

Syringe Manufacturer (all names TM)	Syringe (mL)	Inside Diameter (mm)	Maximum Rate (mL/hr)	Minimum Rate (µL/hr)	Maximum Rate (mL/min)				
B-D	1	4.699	188.1	1.436	3.135				
	3	8.585	627.9	4.791	10.46				
	5	11.99	1224	9.345	20.41				
	10	14.43	1774	13.54	29.56				
	20	19.05	3091	23.59	51.53				
	30	21.59	3971	30.3	66.19				
	60	26.59	6023	45.96	100.3				
HSW Norm-Ject	1	4.69	187.4	1.43	3.123				
	3	9.65	793.4	6.054	13.22				
	5	12.45	1320	10.08	22.01				
	10	15.9	2153	16.44	35.89				
	20	20.05	3425	26.14	57.08				
	30	22.9	4468	34.09	74.46				
	50	29.2	7264	55.43	121				
Monoject	1	5.74	280.7	2.142	4.678				
	3	8.941	681.1	5.197	11.35				
	6	12.7	1374	10.49	22.9				
	12	15.72	2105	16.07	35.09				
	20	20.12	3449	26.32	57.48				
	35	23.52	4713	35.96	78.55				
	60	26.64	6046	46.14	100.7				
	140	38	9999	93.87	205				
Terumo	1	4.7	188.2	1.436	3.136				
	3	8.95	682.4	5.207	11.37				
	5	13	1439	10.99	23.99				
	10	15.8	2126	16.23	35.44				
	20	20.15	3459	26.4	57.65				
	30	23.1	4546	34.69	75.77				
	60	29.7	7515	57.34	125.2				
Poulten & Graf (Glass)	1	6.7	382.4	2.919	6.374				
	2	8.91	676.3	5.161	11.27				
	3	9.06	699.3	5.336	11.65				
	5	11.75	1176	8.975	19.6				
	10	14.67	1833	13.99	30.56				
	20	19.62	3279	25.03	54.66				
	30	22.69	4386	33.47	73.1				
	50	26.96	6192	47.25	103.2				
Steel Syringes	1	9.538	775.1	5.914	12.91				
	3	9.538	775.1	5.914	12.91				
	5	12.7	1374	10.49	22.9				
	8	9.538	775.1	5.914	12.91				
	20	19.13	3118	23.79	51.96				
	50	28.6	6969	53.18	116.1				
SGE (Glass – Gas Tight)	5	0.343	1002	0.008	0.25	2.303	45.18	0.345	
	10	0.485	2004	0.016	0.5	3.257	90.38	0.69	
	25	0.728	4515	0.035	1	4.606	180.7	1.38	
	50	1.03	9039	0.069	2.5	7.284	452	3.449	
	100	1.457	9999	0.138	5	10.3	903.9	6.897	
Hamilton Microliter (Glass)	0.5	0.103	90.39	0.001	10	14.57	1808	13.8	
	1	0.146	181.6	0.002	25	23.03	4518	34.48	
	2	0.206	361.5	0.003	50	27.5	6443	49.16	
	5	0.326	905.4	0.007	100	34.99	9999	79.59	

1. Specifications

1.1 Mechanical & Electrical

<u>Model</u>	<u>Style</u>	<u>Stall Detection</u>	<u>Number of Syringes</u>	<u>Maximum Syringe Size</u>
NE-4000	Stand-Alone	✓	2	60 mL, 140 mL partially filled
NE-4500	OEM		2	60 mL, 140 mL partially filled
NE-4501	OEM	✓	2	60 mL, 140 mL partially filled

Motor type: Step motor
Motor steps per revolution: 200
Motor to drive screw ratio: 15/28
Drive screw pitch: 20.32 revolutions/”
Micro-stepping: 1/8 to 1/2 depending on motor speed
Advance per step: 0.41852679 µm to 1.67410714 µm depending on motor speed

Power connector: 2.1 mm, center positive, DC
Voltage at power connector: 12V DC at full load
Amperage: 1000 mA at full load
Power supply type: External wall adapter, power source specific
Power supply output rating: 12V DC @ 1000 mA

Dimensions: 8 3/4” x 5 3/4” x 4 1/2” High (Non-OEM versions)
(22.86 cm x 14.605 cm x 11.43 cm)

Weight: 3.8 lbs. (1.63 kg)

1.2 Operational

Maximum force: 100 lbs. at minimum speed, 18 lbs. at maximum speed

Syringe inside diameter range: 0.100 to 50.00 mm
Maximum speed: 18.08035714 cm/min
Minimum speed: 0.008276531 cm/hr
Maximum pumping rate: 6023 mL/hr with a B-D 60 mL syringe
Minimum pumping rate: 1.436 µL/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