

Multi Programmable Syringe Pumps



NE-1200: \$1,555
DUAL-NE-1200: \$3,120

- Holds 2, 4, 6, 8, 10 or 12 syringes of up to 3 mL each
- Infusion rates from 0.454 μ L/hr (1 mL syringe) to 121.2 mL/hr
- Higher flow rate models available
- Easy-to-use keypad interface



NE-1600: \$1,555
DUAL-NE-1600: \$3,120

- Holds 2, 4 or 6 syringes of up to 60 mL each or 2 or 4 syringes up to 140 mL each
- Infusion rates from 0.454 μ L/hr (1 mL syringe) to 2376 mL/hr (140 mL syringe)
- Higher flow rate models available
- Easy-to-use keypad interface



NE-1800: \$1,555
DUAL-NE-1800: \$3,120

- Holds 2, 4, 6 or 8 syringes of up to 10 mL each
- Infusion rates from 0.454 μ L/hr (1 mL syringe) to 342.6 mL/hr (10 mL syringe)
- Higher flow rate models available
- Easy-to-use keypad interface

The NE-1000 Series 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!

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



NE-1600, NE-1800 & NE-1200 Multi Syringe Pump

Maximum and Minimum Flow Rates

Syringe Manufacturer (all names™)	Syringe (mL)	Inside Diameter (mm)	Maximum Rate (mL/hr)	Minimum Rate (µL/hr)	Maximum Rate (mL/min)			
B-D	1	4.699	36.33	0.454	0.605			
	3	8.585	121.2	1.515	2.021			
	5	11.99	236.5	2.954	3.942			
	10	14.43	342.6	4.279	5.71			
	20	19.05	597.1	7.457	9.952			
	30	21.59	766.9	9.578	12.78			
	60	26.59	1163	14.53	19.38			
HSW Norm-Ject	1	4.69	36.19	0.452	0.603			
	3	9.65	153.2	1.914	2.553			
	5	12.45	255	3.185	4.25			
	10	15.9	415.9	5.195	6.933			
	20	20.05	661.4	8.26	11.02			
	30	22.9	862.8	10.78	14.38			
	50	29.2	1402	17.52	23.38			
Monoject	1	5.74	54.21	0.677	0.903			
	3	8.941	131.5	1.643	2.192			
	6	12.7	265.3	3.314	4.423			
	12	15.72	406.6	5.078	6.776			
	20	20.12	666	8.318	11.1			
	35	23.52	910.2	11.37	15.17			
	60	26.64	1167	14.59	19.46			
	140	38	2376	29.7	39.6			
Terumo	1	4.7	36.34	0.454	0.605			
	3	8.95	131.8	1.646	2.196			
	5	13	278	3.473	4.634			
	10	15.8	410.7	5.13	6.846			
	20	20.15	668	8.343	11.13			
	30	23.1	878	10.97	14.63			
	60	29.7	1451	18.1	24.19			
Poulten & Graf (Glass)	1	6.7	73.86	0.923	1.231			
	2	8.91	130.6	1.632	2.177			
	3	9.06	135	1.687	2.251			
	5	11.75	227.1	2.837	3.786			
	10	14.67	354.1	4.422	5.901			
	20	19.62	633.3	7.91	10.55			
	30	22.69	847.1	10.58	14.11			
	50	26.96	1195	14.94	19.93			
Steel Syringes	1	9.538	149.6	1.87	2.494			
	3	9.538	149.6	1.87	2.494			
	5	12.7	265.3	3.314	4.423			
	8	9.538	149.6	1.87	2.494			
	20	19.13	602.1	7.52	10.03			
	50	28.6	1345	16.81	22.43			
		Syringe (µL)	Inside Diameter (mm)	Maximum Rate (µL/hr)	Minimum Rate (µL/hr)	SGE Syringe (mL)	Inside Diameter (mm)	Maximum Rate (µL/hr)
SGE (Glass – Gas Tight)	5	0.343	193.5	0.003	0.25	2.303	8.727	0.109
	10	0.485	387	0.005	0.5	3.257	17.45	0.218
	25	0.728	872	0.011	1	4.606	34.9	0.436
	50	1.03	1745	0.022	2.5	7.284	87.3	1.091
	100	1.457	3492	0.044	5	10.3	174.5	2.18
Hamilton Microliter (Glass)	0.5	0.103	17.45	0.001	10	14.57	349.2	4.362
	1	0.146	35.07	0.001	25	23.03	872.7	10.9
	2	0.206	69.82	0.001	50	27.5	1244	15.54
	5	0.326	174.8	0.003	100	34.99	2014	25.16

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Specifications

<u>Model</u>	<u>Style</u>	<u>Stall Detection</u>	<u>Number of Syringes</u>	<u>Maximum Syringe Size</u>
NE-1600	Stand-Alone	Yes	6	140 mL
NE-1800	Stand-Alone	Yes	8	10 mL
NE-1200	Stand-Alone	Yes	12	3 mL

Mechanical

Motor type:	Step motor
Motor steps per revolution:	200
Drive screw pitch:	24 revolutions/”
Motor to drive screw ratio:	5/1
Micro-stepping:	1/8 to 1/2 depending on motor speed
Advance per step:	0.132291667 μ m to 0.5291667 μ m depending on motor speed
Dimensions:	10 1/4” x 15” x 5” (LxWxH) (26.035 cm x 38.1 cm x 12.7 cm)
Weight:	10.125 lbs. (4.595 kg)

Electrical

Power supply type:	External wall adapter, power source specific
Power supply output rating:	12V DC @ 1000 mA
Power connector:	2.5 mm, center positive, DC
Voltage at power connector:	12V DC at full load
Amperage:	1000 mA at full load

Operational

Accuracy:	Within 1% error
Reproducibility:	Within 0.1% error
Force applied across all syringes:	160 <u>lbs.</u> at minimum speed, 30 <u>lbs.</u> at maximum speed
Syringe inside diameter range:	0.100 to 50.00 mm
Maximum speed:	3.4917 cm/min
Minimum speed:	0.0026 cm/hr
Maximum pumping rate:	1163 mL/hr with a B-D 60 mL syringe
Minimum pumping rate:	0.454 μ L/hr with a B-D 1 mL syringe
Number of Program Phases:	41
RS-232 pump network:	100 pumps maximum
RS-232 selectable baud rates:	300, 1200, 2400, 9600, 19200

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