

GE Healthcare



Aisys* CS²

ADVANCED AND SUSTAINABLE
ANAESTHESIA CARE



THE MOST ADVANCED AND SUSTAINABLE CARESTATION* YET

Rising clinical challenges over the past century dictated the need for a new class of anaesthesia delivery system. Escalating medical costs and more acute patients combined with social, political, environmental and economic concerns have put healthcare squarely in the spotlight. Clinicians, hospital administrators and patients are demanding solutions to meet today's healthcare challenges.

GE Healthcare has been driving clinical innovations for more than a century and now we are excited to take the next leap forward. Advancements in digital technology are driving a new era of brilliant machines at GE.

It all comes together in the Aisys CS², the most advanced and sustainable digital anaesthesia Carestation yet.

With Aisys CS², you're planning for the future while protecting your investment.

Aisys CS² incorporates innovative features to help you confidently perform low-flow anaesthesia and reduce both operative costs^{1,2} and greenhouse gas emissions².

Interacting with Aisys CS² is likely to feel very natural thanks to the intuitive user interface and familiarity with CARESCAPE* monitors.

We improved the advanced ventilation and drug delivery capabilities in our Carestation so you can further customize the care you provide to all your patients, even the most complex ones.

We believe advanced technology, seamlessly integrated, can have an impact beyond patient outcomes. Help us have an impact on the world around us as well. See for yourself. The Aisys CS² isn't just another anaesthesia delivery system... and it's not just a Carestation... it's the future!



DIGITAL GAS DELIVERY

DIGITAL VAPORIZATION

Et Control**

DIGITAL VENTILATION

eco FLOW

AIMSReady

PROCEDURES

NEONATAL VENTILATION

FLOW POWER INSIDE





LOW FLOW. HIGH IMPACT.

Concerns around the environmental impact of volatile anaesthetic agents³, along with demands for increased efficiency in health expenditures have led to a renewed interest in promoting low-flow anaesthetic techniques to reduce the quantity of volatile anaesthetic agents used.¹

Aisys CS² has been designed to help you confidently perform low-flow anaesthesia and reduce anaesthetic agent waste. Our comprehensive low-flow toolkit includes:



Et Control, automated target control of volatile anaesthesia. As shown by recent studies, EtC has the potential to **dramatically reduce anaesthetic agent use and costs, clinician workload¹ and the rate of greenhouse gas emissions²** when compared to manual control of gas flow.



ecoFLOW, a clinical decision support tool for enhancement of non-automated low-flow anaesthesia.



The compact **Advanced Breathing System (ABS)**, shown by a recently published study[†] to reach a desired inspired anaesthetic agent concentration **up to 79% faster** than a competitive breathing system.⁴



Pause Gas feature, which simplifies temporary circuit disconnects. One button temporarily stops all gas flows and suspends alarms, agent delivery and ventilation so you can place all your focus on the patient.

[†]Independent prospective study comparing the performance of two breathing systems during neonatal and toddler ventilation using a lung model.

Et Control (EtC)

Et Control helps maintain your patient's end-tidal agent and oxygen settings, regardless of changes in hemodynamic and metabolic status. Two recently published studies^{1,2} and the experience of thousands of clinicians⁵ show that Et Control is:

Vigilant

EtC automates the delivery of anaesthetic agent, fresh gas mix and total flow to deliver consistent set anaesthetic agent levels and **maintain set EtO₂ %** concentration.

Et Control **maintained end-tidal concentration within 10% of the set target for 98% of the total steady state time.**¹

Efficient

Et Control can help reduce anaesthetic and costs throughout the case. A recent study showed that for cases of the same duration, the Et Control group used on **average 40 - 55% less volatile anaesthetics** than the manual control group.¹

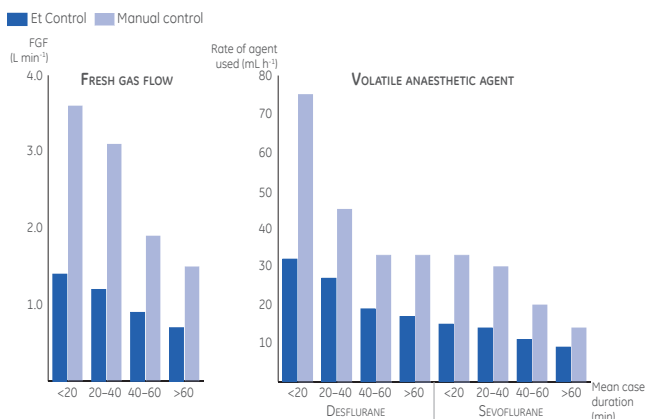
Simple

In clinical tests⁶, a majority of clinicians reported that **Et Control is easier to use** compared with the conventional practice of using fresh gas flow and vaporizer settings. A recent study observed that even for longer cases, Et Control required **52% less keystrokes per case** than manual control.¹

Helpful in decreasing greenhouse emissions

By helping clinicians reduce the waste of anaesthetic agent and fresh gas flow, Et Control may have a positive impact in the environment. A recent publication indicated that the use of Et Control was associated with a **44% decrease in the rate of greenhouse gas emissions** compared with manual control.²

Fresh gas flow and liquid volatile anaesthetic agent usage
Aisys' Et Control vs. Manual control¹



Adapted from Singaravelu, S., & Barclay, P. (2013). Automated control of end-tidal inhalation anaesthetic concentration using the GE Aisys Carestation™

ecoFLOW

This tool displays critical information to help you prevent wasteful over-delivery of anaesthetic agent and reduce the risk of hypoxic gas mixtures during low and minimum flow anaesthesia. May help when Et Control is not appropriate or not available.

Benefits of low-flow with ecoFLOW



May help you quickly identify and address issues with FiO₂ levels



May help you reduce agent cost per procedure



May help you reduce volatile agent waste

UNCOMPROMISED CARE WITH A DIGITAL TOUCH

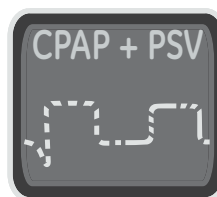
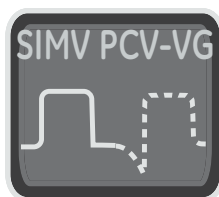
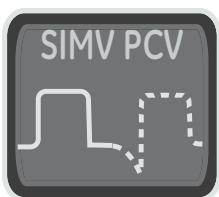
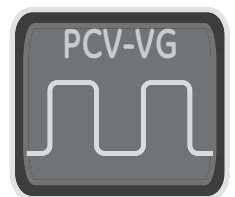
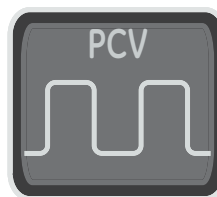
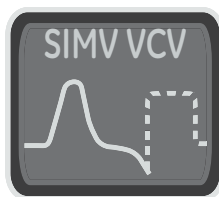
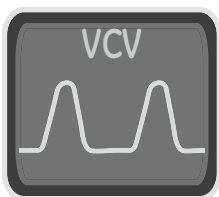
You don't compromise. We don't either. That's why we built into Aisys CS² highly sophisticated ventilation, monitoring and drug delivery technology that you can rely on when caring for your patients.

Our customers honor us with their trust because they know that our Carestations adapt to the needs of their patients within milliseconds: our ICU-inspired ventilator quickly achieves and maintains set pressures.

The therapy delivered to patients precisely matches the treatment decisions thanks to the digitally controlled flow valves technology.

Our customers know they can rely on the information displayed, which is actually continuously measured —not estimated.

The new Aisys CS² offers a variety of advanced tools that you can use to deliver advanced and customized care to your patients, sustainably. Because of its modular and upgradeable design, Aisys CS², like the Aisys Carestation, is always ready to incorporate the latest technological advances, so you can be confident in delivering up to date care, beyond today.





Supporting your tiniest patients

The digitally controlled flow valves, a technology that is found inside GE's Engström* Carestation as well as other leading premium critical care ventilators, enable Aisys CS²'s ICU-level ventilator to quickly achieve and maintain set pressures and volumes to maximize the time available for gas exchange. This helps you ventilate the most difficult patients, from neonates, to the lung compromised to the morbidly obese.

- Delivers tidal volumes as low as 5mL in PCV mode.⁷
- Precision volume and pressure delivery to the patient Y-piece, breath by breath, help reduce the challenges in managing neonatal and pediatric patients.
- Circuit Compliance Compensation ensures that what you set is what you get, precisely showing what is delivered to the patient and taking into account volume in the patient circuit.
- Monitors and responds to changes in the patient's airway pressure or respiratory efforts up to 250 times per second.

Lung procedures

Aisys CS² arms you with resources to configure automated lung ventilation manoeuvres. These programmable steps can enhance your ventilation techniques allowing for increasing and decreasing PEEP levels during mechanical ventilation.



Vital Capacity procedure

- Automates the manual bag "squeeze and hold."
- PEEP at the end of the procedure can be programmed in advance to help sustain an open lung.^{8, 9}



Cycling procedure

- Allows you to configure a lung ventilation manoeuvre.
- Programmable steps allow for increasing and decreasing PEEP levels during mechanical ventilation.



Compliance trending

- Aisys CS² displays compliance measurements in real time to help you assess the effectiveness of automated lung procedures.



ELEGANTLY SIMPLE

Aisys CS² represents the convergence of our premium anaesthesia and patient monitoring heritage. GE monitoring and information management are seamlessly integrated through a modern user interface similar to that found in GE's CARESCAPE* monitors. With time-saving quick pick choices, flat menus and tunneling alarms, the Aisys CS² can help you deliver precise care with a personal touch every day.

The advanced digital features built into the Aisys CS² were designed to work together to make your workflow easier. Each piece of hardware, software and technology fits together in harmony to elevate your Carestation to become the information hub of the operating suite.

To help reduce alarm fatigue and avoid false alarms during mechanical ventilation, Aisys CS² features Auto Alarm Limits software to help clinicians manage CO₂ limit alarms and MV/TV alarms limits on a case by case basis.

Also included is a mechanism to apply upper and lower limits for MV, TV, RR and EtCO₂.

The limits are calculated using a pre-defined formula based on the current measured values for these parameters during an individual case for tailored patient care.



Quick Pick Keys



Procedures



Alarms Setup



Ventilation Modes

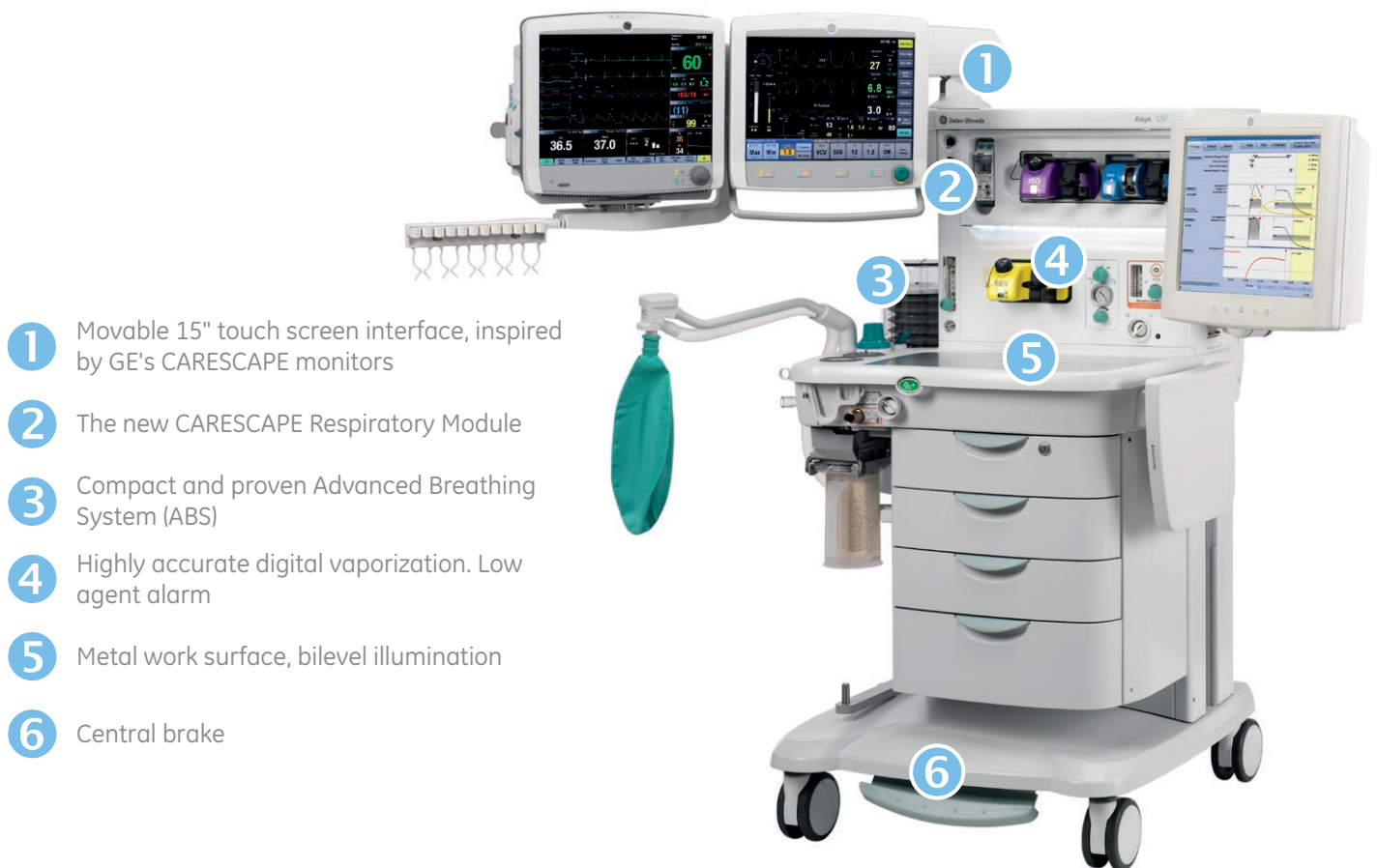
Smart User Interface

Thanks to the new user-configurable 'Quick Picks', fresh gas flow, oxygen, anaesthetic agent and ventilator modes can be often adjusted in less than three seconds.

The modern design helps users visualize important data even when menus are open thanks to

- open and set operations
- moving through tabs avoid pages overlapping
- flexible configuration of patient profiles and monitoring pages
- anaesthesia core tasks grouped in specific menus

THE DIGITAL REVOLUTION CONTINUES



- 1 Movable 15" touch screen interface, inspired by GE's CARESCAPE monitors
- 2 The new CARESCAPE Respiratory Module
- 3 Compact and proven Advanced Breathing System (ABS)
- 4 Highly accurate digital vaporization. Low agent alarm
- 5 Metal work surface, bilevel illumination
- 6 Central brake



Safety in numbers

From Thomas Edison's first commercially viable light bulb to our first fully digital anaesthesia Carestation, we've continued to redefine what's possible. Today, we provide anaesthesia technologies in nearly every country in the world, collaborating closely with clinicians like you to impact the lives of your patients.

OVER
100
YEARS IN
ANAESTHESIA

OVER
100
CURRENTLY ACTIVE
PATENTS¹⁰

OVER
10,000
Aisys UNITS SOLD
WORLDWIDE¹¹

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5. Estimated based on the number of anesthesia machine with preinstalled EtC capabilities and EtC upgrade kits shipped since 2010, based on GE shipping data.
6. Per DOC0668882 GE Healthcare 2009 clinical trials at Helsinki University and Kiel University.
7. Per DOC0933949 GE benchmark study. Actual results may vary and are dependent on the patient.
8. Tusman, G., Bohm, S. H., Tempa, A., Melkun, F., Garcia, E., Turchetto, E., . . . Lachmann, B. (2003). Effects of recruitment maneuver on atelectasis in anesthetized children. *Anesthesiology*, 98(1), 14-22.
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10. As of May 2012, active GE Healthcare anesthesia and respiratory patents issued in the United States.
11. As of September of 2013, based on GE shipping data.

About GE Healthcare

GE Healthcare provides transformational medical technologies and services to meet the demand for increased access, enhanced quality and more affordable healthcare around the world. GE (NYSE: GE) works on things that matter - great people and technologies taking on tough challenges. From medical imaging, software & IT, patient monitoring and diagnostics to drug discovery, biopharmaceutical manufacturing technologies and performance improvement solutions, GE Healthcare helps medical professionals deliver great healthcare to their patients.

GE Healthcare

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GE imagination at work

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**Aisys CS² and Et Control ('Et Control', 'EtC') are not available in all markets.

**Not for sale in the US. Not cleared by the US FDA..

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