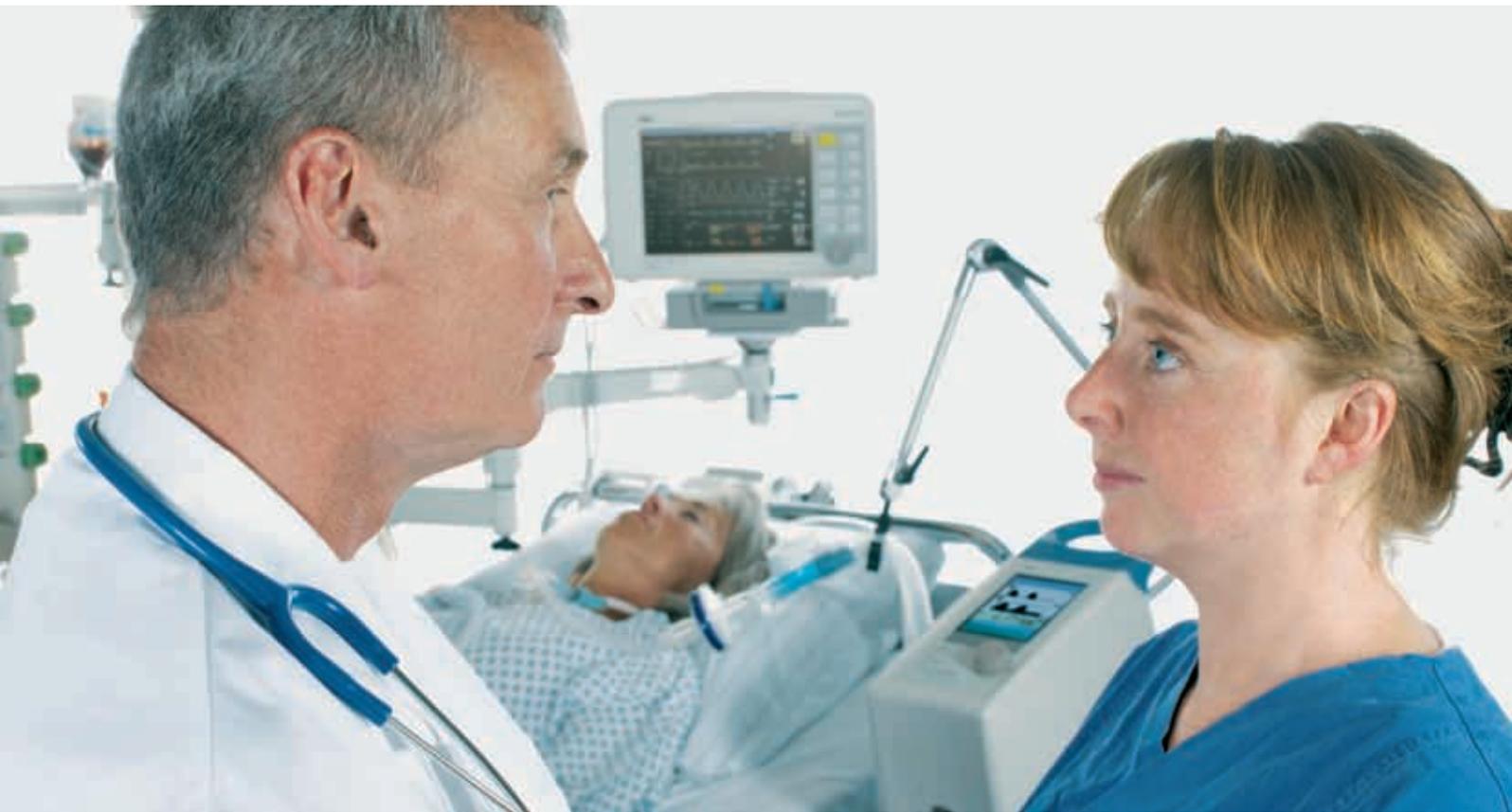


**The compact system  
with simply no compromise**



compact

**There's room to breathe,  
but no room for compromise**



flexible





**Invasive and non-invasive versatility**

Carina® is specially designed to accommodate both invasive and non-invasive ventilation applications. It offers the flexibility and performance needed to help you conveniently address a wide range of ventilation challenges for both adult and pediatric patients. And, it is ideally suited for use in intermediate care units, subacute care facilities and recovery rooms.

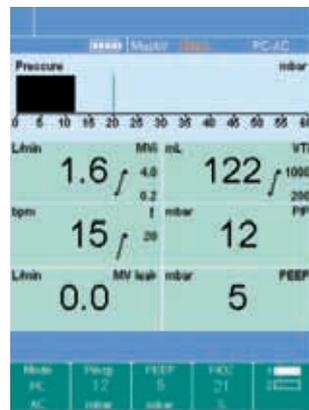
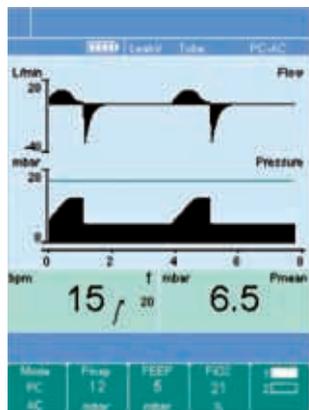


**Flexible oxygen intake capabilities**

Equipped with an integrated blender, Carina® allows the use of oxygen concentrations from 21% to 100%. Where compressed oxygen is unavailable, the low-pressure oxygen inlet (LPO) enables Carina® to be connected to an oxygen concentrator or liquid oxygen cylinders for added application versatility.

**Internal and external battery back-up**

Carina's internal battery lasts about one hour, and the external battery option offers eight additional hours of battery life. This independent power supply can maintain proper ventilation in the event of a power outage. No matter what the situation, Carina® is designed to be there for you and your patients.



Easily adapt the color screen to optimize at-a-glance viewing efficiency. View two curves and two parameters or one bar graph and six parameters at the same time.





#### **Nurse Call**

Carina® can be connected to a nurse call system, which is important in areas with a low nurse-to-patient ratio or during shifts where less staff may be on hand.

#### **Rescue Mode**

When it comes to life support, dependability is every bit as important as performance. That's why Dräger Medical includes state-of-the-art reliability functionalities into Carina®. For example, Carina's rescue mode maintains ventilation to the patient without interruption in the event of pressure sensor failure. Yet, it's just one of the many ways Carina® supports uncompromising reliability and peace of mind.

#### **SyncPlus® – High-performance ventilation**

Carina® simplifies dependable, high-performance ventilation. The SyncPlus® function features automatic leakage compensation and automatic termination criteria. As a result, it precisely synchronizes ventilation to the patient's breathing requirements... even in the presence of changing ventilation patterns or mask leakages. Its sophisticated trigger function helps to minimize the work of breathing. And, its automatic ramp adjustment optimizes the inflation pattern to the patient's changing needs for increased comfort during ventilation.

#### **Room to Breathe concept enhances patient comfort**

For more consistent weaning, Dräger Medical's "Room to Breathe" concept has been integrated into Carina®. It features PC-BIPAP/SIMV so the patient can breathe spontaneously. Also, AutoFlow® encourages spontaneous breathing in the volume modes. This combination helps provide patient-tailored ventilation, regardless of ventilation mode. It also makes the "Room to Breathe" concept a high standard of care for patient comfort and efficient weaning.

**Uncompromising reliability  
and patient comfort**



advanced

# Technical data Carina®

Patient range	Adult, pediatric		
<b>Ventilation settings</b>			
Ventilation mode	<ul style="list-style-type: none"> <li>• VC-SIMV AutoFlow</li> <li>• PC-BIPAP</li> <li>• PC-AC</li> <li>• SPN-PS (VG)</li> <li>• SPN-CPAP</li> <li>• Apnea Ventilation</li> </ul>		
<b>Settings</b>			
Tidal volume V <sub>T</sub>	100 to 2000 mL, BTPS*		
PEEP	3 to 20 mbar (cmH <sub>2</sub> O) (Leakage valve) 1 to 20 mbar (cmH <sub>2</sub> O) (Expiration valve)		
Inspiration pressure limit P <sub>max</sub>	5 to 50 mbar (cmH <sub>2</sub> O)		
Inspiration pressure P <sub>insp</sub>	5 to 40 mbar (cmH <sub>2</sub> O) (Leakage valve) 5 to 50 mbar (cmH <sub>2</sub> O) (Expiration valve)		
Pressure support $\Delta$ P <sub>supp</sub>	2 to 40 mbar (cmH <sub>2</sub> O) (Leakage valve) 2 to 50 mbar (cmH <sub>2</sub> O) (Expiration valve) (absolute $\geq$ 5 mbar (cmH <sub>2</sub> O))		
CPAP	3 to 20 mbar (cmH <sub>2</sub> O) (Leakage valve) 1 to 20 mbar (cmH <sub>2</sub> O) (Expiration valve)		
Ventilation frequency f	5 to 50 bpm		
Inspiration time T <sub>i</sub>	0.3 to 8.0 s		
I:E ratio	1:3 to 2:1		
Rise time Ramp	Auto, 0.1 to 2.0 s		
Trigger sensitivity Trigger	normal, sensitive, OFF		
Insp. O <sub>2</sub> -concentration FiO <sub>2</sub>	21 to 100 %		
<b>Measured value displayed</b>			
Inspiratory pressure PIP	0 to 85 mbar (cmH <sub>2</sub> O)		
Pos. end-exp. pressure PEEP	0 to 85 mbar (cmH <sub>2</sub> O)		
Mean airway pressure P <sub>mean</sub>	0 to 85 mbar (cmH <sub>2</sub> O)		
Inspiratory tidal volume VT <sub>i</sub>	0 to 4000 mL, BTPS*		
Ventilation frequency f	0 to 80 bpm		
Minute volume MV <sub>i</sub>	0 to 40 L/min, BTPS*		
Minute volume leakage MV <sub>leak</sub>	0 to 99 L/min, BTPS*		
<b>Curve screen</b>			
Pressure (t)	0 to 80 mbar (cmH <sub>2</sub> O)		
Flow (t)	-160 to + 160 L/min		
<b>Bargraph screen</b>			
Pressure	0 to 60 mbar (cmH <sub>2</sub> O)		
<b>Alarms / settings</b>			
Airway pressure P <sub>aw</sub>	10 to 55 mbar (cmH <sub>2</sub> O)		
Insp. minute volume MV high	2 to 40 L/min		
Insp. minute volume MV low	0.1 to 39 L/min		
Ventilation frequency f high	10 to 50 bpm		
Delay time T <sub>disconn</sub>	Mask	0 to 120 s	
	Tube	0 to 60 s	
Apnea alarm time T <sub>Apn</sub>	5 to 60 s		
<b>Operating data</b>			
Mains power connection	100 to 240 V AC (-20 to 10 %); 50 to 60 Hz; 1.7 to 1.1 A		
Internal battery	60 min		
Gas supply	HPO	O <sub>2</sub> -pressure	270 to 600 kPa
		O <sub>2</sub> -Flow	0 to 120 L/min
	LPO	O <sub>2</sub> -pressure	0-500 hPa
		O <sub>2</sub> -Flow	0 to 10 L/min
Inspiratory parameter setting	T <sub>i</sub> / I:E		
Care method setting	Mask / Tube		
Screen type setting	Curve / Measure		
Diagonal screen size	5.5" TFT color screen		
Night screen setting	LCD Off setting		
Dimension (W x H x D)	Basic unit 175 x 275 x 385 mm (6.89 x 10.83 x 15.16 inches) Trolley 950 x 570 x 670 mm (37.40 x 22.44 x 26.38 inches)		
Weight	Basic unit 5.5 kg (12.13 lbs.) Trolley 11.5 kg (25.35 lbs.)		
Noise level	Max. 40 dBA (at 10 hPa)		
<b>Output outputs</b>			
Digital output	Output and reception via RS232C interface		
Nurse call connection	AMP/Tyco 5-555237-3, 6-pole		
<b>Accessories</b>			
Patient hose system	One hose system with leakage valve One hose system with expiration valve		
External battery	Approx. 8 h		
*BTPS = Body Temperature Pressure Saturated			