SyringeONE

SKU: 8000

Addendum

www.SyringePump.com

NewEra pump systems

The SyringeONE (SKU: 8000) is a modified version of the SyringeONE (SKU: 1000). All of the information contained in the (SKU: 1000) User Manual applies to the (SKU: 8000), except for what is listed in this addendum.

Features:

- All of the same programming features as the SyringeONE.
- Can operate syringes up to 140 mL, or 200 mL if partially filled (about 160 mL).
- 200 lbs of pumping force.
  - **Adjustable force limit:** Force adjustment knob decreases the maximum force to reduce damage to syringes.

Limit Switches:

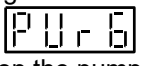
- On the pump, there are two adjustable limit switches; one sets the infusion limit, one sets the withdrawal limit. To adjust them, loosen the white thumbscrew, and slide the collar to the desired position. Then re-tighten the thumbscrew.

  When the pusher reaches a limit switch, the pump will either:

  a) *Trigger a Program Event function.*
  b) *Continue with the next Program Phase.*
  c) *Stop operating.*

- If a Program Event is set, the Event trap will be triggered and the Pumping Program will continue executing the Program Phase set in the Event Function.
- Otherwise, the Pumping Program will start the next Program Phase unless it pumps in the same direction. This is a safety feature to prevent pumping past the limit switch, and instead the pump will stop.
- Limit switches will override target volume settings, and can be set as a program volume target.

Additional Notes:

- **Does not have stall detection; if the motor force is exceeded and the pump is damaged, the warranty and replacement of the nut block are void.**
- The **pusher** has a solid nut block. It is not releasable.
- To position the pusher, use the purge function. Set the pumping direction with the direction key '⇉⇇', then press and hold the 'Start/Stop' key. The display will show  and the pusher block will move at top speed in the set direction. Release the 'Start/Stop' key to stop the pump.

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Maintenance:

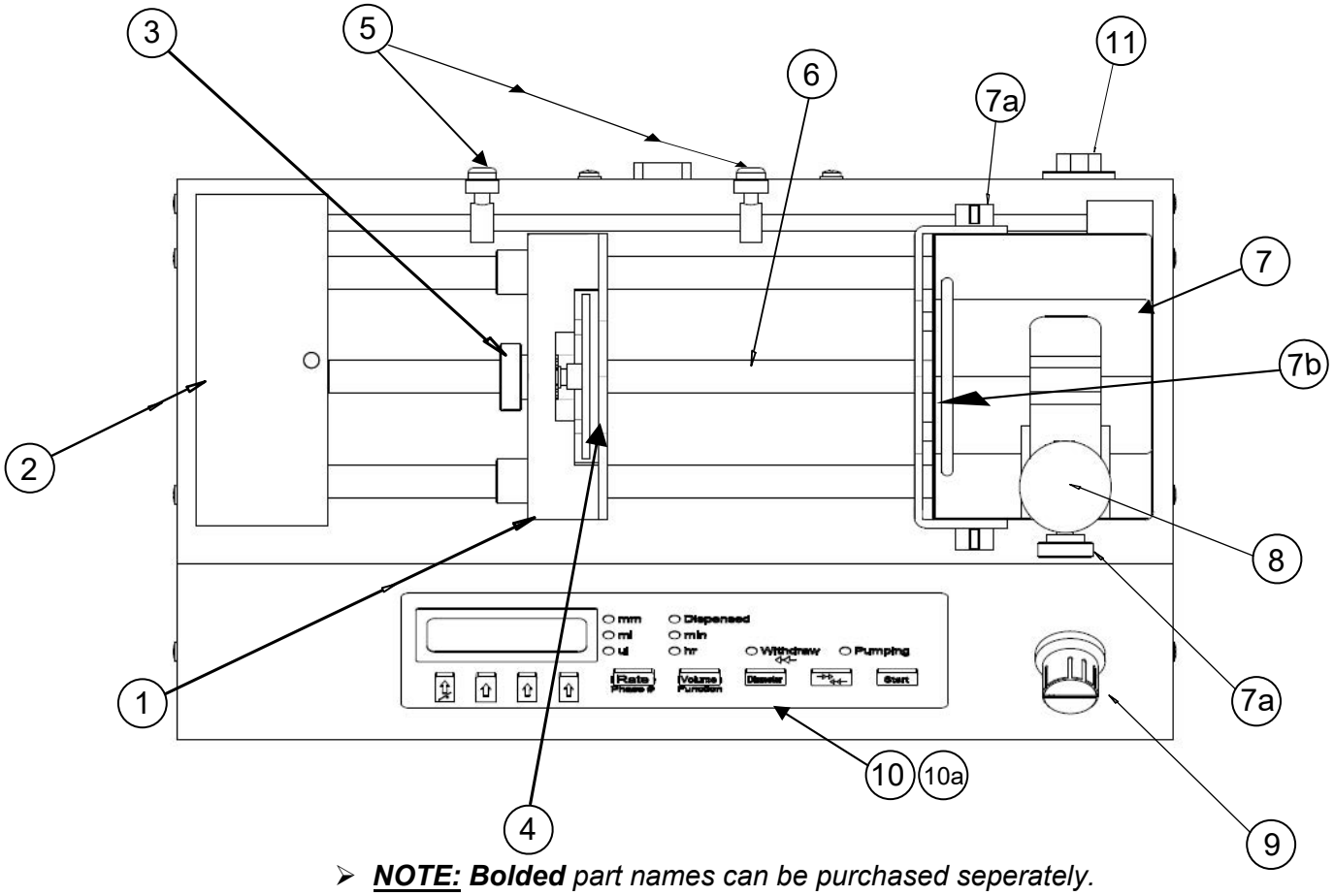
- Periodic lubrication is required for the pump to operate properly.

Without proper lubrication, the nut block can be damaged.

- Remove any dirt or debris prior to lubrication.
- Use ***Grease*** to lubricate the Lead Screw
- Use ***Oil*** to lubricate the Guide Rods.

⚠ **WARNING: Operate with extreme caution.** This pump 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 the mechanism.

Parts of the Pump and Part Numbers



➢ ***NOTE:*** ***Bolded*** *part names can be purchased seperately.*

1) **Pusher =** *PUSHER-ASBLY-HDP*
2) **End Plate =** *ENDPLATE-ASBLY-HDP*
3) **Thumb Screw =** *SCRW_THUMB-10T32KB-MOD1*
    a. ***Washer*** = E-RING-25ST
4) **Anti-Siphon Plate =** *SM-ANTISIPHON-HDP*
5) **Limit Switches**
    a. ***Collar Clamp*** **=** *COLLAR-CLAMP-3/16*
    b. ***Limit Switch Thumbscrew*** **=** *SCRW_THUMB-8T32X1/4-NYLON*
6) Lead Screw
7) **Syringe Holder Block =** *HOLDER-ASBLY-HDP*
    a) *Syringe Holder Thumbscrews (3x)*
    b) ***Syringe Retainer Bracket*** **=** *SM-SRETAINER-HDP*
8) Syringe Clamp = *CLAMP-ASBLY-HDP*
9) **Force Limit Knob =** *ICPM-KNOB-18T20MM*
10) **Keypad =** *KEYPAD-ELASTOMER-01*
    a) *Keypad Overlay = OVERLAY-STANDARD*
11) **Power On/Off Switch =** CABLE-POWER6-2.1MM

Packing List:

Included with the SyringeONE (SKU: 8000) Programmable Syringe Pump are the following items:

- One of the following external power supply adapters:
  - Input: 120V AC 60 Hz, 220V AC 50 Hz, 240V AC 50 HZ, or other custom specified power supply
  - Output: Regulated 24V DC @ 2.5A
- This Addendum
- A SyringeONE User Manual
- Sample of Super-Lube®
- 4 extra spacers and screws to better hold larger sized syringes

Specifications

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

Mechanical

Drive block type:	Solid (Must use the Purge function to move pusher)
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:	7.8125 lbs. (3.55 kg)

Electrical

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

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

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