High performance cannulae for direct and femoral cannulation in minimally invasive cardiac surgery
LivaNova’s approach to **Minimally Invasive Cardiac Surgery (MICS)** extends far beyond minimizing skin incisions: it is aimed at minimizing the overall invasiveness of the cardiac surgery procedure, through comprehensive, dedicated products such as aortic and mitral replacement and repair prostheses, cannulae, perfusion and blood management systems.

**PERCEVAL**’s design was made for Minimally Invasive Cardiac Surgery. It’s an innovative, sutureless and collapsible aortic bioprosthesis that allows for shorter procedures and reduced physiologic impact during surgery.

**MEMO 3D ReChord** truly reflects the native annulus dynamic. The innovative chordal guiding system promotes standardized chord replacement, offering reproducible results while accelerating procedure times.*

**PERFUSION DATA MANAGEMENT SYSTEMS**

**CANNULAE**

**SUTURELESS AVR**

**OXYGENATION**

**BLOOD MANAGEMENT**

**HEART LUNG MACHINE**

**LivaNova HEARTLINK SYSTEM** is the first automatically integrated perfusion management system designed for improved patient outcomes, increased clinical efficacy and goal-directed perfusion.

* Glauber et al., Ann Cardiothoracic Surg. 2015 4 (3) : 298–300
High performance MICS CANNULAE

High performance cannulae specifically developed to meet diverse minimal invasive and femoral approaches where ease of insertion, clear surgical view and good hemodynamics are paramount for improving patient outcomes.

- LivaNova Cannulae facilitate femoral and direct cannulation in MICS while providing optimal blood flow
MICS Cannulation in Valve Procedures

Cannulation procedure techniques with dedicated LivaNova Cannulae

**ARTERIAL AND VENOUS FEMORAL CANNULATION**

**ARTERIAL DIRECT AND VENOUS FEMORAL CANNULATION**

**ARTERIAL AND VENOUS DIRECT CANNULATION**

**Arterial Femoral Cannulation**
Arterial Cannula inserted in the femoral artery

**Arterial Direct Cannulation**
Arterial Cannula inserted in the aorta

**Arterial Direct Cannulation**
Arterial Cannula inserted in the aorta

**Venous Femoral Cannulation**
Venous cannula inserted in the femoral vein

**Venous Femoral Cannulation**
Venous cannula inserted in the femoral vein

**Venous Femoral Cannulation**
Venous cannula inserted in the femoral vein

**Venous Direct Cannulation**
Venous cannula inserted in the atrium

**Optiflow Venous**

**EasyFlow DUO**

**EasyFlow**

**EasyFlow**

**VASCULAR DILATOR KIT INCLUDED**

**VASCULAR DILATOR KIT**
The dedicated Vascular Dilator Kit includes an 18 Gauge needle, a 0.035 x 180 cm guidewire, a blade scalpel as well as 8, 12, 16, 20 and 24 Fr dilators.
RAP Cannula

Dual stage venous femoral cannulae designed to drain from superior and inferior vena cava, available in two sizes 22/22 Fr and 23/25 Fr with full flow drainage capability. A high quality soft introducer features a smooth transition to the cannula to improve insertion and reduce vascular damage. Available for percutaneous insertion through Seldinger technique.

1/2” and 3/8” tubing connector

Dual stage opening to drain from the inferior and superior vena cava without interfering with the atrium especially in mitral valve procedures

Excellent flow characteristics for full venous drainage

PRESSURE DROP

23/25 Fr RAP = 38 mmHg at 5 L/min

OPTIONAL VASCULAR DILATOR KIT

The dedicated Seldinger Insertion kit includes an 18 Gauge needle, a 0.035 x 100 cm guidewire, a blade scalpel as well as dilators of 8, 12, 16, 20 and 24 Fr.
Optiflow Venous Cannula

The Optiflow Venous cannula features a special swirled tip design with multiple side holes that facilitate active and physiological venous drainage regardless of the position of the heart.
This cannula is more compact than a standard cannula which makes it easier to insert and remove while improving the surgical view also in minimally invasive procedures.

“The innovative small-sized, 29-Fr Optiflow cannula provides high-flow drainage across the entire cannula inserted into the right atrium without the need for double cannulation and with no increase in central venous pressure.”*

EasyFlow DUO Cannula

The EasyFlow DUO is a femoral arterial cannula featuring a dispersion tip for a more gentle flow in the femoral artery. The obturator allows bloodless insertion in the arterial vessel. EasyFlow DUO is provided with a dedicated Vascular Dilator kit for percutaneous cannula insertion.
**EasyFlow Cannula**

The EasyFlow Cannula is designed for safe, reproducible direct aortic cannulation and features a multiple outlet port tip for diffused flow dynamics and a malleable stylet to aid introduction via lateral thoracotomy.

- **Conical, dispersion tip design** for a more gentle flow in the femoral artery.
- **Progressive cannula stiffness**, while pushing the introducer, facilitates remote insertion.
- **Red cap** avoids blood back flow during obturator removal.
Aortic Root Cardioplegia

Aortic Root Cannulae are available with and without vent line to ensure cardioplegia delivery while venting the heart. Available with different tip sizes and stainless steel introducer needles. Tubings come in standard length or longer (35 cm) for right anterior thoracotomy.

Coronary Ostia Perfusion Cannulae with Balloon Tip

Coronary Ostia Perfusion Cannulae with balloon tip, plastic tubing and female lure lock connector. The flexible, plastic tubing terminates with a self inflating PVC balloon designed to occlude the coronary ostium and prevent any back flow of cardioplegia solution.
Coronary Ostia Perfusion Cannulae with 3D Tip

Coronary Ostia Perfusion Cannulae with 3D tip and stainless steel shaft. The unique 3D tip allows easy insertion without damaging the ostia. It is available with 45° and 90° tip to easily reach the right and left ostia and ensures homogeneous perfusion of the cardioplegia solution in the coronary path. Also available with female luer lock connector.

Vents

Vents for direct or indirect venting of the left ventricle are available in either PVC or silicone in a variety of configurations including straight or malleable tubings with removable guide wire or malleable stylet with a two-position latching mechanism.

ATRASump

ATRASump is a new generation, flexible tubing sump with a unique, atraumatic weighted-tip specifically designed to provide enhanced patient safety. The special, flexible metal spring tip is encapsulated within a flexible, fluted plastic covering that avoids the risk of tissue entanglement and damage. The flutes provide smooth flow of fluids and the embedded perforations uninterrupted drainage.