# New Era Pump Systems Inc.

www.SyringePump.com

# NE-8060 Syringe Pump

## Model NE-8060 High Pressure / High Speed 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-8060 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 | 6.803 | 15.62 |
| | 3 | 8.585 | 22.71 | 52.15 |
| | 5 | 11.99 | 44.3 | 101.7 |
| | 10 | 14.43 | 64.16 | 147.3 |
| | 20 | 19.05 | 111.9 | 256.7 |
| | 30 | 21.59 | 143.7 | 329.8 |
| | 60 | 26.59 | 217.9 | 500.2 |
| HSW Norm-Ject | 1 | 4.69 | 6.777 | 15.56 |
| | 3 | 9.65 | 28.7 | 65.89 |
| | 5 | 12.45 | 47.76 | 109.6 |
| | 10 | 15.9 | 77.89 | 178.8 |
| | 20 | 20.05 | 123.9 | 284.4 |
| | 30 | 22.9 | 161.6 | 371 |
| | 50 | 29.2 | 262.7 | 603.3 |
| Monoject | 1 | 5.74 | 10.16 | 23.31 |
| | 3 | 8.941 | 24.63 | 56.56 |
| | 6 | 12.7 | 49.7 | 114.1 |
| | 12 | 15.72 | 76.14 | 174.8 |
| | 20 | 20.12 | 124.8 | 286.4 |
| | 35 | 23.52 | 170.5 | 391.4 |
| | 60 | 26.64 | 218.7 | 502.1 |
| | 140 | 38 | 444.9 | 1021 |
| Terumo | 1 | 4.7 | 6.806 | 15.63 |
| | 3 | 8.95 | 24.68 | 56.67 |
| | 5 | 13 | 52.07 | 119.5 |
| | 10 | 15.8 | 76.92 | 176.6 |
| | 20 | 20.15 | 125.1 | 287.2 |
| | 30 | 23.1 | 164.4 | 377.5 |
| | 60 | 29.7 | 271.8 | 624.1 |
| Poulten & Graf (Glass) | 1 | 6.7 | 13.84 | 31.76 |
| | 2 | 8.91 | 24.46 | 56.17 |
| | 3 | 9.06 | 25.29 | 58.08 |
| | 5 | 11.75 | 42.54 | 97.69 |
| | 10 | 14.67 | 66.31 | 152.2 |
| | 20 | 19.62 | 118.6 | 272.3 |
| | 30 | 22.69 | 158.7 | 364.2 |
| | 50 | 26.96 | 224 | 514.3 |
| Steel Syringes | 1 | 9.538 | 28.03 | 64.37 |
| | 3 | 9.538 | 28.03 | 64.37 |
| | 5 | 12.7 | 49.7 | 114.1 |
| | 8 | 9.538 | 28.03 | 64.37 |
| | 20 | 19.13 | 112.8 | 258.9 |
| | 50 | 28.6 | 252.1 | 578.7 |
| | 100 | 34.93 | 376 | 863.3 |
| | 200 | 44.75 | 617 | 1416 |

| SGE Syringe (mL) | Inside Diameter (mm) | Maximum Rate (mL/hr) | Minimum Rate (µL/hr) |
|---|---|---|---|
| 0.25 | 2.303 | 225.1 | 1.635 |
| 0.5 | 3.257 | 450.3 | 3.269 |
| 1 | 4.606 | 900.6 | 6.537 |
| 2.5 | 7.284 | 2252 | 16.35 |
| 5 | 10.3 | 4504 | 32.69 |

| SGE Syringe (mL) | Inside Diameter (mm) | Maximum Rate (mL/min) | Minimum Rate (µL/hr) |
|---|---|---|---|
| 10 | 14.57 | 150.2 | 65.41 |
| 25 | 23.03 | 375.2 | 163.5 |
| 50 | 27.5 | 535.1 | 233 |
| 100 | 34.99 | 866.2 | 377.2 |

# Specifications

| Model | Style | Stall Detection | Number of Syringes | Maximum Syringe Size |
|---|---|---|---|---|
| NE-8060 | Stand-Alone | No | 1 | 140 mL<br>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: | 1/1 |
| Drive screw pitch: | 8 revolutions/” |
| Dimensions: | 11 1/4” x 6 1/8” x 6 3/8” LxWxH<br>(28.575 cm x 15.5575 cm x 16.1925 cm) |
| Weight: | 9.5 lbs. (4.31 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: | 1.984375 µm to 15.875 µm depending on motor speed |
| Maximum speed: | 90.12566735 cm/min |
| Minimum speed: | 0.039242 cm/hr |
| Maximum pumping rate: | 1021 mL/min with a 140 mL syringe |
| Minimum pumping rate: | 6.803 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 |

