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.¹

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®.

¹ Neil R. MacIntyre et al, CHEST / December, 2005

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.

How you benefit:
- Quality ventilation
- Application versatility
- Ease of use
- Quiet operation
The compact system with simply no compromise
There's room to breathe, but no room for compromise
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
Technical data

Carina®

Patient range  Adult, pediatric

Ventilation settings

- VC-SIMV AutoFlow
- PC-BIPAP
- PC-AC
- SPN-PS (VG)
- SPN-CPAP
- Apnea Ventilation

Settings

- Tidal volume $V_t$: 100 to 2000 mL, BTPS*
- PEEP: 3 to 20 mbar (cmH$_2$O) (Leakage valve)
- Inspiration pressure limit $P_{\text{max}}$: 5 to 50 mbar (cmH$_2$O)
- Inspiration pressure $P_{\text{insp}}$: 5 to 40 mbar (cmH$_2$O) (Expiration valve)
- CPAP: 3 to 20 mbar (cmH$_2$O) (Leakage valve)
- Inspiration time $T_i$: 0.3 to 8.0 s
- Ventilation frequency $f$: 5 to 50 bpm
- Inspiration O$_2$-concentration FiO$_2$: 21 to 100 %
- Mean airway pressure $P_{\text{mean}}$: 0 to 85 mbar (cmH$_2$O)
- Inspiratory/expiration gas flow $MV$: 0 to 40 L/min
- Minute volume leakage $MV_{\text{leak}}$: 0 to 99 L/min
- Ventilation frequency $f$: 0 to 80 bpm
- Minute volume leakage $MV_{\text{leak}}$: 0 to 40 L/min, BTPS*
- Minute volume leakage $MV_{\text{leak}}$: 0 to 99 L/min, BTPS*
- Inspiratory tidal volume $VT$: 0 to 4000 mL, BTPS*
- Ventilation frequency $f$: 0 to 80 bpm
- Inspiration O$_2$-concentration FiO$_2$: 21 to 100 %

Curve screen
- Pressure (t) 0 to 80 mbar (cmH$_2$O)
- Flow (t) -160 to +160 L/min

Bargraph screen
- Pressure 0 to 60 mbar (cmH$_2$O)
- Flow (t) -160 to +160 L/min

Alarms / settings
- Airway pressure Paw: 10 to 55 mbar (cmH$_2$O)
- Inspiration minute volume MV high: 2 to 40 L/min
- Inspiration minute volume MV low: 0.1 to 39 L/min
- Inspiration tidal volume VT: 0 to 4000 mL, BTPS*
- Ventilation frequency $f$: 10 to 50 bpm
- Ventilation frequency $f$: 5 to 80 bpm
- Minute volume leakage $MV_{\text{leak}}$: 0 to 40 L/min, BTPS*
- Minute volume leakage $MV_{\text{leak}}$: 0 to 99 L/min, BTPS*
- Inspiratory tidal volume $VT$: 0 to 4000 mL, BTPS*

Operating data
- 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$_2$-pressure: 270 to 600 kPa
  - LPO O$_2$-pressure: 0-500 hPa
  - O$_2$-flow: 0 to 120 L/min
- Internal battery: 60 min
- Internal battery: 60 min
- Inspiratory/expiration gas flow $MV$: 0 to 40 L/min
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Accessories
- 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