



Fluidic
Systems



Fluidic (flu·id·ic)

Definition (noun): The integration of continuous flow positive displacement metering pumps with electronic controlled pump drives for precision flow control of fluids.

(Fluidic Systems Patented Technology)



Orange County
California

Company Overview



Founded January 2000

Located in Orange County, California, Fluidic Systems, Inc. is a manufacturer of precision metering dispensing equipment.

Fluidic metering systems meet Industry spray/dispense requirements with a wide range of dispensing parameters. Systems are available for processing 1, 2, 3, and 4 component material formulations for manual/robotic spray/dispense applications.

Applications

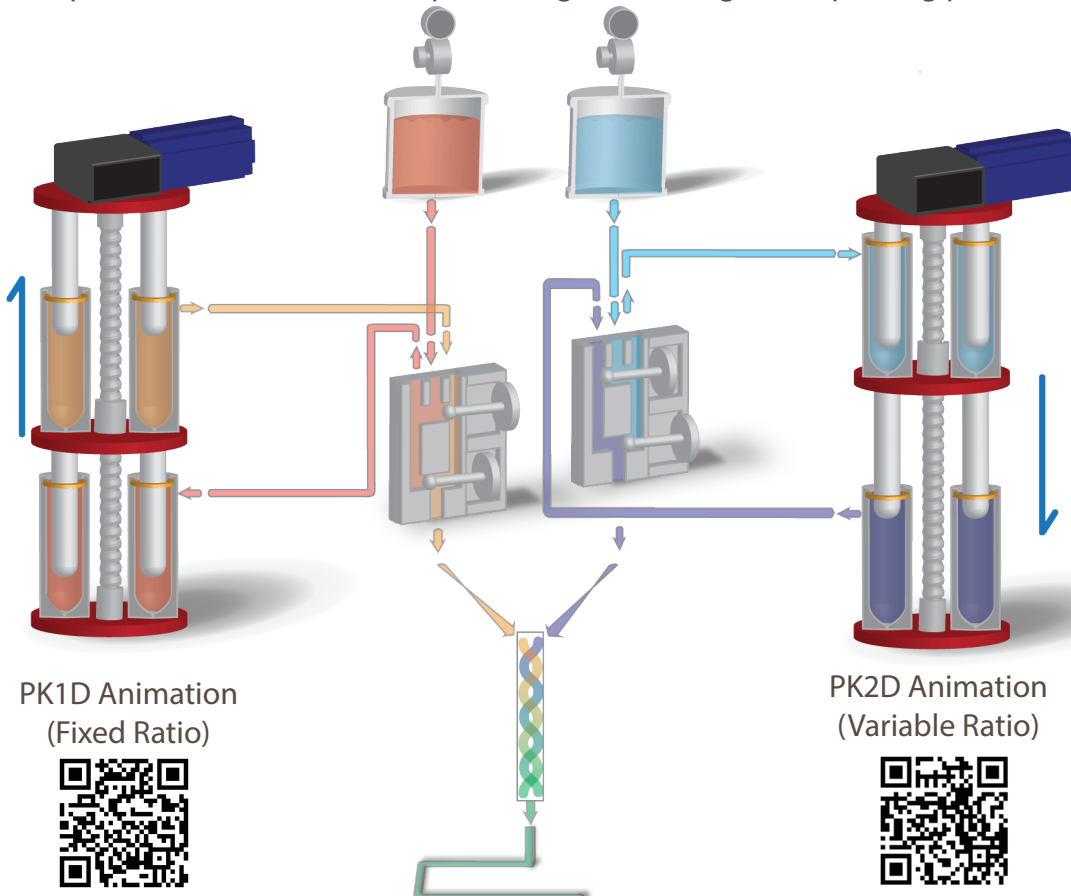
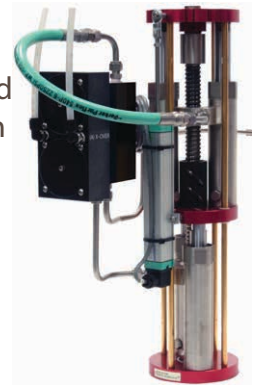
Adhesive/Sealants
Potting/Encapsulants
Paints/Coatings

Markets

General Industrial
Electrical/Electronic
Automotive
Military/Aerospace Industries.

Under the Hood

The patented technology is based on its Fluidic's Linear Displacement Pump (LDP) and Cross-Over Valve (XV2). The positive displacement double-acting rod pumps are powered by closed loop programmable logic controlled (PLC) servo motor drives. The combination of the robust positive displacement metering pumps with electronic motion control provides precision fluid flow control permitting a wide range of dispensing parameters:



PK1D Animation
(Fixed Ratio)



PK2D Animation
(Variable Ratio)



Under the Hood (cont.)

- Continuous Metered Flow:Virtually pulse-free fluid flow
- Multiple Axis Metering: 1, 2 or 3 components standard; 4+ optional
- Mix Ratios:1 to 100:1 (+/-1%) metering accuracy
- Precision Flow Control:Robotic flow 1 cc/min. to >gal/min.
- Viscosity Range:<1 cps to heavy non-flow abrasive compounds
- Pressure Range: 1 psi to 3,500psi

Unlike piston, gear, and progressive cavity pumps, LDP's have no slip factor (bypass) regardless of the fluid pressure. The LDP metering accuracy is unaffected by viscosity variations and do not require calibration. LDP's have no pistons to wear out which eliminates the possibility of material slip.

Since the pump rods do not contact the cylinder wall, pump wear is minimized. The rod simply displaces its own volume regardless of fluid viscosity or abrasiveness of the compound.

The pump cylinder fills and dispenses from a single port. The Fluidic's patented 4-way cross-over valve (XV2) redirects fill and dispense port orientations during pump reciprocations.

This design eliminates check valves that affect metering accuracy when they malfunction.

The XV2 allows pressure balancing (inlet/outlet pressures) of the double acting LDP resulting in pulse-less continuous metered flow during pump reciprocations.



Platforms

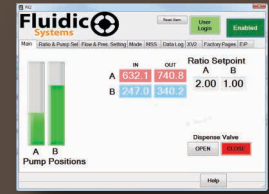


Dispense System Spray System	PK1D PK1S	PK2D PK2S	PK3D PK3S	Customs
Description	2 comp	2 comp	3 comp	4+ comp
Type	Fixed ratio (pbv)	Variable ratio	Variable ratio	Variable ratio
Range	1:1 2:1 4:1 10:1	1:1 to 100:1	1:1 to 100:1	1:1 to 100:1
HMI	4" Touch controller	6" Monochrome 10" Windows based Color	6" Monochrome 10" Windows based Color	6" Monochrome 10" Windows based Color

Accessories

Pressure Pots
Transfer Pumps
Dispense Valves
Material Supply Sensors (MSS)

Statistical Process Reporting (SPR)
Robotic Integrations
Class I, Div I, Group D Controls



Case Studies



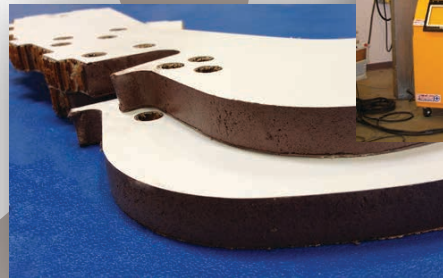
Application: Spray Aircraft Parts
Material: PPG Aircraft Top Coat
Requirement: No flowmeters / 3 component
Solution: 3 component system Fluidic PK3S-EX



Application: HUMVEE
Material: CARC and Epoxy Primer
Requirement: Eliminate flow meters
Solution: Fluidic PK2S



Application: Robotic Spray Adhesive for Automotive Dashboards
Material: HB Fuller 063-05A
Requirement: Continuous flow and accurate mix ratio of 18.18:1 pbw
Solution: Fluidic PK2S-R



Application: Epoxy Syntactic for honeycomb edge fill (aircraft interiors)
Material: EC-3500 series 3M Low Density Void Filling Compounds
Requirement: Continuous flow / Maintain low density integrity of Compound
Solution: Fluidic PK2D

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