



# New Era Pump Systems Inc.

[www.SyringePump.com](http://www.SyringePump.com)

## NE-8000 Syringe Pump

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### Model NE-8000 High Pressure Syringe Pump

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#### Features

- All Programming features of the NE-1000 syringe pump.
- Syringes size up to 140 mL. 200 mL partially filled (About 160 mL).
- Pumping force over 200 lbs.

**Adjustable force limit:** Force adjustment knob reduces the maximum force to reduce damage to syringes.

#### Limit Switches

- Two adjustable limit switches: One sets the infusion limit, one sets the withdrawal limit. To adjust the limit switches, loosen the white thumbscrew, then slide the collar to the required position. Then re-tighten the thumbscrew.
- When the pusher block reaches a limit switch, the pump will either: 1) Trigger a Program Event function; 2) Continue with the next Program Phase; 3) Stop the pump.

If a Program Event is set (Event Function), the Event trap will be triggered and the Pumping Program will continue execution with the Program Phase set in the Event Function.

Otherwise, the Pumping Program will start the next Program Phase unless the next Program Phase pumps in the same direction. This is a safety feature to prevent attempting to pump past the limit switch. The pump will instead stop.

Limit switches can be used as a program volume target. Limit switches will override the volume target setting.

#### Additional Notes

- Does not have stall detection.
- Pusher block has a solid nut block. It is not releasable.
- To position the pusher block, use the purge function: Set the pumping direction with the direction key '→←', then press and hold the 'Start/Stop' key. The display will indicate **PURGE** and the pusher block will move at top speed in the set direction. Release the 'Start/Stop' key to stop the pump.

#### Maintenance

- Periodic lubrication is required for proper operation. **Failure of the nut block can occur if not properly lubricated.**
- Lead-screw: Grease
- Guide Rods: Oil
- Remove accumulation of dirt or debris

#### WARNING

Use extreme caution. The NE-8000 can deliver enough force to break syringes or any objects that get caught in the mechanism. Broken syringes and associated plumbing can create dangerous projectiles that can cause bodily harm. Keep fingers and loose clothing away from mechanism.

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	312.4	1.733	5.208
	3	8.585	1043	5.783	17.38
	5	11.99	2034	11.28	33.9
	10	14.43	2946	16.34	49.11
	20	19.05	5136	28.48	85.6
	30	21.59	6596	36.57	109.9
	60	26.59	9999	55.47	166.7
HSW Norm-Ject	1	4.69	311.3	1.726	5.188
	3	9.65	1317	7.306	21.96
	5	12.45	2193	12.17	36.56
	10	15.9	3577	19.84	59.63
	20	20.05	5689	31.54	94.82
	30	22.9	7421	41.15	123.6
	50	29.2	9999	66.9	201.1
Monoject	1	5.74	466.2	2.585	7.771
	3	8.941	1131	6.272	18.85
	6	12.7	2282	12.66	38.04
	12	15.72	3497	19.39	58.28
	20	20.12	5729	31.76	95.48
	35	23.52	7829	43.4	130.4
	60	26.64	9999	55.68	167.4
	140	38	9999	113.3	340.6
Terumo	1	4.7	312.6	1.733	5.21
	3	8.95	1133	6.285	18.89
	5	13	2391	13.26	39.86
	10	15.8	3533	19.59	58.88
	20	20.15	5746	31.86	95.77
	30	23.1	7552	41.87	125.8
	60	29.7	9999	69.21	208
Poulten & Graf (Glass)	1	6.7	635.3	3.522	10.58
	2	8.91	1123	6.229	18.72
	3	9.06	1161	6.44	19.36
	5	11.75	1953	10.84	32.56
	10	14.67	3045	16.89	50.76
	20	19.62	5447	30.2	90.79
	30	22.69	7286	40.39	121.4
	50	26.96	9999	57.03	171.4
Steel Syringes	1	9.538	1287	7.138	21.45
	3	9.538	1287	7.138	21.45
	5	12.7	2282	12.66	38.04
	8	9.538	1287	7.138	21.45
	20	19.13	5179	28.71	86.32
	50	28.6	9999	64.18	192.9
	100	34.93	9999	95.72	287.7
	200	44.75	9999	157.2	472.3

SGE Syringe (mL)	Inside Diameter (mm)	Maximum Rate (mL/hr)	Minimum Rate (µL/hr)
0.25	2.303	75.06	0.417
0.5	3.257	150.1	0.833
1	4.606	300.2	1.665
2.5	7.284	750.8	4.163
5	10.3	1501	8.323

SGE Syringe (mL)	Inside Diameter (mm)	Maximum Rate (mL/min)	Minimum Rate (µL/hr)
10	14.57	50.07	16.66
25	23.03	125.1	41.61
50	27.5	178.3	59.33
100	34.99	288.7	96.05

# Specifications

## *Mechanical & Electrical*

<u>Model</u>	<u>Style</u>	<u>Stall Detection</u>	<u>Number of Syringes</u>	<u>Maximum Syringe Size</u>
NE-8000	Stand-Alone	No	1	140 mL 200 mL (Partially filled 160 mL)

Drive block type: Solid (Must use Purge function to move pusher block).

Motor type: Step motor  
Motor steps per revolution: 200  
Motor to drive screw ratio: 14/22  
Drive screw pitch: 20 revolutions/”

Power supply type: External, country and power source specific  
Power supply output rating: 24V DC @ 1200 mA  
Power connector: 2.1 mm, center positive, DC  
Voltage at power connector: 24V DC at full load  
Amperage: 1200 mA at full load

Dimensions: 11 1/4” x 6 1/8” x 6 3/8” LxWxH  
(28.575 cm x 15.5575 cm x 16.1925 cm)

Weight: 7.8125 lbs. (3.55 kg)

## ***Operational***

Maximum force: 200 lbs.

Micro-stepping: 1/8 to 1/1 depending on motor speed  
Advance per step: 0.50511364  $\mu$ m to 4.040909  $\mu$ m depending on motor speed

Maximum speed: 30.033 cm/min  
Minimum speed: 0.00998882 cm/hr  
Maximum pumping rate: 340.6 mL/min with a 140 mL syringe  
Minimum pumping rate: 1.733  $\mu$ L/hr with a B-D 1 mL syringe  
Syringe inside diameter range: 0.100 to 50.00 mm

Number of Program Phases: 41

RS-232 pump network: 100 pumps maximum  
RS-232 selectable baud rates: 300, 1200, 2400, 9600, 19200

