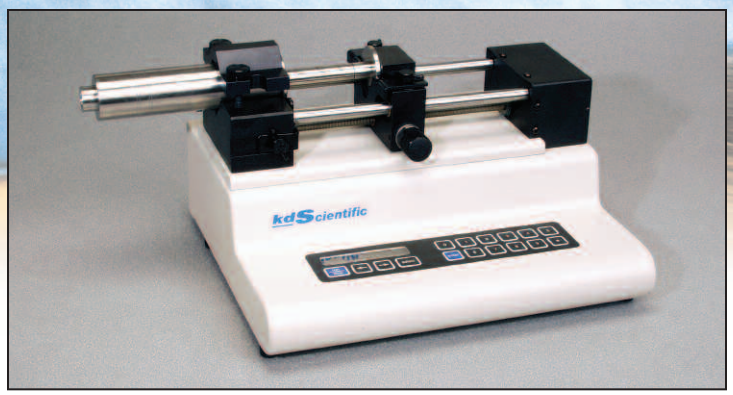
kdS 410

NEW! Higher Force Pump



Higher Force Pump for Demanding Applications

The new KDS 410 is a high pressure syringe pump which more than ***doubles the linear force*** available on the KDS 200 series. This extra force makes the pump ideal for delivery of fluid to reactors in chemical applications or for working with viscous fluids. The robust design of the syringe holder ensures the syringe is kept level during delivery of the fluid. It features two different types of clamping mechanisms, for both smaller and larger syringes. When the application demands a more rugged pump, select the KDS 410.

The KDS 410 features two modes of operation, a dispense mode and a withdrawal mode. It is easy to set up and use in two quick steps; select the type of syringe and the flow rate. The selectable flow rate is entered directly into the program and stored in memory. A volume can also be set to dispense a known amount and then shut off when the delivery is complete.

The KDS 410 accommodates a single syringe and works with all types of syringes from 10 µl to 140 ml, but due to the higher force on the syringe pump, we recommend our new line of stainless steel syringes. (See our Stainless Steel Syringe data sheet.)

All KDS pumps are standard with power failure indication. If there is a power failure while the pump is running in "pump" mode, the display will indicate a power failure occurred and the pump will resume running. This feature can be supressed, requiring manual restart.

The KDS 410 can be triggered remotely by a foot pedal or a switch. This will offer the user true versatility in using the unit in a "hands-free" mode. The pump also comes standard with the RS-232 interface to link to a computer for remote control. The power reduction mode cuts power to the unit when in the idle mode, eliminating any overheating issues with the powerful motor.

The KD Scientific family of pumps includes a wide variety of pumps to meet many different applications. The full line of KDS pumps includes a simple single syringe dispense only pump, a multi-syringe infuse and withdrawal pump, push and pull pumps, continuous pumps for uninterrupted fluid delivery, nanoliter pumps and an emulsifier pump. KD Scientific is world renown for its unsurpassed quality and reliability.

NOTE: *KD Scientific syringe pumps are for laboratory use only. They have not been approved by the FDA for clinical use.*

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Benefits

- High pressure dispensing
- Automatic dispensing of small volumes
- Consistent delivery of fluids
- Hands free operation
- Accurate fluid delivery

Features

- Quick set up and installation
- High pressure syringe clamps
- Typical accuracy 1% or better
- > 100 lbs linear force
- Wide variety of syringes from 10 µl to 140 ml
- Wide plunger travel
- Quick fluid filling
- Power reduction mode
- Volume dispense
- Minimum flow rate of 0.001 µl/hr using 10 µl syringe
- Maximum flow rate of 146.7 ml/min using 140 ml syringe
- Power failure indication
- Anti-syiphon
- TTL interface for remote activation
- RS-232
- Daisy chain up to 99 pumps together

Applications

- Continuous Delivery of Fluid
- Pilot Plant Reactor Dosing
- Dispensing Viscous Fluids

Markets

- Pharmaceutical
- Biotech
- Chemical
- Petrochemical
- Neuroscience
- Research and Development
- Government
- Food and Beverage

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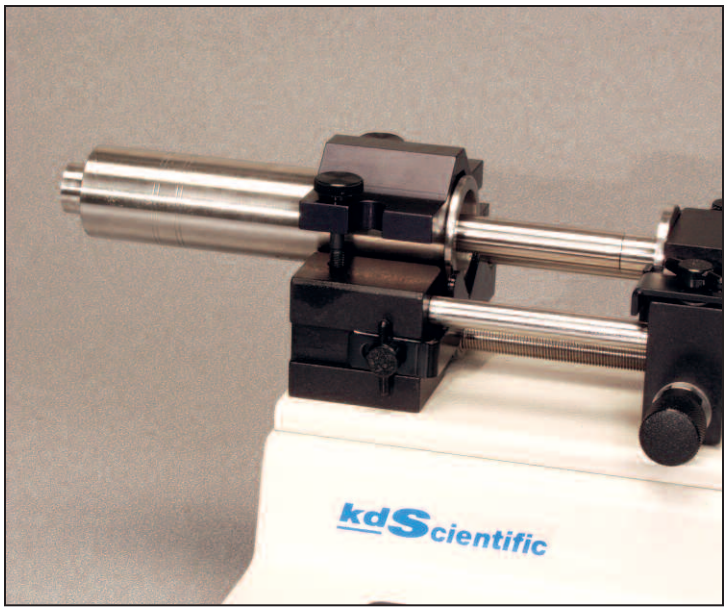

Figure 1
"V" Clamp for Syringes > 50 cc

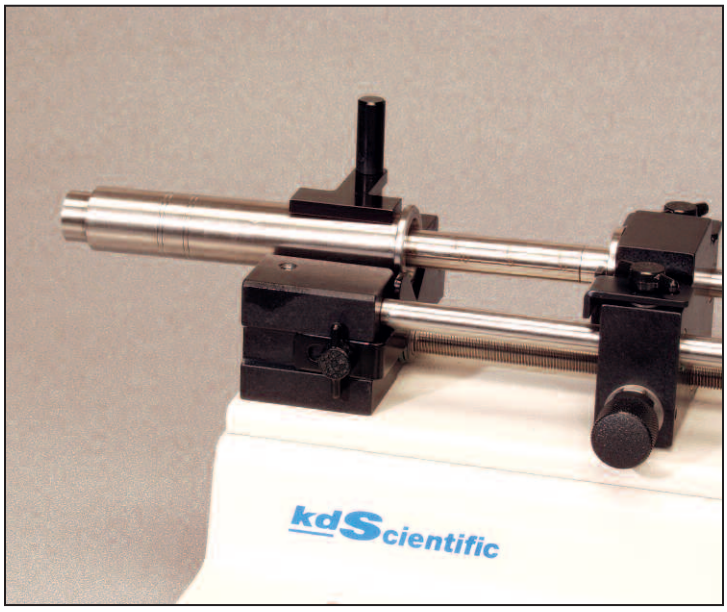

Figure 2
Standard Syringe Clamp

Options

- Alarm Indication at End of Travel
- Foot Switch
- Multi-Step Programming

Flow Rates

Syringe	Diameter	Minimum	Maximum
10 µl	0.46 mm	0.001 µl/hr	21.05 µl/min
25 µl	0.73 mm	0.003 µl/hr	53.04 µl/min
50 µl	1.03 mm	0.005 µl/hr	105.5 µl/min
100 µl	1.46 mm	0.009 µl/hr	212.1 µl/min
250 µl	2.30 mm	0.021 µl/hr	526.4 µl/min
500 µl	3.26 mm	0.042 µl/hr	1.057 ml/min
1 ml	4.61 mm	0.083 µl/hr	2.115 ml/min
3 ml	8.59 mm	0.287 µl/hr	7.343 ml/min
5 ml	10.30 mm	0.413 µl/hr	10.55 ml/min
10 ml	14.57 mm	0.826 µl/hr	21.12 ml/min
20 ml	19.05 mm	1.411 µl/hr	36.11 ml/min
30 ml	21.59 mm	1.813 µl/hr	46.39 ml/min
60 ml	26.60 mm	2.751 µl/hr	83.12 ml/min
100 ml	34.90 mm	4.736 µl/hr	121.2 ml/min
140 ml	38.40 mm	5.733 µl/hr	146.7 ml/min

Specifications

Model	Model KDS 410
Syringe Size	10 µl to 140 ml
Fuse	US 5 x 20 mm, 250 V 0.25 A T slow blow CE 0.125 A T slow blow
Voltage Operating Range	US 110 - 125 VAC, 0.25 A CE 220 - 260 VAC, 0.125 A
Drive Mechanism	Microprocessor controlled stepper motor 1/2 - 1/16 microstepping, driving a lead screw through a belt and pulley drive mechanism
Force	>100 lbs
Pusher Advance Per Micro Step	1/16 step, 0.165 micron or 0.0000064 in
Volume per Microstep	1/16 step with 60 ml BD syringe 0.0917 µl
Speed Range	2.56×10^{4} :1
Stepping Rate:	
Minimum	1 µstep/120 seconds
Maximum	1600 1/2 steps/second
Linear Travel Rate:	
Minimum	4.95×10^{-4} cm/hr
Maximum	12.67 cm/hr
Flow Rate Range	0.826 µl/hr to 21.12 ml/min using 10 ml syringe
Dimensions, H x W x D	15 x 28 x 24 cm (6 x 11 x 9.5 in)
Weight	6.4 kg (14 lbs)
(Syringes NOT included)	

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CE

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Revision B