Tangential Flow
Filtration（TFF）System

About us

YOCELL Biotechnology is your trusted partner in the field of bioprocess. YOCELL has a team of energetic young scientists and engineers. From initial R&D to production, we are committed to providing the most reliable solutions for biotechnology scientists and engineers around the world. Accepting the challenges of continuous innovation in biotechnology and solving problems from multiple perspectives are the most impressive qualities of the team.
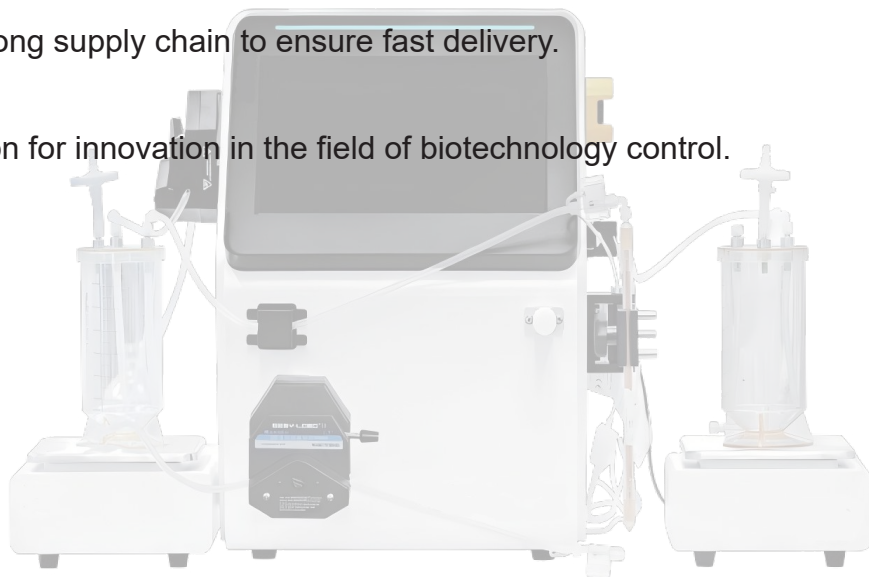
Pragmatic

Always listen carefully to your needs and provide the most competitive solutions.

Efficient

Respond quickly and have a strong supply chain to ensure fast delivery.

Focus

Continuous attention and passion for innovation in the field of biotechnology control.

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01 EliteFlow Series TFF System

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EliteFlow Series TFF System

EliteFlow Series, a versatile automated tangential flow filtration system, is capable of providing customized solutions that are highly automated, highly integrated, and cost-effective for customers.Applications range from laboratory discovery to commercial production.

[Applicable Products] Antibodies, Vaccines, Gene Therapies, Blood Products, Diagnostic Reagents, Antibiotics, Biochemical Products, Natural product extraction.

[Applicable Processes] Harvesting, Clarification, Separation and Purification, Concentration, Dialysis, Buffer Exchange, Microfiltration Experiments.

Product Features

01. R&D and production

Stable support for all needs from laboratory exploration to commercial production.

02. Linear conversion to aid TFF processes

Provide laboratories with an operating environment consistent with mainstream commercial production equipment to facilitate process amplification.

03. Intelligent and automated operation

- Flexible and compact design
- Quick switching between different operating modes (UF/MF/NF)
- Enhances efficiency and flexibility
- Reduces capital expenditure

04. Electronic data

- User-friendly Navigator™ software interface
- 21 CFR Part 11 compliant data management
- Ensures process stability and repeatability
- Helping with scale-up and scale-down of production processes

[Typical Application]

> Cell collection/harvesting	> Plasmid purification	> Latex and nanoparticle fractionation & washing	> Dealcoholization of blood products and removal of metal ions
> Clarification of cell culture and lysis fluids	> Purification of viral samples	> Liposome purification	> Biological samples, antibiotic active pharmaceutical ingredients, traditional Chinese medicine endotoxin removal
> UF&DF for samples	> Polysaccharide separation, purification & concentration	> Buffer, Animal Cell Culture Media Endotoxin Removal	

System Advantage

A. Hardware

Integration

- Compact layout with minimal hold-up volume;
- Integrated design, overall aesthetic and elegant;

Best Compatibility

- Adaptable to any filter components from various suppliers (hollow fiber & cassettes);
- Meet the usage needs from R&D and commercial production;

System Modularization

- Includes fluid handling modules, weighing modules, and detection modules from leading international brands, which are stable and reliable;
- pressure, conductivity, pH, flow, and UV online sensors can be freely combined, with reserved space for upgrades;
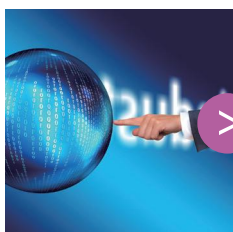
Single Use Technical Components

- Single-Use (SU) technology liquid connection components can be reused or quickly replaced as needed. This eliminates the need for cleaning validation, reduces the risk of cross-contamination, and enhances process development efficiency.
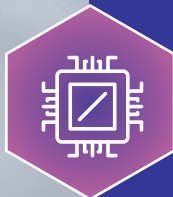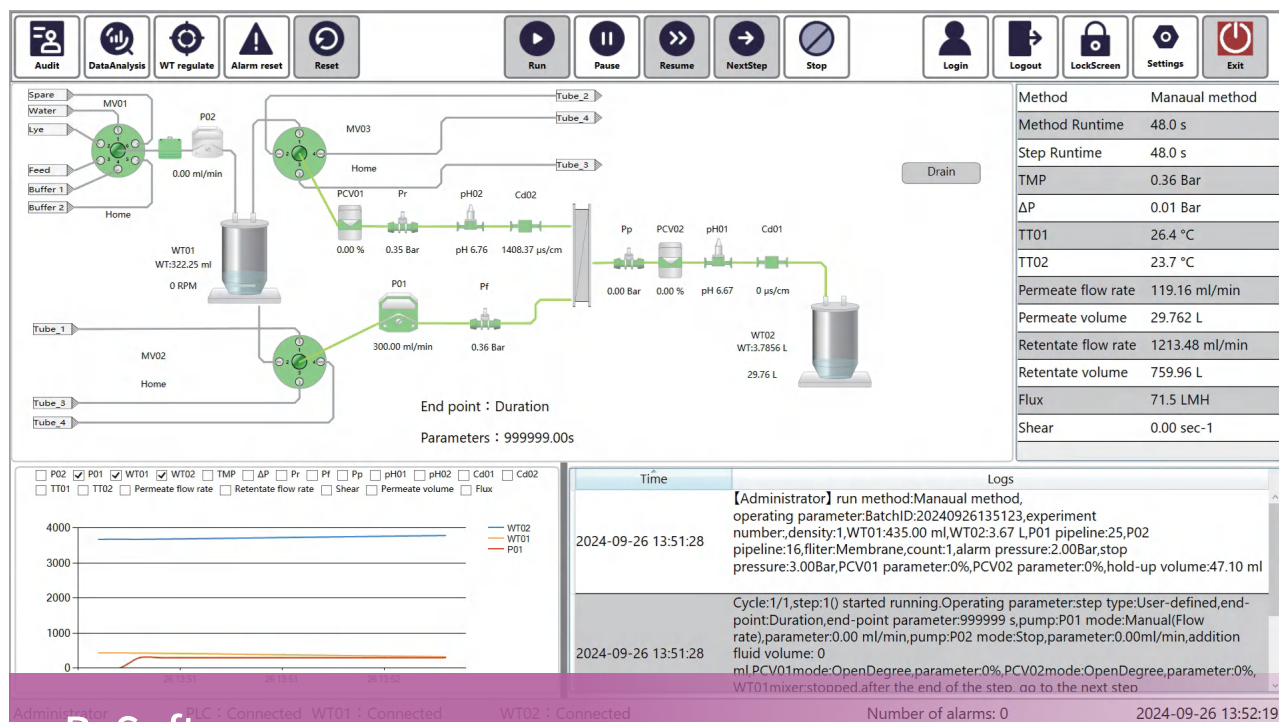
B. Software

Intelligent, Automated

- Flexible automation modes support manual and automatic tasks, including concentration,filtration, rinsing, and water flux testing;
- Pre-set software allows one-click operation across various modes;
- The data processing system simplifies experimental setup and enables easy parameter adjustments for efficient calculations.

Humanized

- Next-generation Navigator ™ software that is user-friendly, feature-rich, and easy to learn and use;
- Flexible assignment and definition of access rights thanks to multi-level permission settings;
- Readily available for system status, warnings, and alarm information;
- Clear and comprehensive software interface, with intuitive data visualization, enabling users to directly view system operations and easily track experimental progress.
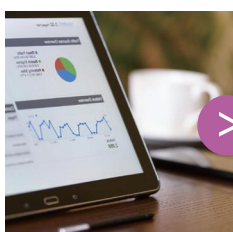
Comprehensive Audit Trail

- A comprehensive audit trail function that complies with 21 CFR Part 11 requirements, ensuring data authenticity, legality, and traceability, with data being secure and reliable.

C. Service

High efficiency low maintenance cost
- Provides disposable systems, saving CIP validation time, and more efficient
- Simple maintenance operations, low maintenance costs extend the instrument's service life

Comprehensive Document System
- Provides DQ/IQ/OQ documentation and validation services

Process Method

| Mode	Method Editing	Remarks
Automatic Mode	Concentration Mode	Preset methods, one-click start, let the instrument calculate complex values for you
	Filter Washing Mode	
	Rinse Mode	
	Caustic Cleaning Mode	
	Buffer Addition Mode	
	Water Flux Mode	
	TMP Optimization Mode	
Manual Mode	Custom Mode	Process development, permissions relaxed, make methods more flexible

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EliteFlow Technical Parameter

Item	Description		Specifications or Descriptions	
Filter	Filter type		Hollow fiber	Plate-type Membrane Package
Basic configuration	Recommended sample processing volume	SUD05	20mL-5L	20mL-5L
		P3	20mL-10L	20mL-15L
		D3	20mL-15L	20mL-15L
		P20	10L-200L	10L-200L
		D20	10L-500L	15L-500L
	Filter recommended membrane area	SUD05	$50cm^2 \sim 1000cm^2$	$50cm^2 \sim 1000cm^2$
		P3	$50cm^2 \sim 3700cm^2$	$50cm^2 \sim 5000cm^2$
		D3	$50cm^2 \sim 3700cm^2$	$50cm^2 \sim 5000cm^2$
		P20	$0.1m^2 \sim 2.5m^2$	$0.1m^2 \sim 2.5m^2$
		D20	$0.1m^2 \sim 2.5m^2$	$0.1m^2 \sim 2.5m^2$
	Feed pump	SUD05	Quattroflow QF30SU, PP pump head, up to 0.5LPM (liters per minute), 4bar pressure 1/8" barbed fittings	
		P3	Easy-load pump head, up to 2.3LPM, compatible with tubing sizes: 13#, 14#, 16#, 25#, 17#, 18#	
		D3	Quattroflow QF150S, stainless steel pump head, up to 3LPM, 6bar pressure, 1/4"Tri-Clamp fittings	
		P20	Easy-load pump head, up to 13LPM (liters per minute), compatible with tubing sizes: 26#, 73#, 82#	
		D20	Quattroflow QF1200S, stainless steel pump head, up to 20LPM, 6bar pressure, 3/4"Tri-Clamp fittings	
	Replenishment pump	SUD05	Easy-load pump head, up to 2.3LPM, compatible with tubing sizes: 13#, 14#, 16#, 25#, 17#, 18#	
		P3	Easy-load pump head, up to 2.3LPM, compatible with tubing sizes: 13#, 14#, 16#, 25#, 17#, 18#	
		D3	Easy-load pump head, up to 2.3LPM, compatible with tubing sizes: 13#, 14#, 16#, 25#, 17#, 18#	
		P20	Easy-load pump head, up to 2.3LPM, compatible with tubing sizes: 13#, 14#, 16#, 25#, 17#, 18#	
		D20	Easy-load pump head, up to 2.3LPM, compatible with tubing sizes: 13#, 14#, 16#, 25#, 17#, 18#	
	Pressure sensor		Single-Use pressure sensor, made of PSU material; Pressure range: -7 to 75 psi (-0.48 to 5.2bar)	
	HMI		IPC, stable and reliable;	
			Pre-installed with Navigater control software	
	Automatic back pressure valve		Automatic adjustment of Transmembrane Pressure (TMP)	
	Weighing unit	SUD05	Range 0-20kg, ±0.1g (Multiple specification available)	
		P3/D3	Range 0-20kg, ±0.1g (Multiple specification available)	
		P20/D20	Range 0-50kg, ±0.1g (Multiple specification available)	
	Magnetic stirring		Fitted weighing unit, adjustable variable speed	
	Container		Interchangeable PSU hygienic grade low residue container	
	Pipe		Based on process requirements, platinum-cured silicone tubes and thermoplastic tubing that meet specification requirements can be used.	
	Bracket		Integrated hollow fiber bracket, compact with a sense of space	
	Through the flow-limiting valve		Microfiltration process limits the permeate floe rate to avoid rapid polarization and contamination of the membrane	
	Filtration outlet module		The filtrate end module with weighing, neat and elegant	
Optional configuration	UV		200-800nm, variable wavelength band	
	pH		0-14	
	Conductivity		Temperature compensation, 0.02-200ms/cm	
Enviroment required	Temperature		0-40℃	
	Humidity		10-90%	
	Body design		IP33, the whole machine can be wiped and cleaned	
	Power supply		AC220V	
Demension	Main module	SUD05	510*480*500 (L*W*H)	
		P3/D3	510*480*500 (L*W*H)	
		P20/D20	520*540*590 (L*W*H)	
	Feed module	SUD05	210*270*100 (L*W*H)	
		P3/D3	210*270*100 (L*W*H)	
		P20/D20	460*440*210 (L*W*H)	
	Filtrate module	SUD05	210*185*100 (L*W*H)	
		P3/D3	210*185*100 (L*W*H)	
		P20/D20	380*405*120 (L*W*H)	
	Weight	SUD05	55kg	
		P3	40kg	
		D3	55kg	
		P20	70kg	
		D20	90kg	
Supporting services	Installation and calibration		Installation, commissioning, and training services, lasting 1-2days, will be conducted on-site or online	
	3Q certification		1-2 days of 3Q certification will be conducted on-site or online, depending on the purchase of the 3Q certification service	
	Regular maintenance		Upon purchasing an annual maintenance contract, monthly and annual maintenance online or on-site services will be provided	

Naming conventions D:Diaphragm P: Peristaltic SUD: Single-Use Diaphragm

Specification	Flow range	Enviroment
EliteFlow Pro SUD05	0-0.5L/min	0-40℃ 10%-90%
EliteFlow Pro SUD3	0-3L/min	
EliteFlow Pro D3	0-3L/min	
EliteFlow Pro P3	0-2.3L/min	

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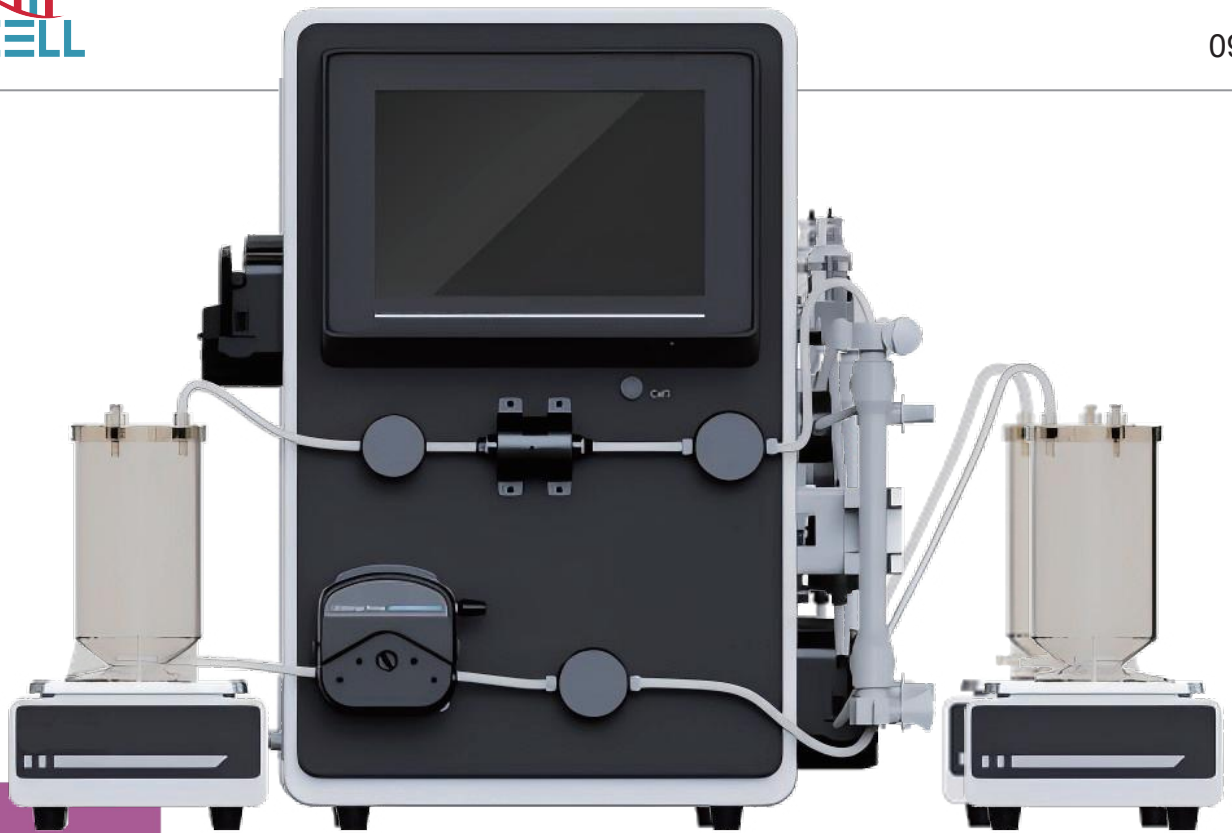
TrueFlow Series TFF System

TrueFlow series features a line of advanced, fully automated tangential flow filtration systems that are highly integrated, flexible, and user-friendly. Tailored for industries such as pharmaceuticals, food processing, environmental protection, and fine chemicals, these systems efficiently meet the process development and research needs of both commercial entities and academic institutions. The Hope series excels with its seamless automation, intelligent design, and outstanding cost-effectiveness, making it an ideal choice for a wide range of applications.

Product Features

01. A good partner for process exploration

With stability that rivals industrial production systems and highly flexible functionality, it empowers users to efficiently and effortlessly conduct process exploration.

02. Intelligent, automated operation for easy-use and highly efficient

The system is designed with a range of modules, making it user-friendly and featuring several built-in method modes. Users also have the flexibility to create custom methods manually, which can be executed automatically, facilitating fully automated operations throughout the entire experiment.

03. Electronic Data Recording and Intelligent Data Processing

Automatically record all key operational data (including but not limited to flow rate, TMP, and flux). With the intelligent data analysis module in the software, corresponding charts and comparative data parameters can be generated at any time and easily exported. The data is comprehensive, and reports can be generated with a single click.

04. Various fields application

Application: biopharmaceuticals, food industry, environmental water
treatment, and membrane process validation...

05. Suitable for multiple membrane

Compatible with mainstream brands of hollow fiber membranes and plate-type membrane package. By replacing the tubing, it can accommodate a wider membrane area.

06. Compact and streamlined design

The shell is made of high-performance ABS material, which is corrosion-resistant, simple in design, compact, lightweight, aesthetically pleasing, and easy to operate and clean.
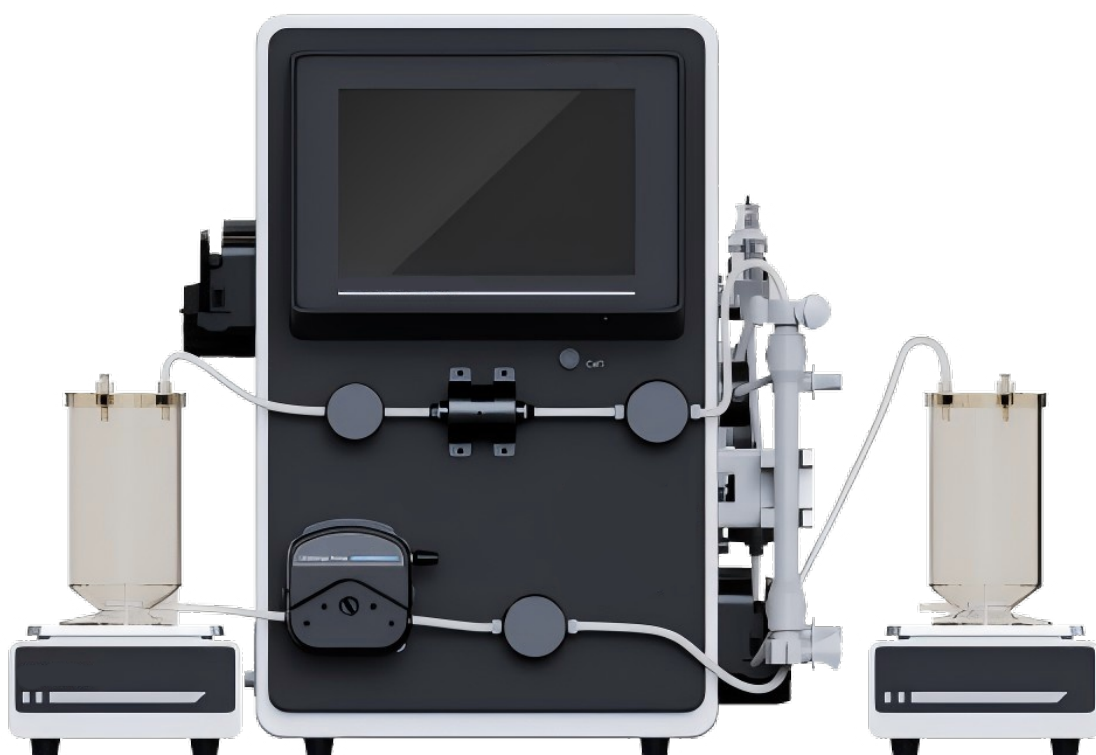
TrueFlow P1 Technical Parameter

Item	Description	Specifications or Descriptions	
Filter	Filter type	Hollow fiber	Plate-type Membrane Package
	Recommended sample processing volume	20ml-2L	20ml-2L
	Recommended membrane area	$50cm^2$-$0.1m^2$	$50cm^2$-$0.1m^2$
Basic Accessories	Feed punp	Peristaltic pump, compatible with 13#, 14#, 16#, 25# tubes, with a maximum flow rate of up to 1 liter per minute (LPM)	
	Pressure sensor	Made of PEEK material, pressure range 0-145 psi (0-10 bar)	
	HMI	IPC (Industrial Personal Computer), stable and reliable; comes with pre-installed Challenge Navigator control software	
	Automatic regulating valve (Retentate)	Automatically controls the Transmembrane Pressure (TMP) according to set parameters	
	Weighing unit	Main circulation weighing range: 0-10 kg, permeate end weighing range: 0-20kg, with a visual reading of 0.1 g (*multiple ranges available)	
	Magnetic stirring	Fitted to the main circulation Weighing unit, adjustable variable speed, with real-time parameter recording	
	Container	Replaceable PSU (Polysulfone) with hygienic and low residue containers	
	Pipe	Can use various platinum-cured tubes, thermoplastic tubes, or other tubes that meet specification requirements, according to process needs	
	Bracket	Integrated hollow fiber membrane Bracket, compact and spatially efficient	
Optional Accessories	Replenishment pump	Peristaltic pump, compatible with 13#, 14#, 16#, 25# tubes, with a maximum flow rate of up to 1 LPM	
	Multi-channel Inlet Valve	Optional multi-channel inlet valve for automatic sample switching and liquid introduction functions	
	pH	0-14	
	Conductivity and Temperature Sensor	Temperature compensation，0.02-200ms/cm	
	Cassette holder	Standard configuration includes a hollow fiber holding device, with the option to additionally choose or connect to various plate membrane package holders provided by the customer	
Enviroment Required	Temperature	0-40°C	
	Humidity	10%-90%	
	Body Design	IP33, the whole machine can be wiped and cleaned	
	Power Supply	1.1A,220V,50/60HZ	
Dimension	Main Module	465x420x566(L*W*H)	
	Feed Module	175x179x102(L*W*H)	
	Filtrate Module	175x179x102(L*W*H)	
	Weight	35kg	
Complementary services	Installation	1-2 days for Installation, commissioning, and training services	
	Regular Maintenance	Purchase of annual maintenance contract, monthly and annual maintenance services will be provided	

03

EasyFlow Series TFF System

EasyFlow series Tangential Flow Filtration(TFF) systems are a newly launched, compact, and elegantly designed membrane filtration system, offering unmatched flexibility and ease of use. This high-performance, cost-effective solution seamlessly integrates tangential flow filtration (TFF) and depth filtration technologies, perfectly addressing daily filtration needs.

Automatic TMP Control

EasyFlow Series

01 **Dual TFF and NFF Modes**

The EasyFlow series integrates both Tangential Flow Filtration (TFF) and Normal Flow Filtration (NFF) technologies, enabling seamless mode switching to meet diverse process requirements. This versatility ensures it can handle a wide range of filtration needs with ease.

02 **Flexible and User-Friendly**

Featuring the Navigator control software, the Easyflow series simplifies operation by removing the need for complex parameter setups. With a single touch, the system adapts to users preferences, streamlining filtration tasks for quicker and more efficient workflows.

03 **Advanced Electronic Data Management**

The system automatically records all operational data, eliminating the need for manual data capture during experiments. Compliant with 21 CFR Part 11, it ensures data integrity, authenticity, and traceability. The built-in data analysis module provides real-time charting and report generation, with easy export options for comprehensive data handling.

04 **Sleek and Compact Design**

Designed to be small yet powerful, the system includes an external display and a compact layout, making it ideal for use in biosafety cabinets and other constrained environments. Its minimalist aesthetic combines functionality with a clean, modern appearance.

EasyFlow Technical Parameter

Item	Description		Specifications or Descriptions	
Basic configuration	Recommended sample processing volume	P3	20mL-10L	20mL-15L
		D3	20mL-15L	20mL-15L
		P20	10L-200L	10L-200L
		D20	10L-500L	15L-500L
	Recommended membrane area	P3	$50cm^2 \sim 3700cm^2$	$50cm^2 \sim 5000cm^2$
		D3	$50cm^2 \sim 3700cm^2$	$50cm^2 \sim 5000cm^2$
		P20	$0.1m^2 \sim 2.5m^2$	$0.1m^2 \sim 2.5m^2$
		D20	$0.1m^2 \sim 2.5m^2$	$0.1m^2 \sim 2.5m^2$
	Feed pump	P3	Easy-load pump head, up to 2.3LPM, compatible with tubing sizes: 13#, 14#, 16#, 25#, 17#, 18#	
		D3	Quattroflow QF150S, stainless steel pump head, up to 3LPM, 6bar pressure, 1/4"Tri-Clamp fittings	
		P20	Easy-load pump head, up to 13LPM (liters per minute), compatible with tubing sizes: 26#, 73#, 82#	
		D20	Quattroflow QF1200S, stainless steel pump head, up to 20LPM, 6bar pressure, 3/4"Tri-Clamp fittings	
	Pressure sensor		Single-Use pressure sensor, made of PSU material; Pressure range: -7 to 75 psi (-0.48 to 5.2bar)	
	HMI		IPC, stable and reliable； Pre-installed with Navigater control software	
	Display screen		External 24"HD display	
	Automatic regulating valve (Retentate)		Automatic adjustment of Transmembrane Pressure (TMP)	
	Weighing unit	P3/D3	Range 0-20kg, ±0.1g (Multiple specification available)	
		P20/D20	Range 0-50kg, ±0.1g (Multiple specification available)	
	Magnetic stirring		Fitted weighing unit, adjustable variable speed	
	Pipe		Based on process requirements, platinum-cured silicone tubes and thermoplastic tubing that meet specification requirements can be used.	
	Holder		Integrated hollow fiber cartridge holder	
Enviroment required	Temperature		0-40℃	
	Humidity		10-90%	
	Body design		IP33, the whole machine can be wiped and cleaned	
	Power supply		AC220V	
Supporting services	Installation and calibration		Installation, commissioning, and training services, lasting 1-2days, will be conducted on-site or online	
	3Q certification		1-2 days of 3Q certification will be conducted on-site or online, depending on the purchase of the 3Q certification service	
	Regular maintenance		Upon purchasing an annual maintenance contract, monthly and annual maintenance online or on-site services will be provided	

04

Yocell Smart Pump

Yocell intelligent pump series is based on quaternary diaphragm pump and precision peristaltic pump liquid transfer technology, integrated with an intelligent human-machine interface and equipped with professional control software, providing a comprehensive solution for various liquid transfer processes in the biopharmaceutical field.

[Multiple Operation Modes]

Constant pressure

Timed distribution

Constant flow

Quantitative distribution

Direct Flow Filtration

[Liquid Transfer]

More accurate

More efficient

More stable

[Bioactivity]

High assurance

Product Features

01 Highly intelligent	**05** User-friendly human-machine interface
02 Clear operation status	**06** Diverse method modes
03 Multi-level permission management	**07** One-click function start
04 Audit trail function, compliant with 21 CFR PART 11 requirements	**08** Multiple ports reserved for the installation of various functional components

Application Scenarios

[Application]

- Ultrafiltration
- Direct flow filtration
- Sterile filtration
- Lysate transfer
- Chromatography operation
- Liquid preparation
- Fermenter replenishment
- Other liquid transfers

[Liquid Applicable]

- Cell culture media
- Enzymes
- Virus culture medium
- Viral vaccines
- Recombinant proteins
- Monoclonal antibodies
- Cell supernatants

[Typical Application] [Direct Flow Filtration]

Intelligent pumps are connected to Capsule filters to set up a sterilizing filtration system. A pressure sensor is placed between the intelligent pump and the capsule filter, with an appropriate initial filtration flow rate set to ensure that the filter membrane does not become clogged prematurely due to excessive flow rates. When the filtration system pressure reaches the set control pressure, the system smoothly switches to a constant pressure mode, maintaining constant system pressure by reducing the flow rate, preventing over-pressurization that could cause hose ruptures or filter membrane damage. The entire process is unattended, saving a significant amount of labor.

01. Maximum Flow Rate Mode

02. Constant Pressure Mode

03. Constant Flow Mode

04. Distribution Mode

05. Calibration Mode

06. Timing Mode

07. Soft Start Mode

08. Data Recording

09. Three-Level Permissions

10. Multi-scenario Application

11. Automatic Operation Mode

Yocell Smart Pump Series

Yocell Smart Series intelligent pumps can be used in conjunction with pressure sensors, flow sensors, and other components to easily meet users' needs for constant pressure and constant flow transfer of liquids, achieving processes such as ultrafiltration, distribution, and transportation of solutions.

- Made of 316L stainless steel
- Surface roughness Ra≤0.4µm
- Supports Clean-In-Place (CIP) / Sterilize-In-Place (SIP)

- Made of PP or PE
- Pumping performance is comparable to stainless steel pump heads
- No need for cleaning validation and sterilization

- Single-use tubing
- Compatible with various sizes of tubing
- Pump head no contact with the fluid
- Low shear force

Note：   Yocell Smart D series offers stainless steel reusable pump heads and disposable pump heads for option
Yocell Smart P series Pairing with an Easy-load pump head
PP: Polypropylene, PE, Polyethylene

Comparison between D series and P series

Type	D Series Intel. Quad-Diaphragm pumps	P Series Intel. Peristaltic Pumps
PumpHead	SS316L pump head and SU pump head of PP	Easy-load pump head pump
Features	① SS316L pump head：Reusable with online cleaning and disinfection functions ② PP pump head：Single-use to reduce the cost of cleaning validation	① Easy to install, stacked or connected in series ② The tubing can be used once to avoid the risk of cross-contamination
	Equipped with Siemens industrial HMI, ensuring the stable operation of the control system	
	Touch screen design for faster data input	
	Multiple sensor interfaces for rapid implementation of process intelligence	
	Exquisite appearance with a strong sense of technology	

Yocell Smart Software

By configuring components such as pressure sensors and flowmeters, it achieves constant pressure, constant flow, timed and quantified special liquid transfer functions.

Equipped with Jump Sys control software, the human-machine interaction is more friendly and intuitive.

The experimental method is launched with one click, the running status is displayed in real-time, and the running trend graph can be viewed simultaneously.

Powerful and easy to operate, it comes with built-in efficient experimental process algorithms. Users only need to set simple parameters to run with one click, eliminating the hassle of calculations. Experimental data is recorded in real-time and is easy to export.

Equipped with an alarm control function, real-time monitoring of overpressure and overload, and alarm information is recorded in real-time; after the alarm is cleared, the process can be continued by pressing the reset button.

Built-in manual, calibration, and distribution three major functional modes, capable of storing 10 process recipes to meet users' daily usage needs.

The system has three-level permission management, optimizing the permission allocation method, and facilitating experimental data management.
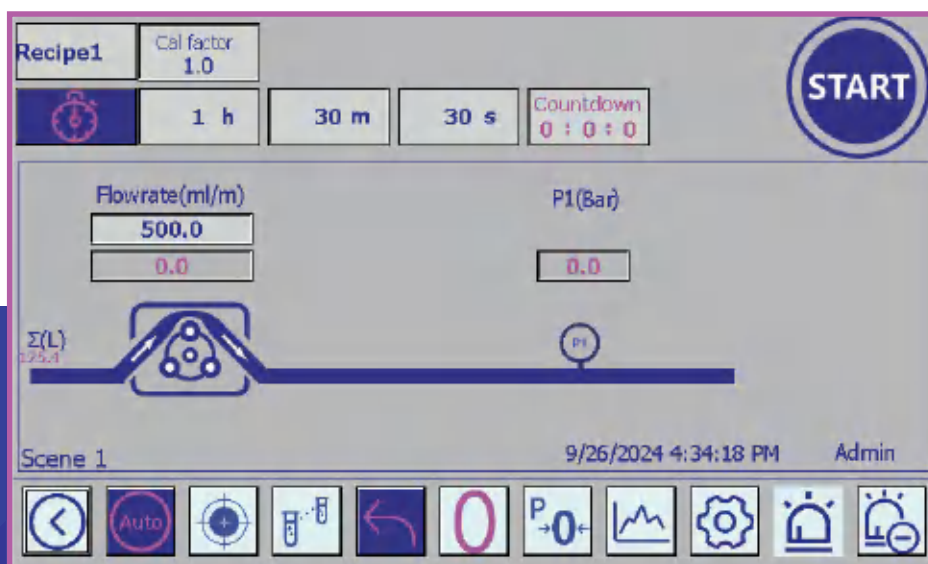
Yocell Smart Series

Series	D Series intel. Quad-Diaphragm pumps			
Pump head	Reusable pump head		Disposable pump head	
Model	Smart D150	Smart D1200	Smart SUD 150	Smart SUD1200
Flow rate range	1-180LPH	10-1200LPH	1-180LPH	10-1200LPH
Flow rate accuracy	±2%			
Maximum pressure	6bar (Fluid temperature＜40℃)4bar (Fluid temperature＞		4bar	
Maximum temperature	Fluid: 80℃; CIP: 90℃ SIP: 130℃ High pressure sterilization: 130℃		Fluid: 60℃	
	SIP: 130℃ High pressure sterilization: 130℃		High pressure sterilization: 130℃	
Connector size	1/4" TC or 3/4" TC			
Pump chamber material	SS316L		PP	
Diaphragm material	TPE			
Valve material	EPDM			
O-ring material	EPDM			
Elastomer compatibility certificate (optional)	USP <88>Class VI; FDA 21 CFR 177; BSE/TSE Safety			
Stainless steel compatibility certificate (optional)	Surface roughness: Ra≤0.4 µm; Ferrite content: <1%			
HMI computer	7 inches Siemens HMI			
Software system	Jump Sys			
Housing material	SS316L			
Power supply	220VAC			
Rated speed	3000 rpm	2400 rpm	3000 rpm	2400 rpm
Rated power	200W	900W	200W	900W
Temperature	0-40℃			
Humidity	(10%-90%) RH, no condensation occurs			

Note: Depending on the combination of the motor/freguency converter drive, the motor frequency and the resulting pump speed will vary.

Series	P Series intel. Peristaltic Pumps	
Pump head	Easy-load II	Easy-load
Model	Smart P150	Smart P1200
Flow rate range	3.6-174LPH	36-1560LPH*
Flow rate accuracy	±2%	
Maximum pressure	2.5bar	
Pump tubes	13, 14, 16, 25, 17, 18 / 15, 24, 35, 36#	26, 73, 82 / 70, 88, 89#
Pump head material	PPS/PSF	
HMI computer	7 inches Siemens HMI	
Software system	Jump Sys	
Housing material	SS316L	
Rated speed	0.1-600rpm	
Rated power	200W	600W
Power supply	220VAC	
Temperature	0-40℃	
Humidity	(10%-90%) RH, no condensation occurs	

Note: Dual-pump head superimposed parameters

Accessories

Challenge Base™ series of cassette holder, compatible with major brand membrane packs, customizable according to customer requirements, for standalone use or in conjunction with tangential flow ultrafiltration systems.

Product Features:

1. The overall material is made of 316L stainless steel;
2. It complies with GMP standards and is manufactured according to ASME BPE standards;
3. The hygienic fluid groove structure has no residue and no dead corners, facilitating cleaning;
4. The inner and outer surfaces are treated with electrolytic polishing, with Ra ≤ 0.4µm;
5. Pressure monitoring uses a pressure gauge or can choose a pressure sensor to perfectly integrate with the Challenge Jump intelligent pump.

Cassette Holder

Model	Applicable membrane packs	Spare Parts
CBEM0F	$100cm^2$ 1-5pcs; $0.1m^2$*1pc	entire set
CBEM0D	$0.1m^2$ 1-5pcs	entire set
CBEM0E	$0.5m^2$ 1-5pcs; $2.5m^2$*1pc	entire set

Low Residue Container

☐ Patent design, zero residue

☐ PSU container, which is sturdy and durable, with no damage from falls.

☐ It is resistant to acids and alkalis from pH 0 to 14

☐ Good stability, leaching is in line with pharmaceutical standards

☐ Be subjected to repeated high-temperature sterilization, in accordance with USP VI standards

Note1: Chinese Utility Model Patent, Patent Number: ZL 2022 2 3020116.0
Note 2: 2. 2.Chinese Utility Model Patent, Patent Number: ZL 2022 2 2821171.3

Disposable Pump Chamber

Specifications and Models:
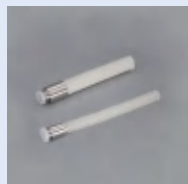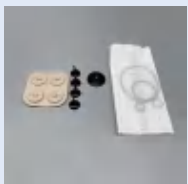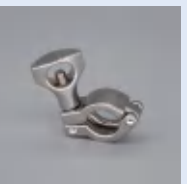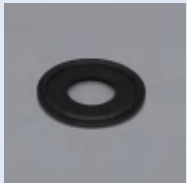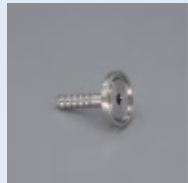
☐ QF12DISPP-3   ☐ QF12DISPP-3-M   ☐ QF25D   ☐ QF44D

☐ QF12DISPP-3-EZ   ☐ QF15DISPP-3-EZ   ☐ QF30D   ☐ QF5D

Basic Accessory Kit for D3

- 1/16''Female & male Luer,barbed
- 1/8'' Female & male Luer,barbed
- 3/16''Female & male and female luer, barbed
- 1/4 ''Female & male Luer,barbed
- Female & male Luer stop cap
- 1/4'' MPC male and female connectors
- Three-way Luer stopcock valve
- Two-way Luer stopcock valve
- Male and female Luer elbow two-way connector, 90° bend

- 1/8 " & 1/4 " Y-type equal-diameter connector
- TC3/4''to 1/4''Barbed
- TC3/4''to 1/8''Barbed
- Sanitary gasket, 3/4" platinum-cured silicone
- TC25 blind plate
- Robert clamp (5#), suitable for 14#
- Flow control valve
- TC25   PA clamp
- Robert clamp (3#), compatible with: 16#, 17#, 18#, 25#

Other Accessories

Peristaltic pump tube (platinum-cured)	Peristaltic pump tube (long-life tube)	Crimped hose assembly tube	Quad diaphragm pump diaphragm set	Clamp(SS316L)
Clamp (PA)	Flow control valve	Clamp-type equal-diameter tee	Blind flange (SS316L)	Blind flange (PP)
Silicone O-ring	EPDM O-ring	Quick-release fitting	Clamp fitting	CPC fitting
Feed connection	Tangential flow cassette holder	Pressure gauge	Pipeline pressure	Chuck-type pressure

Note：For more details, please send email to service@challengeim.com