### With ICU Medical's custom configuration capabilities, you can create MicroCLAVE IV sets that are right for all your clinical applications.

Why settle for stock IV sets when ICU Medical lets you create your own custom configurations for your specific IV therapy needs?

- > T-Connector and catheter extension sets.
- > Bag spikes and vial adapters
- Administration sets >
- Secondary IV sets >
- > IV extension sets
- Blood sets >
- > Stopcocks and manifolds
- IV filter sets
- > IV start kits

When it comes to custom IV sets, if you can draw it, we can build it.

Technical Specifications		Drug Compatibility	
Residual Volume	0.04 mL	Alcohol	Yes
Flow Rate at Gravity	165 mL / minute	Lipids	Yes
Functional Activations	600	Chlorhexidine	Yes
Blood Compatibility	Yes	Chemotherapy	Yes
MRI Compatibility	Yes		
High Pressure Compatibility	10 mL / second		

A complete line of needlefree IV connectors to help you meet your clinical needs.

# **MicroCLAVE**<sup>®</sup> **Neutral Displacement Connectors**

Needlefree technology that is designed to reduce the risk of bacterial contamination and improve patient outcomes.

#### References

1. Jarvis W., MD. Choosing the Best Design for Intravenous Needleless Connectors to Prevent Bloodstream Infections. Infection Control Today, August 2010 http://www.infectioncontroltoday.com articles/2010/07/choosing-the-best-design-for-intravenous-needleless-connectors-to-prevent-bloodstream-infections.aspx. 2. ECRI Institute, Health Devices. Evaluation of Needleless Connectors September 2008, Volume 37, Number 9: 259-286. 3. Ryder M, RN, PhD. Bacterial transfer through needlefree connectors: Comparison of nine different devices. Poster presented at the Annual Society for Healthcare Epidemiology of America (SHEA) conference 2007, Abstract 412. 4. Moore C, RN, MBA, CIC. Maintained Low Rate of Catheter-Related Bloodstream Infections (CR-BSIs) After Discontinual of a Luer Access Device (LAD) At an Academic Medical Center. Poster presented at the annual Association for Professionals in Infection Control and Epidemiology (APIC) Conference 2010, Abstract 4-028. 5. Guideline for the Prevention of Intravascular Catheter-Related Bloodstream Infections, Final Issue Review, May 17, 2010 (http://www.cdd.gov/hicpac/pdf/BSI\_guideline\_IssuesMay17final.pdf). 6. Data on file at ICU Medical. Low Volume Flush Characteristics of Unique Needlefree Connectors M1-1223 Rev. 1. 7. FDA Medical Device Safety Alert, July 28, 2010: Letter to Infection Control Practioners Regarding Positive Displacement Needleless Connectors (http://www.fda.gov/Medical Devices/Safety/AlertsandNotices/ucm220459.htm). 8, Data on file at ICU Medical. Antimicrobial Efficacy of the MicroCLAVE® Connector using silver saturated fluid path elements. M1-1251 Rev. 1.

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ICU Medical, Inc.











### Neutral displacement technology that provides a safe and effective microbial barrier.

The design of your needlefree intravenous (IV) connectors plays a substantial role in your ability to limit hospitalacquired bloodstream infections (HA-BSI).<sup>1</sup> The neutral displacement straight fluid path design, split-septum and minimal deadspace of the MicroCLAVE work together to help minimize blood reflux into the tip of the catheter upon connection or disconnection of the luer.

Not only does the MicroCLAVE provide enhanced patient safety through innovative technology but it has also been proven to provide an effective microbial barrier against bacteria transfer and contamination.2-4

#### Unique features of the MicroCLAVE that may help reduce the risk of bacterial contamination.

- > Split-septum is noted in the CDC draft guidelines as a preferred design feature for connectors.<sup>5</sup>
- > Straight fluid path allows for clearing of blood and blood residual with low flush volumes.<sup>6</sup>
- Minimal deadspace (also referred to as residual volume) of 0.04 mL allows for lower flush volumes.
- Flat smooth swabable surface for ease of disinfection.
- Allows a saline flush option which can eliminate the risk of Heparin Induced Thrombocytopenia (HIT).
- Clamping sequence not required, reducing educational > burden and risk of error.
- > Approved for use with power injectors.

Split-septum a preferred design feature for connectors.7

#### Straight fluid path for clearing

blood and blood residual with low flush volumes.6

Minimal deadspace of 0.04 mL allows for lower flush volumes.



#### **MicroCLAVE® Neutral Displacement Connector**

MicroCLAVE Connector can be used on all peripheral catheters, arterial and central venous catheters for the administration of IV fluids or medication, and can be used to aspirate blood.

#### **Features:**

- > Minimal blood reflux in the catheter tip upon connection or disconnection of a luer.
- > Allows for a saline flush option.
- > No clamping sequence required.

#### Features:

- connector.
- volumes.6

#### No matter which MicroCLAVE you choose, you benefit from the same innovative design features.

Design features common to each of the connectors in the MicroCLAVE line, such as neutral displacement, internal fluid path, and low deadspace may offer protection against bacterial contamination and help improve infection control practices. Each connector is approved for use with a saline flush protocol.

The MicroCLAVE's neutral displacement design may help you address recent concerns raised by the FDA regarding the safety of positive displacement connectors.<sup>7</sup>

## Choose the MicroCLAVE that best meets your needs.



#### MicroCLAVE<sup>®</sup> Clear **Neutral Displacement Connector**

Permits visualizing the fluid path, verifying effective flushing of the patient catheter after use with blood and medications that could leave residual or fluid precipitates after aspiration or infusion.

> Clear housing allows for visualization of the internal fluid path upon flushing the

> Effectively clears blood and blood residual with low flush



### Antimicrobial MicroCLAVE® **Neutral Displacement Connector**

The Antimicrobial MicroCLAVE is a connector that provides enhanced protection to immunocompromised patients who have a greater risk of infection.

#### Features:

- > Ionic silver additive is impregnated in both the split-septum and internal fluid path for a continuous 96-hour use life.
- > Demonstrates microbial efficacy with a 99.99% reduction rate of six common bacteria strains.8

