New Era Pump Systems Inc.

www.SyringePump.com

NE-8000 Syringe Pump

Model NE-8000 High Pressure Syringe Pump

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  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.

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Syringe Manufacturer (all names ™)	Syringe (mL)	Inside Diameter (mm)	Minimum Rate (µL/hr)	Maximum Rate (mL/min)
B-D	1	4.699	1.733	5.208
	3	8.585	5.783	17.38
	5	11.99	11.28	33.9
	10	14.43	16.34	49.11
	20	19.05	28.48	85.6
	30	21.59	36.57	109.9
	60	26.59	55.47	166.7
HSW Norm-Ject	1	4.69	1.726	5.188
	3	9.65	7.306	21.96
	5	12.45	12.17	36.56
	10	15.9	19.84	59.63
	20	20.05	31.54	94.82
	30	22.9	41.15	123.6
	50	29.2	66.9	201.1
Monoject	1	5.74	2.585	7.771
	3	8.941	6.272	18.85
	6	12.7	12.66	38.04
	12	15.72	19.39	58.28
	20	20.12	31.76	95.48
	35	23.52	43.4	130.4
	60	26.64	55.68	167.4
	140	38	113.3	340.6
Terumo	1	4.7	1.733	5.21
	3	8.95	6.285	18.89
	5	13	13.26	39.86
	10	15.8	19.59	58.88
	20	20.15	31.86	95.77
	30	23.1	41.87	125.8
	60	29.7	69.21	208
Poulten &Graf (Glass)	1	6.7	3.522	10.58
	2	8.91	6.229	18.72
	3	9.06	6.44	19.36
	5	11.75	10.84	32.56
	10	14.67	16.89	50.76
	20	19.62	30.2	90.79
	30	22.69	40.39	121.4
	50	26.96	57.03	171.4
Steel Syringes	1	9.538	7.138	21.45
	3	9.538	7.138	21.45
	5	12.7	12.66	38.04
	8	9.538	7.138	21.45
	20	19.13	28.71	86.32
	50	28.6	64.18	192.9
	100	34.93	95.72	287.7
	200	44.75	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

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

Mechanical

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/”
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:	8.1 lbs. (3.67 kg)

Electrical

Power supply type:	External, country and power source specific
Power supply output rating:	24V DC @ 2.5A
Power connector:	2.1 mm, center positive, DC

Operational

Accuracy:	Within 1% error
Reproducibility:	Within 0.1% error
Maximum force:	200 lbs.
Micro-stepping:	1/8 to 1/1 depending on motor speed
Advance per step:	0.50511364 µm to 4.040909 µm 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 µL/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

