



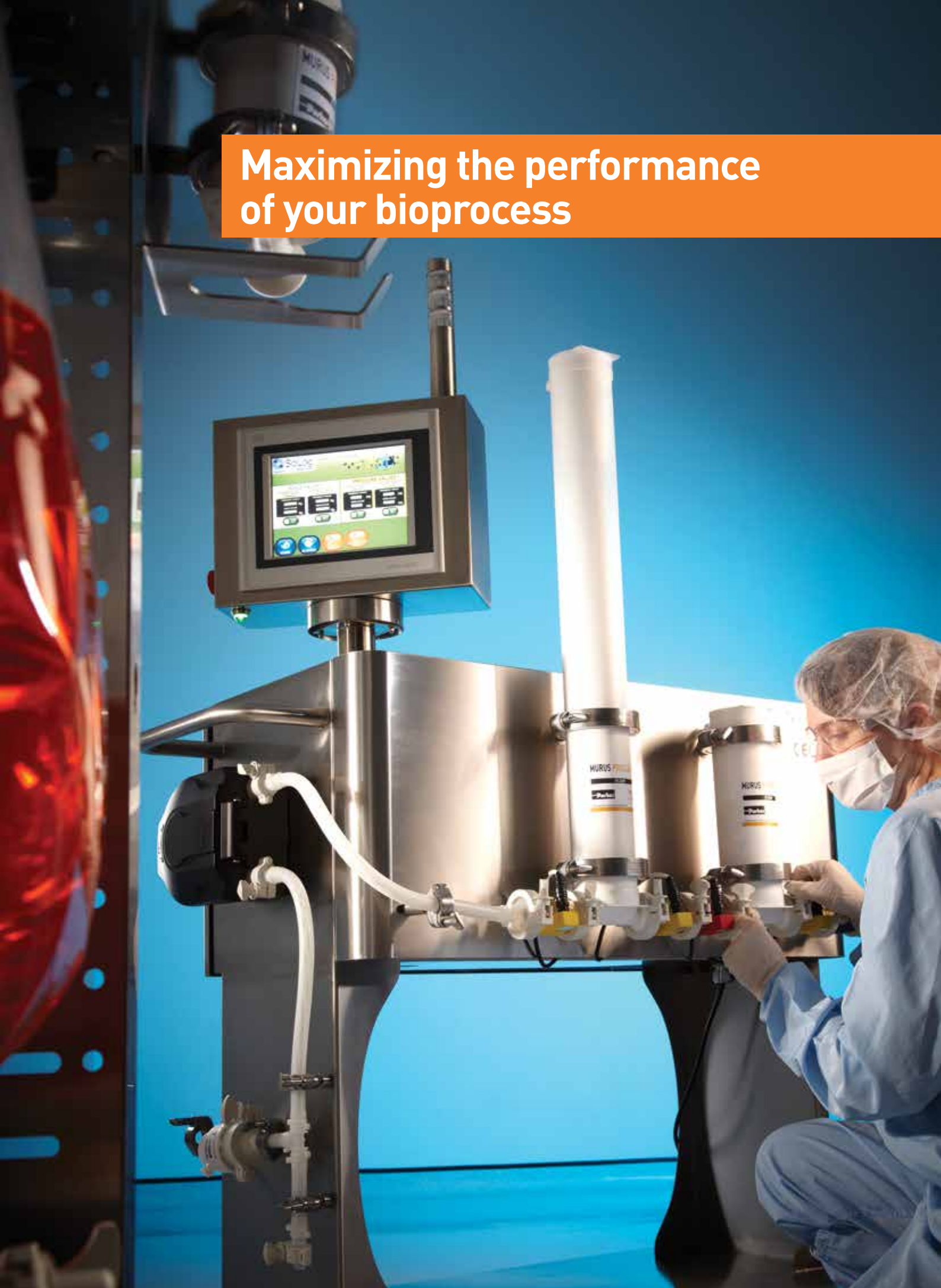
Biopharmaceutical Industry

A guide to bioprocessing products and services



ENGINEERING YOUR SUCCESS.

Maximizing the performance of your bioprocess



Through integrated single-use solutions

Parker Bioscience Filtration is a global supplier of single-use solutions for biopharmaceutical manufacturing. Our solutions combine our unique and innovative SciLog® sensing and control technologies with decades of filtration expertise to produce integrated automated single-use systems that will speed up development times, increase efficiency and safety, and guarantee reproducible product quality.

Bioscience Filtration within Parker Hannifin

Parker Bioscience Filtration is proud to be one of the leading platforms supplying the biopharmaceutical market within the \$13 billion Parker Hannifin Corporation.

Parker is driven by engineering challenges, always seeking new ways to innovate, combine technologies and collaborate with customers. We listen and respond to your needs to solve your bioprocessing challenges.

A commitment to quality

Parker Bioscience Filtration's biopharmaceutical products are designed and manufactured to be used within applications that are most critical to patient safety. All products are manufactured in a controlled environment and fully validated with extractable data for use in biopharmaceutical applications. A strong focus on raw materials, full traceability of components and controlled release of products ensures your process delivers reproducible quality.

Global support

Wherever in the world you choose to manufacture, Parker is there to help you get the most out of your bioprocess. With multiple laboratory and manufacturing facilities and a network of customer support centres operating in 48 countries worldwide, we can offer you local, specialized support throughout your entire development process from R&D through to commercial manufacturing.

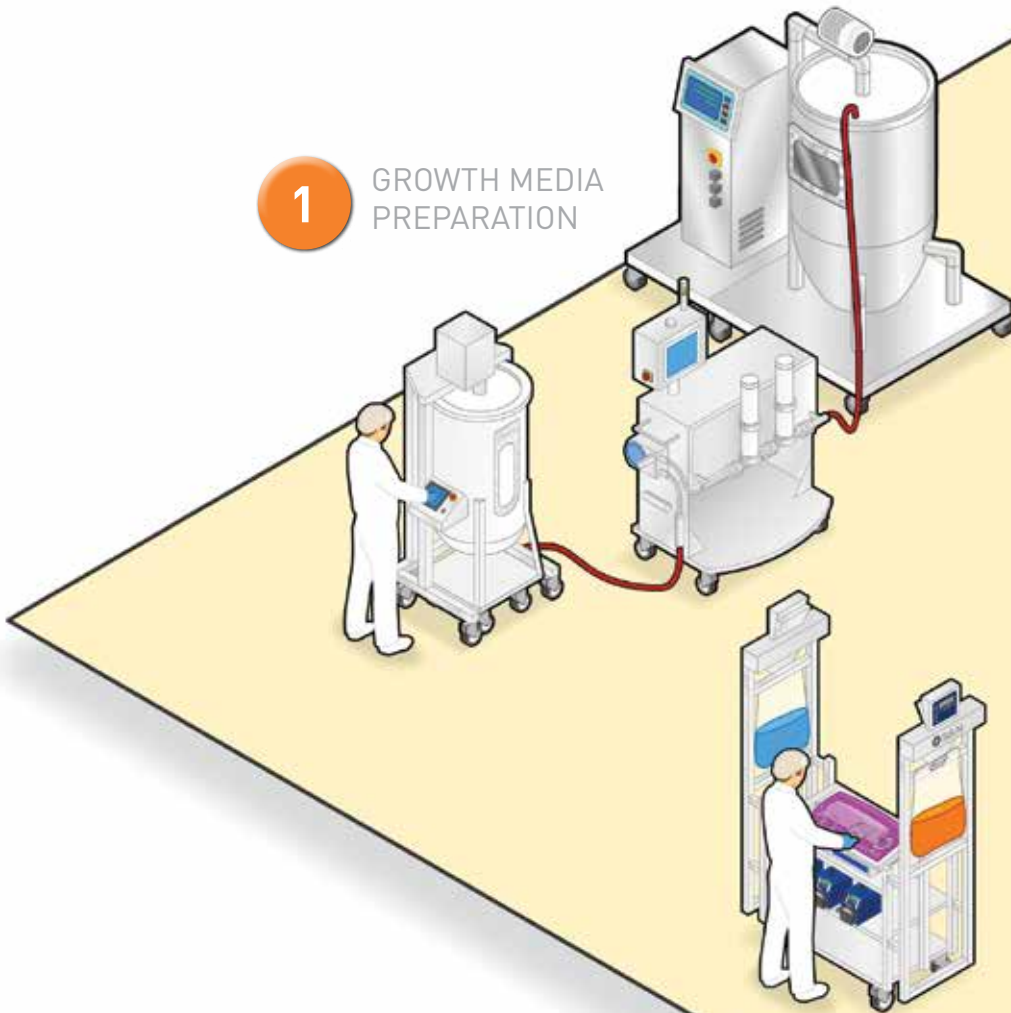


Cell culture and harvest

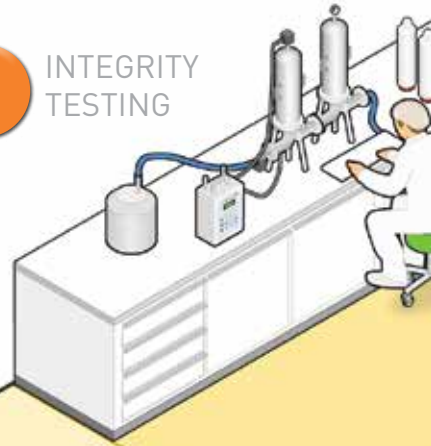
upstream bioprocessing



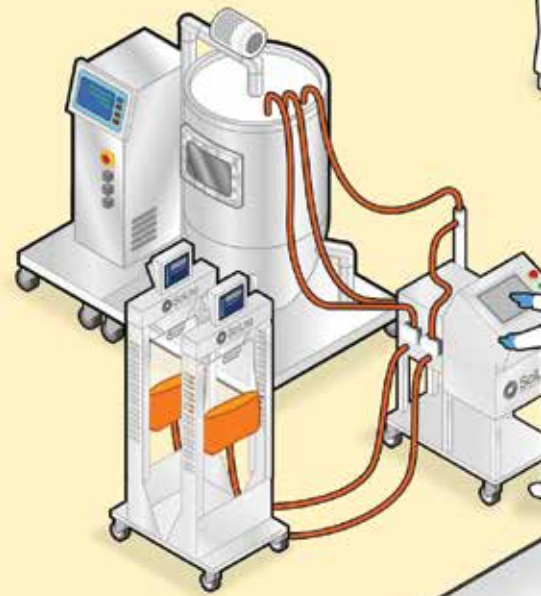
1 GROWTH MEDIA PREPARATION



5 INTEGRITY TESTING



2 CELL CULTURE MAINTENANCE SYSTEM





4 INTELLIGENT LABORATORY-SCALE SYSTEMS

3 CELL CULTURE HARVESTING

Growth Media Preparation	1
Single-use fluid transfer and storage	DuraPure® SciLog® SELECT GO
Automated filtration systems	SciFlex® NFF FilterTec™
Single-use sensors	SciPres® SciTemp® SciCon®
Prefiltration	PROCLEAR range
Mycoplasma retentive filters	PROPOR MR
Cell Culture Maintenance System	2
Bench-scale	MabTec®
Scale-up applications	Contact Parker Bioscience Filtration
Quantitative fluid management	WeighStation™ Dual
Cell retention device	PROPOR TFF
Cell Culture Harvesting	3
TFF systems	SciFlex® TFF SciPure® TFF
Prefiltration	PROCLEAR range
High capacity sterilizing filtration	PROPOR HC
Single-use fluid transfer and storage	DuraPure® SciLog® SELECT GO
Automated filtration systems	HarvestClear™
Single-use sensors	SciPres® SciTemp® SciCon®
Intelligent Laboratory-Scale Systems	4
Laboratory-scale tangential flow filtration systems	PureTec®
Laboratory-scale normal flow filtration systems	FilterTec™
Multi-filter capacity testing system	FilterTec™ Plus
Media preparation station	LabTec®
Precision metering	ChemTec™
Integrity Testing	5
Diffusional flow	Porecheck 4
Bubble point	Porecheck 4
Water intrusion	Porecheck 4
Aerosol challenge	Valairdata 3

ENGINEERING YOUR SUCCESS.

Purification and dispense

downstream bioprocessing



5

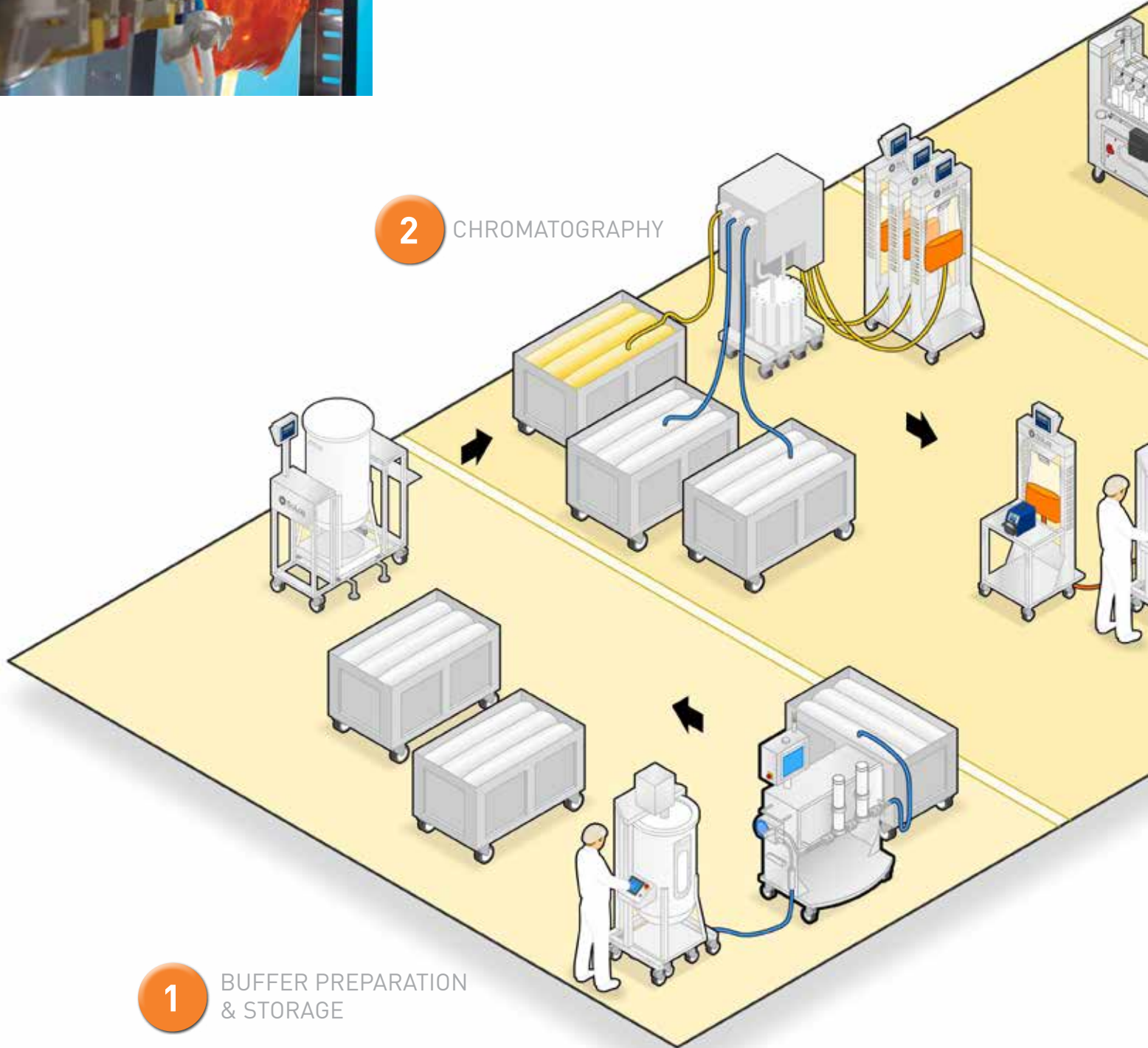
PRODUCT
FILTRATION WITH
DISPENSE

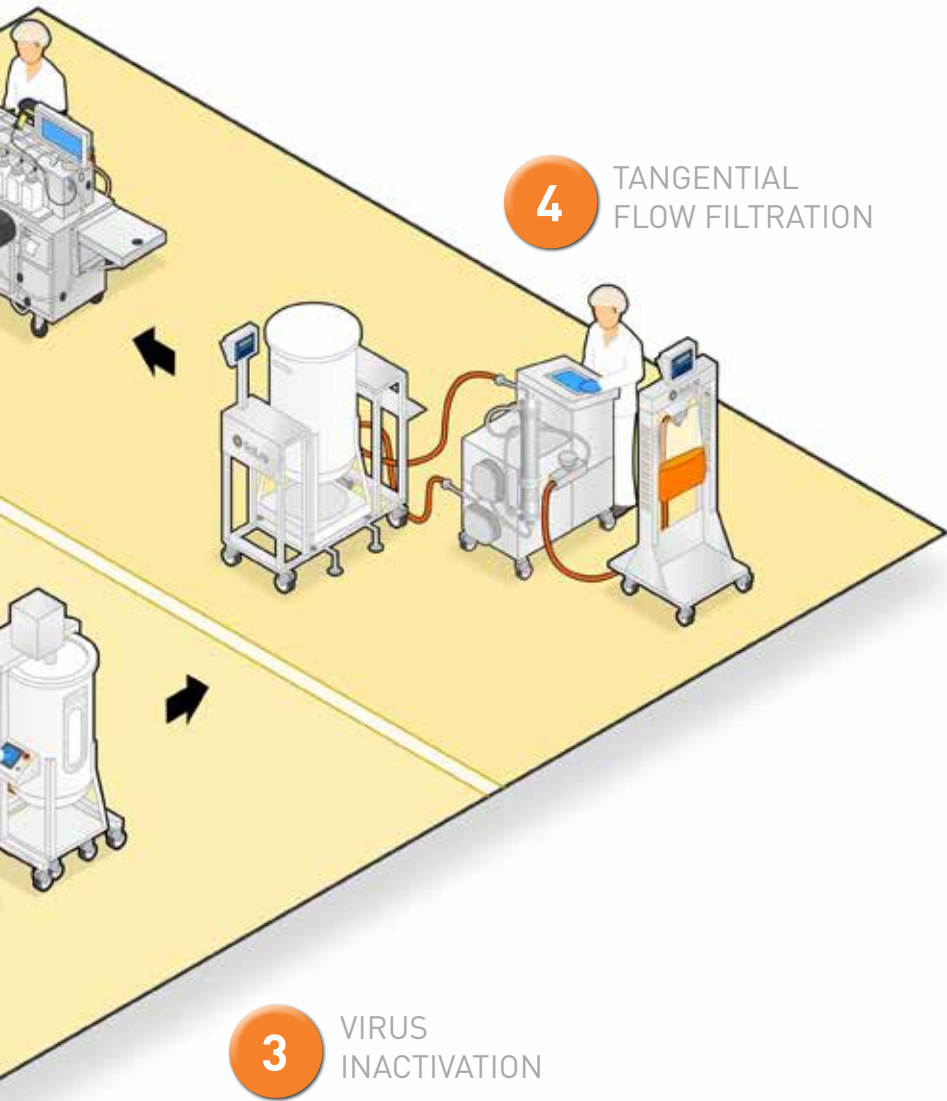
2

CHROMATOGRAPHY

1

BUFFER PREPARATION
& STORAGE





4 TANGENTIAL FLOW FILTRATION

3 VIRUS INACTIVATION

Buffer Preparation and Storage	1
Prefiltration	PROCLEAR range
Sterilizing grade filtration	PROPOR SG
Fluid transfer and storage	DuraPure® SciLog® SELECT GO
Automated filtration systems	SciFlex® NFF FilterTec™
Single-use sensors	SciPres® SciTemp® SciCon®
2D and 3D bioprocess containers	DuraPure®
Configured-to-order single-use assemblies	SciLog® SELECT GO
Chromatography	2
Column guard filtration	PROPOR BR
Fluid transfer and storage	DuraPure® SciLog® SELECT GO
Quantitative fluid management	WeighStation® Triple
Virus Inactivation	3
Precision metering	ChemTec™
Quantitative fluid management	WeighPro™
Tangential Flow Filtration	4
TFF systems	SciFlex® TFF SciPure® TFF
Single-use sensors	SciPres® SciTemp® SciCon®
Fluid transfer and storage	DuraPure® SciLog® SELECT GO
Quantitative fluid management	WeighCart™
Product Filtration with Dispense	5
Quantitative fluid management	WeighStation™
Automated filtration systems	SciLog® SciPure FD System
Single-use sensors	SciPres® SciTemp® SciCon®
Prefiltration	PROCLEAR range
High capacity sterilizing grade filtration	PROPOR HC

Selection product guide

Automated Bioprocessing System

SciLog® SciPure®



BioProcessing
Systems

- GMP – out of the box mobile processing platforms.
- Off the shelf for multiple applications with SciLog single-use sensors manifolds.
- Options available for fully automated, semi and manual operation.
- Works with any manufacturers' filters.
- Available in single-use, extended-use and stainless.
- TFF & NFF models available.
- Optimize filter throughput with patented Rate-Pressure controlled feed.

Semi-Automated Bioprocessing System

SciLog® SciFlex®



BioProcessing
Systems

- TFF, NFF, media transfer, media prep and bag filling models available.
- Mobile station for a multitude of bioprocessing applications.
- Ideal for batch operations in development and contract manufacturing environments.
- Off the shelf for multiple applications with SciLog® single-use sensors manifolds.
- Works with any manufacturers' filters.

Automated Bioprocessing System

SciLog® SciPure FD System



BioProcessing
Systems

- Automates a 10 step final bulk filtration and container fill
- Closed system processing protecting products against contamination and operators from exposure to potent molecules
- Fully single-use flow path
- Mobile system with small footprint

Automated Bioprocessing Components

Manifolds



Single-Use
Components

- Risk management with SU technology.
- Reduce cross-contamination.
- Fully assembled, ready-to-use.
- Increases operator safety when working with toxins.
- Your choice of sensors, bags and filters.
- Designed to meet your requirements.

Quantitative Fluid Management

SciLog® WeighStation™



Fluid
Management

- Accommodates up to three 50Kg single-use hanging bags.
- Eliminates balancing of bags on mobile carts.
- Allows self drainage and 100% sample recovery.
- No second operator required to hold the bag.

Quantitative Fluid Management

SciLog® WeighPro™



Fluid
Management

- A mobile, compact, vertical bag holder.
- Integrated configurable bioprocessing workstation.
- Adjustable filter, tubing, sensor and pump mounts.
- Tool tray table.
- Quick configuration allows maximum process flexibility.

Quantitative Fluid Management

SciLog WeighCart™



Fluid
Management

- A mobile cart with integrated floor scale accommodating 100L or 200L BPCs.
- Standard offering with shelving and supports to mount pumps and tubing.
- A range of additional accessories and balances are available.

Normal Flow Filtration (NFF) System

SciLog FilterTec™/ FilterTec™ Plus



Intelligent
Lab Systems

- Filterability studies and VMax determination.
- Increase DEF filter utilization up to 30%.
- 3 pressure sensor and balance hook-ups for filter trains.
- Safe, walk-away system operation.

Precision Metering System




Intelligent
Lab Systems

- Stored methods for linear or exponential feed by weight or volume.
- Validated methods for pH control and titration, analytic (UV, turbidity) device tracking, preparative chromatography, and buffer weight maintenance.
- Walk-away automation with remote or user defined alarms and interlocks.
- Programmable control of two 6-port rotary valves.

Tangential Flow Filtration (TFF) System

SciLog® PureTec®




Intelligent Lab Systems

- Ideal for lab-scale UF/MF/DF – concentration and diafiltration.
- Controls and monitors TMP (transmembrane pressure) and feed rate.
- Set end points and alarm for walk-away operation.

Smart Dispenser System

SciLog® LabTec®




Intelligent Lab Systems

- Rapid, high precision dispensing/filling, mL to L.
- Automated dispensing by weight or by volume.
- In-line filter sterilization – senses filter plug-up.
- Sample weighing and auto-diluting – weight ratio capability.
- Performance validation sent with each LabTec®.

Cell Culture Maintenance System

SciLog® MabTec®




Intelligent Lab Systems

- Promote high-density cell culture through automated seed, feed and perfusion strategies.
- Methods and alarms to protect your entire cell culture processes.
- Modular compact design enhances current setups.
- Seamless integration to any bioreactor to enhance performance.

Sensor Products

SciPres®, SciCon®, SciTemp®




Sensor Products

- Pre-calibrated sensors for single or extended-use.
- Each sensor is pre-calibrated with a unique identifier and is lot traceable.
- Factory calibration ensures the highest level of accuracy and is stored on each sensor's memory chip for out of the box, plug and play use.
- Custom calibrations available.
- Available in 5 connection variants.

Mycoplasma Removal Filters

PROPOR MR



Filtration

Polyethersulphone	0.1 micron
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- Fully validated and integrity testable for assurance of sterility.
- A typical LRV of >10 for *Acholeplasma laidlawii* for effective mycoplasma control.
- Integral prefilter layer increases throughputs for reduction of filter trains.
- Exceptional flow rates for quick processing of cell culture media.

Sterilizing Filters

PROPOR SG



Filtration

Polyethersulphone	0.1 to 0.45 micron
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- Up to 3.5 times higher flow rates than competitive sterilizing grade filters.
- Fully validated and integrity testable membrane for assurance of sterility.
- Low binding for minimal product loss.

High Capacity Sterilizing Filters

PROPOR HC




Filtration

Polyethersulphone	0.2 micron
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- Optimized membrane configuration allows up to 10 times the throughput compared to single layer membrane products.
- Integral prefilter layer can condense filter trains for greater processing economy.

Bioburden Reduction Filters

PROPOR BR



Filtration

Polyethersulphone	0.2 micron
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- *Brevundimonas diminuta* retention of LRV >5 efficient bioburden reduction.
- Additional prefilter layer gives excellent throughput to blockage.
- Low binding for minimal product loss.

Pharmaceutical Prefilters

PROCLEAR GF



Filtration


Glass Microfibre	0.6 to 10 micron
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- Excellent dirt holding capacity.
- Non-fibre releasing glass microfibre media.
- Long service life for maximum throughput.


Selection product guide

Pharmaceutical Prefilters	
PROCLEAR GP	
 Filtration	
Glass Microfibre / Polypropylene	0.6 to 10 micron
<ul style="list-style-type: none"> • Dual layer media or increased capacity and assurance. • Maximizes retention for protection of downstream membranes. • Ideal for difficult to filter solutions. 	

Pharmaceutical Prefilters	
PROCLEAR PP	
 Filtration	
Polypropylene	0.6 to 100 micron
<ul style="list-style-type: none"> • Dual layer media for increased capacity and assurance. • Maximizes retention for protection of downstream membranes. • Ideal for difficult to filter solutions. 	

Gas Filters	
TETPOR AIR	
 Filtration	
Expanded PTFE	0.2 micron
<ul style="list-style-type: none"> • Assured biosecurity with absolute rated filtration. • High flow rates with low pressure drops. • High voids volume PTFE membrane. 	

Integrity Testing Equipment	
Porecheck 4 / Valairdata 3	
 Integrity Testing	
<p>Porecheck 4 - Water intrusion, pressure decay and bubble point testing of membrane liquid filters.</p> <ul style="list-style-type: none"> • Valairdata 3 - Aerosol challenge testing of sterile gas filters. 	

Fluid Storage	
SciLog® SELECT GO	
 Fluid Management	
Expanded PTFE	0.2 micron
<ul style="list-style-type: none"> • Configured to order single-use assemblies from a validated component library • Rapid design turnaround • Rapid sample manufacture • Reliable delivery • Extensive validation package • Sterility to ISO 11137 available • Localized manufacture • Overmolded or barbed options available 	

Fluid Storage	
DuraPure™ Bags	
 Fluid Management	
<ul style="list-style-type: none"> • DuraPure™ bags are available in the following sizes: 250mL, 1L, 5L, 10L, 20L, 50L, 100L, 500L and 1000L. • Each system is designed to seamlessly integrate with the rest of your process. • MitoS-P platinum-cured tubing with molded junctions and sanitary fittings to minimize risk. • TPE tubing with molded junctions and sanitary fittings. • Contact us to discuss your custom needs. 	

Contact

for further information



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