

# NE-4000 Double Syringe Pump

Continuous Infusion  
Double Syringe Pump System  
DUAL-NE-4000: Ask the price

Microfluidics Double  
Syringe Pump  
NE-4002X: Ask the price

***BUILT FOR AUTOMATION***



## NE-4000 Features:

Accepts 2 different syringes from the smallest size available up to 60 mL. A 140 mL syringe can be filled up to 120 mL. 2 different sized syringes can be used for proportional infusion. NE-4000 & Dual-NE-4000 pumping rate as low as 1.459  $\mu\text{L/hr}$  with a 1 mL syringe or as high as 127.2 mL/min with a 60 mL syringe. NE-4002X pumping rate as low as .008 nL/hr with a 0.5  $\mu\text{L}$  syringe or as high as 1555  $\mu\text{L/min}$  with a 60 mL syringe.

## The NE-1000 Family of Syringe Pumps Features

- Built for Automation
- Operates stand-alone or from a computer
- Infuses and withdraws
- Applications range from simple infusions to complex pumping programs
- Programmable preset protocols
- Program up to 41 pumping phases: change pumping rates, set dispensing volumes, insert pauses, control and respond to external signals, sound the buzzer.
- RS-232 and TTL logic control interfaces

Two pumps connected with a dual cable create a Dual Pump System allowing for continuous infusion or emulsification. Network, control, and monitor up to 100 pumps with one computer. Worldwide power supplies available. Motor stall detection. Non-volatile memory of all parameters and programming. Upgradeable to the X and X2 advanced firmware versions for gradient pumping and increased program memory. Dispensing accuracy of +/-1%. Unlimited lifetime technical support. Two year warranty. Plus many, many more features!

## NE-4000 & NE-4500 Programmable Double Syringe Pumps Maximum and Minimum Flow Rates

| Mfgr.                        | Syringe (cc) | ID (mm) | Max Rate (mL/hr) | Min Rate (µL/hr) | Max Rate (mL/min) |
|------------------------------|--------------|---------|------------------|------------------|-------------------|
| B-D                          | 1            | 4.699   | 191.1            | 1.459            | 3.185             |
|                              | 3            | 8.585   | 637.9            | 4.868            | 10.63             |
|                              | 5            | 11.99   | 1244             | 9.495            | 20.74             |
|                              | 10           | 14.43   | 1802             | 13.76            | 30.04             |
|                              | 20           | 19.05   | 3141             | 23.97            | 52.35             |
|                              | 30           | 21.59   | 4035             | 30.79            | 67.25             |
|                              | 60           | 26.59   | 6120             | 46.7             | 102               |
| HSW<br>Norm-Ject             | 1            | 4.69    | 190.4            | 1.453            | 3.173             |
|                              | 3            | 9.65    | 806.1            | 6.151            | 13.43             |
|                              | 5            | 12.45   | 1341             | 10.24            | 22.36             |
|                              | 10           | 15.9    | 2188             | 16.7             | 36.47             |
|                              | 20           | 20.05   | 3479             | 26.55            | 57.99             |
|                              | 30           | 22.9    | 4539             | 34.64            | 75.65             |
|                              | 50           | 29.2    | 7380             | 56.32            | 123               |
| Monoject                     | 1            | 5.74    | 285.2            | 2.176            | 4.753             |
|                              | 3            | 8.941   | 692              | 5.28             | 11.53             |
|                              | 6            | 12.7    | 1396             | 10.66            | 23.26             |
|                              | 12           | 15.72   | 2139             | 16.33            | 35.65             |
|                              | 20           | 20.12   | 3504             | 26.74            | 58.4              |
|                              | 35           | 23.52   | 4788             | 36.54            | 79.81             |
|                              | 60           | 26.64   | 6143             | 46.88            | 102.3             |
|                              | 140          | 38.00   | 9999             | 95.37            | 208.3             |
| Terumo                       | 1            | 4.7     | 191.2            | 1.459            | 3.187             |
|                              | 3            | 8.95    | 693.4            | 5.291            | 11.55             |
|                              | 5            | 13      | 1462             | 11.17            | 24.38             |
|                              | 10           | 15.8    | 2160             | 16.49            | 36.01             |
|                              | 20           | 20.15   | 3514             | 26.82            | 58.57             |
|                              | 30           | 23.1    | 4619             | 35.25            | 76.98             |
|                              | 60           | 29.7    | 7635             | 58.26            | 127.2             |
| Poulten &<br>Graf<br>(Glass) | 1            | 6.7     | 388.5            | 2.965            | 6.476             |
|                              | 2            | 8.91    | 687.2            | 5.244            | 11.45             |
|                              | 3            | 9.06    | 710.5            | 5.422            | 11.84             |
|                              | 5            | 11.75   | 1195             | 9.119            | 19.91             |
|                              | 10           | 14.67   | 1862             | 14.22            | 31.04             |
|                              | 20           | 19.62   | 3332             | 25.43            | 55.53             |
|                              | 30           | 22.69   | 4456             | 34.01            | 74.27             |
|                              | 50           | 26.96   | 6291             | 48.01            | 104.8             |
|                              | 100          | 34.21   | 9999             | 77.3             | 168.8             |

|  | Syringe (µl) | ID (mm) | Max Rate (µl/hr) | Min Rate (µl/hr) | SGE Syringe (mL) | ID (mm) | Max Rate (ml/hr) | Min Rate (µl/hr) |
|--|--------------|---------|------------------|------------------|------------------|---------|------------------|------------------|
| SGE<br>(Glass -<br>Gas<br>Tight)       | 5            | 0.343   | 1081             | 0.008            | .25              | 2.303   | 45.91            | 0.351            |
|  | 10           | 0.485   | 2036             | 0.016            | .5               | 3.257   | 91.82            | 0.701            |
|  | 25           | 0.728   | 4587             | 0.036            | 1                | 4.606   | 183.6            | 1.402            |
|  | 50           | 1.03    | 9183             | 0.071            | 2.5              | 7.284   | 459.2            | 3.505            |
|  | 100          | 1.457   | 9999             | 0.141            | 5                | 10.3    | 918.3            | 7.007            |
| Hamilton<br>Micro-<br>litre<br>(Glass) | 0.5          | 0.103   | 91.83            | 0.001            | 10               | 14.57   | 1837             | 14.03            |
|  | 1            | 0.146   | 184.5            | 0.002            | 25               | 23.03   | 4591             | 35.03            |
|  | 2            | 0.206   | 367.3            | 0.003            | 50               | 27.5    | 6546             | 49.95            |
|  | 5            | 0.326   | 919.9            | 0.008            | 100              | 34.99   | 9999             | 80.86            |

## Specifications

### Mechanical & Electrical

Syringe sizes: Up to 60 mL. 140 mL partially filled

Number of syringes: 2

Motor type: Step motor

Motor steps per revolution: 200

Microstepping: 1/8 to 1/2 depending on motor speed

Advance per step: 0.42522321 uM to 1.7009 uM depending on motor speed

Motor to drive screw ratio: 15/28

Drive screw pitch: 20 revolutions/”

DC connector: 2.5 mm, center positive

Voltage at DC connector: 12V DC at full load

Amperage: 1000 mA at full load

Power supply type: Unregulated linear external wall adapter, country and power source specific

Power supply output rating: 12V DC @ 1000 mA

Dimensions: 8 3/4” x 5 3/4” x 4 1/2” High

(22.86 cm x 14.605 cm x 11.43 cm)

Weight: 3.6 lbs. (1.63 kg)

### Operational

Maximum speed: 18.36964 cm/min

Minimum speed: 0.008409 cm/hr

Maximum pumping rate: 6120 mL/hr with a B-D 60 cc syringe

Minimum pumping rate: 1.459 µL/hr with a B-D 1 cc syringe

Maximum force: 100 lbs. at minimum speed, 18 lbs. at maximum speed

Number of Program Phases: 41

RS-232 pump network: 100 pumps maximum

RS-232 selectable baud rates: 300, 1200, 2400, 9600, 19200

Syringe inside diameter range: 0.100 to 50.00 mm

### Custom Applications

For specialized and OEM applications, contact your dealer or New Era Pump Systems Inc. Custom modifications can be made to the mechanics or the firmware.