



Fusion X Series Product Brochure

Fusion 6000-X



High Pressure
Temperature Control
Syringe Pump

Model No. 76000X

Fusion 4000-X



Continuous Flow
Independent Channels
Syringe Pump

Model No. 74000X

Fusion 200-X



Infusion & Withdrawal
Syringe Pump

Model No. 0720X

Fusion 100-X

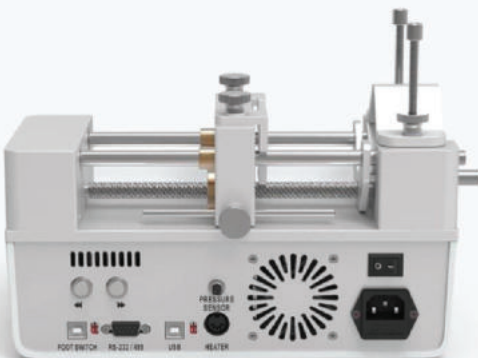


Microfluidic Infusion
Syringe Pump

Model No. 0710X

Fusion 6000-X

High Pressure Temperature Control Syringe Pump



The Fusion 6000-X high-pressure temperature control syringe pump is designed for dosing viscous solutions, and semi-solid material injections against pressure with microfluidic pump precision. The Fusion 6000-X pump has the following unique features: 700 lb linear pushing force, add-on syringe heater, add-on pressure sensor, and prime bottoms. Those features allow Fusion 6000-X to work against high back pressure; warm up the syringe; monitor and control the pressure inside the syringe and adjust the push block position easily.

- High-pressure applications
- Temperature and pressure control options
- Prime Buttons for easy syringe adjustment
- Holds stainless-steel syringes 5mL to 300mL
- Rates from 0.0001 mL/min to 408 mL/min
- Control via touchscreen, USB, RS232, TTL
- Free Programmable Mode Included
- Free LABVIEW & MATLAB Driver
- 2-Year Limited* Warranty
- Patent Pending

Fusion 6000-X Model No. 76000X



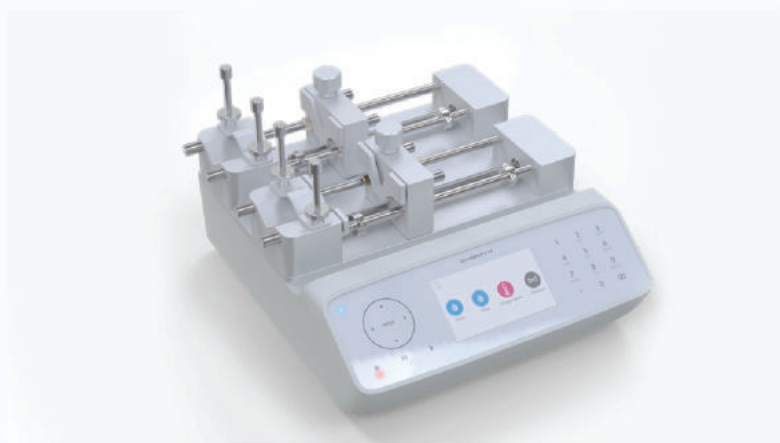
The Fusion 6000-X high-pressure syringe pump is designed for dosing viscous solutions, and semi-solid material injections against pressure. This system allows also for heated temperature control and pressure modulation while providing precision flow and performance. It includes prime buttons that allow you to easily adjust the push blocker to the syringe.

TECHNICAL SPECIFICATIONS

Mode	Infuse/Withdraw
Accuracy	$\pm < 0.35\%$
Reproducibility	$\pm < 0.05\%$
Syringe Size (Min/Max)	0.5 μ L to 300mL Stainless Steel Syringe
Syringe Type	Plastic, Glass and Stainless Steel
Syringe Heating Sleeve Temperature	up to 80°C
Minimum Flow Rate	.0001 μ L/min (with 0.5 μ L syringe)
Maximum Flow Rate	408 mL/min (with 300mL syringe)
Linear Force	up to 700lbs (318kg)
Maximum Viscosity	250,000 cP
Display	4.3 inch LCD Touch Screen
Connectivity	USB-B, RS232 and TTL Ports
System Dimensions	11 x 10 x 6.9 inches (28 x 26 x 14 cm)
Power	110/220 VAC 100 Watts
Weight	19lbs (8.61kg)
Motor Drive	1.8° Stepper Motor with Micro-stepping
Step Resolution	0.0938 μ m/step
Operating Temperature	4°C to 40°C (40°F to 104°F)
Storage Temperature	-10°C to 70°C (14°F to 158°F)
Humidity	20% to 80% RH, non-condensing
Installation Category	II
Regulatory Compliance	CE, RoHS, REACH, ETL

Fusion 4000-X

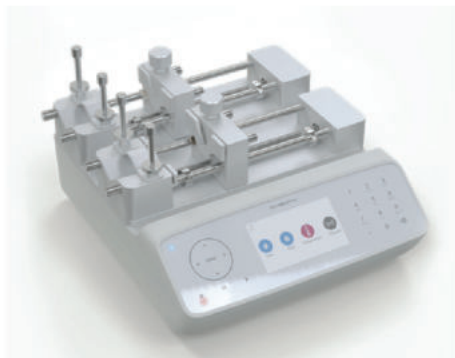
Continuous Flow Independent Channels Syringe Pump



The Chemyx Fusion 4000-X is one of the most unique and advanced lab syringe pump systems on the market. Fusion 4000-X has two independent dual motors and two independently controlled precision syringe pumps in one platform. The programmable step-rate functionality and cycle mode allow this syringe pump for complex dual-rate, push-pull, pulseless, reproducible flow rates, oscillatory, and continuous flow requirements for difficult research applications such as lipid nanoparticles, microfluidic mixing, and microfluidic flow control in drug formulation applications.

- 2 Independent pump channels
- Holds syringes from 0.5 μ L to 100mL
- Chemyx syringe pump rates from .0001 μ L/min to 170.5 mL/min
- Control via touchscreen, USB, RS232, TTL
- Free Programmable Mode Included
- Free LABVIEW Driver
- Serial Pump connections through RS485
- Dual Syringe Holding Rack available
- 2-Year Limited* Warranty

Fusion 4000-X Model No. 74000X



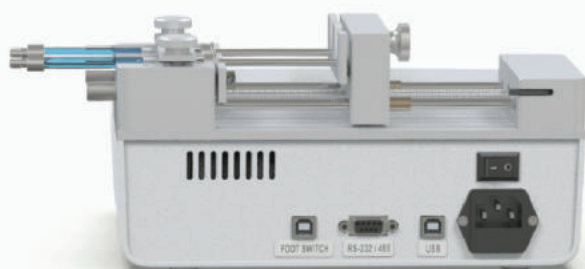
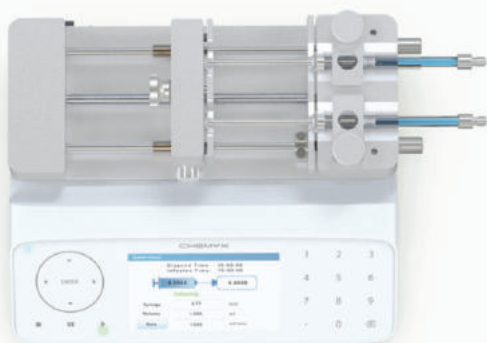
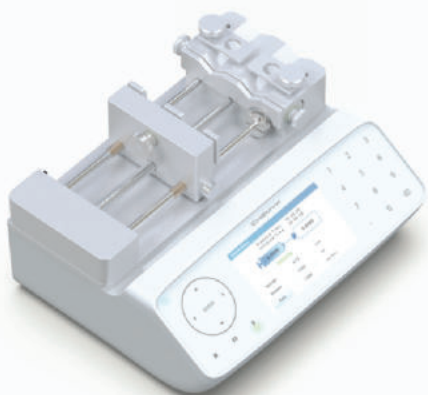
The Fusion 4000-X is a two independently controlled precision syringe pump that allows two syringes to be set up to run simultaneously or independently.

TECHNICAL SPECIFICATIONS

Mode	Infuse/Withdraw
Accuracy	$\pm < 0.35\%$
Reproducibility	$\pm < 0.05\%$
Syringe Size (Min/Max)	0.5 μ L to 100mL
Syringe Type	Plastic, Glass and Stainless Steel
Syringe Flow Rates	See Syringe Library for Min & Max Flow Rates on Website
Minimum Flow Rate	.0001 μ L/min (with 0.5 μ L syringe)
Maximum Flow Rate	170.5 mL/min (with 100mL syringe)
Linear Force	85lb (38.5kg)
Maximum Pressure	See Max Pressure on Website
Display	4.3 inch LCD Glass Touch Screen
Connectivity	USB-B, RS232, RS485 and TTL Ports
System Dimensions	11 x 12 x 4.9 inches (28 x 31 x 13 cm)
Power	110/220 VAC 60 Watts
Weight	19 lbs (8.6kg)
Motor Drive	1.8° Stepper Motor with Micro-stepping
Step Resolution	0.0293 μ m/step
Operating Temperature	4°C to 40°C (40°F to 104°F)
Storage Temperature	-10°C to 70°C (14°F to 158°F)
Humidity	20% to 80% RH, non-condensing
Installation Category	II
Regulatory Compliance	CE, RoHS, REACH, ETL

Fusion 200-X

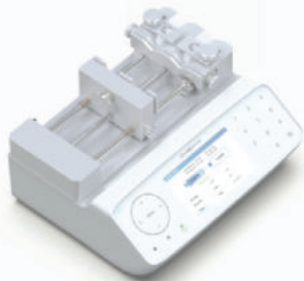
Infusion & Withdrawal Syringe Pump



The Chemyx Fusion 200-X is a programmable, dual-channel infusion and withdrawal modular syringe pump. This popular precision syringe pump model allows two syringes to infuse and withdraw simultaneously at pulseless, reproducible rates, and programs multi-step flow rates. If you need more syringes in the applications, a 4-Syringe Holding Rack for large syringes or an 11-Syringe Holding Rack for small syringes can be added to the pump. Fusion 200-X comes with a programmable multi-step mode at no additional charge. In addition to controlling the pump at the touch screen, Fusion 200-X can be controlled by an external computer with Lab view and other programs.

- Holds syringes from 0.5 μ L to 60mL
- Modular Infuse/Withdraw
- Rates from 0.0001 μ L/min to 84.7 mL/min
- Control via touchscreen, USB, RS232, TTL
- Free multistep programmable mode included
- Glass Touch Screen
- 11-Channel & 4-Channel Syringe Rack
- Free LabView Driver
- 2-Year Limited* Warranty

Fusion 200-X Model No. 0720X



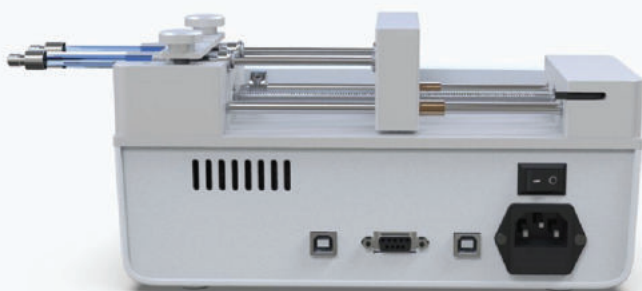
The Fusion 200-X is a modular pump with a full glass touch color screen, a strong pushing force and automatically switches between 110V to 220V. A new accessory of 11-syringe rack can be added on to the pump.

TECHNICAL SPECIFICATIONS

Mode	Infuse/Withdraw
Accuracy	$\pm < 0.35\%$
Reproducibility	$\pm < 0.05\%$
Syringe Size (Min/Max)	0.5 μ L to 60mL
Syringe Type	Plastic, Glass and Stainless Steel
Syringe Flow Rates	See Syringe Library for Min & Max Flow Rates on Website
Minimum Flow Rate	0.0001 μ L/min (with 0.5 μ L syringe)
Maximum Flow Rate	85 mL/min(with 50mL syringe)
Linear Force	65lb (29.4kg)
Multi Steps	Program steps up to 99 step / loop steps up to 99 loop
Display	4.3 inch LCD Touch Screen
Connectivity	USB-B, RS232 and TTL Ports
System Dimensions	9.5 x 8.2 x 4.9 inches (24 x 20.8 x 12.4 cm)
Power	110/220 VAC automatically switches between 110V to 220V 30 Watts
Weight	7lbs (3.1kg)
Motor Drive	1.8° Stepper Motor with Micro-stepping
Step Resolution	0.0528 μ m/step
Operating Temperature	4°C to 40°C (40°F to 104°F)
Storage Temperature	-10°C to 70°C (14°F to 158°F)
Modular Capability	Option to add a 11 syringe rack
Parameter Setting	Option to choose time or rate
Humidity	20% to 80% RH, non-condensing
Installation Category	II
Regulatory Compliance	CE, RoHS, REACH, ETL

Fusion 100-X

Microfluidic Infusion Syringe Pump



The Chemyx Fusion 100-X syringe pump is a programmable modular dual-channel infusing-only syringe pump. It is designed to handle the majority of precision dosing applications. This syringe pump model allows two syringes to infuse simultaneously at pulseless, reproducible infusion pump rates, and programs multi-step flow rates. Fusion 100-X comes with a programmable multi-step mode at no additional charge. In addition to controlling the pump at the touch screen, Fusion 100-X can be controlled by an external computer with Lab view and other programs as well.

- Holds syringes from 0.5 μ L to 60 mL
- Rates from 0.0001 μ L/min to 157 mL/min
- Control via touchscreen, USB, RS232, TTL
- Free multistep programmable mode included
- Glass Touch Screen
- 11-channel Syringe Rack
- Free MATLAB Driver
- 2-Year Limited* Warranty

Fusion 100-X Model No. 0710X



The Fusion 100 X is a modular pump with a full glass touch color screen, a strong pushing force and automatically switches between 110V to 220V. A new accessory of 11-syringe rack can be added on to the pump.

TECHNICAL SPECIFICATIONS

Mode	Infuse Only
Accuracy	$\pm < 0.35\%$
Reproducibility	$\pm < 0.05\%$
Syringe Size (Min/Max)	0.5 μ L to 60mL
Syringe Type	Plastic, Glass and Stainless Steel
Syringe Flow Rates	See Syringe Library for Min & Max Flow Rates on Website
Minimum Flow Rate	0.0001 μ L/min (with 0.5 μ L syringe)
Maximum Flow Rate	157 mL/min (with 60mL syringe)
Linear Force	55lb (25kg)
Multi Steps	Program steps up to 99 step / loop steps up to 99 loop
Display	4.3 inch LCD Glass Touch Screen
Connectivity	USB-B, RS232 and TTL Ports
System Dimensions	9.5 x 8.0 x 4.9 inches (24 x 20 x 12 cm)
Power	110/220 VAC automatically switches between 110V to 220V 30 Watts
Weight	7lbs (3.1kg)
Motor Drive	1.8° Stepper Motor with Micro-stepping
Step Resolution	0.0528 μ m/step
Operating Temperature	4°C to 40°C (40°F to 104°F)
Storage Temperature	-10°C to 70°C (14°F to 158°F)
Modular Capability	Option to add a 11 syringe rack
Parameter Setting	Option to choose time or rate
Humidity	20% to 80% RH, non-condensing
Installation Category	II
Regulatory Compliance	CE, RoHS, REACH, ETL

Chemyx Accessories & Fittings

Stainless Steel Syringes



Syringe Fitting Tips



Syringe Heating Sleeves

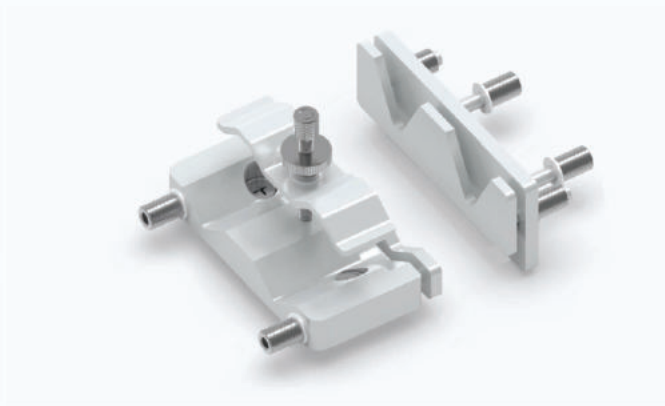


Pressure Sensor

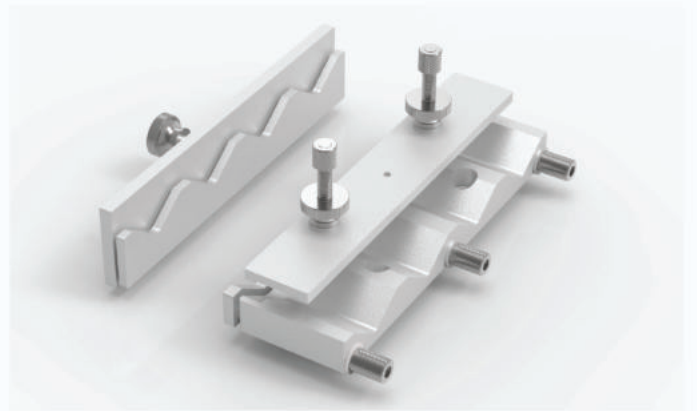


Chemyx Syringe Racks & Footswitch

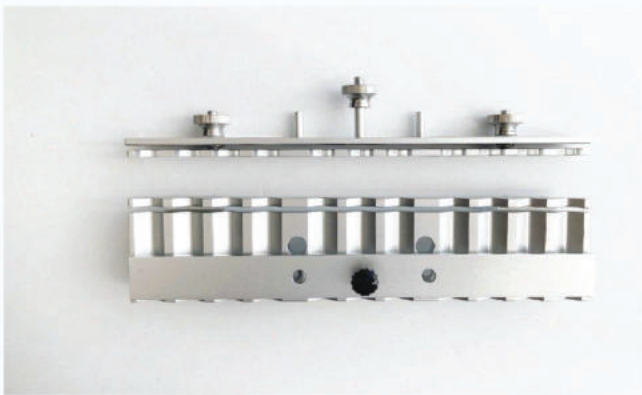
Fusion 4000-X Dual Syringe
Holding Rack



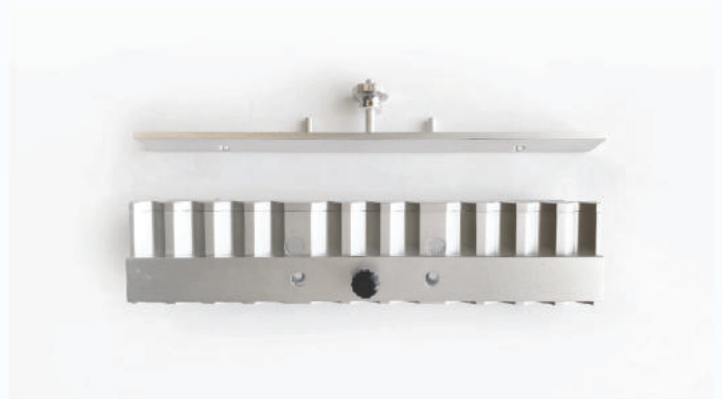
Fusion 200-X 4-Syringe
Holding Rack



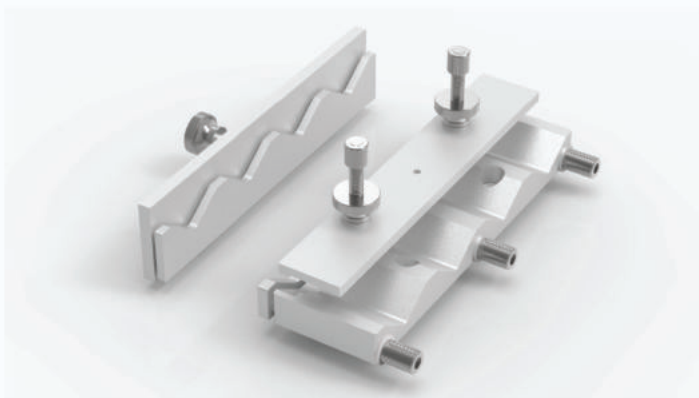
Fusion 200-X 11-Syringe
Infuse/Withdraw Holding Rack



Fusion 100-X 11-Syringe
Infuse Holding Rack



Fusion 6000-X 4-Syringe
Holding Rack



Footswitch



Accessories	Fusion 6000-X	Fusion 4000-X	4000 OEM	Fusion 200-X	Fusion 100-X	Fusion 200
Stainless Steel Syringes	✓	✓ (6,10, 20, 50 mL)	✓ (6,10, 20, 50 mL)			
Fittings	✓	✓				
O-rings Pack	✓	✓				
Pressure Sensor	✓					
Heating Sleeve	✓					
4-Syringe Holding Infuse/Withdraw Rack For Fusion 6000 & 6000-X	✓					
2-Syringe Holding Infuse/Withdraw Rack For Fusion 4000-X		✓	✓			
4-Syringe Holding Infuse/Withdraw Rack For Fusion 200-X				✓		
11-Syringe Infuse/Withdraw Holding Rack For Fusion 200-X				✓		
10-Syringe Holding Infuse/Withdraw Rack For Fusion 200						✓
11-Syringe Infuse Holding Rack For Fusion 100-X					✓	
Footswitch	✓			✓	✓	✓

Precision Syringe Pumps

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