Fluid metering

ACCURACY & PRECISION IN OEM SOLUTIONS

Advancing Life Sciences With Breakthrough Technologies

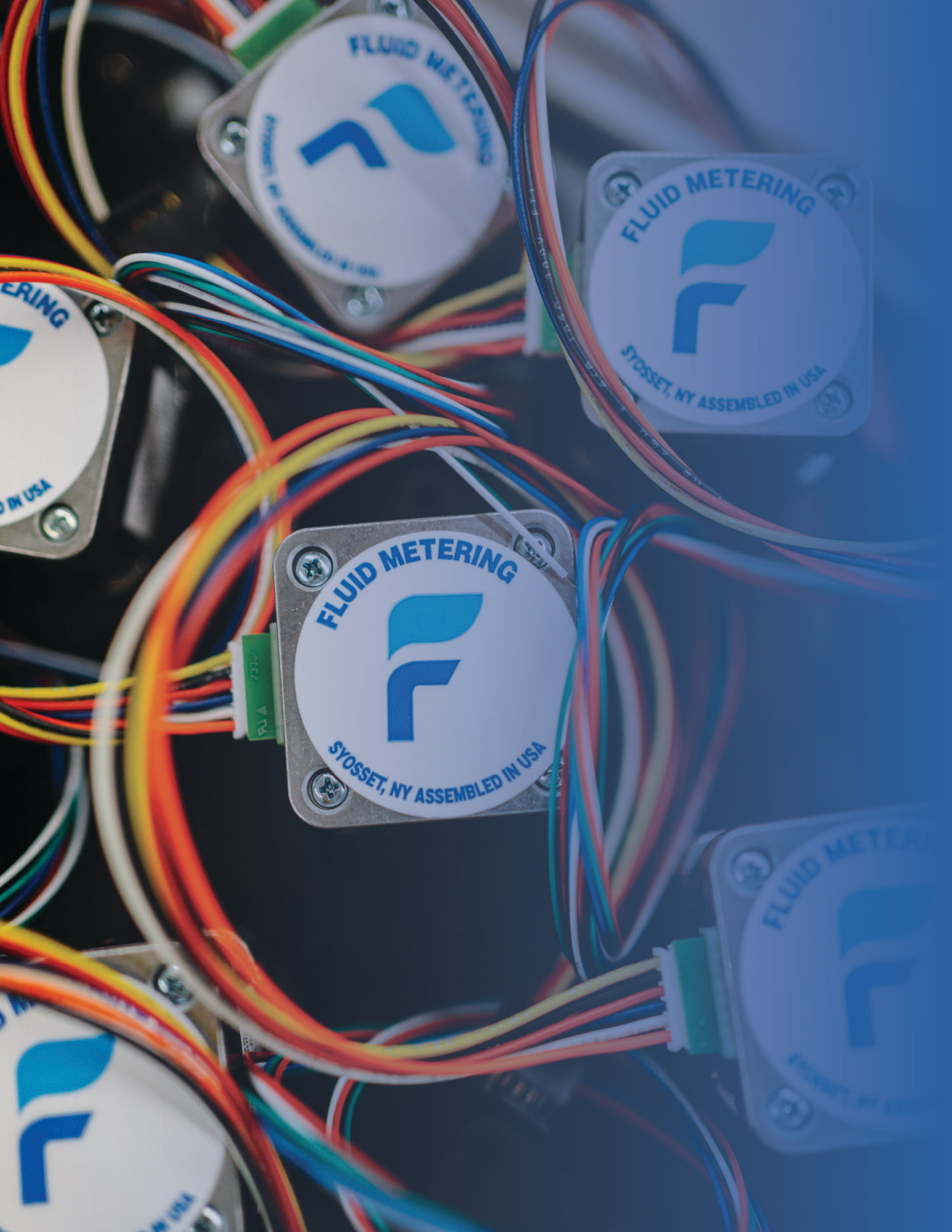

FLUID METERING
SYOSSET, NY ASSEMBLED IN USA

Table of Contents

About Fluid Metering 3-4

Engineer to Engineer Support 5

Rapid Prototyping 6

Sourcing & Shipment 7

Certifications 8

Design Solutions 9-11

General Notes 12

Applications 13-14

OEM Partnerships 15-16

- Product Development Kits 17-18
- OEM Pumps 19-26

Laboratory & Research Partnerships 27-28

- Size & Material Codes 29
- Pump Heads 30-33
- Lab Pumps 34-38

Accessories 39-41

Warranty, Orders & Shipping 42

Worldwide Distribution 43-44

Welcome to Fluid Metering!

Established in 1959, Fluid Metering is committed to making a global impact to improve outcomes for a healthy and sustainable world. We prioritize prompt service and support throughout the customer value chain to maximize efficiency and advance customer business performance.

Our Mission

To be the leader in breakthrough technologies providing go-to solutions for the world's most demanding fluidic challenges.

Our Vision

Through innovation, we unlock next generation fluidic applications that enables advancements for life science and industrial partners.

Our Values

- Collaborative Workplace
- Best in Class Products
- Customer Success

Innovating Fluid Dispensing Solutions for a Healthier Tomorrow

At Fluid Metering, we're passionate about building lasting relationships through comprehensive support and collaboration. Our proactive customer service team is dedicated to assisting you from initial inquiries to post-purchase support, ensuring every interaction adds value. Whether you need a standalone displacement pump or an integrated manifold fluidic assembly, our extensive product portfolio and personalized services have you covered.

Product Development

- **Multidisciplinary Expertise**: Our team includes seasoned professionals in mechanical, electrical, software, and production engineering.
- **Concept to Prototype**: We excel in transforming concepts into functional prototypes within 10 business days.
- **Proven Success**: We have a track record of successfully bringing innovative ideas to life, from initial design to final production.

Production

- **Meticulous Assembly**: Our assembly team meticulously follows written and pictorial step-by-step instructions to assemble all pumps ensuring consistent and accurate pump builds.
- **Efficient Production**: Streamlined production with lean manufacturing ensures continuous flow, enhancing efficiency and product value while minimizing waste and maintaining productivity.

Manufacturing

- **Advanced Facilities**: Our state of the art machine shop features advanced 3D printing, CNC mill, lathe, and routing capabilities.
- **Precision Manufacturing**: Diverse manufacturing processes to produce prototypes, fixtures and components with strict tolerances, ensuring exceptional performance.
- **Scalable Operations**: Our flexible manufacturing and dedicated calibration workstations, combined with deep technical expertise, enable us to scale up operations and get products to market faster.

Quality Control

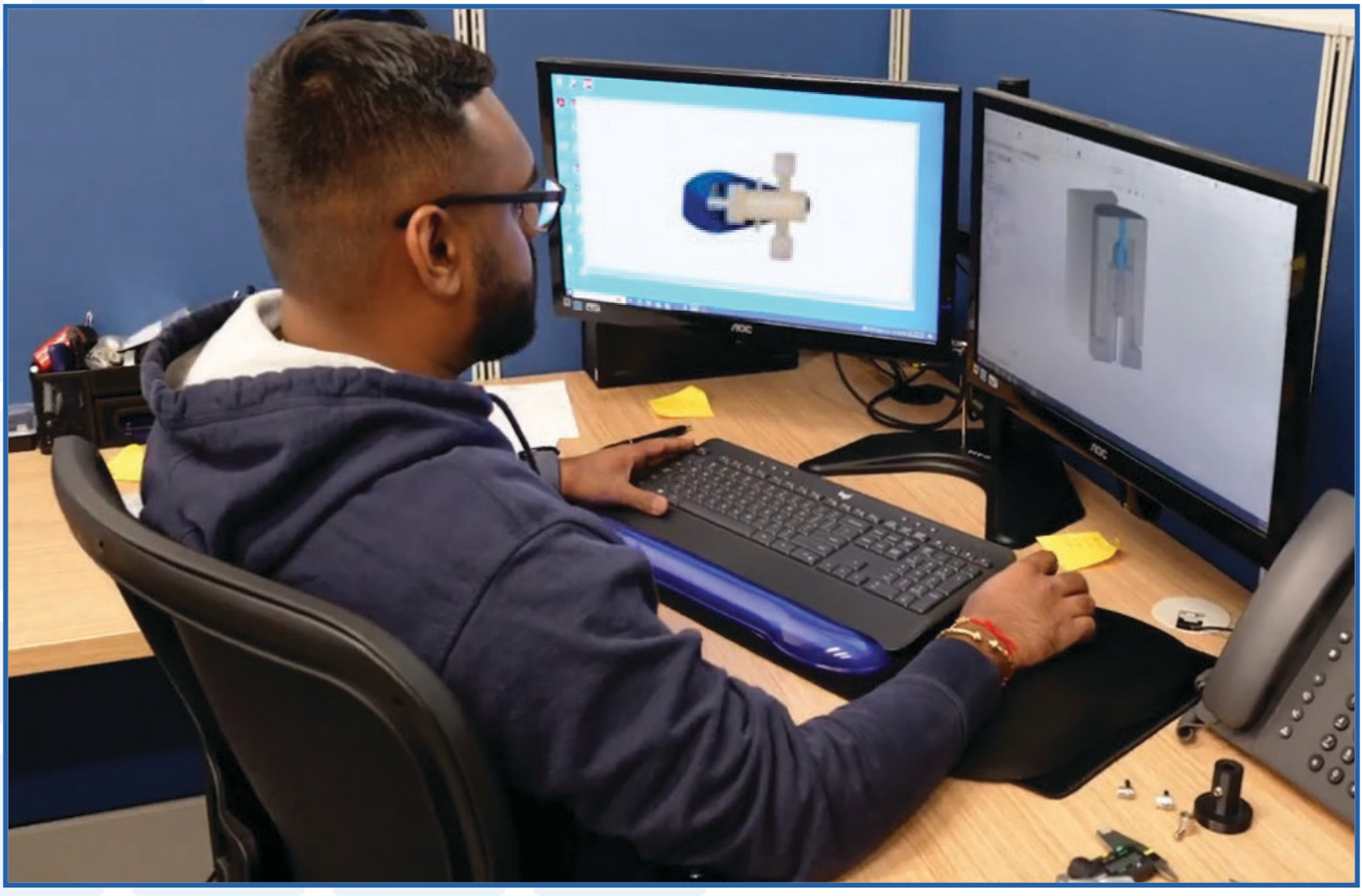
- **Rigorous Testing**: All major sub-components are verified prior to assembly by our skilled quality testing team.
- **Performance Evaluations**: We conduct thorough fluidic performance evaluations to ensure optimal functionality and reliability of our products.
- **Commitment to Quality**: As an ISO 9001:2015 certified facility, we ensure most products are RoHS and REACH compliant. We use certified food-grade and USP Class VI biocompatible materials for critical components, maintaining compliance with all applicable regulatory standards.

Engineer to Engineer Support

Transform your fluidic device vision through collaborative innovation with our expert team of engineers who will support you every step of the way. From the initial design phase and testing to final deployment, our engineers ensure that your current and future projects meet all requirements.

Our Expertise

- Material Selection for Fluid Compatibility
- State-of-the-Art Facility with Advanced Machinery
- Thorough Testing in Our Reliability Lab
- Accurate Analysis
- FREE Compatible Software
- Rapid Prototyping
- Quality Control Compliance
- Legal Certifications
- Project Timeline
- Long-Term Capacity Planning
- Product Development Kits



Design with Trust

Our team of experts instills the confidence you need to advance to the next phase of product development. From your initial design to the manufacturing of your final product, we've got you covered.

Customized Products

Harness the capabilities of your applications with our microfluidic pump customization services. Whether you're looking to enhance existing technology or embark on a new development project, we offer tailored solutions to meet your precise requirements. From dispense volume and flow rate to temperature, pressure, resolution, and materials, our expertise ensures your specific needs are met with precision and reliability. Empowered by cutting-edge technology and innovative ideas, we excel in delivering personalized solutions and proudly provide small-batch production. With unparalleled industry experience and knowledge, we are committed to guiding you every step of the way.*

*Our designs are very modular. In most customization cases, all needed components are already designed. However, if the customization requires newly designed components, lead times will be longer.

Rapid Prototyping

Unlock the potential of your ideas with our Rapid Prototyping Program. Quickly achieve a workable proof-of-concept with our comprehensive guidance on materials and production processes, ensuring the most effective fluid control solution. Every great product starts with a brilliant design, and whether you're deep into the design process or just beginning, our engineers' cross-functional expertise is here to elevate your design to its fullest potential. Let's bring your vision to life together!

Our Rapid Prototyping Program gets you the specific pump you need in *10 business days.

*Prototype requests are subject to availability of parts and materials. Fluid Metering will confirm availability within 2 business days and provide an estimated shipping date.

Lead Times

1-10 Units: 10 days
11-50 Units: 20 days
Over 50 Units: 30 days

*Lead times are subject to availability of parts and materials.

*For orders over 50 pieces, we recommend establishing a blanket order to shorten the lead time and ensure that we have enough parts to cover your demand.

From Source to Shipment

Our made-in-the-USA, dual-sourced supply chain reflects our commitment to quality, resilience, and customer satisfaction.

By manufacturing in Syosset, NY and sourcing parts domestically (as often as possible), Fluid Metering supports the local economy and enhances direct communication and collaboration with suppliers.

Each step of the way from research to production, we perform various in-process checks to guarantee the high caliber and performance of our products, ensuring they embody excellence and reliability.

We partner with suppliers who share our values of product integrity, quality support, environmental stewardship, and ethical practices to jointly plant the seeds of innovation and nurture the route to a healthier planet.

Certifications

We know how important quality standards are to our customers, especially OEMs in the life sciences industries. That's why we seek out the world's highest ranking certifications and carefully take the necessary steps to attain them.

Fluid Metering is proud to be an ISO 9001 certified company!
Determined by the International Organization for Standardization, ISO 9001 certification demonstrates our unwavering commitment to quality. It ensures we've established, are currently implementing, and are continuously improving our quality management system.

The following symbols can be found throughout this catalog next to the products with their corresponding certifications:

When a system contains a UL Listed stand-alone product which has been tested and evaluated for safety by Underwriter Laboratories, that system is UL Recognized. For example, if a motor contains a UL Listed power supply, the motor is UL Recognized in the United States of America and Canada.

The Conformité Européene (CE) mark signifies that a product has met the European Union's mandatory performance and safety requirements to be sold within the European Economic Area (EEA).

RoHS compliant electrical and electronic items have successfully met each of the European Union's regulations in the restriction of hazardous substances.

REACH regulations mandate the registration, evaluation, authorization, and restriction of chemicals within products that are imported, sold, or used in the European Union to conserve human health and protect the environment from chemical contamination.

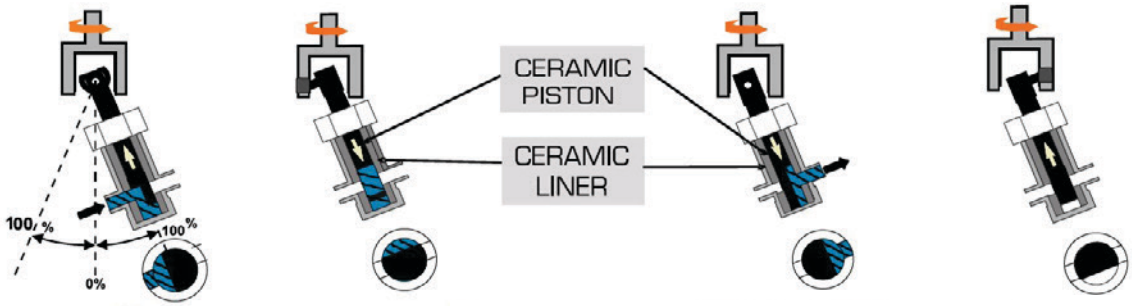
Innovative Designs

CeramPump® Valveless Technology

Our CeramPump® valveless technology simplifies fluidic architecture with one moving part in the fluid path. Its internal sapphire-hard ceramics are chemically inert, dimensionally stable, and abrasion resistant.

The valveless pumping function is accomplished by the synchronous rotation (spinning motion) and reciprocation (up and down movement) of the ceramic piston within its precisely mated ceramic cylinder liner. Each complete piston revolution results in the suction-discharge cycle as seen below (Fig. 1). The piston always bottoms for maximum fluid and bubble clearing.

Fig. 1



SUCTION STROKE

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.

CROSSOVER POINT

Continuing the rotation, the inlet port is then sealed and crossover occurs. As the inlet port is sealed and the pump chamber is full, the outlet port opens up.*

DISCHARGE STROKE

Continuing the reciprocation and rotation, 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.

CROSSOVER POINT

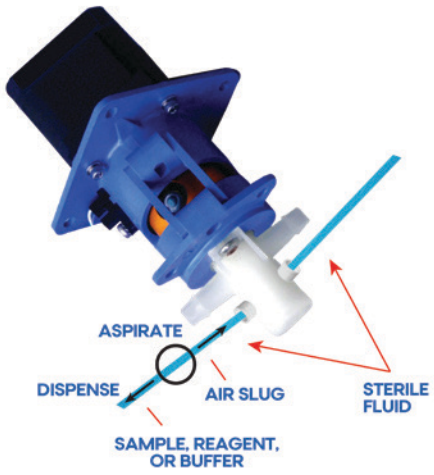
Continuing the rotation, the outlet port is then sealed and crossover occurs. As the outlet port is sealed and the pump chamber is empty, the inlet port opens to start another suction stroke.*

***Only one port is open at any time to ensure zero cross contamination.**
At no point are the inlet and outlet ports interconnected.

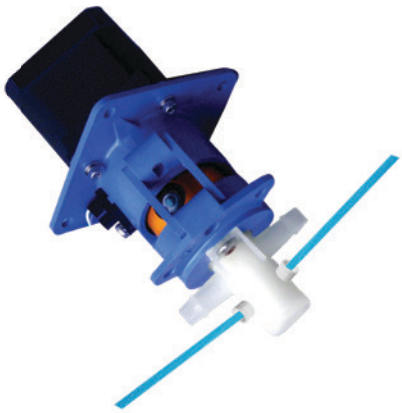
All-in-One Pump Solutions

All Fluid Metering pumps are capable of multiple functions including aspiration, precision dispensing, dosing, fluid transfer, continuous metering, and self-priming (flushing/washing).

VALVELESS SYRINGING
ASPIRATE & DISPENSE



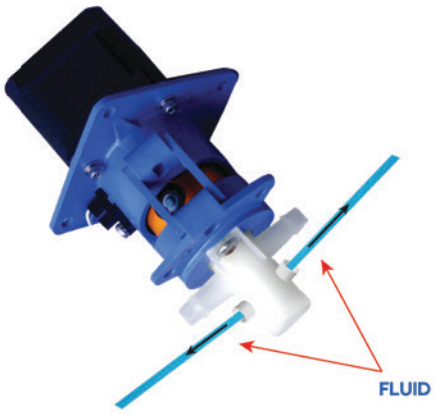
CONTINUOUS
DISPENSING



2 µL - 1,280 µL

Precision (CV) of 0.5% or better

CONTINUOUS
METERING

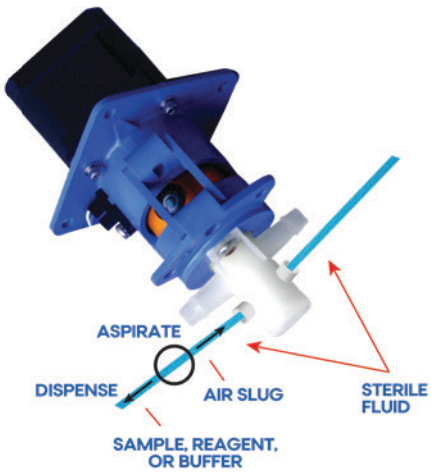


0 - 2,000 mL/min

FAST PRIME
FLUSH & WASH

0 - 2,000 mL/min

NON-CONTACT
DISPENSING



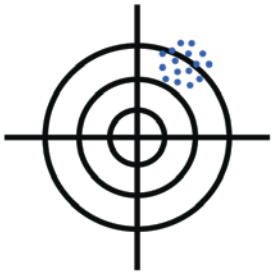
VARIABLE
DISPENSING

0.75 µL - 400 µL

Precision (CV) of 0.5% or better

Dynamic Flow Control

All Fluid Metering pumps maintain 0.5% precision and ±1% accuracy for millions of cycles without maintenance or recalibration, enabling increased throughput and reducing total cost of ownership compared to alternative technologies.

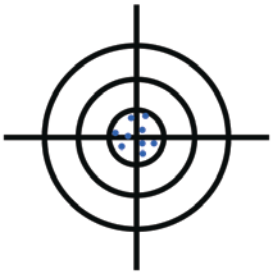


Precision

Repeatability and degree of a variation of a set of values

Accuracy

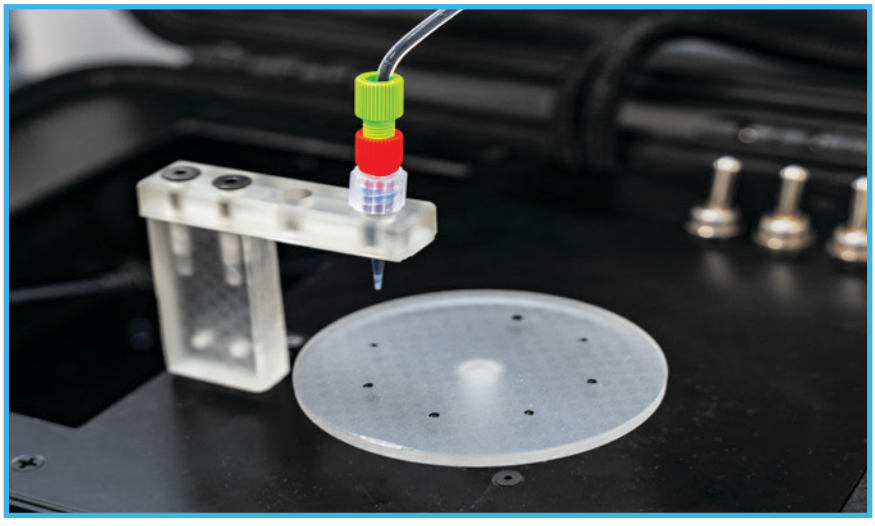
How close the average value is to the true value



Fluid Metering Pumps

Accuracy: ±1%
Precision: 0.5% (% C.V.)

Watch Precision & Accuracy In Action



Above: FENYX Variable Dispense pump dispensing 1µL drops with repeatable accuracy and precision.

Flow Flexibility

You can instantly reverse the direction of fluid flow while running the pump. This allows you to enhance fluid control, improve mixing, clear blockages or bubbles, reduce waste (recover unused reagents or samples), and perform a wider range of functions - all within the same system.

General Notes

- The performance of Fluid Metering pumps may vary based on specific application conditions and individual user setups. We recommend consulting with a qualified professional or our technical support team for assistance tailored to your specific needs.

- Physical characteristics of your pumped fluid may affect the rating/capacity relationships shown in the performance tables for each Fluid Metering pump.

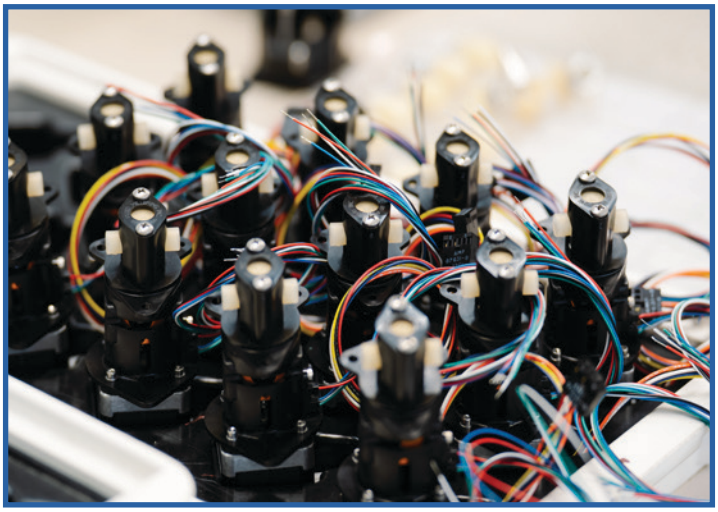
- The maximum flow rates shown in the tables are for H_2O at 2 psig.

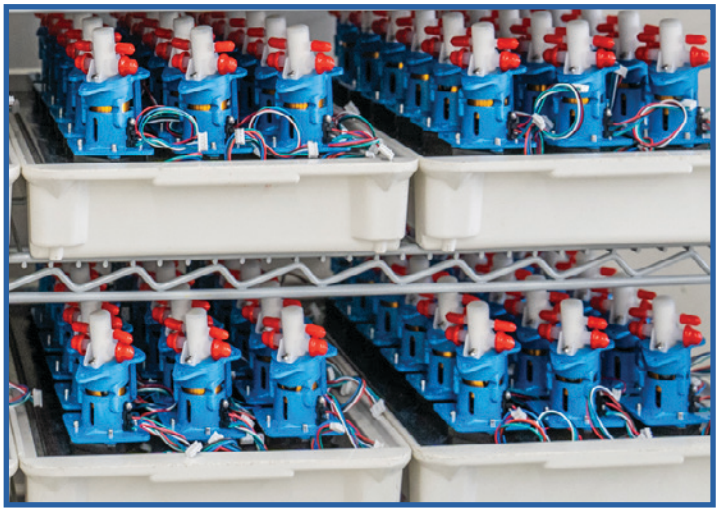
- Flow rates are infinitely variable from zero to maximum capacities shown.

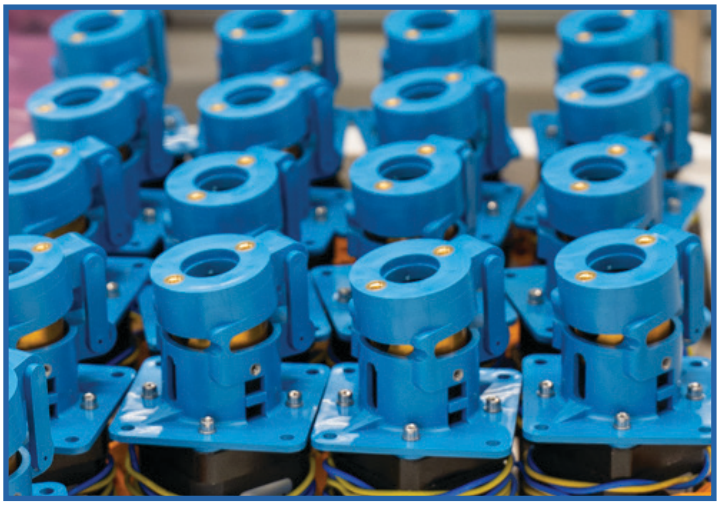
- Pumping capacities are reduced approximately 18% when the pump drive module is operating on a 50 Hz electrical supply.

- 3/8" I.D. tubing or greater is required for flows higher than 500 mL/min.

- 1/2" I.D. tubing or greater is required for flows higher than 1200 mL/min.

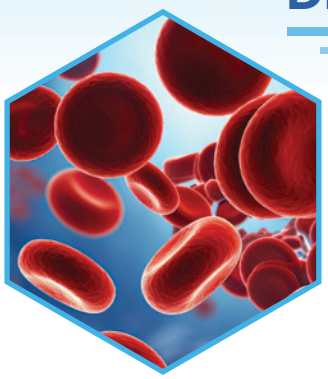






Applications

Diagnostics & IVD

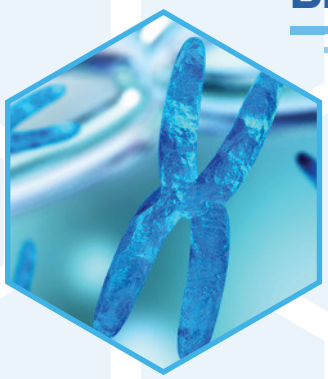


- Immunoassay Analyzers
- Clinical Chemistry Analyzers
- Hematology Analyzers
- Electrolyte Analyzers
- Urine Analyzers
- Microbiology Analyzers
- Flow Cytometry

Medical Devices

- Home Hemodialysis
- Clinical Hemodialysis
- Disinfection & Sterilizers

Biotechnology



- Sample Prep - Genomic Research
- Next-Generation Sequencing (NGS)
- Drug Dissolution
- Pharmaceutical Development

Analytical Instrumentation

- Mass Spectrometry
- Water Quality Analyzers
- Low Pressure Liquid Chromatography (LPLC)

Industrial

- Inkjet & 3-D Printing
- Cartridge Filling & E-Vapes
- Semiconductors
- Lubricant & Glue Dosing
- Cosmetic & Fragrance Generation
- Automotive & Aerospace
- Food & Beverage
- Monomer Dispensing
- Agriculture & Environmental
- Mosquito Abatement
- Packaging
- Die-Casting

Starting a New Application?

We're excited to collaborate with you to push the boundaries of what's possible. With a legacy of pioneering fluidic innovation, we've successfully completed thousands of projects, enriching our portfolio with groundbreaking applications. Our highly skilled technical experts have the knowledge and essential tools to help you develop ultra-precise fluid handling solutions, from microliters to nanoliters.

Upon request, we deliver detailed data reports for our OEM pumps, showcasing their reliability, accuracy, and precision.

Precision and Reliability in Every Report – Request Yours Today!

OEM Partnerships

At Fluid Metering, we take pride in our ability to identify and eliminate pain points, reduce downtime, and maximize throughput for our clients. Our newly renovated manufacturing facility is equipped with an advanced operations structure and state-of-the-art reliability lab to ensure we meet the stringent testing and quality assurance requirements of OEM customers worldwide.

Trusted Advisors

With our expertise and resources, we help OEMs navigate the complexities of their markets, providing cutting-edge fluid handling technology, customized tailored solutions, and unwavering lifetime support. Our commitment to innovation and quality ensures that OEMs can confidently pursue their goals, knowing they have a reliable partner dedicated to their success.

for OEM Collaborations

Product Development Kits

Whether you are engaged in microfluidic research, developing new products, or advancing instrumentation platforms, our 90-day complimentary product development kits are designed to meet your immediate needs. These complete kits include our state-of-the-art OEM technologies, allowing you to innovate rapidly and transform your ideas into reality with unmatched efficiency. Get started today and experience the difference!

Apply Now

Each Fluid Metering OEM pump and Product Development Kit offers the highly customizable **FMI Configuration Tool**. This gives users full control at their fingertips, enabling them to tailor the pump to their specific needs, as well as enhancing its versatility and functionality.

We're constantly working to improve our software capabilities to provide customers with the best user experience possible and allow access to the most up-to-date advancements.

Download Now

FENYX™ Variable Dispense Development Kit

Components

(1) Carry Case
(1) FENYX Variable Dispense Pump
(1) Controller Box
(1) Power Supply + Line Cord
(1) Luer Adapter
(2) RS232 to USB Connection Cable
(2) Motor Extension Cable
(2) Sensor Extension Cable
(2) Dispense Tips (1 blue, 1 red smooth flow tapered tip)
(2) Tubing (FEP, 1/16" ID x 1/8" OD)
(4) Tubing Ferrule (Yellow)
(4) Tubing Ferrule Nut (Green)

Case Contents

TRYTON™ Pulseless Nanoliter Development Kit

Components

(1) Carry Case
(1) TRYTON Pulseless Nanoliter Pump
(1) Controller Box
(1) Power Supply + Line Cord
(1) RS232 to USB Connection Cable
(1) Motor Extension Cable
(1) Sensor Extension Cable
(1) 1-to-4-way Power Splitter Cable
(1) Luer Adapter
(2) Tubing (FEP, 1/16" ID x 1/8" OD)
(2) Dispense Tips (1 blue, 1 red smooth flow tapered tip)
(2) Solenoid Valve
(2) Power Switch
(2) Female Barrel Jack to Splitter Cable
(8) Tubing Ferrule (Yellow)
(8) Tubing Ferrule Nut (Green)

Case Contents

FENYX™ Variable Dispense

Revolutionary Precision & Reliability

The FENYX Variable Dispense Pump features the patented CeramPump® design, utilizing a single, dimensionally stable, and chemically inert ceramic “valveless” piston liner set for precise fluid control. The valveless pumping principle significantly extends the lifecycle for millions of cycles with no maintenance or recalibration compared to current market technology.

Compact & Versatile Design

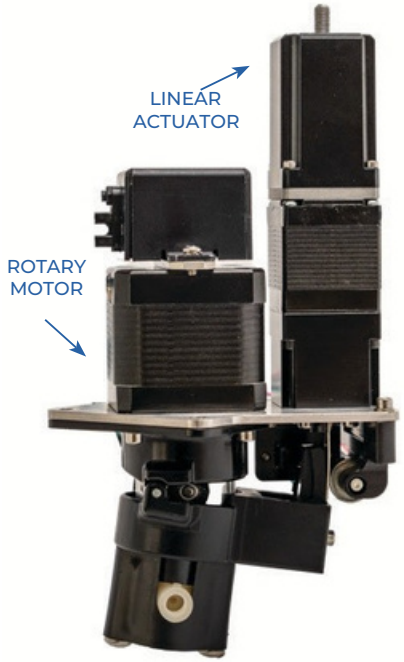
Boasting a cutting-edge, compact design, the FENYX Variable Dispense Pump seamlessly combines priming, washing, and precise dispensing into one advanced unit. Its automated angle adjustment allows the pump head to replicate the functionality of a syringe pump, efficiently moving fluid through the same port. This groundbreaking system can perform the tasks of multiple pumps, revolutionizing fluid control technology and setting new industry standards!

Unmatched Performance

With its low-profile design and multifunctional capabilities, the FENYX Variable Dispense Pump addresses some of the most challenging fluidic requirements. This innovative system can perform the tasks of several pumps making it an all-in-one solution. This eliminates costly downtime, while improving performance, making it an invaluable asset across various markets.

Ideal Applications

- Medical devices
- Biotechnology
- Diagnostics
- Analytical devices



Patented

Side View Top View

See This Pump in Action

Apply for Product Development Kit

Pump Specifications

WETTED MATERIAL OPTIONS:

Ceramics: Alumina, Zirconia
Pump Housing: PVDF, ETFE, Polypropylene
Seals: PTFE, FKM, FFKM, Rulon AR, UHMW-PE

PORT OPTIONS:

1/4-28 UNF Threaded Ports,
Barb Fittings (1/8" - 1/4" Tubing ID),
1/4" Compression Nuts

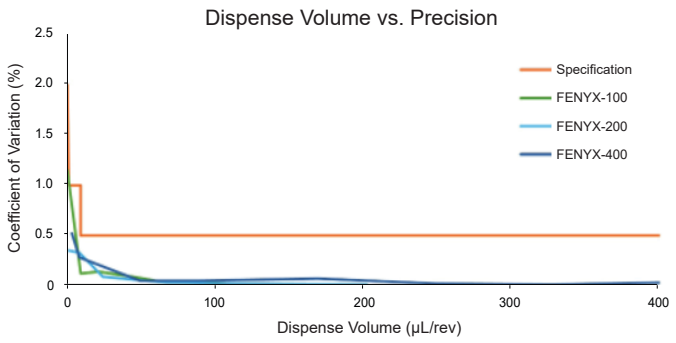
DISPENSE VOLUME:

For 2 - 10µL	For >10 - 200µL
Accuracy of ± 5% Precision (CV) ≤ 1%	Accuracy of ± 1% Precision (CV) ≤ 0.5%

DIMENSIONS:

3.8" Wide x 7.1" Tall

	Dispense Volume (µL/rev)		Flow Rate (mL/min)	
FENYX	min	max	1 rpm	1000 rpm
FENYX-100	0.75	110	0.00075	110
FENYX-200	2	200	0.002	200
FENYX-400	4	400	0.004	400



- Maximum standard operating pressure: 30 psig

Drive Motor Specifications

RATED CURRENT:

Rotational: 2.0A
Linear: 1.0A

STEP ANGLE:

Rotational & Linear: 1.8° Full Step

MOTOR DIRECTION:

Rotational: Clockwise
Linear: Clockwise & Counterclockwise

MOTOR FRAME:

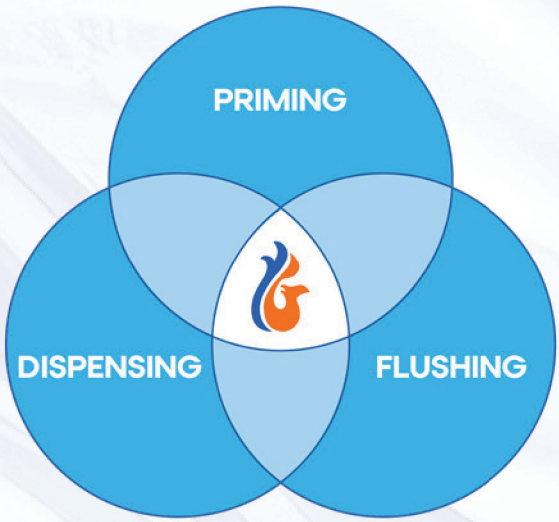
Rotational: NEMA 17 (43mm)
Linear: NEMA 11 (28mm)

MOTOR SPEED:

Rotational: Up to 1000 rpm
Linear: Up to 1900 rpm

OPERATING TEMPERATURE:

0°C to 50°C



Customizations

Be it a small tweak to existing technology or a full development project, our pumps and dispensers can be customized to accommodate dispense volume, flow rate, temperature, pressure, materials, and more.

Regulatory Compliance

TRYTON™ Pulseless Nanoliter

Superior Performance, Stability, & Responsiveness

The TRYTON Pulseless Nanoliter Pump seamlessly integrates advanced technology and engineering, offering a linearly driven ceramic piston pump that delivers less than 1 microliter with remarkable precision and accuracy. It's intuitive design and advanced innovation address some of today's most challenging microfluidic applications.

Patented

Technology & Engineering Come Together

A vastly optimized driving mechanism means the TRYTON Pulseless Nanoliter Pump has only three moving components. Plus, the CeramPump® technology ensures a longer lifetime and superior chemical inertness in comparison to anything in the marketplace today. An advanced feedback system, equipped with a rotary encoder that provides over 4,000 pulses per revolution, delivers accurate positional feedback with ultra-fine 0.02° resolution. In addition, it has a high-precision, fine pitch lead screw and dispense resolution of 0.031µL per full step. All of this with a more efficient and robust design for easy setup and no maintenance.

Meeting Growing Demands

The TRYTON Pulseless Nanoliter Pump offers unmatched precision and accuracy with ZERO mechanical backlash, eliminating the need for software compensations. This innovative pump simplifies fluidic architecture, enhances instrument reliability, and increases throughput, making it an ideal solution to accelerate product development.

Side View Back View

Ideal Applications

- Medical devices
- Biotechnology
- Diagnostics
- Analytical devices

See This Pump in Action

Apply for Product Development Kit

Pump Specifications

WETTED MATERIALS:

Piston: Zirconia
Pump Housing: PVDF
Seals: UHMW-PE, FKM

PORT OPTIONS:

1/4-28 UNF Threaded Ports

DISPENSE VOLUME:

For 3µL	For 150µL
Accuracy of ± 2%	Accuracy of ± 0.1%
Precision (CV) ≤ ± 1%	Precision (CV) < 0.1%

TYPICAL ACCURACY:

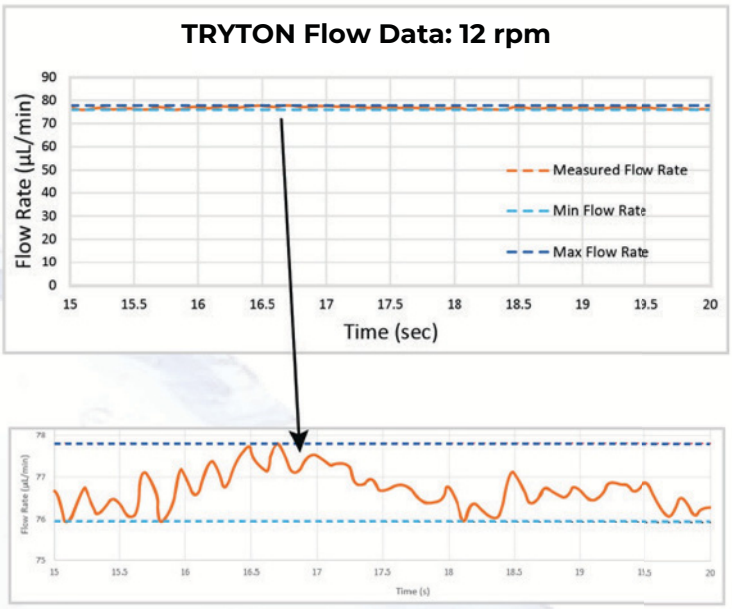
1µL < ± 2%

DISPENSE RESOLUTION

0.031µL/Full Step

PRESSURE RATING

100 psi (6.89 bar)



FLOW RATE:

Minimum: 0.105µL/sec @ 1 rpm
Maximum: 125.6µL/sec @ 1200 rpm

DIMENSIONS:

2.30” Wide x 1.66” Deep x 6.44” Tall

Drive Motor Specifications

RATED CURRENT:

1.5A

STEP ANGLE:

1.8° Full Step

MOTOR DIRECTION:

Aspirate: Clockwise
Dispense: Counterclockwise

MOTOR FRAME:

Linear: NEMA 17 (43mm)

MOTOR SPEED:

Up to 1200 rpm

OPERATING TEMPERATURE:

-20°C to 50°C

Customizations

Be it a small tweak to existing technology or a full development project, our pumps and dispensers can be customized to accommodate dispense volume, flow rate, temperature, pressure, materials, and more.

Regulatory Compliance

STF Positive Displacement Adjustable Dispensing

Versatile Pump Solution

The STF Positive Displacement Adjustable Dispensing Pump is offered in drive configurations from 5 µL to 400 µL in 1 µL increments. Each drive model when paired with a Fluid Metering pump head, guarantees optimal dispense volume/flow rate and full chemical compatibility. Standard pump head options are available with various sealing options and diameters to suit specific requirements.

Pump Specifications

WETTED MATERIAL OPTIONS:

Ceramics: Alumina, Zirconia
Pump Housing: PVDF, ETFE, Polypropylene
Seals: PTFE, FKM, FFKM, Rulon AR, UHMW-PE

PORT OPTIONS:

1/4-28 UNF Threaded Ports,
Barb Fittings (1/8" - 1/4" Tubing ID),
1/4" Compression Nuts

DISPENSE VOLUME:

For 5 - 10µL	For >10 - 400µL
Accuracy of ± 5% Precision (CV) ≤ 1%	Accuracy of ± 1% Precision (CV) ≤ 0.5%

DIMENSIONS:

3.0" Wide x 4.7" Tall

	Dispense Volume (µL/rev)		Flow Rate (mL/min)	
STF	min	max	1 rpm	1000 rpm
STFSM	5	40	0.005	40
STF1	25	200	0.025	200
STF2	28	225	0.028	225
STF3	31	250	0.031	250
STF4	34	275	0.034	275
STF5	38	300	0.038	300
STF6	41	325	0.041	325
STF7	44	350	0.044	350
STF8	47	375	0.047	375
STF9	50	400	0.05	400

- Accuracy is a percentage of the target dispense volume
- Maximum standard operating pressure at 100 psig
- Fixed Link pumps are calibrated in-house to a set volume
- Flow rate can be changed by adjusting motor speed

Drive Motor Specifications

RATED CURRENT:

Rotational: 2.0A

STEP ANGLE:

Rotational: 1.8° Full Step

MOTOR DIRECTION:

Rotational: Bidirectional,
Calibrated Clockwise

MOTOR FRAME:

Rotational: NEMA 17 (43mm)

MOTOR SPEED:

Rotational: Up to 1000 rpm

OPERATING TEMPERATURE:

0°C to 50°C

Customizations

Be it a small tweak to existing technology or a full development project, our pumps and dispensers can be customized to accommodate dispense volume, flow rate, temperature, pressure, materials, and more.

Regulatory Compliance

STFQ Micro Volume Adjustable Displacement Dispenser

Revolutionize Your Fluid Management

Unleash the power of the STFQ Micro Volume Adjustable Displacement Dispenser Pump, featuring a patented eccentric bushing adjustment and fixed link technology. This cutting-edge system allows for effortless adjustments at the point of installation, giving users unparalleled control.

Precision In Every Drop

The STFQ Micro Volume Adjustable Displacement Dispenser Pump innovative design offers customizable port types, orientations, materials, and motors. With dispense volumes ranging from 250 µL to 1.25 mL in 1 µL increments, this pump can be tailored to exact specifications, ensuring top-notch performance and reliability every time.

Pump Specifications

WETTED MATERIAL OPTIONS:

Ceramics: Alumina
Pump Housing: PVDF, ETFE, Polypropylene
Seals: PTFE, FKM, FFKM, Rulon AR, UHMW-PE

PORT OPTIONS:

1/4-28 UNF Threaded Ports,
Barb Fittings (1/8" - 1/4" Tubing ID),
1/4" Compression Nuts

DISPENSE VOLUME:

For 250 - 1250µL

Accuracy of ± 1%
Precision (CV) ≤ 0.5%

DIMENSIONS:

3.0" Wide x 6.5" Tall

	Dispense Volume (µL/rev)		Flow Rate (mL/min)		Accuracy, Precision
STFQ	min	max	1 rpm	1000 rpm	(%,%)
STFQ-1000	250	1000	0.25	1000	1%, ≤ 0.5%
STFQ-1080	270	1080	0.27	1080	
STFQ-1250	313	1250	0.313	1250	

- Maximum standard operating pressure at 60 psig

Drive Motor Specifications

RATED CURRENT:

Rotational: 2.3A

STEP ANGLE:

Rotational: 1.8° Full Step

MOTOR DIRECTION:

Rotational: Bidirectional,
Calibrated Clockwise

MOTOR FRAME:

Rotational: NEMA 23 (57mm)

MOTOR SPEED:

Rotational: 1-1000 rpm

OPERATING TEMPERATURE:

0°C to 50°C

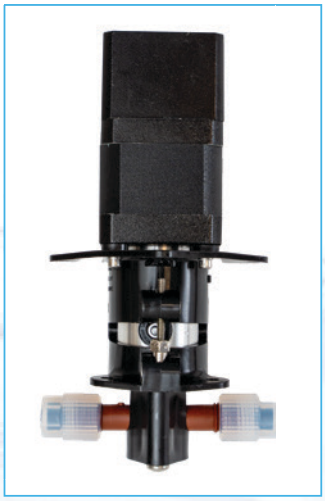
Customizations

Be it a small tweak to existing technology or a full development project, our pumps and dispensers can be customized to accommodate dispense volume, flow rate, temperature, pressure, materials, and more.

Regulatory Compliance

Metering Pump

Precision Perfected, Durability Guaranteed



Meet Fluid Metering's groundbreaking valveless metering pump, the ultimate solution for optimal bulk fluid transfer with unmatched accuracy. This versatile pump handles a wide range of flow rates and fluid types, including highly viscous solutions. With CeramPump® technology and its unique rotating ceramic piston, say goodbye to common valve issues and hello to seamless operation even with waste solids.

Engineered for Excellence, Built to Last

Designed to withstand the challenges posed by waste solids that typically compromise valves, this pump maintains 0.5% precision for millions of cycles without maintenance or recalibration. Its compact design integrates easily into systems requiring a 24V DC power supply, offering exceptional durability and robustness. Equipped with a BLDC motor, it's ideal for set flow rates with longer operating times, making it perfect for metering. For dispensing tasks, stepper motors are your go-to choice.

Pump Specifications

WETTED MATERIAL OPTIONS:

Ceramics: Alumina, Zirconia
Pump Housing: PVDF, ETFE, Polypropylene
Seals: PTFE, FKM, FFKM, Rulon AR, UHMW-PE

PORT OPTIONS:

1/4-28 UNF Threaded Ports,
Barb Fittings (1/8" - 1/4" Tubing ID),
1/4" Compression Nuts

CALIBRATED FLOW RATE:

Pump can be calibrated 20-400mL/min ± 5%

DIMENSIONS:

3.0" Wide x 5.75" Tall

Customizations

Be it a small tweak to existing technology or a full development project, our pumps and dispensers can be customized to accommodate dispense volume, flow rate, temperature, pressure, materials, and more.

Regulatory Compliance

Motor Specifications

Fixed Speed Motors

MOTOR SPEED: 2000 rpm

VOLTAGE: 24V

RATED CURRENT: 0.88A / 2.0A

MOTOR DIRECTION: Bidirectional, Calibrated Clockwise

STALL TORQUE: 0.2 Nm

OPERATING TEMPERATURE: 20°C to 60°C

Variable Speed Motors

SPEED CONTROL: Potentiometer/voltage

SPEED RANGE: 0 - 1700 rpm

VOLTAGE: 24V

RATED CURRENT: 0.88A / 2.0A

MOTOR DIRECTION: Bidirectional, Calibrated Clockwise

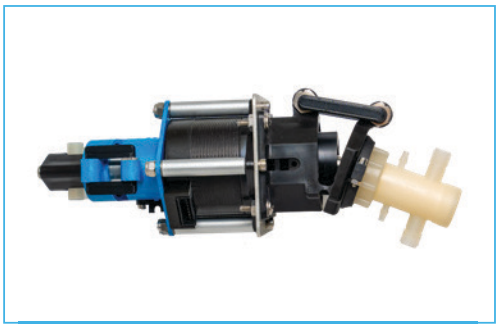
STALL TORQUE: 0.2 Nm

OPERATING TEMPERATURE: 20°C to 60°C

Duplex Pump

Double the Efficiency, Twice the Precision

The Duplex Metering Pump features two Fluid Metering valveless pump heads coupled to a single variable stepper motor drive, offering flexibility with independently adjustable displacements. It supports dispensing ratios from 1:1 to 1:100, covering everything from microliters to liters. Commonly used for a 9:1 mixing ratio, it excels in other ratio mixing and simultaneous dual-process operations.



Pump Specifications

WETTED MATERIAL OPTIONS:

Ceramics: Alumina, Zirconia
Pump Housing: PVDF, ETFE, Polypropylene
Seals: PTFE, FKM, FFKM, Rulon AR, UHMW-PE

PORT OPTIONS:

1/4-28 UNF Threaded Ports,
Barb Fittings (1/8" - 1/4" Tubing ID),
1/4" Compression Nuts,
1/2" Striaght Tube Adapter

DIMENSIONS:

Varies based on pump head selections

Motor Specifications

MOTOR TYPE: 23" Frame Stepper Motor

RATED SPEED: 1000 rpm
(dependent on fluidic setup)

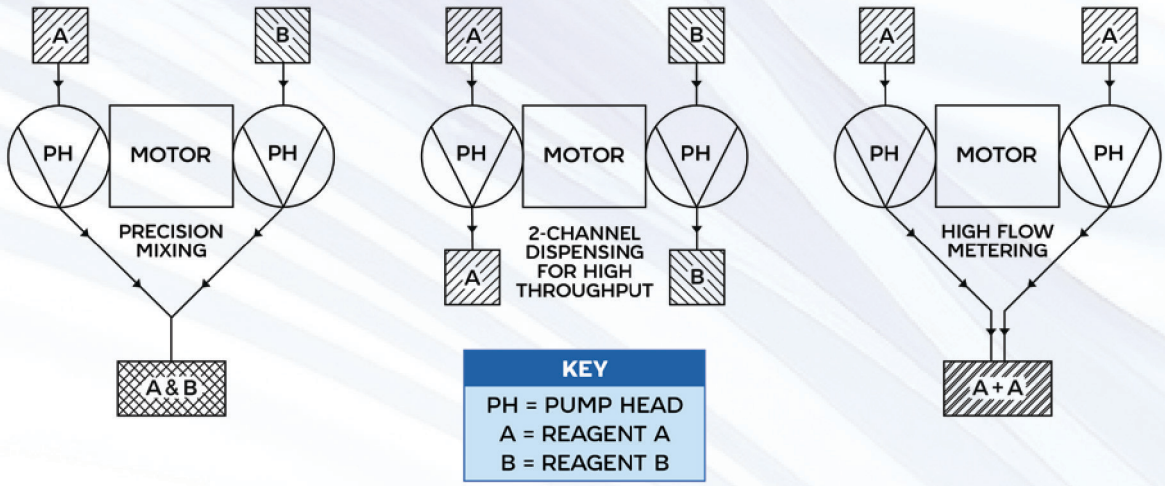
VOLTAGE: 24V

RATED CURRENT: 2.5A

MOTOR DIRECTION: Bidirectional,
Calibrated Clockwise

STEP ANGLE: 1.8° Full Step

Flow Options



Customizations

Be it a small tweak to existing technology or a full development project, our pumps and dispensers can be customized to accommodate dispense volume, flow rate, temperature, pressure, materials, and more.

Regulatory Compliance

Laboratory & Research Partnerships

Fluid Metering supports labs and research facilities by providing high-precision pumps with reliable fluid handling capabilities. Designed to accurately deliver precise volumes of fluid or continuously meter, these pumps excel in a wide assortment of critical laboratory tasks such as sample preparation, reagent dispensing, and chemical analysis. Known for their durability, ease of use, and lack of maintenance requirements, our lab pumps are a trusted choice for global

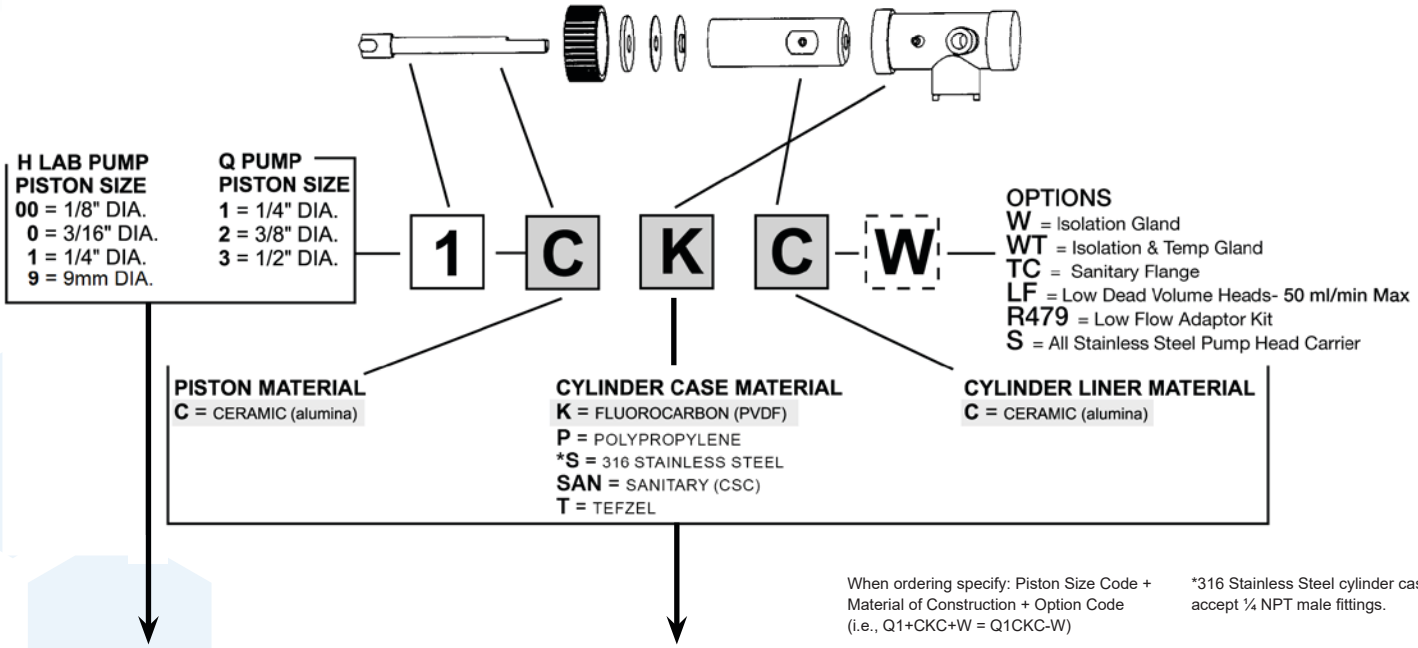
Empowering Innovation

researchers and technicians. At Fluid Metering, our engineers deliver consistent performance and customizable options to help achieve reproducible results and enhance lab efficiency. With a strong focus on innovation, we support your team at every step, ensuring they have the precise testing needed to drive scientific breakthroughs and life-saving discoveries.

Through Expert Collaboration

Measurements & Material Standards

PUMP HEAD MATERIALS CONFIGURATION



When ordering specify: Piston Size Code + Material of Construction + Option Code (i.e., Q1+CKC+W = Q1CKC-W)

*316 Stainless Steel cylinder cases accept ¼ NPT male fittings.

PUMP HEAD MODULE CODES

PISTON SIZE CODE	PISTON & CYLINDER MATERIALS OF CONSTRUCTION						
	CKC	CSC	SAN	CTC	*CPC	ZKC	ZTC
H00						✓	✓
H0	✓			✓	✓		
H1	✓			✓	✓		
H9	✓			✓	✓		
Q1 (1/4")	✓	✓	✓	✓	✓		
Q2 (3/8")	✓	✓	✓	✓	✓		
Q3 (1/2")	✓	✓		✓	✓		

WETTED PARTS	Ceramic PVDF	Ceramic 316 SS	Ceramic 316 SS	Ceramic ETFE	Ceramic Polypropylene	Zirconia Ceramic PVDF	Zirconia Ceramic ETFE
MAX. TEMP	212°F	350°F	350°F	212°F	176°F	212°F	212°F

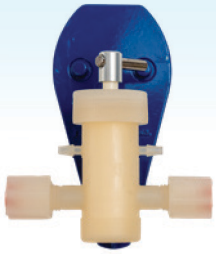
*CPC only available with LF option.

- Pump head materials of construction can be used in a variety of applications
- When ordered together, pump drive modules, pump head modules, and options are mounted, tested and shipped as one unit
- All Fluid Metering complete pumps are modular in design

Q Pump Head Series

QCKC

Ceramic & PVDF Fluid Path



- Excellent for general use with acids, caustics and most solvents (not recommended for MEK, acetone, and methylene chloride)
- Rated to 212°F (100°C) operating
- Max. operating pressure 60 psig (4.1 bar)
- Autoclavable (non-operating) to 240°F (116°C)

QCTC

Ceramic & ETFE Fluid Path

- Excellent for use in applications that require chemically inert fluid path materials
- Rated to 212°F (100°C)
- Max. operating pressure 60 psig (4.1 bar)

QCPC

Ceramic & Polypropylene Fluid Path

- Excellent for applications using oils and other solvents that require chemically inert fluid path materials
- Max. operating pressure 60 psig (4.1 bar)
- Rated to 176°F (80°C)

QCKC-W Isolation Gland Version of QCKC
QCPC-W Isolation Gland Version of CPC
QCTC-W Isolation Gland Version of QCTC

- Ideal for air sensitive, crystal forming solutions like saline
- Isolates main pump fluid from seals and atmosphere

Piston Size	Max. Dispense Volume	Max. Operating Pressure
1/4” Diameter	0.32 mL/rev	60 psig / 4.1 bar
3/8” Diameter	0.72 mL/rev	60 psig / 4.1 bar
1/2” Diameter	1.28 mL/rev	25 psig / 1.7 bar

*Dispense volume resolution varies based on specific pump head and motor setup.

Specifications

Cylinder Casing Options
PVDF, ETFE, Polypropelene

Operating Temperature Range
PVDF & ETFE: 0-100°C (32-212°F)
Polypropylene: 0-80°C (32-176°F)

Pump Drive Modules
All available drive modules are compatible with our Q Pump Heads.

Customizations

- Flush ports and isolation glands are available
- Low flow applications, 1/4-28 UNF threaded ports are available

Regulatory Compliance

Q Pump Head Series

QCSC

316SS Ceramic & PTFE Fluid Path

- Excellent chemical resistance
- Rated to 350°F (177°C)
- Max. operating presssure 100 psig (6.9 bar)

QCSC-200 Ceramic & PTFE Fluid Path

- 200 psi high pressure version of QCSC (for prep/flash chromatography)

QCSC-W Isolation Gland Version of QCSC

- Ideal for air sensitive, crystal forming solutions like saline
- Isolates main pump fluid from seals and atmosphere

Piston Size	Max. Dispense Volume	Max. Operating Pressure
1/4" Diameter	0.32 mL/rev	100 psig / 6.9 bar
3/8" Diameter	0.72 mL/rev	70 psig / 4.1 bar
1/2" Diameter	1.28 mL/rev	25 psig / 1.7 bar

*Dispense volume resolution varies based on specific pump head and motor setup.

Specifications

Cylinder Casing Options
Stainless Steel

Operating Temperature Range
316 Stainless Steel: 0-177°C (32-350°F)

Pump Drive Modules
All available drive modules are compatible with our Q Pump Heads.

Customizations

- Flush ports and isolation glands are available
- Low flow applications, 1/4-28 UNF threaded ports are available

Regulatory Compliance

QCSC-WT

"High Temp Gland"

- Designed for applications, which require temperature control of the pump head
- Accepts two standard 1" x 1/4" cartridge heaters and a 1/8" diameter thermocouple; includes an isolation gland
- 316SS, ceramic, and PTFE fluid path with ceramic internals
- Rated to 350°F (177°C)

Piston Size	Max. Dispense Volume	Max. Operating Pressure
1/4" Diameter	0.32 mL/rev	100 psig / 6.9 bar
3/8" Diameter	0.72 mL/rev	100 psig / 6.9 bar

*Dispense volume resolution varies based on the specific pump head and motor setup.

Specifications

Cylinder Casing Options
Stainless Steel

Operating Temperature Range
316 Stainless Steel: 0-177°C (32-350°F)

Pump Drive Modules
All available drive modules are compatible with our Q Pump Heads.

Customizations

- Flush ports are available
- For low flow applications, 1/4-28 UNC threaded ports are available

Regulatory Compliance

SAN Pump Head Series

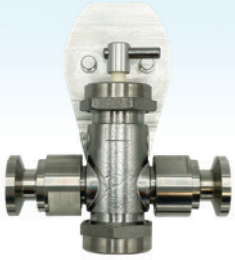
QSAN

316SS Sanitary Design

- Handles discrete fluid streams in sanitary applications (food, dairy, brewery, pharmaceutical, biotech, etc.)
- No internal threads or blind holes to harbor bacterial growth
- Easily dismantles for scrubbing, brushing, and sterilization
- 316 SS and Teflon® are highly resistant to chemical and biological attack

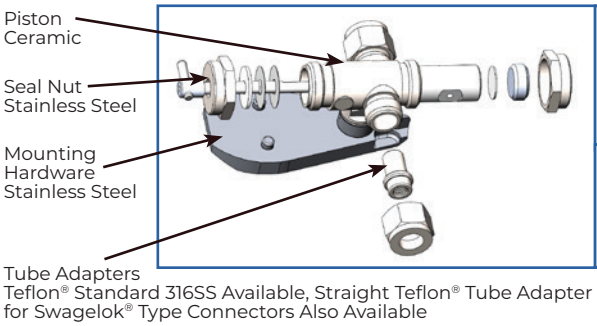
QSAN-TC

316SS Tri-Clamp Version



- Tri-Clamp fittings are an industry standard for applications requiring quick-connect fittings for easy sanitizing/sterilization
- For 1/4" or 3/8" id tubing
- Quick-connect 1" flange for 1/4" to 1" tubing sizes

Q1SANS



ALL STAINLESS STEEL VERSIONS AVAILABLE WITH SS PORT NUTS, TUBE ADAPTERS, & CARRIER

Designed for Quick Disassembly for Maximum Cleaning

Piston Size	Max. Dispense Volume
1/4" Diameter	0.32 mL/rev
3/8" Diameter	0.72 mL/rev

*Dispense volume resolution varies based on the specific pump head and motor setup.

Specifications

Carrier Options
Stainless Steel, Powder-Coated Zinc Alloy

Operating Pressure Range
0-60 psig (0-4.1 bar)

Operating Temperature Range
0-177°C (32°F-350°F)

Pump Drive Modules
All available drive modules are compatible with our QSAN Pump Heads.

Customizations

- Available with flush port and isolation gland
- For low flow applications, 1/4-28 UNC threaded ports are available

Regulatory Compliance

RH Pump Head Series

RHCKC

Ceramic or Zirconia Piston & Ceramic Cylinder

- Self contained pump for 1/4" O.D. tubing using compression fittings for 0 to 200µl/stroke
- Small displacement - fully adjustable zero to max
- Flow Path: ceramic and PVDF standard, other materials available

RHCKC-W Isolation Gland Version of RHCKC

- Ideal for low volume fluid control of crystal forming fluids
- Easily handles saline, slurries, particulates, and abrasives
- Isolates main process fluid from seal area and atmosphere
- Barbed fittings provide quick-connections to isolation gland ports

RHCTC

Ceramic or Zirconia Piston & Ceramic Cylinder

- Self contained pump for 1/4" O.D. tubing using compression fittings for 0 to 200µl/stroke
- Small displacement - fully adjustable zero to max
- Flow Path: ceramic and ETFE standard, other materials available

RHCKCLF "Low Flow"

RHCTCLF "Low Flow"

- Low dead volume pump head
- Female 1/4-28 port version of RH

Piston Size	Max. Dispense Volume	Flow Rate Range	Max. Operating Pressure
1/8" Diameter*	0.025 mL/rev	0.003-65.0 mL/min	60 psig / 4.1 bar
3/16" Diameter	0.05 mL/rev	0.003-130.0 mL/min	60 psig / 4.1 bar
1/4" Diameter	0.1 mL/rev	0.005-260.0 mL/min	60 psig / 4.1 bar
9mm Diameter	0.2 mL/rev	0.001-520.0 mL/min	40 psig / 2.8 bar

*1/8" diameter piston size available in Zirconia piston only.
*Dispense volume resolution and flow rate vary based on the specific pump head and motor setup.

Specifications

Cylinder Casing Options
PVDF, ETFE, Polypropylene

Operating Temperature Range
PVDF & ETFE: 0-100°C (32-212°F)
Polypropylene: 0-80°C (32-176°F)

Operating Motor Speed
0-2600 rpm

Pump Drive Modules
All available drive modules are compatible with our RH Pump Heads.

Customizations

- Flush ports and isolation glands are available
- For low flow applications, 1/4-28 UNF threaded ports are available

Regulatory Compliance

QV Variable Speed Pumps

- Variable flow rate to 2304 mL/min
- Adjustable from 90 - 1800 strokes per minute
- Quick-connect to V300 Controller (included)

Max. Flow		Drive Module	Piston Code
mL/min	gal/hr		
45	0.71	QV	H00
90	1.43		H0
180	2.85		H1
360	5.71		H9
576	9.13		Q1
1296	20.54		Q2
2304	36.52		Q3

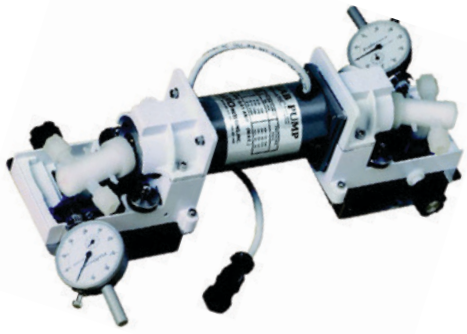
Specifications

Dimensions
10” x 4-5/8” x 4-7/8” wide (254 x 117 x 124 mm)

Shipping Weight
10 lbs (4.5 kg)

Regulatory Compliance

Q2 Ratio:Matic® Variable Speed



- Variable flow rate to 2304 mL/min
- Adjustable from 90 - 1800 strokes per minute
- Quick-connect to V300 Controller (included)
- Duplex for proportional metering using a single drive with two pump heads
- Reduces pulsation by 50%

Max. Flow		Drive Module	Piston Code
mL/min	gal/hr		
90	1.43	Q2V	H00
180	2.85		H0
360	5.71		H1
720	11.41		H9
1152	18.26		Q1
2592	41.08		Q2
4608	73.04		Q3

Specifications

Dimensions
15” x 4-7/8” x 5-1/8” wide (381 x 124 x 130 mm)

Shipping Weight
15 lbs (6.75 kg)

Regulatory Compliance

RHV Low Flow Variable Speed

- Drift-free flow ranges up to 180 mL/min, pressures up to 100 psig
- Easy grip displacement control ring graduated in 450 divisions

Max. Flow mL/min	Wetted Parts	Max. Fluid Temp	Complete Pump
90	Ceramic / PVDF	212°F	RHV0CKC
180			RHV1CKC
45	Zirconia / ETFE		RHV00ZTC
90	Ceramic / ETFE		RHV0CTC
180			RHV1CTC

Specifications

Operating Motor Speed
90-1800 rpm

Dimensions
8" x 3" x 3" wide (181 x 76 x 76 mm)

Shipping Weight
7 lbs (3.15 kg)

Regulatory Compliance

V300 Variable Speed Controller

- Easy-to-use digital LCD flow display
- Selectable 4-20 mA, 0-5V DC, and 0-10V DC input for automatic control
- Start, stop, and reverse flow while maintaining flow settings
- Rugged, anodized, aluminum enclosure designed for both bench-top and wall mounting
- For QV, QVG50, Q2V, and RHV pump drive modules

Specifications

Dimensions
7-1/4" x 5-1/8" x 6-1/4" wide (182 x 128 x 159 mm)

Shipping Weight
5 lbs (2.25 kg)

Electrical
Universal Power Input accepts 100-240V AC 50/60 Hz

Regulatory Compliance

QBLDC Low Speed, Low Flow

- Choice of five different drive speed models
- Long-life, fan cooled, thermally protected, ball bearing gear motors
- Convenient multi-position tilt stand for wall or counter mounting
- Can be combined with all **H** and **Q** pump head modules
- Flow rate adjustable from 0 to maximum in either direction

Max. Flow mL/min	Drive Module	Piston Code
0.15	QBLDC6	H00
0.30		H0
0.60		H1
1.20		H9
1.92		Q1
4.32		Q2
7.68		Q3
0.50	QBLDC20	H00
1.00		H0
2.00		H1
4.00		H9
6.40		Q1
14.40		Q2
25.60		Q3
1.375	QBLDC55	H00
2.75		H0
5.50		H1
11.00		H9
17.60		Q1
39.60		Q2
70.40		Q3
3.75	QBLDC150	H00
7.50		H0
15.00		H1
30.00		H9
48.00		Q1
108.00		Q2
192.00		Q3

Max. Flow mL/min	Drive Module	Piston Code
6.25	QBLDC250	H00
12.50		H0
25.00		H1
50.00		H9
80.00		Q1
180.00		Q2
320.00		Q3
10.00	QBLDC400	H00
20.00		H0
40.00		H1
80.00		H9
128.00		Q1
288.00		Q2
512.00		Q3
12.50	QBLDC500	H00
25.00		H0
50.00		H1
100.00		H9
160.00		Q1
360.00		Q2
640.00		Q3
38.75	QBLDC1550	H00
77.50		H0
155.00		H1
310.00		H9
496.00		Q1
1116.00		Q2
1984.00		Q3

Specifications

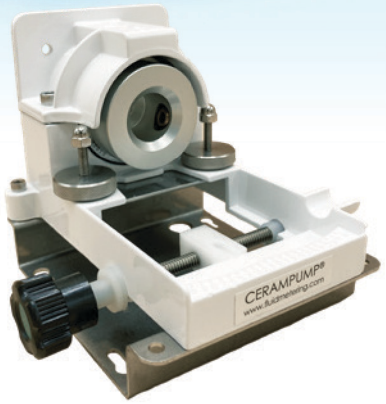
Dimensions
10-3/4" x 4-7/8" x 5-3/4" wide (273 x 124 x 146 mm)

Shipping Weight
10 lbs (4.5 kg)

Electrical
115V AC, 60 Hz, 1Ø, 1 amp, 6, 20, 50, 150, 400 rpm, shaded 2 pole, enclosed ventilated, thermally protected, 135°C with 3-prong power cord

Regulatory Compliance

QP Motorless Pedestal



- Typically driven by belt, chain, or shaft coupling connected to your special motor drive, i.e. air, hydraulic, stepper, etc.
- Maximum speed of 1800 rpm
- Flow rate up to 2300 mL/min
- Minimal torque requirements of 35 inch·ounces

Max. Flow mL/min	Drive Module	Piston Code
45	QP	H00
90		H0
180		H1
360		H9
576		Q1
1296		Q2
2304		Q3

Specifications

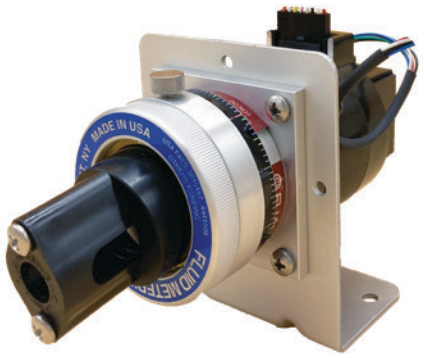
Dimensions
6-3/8" x 4-3/8" x 5-1/8" (162 x 111 x 130 mm)

Shaft Extension
5/16" dia. x 1-3/16" (8 mm dia. x 30 mm)

Shipping Weight
5 lbs (2.25 kg)

Regulatory Compliance

STRH Adjustable Low Flow Stepper Pump

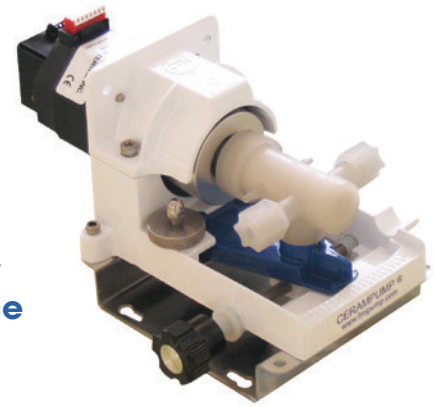


- Precision RH adjustable pump with stepper motor
- Valveless, reversible pump can meter, dispense, aspirate, and flush
- Ceramic and fluorocarbon, low dead-volume fluid path

Max. Flow mL/min	Wetted Parts	Pump Head Code
25	Zirconia / PVDF / Ceramic / ETFE / Polypropylene	STRH00
50	Ceramic / PVDF / ETFE / Polypropylene	STRH0
100		STRH1
200		STRH9

Regulatory Compliance

STQP Adjustable High Flow Stepper Pump



- Precision, variable displacement **Q** pump with integral stepper motor accommodates all **Q**-style pump heads and RH pump heads (with **RH/Q** adapter)
- Available in **ST2QP Duplex Ratio:Matic®** configurations
- Can be driven by **ICST-02** Stepper Controller or a variety of commercially available stepper driver boards (see pg. 40)
- Ideal for accurate and frequent displacement changes

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RHB / QB Direct Current Pumps

For Mobile, Remote, and Instrumentation

- 12, 24, and 90V DC motors with close-coupled **RH/Q** pump heads
- Offers the advantage of mechanical adjustment of stroke length, plus electrical control of stroke rate by voltage variation
- Extended motor shaft accepts supplied rotational sensor
- Ideal for environmental sampling and additive injections

Max. Flow mL/min	Wetted Parts	Max. Fluid Temp	Pump Head Code
65	Ceramic / PVDF / ETFE / Polypropylene	140°F	RHB00
130		212°F	RHB0
260			RHB1

Specifications

Dimensions
8" x 3" x 3" wide (203 x 76 x 76 mm)

Shaft Extension
5/16" dia. x 1" long with flat

Shipping Weight
7 lbs (3.15 kg)

Electrical
12V DC, 4 amps, 2600 rpm, totally enclosed, with 6" pigtail leads

Drive Options
24V DC (3 amps) for RHB Part # 4
90V DC (0.41 amps) for RHB Part # 5

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Max. Flow mL/min	Drive Module	Piston Code
45	QB	H00
90		H0
180		H1
360		H9
576*		Q1
1296*		Q2
2304*		Q3

*Rated at 1800 rpm (or approximately 8 volts for 12V DC models)

Drive Options
24V DC (3 amps) Part # 4
90V DC (0.41 amps) Part # 5

Specifications

Dimensions
10-1/2" x 5" x 4-1/2" wide
(267 x 127 x 114 mm)

Shaft Extension
5/16" dia. x 1" long with flat

Shipping Weight
8 lbs (3.6 kg)

Electrical
12V DC, 4 amps; 24V DC, 3.3 amps; 90V DC, 0.41 amps; totally enclosed with 6" pigtail leads

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Additional Options

To further enhance microfluidic pump setups, Fluid Metering offers additional accessories. These provide a wide variety of control options, monitoring capabilities, and more flexibility to achieve even greater results.

Q661 Small Bore Tubing Kit

- Ten (10) 1/4-28 fittings Delrin® or TFE, ETFE ferrules
- Flangeless design assures leak-free, zero dead-volume connections
- ETFE and Teflon® wetted surfaces

Kit Q661
Delrin 1/16" & 1/8

Contains both Q661A & Q661B

Kit Q661A
Delrin (Black) 1/16"

10' - 1/16" O.D. x 1/32" I.D. TFE Tubing
10 - Delrin Nuts (Black)
10 - ETFE Ferrules (Blue)

Kit Q661B
Delrin (Green) 1/8"

10' - 1/8" O.D. x 1/16" I.D. TFE Tubing
10 - Delrin Nuts (Green)
10 - ETFE Ferrules (Yellow)

Kit Q661C
TFE (White) 1/8"

10' - 1/8" O.D. x 1/16" I.D. TFE Tubing
10 - Delrin Nuts (White)
10 - ETFE Ferrules (Yellow)

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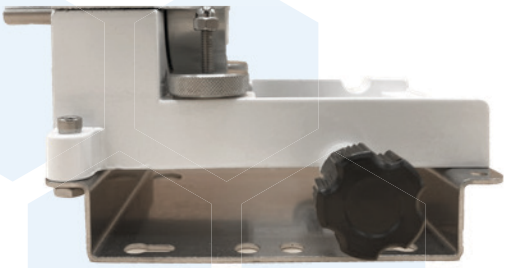
Q Fixed Mounting Base Kit MB



- Sturdy mounting base for **Q** pumps
- Allows pumps to be firmly bolted to a surface in a horizontal or vertical operating position
- Hardware for attaching base to pump and instructions included

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PD-HF In-Line Pulse Suppressor

- For high flow systems of 50 mL/min or greater and stroke rates higher than 150 rpm against head pressures of 10 - 65 psig
- Encapsulated polyethylene bellows eliminate tubing vibrations and cavitation problems
- Easy to connect 1/4" compression fittings
- Best results when installed on both suction and discharge lines
- Hardware for attaching base to pump and instructions included

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Tri-Clamp Sanitary Pump Heads Kit

- Easily changes barbed fittings supplied with SAN to SAN-TC type
- 1" flange will accommodate both 1/2" and 3/4" standard tube sizes
- Includes 316 SS Tri-Clamp flange and Teflon port seal

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R479 Low Flow Isolation Kit

- Includes (4) ferrules, (2) adapters, and assembly/removal tools
- Also available as **R478** option that includes (10) spare ferrules

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Q485 Dial Indicator Kit

- Ultra-precise, responsive flow adjustment for **Q** pumps
- Each increment represents 1/1000 of maximum flow
- Easily attaches to all **Q** pump bases
- Can be ordered with pump or separately

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RH/Q Adapter Kit

- Adapts **RH** pump head to any **Q** pump drive
- Simple installation to **RH** pump head using only 3 screws
- Pump assembly can easily be slipped onto the drive module in seconds without tools

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ICST02 Stepper Controller

- Programmable for all Fluid Metering stepper pumps (MS Windows® programming software included)
- Extensive dispense and metering capabilities
- Multiple input and output connections including RS 232 serial port for PC connection

Specifications

Dimensions

2.0" x 3.1" x 1.6" high (51 x 79 x 41 mm)

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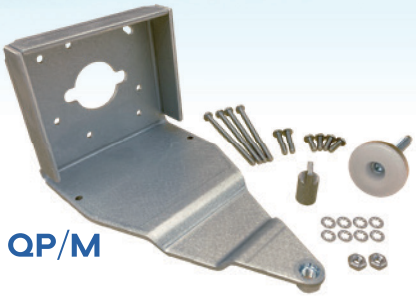
Additional Options

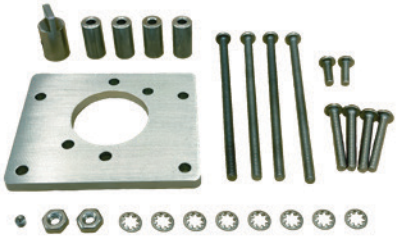
QP/M & RH/M Masterflex® Kits*

- Adds precise mechanical flow adjustment to L/S™ drives
- Quick installation to L/STM standard pump head, L/STM EASYLOADTM pump head, or directly to any L/STM drive
- Extended operating pressure to 100 psig
- Flow rates from microliters to 768 mL/min
- Ceramic standard wetted materials

*Masterflex, L/S, and EASY-LOAD are all registered trademarks of Cole-Parmer Instrument Co.



QP/M



RH/M

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High Flow Tubing Adapters

For plastic case pump heads, the integrally molded port fittings on the standard Type K pump heads accept all 1/4" O.D. tubing. For other tubing arrangements, special port adapters are required.

#R412-0K
Adapter for 1/8" I.D. tubing

#R412-1K
Adapter for 1/4" I.D. tubing

#R412-2K
Adapter for 3/8" I.D. tubing

#R412-5K
Adapter for 1/4-28 ferrule fittings

#H476-K
Adapter for 1/8" O.D. tubing

#R412-6K
Adapter for 1/2" I.D. tubing

#110949
Adapter for 6 mm O.D. tubing

Stainless steel adapters for Type S pump heads.

#R412-1
Adapter for 1/4" I.D. flexible tubing

#R412-2
Adapter for 3/8" I.D. flexible tubing

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Low Flow Tubing Adapters

Threaded 1/4-28 UNF fitting to PVDF barb bottom sealing, rotating adapters consisting of a white nylon 1/4-28 fitting with 5/16" hex nut and PVDF (fluid path) insert barb.

#110873A for use with 1/8" (3.2 mm) I.D. tubing; pack of 10

#110874A for use with 1/16" (1.6 mm) I.D. tubing; pack of 10

#110847-01 for use with 1/8" flexible tubing connection to isolation gland stainless steel "Q" Pumps; single unit

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Warranty, Orders & Shipping

1-Year Limited Warranty

Fluid Metering products are manufactured to a high level of mechanical precision from materials that are resistant to attack by many corrosive chemicals. These products, however, may be self-destructive when used with non-compatible fluids or when located in physically hostile environment or when operated under non-specification voltage or pressure conditions. Please visit our website for more information.

Product Standards

Our products are certified and sold to comply with written specifications. Products are subject to change without notice.

Quotations

Each price quote will remain in effect for the time period stated in the quote, and may be changed or withdrawn at any time prior to customer acceptance.

Orders

Placed orders cannot be canceled and will be shipped and invoiced by Fluid Metering per the confirmed delivery schedule. Fluid Metering is not responsible for delays beyond its control, including but not limited to, component shortages, delays by its suppliers, labor disputes, weather delays or military/government actions.

Freight Policy

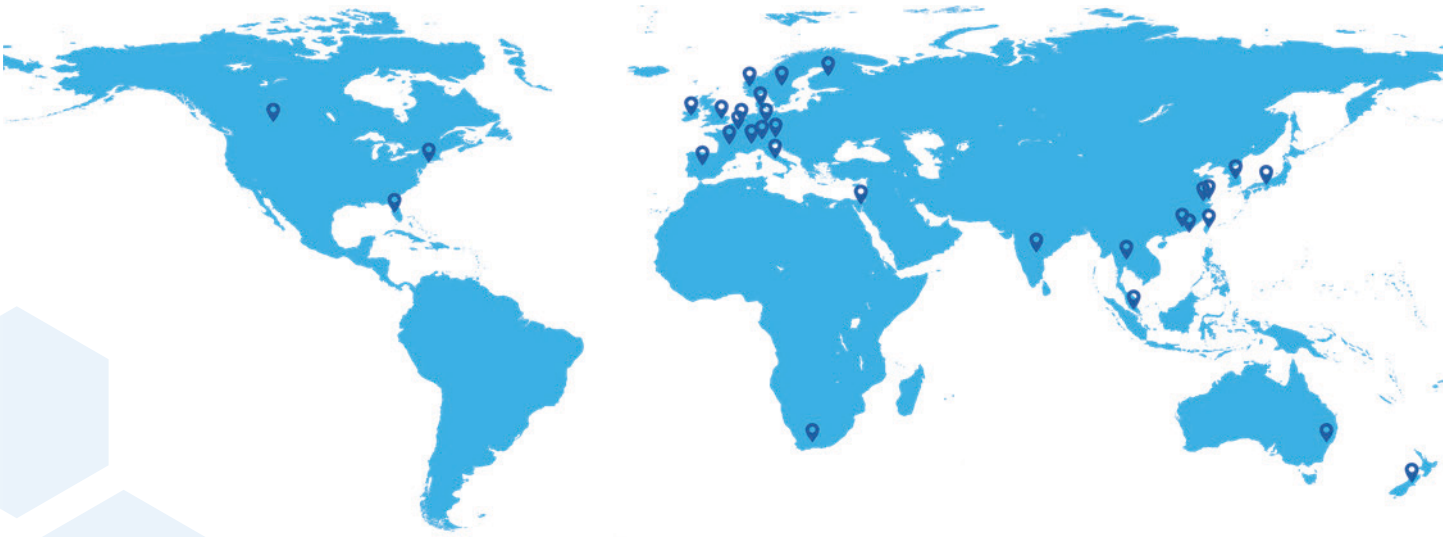
Fluid Metering will assist with arranging transportation via pick up, prepay and bill or freight collect. Goods will be packed for domestic shipment unless other packaging arrangements have been mutually agreed upon in writing. All shipment costs and special packaging are the sole responsibility of the customer. All claims for damaged merchandise should be made with delivering carrier.

Payment Terms

- Open Accounts - 1% 10 days, net 30
- International Sales - Cash in advance
- Credit Card Payments - Visa®, Mastercard®, American Express®, and Discover® are accepted

Worldwide Distribution

We're proud to partner with international distributors who share our values and commitment to excellence, enabling us to deliver our products efficiently and effectively worldwide. With us, you can always expect consistent, high-level service and support, no matter where you are.



Australia
John Morris Group
61-63 Victoria Ave
Chatswood, NSW 2068

Austria
Girtec AG
Palmenstrasse 1
Sulgen, CH-8583
Switzerland

Belgium
Elscolab NV
Hogenakkerhoekstraat 14,
Kruibeke, B-9150

Canada
WJF Instrumentation Ltd.
Bay 5, 3610-29th St. N.E,
Calgary T1Y 5Z7

China
Dongguan / Shenzhen / Guangzhou
Sea Galleon International Limited
Unit B, 13/F, Tower B, Peace Square,
Shenghe Rd.,
Nancheng District, Dongguan City,
Guangdong, China

Hong Kong
Sea Galleon International Limited
Unit 5A, 16/F, Modern Warehouse
No. 6, Shing Yip Street
Kwun Tong, Kowloon, Hong Kong

Shanghai
Sea Galleon International Limited
301B, Yuntongxing Building,
No. 399, Zhongren Road
Jiading District, Shanghai City, 201802
China

Suzhou
Sea Galleon International Limited
Kou Ryou & Sea Galleon Suzhou Office
Suzhou, P.R. China

Denmark
ALDAX AB
Älvsjövägen 5
SE-125 34 Älvsjö, Sweden

Finland
ALDAX AB
Älvsjövägen 5
SE-125 34 Älvsjö, Sweden

France
Flow Technique
Aeroparc 1, Batiment Latitude
19, Rue Icare
Entzheim, France 67960

Germany
Girtec AG
Palmenstrasse 1
Sulgen, CH-8583
Switzerland

India
Maxim Fluid Systems
Hyderabad – 500040
Telangana, India

Ireland
Premier Control Technologies
Office 64,
Hethel Engineering Centre,
Chapman Way,
Hethel, Norwich,
NR14 8FB
United Kingdom

Israel
Fluid Metering (U.S.A.)

Italy
AxFlow S.r.l.
Via Montefeltro, 4
20156 Milano (MI), Italy

Japan
Yamazen Corp.
Recruit Shinosaka Bldg.,
5-14-22 Nishinakajima,
Yodogawa-Ku Osaka 532-0011

Liechtenstein
Girtec AG
Palmenstrasse 1
Sulgen, CH-8583
Switzerland

Netherlands
Distrilab BV
Leusderend 6
3832 RC Leusden
The Netherlands

New Zealand
John Morris Group
18 Saint Benedicts Street
Eden Terrace, Auckland 1010

Norway
ALDAX AB
Älvsjövägen 5
SE-125 34 Älvsjö, Sweden

Singapore
I M Kinetic Asia Pte Ltd.
21 Toh Guan Road East, #06-17
Toh Guan Centre, Singapore 608609

South Africa
Fluid Metering (U.S.A.)

South Korea
REVODIX Inc.
#334 ITECO B/D, 150, Jojeong-daero
Hanam-si, Gyeonggi-do 12930
Korea

Spain
Técnica de Fluidos, S.L.U.
C/ Miguel Hernández, 77-79
08908 L'Hospitalet de Llobregat
Barcelona, Spain

Sweden
ALDAX AB
Älvsjövägen 5
SE-125 34 Älvsjö, Sweden

Switzerland
Girtec AG
Palmenstrasse 1
Sulgen, CH-8583
Switzerland

Taiwan
Good Stone Trading Company
2F, No. 92, Sec. 1, Nei-Hu Road
Taipei, Taiwan

Thailand
ILAB Fluid Control Co., Ltd.
48/261 Soi Nawamin 157,
Nuanchan, Boengkum,
Bangkok 10230
Thailand

United Kingdom
Premier Control Technologies
Office 64,
Hethel Engineering Centre,
Chapman Way,
Hethel, Norwich,
NR14 8FB
United Kingdom

United States of America
Fluid Metering
5 Aerial Way, Suite 500
Syosset, NY 11791

State of Florida
GCC Distributor Systems
5201 Tampa W Blvd
Tampa, FL 33634

Fluid metering

Innovate Today,

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Fluid metering
5 Aerial Way
Suite 500
Syosset, NY 11791
T: 1-800-223-3388
www.fluidmetering.com

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