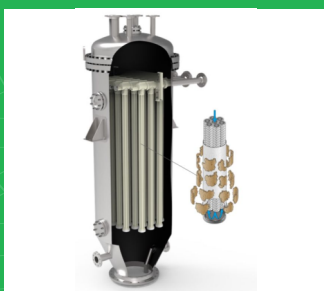
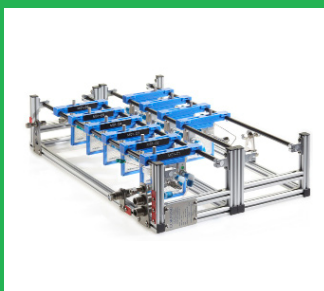




SKY LIFESCIENCES SOLUTIONS

"Precision Meets Innovation"

"Your partner for continuous manufacturing"



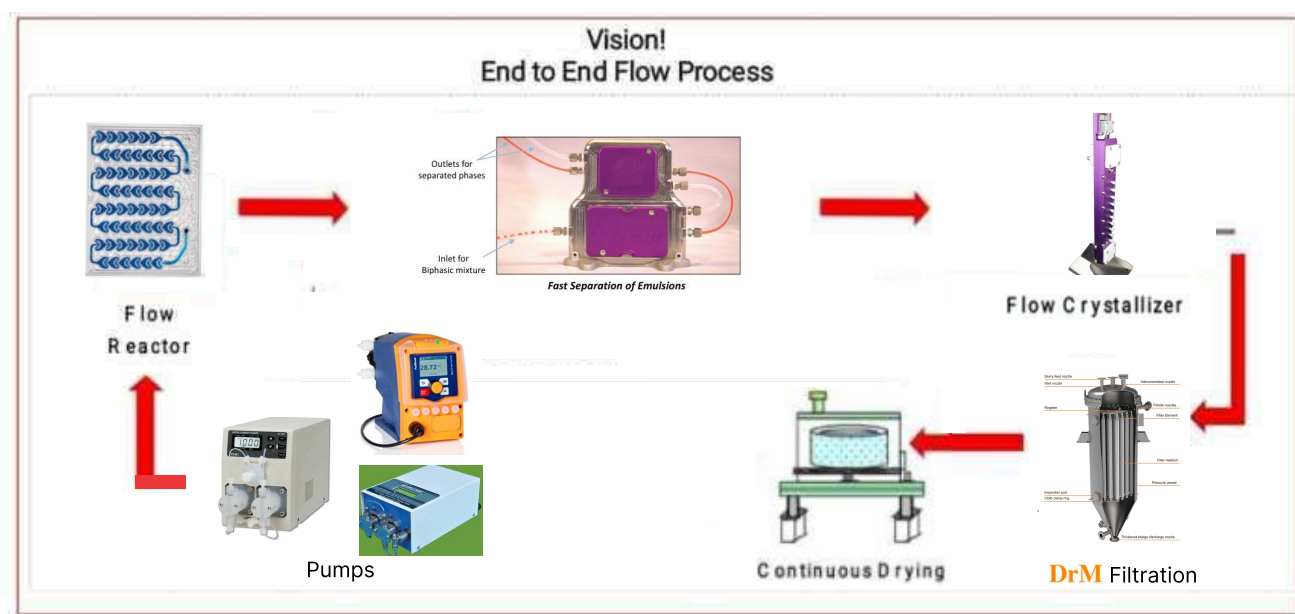
CATALOGUE



Introduction

We provide exceptional analytical solutions to solve the toughest Research and Development challenges in Pharmaceutical, Biotech and Life sciences companies with wide range of high quality, sustainability as well as innovative next-generation Laboratory products. Thereby enabling continuous improvements in life changing and life saving drug discoveries with World Class Revolutionary Technologies and Developments henceforth increasing the manufacturing efficiency of Safe and effective Vaccines and other Medicinal productions.

Our products include liquid-liquid/liquid-gas separators, back pressure regulators, and multi-stage extraction platforms, that are scalable, modular, and continuous. Whether you work in academia or industry, if you work in batch or continuous flow, we believe that our products will help to streamline your work, enable new approaches and allow you to harvest the power of chemistry.

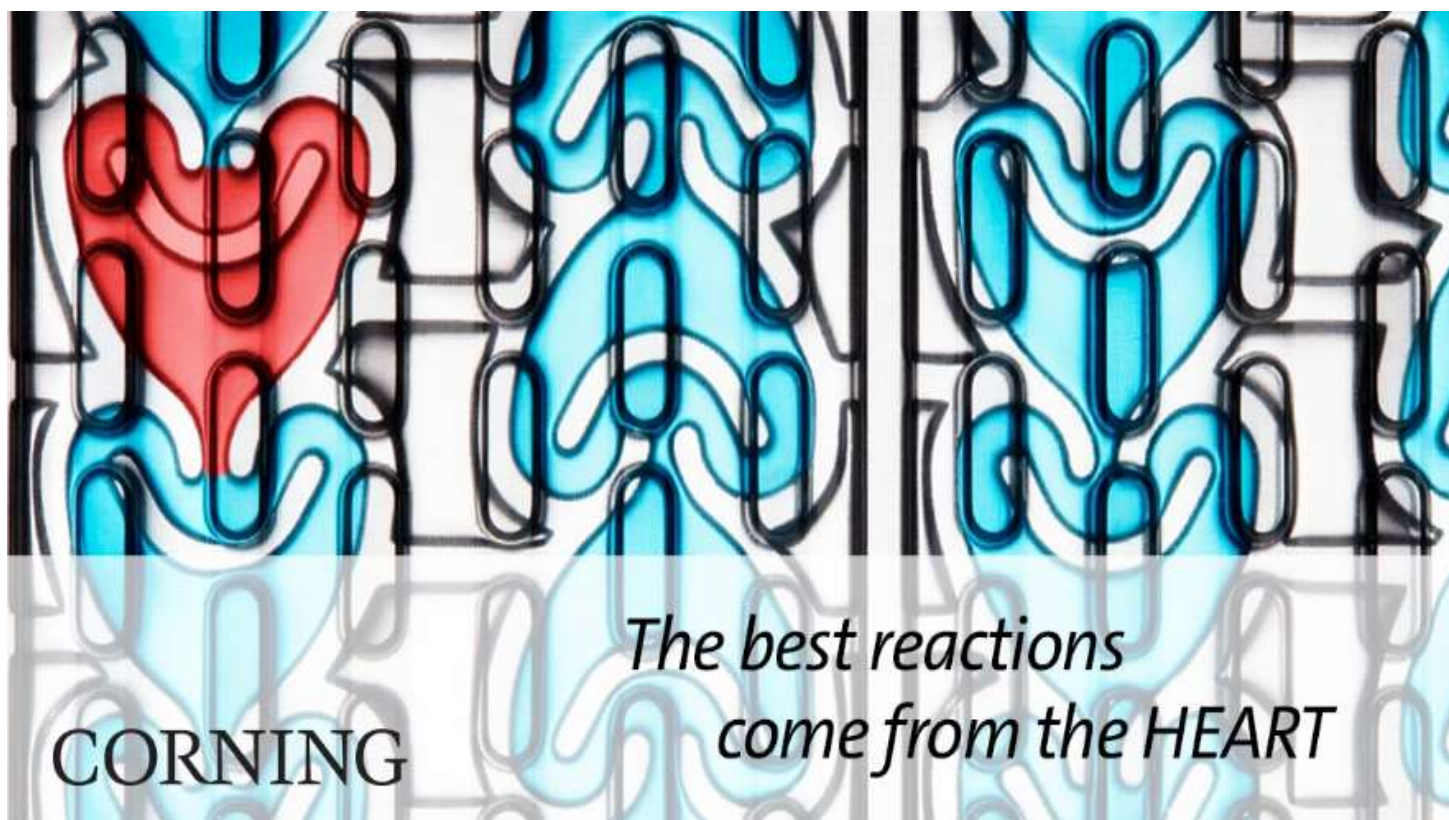




SKY LIFESCIENCES SOLUTIONS

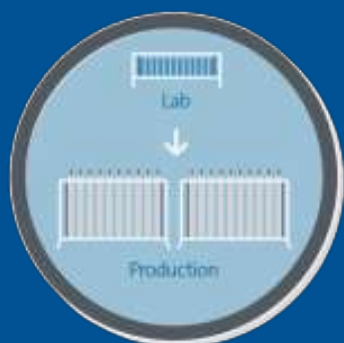
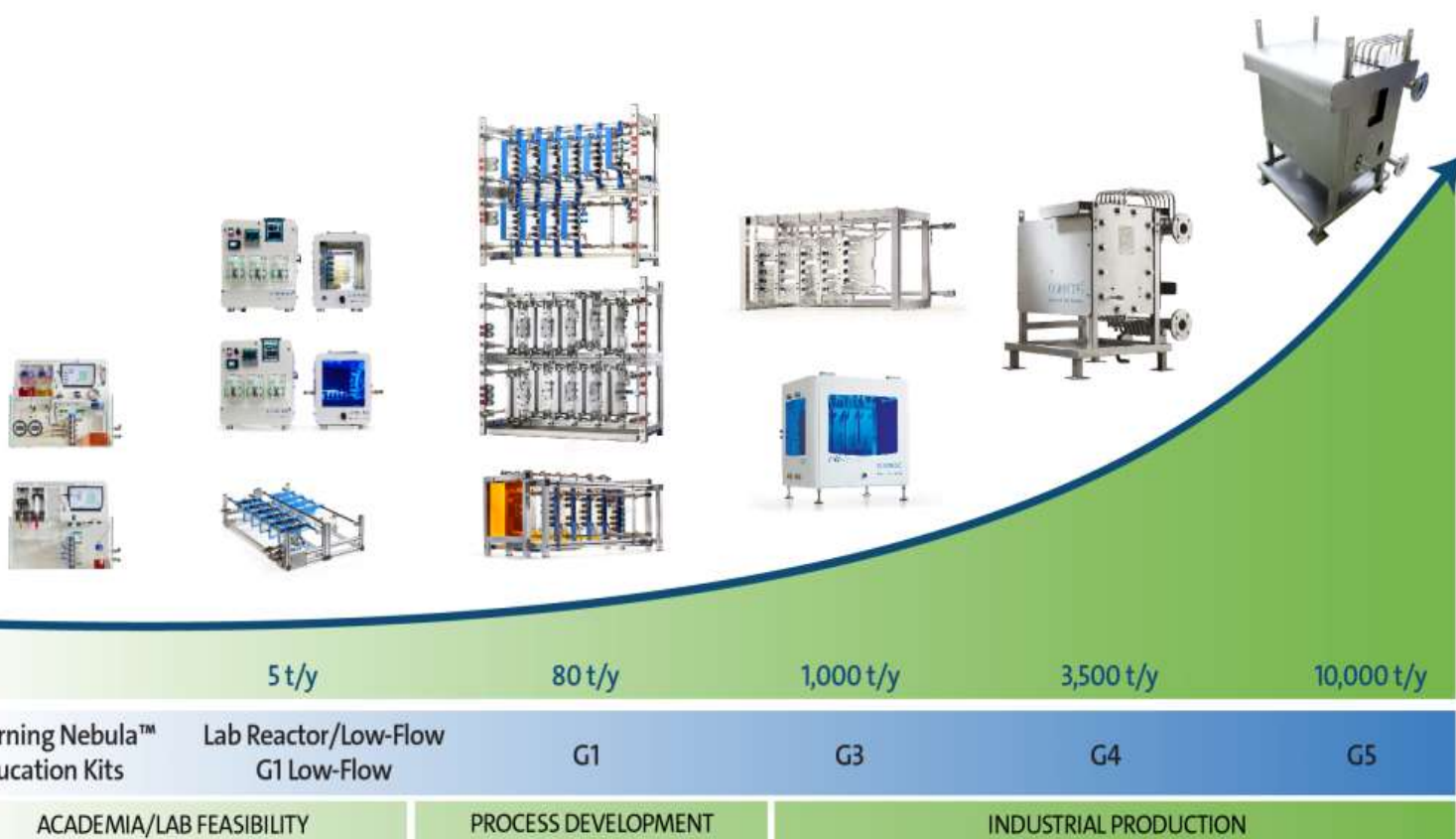
☎ 9908140066 / 73867 61912

✉ shylander@skylifesciencesolutions.com



CORNING
Advanced-Flow™ Reactors

The future flows through Corning® Advanced-Flow™ Reactors



**Seamless scale-up from
lab to production**



**100x better
Mass Transfer***



**1000x better
Heat Exchange***

*Compared to traditional batch reactors

Higher yields, lower cost

Corning innovation brings significant performance benefits to the chemical processing industry through Corning® Advanced-Flow™ Reactors - a full range of reactor products suited to meet the needs of a particular reaction or a wide portfolio of reactions.

Continuous flow chemical production utilizing Corning Advanced-Flow Reactors can provide:

- seamless scale-up
- increased production yields
- lower overall production costs
- enhanced plant safety
- higher product quality
- decreased waste generation and energy consumption
- faster product time to market

Corning's reactors can be effectively run on reactions with miscible and immiscible liquids, and gases and liquids containing some amounts of small solids particles.

Many different types of reactions are well suited for Corning's reactor equipment, including:

- nitrations
- oxidations
- brominations
- chlorinations
- grignards
- alkylations
- organo-metallics
- hydrogenations
- polymerizations
- ...and others.

Corning Advanced-Flow Reactors can be integrated into existing chemical processing infrastructures and designed upon request to ATEX and cGMP standards. Corning's reactors can be easily incorporated into industrial systems via standard connectors, helping customers migrate to Corning's technology with little to no downtime.

A full range of services to suit your needs

Corning Advanced-Flow Reactors include a full range of services to enhance customers' projects from development through to implementation and operation, including:

- workshops and trainings
- basic and detailed auxiliary systems engineering
- customized turnkey solutions
- technical support
- FAT/SAT and industrial startup
- assistance for equipment qualification following cGMP/FDA requirements
- pre- and post-purchase technical support
- compliance with international standards (ATEX, ASME, PED, SELO, KGS, etc.)



Corning® Cooling and Heating Chiller

CORNING



Corning® Chiller is specialized to design for Corning Advanced-Flow™ reactor. The range of operating temperature will be from -45°C to 200°C. The chiller could precisely control the reaction temperature.

The product could be well equipped with Corning Advanced-Flow™ reactor from lab scale to industrial manufacturing.



Type	HC-G1-A-2T		HC-G4-B
Temperature Range	-25°C~ 200°C		-45°C~ 200°C
Control precision	± 0.3°C		± 0.1°C
Precision of Temperature	0.1K		0.1K
Operating Panel	7" color touch screen		7" color touch screen
Control mode	PID		PID
Power of cooling (200°C)	5.5KW	8KW both	38KW
(100°C)	5.5KW	8KW both	38KW
(20°C)	5.5KW	8KW both	38KW
(-20°C)	2.8KW	4KW both	26KW
(-40 °C)			12KW

IKA

designed for scientists

EN



FLOW CHEMISTRY | IKA FLOW SYSTEM



ElectraSyn 2.0

The ElectraSyn 2.0 complete variable system ena

of new electrochemical reactions or transformations on the laboratory scale. Precise batch electrosynthesis for users with or without previous experience:



IKA Carousel complete
Ident. No. 0040005427



IKA e-Hive
Ident. No. 0040004945

- > Ideal test conditions thanks to Smart Assist
- > For use as a potentiostat / galvanostat
- > Analysis of samples via cyclic voltammetry
- > Digital recording of tests
- > Best reproducibility
- > Large selection of electrodes
- > Sustainable, cost-effective synthesis paths
- > Maximum process security
- > Mixing with the magnetic stirrer function
- > Control via Labworldsoft 6.0
- > Regular enhancement via software updates
- > A variety of accessories available [ElectraSyn 2.0 Package](#)

[ElectraSyn 2.0 pro Package](#) [ElectraSyn 2.0 pro starter Package](#)

Ident. No. 0020008980

Ident. No. 0040003261

Ident. No. 0010003390

5 | ElectraSyn flow



ElectraSyn flow

ElectraSyn flow enables you to carry out continuous

based on the flow-through principle. The electrosynthesis flow cell can be used either individually or in combination, to research or produce very small quantities. Ideal process parameters for the production scale with ElectraSyn



- > Modular, compact complete system
- > Galvanostatic operating method
- > Continuous operation
- > Nine half cells that can be combined as required
- > Optional cell division via ion-permeable membrane
- > Adjustable electrode separation
- > Adjustable educt flow speed
- > Continuous adjustment of the electrosynthesis flow
- > Height-adjustable cell mounting
- > Practical component system in the carry case
- > Can be recirculated
- > Numbering-up easily possible
- > Upscaling to larger cell systems easily possible
- > Easy identification of ideal process parameters
- > Easy adjustment of parameters for research purposes
- > Control, automation and recording via Labworldsoft 6.0 [ElectraSyn flow basic](#)

[ElectraSyn flow eco](#)

Ident. No. 0020014266

Ident. No. 0020014267

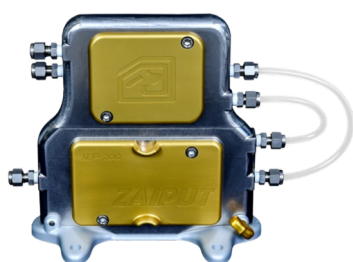


Zaiput Flow Technologies

Separation made simple

Zaiput products catalogue

SEP: LiquidLiquid / Gas- Liquid Phase Separators



Membranebased liquidliquid/
liquid-gas separators.

*Enabling liquid separation in flow
chemistry based processes and
providing a solution for challenging
batch based liquid separation steps*

SEP-10	0 - 10 ml/min
SEP-200	10—200ml/min
SEP-3000	200—3,000ml/min
SEP-40K	1,000—40,000ml/min

MS: Multistage Extraction Platforms

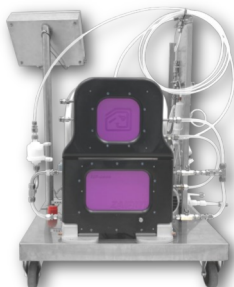


Platforms for counter-current
liquid-liquid extractions

*Enabling multi-stage extractions
with a small footprint, minimal
internal volume and high efficiency.*

MS-10	0 - 10 ml/min
MS-200	5—200ml/min
MS-3000	200—3,000ml/min

ZFOX: Batch Extraction Platforms



Platforms for continuous liquid-
liquid extraction for batch
processes

*Enabling improved phase cut,
reduced processing times, doubling
of productivity.*

ZFOX-3000	100—3,000ml/min
ZFOX-40K	1,000—40,000ml/min

BPR: Back Pressure Regulators



Back Pressure Regulators for high
accuracy and precision, broad
pressure range and outstanding
chemical compatibility

BPR10	0—100ml/min
BPR1000	20—1,000ml/min



Zaiput Flow Technologies

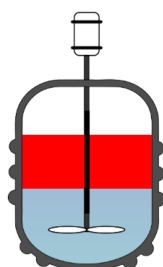
Separation made simple

Z-FOX Extraction Platform

Technical Brochure

Solving the most challenging extraction problems

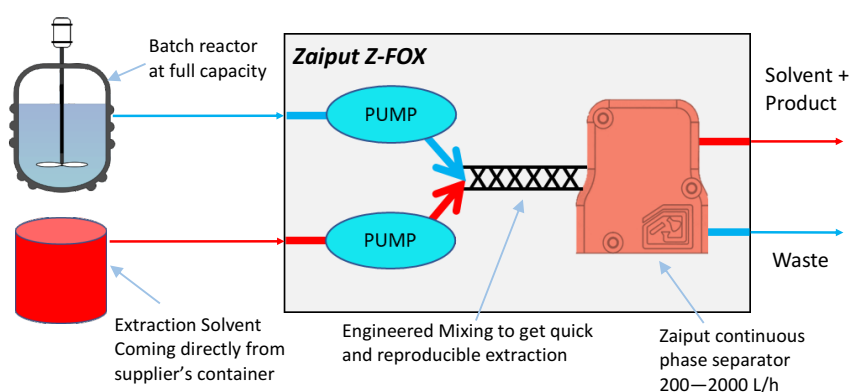
Batch Problems



Reactor used at Half capacity

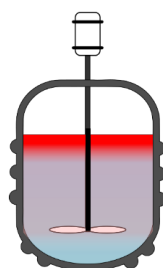
When a reaction is followed by an extraction only half of the reactor volume is used for reaction, thus losing half of the productivity.

Z-FOX Solution



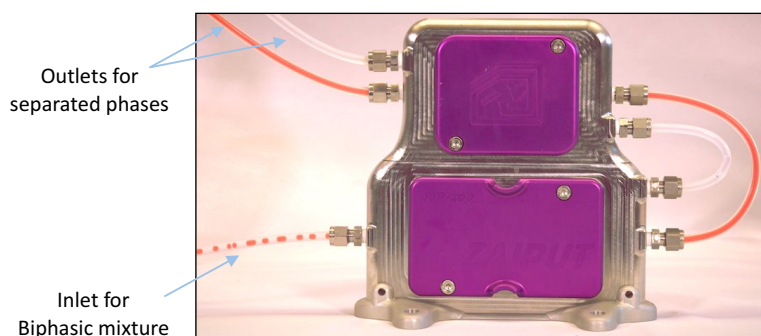
Reactor used at Full Capacity

The extraction is moved outside the reactor by leveraging a continuous approach



Emulsions & slow settling mixtures

Slow to settle systems result in substantial time loss



Fast Separation of Emulsions

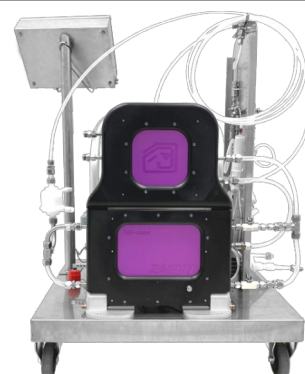
Zaiput's membrane separation technology readily separates emulsions

All In One Extraction Solution

Zaiput's liquid-liquid extraction platform (Z-FOX) integrates fast and continuous phase separation with engineered mass transfer to provide a complete extraction solution.

Z-FOX is a turnkey platform that allows users to quickly tune their extractions, open reactor capacity by taking the extraction out of the reactor while also speeding up the separation of slow to settle systems.

With Z-FOX is available at different scale, it is mobile so it can be easily deployed wherever needed — a perfect solution for the plant of the future!





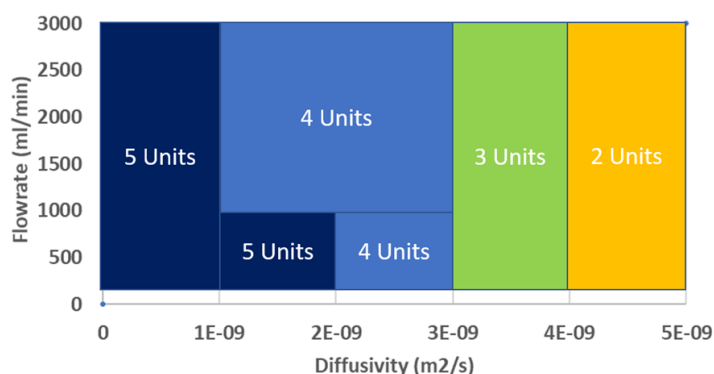
Batch Extraction

Engineered Mass Transfer

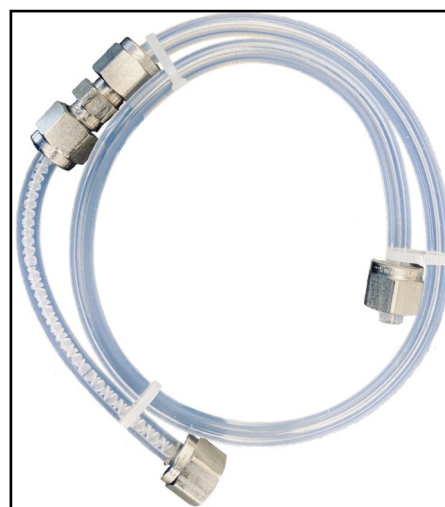
Zaiput has simplified sizing of mass transfer conditions to achieve complete extraction. We have developed and validated a diffusion based model that has resulted in easy to use sizing charts (see below an example). With a few steps you can find out how many static mixing units you need to achieve equilibrium in your extraction thus reaching 100% efficiency.

1 Unit = 3' of tubing (ID=3/8") containing ~8" of Kenics Static Mixer

Tube Length Guideline Chart

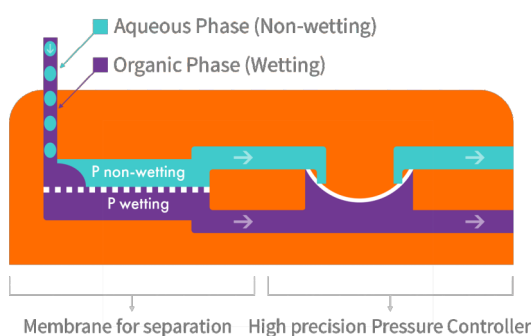


Example of sizing chart and mixing unit. Please look at at "Sizing Guide" for detailed information



1 Modular mixing unit for SEP-200

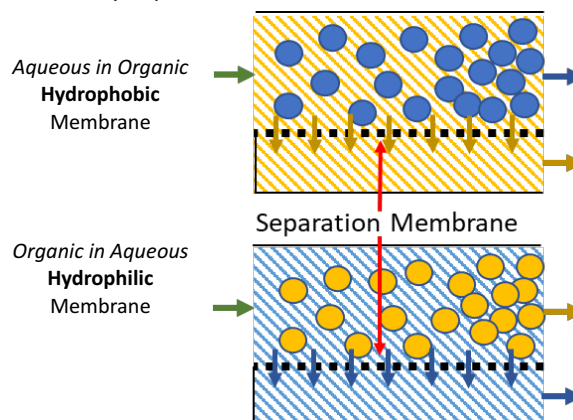
Continuous Membrane Separation Mechanism - Key Advantages



- Zaiput patented separators provide continuous separation of an immiscible phases by leveraging differences in wetting properties of the liquids onto a porous membrane.
- When a bi-phasic stream enters the separator, one phase will have an affinity for the membrane and fill the pores ("wetting phase, purple), the other will be repelled ("non-wetting phase, blue).
- A pressure difference, automatically controlled by an onboard controller, ensures the wetting phase is separated out while retaining the non-wetting phase.

By relying on surface forces instead of gravity as a driving force for separation, several advantages arise:

1. Quickly separate emulsions



2. Separate liquids with the same density
3. Easily scalable across multiple devices. Throughput of up to 2400 Liters/hour.
4. Rapid quench & reduced phase contact time.
5. Minimal internal volume

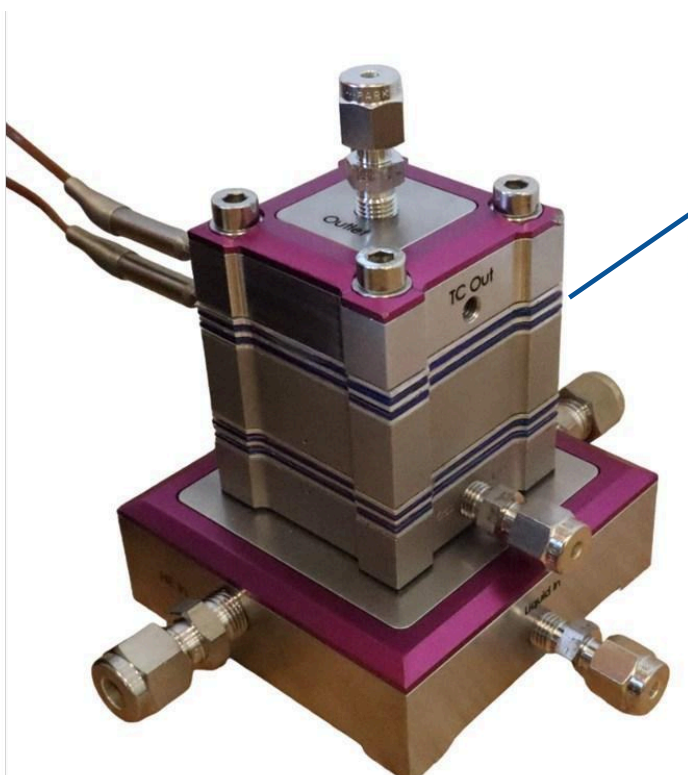
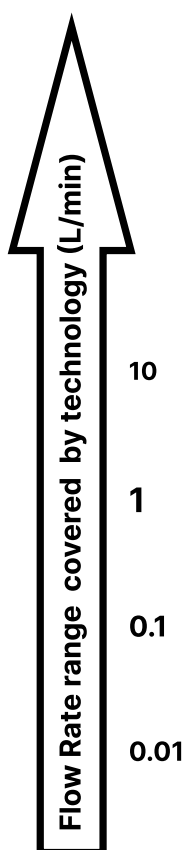
Heterogeneous Catalysis Flow Reactor

Providing a scalable solution for continuous hydrogenation



Overview

From Lab to Plant: modular, scalable, continuous



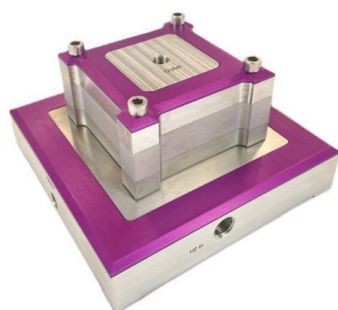
Catalyst is packed inside cartridge modules in an engineered repeatable way

Features:

- Interchangeable layered design
- Excellent mass and heat transfer
- Uniform temperature in cross section
- Safety & direct scalability

Highly engineered design to enhance tight control on process parameters, boosting performance, safety, and catalyst savings.

Specifications



Coming in 2026

Coming in 2026

Part Number	TWR-10
Maximum Pressure	35 Bar (500 psi)
Wetted Parts	316-SS or Hastelloy, PTFE, FFKM
Liquid Flow Rate	~ 0.5-10 mL/min
Max Temperature	200 °C
Gas Flow Rate	~ 20-500 sccm

Part Number	TWR-100
Maximum Pressure	35 Bar (500 psi)
Wetted Parts	316-SS or Hastelloy, PTFE, FFKM
Liquid Flow Rate	~ 10-100 mL/min
Max Temperature	200 °C
Gas Flow Rate	~ 300-5000 sccm

Part Number	TWR-1000
Maximum Pressure	35 Bar (500 psi)
Wetted Parts	316-SS or Hastelloy, PTFE, FFKM
Liquid Flow Rate	~ 100-1000 mL/min
Max Temperature	200 °C
Gas Flow Rate	~ 3-50 slm

Part Number	TWR-10K
Maximum Pressure	35 Bar (500 psi)
Wetted Parts	316-SS or Hastelloy, PTFE, FFKM
Liquid Flow Rate	~ 1-10 L/min
Max Temperature	200 °C
Gas Flow Rate	~ 30-500 slm



Zaiput Flow Technologies

Innovative Equipment for Continuous Processes

KryZr, Zaiput's Tower Crystallizer

Providing a scalable solution for continuous crystallization

Technical Data

Overview

From Lab to Plant: Flexible, Scalable, Continuous



Features:

- Plug flow characteristics
- No need for transfer lines
- Small internal volume

Tight control of:

- Mixing
- Supersaturation
- Temperature

Zaiput has developed a continuous crystallizer for Pharmaceutical and fine chemical applications which utilizes 11 Tanks-in-Series to achieve plug flow characteristics. The novel A-PUSH system ensures adequate slurry transfer through the device and eliminates fouling of transfer lines.

Temperature control at the extremities of the device allows for a linear gradient or uniform temperature during crystallization and the distributed antisolvent ports provide means for increased control of supersaturation in each tank.

Whether you are new to crystallization or a veteran, KryZr is the ultimate tool for your process.

11 Tanks-in-Series for effective and controlled cooling, antisolvent or reactive crystallizations

Lab scale device, 86 mL volume

Specifications



Part Number	KryZr-10
Volume	86 mL
Wetted Parts	316 Stainless Steel or Hastelloy C276, FEP, FFKM
Flow Rate	0-7 mL/min
Temperature Range	-10-80°C
Recommended Particle Size	≤ 500 μm
Solid-Liquid Density Difference Range	0-0.56 g/cm ³

Coming soon

Part Number	KryZr-100
Volume	~850 mL
Wetted Parts	316 Stainless Steel or Hastelloy C276, FEP, FFKM
Flow Rate	0-70 mL/min
Temperature Range	-10-80°C
Recommended Particle Size	≤ 500 μm
Solid-Liquid Density Difference Range	0-0.56 g/cm ³

Coming soon

Part Number	KryZr-1000
Volume	~8.5 L
Wetted Parts	316 Stainless Steel or Hastelloy C276, FEP, FFKM
Flow Rate	0-700 mL/min
Temperature Range	-10-80°C
Recommended Particle Size	≤ 500 μm
Solid-Liquid Density Difference Range	0-0.56 g/cm ³



Zaiput Flow Technologies

Innovative Equipment for Continuous Processes

Continuous Liquid-Liquid

Partton Chromatography

Providing continuous in-line separation of chemical species

Overview

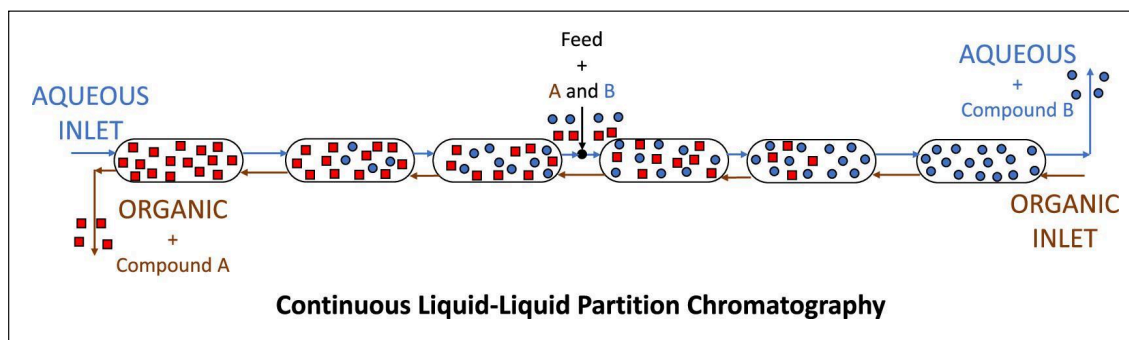
Zaiput membrane based separators enable, with appropriate configuraton, contnuous separaton of chemical species leveraging the principle of *Partton Chromatography*.

Applicatons:

- Separaton of Chiral Molecules
- Separaton of Natural products
- Separaton of Isomers

Advantages:

- Low cost of operaton (No solid statonary phase)
- Ease of process development
- Scalable from bench to plant



Results typically achieved with Simulated Moving Bed chromatography can be obtained at a substantial lower cost (no need of solid statonary phase!).

Contact Zaiput to discuss your applicaton

sales@zaiput.com

What is *Partton Chromatography*

Partton or liquid-liquid chromatography is a separaton technique that relies on the distributon of at least two chemical species between two immiscible liquid phases, a statonary phase and a mobile phase. An adequate cascade of liquid-liquid extracton steps allows for high separaton efficiency.

www.zaiput.com



Batch Extraction

Z-FOX: Zaiput's Extraction Solution

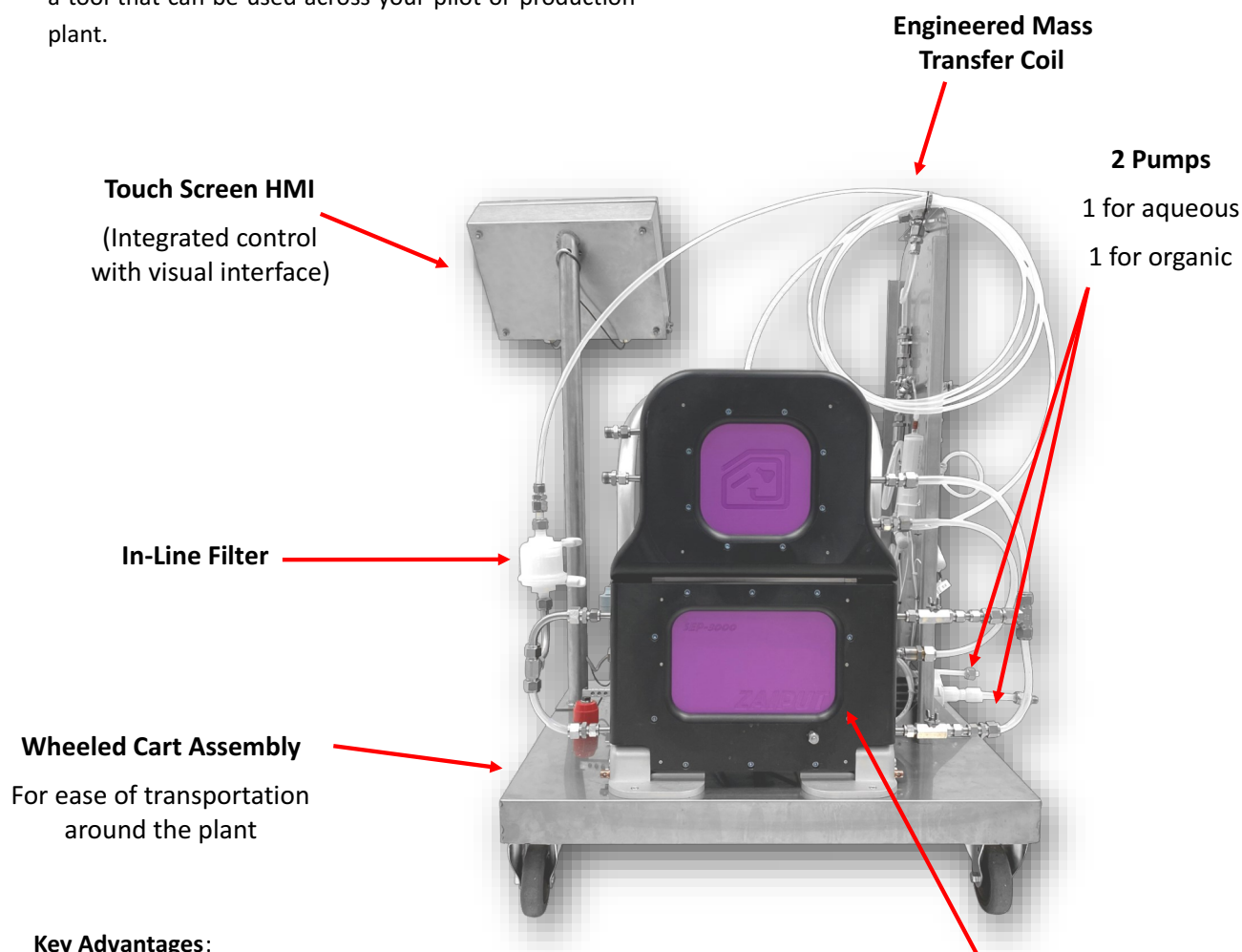
By engineering your mass transfer in flow, you can ensure that you will have a 100% theoretically efficient extraction without waiting for mixing or settling.

Zaiput's scalable liquid-liquid separators enable an instantaneous phase cut, finishing your extraction quickly.

Z-FOX is easy to implement, scale, and clean, making it a tool that can be used across your pilot or production plant.

Take your **extraction** out of your **reactor** and into flow to double your plants capacity.

Reduce the time and uncertainty inherent in extractions by using Zaiput's high throughput extraction solution.



Key Advantages:

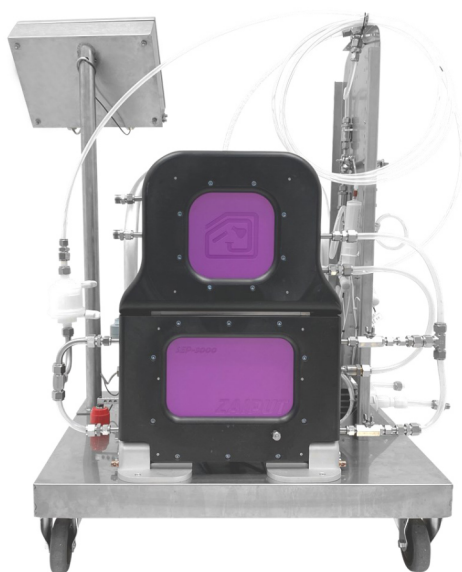
- ☐ Double your batch productivity
- ☐ Scalable: throughput of up to 2400 Liters/hour.
- ☐ Mobile across the plant—one unit can fix separation issues for many reactors.
- ☐ Rapid quench & reduced phase contact time.

Zaiput Continuous Separator



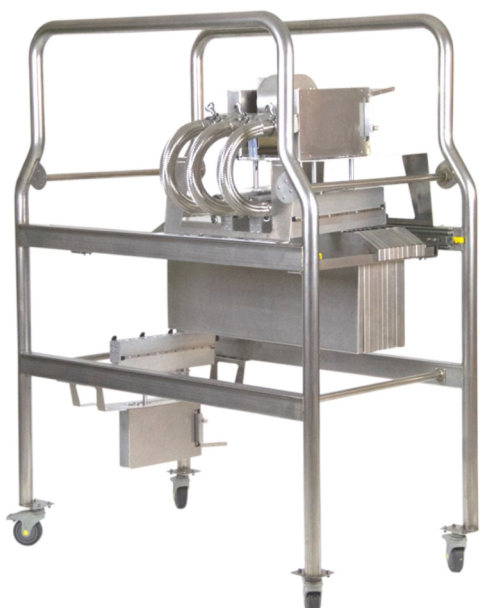
Batch Extraction

Pilot Scale



Part number	Z-FOX-3000 (SS/HS/FP)
Width x Depth x Height	760 mm (29.92 inch) x 620 mm (24.41 inch) x 1150 mm (45.28 inch)
Maximum Pressure	1 MPa (290 psi) Standard—2 MPa available upon request
Ports	Swagelok for 1/2" OD
Separator Wetted Parts	Model HS: Hastelloy C 276, PTFE, PFA, FFKM Model SS: SS 316, PTFE, PFA, FFKM Model FP: ETFE, PTFE, PFA, FFKM
Static Mixers Wetted Parts	316-SS, Polypropylene or PTFE
Pump wetted parts	Customizable to fit compatibility needs
Total Liquid Flow Rate	100-3,000 ml/min
Max Temperature	130 °C
Internal Volume	~0.5 L
Control	Stand alone & plant integrated control
Filtration	Optional, different pore sizes available
Compliance	Atex / Class 1 Div 2

Plant Scale



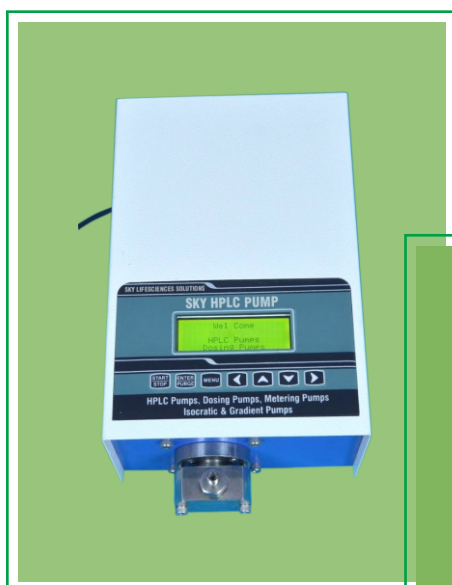
Part number	Z-FOX-40K
Width x Depth x Height	176 cm x 80 cm x 168 cm
Maximum Pressure	1 Bar (15 PSI)
Ports	1.5" Triclam fitting
Separator Wetted Parts	316-SS, FEP, PTFE, FFKM
Static Mixers Wetted Parts	PTFE, 316-SS, or PP
Pump wetted parts	Customizable to fit compatibility needs
Total Liquid Flow Rate	1,000-40,000 ml/min
Internal Volume	Depends on # of Cartridges used
Control	Stand alone & plant integrated control
Filtration	Optional, different pore sizes available
Compliance	Atex / Class 1 Div 2 (upon request)



SKY LIFESCIENCES SOLUTIONS

"Precision Meets Innovation"

HPLC PUMPS



- ◆ ISOCRATIC
- ◆ BINARY
- ◆ QUARTENARY
- ◆ METERING
- ◆ DOSING
- ◆ MULTI COLUMN WASHING

HPLC PUMP

Products Selection Guide

Features:

- This Pump comes with SINGLE/DUAL Head, with a Pulsating Flow.
- Flow Range being 0.01 to 1000.00 ml per minute, with 0.01 increments
- Comes with built in Pressure Transducers.
- Application in Dosing, Metering & Column Washing Applications.
- Available in Isocratic, Binary & Quarternary Gradient Models.
- It can be integrated with Column Oven

Model	No of Heads	Flow	Pressure
SKY SP5	01	0.01 - 5.00	6000psi
SKY DP5	02	0.01 - 5.00	6000psi
SKY SP10	01	0.01 - 10.00	6000psi
SKY DP10	02	0.01 - 10.00	6000psi
SKY SP20	01	0.01 - 20.00	4000psi
SKY DP20	02	0.01 - 20.00	3000psi
SKY DP40	02	0.01 - 40.00	3000psi
SKY DP50	02	0.01 - 50.00	2000psi
SKY DP100	02	1.0 - 100	2000psi
SKY DP200	02	1.0 - 200	2000psi
SKY DP300	02	1.0 - 300	2000psi
SKY DP500	02	1.0 - 500	2000psi
SKY DP1000	02	1.0 - 1000	2000psi
SKY BG	This is a Time Programmed Binary Gradient Model		
SKY QG	This is a Time Programmed QTY Gradient Model		
SKY MCW	This is for Simultaneous Multi Column Washing		
SKY ICO	This Model comes with Integrated Column OVEN		

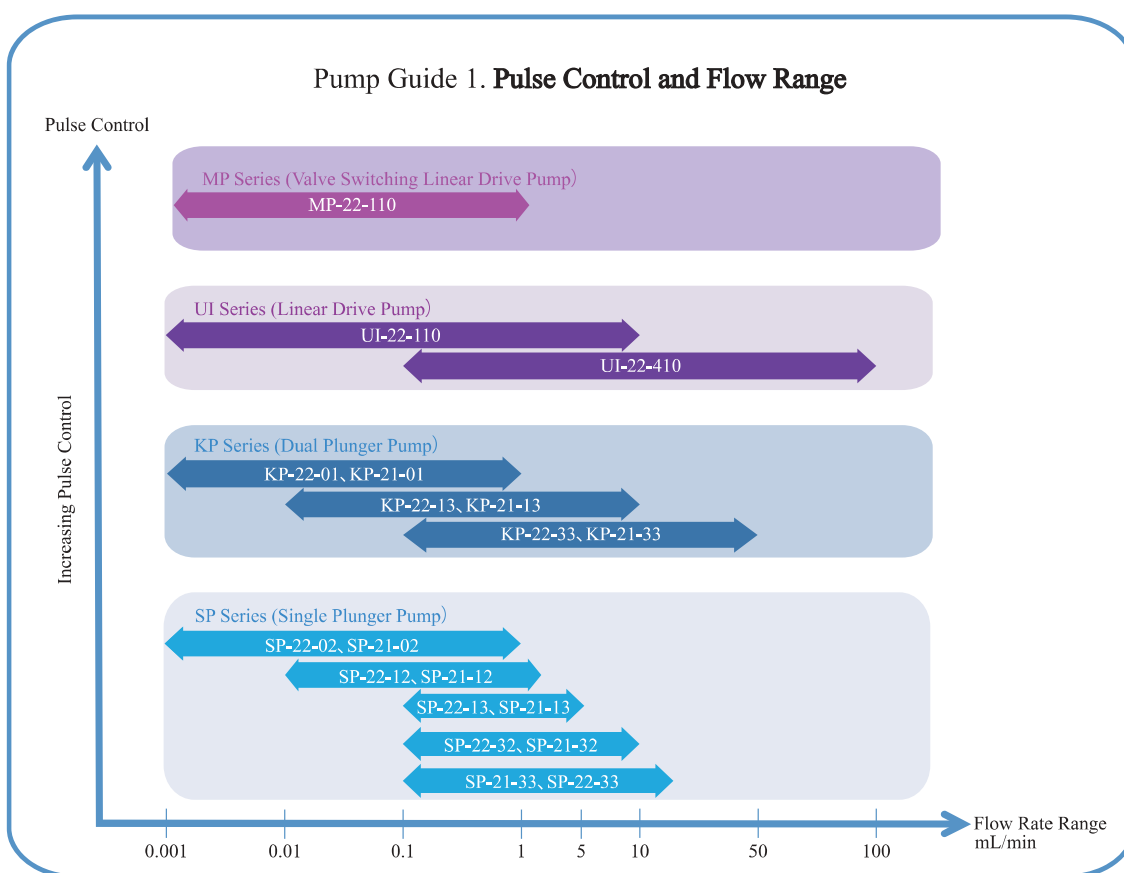
Technical Specifications:

Flow Precision	: $\pm 0.1\%$ RSD of retention time at 1mL/min, 1000 to 2000 psi
Flow Accuracy	: $\pm 0.1\%$ of setting at 1 mL/min, or 30 μ L/min, whichever is larger using degassed methanol at 1000 to 2000 psi backpressure
Pressure Ripple	: $\approx 2.0\%$ at 1mL/min, degassed methanol, at 1000 psi backpressure
Flow Path	: 316 stainless steel, sapphire, reinforced fluorocarbon polymer seals, carbon-reinforced Tefzel PEEK, PTFE \$ Hastelloy OPTIONAL
Solvent Compatibility	: Solvents consistent with materials of construction, Salts and buffers can reduce seal life, especially at pressure in excess of 3000psi.
Max Pressure	: 6000PSI
Auto Stop Time	: 1 to 999 Minutes
Operation Mode	: Continuous & Timed
Display	: 20*4 LCD Yellow Background
Pressure Cut OFF	: The Pump will stop automatically if operating Pressure exceeds SET Pressure
Computer Interface	: Via RS232 Port
Line Voltage	: Regulated 230 Volts 50HZ with Proper Ground
Operating Temperature	: 4 to 40 Degree Celsius
Humidity	: 20% to 80% Non Condensing
Audible Noise	: Less than 70dBA
Physical Specs	: 325mm(L)*165mm(W)*225mm(H)
Weight	: Approx 15 Kgs

1. Plunger Pumps

Selection Guide for Plunger Pumps

FLOM features a full lineup of plunger pumps for a wide variety of flow control systems and flow volume ranges. Depending on your application and goals, choose SUS, PEEK, or PCTFE as your pumphead material.



Pump Guide 2. Pumphead Material

Material	PCTFE	PEEK	SUS
Max Pressure	2 MPa (290 psi)	5~20 MPa* ¹ (725 ~ 2900 psi)	5 ~ 35 MPa* ¹ (725 ~ 5075 psi)
AVOID use with	- tetrahydrofuran - halogenated solutions under high temp	- tetrahydrofuran - halogenated solutions - strong acids	- strong acids - certain inorganic salts

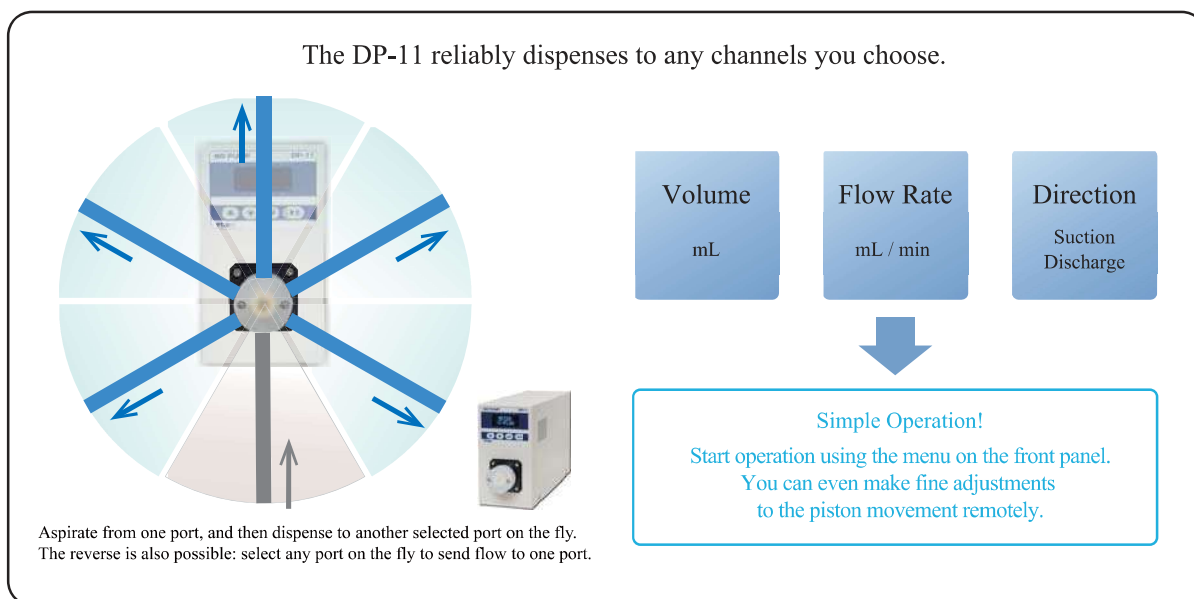
*¹: depends on device

About the Switching Delivery Pump DP-11

A new conception in multi-purpose pumps from FLOM.

This smart pump can either dispense up to 5 separate channels, or continuously dispense just 1 channel, all in one device.

💡 What This Pump Can Do!



• Special Features of the DP-11

High Flow Accuracy

Accuracy : $\pm 1.0\%$ or ± 0.01 mL
Repeatability : $\pm 0.1\%$ RSD or 0.00 1mL SD
(Measuring Mode)

The DP-11 offers high accuracy flow in both continuous flow and Measuring modes.

Chemical Resistance

Ceramic and PCTFE
Chosen for the Wetted Materials

High resistance with a wide range of liquids including strong acid

Fewer Maintenance Problems

NO CHECK VALVES!

This avoids the typical problems you get when pumping highly viscous liquids.

Rugged

Uses FLOM's Proven Linear Drive!

A smaller mechanical load reduces maintenance frequency.

- For more detailed info on the DP-11, check out the video below.



QR Code Here↑



Intelligent Pump
UI-22-110S

Intelligent Pump
UI-22-110P

Intelligent Pump
UI-22-110D

Linear Drive Pulse Control Intelligent Pump Intelligent Pump UI-22 Series

Combines high precision flow and ease of use

Features

- Pulses reduced to absolute minimum making low flow rate pumping possible
- Bubble problems greatly reduced
- Long life plunger seal
- Upper and lower pressure limiters
- Space-saving compact design
- Control with RS232C protocol
- Choose SUS, PEEK, or PCTFE to fit your solvent

Product name	Intelligent Pump					
Part number	UI-22-110S	UI-22-110P	UI-22-110D	UI-22-410S	UI-22-410P	UI-22-410D
Pumphead material	SUS	PEEK	PCTFE	SUS	PEEK	PCTFE
Max pressure*1	35 MPa (5075 psi)	20 MPa (2900 psi)	2 MPa (290 psi)	5 MPa (725 psi)	5 MPa (725 psi)	2 MPa (290 psi)
Flow rate range*2	0.001~9.999 mL/min			0.01~99.99 mL/min		
Flow per stroke	80 μL			708 μL		
Plunger stroke	10 mm					
Flow repeatability*3	< 0.3 % (0.1 ~ 5.0 mL/min)			< 0.3 % (1.0 ~ 50 mL/min)		
Flow accuracy*3	± 2% or ± 2 μL /min or less, whichever is greater			± 2% or ± 20 μL /min or less, whichever is greater		
Features	Self-regulating, upper/lower pressure limiters					
Pressure accuracy	± 0.2 MPa					
Wetted materials	SUS: Sapphire, Ruby, PCTFE, PFA, FFKM, UHMW-PE, PEEK, SUS					
	PEEK: Sapphire, Ruby, PCTFE, PFA, FFKM, UHMW-PE, PEEK, ETFE					
	PCTFE: Sapphire, Ruby, PCTFE, PFA, FFKM, ETFE, PTFE					
Remote control	Input: PUMP ON / OFF, Output: Error signal, Pressure monitor					
Communication	RS232C, RS485 (between FLOM devices)					
Dimensions	144 (H) × 105 (W) × 240 (D) mm, excluding protuberances					
Weight	Approx. 5.6 kg					
Power	AC100~240 V (50 / 60 Hz) MAX140 VA					
Order Code	SLP-P509	SLP-P514	SLP-P517	SLP-P511	SLP-P516	SLP-P510

*¹: Maximum pressure is only sustained intermittently, this does not mean maximum pressure under continuous use.

*²: Maximum output is not sustainable over long periods of time,

*³: Test data generated under FLOM's standard test conditions.

Auto Back Pressure Regulator for MP-22 and UI-22 Series Auto BPR BP-11 Series

Automatic pressure regulation for changes due to factors such as temperature and flow fluctuations

Features

- Provide consistent pressure by tracking variable pump pressure in real time
- MP-22 and UI-22 Series provide stable flow, BP-11 Series maintains set pressure



Auto BPR
BP-11S

Product name	Auto BPR	
Part number	BP-11S	BP-11D
Wetted materials	SUS, PFA	PCTFE, PFA
Path diameter	0.6 mm	
Setup pressure range	0.10 ~ 5.00 MPa (14.5 ~ 725 psi)	
Flow rate range	0.1 ~ 100 mL/min	
Features	Manual mode, Auto-stop	
Pressure accuracy* ¹	±0.1 MPa (±14.5 psi)	
Pressure signal range	Uses pressure signal from MP-22/UI-22 [DC1 - 5V]	
Remote control	Input: Start/Stop, Output: FUNC RS232C, RS485 (between FLOM devices)	
Dimensions	144 (H) × 79 (W) × 240 (D) mm, excluding protuberances	
Weight	Approx. 2.7 kg	
Power	AC100 ~ 240 V (50 / 60 Hz) MAX 70 VA	
Order Code	SBP-F012	SBP-F019

*¹: Using pure water or methanol, pressure 0.5 ~ 5.0 MPa / flow rate 0.1 ~ 50.0 mL/min.

※: please contact us if you need flow rates outside 0.1 ~ 50 mL/min.

REAXUS PUMP SELECTION GUIDE

SINGLE HEAD



M1 CLASS

3 MODELS
Small package for simple metering, dispensing, and general laboratory applications.

MATERIAL OPTIONS	FLOW RANGE (ML/MIN)	FLOW ACCURACY	PRESSURE LIMIT (PSI)
Stainless Steel	0.0–10.0	2%	2,000
	0.0–40.0	5%	500
	0.0–100.0	5%	250



MX CLASS

3 MODELS
Pressure capabilities up to 5,000 psi with pressure monitoring and leak detection.

Stainless Steel	0.0–10.0	2%	5,000
	0.0–40.0	5%	900
	0.0–200.0	5%	200



LS CLASS

20 MODELS
Low pulsation and pressures to 6,000 psi for analytical HPLC applications.

Stainless Steel Hastelloy	0.0–10.0	2%	6,000
	0.0–40.0	2%	1,600
	0.0–100.0	4%	600
	0.0–10.0	2%	6,000
	0.0–40.0	2%	1,600



LD CLASS

24 MODELS
Dual linear cams and automatic pressure compensation for pulse-free precise operation.

Stainless Steel Hastelloy	0.0–12.0	2%	10,000
	0.0–36.0	2%	6,000
	0.0–100.0	2%	1,000



PR CLASS

2 MODELS
High flow rates (300 mL/min) with accuracy for preparative chromatography and SMB applications.

Stainless Steel	0.0–100.0	3%	4,000
	0.0–300.0	4%	1,000

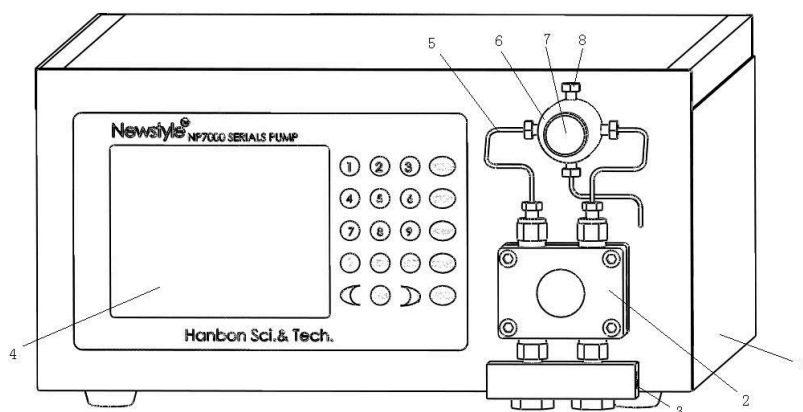
DUAL HEAD

High Pressure Infusion Pumps

1. Features and Advantages

- **Low Flow Rate Pulsation:** Electrical Dump Control technology is used to effectively control flow pulsation and ensure minimum baseline noise.
- **High Flow Accuracy and Repeatability:** multi-point flow correction curve ensures flow accuracy in the full flow range.
- **Long Seal Ring Life:** floating plunger design to ensure the service life of high-pressure seal.
- **Automatic Plunger Cleaning:** An optional automatic mechanism cleans the plunger and the back of the plunger seal to prevent shortening of the seal life due to crystallization of a buffer solution with a high salt concentration.
- **User-Friendly Graphical Interface:** 320 × 240 4.7-inch LCD display, popular table interface design, 10 user programs, can realize flow and gradient programming.
- **Third-Party Software Interface:** Open-source computer counter-control communication protocol, easy to control third-party software.

2. Pump Appearance



3. Power Supply

	100mL/min	200mL/min	300mL/min
Power Supply	85-263V AC		
Power	150	150	500
Infusion Mode	Double plunger Parallel mode; Floating Pluger Design		

4. Technical Specification of Different Type Pumps

4.1 SS316L Pump Heads

High Pressure infusion Pump Specification (SS316L)			
Pump Type	100ml SS316L Pump	200ml SS316L Pump	300ml SS316L Pump
Flow Range	0.01-99.99ml/min, Increment 0.01ml/min	0.1-199.9ml/min, Increment 0.1ml/min	0.1-299.9ml/min, Increment 0.1ml/min
Max Pressure	15MPA	10MPA	5MPA
Flow Accuracy	±1%	±1%	±1%
flow Repeatability	RSD ≤0.3%	RSD ≤0.3%	RSD ≤0.5%
Pressure Pulse	≤0.2MPA	≤0.2MPA	≤0.2MPA
Pipeline	1/16"OD、0.75mmID	1/16"OD、0.75mmID	1/8"OD、2mmID
Displayer	OLED Image Displaying	OLED Image Displaying	240*320LCD Image Displaying
Wetted Material	SS316L, Gemstone, PTFE, PCTFE	SS316L, Gemstone, PTFE, PCTFE	SS316L, Gemstone, PTFE, PCTFE

4.2 Peek Pump Heads

High Pressure infusion Pump Specification (PEEK)			
Pump Type	100ml PEEK Pump	200ml PEEK Pump	300ml PEEK Pump
Flow Range	0.01-99.99ml/min, Increment 0.01ml/min	0.1-199.9ml/min, Increment 0.1ml/min	0.1-299.9ml/min, Increment 0.1ml/min
Max Pressure	15MPA	10MPA	5MPA
Flow Accuracy	±1%	±1%	±1%
flow Repeatability	RSD ≤0.3%	RSD ≤0.3%	RSD ≤0.3%
Pressure Pulse	≤0.2MPA	≤0.2MPA	≤0.2MPA
Pipeline	1/16"OD、0.75mmID	1/16"OD、0.75mmID	1/8"OD 、2mmID
Displayer	OLED Image Displaying	OLED Image Displaying	240*320LCD Image Displaying
Wetted Material	PEEK, Gemstone, Ceramic, PTFE	PEEK, Gemstone, Ceramic, PTFE	PEEK, Gemstone, Ceramic, PTFE

4.3 Titanium Alloy Pump Heads

High Pressure infusion Pump Specification (Titanium Alloy)			
Pump Type	100ml Titanium Alloy Pump	200ml Titanium Alloy Pump	300ml Titanium Alloy Pump
Flow Range	0.01-99.99ml/min, Increment 0.01ml/min	0.1-199.9ml/min, Increment 0.1ml/min	0.1-299.9ml/min, Increment 0.1ml/min
Max Pressure	15MPA	10MPA	5MPA
Flow Accuracy	±1%	±1%	±1%
flow Repeatability	RSD ≤0.3%	RSD ≤0.3%	RSD ≤0.5%
Pressure Pulse	≤0.2MPA	≤0.2MPA	≤0.2MPA
Pipeline	1/16"OD、0.75mmID	1/16"OD、0.75mmID	1/8"OD 、2mmID
Displayer	OLED Image Displaying	OLED Image Displaying	240*320LCD Image Displaying
Wetted Material	Titanium Alloy, Gemstone, PTFE, PCTFE	Titanium Alloy, Gemstone, PTFE, PCTFE	Titanium Alloy, Gemstone, PTFE, PCTFE

4.4 Hastelloy Pump Heads

High Pressure infusion Pump Specification (Hastelloy)		
Pump Type	100ml Hastelloy Pump	200ml Hastelloy Pump
Flow Range	0.01-99.99ml/min, Increment 0.01ml/min	0.1-199.9ml/min, Increment 0.1ml/min
Max Pressure	15MPA	10MPA
Flow Accuracy	±1%	±1%
flow Repeatability	RSD ≤0.3%	RSD ≤0.3%
Pressure Pulse	≤0.2MPA	≤0.2MPA
Pipeline	1/16"OD、0.75mmID	1/16"OD、0.75mmID
Displayer	OLED Image Displaying	OLED Image Displaying
Wetted Material	Hastelloy, Gemstone, ceramic, PTFE	Hastelloy, Gemstone, Ceramic, PTFE



We employ over 7,000 people in 20 countries, with major operations in the UK, Europe, the USA and Asia Pacific.
Halma is listed on the London Stock Exchange and has been a member of the FTSE 100 Index since December 2017.



Our purpose defines the three broad market areas where we operate:

- **Safety**—
protecting life as populations grow and urbanise, and protecting worker safety.
- **Environment**—
improving food and water quality, and monitoring air pollution.
- **Health**—
meeting rising healthcare demand as growing populations age and lifestyles change.

halma.com

AT A GLANCE

Longer Pump

Longer Precision Pump Co., Ltd. was founded in 1997 in Baoding, North China, specializes in R&D, production and the sale of precise fluid transfer and handling devices.

Longer has over 20 years experience in Peristaltic pumps, Laboratorial syringe pumps, Industrial syringe pumps, Micro-gear pumps, Dispensing and Filling systems, Tubing and OEM pumps. We have more than 40 series of products with over 600 specifications. Our pumps are ideally suited to a wide variety of applications, including Pharmaceutical, Medical, Environmental monitoring and Laboratory fields, etc.

We have set up Research Centers in Shanghai and Baoding with branch in the United States. Our products are sold throughout the world through company-owned customer channel outlets and a strong network of international dealers.

LONGER

Longer has a complete product line of precision pumps and an abundance of experience in OEM products that can offer our customers solutions that are more reliable and produce better results to suit a wide range of market demand.

MAIN PRODUCT LINES

----- Peristaltic Pump -----



Intelligent Type
Basic Type Flow Rate Type
Dispensing Type Industrial Type

----- OEM Peristaltic Pump -----



OEM Without Drive Variable Speed OEM
Fixed Speed OEM Hemodialysis Pump

----- Syringe Pump -----



Laboratorial Syringe Pump



Industrial Syringe Pump

----- Micro Piston Pump -----



MP Series Piston Pump

----- Dispensing & Filling System -----



Peristaltic Pump Type Syringe Pump Type

----- Peristaltic Pump Tubing -----



Biosilicone Tubing
Various Materials Tubing

----- Other Pump -----



Micro Gear Pump



Pico-liter Microinjector

----- Pump Accessories -----



Ceramic Rotary Valve



Stainless Steel Syringe

Polyethylene Rotary Valve

Footswitch

Tubing Assemblies

Glass Syringe

Cable

.....

LONGER

1.1 Solenoid-Driven Metering Pumps

1.1.4 Solenoid-Driven Metering Pump gamma/ XL

gamma/ XL – large output, great features

Feed rate of product range 4 ml/h – 80 l/h; 25 – 2 bar



The gamma/ XL is a smart, connectible solenoid-driven metering pump that is setting new standards in terms of productivity, reliability and cost-effectiveness.



The new solenoid-driven metering pump gamma/ XL extends the capacity range of the proven gamma/ X to 80 l/h. In addition to the familiar relays and bus interfaces, the gamma/ XL provides a socket with 3 more configurable inputs and outputs. This allows the gamma/ XL to network with all common systems, devices and platforms. Like the gamma/ X, the gamma/ XL has an intuitive operating concept. The pump is adjusted using a click wheel and 4 additional operating keys. Pressure detection without wetted parts ensures maximum operational safety. Hydraulic error statuses, like "Gas in the dosing head", "Overpressure" and "No pressure" can be detected.

Pressure fluctuations in the system are detected and compensated for, achieving a high level of dosing precision and reducing chemical consumption to the required level.

The last 300 events are retrospectively saved in the integral logbook, which permits rapid analysis of the cause and troubleshooting if required.

Deviations from the metering volume or hydraulic fault statuses are immediately detected and corrected by the gamma/ XL. The pump's operating menu includes ordering information for the wear parts required.

Designed as a smart product, it can also be connected to our web-based IIoT platform. The user can use this to monitor his metering process in real-time, avoid downtimes and generate reports fully automatically.

Your Benefits

- ④ Simple adjustment of the metering rate directly in l/h
- ④ Integrated pressure measurement and display for greater safety during commissioning and in the process
- ④ Control range for metering rate 1:40,000
- ④ Direct input of the required and desired concentration in concentration mode with volume-proportional metering tasks
- ④ Virtually wear-free solenoid drive, overload-proof and economical
- ④ Suitable for continuous micro-metering from approx. 4 ml/h, thanks to the regulated solenoid drive
- ④ Detection of hydraulic malfunctions, such as gas in the dosing head, and no or too high a back pressure, ensures smooth processes
- ④ External control via potential-free contacts with pulse step-up and step-down
- ④ External control via 0/4-20 mA standard signal, scalable
- ④ Integrated 1-week/1-month timer
- ④ Guaranteed metering by means of automatic bleeding
- ④ Connection to process control systems via fieldbus interfaces, such as PROFIBUS, PROFINET, Modbus RTU and CANopen

Technical Details

- ④ Illuminated 3" LCD and 3-LED display for operating, warning and error messages, visible from all sides
- ④ In non-automatic mode, stroke rate setting 1 stroke/h – 12,000 strokes/h, stroke length electronically continuously variable 0 – 100%, recommended 30 – 100%
- ④ Factor with external contact control 99:1 – 1:99
- ④ In automatic mode, an even finer setting in ml
- ④ Batch operation with max. 99.99 l or 99,999 strokes/start pulse
- ④ Connector for 2-stage level switch
- ④ 3 additional ports, switched as digital inputs or outputs
- ④ Optional 0/4 – 20 mA output for remote transmission of actual dosing rate and error messages
- ④ Optional relay module with 1 x switch-over contact, 230 V – 6 A
- ④ Optional relay module with 2 x On, 24 V – 100 mA



Non-Plusating Pump System with Versatile Controller

Haruyuki Morikawa, General Manager, Fuji Techno Industries Corporation
<http://www.fuji-techno.co.jp/>

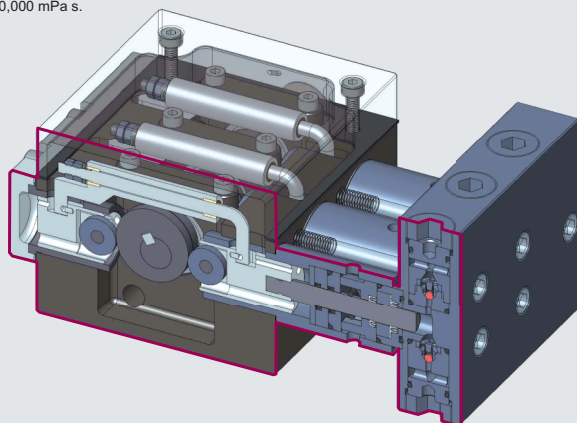
Introduction

The P501-M08 system unit has been developed to provide a user friendly, cost effective, lab and possible pilot plant scale solution for high corrosive media delivery to the highest performance levels.



Superb Accuracy and Handling

The P501-M08 system is able to provide continuous delivery of a vast range of liquids and chemicals, the P501-M08 unit can operate at flow rates up to 108.6 ml/min, at pressures up to 98Bar, with near zero pulsation and reproducible accuracy of up to 99.9%. Temperature range from -30°C to +120°C (higher temperature possible on demand) and viscosity range from 1 up to 20,000 mPa s.



Technical Specifications

Pump model	Max. discharge pressure	Pump revolution	Flow rate range	Liquid end material	Accuracy (deviation)	Inlet	Outlet
HYM-03	9.8l 24.5'	1a 120	0.13 a 15.3	SUS316	±0.1'	Rc1/4	Rc1/8
HYM-06	9.8l 19.6'	1a 120	0.51 a 61.1	SUS316	±0.1'	Rc1/4	Rc1/8
HYM-08	9.8	1a 120	0.90 a 108.6	SUS316	±0.1'	Rc1/4	Rc1/8
HYM-03	2 [8]	5a 120	0.65 a 15.3	PTFE [PEEK	±0.1'	Rc1/4	Rc1/8
HYM-06	2 [8]	5a 120	2.55 a 61.1	PTFE [PEEK	±0.1'	Rc1/4	Rc1/8
HYM-08	2 [8]	5a 120	4.50 a 108.6	PTFE [PEEK	±0.1'	Rc1/4	Rc1/8

<Note>

(1)

The pressures in parentheses are the max. discharge pressures of the high pressure versions. Rc is the standard. NPT is available as an option.

(2)

RS-485 terminal : One PC can control the operation of multiple numbers of the units. (Optional)
4a 20mA terminal : Wires from a temp. sensor and a pressure sensor can be attached to the unit. The power source is DC24V. (Optional)

Environmental condition : 5a 35° None condensing.

Liquid temperature : 0a 70° No solidification in plumbing.

<Note>

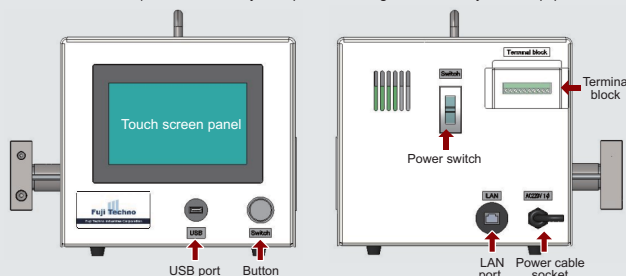
Please consult with Fuji Techno for the use of liquid with a temperature more than 70° .

Power source : AC200a 230V/50Hz/60Hz/Single phase

Motor : 0.1 kW Reduction ratio 1/25

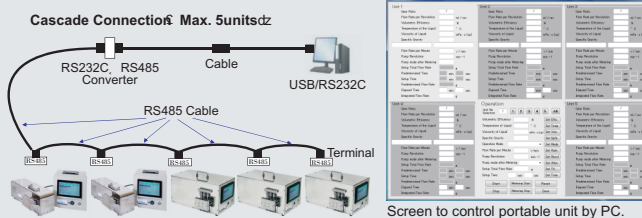
Versatile Controller Unit

The EtherNET connectivity and a USB port provide the means to up and download data and settings to the pump controller. 6 different languages (English, French, German, Japanese, Chinese and Korean) are selectable by the operator, adding to the usability of the equipment.



<Simultaneous Control>

To facilitate further integration of the system into lab and production cells, a PC option is available for the simultaneous control of up to 5 system units.



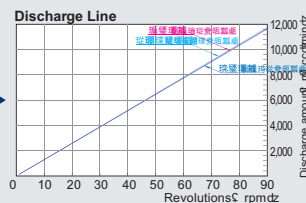
Screen to control portable unit by PC.

< Self-Calibration >

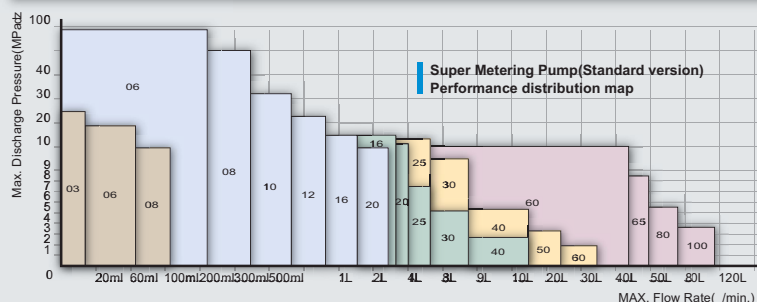
Self-calibration is a distinctive feature of the system to resolve differences between set flow rates and actual flow rates.

The user conducts measurements for each specific condition and enters measured data into the controller unit. Then, the unit carries out an internal calibration to adjust pump speeds so that actual flow rates will match set flow rates. Thus, an expensive flowmeter is NOT needed.

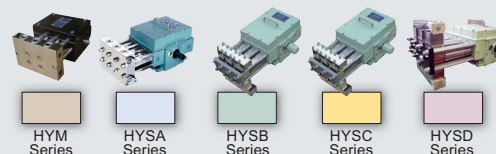
No.	Pump Rev.	Mass Flow Rate	Flow Rate	No.	Pump Rev.	Mass Flow Rate	Flow Rate
1	min ⁻¹	g/min	ml	7	min ⁻¹	g/min	ml
1	50.0	100.0	**	7	50.0	100.0	**
2	100.0	200.0	**	8	50.0	100.0	**
3	200.0	400.0	**	9	50.0	100.0	**
4	300.0	600.0	**	10	50.0	100.0	**
5	400.0	800.0	**	11	50.0	100.0	**
6	500.0	1000.0	**	12	50.0	100.0	**



Scale up: From R&D to Industrial Production



Various models in same operation principles and specification



Number in each box is model number.

DrM

FUNDABAC® Candle Filter

Filtration plain and simple:

The FUNDABAC® family represents a proven filtration technology for the separation of solids from any kind of liquid. And when we mean proven we talk about more than 3700 times applied in new or revamped production plants all around the World.

The equipment assures you as operator significantly increased productivity while keeping a tight grip on your investment and operating budget.

The FUNDABAC® Advantage...

Investment	Operation	Safety	Productivity	Quality
Simple filter design with no moving parts keeps investment reasonable. Plastic elements eliminate investment in expensive alloys.	Complete automation keeps labor cost low. High availability due to low maintenance periods.	Complete automation keeps labor cost low. High availability due to low maintenance periods.	Broad choice of filter media assures optimal filter selection. Effective in-situ media cleaning stabilizes filter efficiency.	Filtrate quality down to below 1 ppm. Optional cake washing and drying improves product quality and reduces waste.

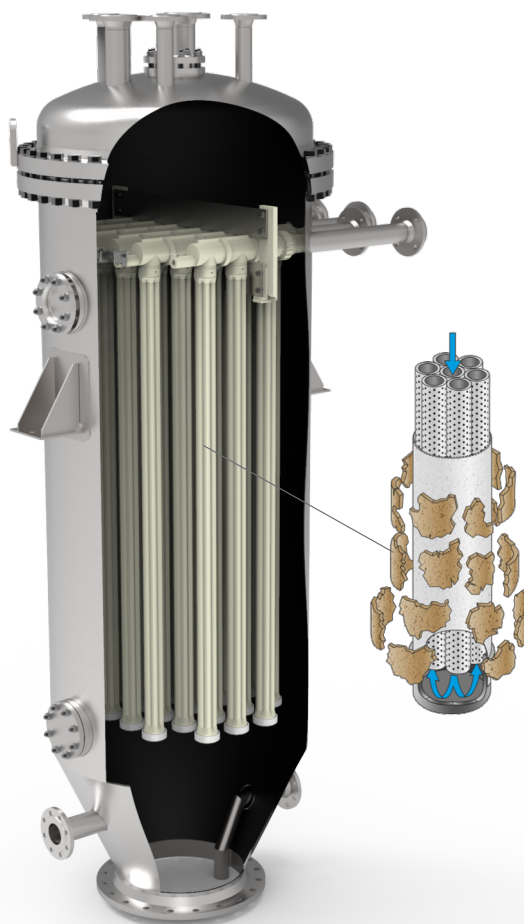
What does the FUNDABAC® Filter do?

- It produces a dry filter cake, but it is not a filter press
- It can polish fluids down to 0.5 µm and below 0.5 ppm but it is not a cartridge filter
- It runs completely automatic, but it is not a centrifuge
- The vertical filter elements are arranged in a closed pressure vessel, but it is not a leaf filter
- The filter cloths can be backwashed, but it is not a drum filter
- Cake can be washed efficiently, but it is not a belt filter
- Heel filtration is possible, but it is not a nutsche filter

The FUNDABAC® is in a category of its own.

Typical Applications:

- Impurities removal from process streams where cartridge filters show too short life time
- Recovery of pyrophoric catalysts or other valuable products for reprocessing
- Product recovery and cake washing
- Filtration of individual batches with CIP in between batches
- High capacity applications with hundreds to thousands of gpm
- Processing of highly corrosive or toxic fluids
- Solids content in feed between 1 ppm and 20%
- Operating temperature up to 400°C (752°F)
- Design pressure up to 80 barg (1100 psi)



DrM



FUNTABAC® wet and dry discharge
The filtered solids are dewatered and discharged by gas blow-back. As an alternative, the cake can be reslurried into another liquid.

CONTIBAC® continuous thickening
This filter type allows continuous or semi-continuous filtration without interruption of flow. The solids are flushed back into the liquid and discharged in slurry form. This filtration process mainly applies for processes where continuous flow is required.

STERIBAC® GMP Filter
This is a variant of the FUNTABAC® design to comply with the specific production standards of pharmaceutical and biotech industries. Surface finish and design of internals allow effective cleaning of all parts in contact with product.



Feel free to contact us for further details and discussions. We also conduct trials for any specific application.

DrM

FUNDAMIX® Vibromixer

The Mixing Device Without Rotation:

The FUNDAMIX® is a universal device for mixing liquids in open or closed vessels, under vacuum or pressure, even in sterile conditions. FUNDAMIX® can be operated continuously without overheating or amplitude variations.

Working of FUNDAMIX®:

The electro-magnetic drive operates at 50 to 60 Hz and transmits the vibration via the mixing device or mixing plate attached to a special clamp coupling into the medium.

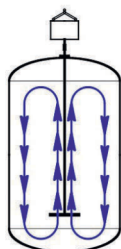
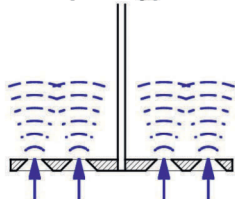
The amplitude resp. mixing effect is controlled by an electronic system and can be adjusted from 0 to 4 mm. The flow direction can be adapted to suit the medium and required mixing effect. The mixing direction depends on the orientation of the conical holes.

Materials:

Standard mixers are in 316L stainless steel, but can be manufactured from a wide range of materials including Hastelloy, Titanium and various plastics.



Mixer plate type A



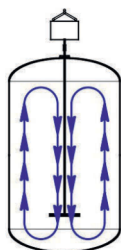
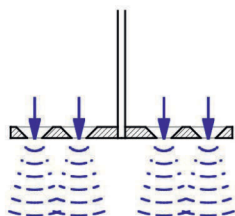
Function Principle of the Mixing Device:
Depending on the orientation of the conical bores, two different mixing types are available:

Mixer Plate Type A:

Type A with the conical bores facing upwards is the preferred standard. Type A has higher efficiency due to upward flow through the whole vessel.

The plate can be mounted very low, so the mixable heel volume is reduced to a minimum.

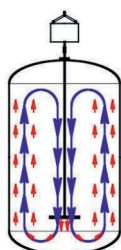
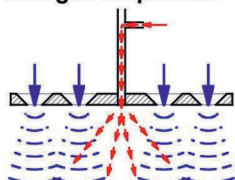
Mixer plate type B



Mixer Plate Type B:

Mixer type B with the conical bores facing downwards is chosen if the product tends to sediment, creates foaming or if no air is to be introduced during mixing. The distance to the bottom of the vessel is about the diameter of the plate.

Mixer plate type B with gas dispersion



Mixer Plate Type B With Gas Dispersion:

If gas is required then it can be injected through the shaft with mixer plate type B. The liquid flows downwards distributing the fine gas bubbles in the vessel generating an excellent gas dispersion. Another well proven set up is to inject the gas between two plates to break the bubbles.

DrM

Typical FUNDAMIX[®] Applications:

- Pharmaceutical And Cosmetic Industry:

Insulin production; blood fractionations; preparation of sterile solutions; mixing of injectable suspensions in sterile vessels; vaccine/oil emulsions

- Food And Beverage Industry:

Mixing of soft drinks; addition of flavors, salt, sugar, vitamins and colors; blending alcoholic beverages; agitation of milk

- Chemical Industry:

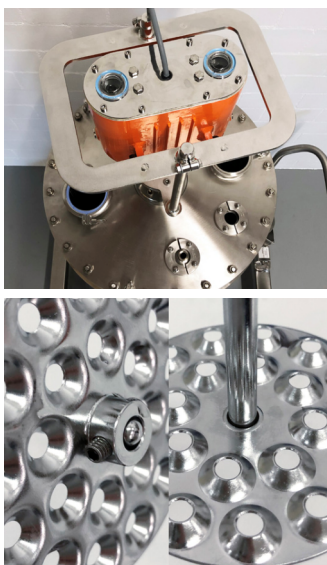
Mixing of photographic developer; suspending of solids such as filter aids in liquids; precipitation of solids during neutralization; gas/ liquid batch reactions like hydrogenations and chlorinations; agitation under vacuum or pressure

- Microbiological And Biochemical Industry:

Anaerobic fermentations; submerge culture of mammalian and plant cells; protein solutions

Advantages of FUNDAMIX[®]:

- Low shear force on solids/cells
- No vortex formation
- No friction
- No baffles required in the tank
- No rotating mechanical seals
- Simple installation
- Low energy consumption
- Very long service life
- Effective & gentle mixing
- Sterile execution
- No overheating of liquid
- Low installation and maintenance cost
- Can be used to mix either settled or floating solids



For demonstration or test work to show how the FUNDAMIX[®] could improve your process, please contact our fully qualified engineers, all details below.

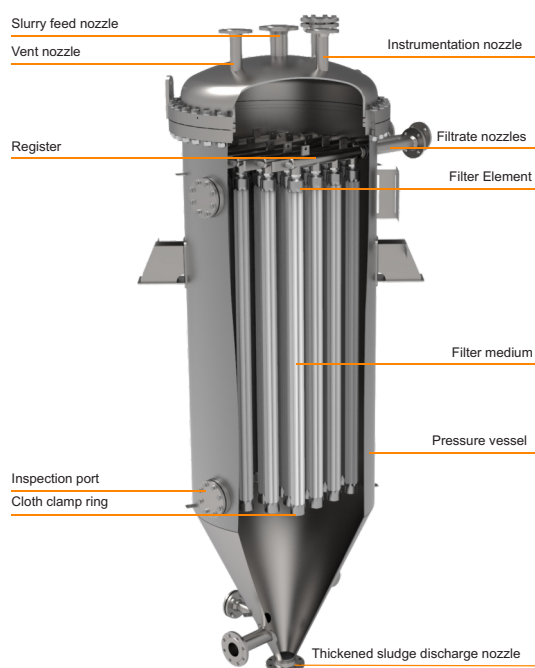
CONTI-CONTIBAC

Continuous filtration system

Conti-Contibac is a state of the art of continuous filtration system with online auto backwash feature.

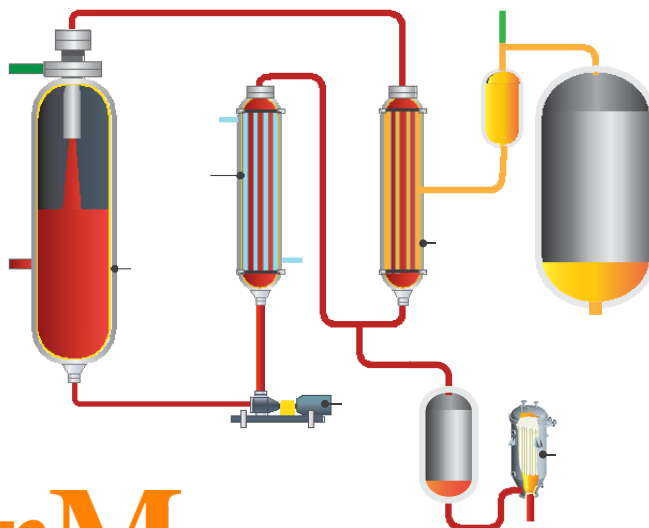
ADVANTAGES

- Continuous uninterrupted filtration flow.
- Continuous slurry recovery with simultaneous backwash.
- High solids capture with no downtime.
- A state of the art downstream integrated equipment for the loop reaction process.
- Reliable and fully automatic solution.
- Fully closed and high end hazard handling system



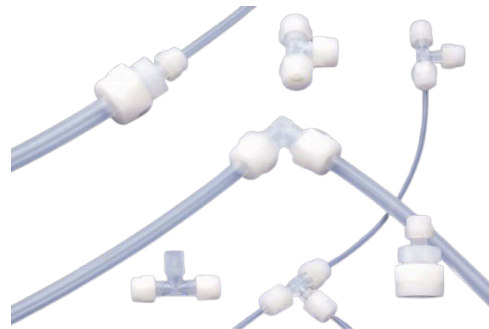
APPLICATIONS

- Specialty and fine chemicals
- Food & Agrochemicals
- Environmental
- Pharma & Nutraceuticals
- Oil and Gas
- Bulk chemicals and Petrochemicals



DrM

SKY Solutions Tubings and Fittings





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