

MAQUET

ECMO AND LIFE SUPPORT SYSTEMS
QUADROX PLS AND ROTAFLOW
HARDWARE AND ACCESSORIES

CARDIOVASCULAR





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ALPHA-PORT

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QUADROX PLS AND ROTAFLOW INNOVATIVE PERFORMANCE AND RELIABILITY MAQUET – THE GOLD STANDARD



Extracorporeal circulation for extended life support:

The extremely demanding requirements for extended life support call for technology with outstanding features. The BIOLINE coated QUADROX PLS oxygenator and the ROTAFLOW Centrifugal Pump with their 14-day CE certification are designed for treating patients in need of extended respiratory and/or circulatory support. This PLS System provides a unique specification triad – consistent performance, functional reliability and biocompatibility.

Products from MAQUET Cardiovascular are the result of innovative engineering and extensive clinical experience. With QUADROX PLS, ROTAFLOW, and a tubing set, MAQUET offers a combination for long-term extracorporeal support applications.

It's the only system validated with CE certification for 14 days continuous use.

MAQUET – The Gold Standard.

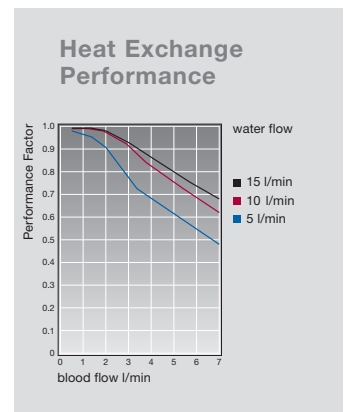
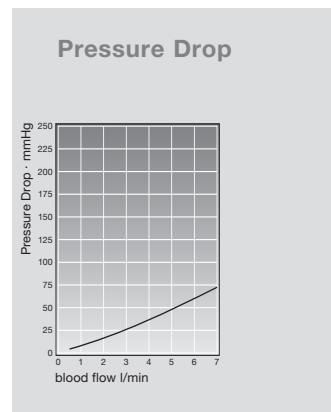
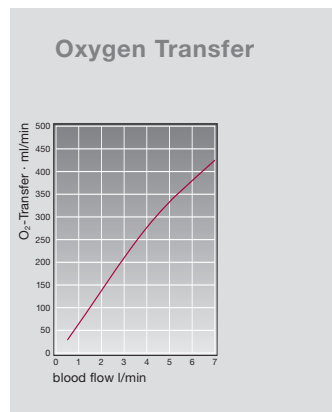
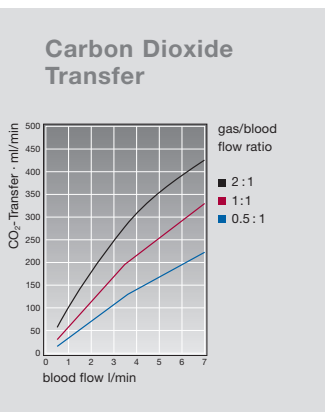
INNOVATIVE ENGINEERING AND EXTENSIVE CLINICAL EXPERIENCE QUADROX PLS OXYGENATOR



QUADROX PLS with reinforced materials: The oxygenator incorporates highly plasma resistant polymethylpentene fibres with a modified housing designed specifically for extended use.

The PLS System is “tip-to-tip” BIOLINE coated. With QUADROX PLS, ROTAFLOW, and a tubing set, all BIOLINE coated, MAQUET offers a system specially designed for long-term extracorporeal support applications – the result of our innovative engineering and extensive clinical experience.

Superior fibre technology: The QUADROX PLS with diffusion membrane. QUADROX PLS provides constant, optimum safety especially in the case of prolonged perfusion. Its tight hollow-fibres made of polymethylpentene eliminate plasma leaks and effectively prevent the formation of microbubbles.



Reference: ISO 7199 standard (37° C)

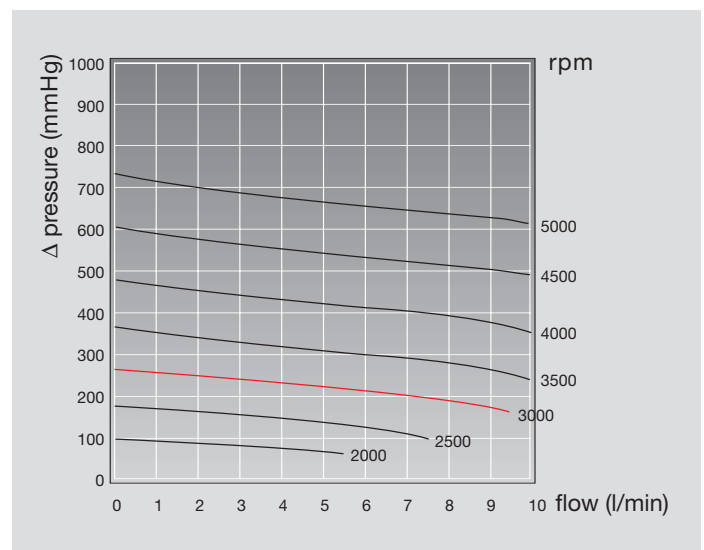
Technical Data	QUADROX PLS
Max. blood flow	0.5 – 7.0 l/min
Priming volume	250 ml
Effective surface area gas exchange	1.8 m ²
Material of diffusion membrane	Polymethylpentene
Effective surface area heat exchange	0.6 m ²
Material of heat exchange capillary	Polyurethane

OPTIMUM QUALITY EVERY PATIENT DESERVES ROTAFLOW CENTRIFUGAL PUMP

The **ROTAFLOW Centrifugal Pump** benefits the patient with its improved, gentle blood handling during extracorporeal circulation. Engineered with simplicity and sophistication, it is one of the smallest centrifugal pumps available. The ROTAFLOW is the perfect pump for long-term application. It is both efficient and reliable.

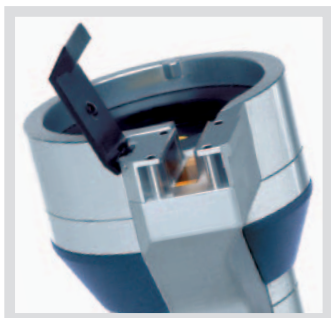
- Minimal priming volume
- Minimal surface area
- No stagnant blood areas and fewer hot spots
- Minimal haemolytic index
- Minimal MTT (Mean Transit Time)
- Hydraulic optimized flow channels
- Spiral housing for best flow ratio
- Low-friction one-point bearing (sapphire ball & PE calotte)

Unique pump head design for gentle blood handling and maximum biocompatibility. The combination of the mechanical and the magnetic bearing and the flow channel principle ensure that no stagnant blood areas build up in the entire housing. Potential clotting risk is reduced to an absolutely minimum. ROTAFLOW is the best choice for any kind of extracorporeal assistance.



Technical Data	ROTAFLOW Centrifugal Pump
Priming volume	32 ml
Surface	190 cm ²
Diameter of rotor	50 mm
Flow rate	0 – 10 l/min
Connectors	3/8"
Material	Polycarbonate

INDEPENDENT, MOBILE, AND FLEXIBLE: MULTIPLE CHOICE DUE TO VARIOUS EQUIPMENT OPTIONS



One cable – three functions: The unique set-up of the ROTAFLOW pump drive also incorporates flow sensing and bubble detection in one advanced unit. The blood flow is precisely measured in the pump outlet by ultrasonic transit time technology. Costly disposable flow probes and time-consuming tubing connections are a thing of the past.



The ROTAFLOW Emergency Drive Unit: It is designed for secure handling and fast fixation on the mast when every second counts. While operating in the manual mode, there is an LED display of RPM.



Optimum flexibility: The swivel-joint bracket assures ideal positioning with greater flexibility in handling. For further convenience, this sturdy drive's special cooling system has no dirt-catching ribs: a smooth surface for quick and easy cleaning. Individual adaption to any kind of workstation is possible with this flexible fixation system.



The ROTAFLOW as a stand-alone unit: In this configuration the compact unit acts as an independent workstation. Due to the compact and small dimensions and the integrated battery pack, both internal and external patient transport is safe and reliable. The pump control is regulated in two possible modes. Either in the LPM mode or in the RPM mode. High and low flow levels as well as RPM level can be set with specific limits for each individual patient. There are no additional cables to be connected.

ROTAFLOW Console	
RPM speed	0 – 5000 RPM
Accuracy of flow display	0.1 l/min
Flow rate	0 – 9.9 l/min
Dimensions	180 x 380 x 240 mm
Weight	approx. 15 kg

THE OPTIMAL OXYGENATOR HEATER UNIT HU 35 FOR ECMO PROCEDURE

The HU 35 is the perfect companion to the QUADROX PLS oxygenator or any appropriate oxygenator: With a footprint of only 200 x 330 mm and an approximate weight of 9 kgs it fits on the lower shelf of the SPRINTER CART. The HU 35 is a precise and reliable oxygenator water supply unit for maintaining patient temperatures between 33 and 39° C. Two different lengths of water supply lines are available. The HU 35 incorporates an automatic function test and water and temperature alarms with status displays to optimize operational safety and reliability.

- Accurate and reliable temperature control
- Function test and status alarms
- Compact, robust, and easily transportable



Technical Data	HU 35
Operating voltage	230 V, 50 Hz
Power consumption	530 W
Setting range for water temperature	33 – 39 °C
Water content	approx. 0.7 / 1.4 l (MIN / MAX)
Pumping level	10 W (max. 3 – 5 l/min, 0.34 bar)
Heating capacity	500 W
Weight incl. water	approx. 9 kg
Noise rate	approx. 35 dB (A)
Alarm level	> 65 dB (A)
Dimensions (W x H x L):	approx. 200 x 290 x 330 mm

A MULTI-FUNCTIONAL AND RELIABLE WORKSTATION SPRINTER CART WITH OPTIONAL ACCESSORIES

ECMO hardware systems for stationary and transport applications: Appropriate, reliable and safe equipment and accessories are necessary for the successful application of sophisticated techniques like extended extracorporeal support. The SPRINTER CART, with its optional accessories, provides technologists and nursing staff with a high quality, carefully configured multi-functional work station. This stable and compact SPRINTER CART is designed for

use in the operating room and intensive care unit as well as for patient transport applications – especially in areas of limited space without usual hospital facilities. In this case, reliable and safe transport solutions must be available. With the very compact transport holder system and the mobile heart-lung machine, MAQUET offers a hybrid solution that fulfills and exceeds both transport and stationary requirements.



HKH 7900

HKH 7910

HKH 8800 (gas bottle and drive unit not included)

Sechrist gas blender

Product	Code No.
PLS tubing set	BE-PLS 2050
ROTAFLOW stand-alone console	country kit*
ROTAFLOW drive unit	95 22 91
ROTAFLOW emergency drive unit	95 23 01
Heater Unit HU 35 (base unit) **	103 52 59
Water tubes 1.5 m	103 36 48
Water tubes 3 m	103 35 51
Hansen coupling kit for HU 35	103 35 47
Cleaning connector	102 93 06
Water tube holder for HU 35	103 36 49
Fixation system for HU 35 (external rail system)	103 35 52
Fixation system for HU 35 (SPRINTER CART)	103 35 50
Desinfectant for HU 35	103 35 69
SPRINTER CART	103 34 56

Additional accessories for SPRINTER	Code No.
Infusion pole mast (height adjustable)	103 35 99
Gas bottle holder for SPRINTER CART	104 08 09
Sechrist gas blender, 2 tubes	51 01 19
Multiple socket outlet	104 50 70

Holder systems for PLS set	Code No.
Mobile HLM holder	HKH 8800
ROTAFLOW drive unit	95 22 91
Holder for PLS System (rotary)	HKH 7900
Holder for PLS System (bottom fixed)	HKH 7910
ROTAFLOW handholder	HKH 8810

* Code No. according to corresponding country kit. ** Heater Unit HU 35 including Hansen coupling kit, desinfectant, and cleaning connector.



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