GE

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 challenges head-on with the flexibility to adapt to an uncertain future.

GE Healthcare has been driving clinical innovations for more than a century... and 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 emissions[2]. 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.

Interacting with Aisys CS² is likely to feel very natural thanks to the intuitive user interface and numerous familiar platform components from our original Aisys Carestation and our CARESCAPE* monitors . These elements provide reassurance - from a trusted brand known worldwide for its reliability.

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!


60
36.5
37.0
32
6.8
37

Low flow. High impact.

In the past few years, the World Health Organization has been referring to climate change as the defining issue for health systems in the 21st century[3], but ironically the health care industry itself is a leading emitter, accounting for 8% of total carbon dioxide emissions in the United States alone.[4]

Concerns around the environmental impact of volatile anaesthetic agents[5], 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 workload**[1] **and the rate of greenhouse gas emissions**[2] 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.[6]
- **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 is an optional gas delivery previously released for Aisys and also available for Aisys CS[2]. It 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 clinicians[7] show that Et Control is:

Vigilant

EtC automates the delivery of anaesthetic agent, fresh gas mix and total flow to deliver consistent anaesthetic agent levels and **maintain EtO_2 at 25%** or higher. In a clinical study, 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]

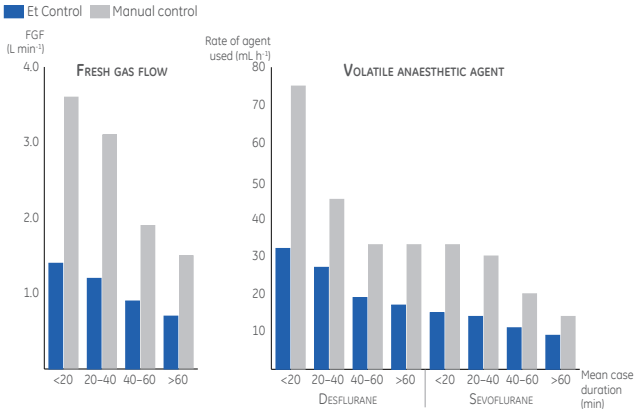
Simple

In clinical tests[8], 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. And 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 control[1]



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 available

Benefits of low-flow with ecoFLOW

- May help you quickly identify and address issues with FiO_2 levels.
- May help you reduce agent cost per procedure
- May help you reduce volatile agent waste.

UNCOMPROMISED CARE WITH A DIGITAL TOUCH

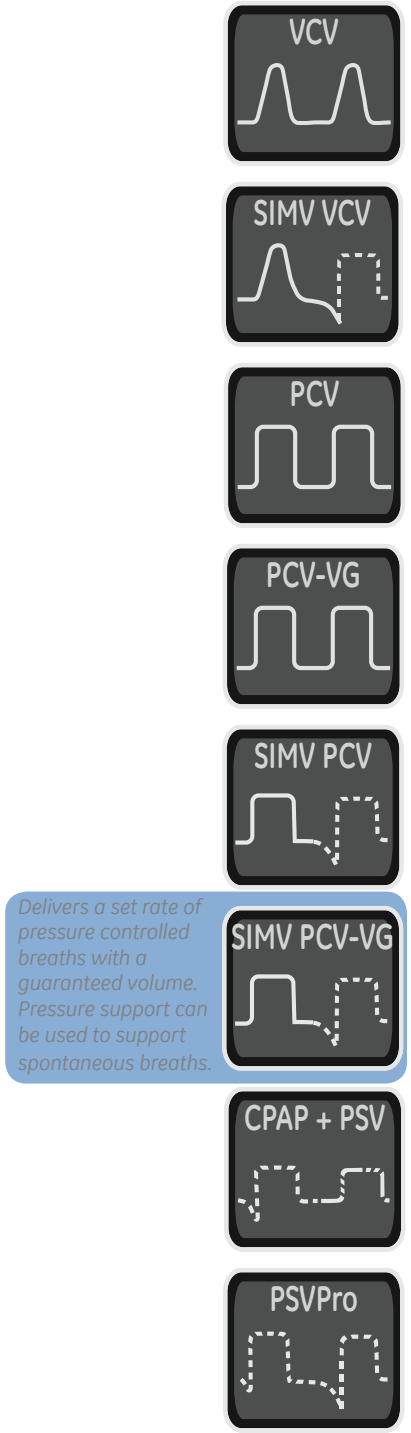
You don't compromise. We don't either. That's why we built into Aisys CS^2 highly sophisticated ventilation, monitoring and drug delivery technology that you can rely on when caring for your patients.

Our customers honor us with their trust because they know that our Carestations adapt to the needs of their patients within milliseconds, that our ICU-inspired ventilator quickly achieves and maintains set pressures, and that the therapy delivered to their patients precisely matches their treatment decisions, thanks to the digitally controlled flow valves of the ventilator and the accuracy of our Aladin$_2$ digital vaporizer, which exceeds published performance specifications of other digital and conventional anesthesia vaporizers.[9]

Our customers know they can rely on the information displayed, which is actually continuously measured —not estimated, and that the data can flow uninterrupted to other systems.

The new Aisys CS^2 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 CS^2, 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.

The revolution in digital care continues. Join us.



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.[10]
- 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 maneuvres. 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.[11,12]

Cycling procedure

- Allows you to configure a lung ventilation maneuvre.
- 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 CS^2 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 CS^2 can help you deliver precise care with a personal touch every day.

The advanced digital features built into the Aisys CS^2 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.

Plus, to help reduce alarm fatigue and avoid false alarms during mechanical ventilation, Aisys CS² features Auto Alarm Limits software to help clinicians manage CO_2 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 $EtCO_2$. 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.

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.

THE DIGITAL REVOLUTION CONTINUES

1. Movable 15" touch screen interface, inspired by GE's CARESCAPE monitors.
2. Advanced ventilation capabilities enhanced with the new CARESCAPE Respiratory Modules.
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 PATENTS[13]

OVER 10,000
Aisys UNITS SOLD WORLDWIDE[14]

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.

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7. Estimated based on the number of anesthesia machine with preinstalled EtC capabilities and EtC upgrade kits shipped since 2010, based on GE shipping data.
8. Per DOC0668882 GE Healthcare 2009 clinical trials at Helsinki University and Kiel University.
9. DOC1426375 GE internal analysis of published industry standards and vaporizer data product performance specifications comparing GE Aladin2 Cassettes to Draeger Vapor 2000 (conventional), FLOW-I (digital), Blease Datum L series Anesthesia Vaporizer (conventional), GE Tec 6 Plus and Tec 7 Vaporizers (conventional). Comparison shows that the Aladin 2 is up to 2 times (200%) as accurate as other vaporizers (Draeger Vapor 2000, Blease Datum, Penlon Sigma Elite) and up to 1.5 times (150%) as accurate as other digital vaporizers (FLOW-I).
10. Per DOC0933949 GE benchmark study. Actual results may vary and are dependent on the patient.
11. Tusman, G., Bohm, S. H., Tempra, 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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13. As of May 2012, active GE Healthcare anesthesia and respiratory patents issued in the United States.
14. As of September of 2013, based on GE shipping data.

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