

# CAPIOX<sup>®</sup> SX Family of Oxygenators

High-performance, Hollow Fiber Oxygenators

with Xcoating<sup>™</sup>



## CAPIOX® SX Family of Oxygenators

**Terumo's line of high-performance CAPIOX® SX oxygenators are available in multiple sizes to accommodate every patient. Able to meet the requirements of small to large patients, this family of oxygenators offers low priming options and high gas exchange. Proven performance features, including Terumo's exclusive biopassive surface coating, make these highly efficient oxygenators the right choice for the perfusionist and the patient.**

### Oxygenator

- Terumo's exclusive hollow fiber technology is used in every CAPIOX® SX oxygenator.
- Unique fiber bundle design creates a uniform blood flow, resulting in consistently high gas exchange.
- Superior quality control assures consistent oxygenator performance.



### Xcoating™ Surface Coating

- Available on the SX18 and SX25, this amphiphilic surface coating has both hydrophobic and hydrophilic properties which reduce platelet adhesion and minimize platelet activation.
- Non-heparin based biopassive polymer does not react with blood components.
- Adheres to all surfaces and has no contraindications for patient size.

### Reservoir

- Separate cardiotomy and venous filters improve handling of venous blood and minimize defoamer contact.
- Flat front enhances visibility and allows for easy mounting of level sensor pads.
- Tapered design aids low level volume assessment.
- Volume scales are easily visible on three sides, even at low volume levels.
- Short breakthrough time permits quick and easy priming.
- Integrated positive pressure relief for vacuum assisted venous drainage (SX18/SX25).
- Detachable hardshell reservoir for additional setup options.



### Heat Exchanger

- Efficient heat exchange produced by hundreds of stainless steel pipes facilitates the uniform circulation of water through the heat exchanger compartment.
- Designed specifically to reduce cooling and rewarming times.
- *Non-compliant* heat exchanger design does not expand and contract, regardless of temperature and pressure changes.





### CAPIOX® SX10 Oxygenator

*Specially designed to meet the needs of smaller patients.*

- Priming volume of 135 mL
- Blood flow rate of up to 4.0 L/min
- Reservoir capacity of 3,000 mL; 70 mL minimum operating level



### CAPIOX® SX18 Oxygenator

*Compact oxygenator for a wide range of patient sizes.*

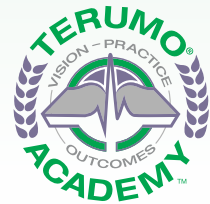
- Priming volume of 270 mL
- Large blood flow rate of up to 7.0 L/min
- Large reservoir capacity of 4,000 mL; 200 mL minimum operating level



## Clinical Education and Support

Terumo Cardiovascular Group is a global leader in clinical education and support. Through programs like Terumo® Academy and Optimizing Cardiac Surgery®, Terumo helps to ensure that the highest standards of clinical care are delivered to patients worldwide.

For information on training and education in your region, contact your local Terumo representative.



Optimizing Cardiac Surgery®

### CAPIOX® SX25 Oxygenator

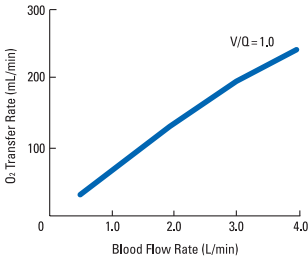
Enhanced gas exchange performance for larger patients.

- Priming volume of 340 mL
- Large blood flow rate of up to 7.0 L/min
- Large reservoir capacity of 4,000 mL; 200 mL minimum operating level

# Performance Data

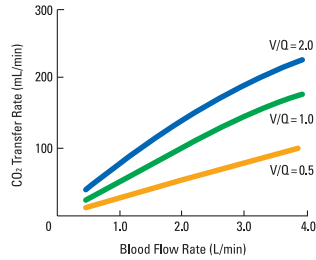
## CAPIOX® SX10 Hollow Fiber Oxygenator

**O<sub>2</sub> Transfer Rate (in vitro)**



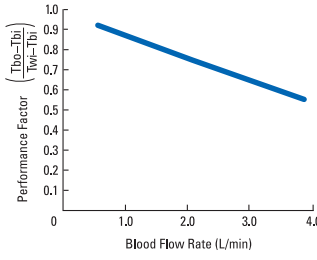
Conditions  
 Blood = Bovine SvO<sub>2</sub> = 65 ± 5%  
 Hb = 12 ± 1g/dL PvCO<sub>2</sub> = 45 ± 5 mmHg  
 Temp = 37 ± 1°C B.E. = 0 ± 5 mEq/L  
 FiO<sub>2</sub> = 100%

**CO<sub>2</sub> Transfer Rate (in vitro)**



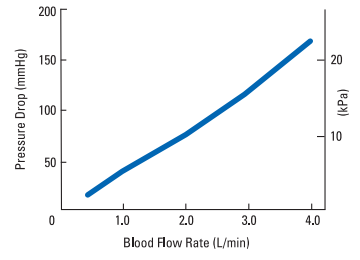
Conditions  
 Blood = Bovine SvO<sub>2</sub> = 65 ± 5%  
 Hb = 12 ± 1g/dL PvCO<sub>2</sub> = 45 ± 5 mmHg  
 Temp = 37 ± 1°C B.E. = 0 ± 5 mEq/L  
 FiO<sub>2</sub> = 100%

**Heat Exchanger Performance Factor (in vitro)**



Conditions  
 Blood = Bovine Tbi = 30°C  
 Hb = 12 ± 1g/dL Twi = 40°C  
 Water Flow Rate = 15L/min

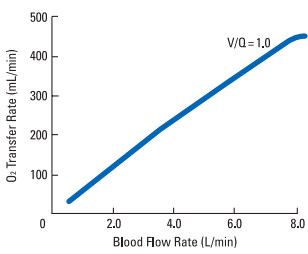
**Blood Side Pressure Drop (in vitro)**



Conditions  
 Blood = Bovine Temp = 37 ± 1°C  
 Hb = 12 ± 1g/dL B.E. = 0 ± 5 mEq/L

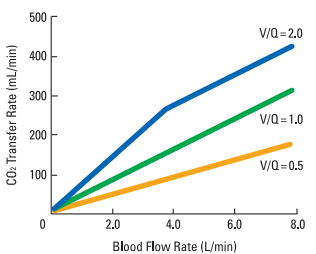
## CAPIOX® SX18 Hollow Fiber Oxygenator

**O<sub>2</sub> Transfer Rate (in vitro)**



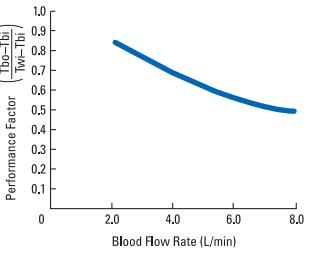
Conditions  
 Blood = Bovine SvO<sub>2</sub> = 65 ± 5%  
 Hb = 12 ± 1g/dL PvCO<sub>2</sub> = 45 ± 5 mmHg  
 Temp = 37 ± 1°C B.E. = 0 ± 5 mEq/L

**CO<sub>2</sub> Transfer Rate (in vitro)**



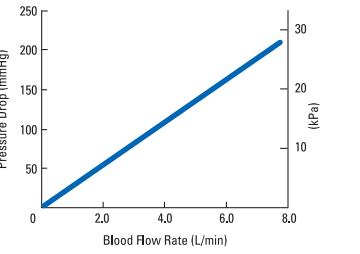
Conditions  
 Blood = Bovine SvO<sub>2</sub> = 65 ± 5%  
 Hb = 12 ± 1g/dL PvCO<sub>2</sub> = 45 ± 5 mmHg  
 Temp = 37 ± 1°C B.E. = 0 ± 5 mEq/L

**Heat Exchanger Performance Factor (in vitro)**



Conditions  
 Blood = Bovine Tbi = 30°C  
 Hb = 12 ± 1g/dL Twi = 40°C  
 Water Flow Rate = 15L/min

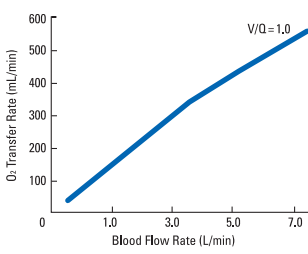
**Blood Side Pressure Drop (in vitro)**



Conditions  
 Blood = Bovine Temp = 37°C  
 Hb = 12 ± 1g/dL B.E. = 0 ± 5 mEq/L

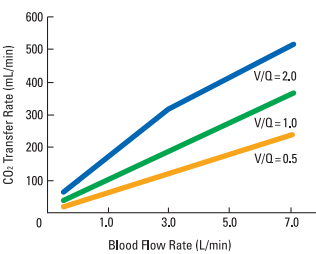
## CAPIOX® SX25 Hollow Fiber Oxygenator

**O<sub>2</sub> Transfer Rate (in vitro)**



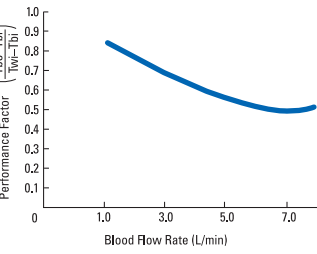
Conditions  
 Blood = Bovine SvO<sub>2</sub> = 65 ± 5%  
 Hb = 12 ± 1g/dL PvCO<sub>2</sub> = 45 ± 5 mmHg  
 Temp = 37 ± 1°C B.E. = 0 ± 5 mEq/L

**CO<sub>2</sub> Transfer Rate (in vitro)**



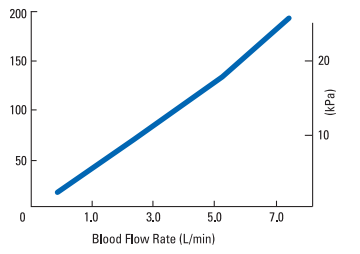
Conditions  
 Blood = Bovine SvO<sub>2</sub> = 65 ± 5%  
 Hb = 12 ± 1g/dL PvCO<sub>2</sub> = 45 ± 5 mmHg  
 Temp = 37 ± 1°C B.E. = 0 ± 5 mEq/L

**Heat Exchanger Performance Factor (in vitro)**



Conditions  
 Blood = Bovine Tbi = 30°C  
 Hb = 12 ± 1g/dL Twi = 40°C  
 Water Flow Rate = 15L/min

**Blood Side Pressure Drop (in vitro)**



Conditions  
 Blood = Bovine Temp = 37°C  
 Hb = 12 ± 1g/dL B.E. = 0 ± 5 mEq/L

## Holder Systems



Catalog # XX\*CXH18



Catalog # XX\*CXH18R



Catalog # XX\*XH032

# CAPIOX® SX Family of Oxygenators

## Specifications

### Oxygenator and Heat Exchanger

MATERIAL	Housing	Polycarbonate	
	Oxygenator fibers	Microporous polypropylene	
	Heat exchanger	Stainless steel	
<b>OXYGENATOR</b>	<b>SX10</b>	<b>SX18</b>	<b>SX25</b>
Fiber bundle surface area	Approx. 1.0 m <sup>2</sup>	Approx. 1.8 m <sup>2</sup>	Approx. 2.5 m <sup>2</sup>
Heat exchanger surface area	Approx. 0.13 m <sup>2</sup>	Approx. 0.22 m <sup>2</sup>	Approx. 0.22 m <sup>2</sup>
Blood flow range	0.5 - 4.0 L/min	0.5 - 7.0 L/min	0.5 - 7.0 L/min
Priming volume (static)	135 mL	270 mL	340 mL
Blood inlet port (from pump)	3/8" (9.5 mm) (1/4" adapter)	3/8" (9.5 mm)	3/8" (9.5 mm)
Blood outlet port	3/8" (9.5 mm) (1/4" adapter)	3/8" (9.5 mm)	3/8" (9.5 mm)
Cardioplegia port	1/4" (6.4 mm)		
Gas inlet port	1/4" (6.4 mm)		
Gas outlet port	1/4" (6.4 mm) (base: 3/8" with gas vent)		
Water ports	1/2" (12.7 mm) Hansen quick connect fitting		
Maximum pressure blood inlet	1,000 mmHg (133 kPa)		
Maximum pressure water inlet	42 psi (3ATM) (289 kPa)		

### Ordering Information

CATALOG #	DESCRIPTION	UNITS/CASE
	<b>CAPIOX SX10 Oxygenator</b>	
CX*SX10R <sup>†</sup>	Hollow fiber oxygenator with hardshell reservoir	4
	<b>CAPIOX SX18 Oxygenator</b>	
CX*SX18R	Hollow fiber oxygenator with hardshell reservoir	4
CX*SX18RX	Hollow fiber oxygenator with hardshell reservoir with Xcoating™ surface coating	4
	<b>CAPIOX SX25 Oxygenator</b>	
CX*SX25R	Hollow fiber oxygenator with hardshell reservoir	4
CX*SX25RX	Hollow fiber oxygenator with hardshell reservoir with Xcoating™ surface coating	4
	<b>Holders for CAPIOX SX Oxygenator</b>	
XX*CXH18 <sup>†</sup>	Holder for SX oxygenator	1
XX*CXH18R	Holder for SX/RX/FX oxygenator with hardshell reservoir (except U.S.)	1
XX*XH032	Holder for hardshell reservoir, short arm (except U.S.)	1
	<b>Accessories for CAPIOX SX Oxygenators</b>	
CX*BP021	Blue thermistor wire	10
CX*BP022	Red thermistor wire	10

<sup>†</sup>Not available in Europe and the U.S.

<sup>†</sup>Not available in Europe. Replaced with catalog # XX\*CXH25F.

### Hardshell Reservoir

MATERIAL	Housing	Polycarbonate	
	Venous filter	Polyester screen type, pore size 47 µm	
	Cardiotomy filter	Polyester depth type	
	Defoamer	Polyurethane foam	
<b>OXYGENATOR</b>	<b>SX10</b>	<b>SX18</b>	<b>SX25</b>
Blood flow range			
Venous flow	0.5 - 4.0 L/min	0.5 - 7.0 L/min	0.5 - 7.0 L/min
Cardiotomy inlet	Max. 4.0 L/min	Max. 5.0 L/min	Max. 5.0 L/min
Combined flow	Max. 4.0 L/min	Max. 7.0 L/min	Max. 7.0 L/min
Blood storage capacity	3,000 mL	4,000 mL	4,000 mL
Minimum operating volume	70 mL	200 mL	200 mL
Venous blood inlet port	3/8" (9.5 mm) Rotatable (1/4" adapter)	1/2" (12.7 mm) Rotatable	1/2" (12.7 mm) Rotatable
Blood outlet port (to pump)	3/8" (9.5 mm) Rotatable (1/4" adapter)	3/8" (9.5 mm)	3/8" (9.5 mm)
Suction ports	Six 1/4" (6.4 mm)		
Vertical port to CR filter	3/8" (9.5 mm)		
Quick prime port	1/4" (6.4 mm)		
Vent port	1/4" (6.4 mm)		
Auxiliary port	1/4" - 3/8" (6.4 mm - 9.5 mm)		
Luer ports	Four filtered luer ports to cardiotomy filter One non-filtered luer port Two luer ports on venous inlet		
Maximum sustainable negative pressure	-150 mmHg (-20 kPa)		
Positive pressure relief valve	N/A	0 - 8 mmHg (1.1 kPa)*	0 - 8 mmHg (1.1 kPa)*

\*Only for products manufactured in Elkton, Maryland.

The photographed products featured throughout this brochure were manufactured in Terumo Cardiovascular Group's Elkton, Maryland, and Ashitaka, Japan, factories. Depending on the factory, CAPIOX® SX oxygenators will exhibit slight physical design differences, including cap and label colors and shapes, method of positive pressure relief valve integration, venous inlet sampling port location, and CR filter material.



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