

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 and a withdrawal mode. It is easy to set up and use in 2 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.

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

All pumps feature the power failure mode. The display will indicate a power failure and keep running or the unit can automatically stop and the unit can be manually restarted. The power reduction mode cuts power to the unit when in the idle mode, eliminating any overheating issues with the powerful motor.

The KDS 410 can be triggered remotely by a foot pedal or remote switch. This will offer the user true versatility in using the unit in a "hands-free" mode. The pump also come standard with the RS-232 interface to link to a computer for remote control.

The KD Scientific family of pumps includes a wide variety of types to meet all the 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. KD Scientific is world renowned for its unsurpassed quality and reliability.

NOTE: KDS scientific syringe pumps are for laboratory use only. They have not been approved by the FDA for clinical use.

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 ul to 140 ml
- Wide plunger travel
- Quick fluid filling
- Power reduction mode
- Volume dispense
- Minimum flow rate of 0.001 ul/hr (10 ul syringe)
- Maximum flow rate of 145.5 ml/min (140 ml syringe)
- Power failure indication
- Anti-syphon
- 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

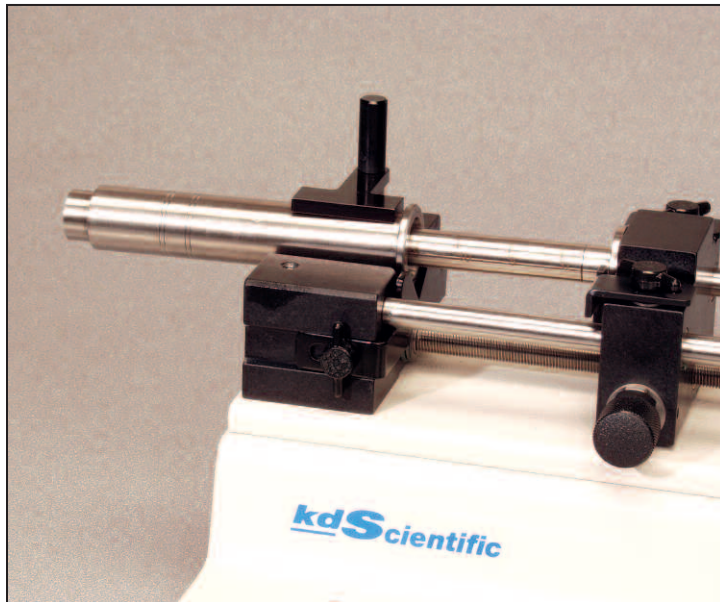
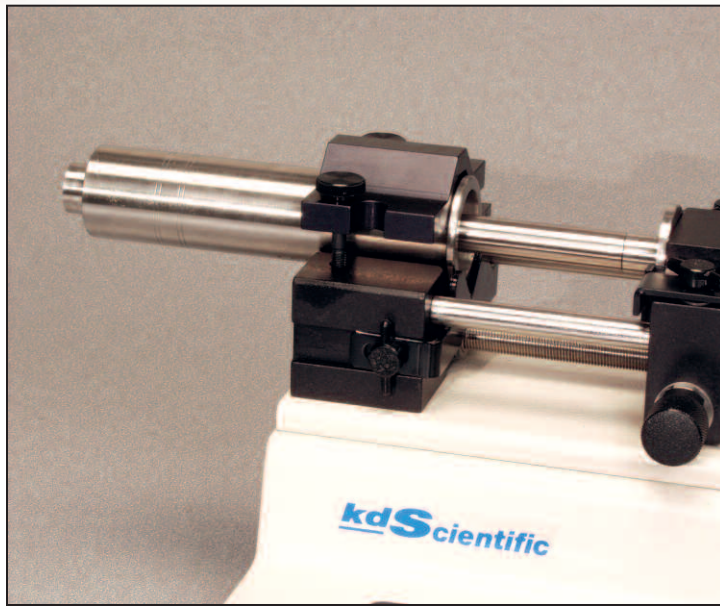
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All specifications subject to change at anytime.

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Flow Rates

Syringe	Diameter mm	Minimum $\mu\text{l/h}$	Maximum
10 μl	0.48	0.001	22.98 $\mu\text{l/m}$
25 μl	0.73	0.001	53.35 $\mu\text{l/m}$
50 μl	1.03	0.001	105.8 $\mu\text{l/m}$
100 μl	1.46	0.001	212.6 $\mu\text{l/m}$
250 μl	2.30	0.001	527.6 $\mu\text{l/m}$
500 μl	3.26	0.001	1.06 ml/m
1 ml	4.61	0.001	2.119 ml/m
3 ml	8.99	0.01	8.061 ml/m
5 ml	10.30	0.01	10.58 ml/m
10 ml	14.57	0.02	21.17 ml/m
20 ml	19.58	0.03	38.25 ml/m
30 ml	22.70	0.04	51.39 ml/m
60 ml	29.45	0.07	86.50 ml/m
100 ml	35.70	0.10	127.1 ml/m
140 ml	38.20	0.11	145.5 ml/m

Specifications

Model	Model KDS 410
Syringe Size	10 μl to 140 ml
Electrical Rating	US model 115VAC 0.25 A CE model 230VAC 0.125 A
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 $\frac{1}{2}$ - $\frac{1}{6}$ microstepping, driving a lead screw through a belt and pulley drive mechanism
Force	>100 lbs
Pusher Advance Per Half Step	$\frac{1}{6}$ step, 0.165 micron or 0.0000064 in
Volume per microstep	$\frac{1}{6}$ with 60 ml BD syringe 0.0919 μl
Speed Range	4.26 x 10 ⁹ :1
Minimum Stepping Rate	One $\frac{1}{6}$ step every 10 seconds
Maximum Stepping Rate	1600 $\frac{1}{6}$ steps/second
Linear Travel Rate	Min 5.7 x 10 ^{E5} Max 12.69 cm/min
Flowrate Range	0.001 $\mu\text{l/h}$ to 82.73 ml/min [50 ml syringe]
Dimensions	11 x 9.5 x 6 in (28 x 24 x 15 cm)
Weight	14 lbs
(Syringes NOT included)	

Options

- Alarm indication at end of travel
- Foot Switch
- Multi-step Programming



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