AF
HIGHLY EFFICIENT OXYGENATORS
WITH INTEGRATED CASCADE ARTERIAL FILTER
SKIPPER AF

Innovative conical dispenser for eliminating the splashing effect, reducing the microbubbles’ activity

VENOUS CARDIOTOMY RESERVOIR
TECHNICAL CHARACTERISTICS

Max volume capacity 4600 ml (approx)
Max operating level 4500 ml (approx)
Min. operating level 200 ml (approx)
Venous Filter Pore Size: 80 μm
Cardiotomy Filter Pore Size: 40 μm
Cardiotomy reservoir ready for vacuum (equipped with over-under safety valve)
Min. operating level (approx) 200 ml
Connectors: 6 x 1/4”
1 x POS Lock
1 x 3/8”
2 x Luer Lock
1 x POS Lock - Luer Lock
1 x Unfiltered Luer Lock

The SKIPPER AF module and heat exchanger highlights a unique features, coupled with a single chamber reservoir and integrated Cascade Arterial Filter

• Clinical flexibility
• Low contact surface
• Priming reduction
• Agile PC Coating
• Integrated Cascade Arterial Filter
• Easy set-up and debubbling
**A.L.ONE AF**

**OXYGENATOR MODULE WITH INTEGRATED CASCADE ARTERIAL FILTER**

**TECHNICAL CHARACTERISTICS**

- **Priming volume:** 190 ml
- **Contact surface area:** 1.35 m²
- **Max blood flow rate:** 7.0 l/min
- **Cascade Arterial Filter pore size:** 80 μm + 38 μm

**Innovative Heat Exchanger**

- **Heat Exchanger surface area:** 0.08 m²
- **H.E. Performance Factor:** \( \eta = 0.64 \) (@ 4 l/min)

**Coating:** PC phosphorylcholine

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**THE PATH OF BIOCOMPATIBILITY**

Phosphorylcoline or PC is the predominant lipid headgroup found in the outer layer of cell membranes. PC has a natural affinity for water and binds water tightly around itself. As a result, the outer layer of the cell membrane does not promote clots formation (thrombosis).

- low thrombogenic
- low inflammatory
- stable
- resistant to bacterial adhesion
- resistant to protein deposition

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**PHOSPHORYLCHOLINE COATING**

- **ALKALINE CHAINS SPREAD ACROSS THE SURFACE YIELDING A STABLE COATING THROUGH HYDROPHOBIC INTERACTIONS**
- **ZWITTERIONIC PC GROUPS EXPRESSED OUTWARDS FROM THE SURFACE**
- **LAYER OF HYDRATION AROUND PC - WITH A COATED SUBSTRATE**
- **THE BLOOD THEREFORE “SEES” A LAYER OF WATER**
- **BLOOD/BODY FLUID CONTACT LAYER**
VENOUS RESERVOIR
TECHNICAL CHARACTERISTICS

Capacity (non activated blood section): 3200 ml (approx)
Filter Pore Size: 80 μm
Ready for vacuum (equipped with over-under safety valve)
Connectors: 2 x 1/4”, 1 x 3/8”, 2 x Luer Lock, 1 x POS Lock - 1/4”, 1 x Luer Lock unfiltered, 1 x 1/4” Dedicated intracavitary port

CARDIOTOMY RESERVOIR
TECHNICAL CHARACTERISTICS

Capacity (activated blood section): 1800 ml (approx)
Filter Pore Size: 40 μm
Transferring lever (Cardiotomy - Reservoir)
Ready for vacuum (equipped with over-under safety valve)
Connectors: 2 x 1/4”, 1 x 3/8”, 2 x Luer Lock, 1 x POS Lock - Luer Lock, 1 x 1/4” Cell Saver outlet Line

Innovative conical dispenser for eliminating the splashing effect, reducing the microbubbles’ activity.
• Despite improvements in cardiopulmonary bypass (CPB) brain injury remains a significant sequela of cardiac surgery.*

• Cardiopulmonary bypass is associated with an inflammatory reaction that involves activation of plasma proteins and cells.

• Activation of leukocytes, in particular neutrophils, directly contributes to issue and organ injury.*

**VENOUS RESERVOIR**

**TECHNICAL CHARACTERISTICS**

Capacity (non activated blood section): 3200 ml (approx)

Filter Pore Size: 80 μm

Ready for vacuum (equipped with over-under safety valve)

Connectors: 2 x 1/4”
1 x 3/8”
2 x Luer Lock
1 x POS Lock - 1/4”
1 x Luer Lock unfiltered
1 x 1/4” Dedicated intracavitary port

Innovative conical dispenser for eliminating the splashing effect, reducing the microbubbles’ activity

**CARDIOTOMY CHARACTERISTICS**

• Capacity (activated blood section): 1800 ml (approx)

• Two steps lipid-leukocytes depletion:
  - Multilayer cascade filtration (for lipids and leukocytes)
  - Supernatant separator (lipids only)

Cardiotomy ready for vacuum (equipped with over-under safety valve)

Connectors: 2 x 1/4”
1 x 3/8”
2 x Luer Lock
1 x POS Lock - Luer Lock
1 x 1/4” Cell Saver outlet Line

**BLOOD DENSITY SEPARATION TIME [min]**

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**% WBC’s REDUCTION**

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The diffuse brain damage (DBD) after cardiac operation is reported as a frequency within a range of between 20% and 80%.


Current estimates indicate that > 50% of patients who undergo to CPB have neurological or neuropsychological deficits during the first week after surgery, 10% to 30% have long-term or permanent deficits, and 1% to 5% experience severe disability or die.


The scavenging of pericardial suction blood is a potential major source of lipid emboli during cardiopulmonary by pass.


Lipid particles in the side range of 10 μm to were characterized in shed mediastinal blood, until 300,000 particles per milliliter of blood were found.


Embolization of lipids is not a phenomenon restricted to the brain, but affected other organs which kidneys1, spleen1 and lung2.

2 AJ de Vries et al. The rationale for fat filtration during cardiac surgery. Perfusion 2002; 17: 29-33

Activation of the systemic inflammatory response during CPB has been a major problem for clinicians because of the potential deleterious effect on organs such as the heart, brain, lung, kidneys. one strategy may be the use of leukocyte-depleting filters.


*REMOVELL REFERENCES