Dräger medical
A Dräger and Siemens Company

Primus

Your personal anesthesia assistant

Emergency Care · Perioperative Care · Critical Care · Perinatal Care · Home Care

Because you care

You're part of a complex healthcare environment ...

In an increasingly integrated healthcare environment, your job as an anesthetist is becoming more demanding. The interaction between your anesthesia workplace and the rest of the healthcare environment is growing in complexity. As the cost of medical care becomes a more sensitive issue, our equipment helps you to cut costs. After listening to the needs and wishes of thousands of users all over the world, we were determined to make your workflow more efficient and enhance your role in this integrated healthcare environment.

personal

... Primus helps you play a more effective role

Your growing demands led to Primus - an anesthesia work-station designed not just to offer all round performance but to serve as your personal anesthesia assistant. Primus combines a tried-and-tested design concept with state-of-the-art technology to offer you a workflow oriented anesthesia platform equipped to meet the demands of today's and tomorrow's world.

Optimized workflow
Primus plays an important role in optimizing your anesthesia workflow and reducing process costs, e.g. with features such as the fully automatic self-test. Since no user interaction is required, you are free to get on with other jobs.

Improved monitoring
Designed as a workflow-oriented workstation, Primus not only provides you with invaluable assistance through best-in-class therapy, it also offers you an open-platform architecture enabling it to be entirely integrated into your workflow. You can create your own custom-designed workplace based, for example, by integrating our Infinity Patient Monitoring System™ and information management system. The Pick and Go® transport concept not only offers seamless data monitoring during transport. Fewer monitors are required throughout the patient care process, which saves investment and maintenance costs. And the amount of time needed for staff training is reduced, thanks to the common user interface. A sensible pod-based cable management concept - less cables to the monitor - and the fact that cables only have to be connected once also reduce staff work loads and patient preparation time. Another key benefit is the continuity in patient monitoring and documentation as well as the ease with which data can be collected and retrieved for any patient at any place and time.

Why Primus makes a difference
- More efficient anesthesia workflow
- Time- and money-saving benefits
- Safe long-term investment

support

You care about improving outcome ...

Ventilation to ICU standard

As the proportion of elderly and critical-care patients in OR rises, more is demanded of an anesthesia workstation. Primus has the ventilation technology to care for patients of any age and medical condition. E-Vent® *plus,* Primus' electrically powered high-speed piston ventilator, works with great precision to supply a maximum peak flow comparable with an ICU ventilator - and requires no drive gas! Another outstanding feature, the very short response time, has clear physiological benefits for your patients. In Pressure Mode (PCV), Primus has a number of features that are particularly beneficial for pediatric or critical-care patients. Decelerating flow control and optimum flow in the face of inspiratory obstruction add up to high-quality ventilation of critical-care standard. Primus eliminates the need for an additional ICU ventilator in the OR, even for inhomogeneous lungs.
In synchronized Volume Mode (SIMV), Primus offers benefits such as an adjustable flow trigger that reduces the patient's respiratory work and adjustable PEEP. So with E-Vent® *plus* you can switch smoothly from controlled to spontaneous respiration. In addition, Primus is prepared for assisted spontaneous respiratory modes, e.g. with an optional upgrade package „Advanced Monitoring" or/and „Adanced Ventilaton".

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... we help you provide the best therapy

Innovative user interface
Another noticeable feature is the large, configurable TFT color screen. The intuitive operating concept ensures you can easily keep your eye on what's going on. Your workload is reduced and your workflow optimized by the innovative user interface. Since Primus takes up very little space, your OR range of action is also optimized.

Ease of operation
Although its technical features are so sophisticated, you'll be surprised by how simple Primus is to use. Intelligent design can save time and money in training personnel as well. Thanks to the wide range of operating features common to all Dräger Medical equipment and geared to worldwide industry standards, staff find that once they know how to operate one device from the Dräger family, they can use them all.

How Primus stands out

- Best-in-class ventilation performance - one ventilator for all patients and outstanding outcome
- Electrically powered piston ventilator - no drive gas needed!
- No need for an additional critical-care ventilator in the OR
- Easy to use

formance

You care about patient health ...

Intelligent networkability
Primus enables all ventilation and gas-flow data to be collected and exported to an information management system, facilitating on-going documentation of the anesthesia process. The data link to the Infinity Patient Monitoring System™ brings clear benefits. Infinity has a different approach to patient monitoring, giving you up to 24 hours of continuous patient information from the ER or ICU prior to surgery and a continuous record for post-surgery follow up. Infinity has a different approach to bedside ergonomics and workflow with pod-based cable management. With the use of Infinity Explorer you have the added benefit that all information at the acute point of care is available. Infinity has a different approach to patient transport with the Pick and Go® concept saving time and money in transporting a patient to and from the OR. And Infinity has a different approach to information management, enabling all caregivers to access information on any patient at any place and time. The intelligent difference that is Infinity will bring you measureable benefits.

... we care about your needs

We at Dräger Medical are just as concerned about your needs as you are about caring for your patients. That is why the perfect "personal anesthesia assistant" has so many practical and ergonomically sound features. Its efficient, ergonomic design saves time and helps optimize your anesthesia workflow. The support we provide you through DrägerService and Education & Training also brings clear benefits.

DrägerService
Downtime is the last thing you can afford in today´s high-pressure clinical environment. Medical equipment needs to be operational 24 hours a day, seven days a week. Our answer to this challenge is to provide you with technical service programs for everything from individual devices to complete CareAreas™ - so you can maintain your performance.

Dräger Education & Training
Today, healthcare providers like you have to meet increasing quality standards. One step toward achieving this involves the safe and effective use of medical devices. Our education and training tools help your staff develop knowledge and skills by empowering through learning. Our services include everything from basic device training to management skill courses - so you can make the most of your resources.

How practitioners benefit
- Efficient, ergonomic design to save time and optimize workflow
- Service solutions to maintain performance
- Support through device training and know-how transfer

support

Technical data	Primus
Gas flow control	
Weight	115 kg (without vaporizers or cylinders)
Dimensions (H x W x D)	137 cm x 80 cm x 80 cm
Power	200 W, typical
Operating voltage	100 - 240 V~, 45 - 65 Hz
Integrated power backup	at least 30 minutes, typical 90 minutes. Depending on ventilation mode
Ventilator E-Vent® *plus*	Electrically driven and electronically controlled
Operating Modes	Manual, spontaneous, Volume Mode (IPPV), Pressure Mode (PCV) Optional: Pressure Support (PS) Synchronized volume controlled ventilation (SIMV), optional with PS Synchronized pressure controlled ventilation, optional with PS
Pressure limitation P_{MAX} (in Volume Mode)	(PEEP+10) up to 70 hPa
Pressure limitation P_{INSP} (in Pressure Mode)	(PEEP+5) up to 70 hPa
Trigger	0.3 - 15 L/min
Tidal volume (in Volume Mode)	20 - 1400 mL 10 - 1400 mL (option)
Tidal volume (in Pressure Mode)	10 - 1400 mL
Breathing frequency (freq.)	3 - 80 1/min
Inspiration time (T_{INSP})	0.2 - 6.7 s
Inspiration/Expiration time ratio (I:E)	max. 5:1 to 1:99
Plateau time (T_{IP}:T_{INSP})	0 - 60 %
Inspiratory flow (in Pressure Mode)	max. 150 L/min
PEEP in Volume Mode	0 - 20 hPa (max. P_{MAX} - 10 hPa)
PEEP in Pressure Mode	0 - 20 hPa (max. P_{INSP} - 5 hPa)
Fresh-gas flow	0 and 0.2 - 18 L/min
T_{SLOPE} (in Pressure Mode and Pressure Support)	0 - 2 s
Total system leakage	< 150 mL at 30 hPa (automatic leak test)
O_2 flow control	Sensitive ORC function: at least 25 Vol.% or 200 mL/min for nitrous oxide (N_2O) as carrier gas; O_2 concentration: 21 - 100 Vol.%
O_2 flush	> 35 L/min
O_2 safety flow	0 - 12 L/min
External fresh gas outlet	optional
Monitoring Inspiratory and expiratory concentration of O_2, N_2O, CO_2 as well as anesthetic agents (Halothane, Enflurane, Isoflurane, Sevoflurane, Desflurane); Minute volume (MV) and Tidal volume (V_T); Breathing frequency; Peak pressure, plateau pressure, mean pressure, PEEP; Patient compliance C_{PAT}; Option: Functional oxygen saturation (SpO_2) The following parameters maybe displayed as waveforms: Concentration of CO_2, O_2, as well as anesthetic agents, airway pressure, inspiratory and expiratory flow; Option: Plethysmogram; Bar graph display of volumeter and tidal volume; Virtual flow tubes for O_2, AIR, N_2O; Display of graphical trends and numerical lists of measured values; AutoSet for alarm limits	
Serial interface	3 x RS 232
Protocol	Medibus
Absorber volume	1.5 L

The colors of Primus may differ from the color of the Primus pictures in this brochure

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The quality management system at Dräger Medical AG & Co. KG is certified according to ISO 13485, ISO 9001 and Annex II.3 of Directive 93/42/EEC (Medical devices).

90 49 135 / 09.07-12 / gm-ls-dw / Printed in Germany / Chlorine-free - environmentally compatible / Subject to modifications /