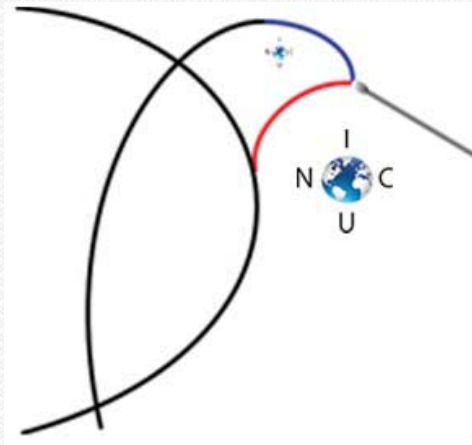


Hummi Micro-Draw Closed Blood Transfer Device

Hummi Micro-Draw Clinical Education Resource Manual

1

Hummi Micro-Draw CLOSED BLOOD TRANSFER DEVICE



Hummi Micro-Draw Blood Transfer Device

2

Design and Clinical Benefits

Clinical Benefits

❖ The Hummi Micro-Draw Blood Transfer Device maintains a Closed System for Blood Draw and Minimizes Blood Exposure for the Caregiver.

- **Reduces blood waste and minimizes infection risk vs. open systems.**
- **Significantly reduces volume of clearance blood required to clear the arterial line after a blood draw vs. current methods.**
- **Significantly reduces flush volume required to clear the line after the blood draw.**
- **Only one access to the line is needed for each time blood is drawn.**

These Clinical Benefits are important to the very low birth weight infant and the fluid restricted patient.

Hummi Micro-Draw Blood Transfer Device

3

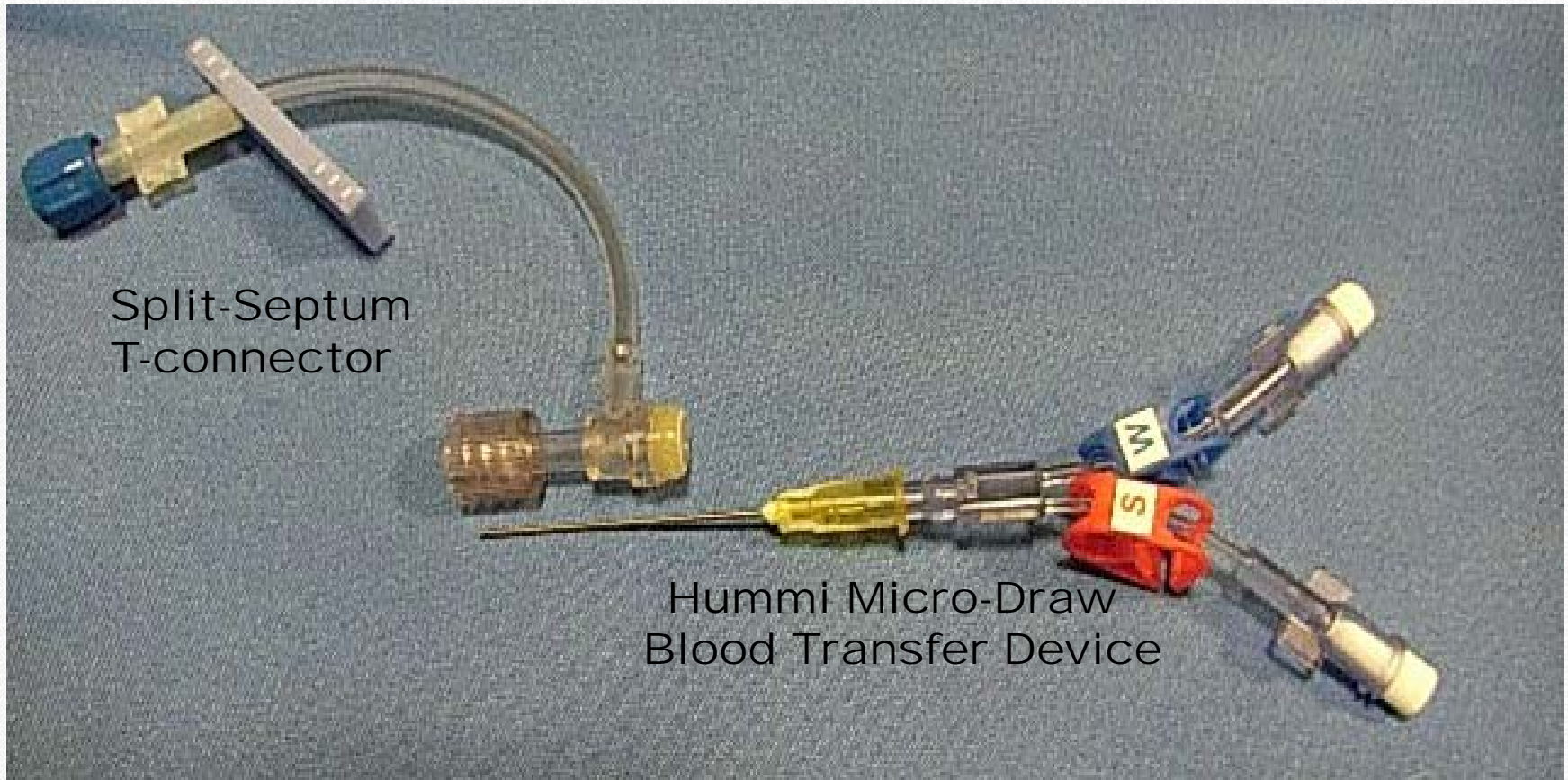
Product Description

The Hummi Micro-Draw Blood Transfer Device consists of a very small diameter Blunt capillary-size transfer tube that is bonded to a Y-Connector with Microbore extension tubes of a specific length attached.

The capillary-size transfer tube and Y-Connector with the microbore tubing and clamps work together as a system to facilitate the transfer of a small volume clean blood sample into a collection device (syringe) attached to one leg of the microbore tubing.

Hummi Micro-Draw Blood Transfer Device and Split-Septum T-Connector Extension Set

4



Split-Septum
T-connector

Hummi Micro-Draw
Blood Transfer Device

Hummi Micro-Draw Blood Transfer Device

Approximate Residual Fluid Volume

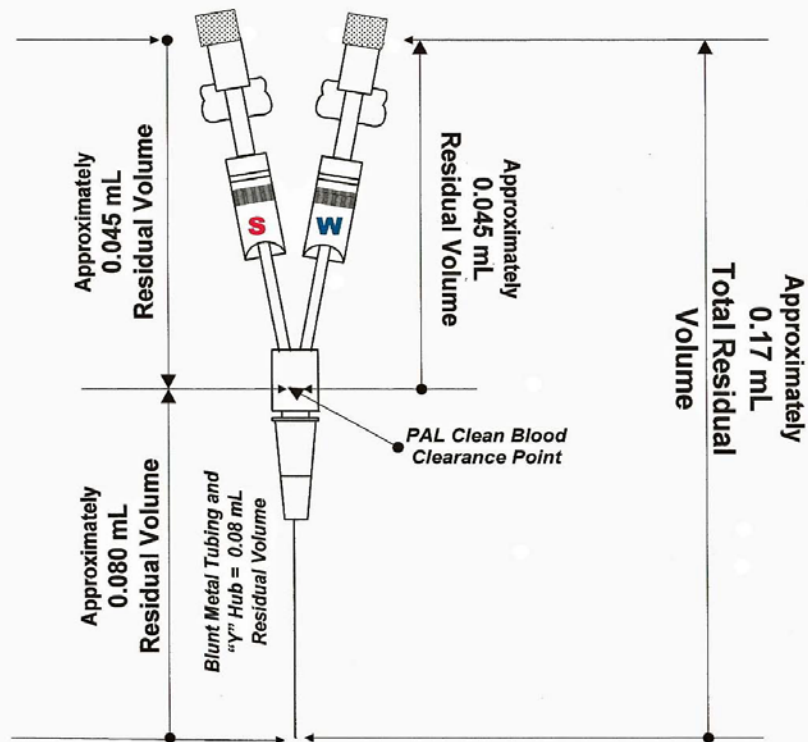
5

Hummi Micro-Draw Blood Transfer Device

Approximate Residual Fluid Volumes

- S** Sample Microbore Tubing Volume – 0.045 mL
- W** Waste Microbore Tubing Volume – 0.045 mL
- Blunt Tubing & “Y” Hub Volume – 0.080 mL

Approximately
0.17 mL
Total Residual
Volume

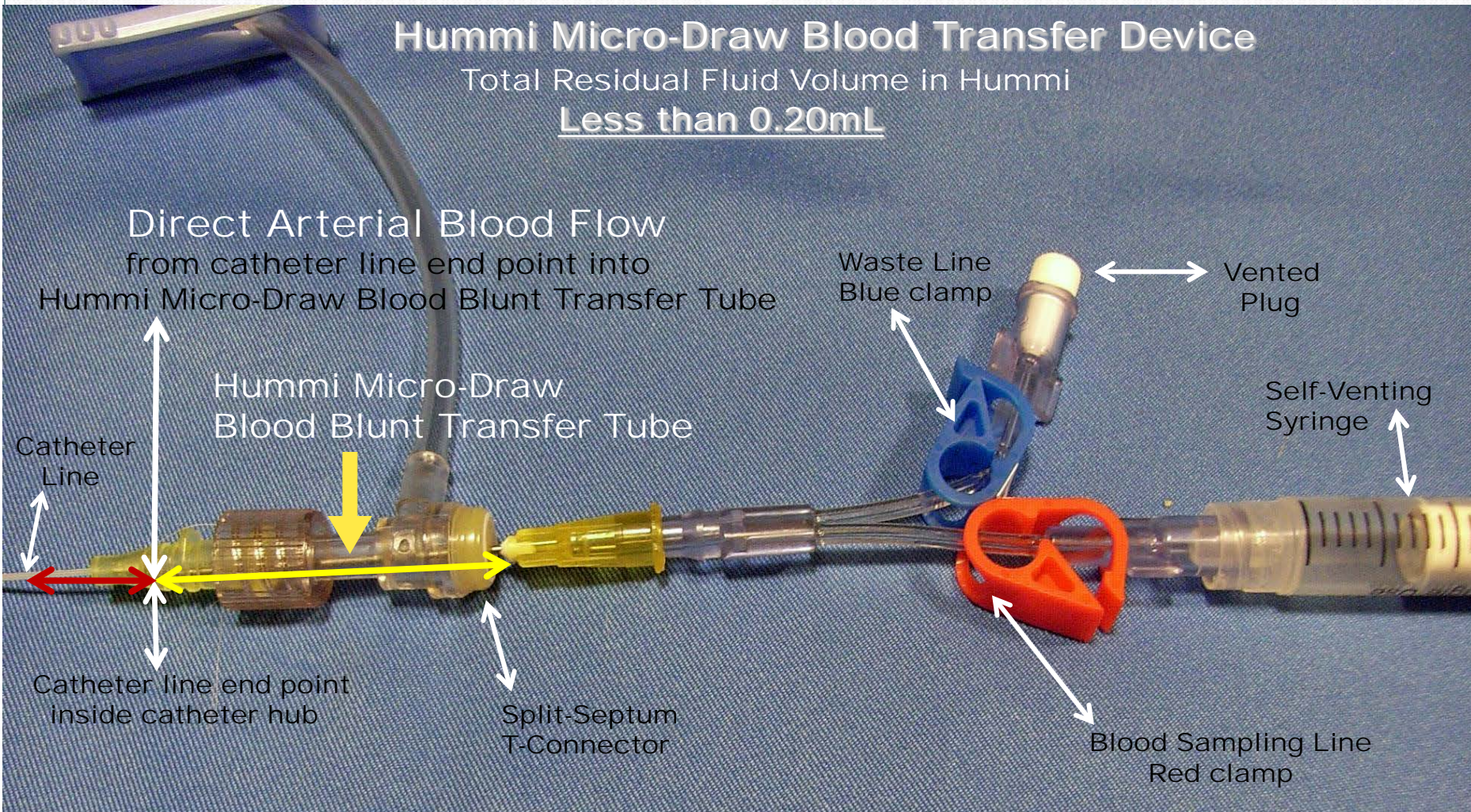


Hummi Micro-Draw Blood Transfer Device and T-Connector Extension Set

6

Hummi Micro-Draw Blood Transfer Device

Total Residual Fluid Volume in Hummi
Less than 0.20mL

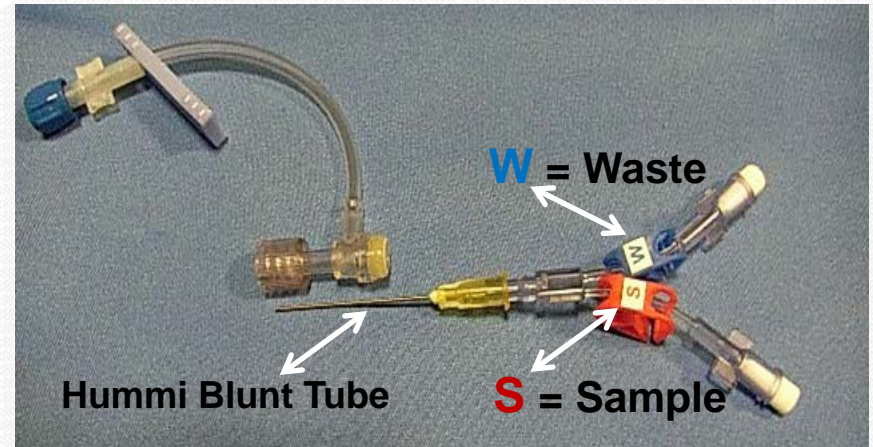


Hummi Micro-Draw Blood Transfer Device and T-Connector Extension Set

7

- The Hummi Micro-Draw Blood Transfer Device has a blunt stainless tube and Y-hub with twin micro-bore tubing extensions.
One (**blue clamp (W)**) extension containing waste clearance blood, and one extension (**red clamp (S)**) for obtaining a blood sample.
- The Hummi Micro-Draw Blood Transfer Device is made for insertion through a Micro-T Split-septum T-connector into the base of an arterial catheter hub, within 1-2mm of the catheter opening in the catheter hub.

NOTE: A stopcock with valve can be added to the UAC Micro-T Split-septum T-connector to be a closed port for the addition of a flush syringe.



Hummi Micro-Draw Blood Transfer Device

Umbilical Arterial Catheter Blood Draw

8

- **To do an Umbilical Arterial Catheter draw,** the Hummi Micro-Draw Blood Transfer Device is inserted into the Micro-T Split-septum T-Connector attached to the UAC hub. The HMD blunt tube rests within 1- 2mm of the catheter opening.
- A clearance waste volume of 0.5mL is drawn with a self-venting syringe or an aspirating syringe from waste line (W).

This clears the umbilical catheter UAC dead space approx. 3x the catheter lumen fluid volume.

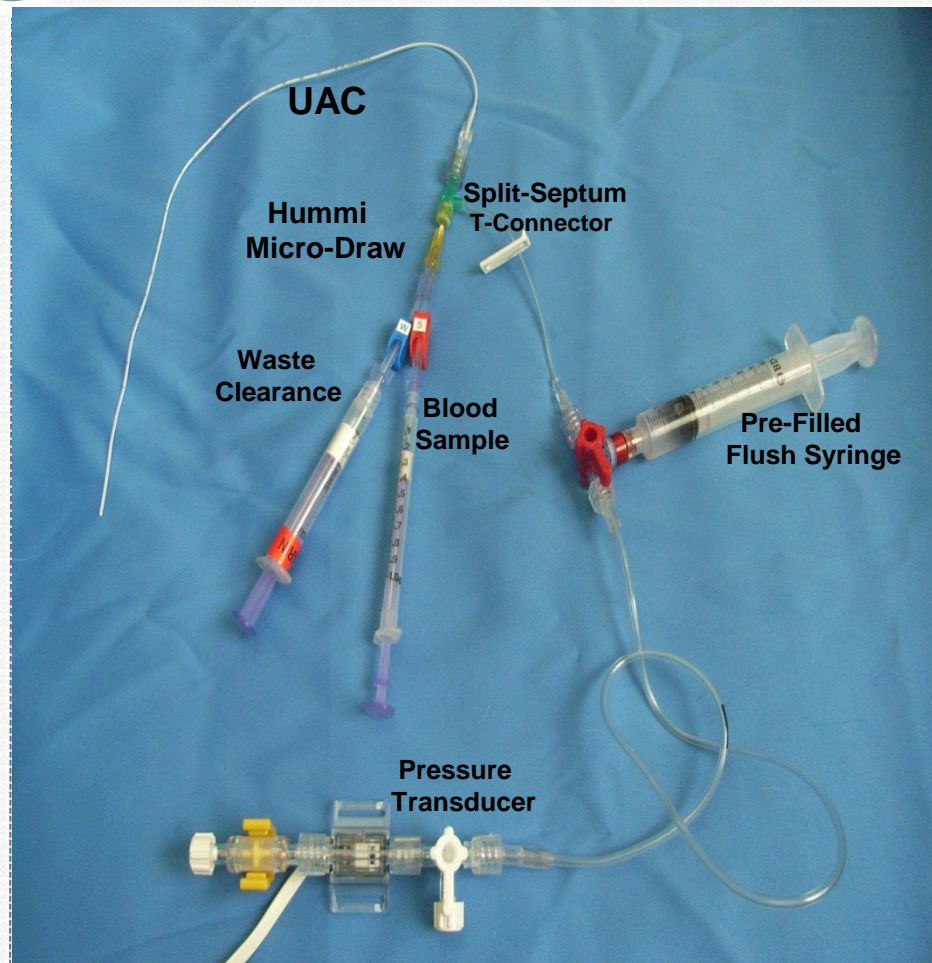
Note: When infusing TPN , Lipids, Glucose a clearance waste volume is increased to a minimum of 0.8mL-1mL. This clears the umbilical catheter dead space approximately 6 times volume.

- The blood sample required is drawn from the other extension line (S) using any type syringe, preferably self-venting.

Aspirating syringes should be used with care due to pressures generated.

- Clamp the sample line (S), remove and cap sample syringe.
- Unclamp waste line (W) and return waste to the patient. Re-clamp line.
- The Hummi set with waste syringe attached is then slowly removed from the Micro-T Split-Septum T-Connector and discarded.

NOTE – The Umbilical catheter should be flushed with a fluid volume of 0.30mL to 0.50mL



Hummi Micro-Draw Blood Transfer Device

Umbilical Arterial Catheter Blood Draw

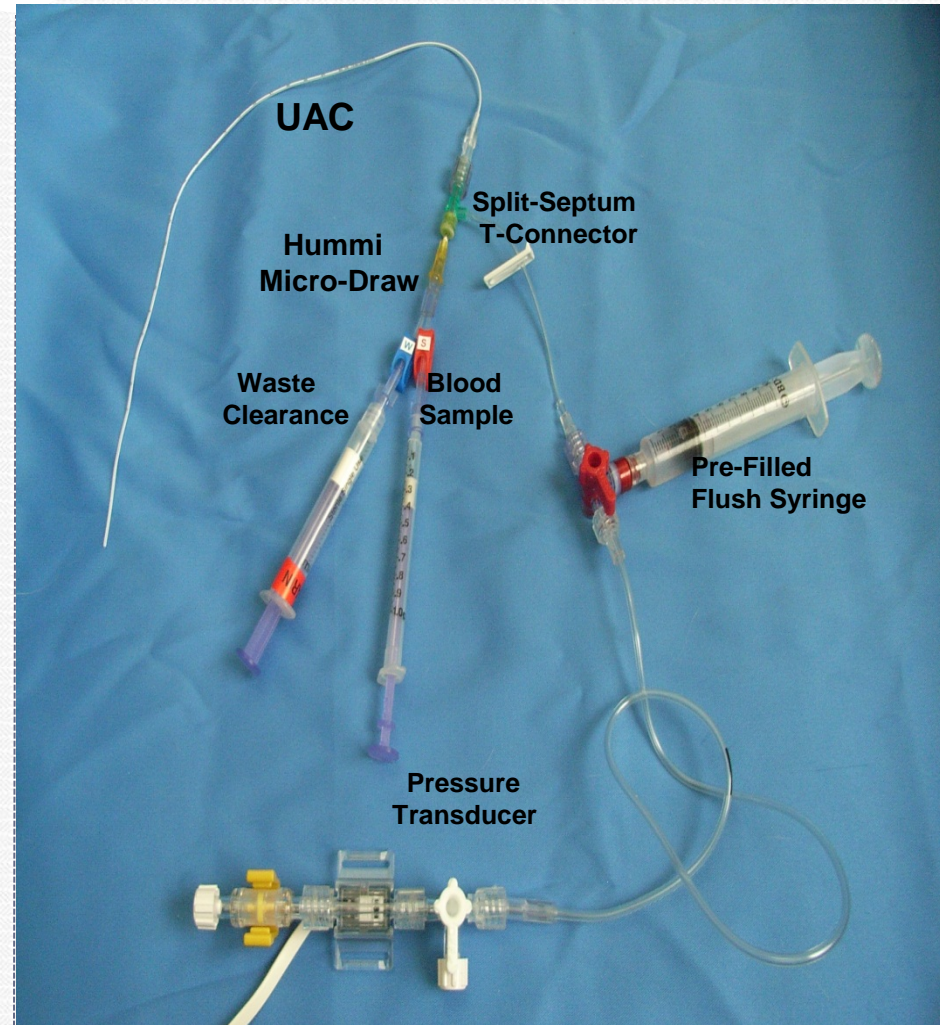
9

- A flush syringe can be attached to the valve port at the end of the T-connector extension set or at the zero port on the transducer.

With only 0.3mL needed to flush, a 3mL or 5mL flush syringe would not need replacement for at least 8 – 15 blood draws. **5mL Syringe**, 1 time per 24 hour period if heparinized. **3mL Syringe**, up to 2 time per 24 hour period if heparinized.

This reduces multiple line access as well as flush volumes given to VLBW Neonates after blood sampling drawing.

- This method significantly *reduces clearance needed for a blood Draw by over 70-75%*, and *reduces flush volume needed to clear a line after a blood draw by 80%* when compared to other systems currently on the market.
- This is accomplished by bypassing existing dead space in the line, T-connector and catheter hub, *thus requiring reduced blood volume movement, lower clearance volumes and lower flush volumes.*
- This is significant when dealing with very low gram birth weight infants where low volume of blood movement and low volumes of flushing are desired.



UAC Clinical Benefits - Hummi

10

Hummi Micro-Draw Capability for Improved Clinical Outcomes

UAC Blood Draw

- **Closed system during line access.**
- **Reduces Blood Clearance 75% and Flush Volumes up to 80% vs Current Methods.**
 - ❖ **Only 1.3mL Total Blood / Fluid Movement Required When Using the Hummi Micro-Draw vs. 4mL-6mL Total Fluid Movement with Current Sampling Methods from Umbilical Arterial Catheters.**
- **Reduces the known Risk Factors for IVH reported with the Current Sampling Methods from Umbilical Arterial Catheters.**
- **No Complex “In-Line Blood Draw System” required. Simplifies line set-up.**
- **Set-up & troubleshooting of complex closed system eliminated.**
- **No impact on wave form or frequency response for arterial line.**
- **No need to draw blood into arterial line for access.**
- **No residual blood in line after blood draw .. Reduced bacterial growth potential in stopcocks, Line Components, etc.**

(continued)

UAC Clinical Benefits - Hummi

11

Hummi Micro-Draw capability for improved Clinical Outcomes

UAC Blood Draw (continued)

- Catheter is accessed through a Micro-T Split-septum T-connector attached directly to a Umbilical Arterial Catheter hub. Only 1 line access per ABG & Lab Values blood draw.
- Single use ... Use only when blood sampling is required.
- Hummi Micro-Draw device is used with Micro-T Split-septum T-Connector on both the UAC and PAL catheters for arterial blood sampling.
- Can be used with aspirating or self-venting syringes. Self-venting preferred.

NOTE:

- * ***If more than 1.0mL of blood needs to be drawn for waste or sampling, an aspirating syringe is recommended.***
- * ***If a Dual Lumen UAC or UVC is used, aspirating syringes are required***

Hummi Micro-Draw Blood Transfer Device

Peripheral Arterial Catheter Blood Draw

12

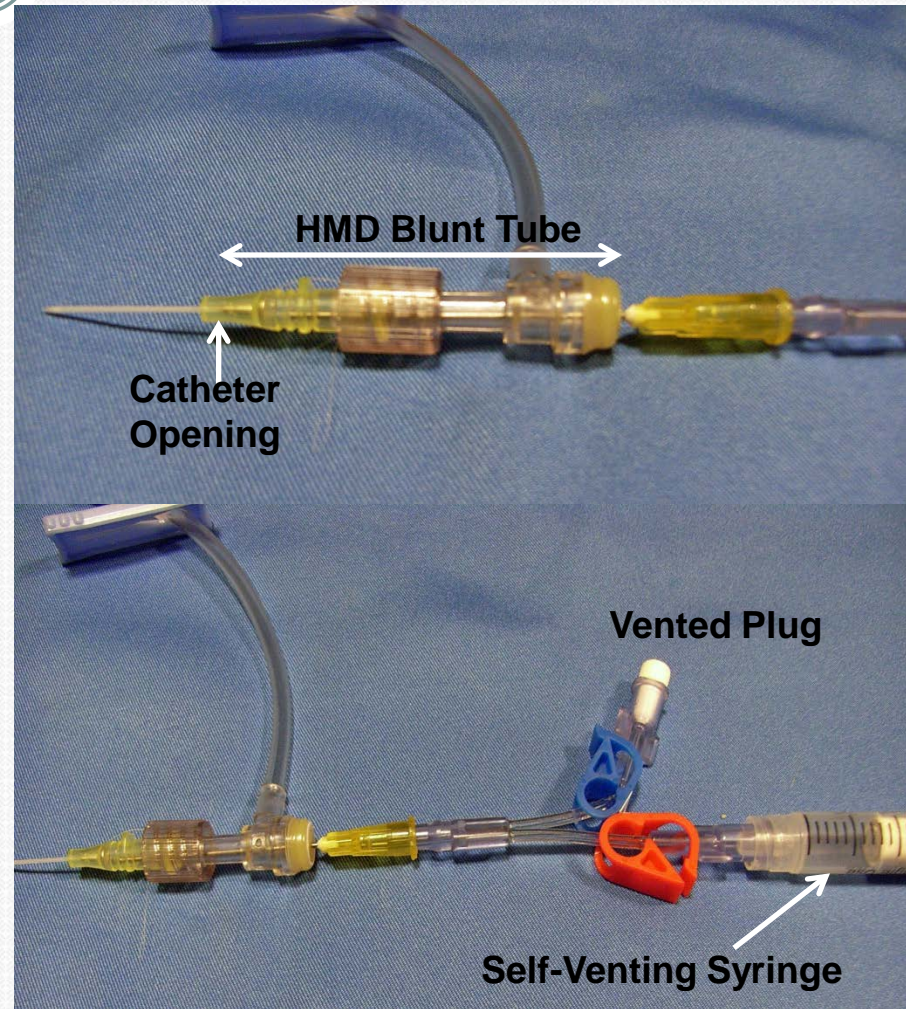
- **During a Peripheral Arterial Line catheter draw (PAL),** the Hummi blunt tube rests approximately 1-2mm from the catheter opening.

This bypasses the dead space in the Micro-T Split-septum T-connector and catheter hub, and allows for a much lower volume of clearance blood.

Blood flow goes directly from the catheter into the Hummi Micro-Draw blunt tube and extension lines.

The **Blue** and **Red** Clamps on the lines direct the flow of blood to desired extension line for clearance or sample.

- One extension line (**Blue Clamp**) on the HMD contains a vented plug, and allows the small amount of clearance blood needed to enter the line and be held in place.
- The second extension line (**Red Clamp**) allows for the attachment of a self-venting syringe to collect the blood needed for sampling.

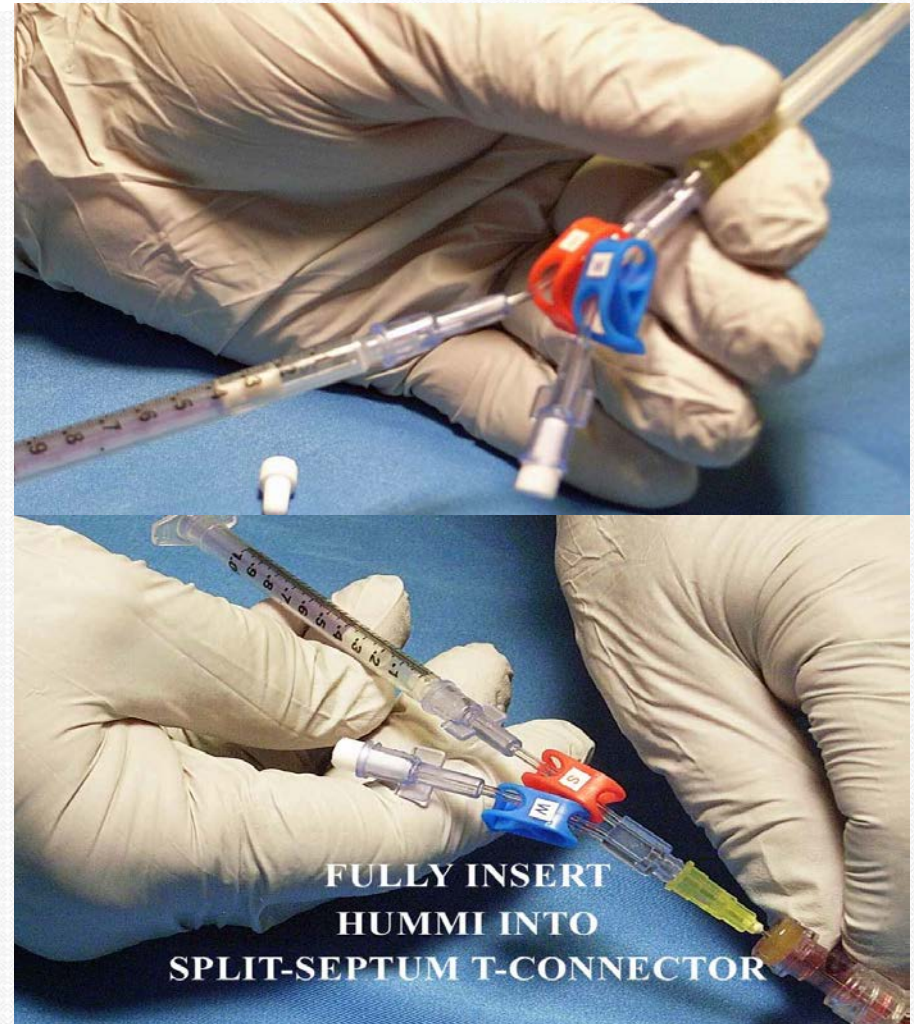


Hummi Micro-Draw Blood Transfer Device

Peripheral Arterial Catheter Blood Draw

13

- The HMD set is removed after sampling and discarded.
The amount of blood waste disposed in the Hummi is small at less than 0.2mL.
- The amount of waste blood required to clear the **Blue (W)** line is approximately 0.1mL.
This is due to bypassing the dead space in the line and Micro-T Split-septum T-connector to gain direct access to the base of the catheter hub.
- Flushing after the blood draw is **OPTIONAL**.
When the Micro-T Split-septum T-connector is unclamped, The maintenance line IV pump will clear the catheter
- No blood is aspirated when using Self-Venting Syringes... **AND .. No blood is drawn up the monitoring set line .. thus requiring No Extra Flush.**
- Infection risk is minimal as system is closed.
The device is a one time use and then discarded.
Only 1 access is made to the line to do both the waste clearance and sample draw.
Blood exposure is very minimal.
- The system remains closed with the only line access occurring at the Micro-T T-Connector Split-septum using the sterile Hummi Micro-Draw Blood Transfer Device.



PAL Clinical Benefits - Hummi

14

Key on Hummi Micro-Draw Capability for Improved Clinical Outcomes

PAL Blood Draw

- **Standardized Low volume of clearance needed .. Less than 0.05mL**
- **No need to draw blood into the Micro-T Split-septum T-connector.**
- **Standardized PAL waste amount < 0.2mL for every draw.**
- **Closed System .. No dripping of blood .. Reduced infection risk.**
- **Self-venting syringe allows “No Pressure Blood Draw”.**
- **Very little or No flush required after PAL draw.**
- **Only a Micro-T Split-septum T-connector required for access to catheter.**
- **No inline parts and pieces for residual blood to collect and colonize bacteria.**
- **No impact on wave form or frequency response.**
- **Single use disposable. Use only as needed. No expensive in line kits needed.**
- **Reduced blood exposure for the caregiver vs. open drip method.**