



sartorius stedim  
biotech

## Sartorius Stedim Biotech Crossflow Filter Holders



turning science into solutions

# Sartorius Stedim Biotech at a Glance

At Sartorius Stedim Biotech, we work together to achieve one primary goal: to provide our customers with the best solutions for their process needs. That's why we deliver across the board. Our products and services cover the biopharmaceutical industry's entire process chain – from development and quality assurance to production. We are your total solution provider and experts in single-use technologies and added-value services.

With Sartorius Stedim Biotech, you have gained a partner with extensive engineering capabilities in biotechnology and pharmaceutical processes. We will provide you with high-performance membranes that are integral elements in your biopharmaceutical manufacturing process. On top of our cutting-edge skills in developing membranes and designing cassettes, our core area of expertise is in engineering the highest quality crossflow filters and systems.

These integrated capabilities extend from laboratory to pilot scale, right on up to clinical manufacturing. We offer automated production systems that enable bioprocess manufacturers to integrate upstream and downstream processes. In any case, you can be sure that you will be benefiting from high-quality products and services.



# Sartorius Stedim Biotech Crossflow...

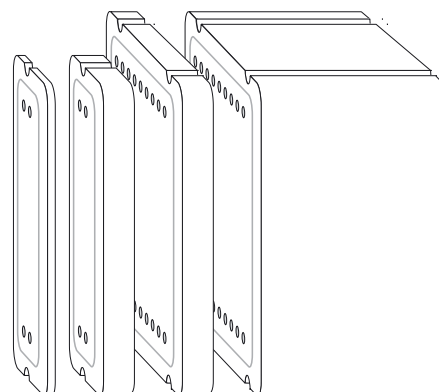
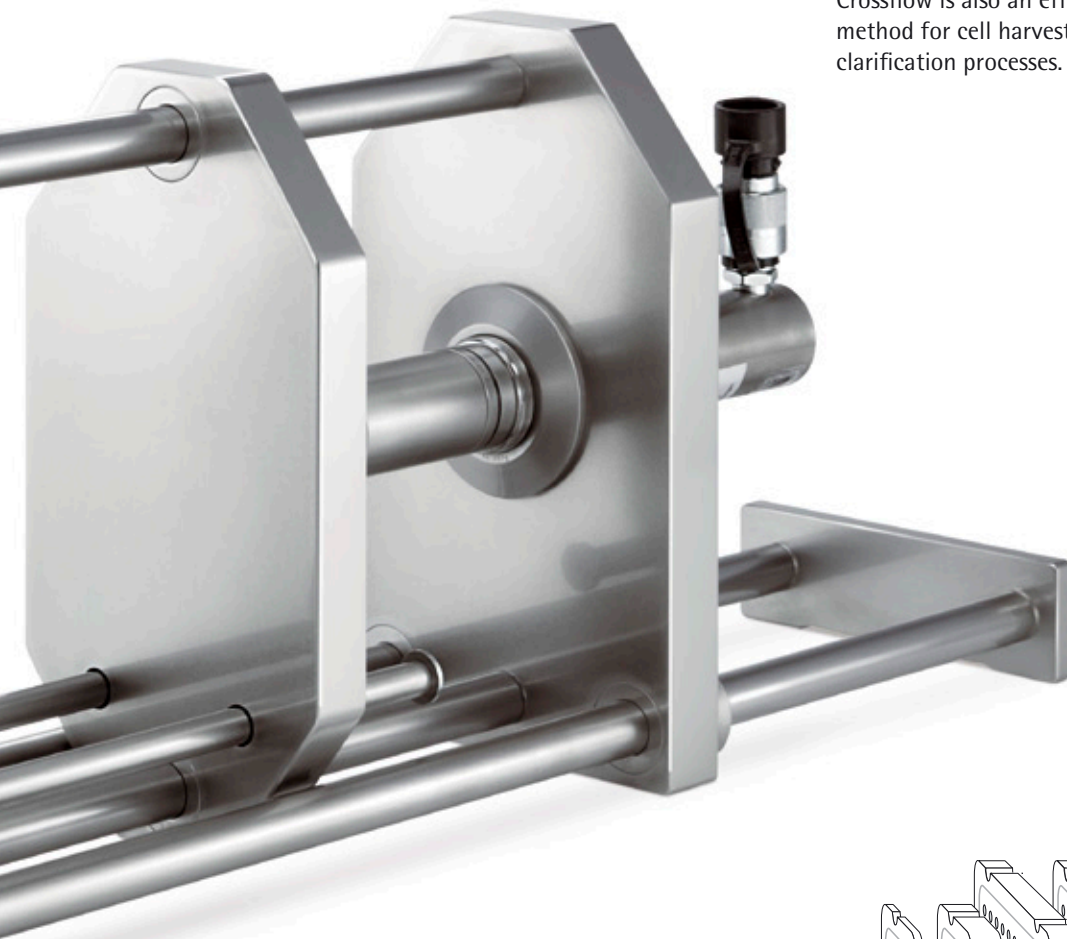
## ...Simply Convincing

Your requirement is to efficiently process high-value products with the maximum possible yield. High-performance membranes are an integral part of downstream processing applications, such as concentration and diafiltration of proteins, vaccines, viruses, antibodies, oligonucleotides, endotoxin removal, etc. Crossflow is also an efficient method for cell harvesting and clarification processes.

Every single step in a biopharmaceutical process requires high-performance filtration units to ensure maximum product yield in all manufacturing phases. High-value biological compounds can be produced only within precisely defined environments for consistent and robust, downstream processing. This is where Sartorius Stedim Biotech crossflow products and technologies excel.

The unique design within the crossflow cassette family provides end users with predictable performance for scaling studies. Each cassette has the same hydrodynamic flow path geometry and identical materials of construction. The cassettes are self-sealing and feature low protein binding. The vertical positioning of the cassettes in the holder enables complete drainage of retentate and permeate channels by gravity during recovery and steam sterilization procedures.

**With our products and services, we offer precisely defined quality standards, a wide choice of performance specifications, and incomparably high yield rates.**



The Sartorius Stedim Biotech crossflow cassette family is scalable from lab to process

# Sartorius Crossflow Process-Scale Filter Holders for Maximum Reliability

**The family of Sartorius crossflow filter holders features the latest advances in crossflow design for full flexibility**

- Self-draining and self-venting thanks to vertical positioning
- Large retentate channels for low pressure drop
- Easy installation
- Low hold-up volume
- Monolithic design
- All ports located on the product plate



## **Sartococon® Slice 200 Holder**

The Sartococon® Slice 200 stainless steel holder is optimized for use with up to two Slice 200 crossflow cassettes (max. 400 cm<sup>2</sup>). It is designed for low-volume applications from 20 ml to 5 l. The Sartococon® Slice 200 holder uses female stainless steel Luer lock connectors. This ensures safe and reliable connections to ancillary equipment. The Slice 200 holder is the perfect tool for any low-volume crossflow application.

The Sartococon® Slice 200 cassettes have the same flow channel dimensions as do Sartococon® process filtration cassettes. Therefore, it is ideal for your scaling studies.

### **Target Applications**

- Scaling studies
- Membrane screening studies
- Product development
- Preclinical trials



## **Sartococon® Slice Holder**

The Sartococon® Slice stainless steel holder has been designed for low-to medium-volume applications from 300 ml to 100 l and optimized for use with up to five Sartococon® Slice crossflow cassettes (0.1–0.5 m<sup>2</sup>). The filter holder can be sterilized by autoclaving or inline steaming if pressure compensation tools are used.

### **Target Applications**

- Process development
- Preclinical trials
- Clinical trials
- Scaling studies
- Pilot-scale and small-volume production

This unique design within the Sartococon® family provides you with predictable performance all the way from process volumes down to scaling studies or daily lab-scale procedures.

### Outstanding Design for Full Flexibility

- Self-draining and self-venting due to vertical positioning
- Large, oval retentate channels for low pressure drop
- Easy installation
- Low hold-up volume
- Monolithic design
- All ports located on the product plate
- Hard-piped installation with low hold-up volume



### Target Applications

- Process development
- Preclinical trials
- Clinical trials
- Pilot lots
- Production

Our process filter holders are available in a choice of versions compliant with DIN, ISO or the Japanese Industrial Standard and with a choice of surface finish electropolished or mechanically polished to Ra < 0.4 µm. All holders are manufactured using high-grade 316 L stainless steel. For maximum flexibility, you can order any process filter holder with a mirror finish.

### Sartocon® 2 plus

The Sartocon® 2 plus AISI 316 L stainless steel holder (choice of 1.4404 or 1.4435) has been optimized for use with Sartocon® production-scale crossflow cassettes of up to 7 m<sup>2</sup>. It is suitable for applications from 30 l to > 2,000 l process volumes. Its easy-to use design and high quality materials make this holder the perfect tool.

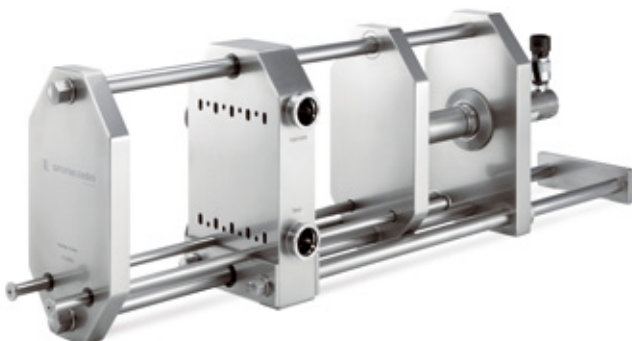
This holder is designed for thermal sterilization in an autoclave or steaming in place.



### SARTOFLOW® 10

The SARTOFLOW® 10 holder (1.4435 stainless steel) has been optimized for use with Sartocon® production-scale crossflow cassettes featuring up to 7 m<sup>2</sup> of membrane area. This holder is suitable for applications from 30 l to >2,000 l volumes.

An easy-to-use design and high-quality materials make this holder the perfect tool.



### SARTOFLOW® 20

The SARTOFLOW® 20 AISI 316 L stainless steel holder (1.4435) has been optimized for use with up to 14 m<sup>2</sup> Sartocon® crossflow cassettes. It is designed for volumes ranging from 200 l to > 2,500 l.

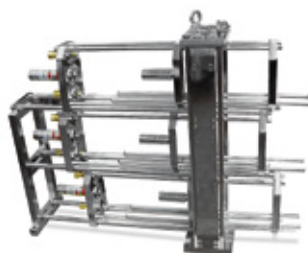
The clamping pressure can be controlled by a manual pump or an automatic hydraulic pump.







SARTOFLOW® 40



SARTOFLOW® 60



SARTOFLOW® 80

### SARTOFLOW® 40 | 60 | 80

To match the advanced level of our membrane development and cassette designing capabilities, our core area of expertise is in engineering the highest quality crossflow filters, holders and systems. This extends from lab to pilot scale, to clinical manufacturing, all the way to fully automated production systems.

The stacked holders have been designed following the proven principle of the SARTOFLOW® 20 filter holder with an enlarged filter plate for the integration of feed, retentate and permeate piping. Depending on specific process requirements, the piping can be mirror inverted. SARTOFLOW® 40 | 60 | 80 holding devices offer a combination of the smallest footprint possible, safety and operator convenience.

Like all other Sartococon® and SARTOFLOW® filter holders from Sartorius Stedim Biotech, the stacked filter holder can be drained backwards by gravity. Each level of a SARTOFLOW® 40 | 60 | 80 holder can hold up to 14 m<sup>2</sup> of Sartococon® or Sartocube® cassettes, adding to a total filter area of 28 m<sup>2</sup>, 42 m<sup>2</sup> or 56 m<sup>2</sup>. The family of Sartorius crossflow filter holders features the latest advances in crossflow design for full flexibility. Thanks to vertical positioning of our cassettes inside the filter holders, the feed flow easily evacuates air from the system. Sartorius Stedim Biotech offers the perfect equipment solution for single-use or reusable crossflow applications, such as concentration and diafiltration of proteins, vaccines, viruses, antibodies and oligonucleotides.

	Order Numbers	Description
Adapter plates	17546---113-C	Sartococon® Single-use Adapter (PP-DWST)
	17521---114-C	Sartococon® Slice Single-use Adapter (PP-DWST)
	175--Z40GDB-0001	Sartococon® Adapter (316 L) – Round to oval ports
	302020A-C	Sartococon® Adapter (PP-DWST) – Round to oval ports
	17521---029-C	Sartococon® Slice Adapter (PP-DWST) – Round to oval ports
Silicone gaskets	17546---114	Gasket for Sartococon® Adapter plate (316 L)
	17521---030C	Sartococon® Slice oval hole gasket
	17521---031C	Sartococon® Slice round hole gasket
	17546---112C	Sartococon® oval hole gasket
	17546---115	Sartococon® round hole gasket
Flush plates	302030C-C	Sartococon® Flush plate (PP-DWST & for cleaning EPDM O-ring) for feed and permeate flushing
	305030C-C	Sartococon® Slice Flush plate (PP-DWST & EPDM O-ring) for feed and permeate flushing
Dummy module plates, without flow channels	302020D-C	Sartococon® Dummy-Module (PP-DWST) 20 mm – equivalent of 1 cassette
	302040D-C	Sartococon® Dummy-Module (PP-DWST) 40 mm – equivalent of 2 cassettes
	302100D-C	Sartococon® Dummy-Module (PP-DWST) 100 mm – equivalent of 5 cassettes
Threaded spacers for SARTOFLOW® 10   SARTOFLOW® 20"	17000---309	Nominal length = 100 mm Effective length = 85 mm
	17000---314	Nominal length = 65 mm Effective length = 50 mm

Trolley	179SFG-17	Trolley for SARTOFLOW® 10 with drip tray for storage of components (e.g., pump, hoses) with two wheels and two swivel castors with brake
	179SFG-18	Trolley for SARTOFLOW® 20 with drip tray for storage of components (e.g., pump, hoses); with two wheels and two swivel castors with brake
Hand hydraulic set	1ZW---0004	Hand hydraulic set for SARTOFLOW® 10   for SF 10 or SF 20 SARTOFLOW® 20: Hand hydraulic pump, pressure gauge, pressure hose, needle valve



Sartococon® SU Adapter  
17546---113-C



Sartococon® Slice SU Adapter  
17521---114-C



Sartococon® Adapter – round to oval ports, 302020A-C



Sartococon® Slice Adapter – round to oval ports, 17521---029-C

# Ordering Information

## Filter Holders and Filtration Sets

Slice 200	17525--01	Sartocon® Slice 200 filter holder (316 L) – 200 – 400 cm <sup>2</sup>
Slice microfiltration set	17521---105	Sartocon® Slice Microfiltration set (316 L) – 0.1 – 0.5 m <sup>2</sup> , filter holder, pressure gauges, valves, clamps, permeate manifold, torque wrench
Slice ultrafiltration set	17521---106	Sartocon® Slice Ultrafiltration set (316 L) – 0.1 – 0.5 m <sup>2</sup> with filter holder, pressure gauges, valves, clamps, permeate manifold, torque wrench
Microfiltration set Sartocon® 2 Plus	17546---201	Sartocon® Microfiltration set (316 L) – 7 m <sup>2</sup> , filter holder, pressure gauges, valves, clamps, permeate manifold, torque wrench
Ultrafiltration set Sartocon® 2 Plus	17546---202	Sartocon® Ultrafiltration set (316 L) – 7 m <sup>2</sup> , filter holder, pressure gauge, valves, clamps, permeate manifold, torque wrench

## Sartocon® 2 plus, AISI 316 L (1.4404)

Order numbers	Standard	F/R	P	E-polished	Mirror-inverted
		[mm]	[mm]		
17546D260160	DIN	26	16		
17546D260160E	DIN	26	16	X	
17546IZ221157	Zoll	22.1	15.7		
17546IZ221157E	Zoll	22.1	15.7	X	
17546II297181	ISO	29.7	18.1		
17546II297181E	ISO	29.7	18.1	X	
17546IJ230230	JIS-G	23	23		
17546IJ230230E	JIS-G	23	23	X	
17546D260160-M	DIN	26	16		X
17546D260160EM	DIN	26	16	X	X
17546IZ221157-M	Zoll	22.1	15.7		X
17546IZ221157EM	Zoll	22.1	15.7	X	X
17546II297181-M	ISO	29.7	18.1		X
17546II297181EM	ISO	29.7	18.1	X	X
17546IJ230230-M	JIS-G	23	23		X
17546IJ230230EM	JIS-G	23	23	X	X

## Sartocon® 2 plus, AISI 316 L (1.4435)

Order numbers	Standard	F/R	P	E-polished	Mirror-inverted
		[mm]	[mm]		
17546DD260160	DIN	26	16		
17546DD260160E	DIN	26	16	X	
17546DZ221157	Zoll	22.1	15.7		
17546DZ221157E	Zoll	22.1	15.7	X	
17546DI297181	ISO	29.7	18.1		
17546DI297181E	ISO	29.7	18.1	X	
17546DJ230230	JIS-G	23	23		
17546DJ230230E	JIS-G	23	23	X	
17546DD260160-M	DIN	26	16		X
17546DD260160EM	DIN	26	16	X	X
17546DZ221157-M	Zoll	22.1	15.7		X
17546DZ221157EM	Zoll	22.1	15.7	X	X
17546DI297181-M	ISO	29.7	18.1		X
17546DI297181EM	ISO	29.7	18.1	X	X
17546DJ230230-M	JIS-G	23	23		X
17546DJ230230EM	JIS-G	23	23	X	X

F – Feed  
R – Retentate  
P – Permeate  
E – Electro-



Sartorius Stedim Biotech plant in Goettingen, Germany

## SARTOFLOW® 10, AISI 316 L (1.4435)

Order numbers	Standard	F/R	P	E-polished	Mirror-inverted
		[mm]	[mm]		
179-6DD260160	DIN	26	16		
179-6DD260160E	DIN	26	16	X	
179-6DZ221157	Zoll	22.1	15.7		
179-6DZ221157E	Zoll	22.1	15.7	X	
179-6DI297181	ISO	29.7	18.1		
179-6DI297181E	ISO	29.7	18.1	X	
179-6DJ230230	JIS-G	23	23		
179-6DJ230230E	JIS-G	23	23	X	
179-6DD260160-M	DIN	26	16		X
179-6DD260160EM	DIN	26	16	X	X
179-6DZ221157-M	Zoll	22.1	15.7		X
179-6DZ221157EM	Zoll	22.1	15.7	X	X
179-6DI297181-M	ISO	29.7	18.1		X
179-6DI297181EM	ISO	29.7	18.1	X	X
179-6DJ230230-M	JIS-G	23	23		X
179-6DJ230230EM	JIS-G	23	23	X	X

## SARTOFLOW® 20, AISI 316 L (1.4435)

Order numbers	Standard	F/R	P	E-polished	Mirror-inverted
		[mm]	[mm]		
179-2DD380260	DIN	38	26		
179-2DD380260E	DIN	38	26	X	
179-2DZ348221	Zoll	34.8	22.1		
179-2DZ348221E	Zoll	34.8	22.1	X	
179-2DI384237	ISO	38.4	23.7		
179-2DI384237E	ISO	38.4	23.7	X	
179-2DJ357230	JIS-G	35.7	23		
179-2DJ357230E	JIS-G	35.7	23	X	
179-2DD380260-M	DIN	38	26		X
179-2DD380260EM	DIN	38	26	X	X
179-2DZ348221-M	Zoll	34.8	22.1		X
179-2DZ348221EM	Zoll	34.8	22.1	X	X
179-2DI384237-M	ISO	38.4	23.7		X
179-2DI384237EM	ISO	38.4	23.7	X	X
179-2DJ357230-M	JIS-G	35.7	23		X
179-2DJ357230EM	JIS-G	35.7	23	X	X
179-6DJ230230-M	JIS-G	23	23		X
179-6DJ230230EM	JIS-G	23	23	X	X

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