Clinical Benefits


  - 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

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
Hummi Micro-Draw Blood Transfer Device

Approximate Residual Fluid Volume

Sample Microbore Tubing Volume – 0.045 mL
Waste Microbore Tubing Volume – 0.045 mL
Blunt Tubing & “Y” Hub Volume – 0.080 mL

Approximately 0.17 mL
Total Residual Volume

Approximately 0.045 mL
Residual Volume

Approximately 0.080 mL
Residual Volume

PAL Clean Blood Clearance Point

Approximately 0.045 mL
Residual Volume

Approximately 0.17 mL
Total Residual Volume
Hummi Micro-Draw Blood Transfer Device and T-Connector Extension Set

Direct Arterial Blood Flow from catheter line end point into Hummi Micro-Draw Blood Blunt Transfer Tube

Total Residual Fluid Volume in Hummi Less than 0.20mL

Hummi Micro-Draw Blood Transfer Device

Catheter Line

Catheter line end point inside catheter hub

Hummi Micro-Draw Blood Blunt Transfer Tube

Split-Septum T-Connector

Waste Line

Red clamp

Blue clamp

Self-Venting Syringe

Blood Sampling Line

Red clamp

Vented Plug
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.
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

- 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

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)
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*
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

• 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

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.