

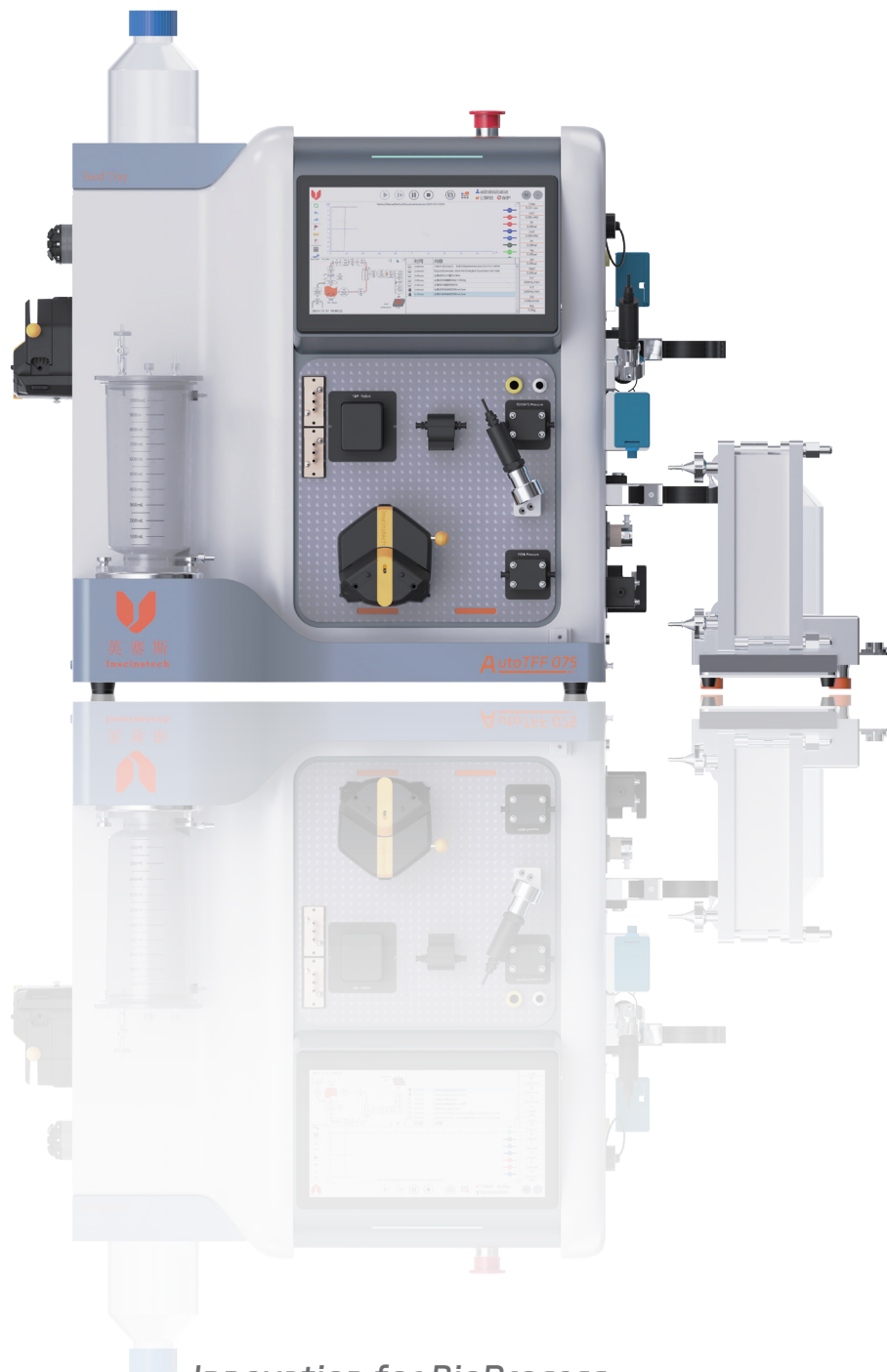


Inscinstech

■ Crossflow System

Unique AutoTFF075

For process development, scale-up study, and lab scale sample preparation



Innovation for BioProcess



Unique AutoTFF075 is a flexible and automated lab scale crossflow filtration system that can be used with hollow fibers or cassette filters for concentration, diafiltration or clarification of samples. It is widely used in biological product process, such as antibodies, recombinant proteins, mRNA, nucleic acids, viral vectors, etc. Its flexible configuration allows for manual operation and highly automated process control. Combined with a comprehensive management system, it is suitable for small-scale process development, process scale up study, and sample preparation.

Product Features

- Automatic TMP control, weighing, feeding, precise control of concentration ratio and diafiltration volume
- Compact design, small recirculation volume, to meet high concentration requirements
- The User friendly control software offers easily recipe setup, operation control, data recording and user management
- Optional permeate pump for comprehensive microfiltration process control
- High automation with pre-defined method modules, recipe and recipe sequence
- Optional conductivity sensor, pH, UV, for comprehensive process monitoring
- Adapt to different type of cassette filters and hollow fibers

Three Models



Unique AutoTFF075-L
Peristaltic pump basic version



Unique AutoTFF075-M
Peristaltic pump+
Options



Unique AutoTFF075-MD
Diaphragm pump+
Options

Unique AutoTFF075 System Components



Unique AutoTFF075 system consists of buffer transfer module, recirculation vessel module, feed module, retentate module, filtrate module, filter holder, control software, etc. The system can be configured according to different process requirement to realize different levels of automation.

Recirculation vessel

- The system comes with a 1L circulation vessel that complies with USP Class VI, with mixing and weighing module at the bottom. The weight is monitors in real time, and achieve automatic concentration endpoint control and continuouse dialysis.The vessel can be easily emptied with conical bottom design.

Feed pump

- A peristaltic pump or a low shear force diaphragm pump can be choosed as the feed pump, with a maximum flow rate of 700ml/min, which can achieve constant flow rate or constant inlet pressure,differential pressure.

Buffer transfer module

- The system can be equipped with transfer pump and inlet valve, which is used for automatic filling of the circulating vessel.

Detector

- The system is equipped with three pressure sensors(2 for module L): inlet, retentate, and permeate, to achieve pressure monitoring and calculation of differential pressure and TMP. Conductivity, pH, UV detectors are optional.

Permeate control

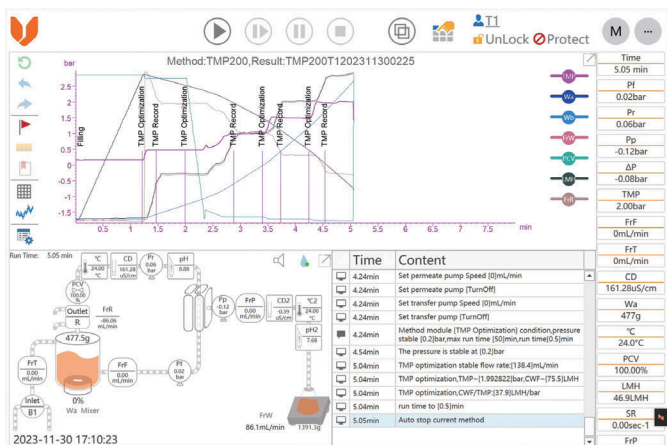
- Optional permeate pump allows control of permeate flowrate. It is widely used in microfiltration process. Control the peremetate flux can reduce fouling of the membrane and slow down the formation of gel layer, which is beneficial for improving the overall process efficiency.

PCV

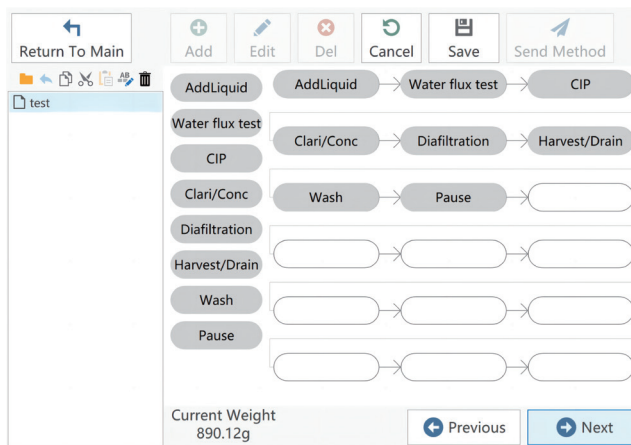
- The retentate is equipped with an automatic clamp valve(manual valve for module L), which can automatically control the retentate pressure and achieve automatic adjustment of TMP.

Control software

- The control software can be used for system control, method editing, data recording, user management, equipment calibration, etc. Standard method modules include clean water flux test, CIP, clarification/concentration, dialysis, harvest/drain, filling, system flushing, etc. Users can easily create a whole recipe by combining different method mocules.



Unique AutoTFF075 control software



Method editing and recipe creation



● Predefined method modules

Method Module	Function
Filling	Add a certain amount of liquid to the circulation vessel
Water flux test	Can automatically test water flux based on defined pressure/crossflow conditions
Clarification/Concentration	Concentrate the feed liquid to the defined volume or concentration factor
Diafiltration	Constant volume diafiltration with continuous feed until predefined endpoint, eg. Diltiltration volume, conductivity, pH
Harvest/Drain	Harvest the liquid through the harvesting port or outlet valve
CIP	Used for system cleaning
Flush	Flush the system with water, buffer or other solutions
Pause	System pause
TMP optimization	A method protocol for TMP optimization. A Flux vs TMP trend could be generated in "Report" screen
Diafiltration point optimization	A function in "Report" screen for selection of optimal diafiltration start point with existing concentration process data

Unique AutoTFF075 Specification

Dimensions(LxDxH,mm)	580 x 355 x 640 (filter holder not included))
Electrical requirements	240VAC, 50-60Hz
Weight	48kg(include 0.1m ² filter holder)
Power	160W
System language	Chinese, English
Ambient temperature	2-35°C
Filtration area	50cm ² - 0.1m ² (The specific filtration area can be varied with different filters)
Maximum feed pressure	5bar
Minimum recirculating volume	20ml(When using standard tubing)
Process temperature	2-50°C
Feed pump flow rate	0-700ml/min(Max flowrate 1200ml/min with 25#tubing)
Retentate pump flow rate	0-600ml/min
Permeate pump flow rate	0-300ml/min
Recirculation vessel volume	A 1000ml circulating vessel comes standard, with 50ml, 250ml, and 500ml vessel available as options
Stirring speed	0-300rpm
Pressure sensor	Detection range: 0-5Bar
Conductivity sensor	Detection range: 0.001-999.99ms/cm
Temperature sensor	Integrated in conductivity sensor, detection range: 0-99 ° C
pH	Detection range: 0-14
Retentate and filtration weighing	0-6kg; Optional 25kg permeate balance.
Filter holder	1x ABS multifunctional holder for 50cm ² Capsule capsule or hollow fiber filters with a diameter within 50mm 1x 0.1m ² Stainless steel holder ; Designed to hold 1 to 5 standard filter
Tube&Connector	Luer Lock

Unique AutoTFF075 System Configurations/Options



Unique AutoTFF075 has three standard configurations and multiple flexible options:

Components	Unique AutoTFF075-L	Unique AutoTFF075-M	Unique AutoTFF075-MD
Feed pump	√	√	√
Recirculation vessel	√	√	√
Recirculating vessel balance	√	√	√
Feed and retentate pressure sensors	√	√	√
Retentate Manual PCV Valve	√	—	—
Permeate Manual PCV Valve	√	—	—
Filter Holder & Multi-function Clamp	√	√	√
Control System	√	√	√
Leak Detector	√	√	√
Retentate Automatic PCV Valve	—	√	√
Permeate Pressure Sensor	—	√	√
Permeate Balance (6kg)	—	√	√
Permeate Balance (25kg)	—	○	○
Feed Pump (Peristaltic Pump)	—	○	○
Disposable Bag Holder (≤3L)	—	○	○
Feed 2 Inlet Valve	—	○	○
Feed 6 Inlet Valve	—	○	○
Permeate 2 Outlet Valve	—	○	○
Permeate 6 Outlet Valve	—	○	○
Retentate 2 Outlet Valve	—	○	○
Retentate 6 Outlet Valve	—	○	○
Permeate Pump & Permeate Automatic PCV Valve & Manual Valve (Select One of Three)	—	○	○
Retentate Conductivity Detector	—	○	○
Permeate Conductivity Detector	—	○	○
Retentate pH Detector	—	○	○
Permeate pH Detector	—	○	○
Retentate Flow Meter	—	○	○
Permeate Flow Meter	—	○	○
Permeate UV Detector	—	○	○
Validation Service	○	○	○

Note: "√" standard configuration item; "○" optional configuration; "—" is not optional



Website



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