

AVANOS | CLOSED SUCTION SYSTEMS With BALLARD* Technology

MANIPULATION OF THE VENTILATOR CIRCUIT CAN INCREASE CROSS-CONTAMINATION – A LEADING CAUSE OF VAP¹

- Ventilator-associated pneumonia (VAP) is the most common and deadly healthcare-associated infection, affecting up to 28% of ventilated patients.² To help protect patients, a closed ventilator circuit is recognised as a best practice in the prevention of VAP³
- Maintaining a closed ventilator circuit is recommended by the American Association for Respiratory Care (AARC)³
- A closed circuit maintains ventilation and oxygen therapy throughout suctioning, and prevents approximately 50% of the lung volume fall observed when suctioning after disconnection from the ventilator⁴
- Closed suctioning is a best practice that protects patients and caregivers^{3,5}
 - Reduces the risk for contamination from outside pathogens⁵
 - Reduces colonisation within the circuit⁵
 - Designed to protect caregivers from exposure to body fluids

ADVANCED INFECTION CONTROL THAT SETS A NEW STANDARD IN CLEAN

From the leader in closed suctioning, AVANOS[®] Closed Suction Systems have advanced infection control features that redefine the standard of care for closed suctioning. These unique infection prevention features have been proven to reduce cross-contamination, reducing ICU days and associated costs.⁶ With a solution to meet every patient need, AVANOS[®] Closed Suction Systems are a powerful tool in your fight against this deadly HAI.

"The pathogenesis of VAP...is linked to two separate but related processes: colonisation of the aerodigestive tract with pathogenic bacteria, and aspiration of contaminated secretions."

- Kollef, et al. Respiratory Care, 2005



PROVEN TO PROVIDE AN 89% CLEANER CATHETER TIP.⁷

AVANOS[®] Turbo-Cleaning Closed Suction System, which features BALLARD[®] Technology, is the only catheter that retracts within a unique, isolated and vacuum-sealed turbulent cleaning chamber. The turbulent cleansing action results in an 89% cleaner catheter tip compared to a standard closed suction system.⁷ This reduced colonisation may help reduce risk of VAE in your ventilated patients.

ONE-WAY LAVAGE PORT designed to prevent "sprayback"

HINGED VALVE isolates catheter tip and helps prevent inadvertent lavage

TURBULENT CLEANING CHAMBER creates cleansing action, resulting in a cleaner catheter

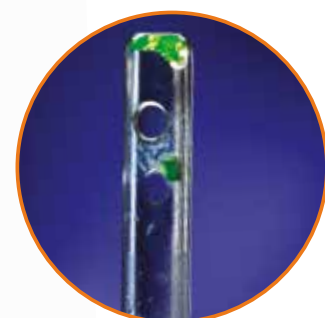
PEEP SEAL helps reduce PEEP loss and inadvertent lavage

INTEGRATED MDI PORT (optional)



**89%
CLEANER**

**AVANOS[®] TURBO-CLEANING
CLOSED SUCTION SYSTEM**
cleaned in the isolated,
turbulent cleaning chamber



**STANDARD CLOSED
SUCTION SYSTEM**
cleaned by usual method
of squeezing saline vial
to dispense

**SEALED BY OUR PATENTED
"PEEP SEAL" TECHNOLOGY,**
the suction and saline produce
turbulent cleansing action,
for a cleaner catheter tip



MULTIPLE ACCESS. MULTIPLE PROCEDURES. ONE CLOSED CIRCUIT.

AVANOS* Multi-Access Port Closed Suction System features a compact rotating manifold that provides multiple ports to access the patient's airway without jeopardising integrity of the closed circuit. And a closed circuit helps you protect your patient from cross-contamination and VAE.



PACKAGE INCLUDES AVANOS* TURBO-CLEANING CLOSED SUCTION SYSTEM CATHETER

Additional replacement catheters available



ROTATING MANIFOLD LOCKS INTO PLACE WITH A CLICK for reassurance that circuit remains sealed

CLINICIANS CAN PERFORM SUCTIONING AND OTHER PROCEDURES SUCH AS BRONCHOALVEOLAR LAVAGE, BRONCHOSCOPY, OR MDI DRUG DELIVERY while maintaining a closed vent circuit as recommended to help prevent VAE

CATHETER LOCKS INTO SEPARATE PORT and stays connected and clean

SINGLE-USE SEAL CASSETTE maintains PEEP during insertion of sampling catheter or other devices

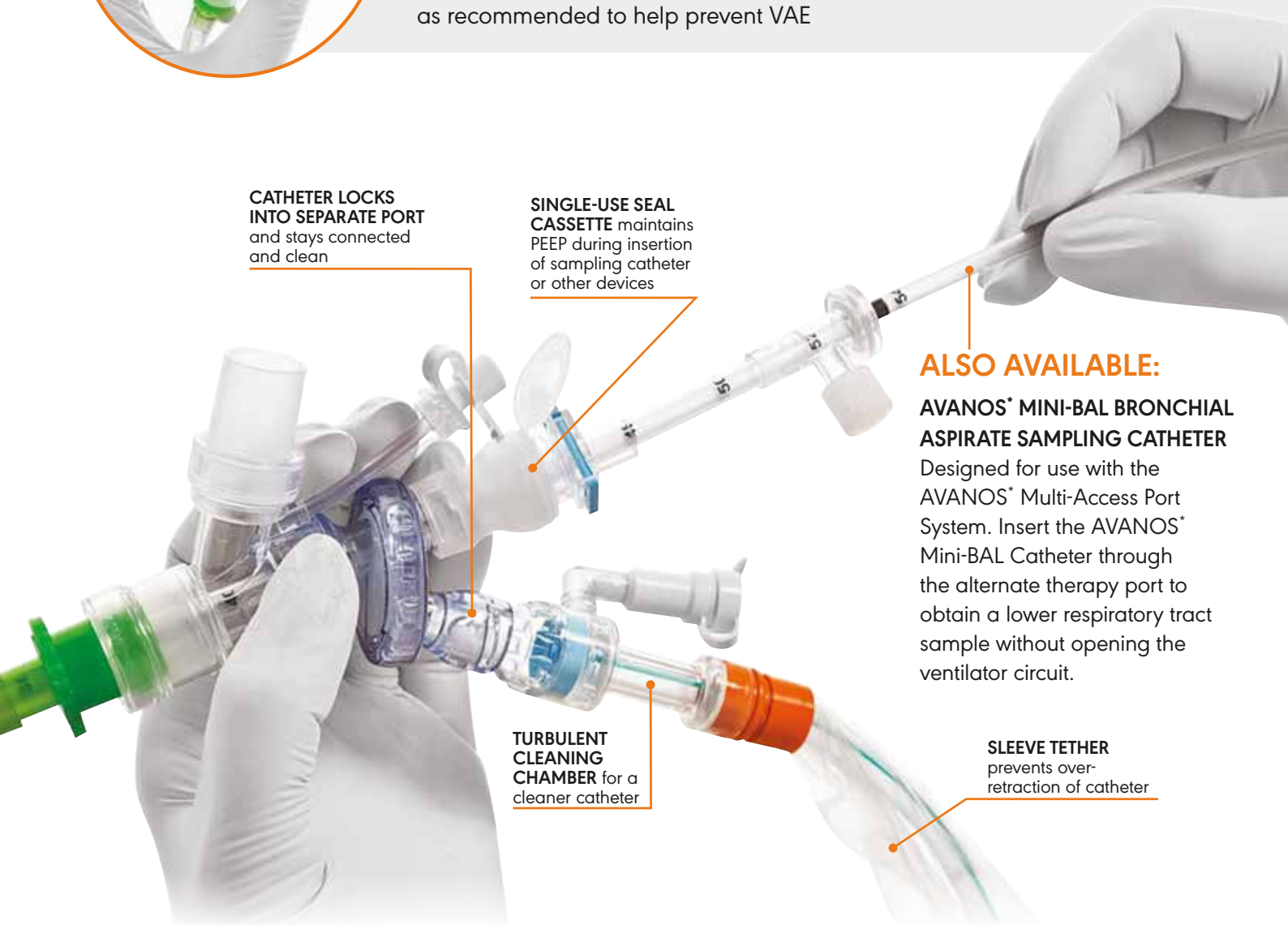
ALSO AVAILABLE:

AVANOS* MINI-BAL BRONCHIAL ASPIRATE SAMPLING CATHETER

Designed for use with the AVANOS* Multi-Access Port System. Insert the AVANOS* Mini-BAL Catheter through the alternate therapy port to obtain a lower respiratory tract sample without opening the ventilator circuit.

TURBULENT CLEANING CHAMBER for a cleaner catheter

SLEEVE TETHER prevents over-retraction of catheter



As a global leader in VAE prevention, Avanos offers a comprehensive range of products, education, in-service training, and compliance programs to assist you as you develop your best-practice protocol that can help protect your patients from VAE.

AVANOS* VAE SOLUTIONS:

- Closed Suction Systems
- Bronchial Aspirate Sampling Catheter
- Endotracheal Tubes
- Oral Care Solutions

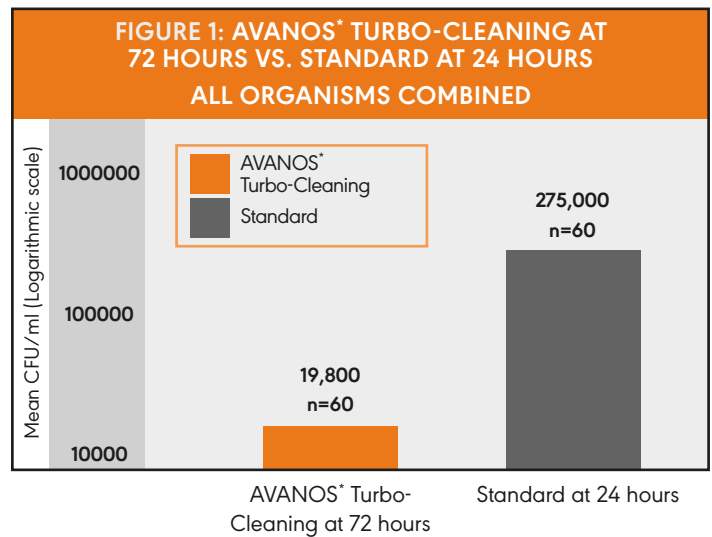


FIGURE 1: AVANOS* Turbo-Cleaning Closed Suction Systems, at 72 hours, show over an (89%) reduction in mean catheter tip colonisation compared to the control catheters at 24 hours ($p < 0.001$)⁷

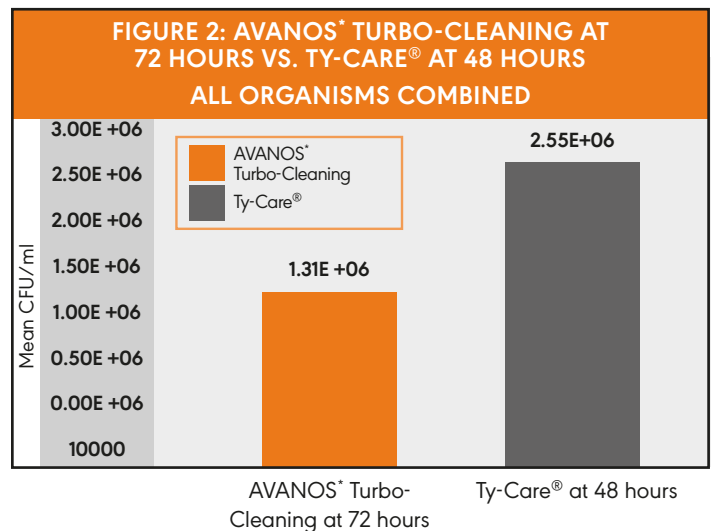


FIGURE 2: Turbo-Cleaning Closed Suction Systems at 72 hours show a (50%) reduction in mean catheter tip colonisation compared to the control Ty-Care® catheters at 48 hours.⁸

References 1. Guidelines For Preventing Healthcare Associated Pneumonia, 2003, CDC Centers For Disease Control. 2. Chastre J, Fagon J. Ventilator-Associated Pneumonia, Crit Care Med, 2002; 165:867-903. 3. Hess DR, Kallstrom TJ, Mottram CD, Myers TR, Sorenson HM, Vines DL; American Association for Respiratory Care. Care of the ventilator circuit and its relation to ventilator-associated pneumonia. Respir Care. 2003 Sep;48(9):869-79. 4. Maggiore SM, Lellouche F, Pigeot J, Taille S, Deye N, Durrmeyer X, Richard JC, Mancebo J, Lemaire F, Brochard L. Prevention of endotracheal suctioning-induced alveolar derecruitment in acute lung injury. Am J Respir Crit Care Med. 2003 May 1;167(9):1215-24. 5. Freytag CC, Thies FL, Konig W, Welte T. Infection, Clinical and Epidemiological Society, 31-2003-No. 1. 6. Kollef, MH, Prentice D, Shapiro SD, Fraser VJ, Silver P, Trovillion E, Weillitz P, Von Harz B, St. John R., Mechanical Ventilation with or without Daily Changes of In-Line Suction Catheters, Am J Respir Crit Care Med., Volume 156, Number 2, August 1997, 466-472. 7. Compared to Ballard TrachCare® 24-hour closed suction systems. Ballard® Critical Care Products Trach Care® 72 Microbiology Report, Nelson Laboratories Final Reports, Laboratory Numbers 18343, 163901.1. 8. Compared to Ty-Care® Catheter at 48 hours. Trach Care® 72 versus Ty-Care® Microbiology Report Sales Sheet.

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