The proven safe and reliable, world-leading perfusion system, now optimized for minimally invasive and pediatric surgery.
S5™ Min.I. isn’t just another configuration of the S5 system. Optimized with the aim of improving outcomes during extra-corporeal circulation in minimally invasive and pediatric surgery, S5 Min.I. is a global approach to minimally invasive perfusion.

The world-leading perfusion system just got better

It’s the maximum expression of over 40 years’ experience and worldwide leadership in heart-lung machine design and manufacture. All components derive from this heritage and are proven safe, flexible and modular.

Redefining minimally invasive perfusion solutions
Minimized configuration, Maximized benefits

**Clinical Benefits**
- Aiming to minimize transfusions
- Aiming to minimize acute kidney injury
- Maximized ergonomics
- Goal-directed perfusion
- Optimized air management

**Patient Benefits**
- Aiming to maximize neurological protection
- Aiming to minimize complications

**Clinical Benefits**
- Minimal hemodilution

**Diagram**
- Medical device with various monitoring screens and control panels.
Closer to you, Closer to your patients

Optimized ergonomics and console height with reduced footprint allow an easy interaction with the system by the operator. The gas blender is well protected during use and transport and is integrated within the central console together with handy storage drawers.

OPTIMIZED CONSOLE
As all pump control panels are arranged in a linear, horizontal way within the shelf of the three size console, there is better visibility to the oxygenator and tubings as well as to the surgical field.

LEAN AND CLEAN
Additional, newly designed cable guides enable a lean configuration and design with cables protected and clearly organized, allowing to optimize ergonomics and prevent interfering with accessories or disposables.
Maxi ergonomics, flexibility and modularity

The S5 system design is fully modular, to be configured according to the specific clinical needs of the perfusionist, allowing to accomodate a large variety of clinical practices and applications. With its fully mast-mounted pumps architecture, S5 Min.I. represents the ideal configuration for pediatric and minimally invasive adult cardiac surgery.

ADULT MINIMALLY INVASIVE CONFIGURATION
The adult minimally invasive configuration allows a centrifugal or a large roller pump to control arterial flow, and offers a flexible combination of integrated large and small double roller pumps for suction and cardioplegia delivery. Additional pumps with external control panels can be added, providing a total customization.

PEDIATRIC CONFIGURATION
The pediatric configuration can hold up to one large and two integrated small double roller pumps or alternatively three integrated small pumps, allowing the lowest possible priming circuit design for the benefit of the smallest patients. Additional pumps with external control panels can be added, providing a total customization.

“I am using the S5 in various configurations according to the different weight of my patients. This helps me to achieve an optimum relation between the priming and blood volume of the patient. The flexible mast mounted pumps allow a very close positioning of the whole system to the patient”

Frank Münch, Chief perfusionist
University hospital Erlangen, Germany
Mini hemodilution Maxi neurological protection

Outstanding flexibility with fully mast-mounted pumps allows S5 Min.I. to be positioned closer to the patient, reducing tubing lengths, thus minimizing priming volumes and blood contact surface area, helping reduce the risk of transfusions-related complications during and after cardiac surgery.

S5 offers advanced technology in terms of air bubble management systems, allowing perfusion optimization with the utmost safety, helping clinicians to protect their patients from neurological damage.

EFFECTIVE PROTECTION FROM AIR BUBBLES
The S5 bubble module along with the bubble sensor allow for extremely fast detection of air bubbles in the tubing set.

INTEGRATED MONITORING
The integrated B-Care 5 system B-Care 5 allows continuous monitoring for Hct, SvO2, and venous blood temperature. Accurate monitoring of Hct and blood flow is key to implement Goal-Directed Perfusion (GDP), which helps to reduce the risk of acute kidney injury (AKI) and red blood cells (RBC) transfusions.\(^1\)\(^2\)

ELECTRONIC REMOTE CLAMP FOR ULTIMATE EASE OF USE AND SAFETY
Available with the CP5 centrifugal pump, the electronic control clamp minimizes the risk of cerebral embolism. In combination with the air bubble sensor and blood level sensor, it allows to quickly occlude the arterial line if air bubbles or back-flow are detected.

INTEGRATED CONTROL
Using a dedicated sensor, the blood level in the reservoir is carefully controlled to prevent air from entering in the oxygenator.
CONNECT is LivaNova’s innovative and intuitive perfusion data management system designed to assist the clinician in minimizing transcription errors and bias, focusing more on the patient and circuit, maximizing traceability, liability and clinical practice and implementing Goal-Directed Perfusion (GDP).
The HeartLink System is the first perfusion management system to assist with the implementation of Goal-Directed Perfusion, a perfusion therapy aimed at reducing the occurrence of acute kidney injury, shortening ICU and hospital length of stay, and potentially decreasing blood transfusions by respecting the metabolic needs of each patient during cardiac procedures.

HEARTLINK® SYSTEM

The first integrated Perfusion Management System designed for helping clinicians to improve patient outcomes, increase clinical efficacy and apply Goal-Directed Perfusion Therapy.

IMPROVING CLINICAL DATA ACCURACY

"The use of an automated system provides the opportunity to minimize transcription errors and bias""*"" \[1\]

BENEFITS INCLUDE:

- full LivaNova disposable traceability
- less transcription errors
- less manual operations for clinicians

REDUCING AKI & BLOOD TRANSFUSIONS

"The AKI rate started declining in our institution the year GDP was introduced. This suggests that GDP may actually be beneficial regarding renal protection""*"" \[2\]

REDUCING AKI & BLOOD TRANSFUSIONS

"It is of note that with the use of ultra low prime oxygenators, GDP actually exerted his potential""*"" \[3\]

FOCUSING ON NEUROLOGICAL PROTECTION

"The new PFAT protocol featured in XTRA significantly increases fat elimination, yielding results comparable with continuous processing technology""*"" \[4\]

"GDP is providing us with a new opportunity to continually improve patient care in real-time during the critical period of CPB"

Ian Johnson, Liverpool Heart and Chest Hospital NHS Foundation trust

[1] *The use of an automated system provides the opportunity to minimize transcription errors and bias* 
[2] *It is of note that with the use of ultra low prime oxygenators, GDP actually exerted his potential* 
[3] *The new PFAT protocol featured in XTRA significantly increases fat elimination, yielding results comparable with continuous processing technology* 
[4] *GDP is providing us with a new opportunity to continually improve patient care in real-time during the critical period of CPB*
Maxi reliability and proven safety that only a world-leading platform can guarantee

HIGHLY RELIABLE TECHNOLOGY
The direct drive technology ensures years of problem-free performance offering the advantages of very low noise and vibration, reliable, maintenance-free pumps without any belts and a gearbox.

TOP QUALITY TECHNICAL SERVICE
Our top quality technical service support is available in over 100 countries on all continents. LivaNova offers numerous training sessions that are divided into different levels to skillfully prepare the hundreds of technicians and trainers that participate every year. This guarantees fast and reliable service support all around the world.

PERFUSION MANAGEMENT TRAININGS
As part of our Campus educational program, LivaNova collaborates with leading clinicians and institutions globally and offers several perfusion trainings on safe perfusion management, minimally invasive approach, Connect & GDP monitor.
References:

Order Guide

The S5 Min.I. consists of console and 3 pump control panels:

- **48-35-00** S5 Min.I. includes:
  - 48-30-00 Console (3 position)
  - 50-45-00 S5 mast extension system
  - 48-31-61 S5 Min.I. shelf with power outlets to integrate pump control panels
  - 48-31-50 Vertical cable guide 300mm
  - 48-31-52 Vertical cable guide 500mm
  - 48-31-54 Vertical cable guide 700mm

In addition to **48-35-00**, 3 pumps out of the following pumps must be selected:

- **50-80-05** S5 Min.I. 1 big mast roller pump 150mm
- **50-80-65** S5 Min.I. 2 small mast roller pumps 85mm on single holders
- **50-80-66** S5 Min.I. 2 small mast roller pumps 85 on twin holders

Optional:

- **48-42-20** S5 Min.I. drawer module
- **48-42-30** S5 Min.I. adapter plate for electronic gas blender EGB

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Please always refer to the Instructions For Use (IFU) manual provided with each product for detailed information, warnings, precautions and possible adverse side effects.

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