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Pump 22 Multiple Syringe Pump

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- Legendary reliability – 2 year warranty
- Versatile
- Easy to use
- Nonvolatile memory
- Sturdy construction
- Computer control

The Harvard 22 syringe pump is the pump that set the industry standard! It is the world's most popular syringe pump. Harvard Apparatus' long-standing tradition of providing rugged and reliable products is the foundation upon which this pump was built.

Since the introduction of the first pump 22 many features and innovations have been added to the pump to offer a complete line of pumps for multiple syringe applications. Versions of the pump 22 for 4 microliter syringes, a 10 syringe rack and a syringe rack for 1 to 4, 140 ml syringes are available. An anti-siphon model is also available for infusion applications where the line pressure is lower than the syringe pressure. The anti-siphon bracket securely retains the syringe plunger to prevent unintended loss of fluid from the syringe.

This pump features an LED display and numerical keypad for easy entry of syringe diameter data and flow rates. Flow rate units can be set in µl/hr, µl/min, ml/hr and ml/min. An optical encoder monitors lead screw rotation to accurately maintain any flow rate. The run LED flashes when syringe plunger movement stops unexpectedly. A complete line of accessories for the Pump 22 are available including an interface box to make the connection of multiple accessories to a single pump fast and easy, see page A19.

The pump 22 can be controlled using RS-232 (serial) commands. An interface box and computer connector are required, see page A19 for a complete list of pump accessories. Multiple syringe pumps can be interconnected by daisy chaining pumps. Up to 100 pumps can be addressed independently using internal reference addresses from 0 to 99. A set of sample programs, using the Basic programming language, is included with each pump.

For Symphony Software, see page A17.

For Accessories, see page A19.

For GASTIGHT® Syringes, see pages A73 and A74.

For Plastic Syringes, see pages A76 and A77.

For Stainless Steel Syringe, see page A70.

For Tubing, see pages A78 to A87.

For Luer Connectors and Kits, see pages A88 to A91.

Specifications

Type	Microprocessor multiple syringe, infusion or infusion/withdrawal
Accuracy	±0.35%
Reproducibility	±0.05%
Syringes Size:	
Minimum	0.5 µl
Maximum	140 ml
Flow Rate:	
Minimum	0.002 µl/hr
Maximum	55.1 ml/min
Non Volatile Memory	Storage of all settings
RS-232	25-pin connector
TTL	Shared port with RS-232
Average Linear Force	47 lbs
Drive Motor	0.9° stepping motor
Motor Drive Control	1/4 microstepping
Motor Step per One Revolution of Lead Screw	3200 at 1/4 stepping
Resolution	0.33 µm/step
Step Rate:	
Minimum	6.8 sec/step
Maximum	416.7 µsec/step
Pusher Travel Rate:	
Minimum	2.9068 µm/min
Maximum	47.6 mm/min
Power	30 W, 0.5 A fuse
Voltage Range	95 to 130 VAC, 60 Hz; 220 to 260 VAC, 50 Hz, selectable
Dimensions, H x W x D	28 x 22.2 x 14 cm (11 x 8.75 x 5.5 in)
Weight	4.5 kg (10 lb)

Catalog No.	$	Product
BS4 55-2222		Pump 22 Infusion Only with Standard Syringe Holder
BS4 55-2275		Pump 22 Infusion Only with Anti-Siphon[1] Standard Syringe Holder
BS4 55-5920		Pump 22 Infusion Only with 6/10 Multi-syringe Rack
BS4 55-2314		Pump 22 Infusion Only with 4 x 140 Multi-syringe Rack
BS4 55-2226		Pump 22 Infusion/Withdraw with Standard Syringe Holder
BS4 55-2219		Pump 22 Infusion/Withdraw with 6/10 Multi-syringe Rack
BS4 55-2316		Pump 22 Infusion/Withdraw with 4 x 140 Multi-syringe Rack
BS4 55-4153		Pump 22 Infusion/Withdraw with Microliter Syringe Holder

1. *Anti-Siphon syringe holder secures syringe plunger to pusher block*

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