



Challenge Make
Achievements Attain



Company Profile



Challenge make Achievements attain

Focus

Focusing on the development and application of membrane filtration products in the biopharmaceutical field, Challenge IM is a high-tech enterprise that integrates R&D, manufacturing, sales, and technical services. Its products are widely utilized across various processes for multiple drug types, including: Antibodies and Antibody-Drug Conjugates, Cell and Gene Therapy, Vaccines, Nucleic Acid Drugs... Its fully automatic Tangential Flow Filtration (TFF) systems effectively fill a critical market gap, enhancing the efficiency and reliability of biopharmaceutical manufacturing processes. Challenge IM has been recognized as a national high-tech enterprise and has successfully obtained ISO9001 quality system certification, underscoring its commitment to quality and excellence in the industry.

Specialized

Challenge IM possesses complete intellectual property rights and currently holds tens of patents, showcasing our commitment to innovation in the biopharmaceutical field. It has established a professional research and development (R&D) and technical service team, with over 70% of personnel holding master's or doctoral degrees, or graduating from top-tier universities. Its facility includes a 2,000m² cleanroom that meets industry standards, ensuring the highest quality in our manufacturing processes. It empowers a professional sales team, supported by pre-sales and post-sales service teams, which provide specialized, efficient, and convenient services to empower the development of biopharmaceuticals. Challenge IM has already established successful collaborations with leading enterprises in the biopharmaceutical sector, reinforcing our position as a key player in the industry.

Vision

Challenge IM adheres to the philosophy of "Challenge make Achievements attain" with a core value orientation centered on meeting customer needs. We are committed to technological innovation and breakthroughs in "bottleneck" technologies in the bioprocessing field, providing professional technical solutions to clients, aiming to become a respected, continuously growing leader in the industry.

Contents



01 Challenge Dream TFF System

Product Features	04
System Advantages	05
Process Methods	07
Parameter Information	08
Other Series	09

02 Challenge Jump Intelligent Pump

Product Features	11
Application Scenarios	12
Challenge Jump Series	13
Challenge Jump Oder Information	16

03 Challenge FIT Integrity Tester

Product Features	18
Technical Specifications	19

04 Challenge Bloom High Pressure Homogenizer

Challenge Bloom 10	21
Challenge Bloom 12-150	23
Specifications And Models	24

05 Challenge Nova Microfluidics

Product Features	26
Technical Specifications	26

06 Accessories

Accessories	27
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07 Excellent+ Service

Excellent+ Service	30
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01

Challenge Dream Tangential Flow Filtration (TFF) system

Challenge Dream 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
> UF&DF for samples	> Polysaccharide separation, purification & concentration	> Buffer, Animal Cell Culture Media Endotoxin Removal	> pharmaceutical ingredients, traditional Chinese medicine endotoxin removal

System Advantage

A. Hardware

Integration

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

Best Compatibility

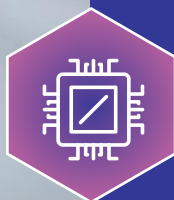
- Adaptable to any filter components from various suppliers (hollow fiber & cassettes);
- Meet the usage needs from R&D and commercial production;

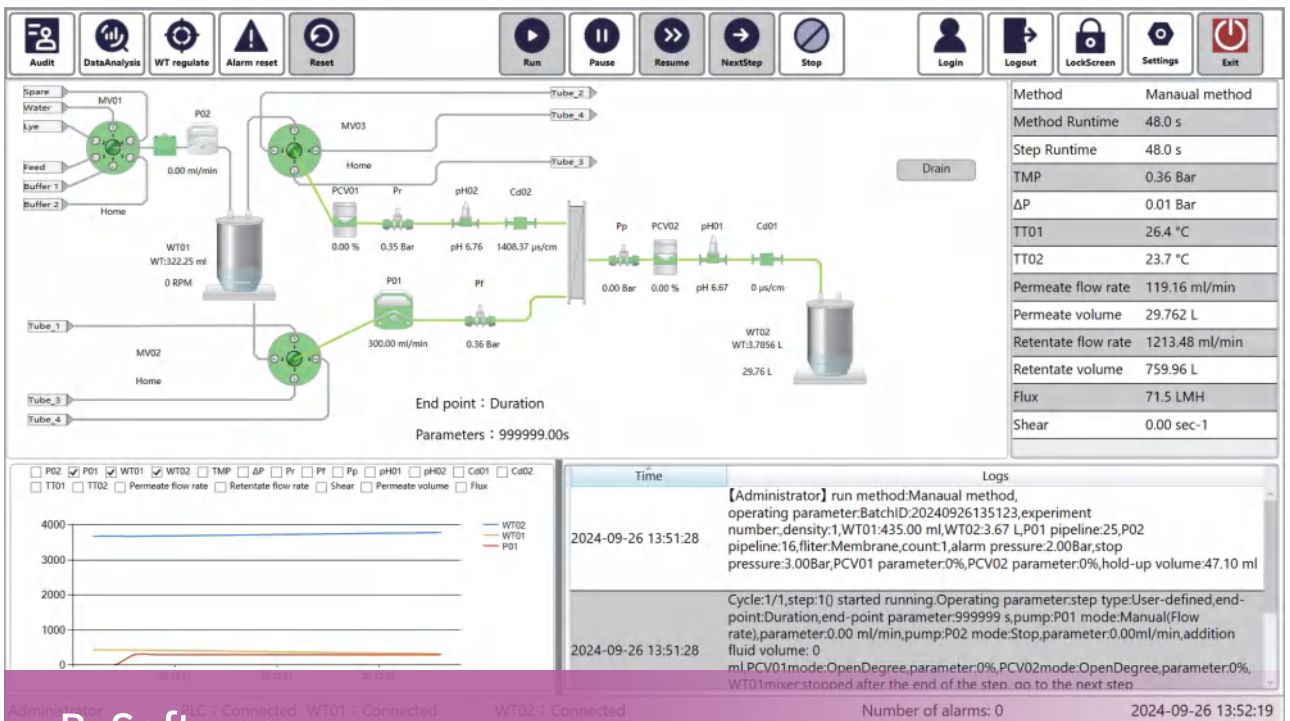
System Modularization

- 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;

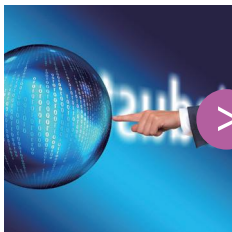
Single Use Technical Components

- 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



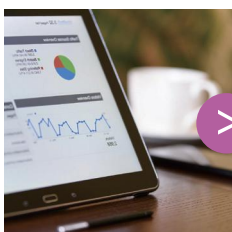
Intelligent, Automated

- 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 Challenge 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

Challenge Dream Parameter information

Item	Description		Specifications or Descriptions		Item	Description		Specifications or Descriptions			
Filter	Filter type		Hollow fiber		Plate-type Membrane Package		Optional Accessories	UV		200-800nm,Variable wavelength band	
	Recommended sample processing volume	05D-SU	20ml-5L		20ml-5L			pH		0-14	
		3P	20ml-10L		20ml-15L			Conductivity		Temperature compensation, 0.02-200ms/cm	
		3D	20ml-15L		20ml-15L		Enviroment Required	Temperature		0-40°C	
		20P	10L-200L		10L-200L			Humidity		10-90%	
		20D	10L-500L		15L-500L			Body Design		IP33, the whole machine can be wiped and cleaned	
	Filter Recommended membrane area	05D-SU	50cm²-1000cm²		50cm²-1000cm²		Power Supply		AC220V		
		3P/3D	50cm²-3700cm²		50cm²-5000cm²		Dimension	Main Module	05D-SU	510*480*500 (L*W*H)	
		Feed pump	05D-SU	Quattroflow QF30SU,PP pump head,Up to 0.5 LPM (liters per minute),4 bar pressure 1/8" barbed fittings		3P/3D			510*480*500 (L*W*H)		
Easy-load Pump Head,Up to 2.3 LPM,Compatible with tubing sizes: 13#, 14#, 16#, 25#, 17#, 18#				20P/20D		520*540*590 (L*W*H)					
Quattroflow QF150S,Stainless steel pump head,Up to 3 LPM,6 bar pressure,1/4" Tri-Clamp fittings				Feed Module	05D-SU	210*270*100 (L*W*H)					
Easy-load Pump Head,Up to 13 LPM (liters per minute), Compatible with tubing sizes: 26#, 73#, 82#		3P/3D			210*270*100 (L*W*H)						
Quattroflow QF1200S,Stainless steel pump head Up to 20 LPM,6 bar pressure,3/4" Tri-Clamp fittings		20P/20D	460*440*210 (L*W*H)								
Replenishment pump	05D-SU	Easy-load Pump Head,Up to 2.3 LPM,Compatible with tubing sizes: 13#, 14#, 16#, 25#, 17#, 18#		Filtrate Module	05D-SU	210*185*100 (L*W*H)					
		Easy-load Pump Head,Up to 2.3 LPM,Compatible with tubing sizes: 13#, 14#, 16#, 25#, 17#, 18#			3P/3D	210*185*100 (L*W*H)					
		Easy-load Pump Head,Up to 2.3 LPM,Compatible with tubing sizes: 13#, 14#, 16#, 25#, 17#, 18#			20P/20D	380*405*120 (L*W*H)					
	Weight	05D-SU	55kg		Supporting Services	Installation and Calibration		Installation, commissioning, and training services, lasting 1-2 days, will be conducted on-site or online.			
3P		40kg		3QCertification		1-2 days of 3Q certification will be conducted on-site or online, depending on the purchase of the 3Q Certification Service.					
3D		55kg		Regular Maintenance		Upon purchasing an annual maintenance contract, monthly and annual maintenance online or on-site services will be provided.					
20P	70kg										
20D	90kg										
Basic Accessories	Pressure sensor		Single-Use Pressure Sensor, made of PSU material; Pressure range: -7 to 75 psi (-0.48 to 5.2 bar)								
	HMI		IPC, stable and reliable; Pre-installed with Challenge Navigator control software.								
	Automatic back pressure valve		Automatic adjustment of Transmembrane Pressure(TMP)								
	Weighing unit	05D-SU	Range 0-20Kg, ±0.1g. (Multiple specifications available)								
		3P/3D	Range 0-20Kg, ±0.1g.(Multiple specifications available)								
		20P/20D	Range 0-50Kg, ±0.1g.(Multiple specifications 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 flow rate to avoid rapid polarization and contamination of the membrane.								
	Filtration outlet module		The filtrate end module with weighing, neat and elegant.								

Remark (Processing Capacity Range*): The specific values are related to the processing time and other process conditions.

Other Series-Challenge Dream+

Specification	Feed pump	Flow Rang	Enviroment
Challenge Dream+ 05D-SU	Diaphragm pump	0-0.5L/min	0-40°C
Challenge Dream+ 3D-SU	Diaphragm pump	0-3L/min	
Challenge Dream+ 3D	Diaphragm pump	0-3L/min	10%-90%
Challenge Dream+ 3P	Peristaltic Pump	0-2.3L/min	

Other Series-Challenge Hope



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 pump	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	



02

Challenge Jump Smart Pump

Challenge Jump 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

Challenge Jump Series

Challenge Jump 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 $Ra \leq 0.4\mu m$
- 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: Challenge Jump D series offers stainless steel reusable pump heads and disposable pump heads for option.

Challenge Jump 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	

Challenge Jump Software



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



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

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.



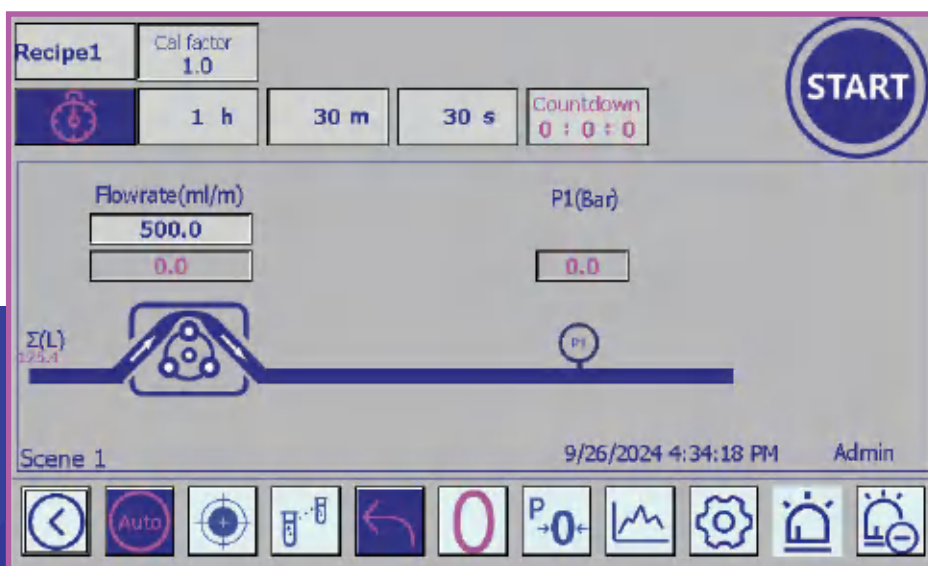
Equipped with an alarm control function, real-time monitoring of overpressure and overload, and alarm information is recorded in real-time; after the alarm is cleared, the process can be continued by pressing the reset button.



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.



Challenge Jump Series

Series	D Series Intel. Quad-Diaphragm pumps			
Pump head	Reusable pump head		Disposable pump head	
Model	Jump 150D	Jump 1200D	Jump 150D-SU	Jump 1200D-SU
Flow rate range	1-180LPH	10-1200LPH	1-180LPH	10-1200LPH
Flow rate accuracy	±2%			
Maximum pressure	6bar(Fluid temperature<40°C) 4bar(Fluid temperature>40°C)		4bar	
Maximum temperature	Fluid:80°C;CIP:90°C SIP:130°C High pressure sterilization:130°C		Fluid:60°C High pressure sterilization:130°C	
Connector size	1/4" TC or3/4" 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≤0.4μm; Ferrite content:<1%			
HMI computer	7 inches Siemens HMI			
Software system	Jump Sys			
Housing material	SS316L			
Power supply	220 VAC			
Rated speed	3000 rpm	2400 rpm	3000 rpm	2400 rpm
Rated power	200W	900W	200W	900W
Temperature	0-40°C			
Humidity	(10%-90%) RH,no condensation occurs			

Note: Depending on the combination of the motor/frequency 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	Jump 150P	Jump 1200P
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	0.1-600 rpm	
Rated power	200W	600W
Power supply	220 VAC	
Temperature	0-40°C	
Humidity	(10%-90%) RH, no condensation occurs	

*Note: Dual-pump head superimposed parameters

Ordering Information

Series	Model	Pump type	Flow rate range	Part number
Challenge Jump Series	Challenge Jump 150D	Diaphragm pump	1-180L/h	CJP150D
	Challenge Jump 1200D	Diaphragm pump	10-800L/h	CJP1200D3
		Diaphragm pump	20-1200L/h	CJP1200D5
	Challenge Jump 2500D	Diaphragm pump	50-2500L/h	CJP2500D
	Challenge Jump 4400D	Diaphragm pump	150-5000L/h	CJP4400D
	Challenge Jump 5000D	Diaphragm pump	200-6000L/h	CJP5000D
	Challenge Jump 30D-SU	Diaphragm pump	0.06-30L/h	CJP30D-SU
	Challenge Jump 150D-SU	Diaphragm pump	1-180L/h	CJP150D-SU
	Challenge Jump 1200D-SU	Diaphragm pump	10-800L/h	CJP1200D3-SU
		Diaphragm pump	20-1200L/h	CJP1200D5-SU
	Challenge Jump 2500D-SU	Diaphragm pump	50-2500L/h	CJP2500D-SU
	Challenge Jump 4400D-SU	Diaphragm pump	150-5000L/h	CJP4400D-SU
	Challenge Jump 150P	Peristaltic pump	3.6-174L/h	CJP150P
	Challenge Jump 1200P	Peristaltic pump	36-780L/h	CJP1200P
		Peristaltic pump	36-1560L/h	CJP1200P2
Challenge Jump Pro Series	Challenge Jump 150D Pro	Diaphragm pump	1-180L/h	CJP150D-Pro
	Challenge Jump 1200D Pro	Diaphragm pump	10-800L/h	CJP1200D3-Pro
		Diaphragm pump	20-1200L/h	CJP1200D5-Pro
	Challenge Jump 2500D Pro	Diaphragm pump	50-2500L/h	CJP2500D-Pro
	Challenge Jump 4400D Pro	Diaphragm pump	150-5000L/h	CJP4400D-Pro
	Challenge Jump 5000D Pro	Diaphragm pump	200-6000L/h	CJP5000D-Pro
	Challenge Jump 30D-SU Pro	Diaphragm pump	0.06-30L/h	CJP30D-SU Pro
	Challenge Jump 150D-SU Pro	Diaphragm pump	1-180L/h	CJP150D-SU Pro
	Challenge Jump 1200D-SU Pro	Diaphragm pump	10-800L/h	CJP1200D3-SU Pro
		Diaphragm pump	20-1200L/h	CJP1200D5-SU Pro
	Challenge Jump 2500D-SU Pro	Diaphragm pump	50-2500L/h	CJP2500D-SU Pro
	Challenge Jump 4400D-SU Pro	Diaphragm pump	150-5000L/h	CJP4400D-SU Pro
	Challenge Jump 150P Pro	Peristaltic pump	3.6-174L/h	CJP150P-Pro
	Challenge Jump 1200P Pro	Peristaltic pump	36-780L/h	CJP1200P-Pro
		Peristaltic pump	36-1560L/h	CJP1200P2-Pro



03

Challenge FIT5 Integrity tester

Challenge FIT5 Integrity testers are characterized by their portability, ease of use, and automation, aiding you in accurately and reliably completing the integrity testing of filters and process equipment. They offer high testing precision, good repeatability, and stable performance, having already served hundreds of customers. The latest model, FIT5, complies with FDA 21CFR PART 11, meeting the latest requirements for data integrity.

Product Features

1 Reliability

- IP54 dust and splash protection rating
- The sleeve interface module is washable and replaceable, eliminating contamination risks
- Automated self-check procedures provide timely verification

3 Compliance

- Compliant with GMP and US Federal FDA 21 CFR PART 11 regulations
- Supports multi-level user access permission settings to ensure data integrity and complete audit trails
- User login with password, 4-level permission, and supports both manual and electronic signatures
- This instrument is certified by the EU CE mark

2 Advantages

- Comprehensive dust and water resistance design with automatic checking and verification functions
- Optimized testing calculations to reduce test times and simplify the creation of test procedures
- A clear and straightforward operation interface with comprehensive prompts to support every step of the operation
- Flexible information display, operation status, and test grouping to meet various process requirements
- Standard wireless networking, local area network support for multi-unit management and synchronization

4 Practicality

- Bilingual Chinese and English operating interface
- Built-in thermal printer
- Process-oriented operation interface for easy command
- Supporting multiple input methods
- Display and print functionality of diffusion flow-pressure curves, with the ability to display and print three curves simultaneously
- Optimized gas inlet control unit significantly increases gas flow rate and stability
- The use of high-precision sensors and optimized algorithms allows for gas lines to be extended up to 100 meters, making the testing of upstream volume more accurate

5 Integration

- Supports Wi-Fi/USB printers for data input
- Rich data interfaces, standard with RS232/USB, and customizable with a variety of industrial buses and analog control ports, meeting the requirements of digital factories

Technical Parameters

Item	Description
Operating system	Linux
User interface	Sino-English bilingual operating interface /Multilingual user interface
Human-Machine Interface (HMI)	High-definition 10-inch color touch screen
Operating pressure	100-10000 mbar (150psi)
Unit of measure	mbar , kpa, psi, kgf/cm2
Operating conditions	Temperature: +5°C - +40°C; Humidity: 10-80%
Testing function	Manual bubble point test,Basic bubble point test,Enhanced bubble point test,Pressure retention test, Diffusion flow test,Water immersion test,Ultrafiltration membrane package test
Testing accuracy	Net volume test: $\pm 4\%$
	Bubble point: ± 50 mbar
	Diffusion flow: $\pm 4\%$
	Water immersion method: ± 0.01 ml
Testing range	Symmetrical and asymmetrical membrane testing, Needle-type Filter ,Pouch-type Filter ,Plate-type Filter, Cylindrical Filter (up to 12 cores, 20 inches), Ultrafiltration membrane package, Ultrafiltration column, Various irregular Filters
Audit trail	Comprehensive event logs, exportable but not modifiable
Access control	Username and password login with 4 levels of access control, compliant with FDA 21 CFR PART 11 requirements
Saved procedures	1000
Storage for audit trail record	≥ 5 years
Anti-backflow device	Optional
Number of users	1000
Dust and splash protection level	IP54 front, IP65
Printing function	Built-in thermal printer to avoid particle and ink contamination risks, capable of maintaining clear print for over 10 years under suitable conditions
Historical records	Unlimited record storage
Record backup	Supports data export via USB flash drive (including test curves)
Serial port connection method	RS232 serial port, USB interface; wireless connection supported
Mode of use	Online/offline
Suitable environment	Above D-level
Power requirements/Power	100–240 VAC, 50HZ, 120W
Weight	10KG
Signal output	4-20mA, RS485, 12V alarm output.
Outer dimensions (mm)	480(L) \times 300 (W) \times 190(H)



04

Challenge Bloom High-Pressure Homogenizer

The Challenge Bloom series is a multi-purpose high-pressure homogenizer, suitable for customers from small-scale laboratory trials to process scaling up for production, we offer suitable models for clients across various fields, including biotechnology, pharmaceuticals, and food industries.



Challenge Bloom 10 High-Pressure Homogenizer



Application Area

Pharmaceuticals: Fat emulsions, liposomes, etc

Biological: Various types of cells, yeast, etc

Chemical Industry:
Materials, paints, cosmetics, etc

Food:
Dairy products, fruit juices, sauces, etc

Product Features

**Worry
-Free**
» 3-Year Warranty Service, Eliminating All Concerns
Multiple Options
» Multiple Configurations and Customizable Solutions Available
High Adaptability
» Sanitary-grade homogenizers with high adaptability for pharmaceutical use
Triple Safety Protection
» Pressure Protection: Machine stops automatically for self-protection when pressure exceeds 10% of sensor range

» Overload Protection: Built-in inverter for overload protection

» Pressure Relief: Equipped with a safety valve for pressure relief protection

Technical Parameters

Item		Specification
Working condition	Working Voltage	220V±10%, 50Hz
	Temperature	10-40°C
	Humidity	20-80%
Technical Specifications and Parameters	Processed Products	Cell wall disruption, preparation of nano-emulsions, suspensions, etc.
	Product Process Viscosity	< 5000 cPs
	Maximum Feed Particle Size	< 500 micrometer
	Throughput	10L/H(Flow rate can be adjusted)
	Minimum Batch Size	15 ml
	homogenization level	First Level
	Maximum Design Pressure	2000bar
	Maximum Operating Pressure	1600bar
	Variable Frequency Flow Control System	Equipped with a frequency converter, adjustable flow rate
	Pressure Gauge	High-precision pressure sensor + display panel
	Residual Volume	Zero Residual (Built-in exhaust valve allows for complete evacuation)
	Power Source	Requires a 220V power supply
	Cooling System	Equipped with an internal cooling system for cooling samples at the point of disruption
	Chiller	Equipped with a low-temperature cooling water circulation unit for sample cooling
	Main Motor	Swiss ABB 1.5kW
	Voltage and Frequency	220V, 50Hz
	Safety Protection System	Set the safety pressure as needed, and when the average pressure exceeds the set safety pressure, the machine can automatically shut down to protect the machine from damage due to excessive instantaneous pressure
	Power System Structure	The power system utilizes a crankshaft and connecting rod mechanism, ensuring that the piston consistently reciprocates with the crankshaft's rotation, thereby guaranteeing the stable operation of the equipment
	Quality Standards	CE Certified



Challenge Bloom 12-150 High-Pressure Homogenizer

High fragmentation rate of 99%

Internal heat exchange system

Pressure is more stable

Triple-plunger design

Closed piston cooling system

High-pressure pulse superposition



Application Area

01

Vaccine adjuvant AS03/MF59,
nano-emulsion adjuvant;

02

Vaccine adjuvant AS01, nano-li-
posomal adjuvant;

03

Molecular weight control of
capsular polysaccharide vaccines,
13-valent pneumococcal vaccine

Technical Parameters

Maximum Operating Pressure	1200bar	120-150L/H	Product Processing Capacity
Maximum Design Pressure	1500bar	5L	Minimum Processing Capacity
Motor Power	11KW/380V	Residue-free	Material Consumption

Challenge Bloom Series Specifications and Models

From lab to production scale
meeting diverse needs in various scenarios!



Laboratory Research



Design Pressure



Multi-scale Production



Model	Processing Flow Rate	Design Pressure
Bloom10	10L/H	2000Bar
Bloom15	10-15L/H	1500Bar
Bloom30	30L/H	1200Bar
Bloom40	30-40L/H	1800Bar
Bloom60	50-60L/H	1000Bar
Bloom08-10	60-80L/H	2000Bar
Bloom12-150	120-150L/H	1500Bar
Bloom12-300	260-300L/H	1200Bar



05

Challenge Nova Microfluidic

Microfluidic technology is a technique based on (micro) fluid dynamics theory, which achieves sample preparation and processing in pipelines. The perfect combination of microfluidic physical and chemical models with fluid dynamics theory can achieve functions such as sample mixing, emulsification, and separation purification.

Product Features



Quick prescription screening (<1 minute)

One-step preparation method, saying goodbye to traditional methods such as film hydration, ultrasonication, high-pressure homogenization, and membrane extrusion

The chip is not limited to the number of uses and is compatible with globe syringes

Uniform and adjustable particle size, with complete batch repeatability

Suitable for the preparation of chemical drugs and biological preparations

Compact in size, easy to operate, no training required

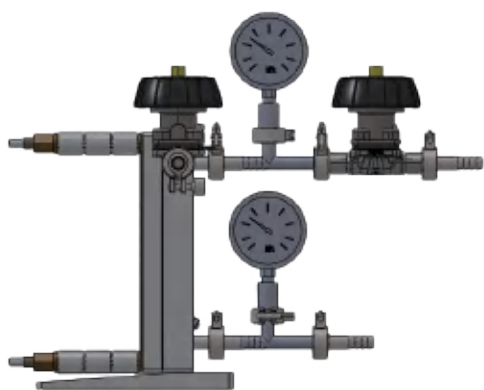
Special design requires less sample to start experiments; saving resources and improving efficiency

Technical Parameters

Item	Description
Model	Challenge Nova L1
Processing Capacity	1-40 mL per dose
Two-phase Range	1:10~1:1
Chip Material	316L, PC
Chip Lifespan	Reused multiple times
pH	1-14
Flow Rate Range	0.1-20.00ml/min
Syringe Specification	1.3.5.10.20.30ml
Injection Method	Disposable syringe
Temperature	20-80°C
Connector	Standard Luer connector
Size	L*W*H:43*29*45cm
Power Supply	220V



Accessories



Cassette Holder



Low Residue Container



Disposable Pump Chamber

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 $Ra \leq 0.4\mu m$;
- 5.Pressure monitoring uses a pressure gauge or can choose a pressure sensor to perfectly integrate with the Challenge Jump intelligent pump.

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

- ☐ 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

Specifications and Models:

- ☐ QF12DISPP-3
- ☐ QF12DISPP-3-M
- ☐ QF25D
- ☐ QF44D
- ☐ QF12DISPP-3-EZ
- ☐ QF15DISPP-3-EZ
- ☐ QF30D
- ☐ QF5D



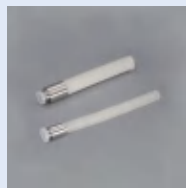
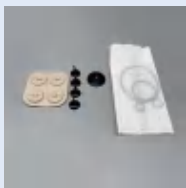
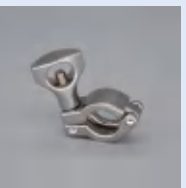







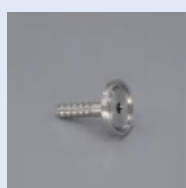


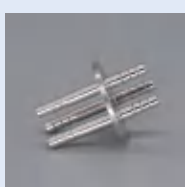
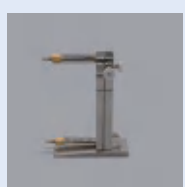


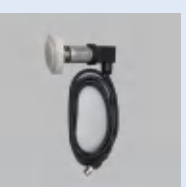
Basic Accessory Kit for D3

Applicable: 3P, 3D, 05D-SU, 3D-SU, 3D-SUEZ Series



- ✦ 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

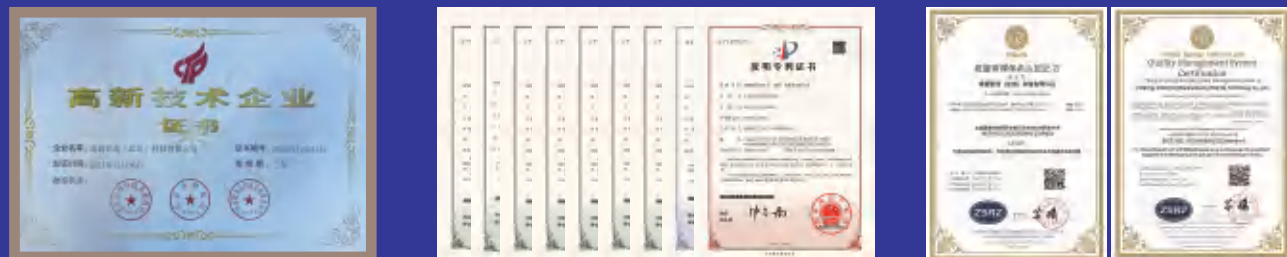
				
Peristaltic pump tube (platinum-cured)	Peristaltic pump tube (long-life tube)	Crimped hose assembly tube	Quad diaphragm pump diaphragm set	Clamp(SS316L)
				
Clamp (PA)	Flow control valve	Clamp-type equal-diameter tee	Blind flange (SS316L)	Blind flange (PP)
				
Silicone O-ring	EPDM O-ring	Quick-release 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

Customers



Certificates



Cases





Excellent⁺ Service

优⁺ 服务

Specialized

- Comprehensive pre-sales system;
- Personalized solutions under requirement.

Thoughtful

- Comprehensive and meticulous service processes, including on-site equipment installation and user training.

Efficient

- Short delivery cycles to quickly meet practical needs;
- A professional after-sales team with a 2-hour response.

Peace Of Mind

- Regular equipment maintenance services for best user experience



C h a l l e n g e M a k e A c h i e v e m e n t s A t t a i n



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