



BD TIVA Administration Sets





Intuitive design for optimal patient care



A positive alternative

Maintenance of anaesthesia using total intravenous anaesthesia (TIVA) with target-controlled infusion (TCI) is well-established in clinical practice and has several potential advantages over inhaled volatile anaesthesia.¹

Benefits of TIVA over inhaled volatile anaesthesia ^{1,2}

- +1  Improved neuromonitoring during surgery
- +2  Reduced post-operative nausea and vomiting (PONV)
- +3  Rapid and smooth recovery profile
- +4  Improved overall quality of recovery, for example reduced post-surgical pain

Environmentally-aware healthcare

Anaesthesia contributes significantly to healthcare's substantial environmental impact through greenhouse gas emissions – TIVA could help to reduce this impact.^{3,4*}

**4X
LOWER**

Greenhouse gas emissions from propofol (the most frequently used TIVA agent) are lower than those from gases used in inhalation anaesthesia^{3,4,5}

**27 MILLION
TONNES**

The annual carbon footprint of the NHS in England in 2018⁶

5%

Proportion of the carbon footprint (CO₂e) of the NHS attributable to exhaled anaesthetic gases³

80%

Reduction in carbon footprint that the NHS has committed to between 2008 and 2050⁵

* TIVA eliminates greenhouse gas emissions associated with volatile agents, but still has an environmental impact through the manufacture, transport and syringe driver delivery of drugs used in the procedure.⁵

Delivering TIVA with confidence

TIVA is indicated where inhaled anaesthesia is not possible or desirable.⁷

Informed by recent guidelines for “*Safe practice of total intravenous anaesthesia*” published by the Association of Anaesthetists of Great Britain and Ireland (AAGBI) and the Society for Intravenous Anaesthesia (SIVA), BD TIVA sets help anaesthetists deliver TIVA confidently in all these situations.

Indications^{5,7,8}



Patient-related

- History of severe PONV
- Frequent repeated anaesthesia
- Difficult intubation/extubation
- Malignant hyperthermia
- Contra-indications to neuromuscular blockers
- Patient choice



Surgery-related

- Airway surgery
- Neurosurgery
- Surgery requiring neurophysiological monitoring

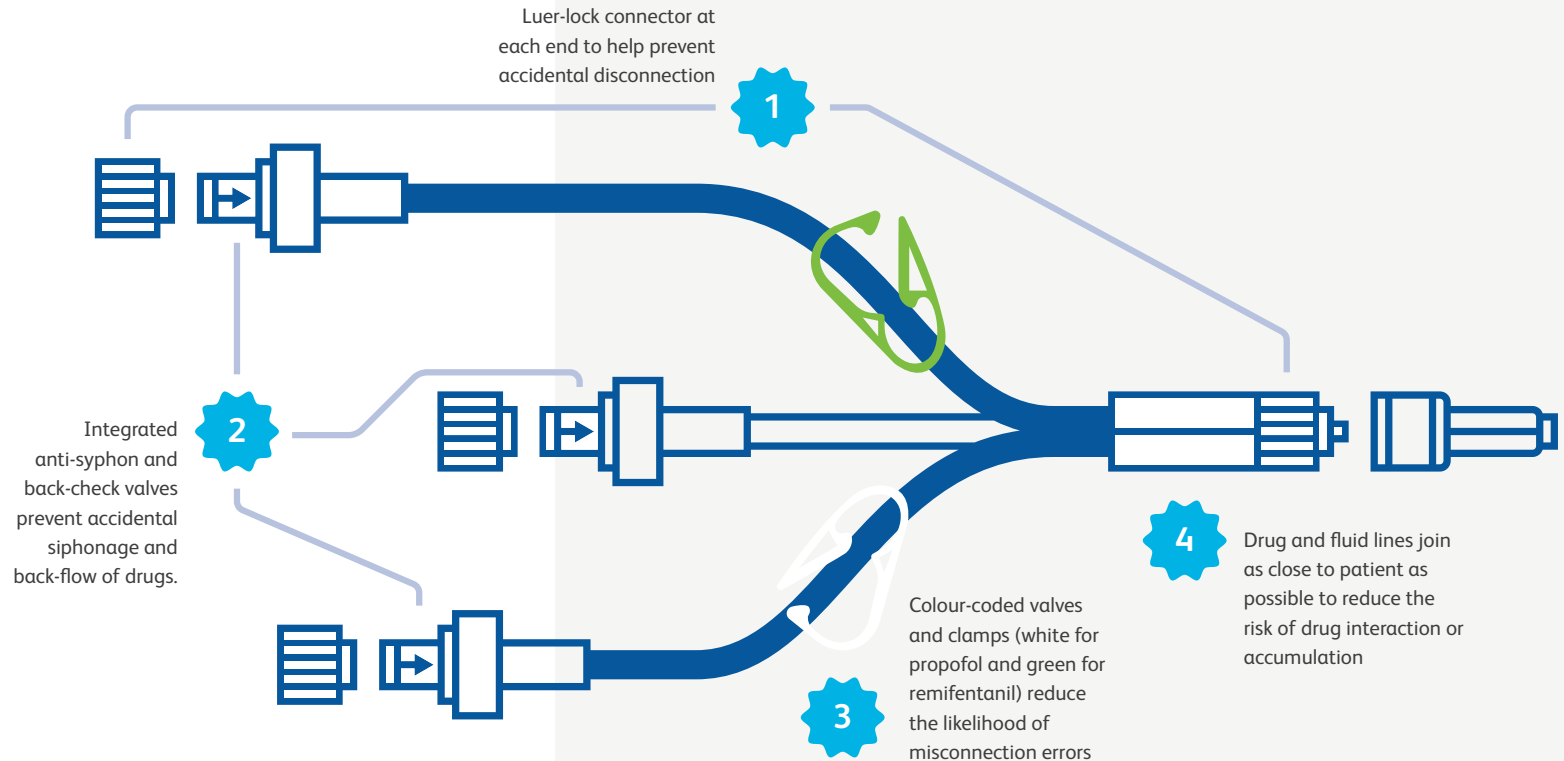


Other factors

- Anaesthesia in non-theatre environments
- Transfer of an anaesthetised patient
- Environmental concerns

Optimising patient care

Designed specifically for use in TIVA,⁷ BD TIVA sets aim to promote patient safety while being easy to use and helping clinicians deliver optimal care.



BD TIVA sets also offer:

Kink-resistant polyurethane tubing avoiding line occlusions

Complete closed system reducing risk of infection (no self-assembly/separate parts)

Easy access for additional emergency drugs, including an integrated connection route for a gravity infusion line or fluid bolus

Diagram 1: BD TIVA set

BD TIVA sets comply with joint AAGBI/SIVA safe practice recommendations⁷

Driving clinical efficiencies

As well as promoting the highest standards of care, BD TIVA sets may also help drive efficiencies across treatment areas and scenarios.



Standardisation

Standard practice and consistency for ease of use



Ready to use

Each standardised set is ready to use meaning minimal preparation is required by the operating department practitioner



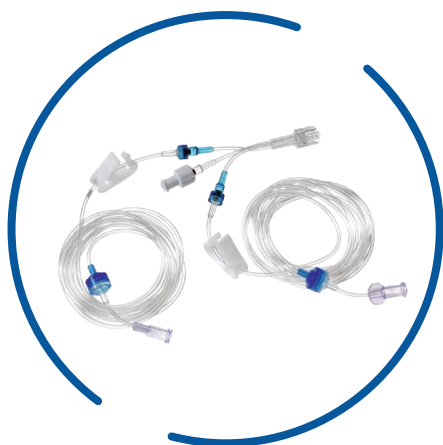
Avoiding drug wastage

Standardisation and reduction in priming volume from PE-lined tubing prevents sorption and leaching of phthalates into the fluid pathway

Intuitive design for optimal care

Detachable TIVA sets

Reference	Length (cm)	Luer lock	Back check valve	Anti-syphon valve	Pinch clamp	2-way	3-way	Tubing material	Units / Box
500-002V	13	Rotating	1	1	✓	✓		PE, EVA and PVC	50
500-012V	215	Rotating	1	1	✓	✓		PE, EVA and PVC	50
500-003V	15	Rotating	1	2	✓		✓	PE, EVA and PVC	50
500-013V	192	Rotating	1	2	✓		✓	PE, EVA and PVC	50



Non-detachable TIVA sets

Reference	Length (cm)	Luer lock	Back check valve	Anti-syphon valve	SmartSite™	Pinch clamp	2-way	3-way	Tubing material	Units / Box
MFX2291	200	Rotating	1	1		1	✓		PVC	50
MFX2290	210	Rotating	3	2		2		✓	PVC	50
MFX2290E	200	Rotating	3	2	2	2		✓	PVC	50

References

1. Wong GTC, Choi SW, Tran DH, Kulkarni H, Irwin MG. An international survey evaluating factors influencing the use of total intravenous anaesthesia. *Anaesth Intensive Care* 2018;46(3):332–338.
2. Johnson KB. Advantages, disadvantages, and risks of TIVA/TCI. In: Absalom A, Mason K, editors. *Total intravenous anaesthesia and target controlled infusions*. Cham: Springer; 2017. p.621–631.
3. Campbell M, Pierce T. Atmospheric science, anaesthesia, and the environment, *BJA Education*, Volume 15, Issue 4, August 2015, Pages 173–179, <https://doi.org/10.1093/bjaceaccp/mku033>. Accessed 11/09/2020.
4. Sherman J, Le C, Lamers V, Eckelman M. Life cycle greenhouse gas emissions of anesthetic drugs. *Anesth Analg* 2012;114(5): 1086–1090.
5. Shelton CL, McBain SC, Mortimer F, White SM. A new role for anaesthetists in environmentally-sustainable healthcare. *Anaesthesia* 2019;74(9):1091–1094.
6. NHS England. Reducing the use of natural resources in health and social care. 2018. Available from: <https://www.sduhealth.org.uk/policy-strategy/reporting/natural-resource-footprint-2018.aspx> [Accessed 29 Sep 2020].
7. Nimmo A, Absalom A, Bagshaw O, Biswas A, Cook TM, Costello A, et al. Guidelines for the safe practice of total intravenous anaesthesia (TIVA). *Anaesthesia* 2018; 74(2): 211–224.
8. Al-Rifai Z, Mulvey D. Principles of total intravenous anaesthesia: practical aspects of using total intravenous anaesthesia. *BJA Education* 2016;16(8):276–280.

To contact
customer services:



Becton, Dickinson U.K. Limited, 1030 Eskdale Road, Winnersh Triangle, Wokingham, RG41 5TS

Tel: **0800 917 8776**

E-mail: **BDUK_CustomerService@bd.com**

BD, the BD logo and SmartSite are trademarks of Becton Dickinson and Company or its affiliates. © 2021 BD. All rights reserved. (BD-16337, June 2021)
Image is of a model and used for illustrative purposes only

