

NE-1000 Single Syringe Pump

**High Pressure Syringe Pump
NE-1010**

**Continuous Infusion
Syringe Pump System
Dual-NE-1000**

**Microfluidics Single
Syringe Pump
NE-1002X**



NE-1000 Features:

Accepts 1 syringe from the smallest size available up to 60 ml. A 140 ml syringe can be filled up to 120 ml. NE-1000 & Dual-NE-1000 pumping rate as low as 0.73 $\mu\text{L/hr}$ with a 1 ml syringe or as high as 35.33 ml/min with a 60 ml syringe. NE-1010 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-1002X pumping rate as low as .008 nl/hr with a 0.5 μL 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 $\pm 1\%$. Unlimited lifetime technical support. Two year warranty. Plus many, many more features!

****Not For Clinical Use On Humans****



NE-1000 Single Syringe Pump Maximum and Minimum Flow Rates

Syringe Manufacturer (all names TM)	Syringe (mL)	Inside Diameter (mm)	Maximum Rate (mL/hr)	Minimum Rate (μL/hr)	Maximum Rate (mL/min)			
8-0	1	4.699	53.07	0.73	0.884			
	3	8.585	177.1	2.434	2.952			
	5	11.99	345.5	4.748	5.758			
	10	14.43	500.4	6.876	8.341			
	20	19.05	872.2	11.99	14.53			
	30	21.59	1120	15.4	18.67			
	60	26.59	1699	23.35	28.32			
HSW Norm-Ject	1	4.69	52.86	0.727	0.881			
	3	9.65	223.8	3.076	3.73			
	5	12.45	372.5	5.119	6.209			
	10	15.9	607.6	8.349	10.12			
	20	20.05	966.2	13.28	16.1			
	30	22.9	1260	17.32	21			
	50	29.2	2049	28.16	34.15			
Monoject	1	5.74	79.18	1.088	1.319			
	3	8.941	192.1	2.64	3.202			
	6	12.7	387.6	5.326	6.46			
	12	15.72	593.9	8.161	9.899			
	20	20.12	972.9	13.37	16.21			
	35	23.52	1329	18.27	22.15			
	60	26.64	1705	23.44	28.42			
	140	38	3470	47.7	57.84			
Terumo	1	4.7	53.09	0.73	0.884			
	3	8.95	192.5	2.646	3.208			
	5	13	406.1	5.581	6.769			
	10	15.8	600	8.244	10			
	20	20.15	975.8	13.41	16.26			
	30	23.1	1282	17.63	21.37			
	60	29.7	2120	29.1	35.33			
Pou/ten &Graf (Glass)	1	6.7	107.8	1.483	1.798			
	2	8.91	190.8	2.622	3.18			
	3	9.06	197.2	2.711	3.288			
	5	11.75	331.8	4.559	5.53			
	10	14.67	517.2	7.107	8.62			
	20	19.62	925.2	12.72	15.42			
	30	22.69	1237	17.01	20.62			
	50	26.96	1746	24.01	29.11			
Steel Syringes	1	9.538	218.6	3.005	3.644			
	3	9.538	218.6	3.005	3.644			
	5	12.7	387.6	5.326	6.46			
	8	9.538	218.6	3.005	3.644			
	20	19.13	879.5	12.09	14.65			
	50	28.6	1965	27.01	32.76			
	Syringe (μL)	Inside Diameter (mm)	Maximum Rate (μL/hr)	Minimum Rate (μL/hr)	Syringe (mL)	Inside Diameter (mm)	Maximum Rate (μL/hr)	Minimum Rate (μL/hr)
SGE (Glass - Gas Tight)	5	0.343	282.7	0.004	0.25	2.303	12.74	0.176
	10	0.485	565.3	0.008	0.5	3.257	25.49	0.351
	25	0.728	1273	0.018	1	4.606	50.99	0.701
	50	1.03	2549	0.036	2.5	7.284	127.5	1.752
	100	1.457	5102	0.071	5	10.3	254.9	3.504
Hamilton Microliter (Glass)	0.5	0.103	25.49	0.001	10	14.57	510.2	7.01
	1	0.146	51.23	0.001	25	23.03	1274	17.52
	2	0.206	101.9	0.002	50	27.5	1817	24.98
	5	0.326	255.4	0.004	100	34.99	2942	40.43



Specifications

<u>Model</u>	<u>Style</u>	<u>Stall Detection</u>	<u>Number of Syringes</u>	<u>Maximum Syringe Size</u>
NE-1000	Stand-Alone	Yes	1	60 mL; 140 mL partially filled
NE-500	OEM	No	1	60 mL; 140 mL partially filled
NE-501	OEM	No	1	60 mL; 140 mL partially filled

Mechanical

Motor type:	Step motor
Motor steps per revolution:	400
Motor to drive screw ratio:	15/28
Drive screw pitch:	20 revolutions/"
Micro-stepping:	1/8 to 1/2 depending on motor speed
Advance per step:	0.2126116 μm to 0.8504464 μm depending on motor speed

Dimensions:	8 3/4" x 5 3/4" x 4 1/2" (LxWxH) (Non-OEM versions) (22.86 cm x 14.605 cm x 11.43 cm)
Weight:	3.8 lbs. (1.63 kg)
Allen Wrench	3/32 Hex (Not all models)

Electrical

Power supply type:	External wall adapter, power source specific
Power supply output rating:	12V DC@ 1000 mA
Power connector:	2.1 mm, center positive, DC
Voltage at power connector:	12V DC at full load
Amperage:	750 mA at full load

Operational

Accuracy:	Within 1% error
Reproducibility:	Within 0.1% error
Maximum force:	45 lbs. at minimum speed, 18 lbs. at maximum speed

Syringe inside diameter range:	0.100 to 50.00 mm
Maximum speed:	5.100464828 cm/min
Minimum speed:	0.004204478 cm/hr
Maximum pumping rate:	1699 ml/hr with a 8-D 60 ml syringe
Minimum pumping rate:	0.73 μl/hr with a 8-D 1 ml syringe

Number of Program Phases:	41
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RS-232 pump network:	100 pumps maximum
RS-232 selectable baud rates:	300,1200,2400,9600,19200

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.

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