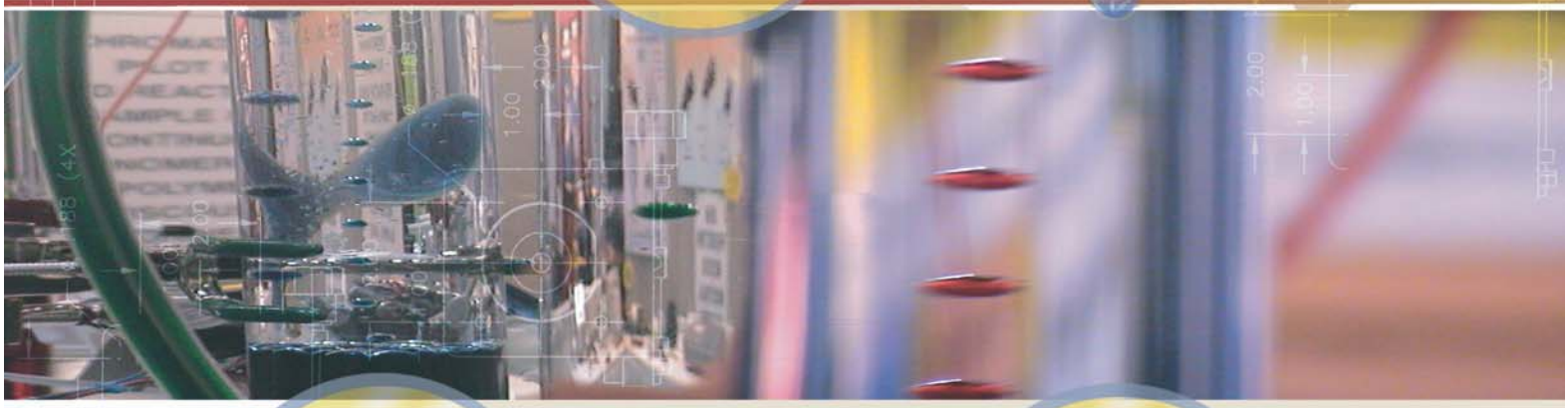
FLUID METERING, INC.

DISPENSERS & METERING PUMPS

.OEM .PROCESS .PRODUCTION

ISO9001:2000



OEM

800-223-3388 / www.fmipump.com

Catalog

OEM

Ultra-Precise Fluid Control

from Microliters to Liters

Patented “No-Valves” Design

Eliminates problems caused by valves which clog, leak, hang up, and require service.

One Moving Part !

CeramPump® design utilizes a single dimensionally stable, chemically inert CERAMIC piston ensuring long term, drift free fluid control.

Proven Performance !

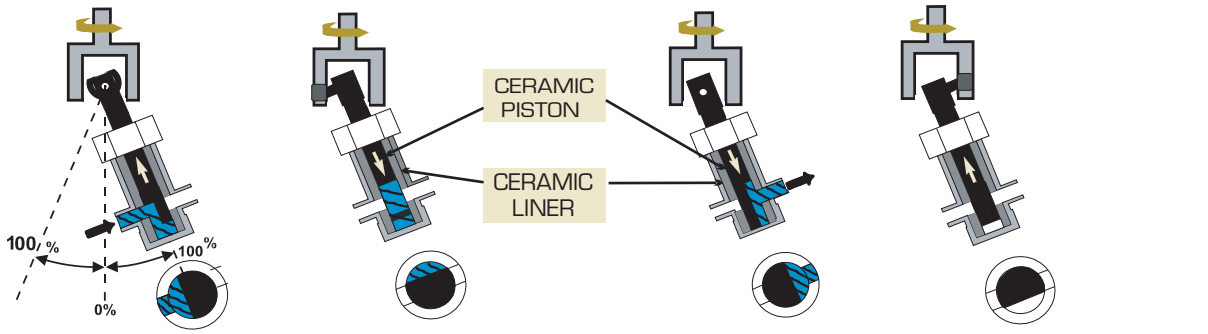
Over 40 years OEM experience and more than 250,000 OEM pumps in service.

Accuracy, Precision, & Reliability

Measured in millions of “trouble free” cycles.

OPERATION

The valveless pumping function is accomplished by the synchronous rotation and reciprocation of the ceramic piston in the precisely mated ceramic cylinder liner. One complete piston revolution is required for each suction /discharge cycle as shown. The piston always bottoms for maximum fluid and bubble clearing.



SUCTION STROKE

The piston rotates and reciprocates. As the piston is pulled back and the piston flat opens to the inlet port, suction is created and fluid fills the pump chamber. As the piston reaches the highest point in the reciprocation cycle, the pump chamber is now at its maximum volume capacity. Continuing the rotation, the inlet port is then sealed

CROSSOVER POINT

and crossover occurs. As the inlet port is sealed and the pump chamber is full, the outlet port opens up. ***Only one port is open at any time and at no time are both ports interconnected.***

DISCHARGE STROKE

Continuing the rotation and reciprocation, the piston is forced down and the piston flat opens to the outlet port. Discharge is created and fluid is pumped out. The piston bottoms for maximum fluid and bubble clearing. Continuing the rotation, the outlet port is then sealed

CROSSOVER POINT

and crossover occurs. As the outlet port is sealed and the pump chamber is empty, the inlet port opens to start another suction stroke. ***Only one port is open at any time and at no time are both ports interconnected.***

The Answers...

...to All of Your Dispensing & Metering Needs

- **Fixed or Variable**
- **Simple or Complex**
- **Production or Process**
- **Industrial or Laboratory**
- **Medical or Scientific**
- **Instrumentation or Monitors**

TYPICAL APPLICATIONS

MEDICAL
For precise dispensing, aspirating, rinsing, mixing systems and syringe pump replacement in diagnostic, clinical chemistry and medical equipment manufacturing.

SPRAYING SYSTEMS
For injection of insecticides, herbicides, and agricultural nutrients, as well as for ULV spray equipment.

ENVIRONMENTAL & POLLUTION CONTROL
For sampling stack gases, ground water & waste water, as well as injection of monomers, polymers, and chemicals for water & waste treatment, TCLP and more.

BATTERY MANUFACTURING
For dispensing of electrolytes and slurries for batteries. Also for lubrication to fine blanking machines.

INSTRUMENTATION
For all kinds of precision instruments and monitors including titrators, TOC, SO_2 monitors, chromatographic systems & humidity control.

DISPENSING SYSTEMS
For dispensing of solvents, UV adhesives, lubricants, reagents, mercury in the manufacture of electronics, pharmaceutical, medical disposables, computers, and calibration equipment.

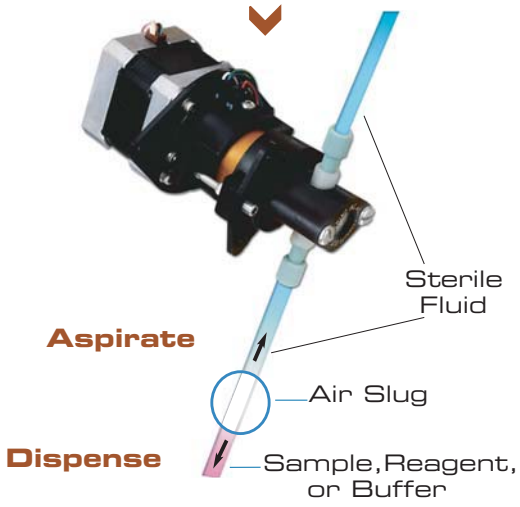
FOOD & DAIRY
For candy coating and polishing, as well as, vitamin fortification, addition of flavors, colors and other various ingredients in food products.

FMI FLUID METERING, INC. 5 Aerial Way, Suite 500, Syosset NY 11791

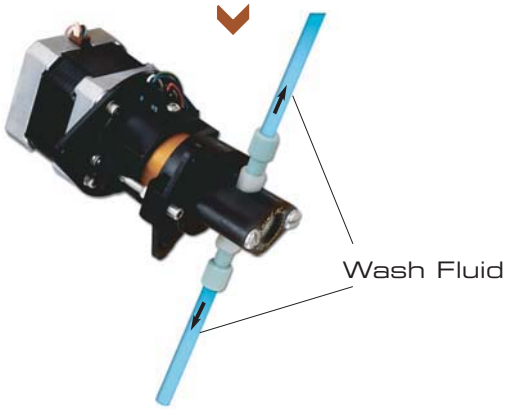
One Dispenser / Pump...

...for All OEM Applications

Valveless Syringing
Aspirate & Dispense



Fast Prime
Flush & Wash

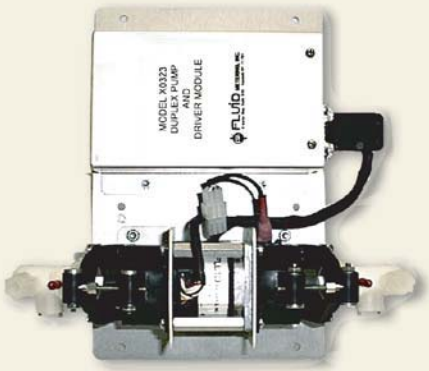


Continuous
Dispensing

Continuous
Metering

Special Applications

Proven performance, service, and reliability enable us to fulfill your special fluid handling requirements. If you do not see a specific product in this literature to meet your application requirements or would like to discuss how we can assist you, please contact us. We always welcome new application challenges.



Toll free: 800-223-3388 Tel: 516-922-6050 Fax: 516-624-8261

OEM Dispensers & Pumps

"Set It & Forget It" Calibration

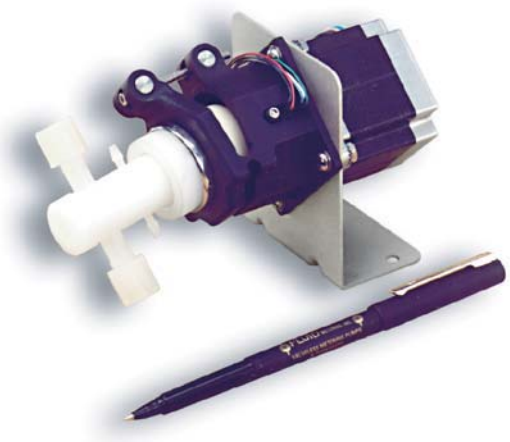
- Displacement of 0 to 1280 microlitres (1.28ml) per revolution
- 1.8 º stepper motors with opto sensors
- 6 standard models and custom models
- Affordable quality

"Q" High Flow

COMPLETE PUMP ASSEMBLY	MAX DISPENSE RANGE ml / Revolution
STQ1CKC	0 - .32 ml
STQ2CKC	0 - .72 ml
STQ3CKC	0 - 1.28 ml

"H" Low Flow

COMPLETE PUMP ASSEMBLY	MAX DISPENSE RANGE µl / Revolution
STH00CKCLF	0 - 25 µl
STH0CKCLF	0 - 50 µl
STH1CKCLF	0 -100 µl



Dimensions (approx.):
6 1/2" x 3 5/3" x 3 1/4" wide
166.5 x 91.4 x 82.6 mm
Weight : 3 lb (1.35 kg)

Dimensions (approx.):
4 5/8" x 3 1/8" x 2 1/8" wide
117 x 79 x 53 mm
Weight : 12 oz. (336 g)

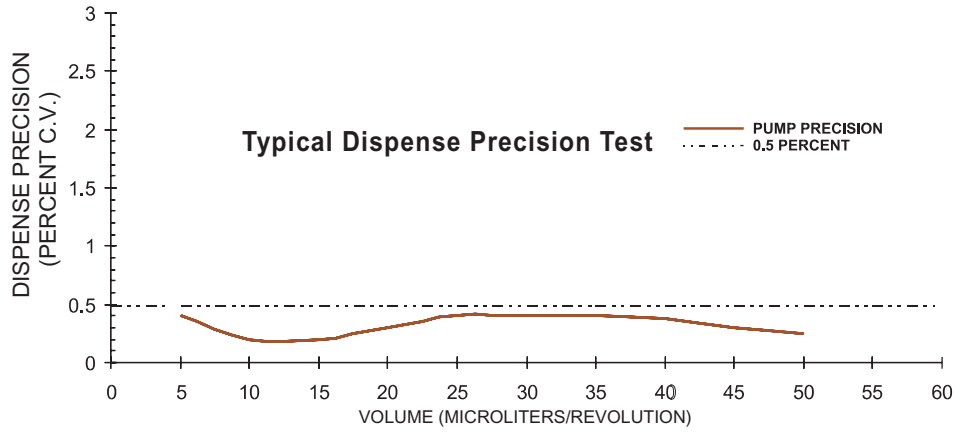
FMI Stepper Control Kit " SCST-01"

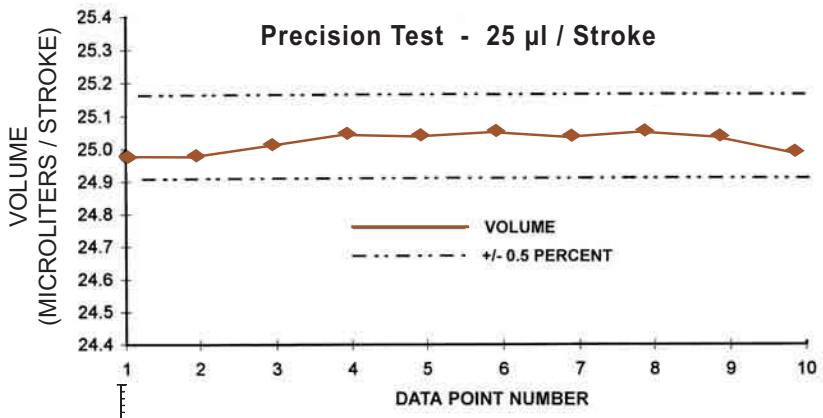
- Quick start control for FMI stepper pumps STH & STQ
- Stroke rate to 1000 spm maximum
- 7 dispense modes
- 0-5 VDC input control
- Automatic current reduction
- Stall detection and restart
- Easy hook-up
- Small size (board only 3 1/2" x 4 1/4" x 1 1/4" high)

www.fmipump.com Email: pumps@fmipump.com

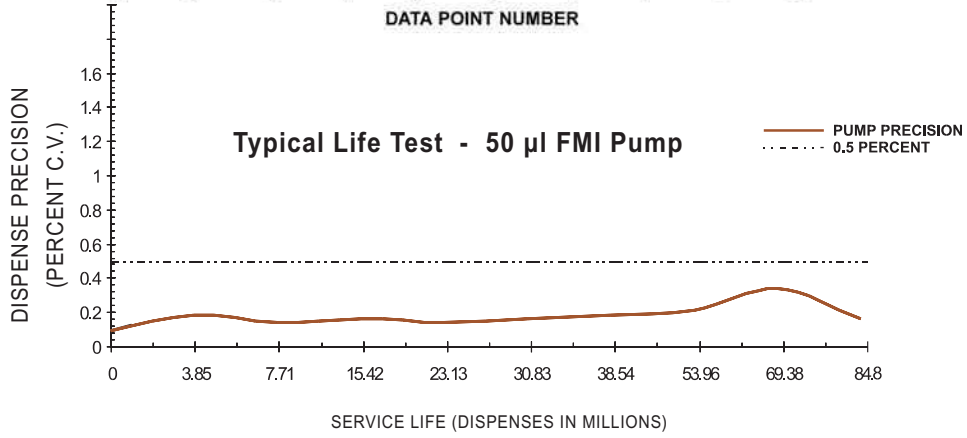
Accuracy, Precision, & Reliability...

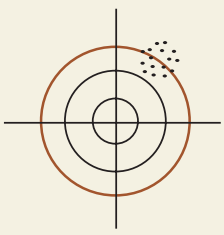
...Measured in Millions of Maintenance Free Cycles



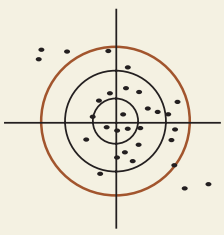


Point	Volume (ul)
1	24.98
2	24.97
3	25.02
4	25.07
5	25.06
6	25.08
7	25.06
8	25.08
9	25.06
10	24.99
Total:	250.37
Avg.:	**25.04**
Std. Dev.:	**0.04**
C.V.:	**0.17**

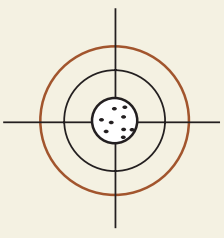




Precision
Repeatability and degree of variation of a set of values



Accuracy
How close the average value is to the true value



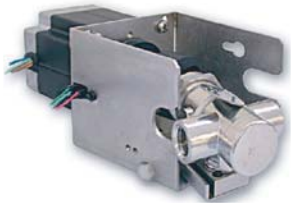
FMI Pumps
Accuracy: 1%
Precision: 0.5% (% C.V.)

Components to Solutions

The Answer to All of Your Fluid Control Needs

PUMP HEADS

Variable Displacement
For applications which require frequent changes in dispense volumes or flow rates, FMI's selection of adjustable pump heads includes precision micrometer adjustment for ultra-fine control, even while running.



Fixed Displacement
Many processes and OEM instrumentation applications benefit from FMI's "set it and forget it" pumps . Once calibrated, fixed displacement pumps will maintain a precision of better than 0.5% for millions of cycles.

Special Applications
Special pump head designs and materials are available to meet your unique application requirements for Food, Pharmaceutical, Biotech, Industrial, and Process applications.

DRIVES & CONTROLLERS

Fixed Speed Drives
Ideal for General Purpose Laboratory and Industrial Applications, FMI offers a full complement of fixed speed drives ranging from 6 rpm geared to 2300 rpm direct drive.

Variable Speed Drives
Provide extreme versatility for Industrial, Process, Mobile, and Environmental Monitoring applications.

Stepper Motor Drives
Provide superior performance for Medical, Analytical, Industrial and OEM Instrumentation.

Intelligent Stepper Controllers
Offer solutions from simple quick start stepper control to intelligent programmable control functions with infinite digital control capability for integration with PLCs.

Our Mission Statement . . .

100% Quality, 100% On-Time Delivery

. . . is supported by our valued OEM supplier awards.

2001 Supplier of the Year

Every year, our list of distinguished supplier awards grows. Shown here is our recent award from Abbott Diagnostics, world leader of medical diagnostic test systems.

ISO 9001:2000

Fluid Metering, Inc. is proud to announce certification of it's operations under ISO 9001:2000 criteria.

Test a Pump, NO CHARGE...

...and Experience Valveless Precision!

Please use the OEM Application Information form below to provide us with the details of your application. Fax this form to FMI for our immediate attention and recommendations.

OEM Application Information

Company Name: _____ Contact: _____
Address: _____
City: _____ **State/Province:** _____ **Postal Code:** _____
Telephone: _____ **Fax:** _____ **Email:** _____

Application Details:

Fluid Name: _____ ❑Dispense volume: _____ ❑ Flow Rate: ____ Accuracy: _____
Pressure: _____ Temperature: _____ Viscosity: _____ Air Sensitive:Y / N
Drive Information: ❑ Stepper ❑ DC ❑ AC ❑ Pedestal / Motorless Duty cycle: _____

Description: _____

Prototypes: Date Req'd: _____ Qty: _____
Production: Date Req'd:_____ 1st Year Qty.:_____ 2nd Year Qty.: _____

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