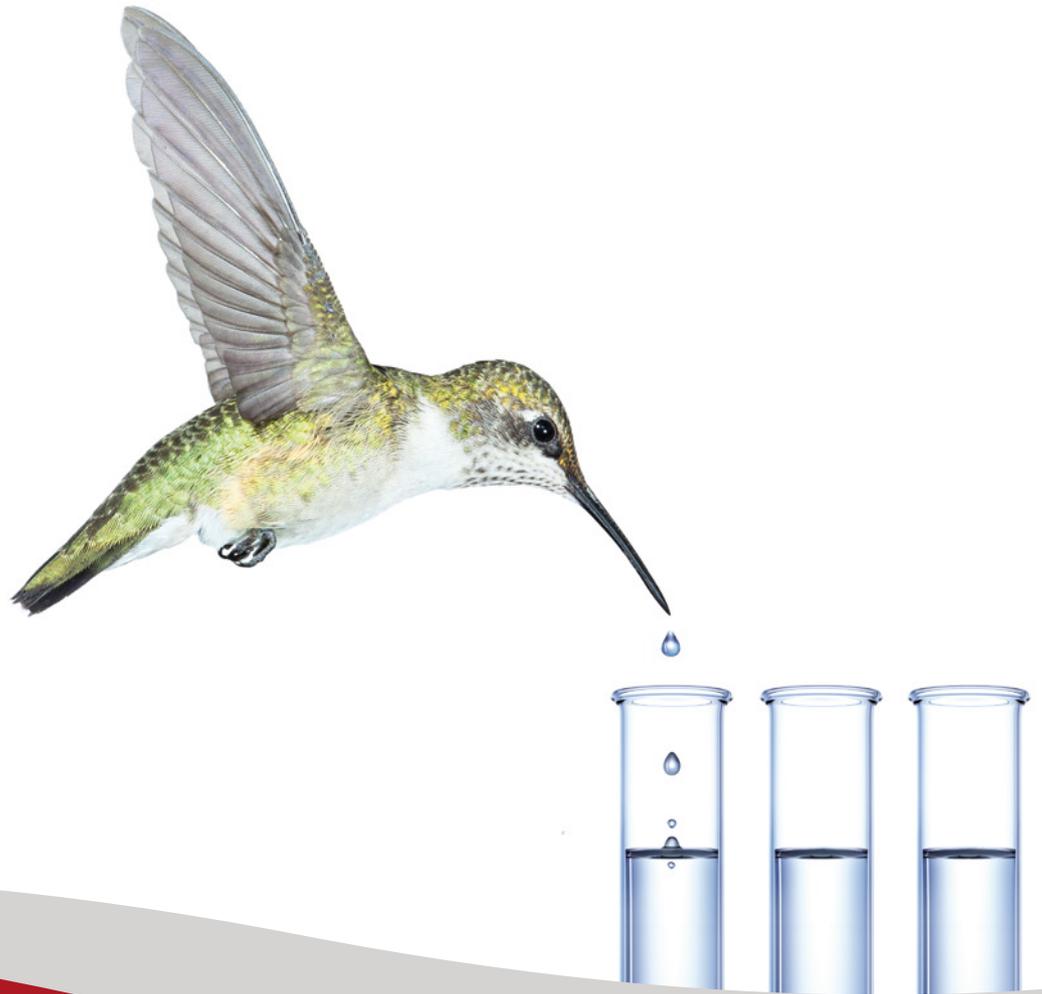


Liquid Handling Lab Automation Expertise



THE NEW TECH CON

LIQUID HANDLING CATALOGUE

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Liquid-Handling Solution for OEMs Worldwide

THOMAS
by Gardner Denver

TRICONTINENT
by Gardner Denver

WELCH
by Gardner Denver

Thomas, TriContinent and Welch are leaders in flow control products for medical, life sciences, and selected other industries – focused on solutions for OEMs. Innovation, global capabilities and a solutions centric approach to our customer's success is at our core. Together, our three brands are serving more than 5,000 customers globally. A global production network with seven modern manufacturing facilities throughout the U.S., Europe and Asia allows fast and flexible reaction to our customer needs.

THOMAS is a leading manufacturer of systems, compressors, vacuum and liquid pumps for OEM in the medical, laboratory, environmental and industrial sector. With a wide range of pressure, vacuum and liquid technologies including WOB-L piston, articulated piston, diaphragm, miniature diaphragm, rotary vane, linear and peristaltic, Thomas offers the broadest oil-less product range in the industry. With this vast product offering, Thomas designs ideal, customized pressure and vacuum solutions which meet our customers' precise needs.

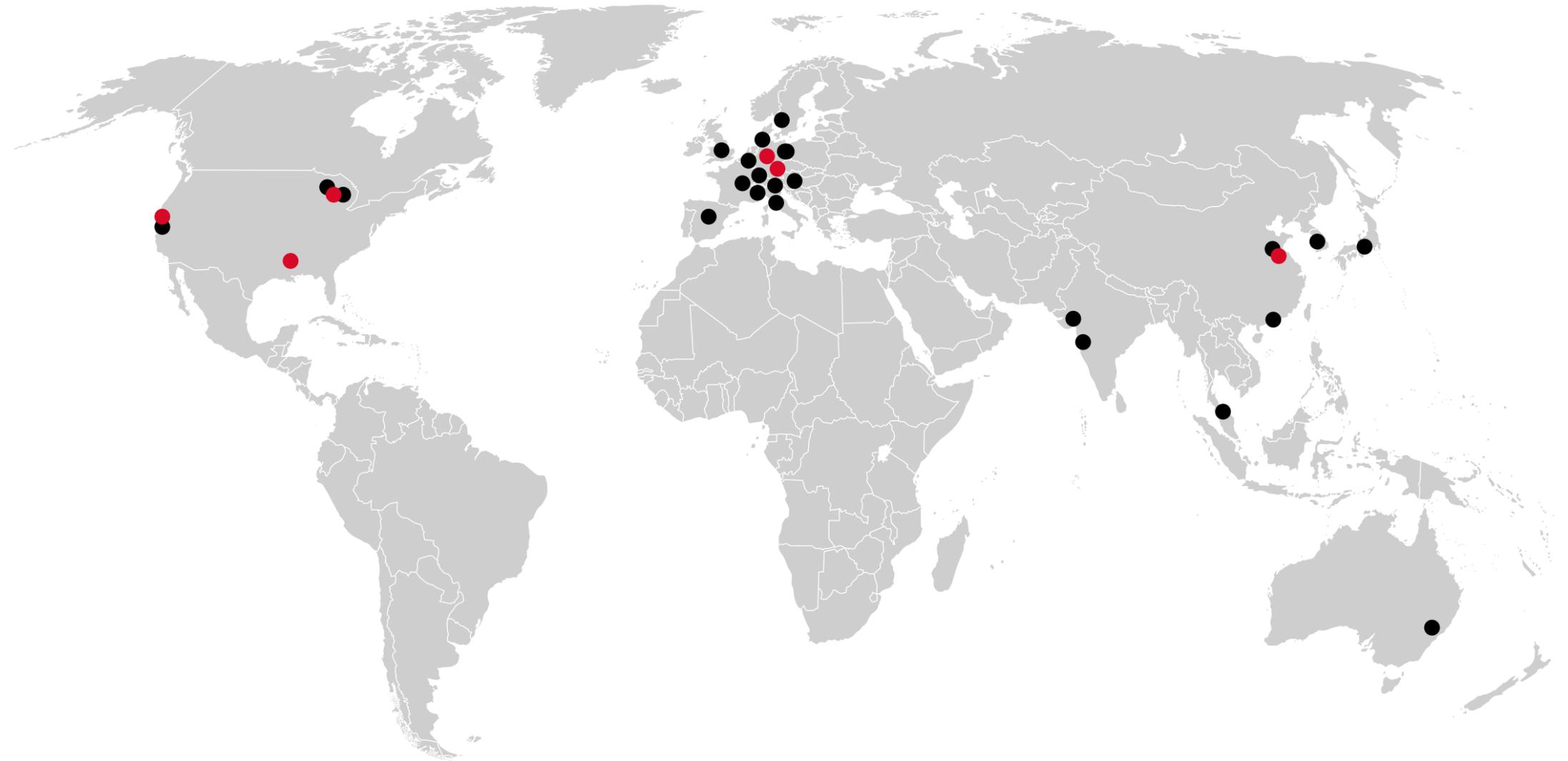
TriContinent Scientific is a leading manufacturer of OEM precision syringe pumps and liquid handling robots. We are a preferred supplier to the world's leading medical and biotechnology diagnostic and analytics equipment manufacturer. Tricontinent offers solutions for CTC isolation and PCR techniques, as well as precise and accurate dosing for molecular diagnostics. We are wellknown for continuous innovations like the C24000 pump (see page 12) which offers a unique combination of low flow and low pulsation.

WELCH is a leading manufacturer of vacuum pumps, modular systems and network solutions for use in laboratory and industry. As an expert for vacuum applications the company provides comprehensive advisory service for customized solutions.

Liquid-Handling Solution for OEMs Worldwide

Wherever you are in the world, we have an office near you! TriContinent is based in the high-tech state of California, while the Thomas and Welch HQ is near Munich in Germany. Our global network of Thomas, TriContinent and Welch production centers, sales offices and representatives ensure that you're never far from our highly qualified and dedicated teams, whether you need sales, engineering, manufacturing, quality assurance, or customer support expertise. That way, retail and OEM customers like you can always count on a quick response from us.

- Production Centers
- Sales Offices



Liquid-Handling Solution for OEMs Worldwide



QUALITY

**Looking for the highest Quality?
You've come to the right Place.**

At Thomas, TriContinent and Welch, quality is part of our DNA - and we've worked hard to win our reputation as a company that's dedicated to uncompromising quality. Every single employee is committed to quality, regardless of their role, department, or level in the organization. We do have a "quality department" to maintain the quality system and to measure quality, but most of our customers see TriContinent and Thomas as one big quality department! That's because the quality of our products and service is a primordial and integral part of every job role, system, process, design and material.

OUR THREE PILLARS OF QUALITY

- **Management:** we're committed to Total Quality Management (TQM) at every level. That includes attention to every detail when we monitor and measure the performance of products - because nearly good enough is not good enough. We continuously improve our products and services to achieve total customer satisfaction.
- **Employees:** Every one of our scientific staff is an expert in the critical disciplines of liquid handling instrumentation. At Thomas, TriContinent and Welch, our development staff include experienced electrical, mechanical, plastics, fluid dynamics and software engineers. Along with our leading edge production technology, our people enable the engineering group to routinely exceed our customers' expectations.
- **Processes:** One reason for the top-flight quality of every item we manufacture is that we keep tight control over the quality of our raw materials and how they are processed, using advanced planning systems to regulate and monitor the flow of manufacturing and production. Leveraging a wide range of manufacturing processes, Thomas, TriContinent and Welch has invested in computer-controlled machining facilities, ensuring consistently precise component production - and it's our customers and OEMs who benefit.

SYRINGE PUMPS

C-3000/24000

MC-6000

LT-Pump

Basepump

AP2000

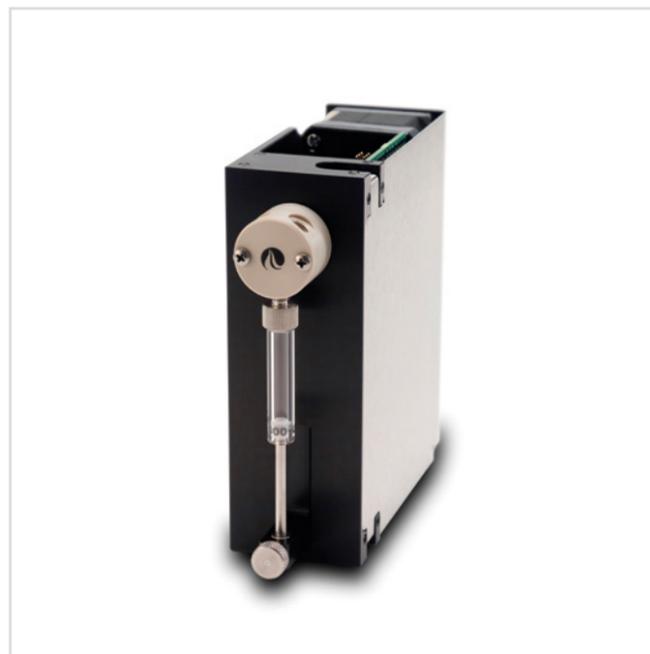
C-Series Syringes and Rotary Valves, Accessories

Syringes and Accessories for BasePump and AP2000

C-Series Syringe Pumps

BASE MODEL

C3000, C24000



FEATURES

The C-Series comprises syringe pump modules for automated instrumentation and can seamlessly replace XP, XCalibur, PSD/4 and PVM pumps. They provide low total cost of ownership as their proprietary, high efficiency direct drive system has no belts to stretch or snap - so it is maintenance-free. C-Series pumps also feature long-life rotary shear valves, which last up to 24x longer than competing valves. The valve drive achieves a performance of < 250ms between neighbouring ports. With C-Series pump modules, you can address up to 15 pumps individually and run in standard full-step mode or high-resolution mode up to 192,000 microsteps/full-stroke. The C24000 provides extremely low flowrates at minimum pulsation and sets new standards for syringe pumps in this application field.

• Interface

Type: RS232, RS485 or CAN
 Communication Rates: RS232/RS485 9600 or 38400 baud, CAN 100 K, 125 K, 250 K, 500 K, 1 M baud
 Format (RS232/RS485): Data Bits - 8,
 Parity - None, Stop Bit - 1, Half Duplex,
 Data Terminal and OEM protocols

• Operating Conditions

Temperature 15°C to 40°C (59°F to 104°F)
 Humidity 20 to 95% RH at 40°C (104°F)

OPTIONS

• Fluid Contact Syringe Material

Borosilicate Glass and UHMWPE or PTFE (seal) - Pressures to 80 PSI

• Fluid Contact Valve Material

PCTFE or PEEK (housing) and PTFE or UHMWPE (plug) - Pressures to 100 PSI

• Accessories

Syringe Sizes: 50 µL, 100 µL, 250 µL, 500 µL, 1 mL, 2.5 mL, 5 mL, 12.5 mL

ORDERING INFORMATION

Part Number	Description
C3000 Syringe Pumps	
TCS 10010	With 120° 3-port Valve PEEK/UHMWPE
TCS 10011	With 120° 3-port Valve PEEK/PTFE
TCS 10012	With 120° 3-port Valve PCTFE/UHMWPE
TCS 10013	With 120° 3-port Valve PCTFE/PTFE
TCS 10030	With 90° 4-port Valve PEEK/UHMWPE
TCS 10031	With 90° 4-port Valve PEEK/PTFE
TCS 10032	With 90° 4-port Valve PCTFE/UHMWPE
TCS 10033	With 90° 4-port Valve PCTFE/PTFE
TCS 10052	With Distribution 4-port Valve PCTFE/UHMWPE
TCS 10053	With Distribution 4-port Valve PCTFE/PTFE
TCS 10110	With T 3-Port Valve PEEK/UHMWPE
TCS 10120	With T 4-Port Valve PEEK/UHMWPE
C24000 Syringe Pumps	
TCS 10018	With 120° 3-port Valve PEEK/UHMWPE
TCS 10019	With 120° 3-port Valve PCTFE/UHMWPE
TCS 10028	With 120° 3-port Valve PEEK/PTFE
TCS 10029	With 120° 3-port Valve PCTFE/PTFE
TCS 10038	With 90° 4-port Valve PEEK/UHMWPE
TCS 10039	With 90° 4-port Valve PCTFE/UHMWPE
TCS 10048	With 90° 4-port Valve PEEK/PTFE
TCS 10049	With 90° 4-port Valve PCTFE/PTFE
TCS 10059	With Distribution 4-port Valve PCTFE/UHMWPE
TCS 10069	With Distribution 4-port Valve PCTFE/PTFE
For technical information please ask for Datasheet Nr. MKT20021 or visit www.tricontinent.com	

Multi-Channel Syringe Pump

BASE MODEL

MC6000-4, MC6000-6, MC6000-8



FEATURES

The MC6000 pump is the only one available on the market with shear valves that eliminate the problems associated with solenoid valves. The valves are provided with 1/4 -28 female ports and offer integrated bypass capability. Absolute syringe positioning is verified with a full quadrature encoder whether running in standard mode (6,000 steps/full-stroke) or in high-resolution mode (48,000 microsteps/full-stroke). The MC6000 also includes front panel LEDs indicating flow and status, enabling you to easily monitor the process. The valve drive achieves a performance of < 250ms between neighboring ports. With the MC6000, you can address up to 15 pumps individually.

• Interface

Type: USB, RS232, RS485 or CAN
 Communication Rates: RS232/RS485 9600 or 38400 baud, CAN 100 K, 125 K, 250 K, 500 K, 1 M baud
 Format (RS232/RS485): Data Bits - 8, Parity - None, Stop Bit - 1, Half Duplex, Data Terminal and OEM

• Operating Conditions

Temperature 15°C to 40°C (59°F to 104°F)
 Humidity 20 to 95% RH at 40°C (104°F)

OPTIONS

• Available

in 6 or 8 channel syringe configurations,
 4 channels on request

• Accessories

Syringe Sizes: 50 µL, 100 µL, 250 µL, 500 µL,
 1 mL, 2.5 mL, 5 mL

ORDERING INFORMATION

Part Number	Description
TCS 10154	MC6000-8, 8-Channel with 120° 3-port Valve PEEK/UHMWPE
TCS 10155	MC6000-6, 6-Channel with 120° 3-port Valve PEEK/UHMWPE
TCS 10153	120° 3-port Valve, ¼ - 28, PEEK/UHMWPE
MC6000 Accessories	
TCS 10171	Cable, RS232 to Pump
TCS 8246-71	Cable, Interface Converter to Pump

For syringes please see the syringe section. Note: On the MC6000 Multichannel Syringe Pump the maximum syringe volume is 5 mL!
 For technical information please ask for Datasheet Nr. MKT90022 or visit www.tricontinent.com

LT-Series Pump

BASE MODEL

250 µL, 150 µL, 1.0 mL, 2.5 mL, 5.0 mL



FEATURES

Elegant in their simplicity, TriContinent LT Series syringe pumps are renowned for their reliability and cost-effectiveness. With our advanced manufacturing processes we achieve near-perfect alignment of the syringe, plunger seal and other drive elements resulting in long lifecycle with zero maintenance. This includes the UHMWPE syringe seals, which combine resilience with exceptional longevity. With LT Series pumps, you benefit from a wide range of options, including valves, electronics and encoders.

• Drive Recommendations

Pump should typically be driven with a 24 VDC bipolar chopper drive, 1/2 step, at rated current. Higher voltage may be required at higher step rates.

• Operating Conditions

Temperature (operating) 15°C to 45°C (59°F to 113°F)
 Humidity (operating) 10-85% RH (non-condensing)

OPTIONS

• Available

in 250 µL, 500 µL, 1.0 mL, 2.5 mL, 5.0 mL

ORDERING INFORMATION

Part Number	Description
TCS 0386	LT Pump, 250 µL
TCS 0387	LT Pump, 500 µL
TCS 0388	LT Pump, 1.0 mL
TCS 0389	LT Pump, 2.5 mL
TCS 0390	LT Pump, 5.0 mL
TCS 0956	M-Series Controller PCBA Controller/Driver Assembly (.5A Max)
TCS 0959	RS232/485 Converter Kit
TCS 0960	USB/485 Converter Kit

For technical information please ask for Datasheet Nr. MKT90019 or visit www.tricontinent.com

BasePump

BASE MODEL

BasePump



FEATURES

TriContinent's range of BasePump syringe pumps are recognized throughout the industry for their quality, reliability and cost-effectiveness. You can choose from a wide range depending on your application needs - with or without valves and electronics. The BasePump range is also flexible, accommodating syringes of different sizes, from 50 µL to 10 mL.

- **Driver Recommendation (min)**

For Stepper Motor: Bipolar Chopper at 24 VDC, 350 mA per phase or equivalent

OPTIONS

- **With or without Valve**
- **Accessories**

Diluent Syringe Sizes - 500 µL, 2 mL, 5 mL, 10 mL
 Dual Port Sample Syringe Size - 50 µL, 250 µL
 Single Port Sample Syringe Size - 250 µL, 500 µL,
 2 mL, 5 mL, 10 mL

ORDERING INFORMATION

Part Number	Description
TCS 0802	BasePump, Sample
TCS 0884	BasePump, Diluent
For technical information please ask for Datasheet Nr. MKT20028 or visit www.tricontinent.com	

AP2000

BASE MODEL

AP2000 for Diluent, AP2000 for Sample



FEATURES

Our AP2000 syringe pump is electronic and software compatible with the XE pump as it is economical and flexible enough to be tailored to your needs. The AP2000 accommodates syringes with volumes ranging from 50 µL to 10 mL, and models are available with or without valves. It saves you money with low preventative maintenance costs and can address up to 15 pumps individually. Onboard electronics for computer control.

- **Interface**

Type: RS232, RS485 or CAN
 Communication Rates: RS232/RS485 9600 or 38400 baud, CAN 100 K, 125 K, 250 K, 500 K, 1 M baud
 Format (RS232/RS485): Data Bits - 8, Parity - None, Stop Bit - 1, Half Duplex, Data Terminal and OEM protocols

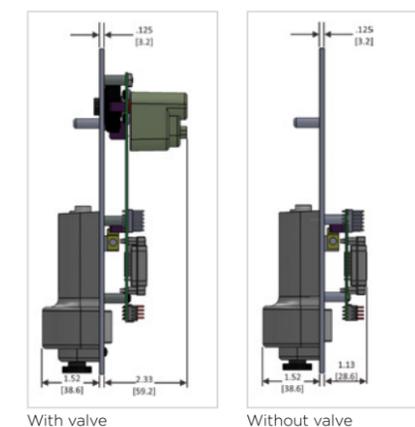
- **Operating Conditions**

Temperature 15°C to 40°C (59°F to 104°F)
 Humidity 20 to 95% RH at 40°C (104°F)

OPTIONS

- **With or without Valve**
- **Accessories**

Diluent Syringe Sizes - 500 µL, 2 mL, 5 mL, 10 mL
 Syringe Port Sample Syringe Sizes - 250 µL, 500 µL,
 2 mL, 5 mL, 10 mL
 Dual Port Sample Syringe Sizes - 50 µL, 250 µL



ORDERING INFORMATION

Part Number	Description
upon request	AP2000 Sample Syringe Pump
upon request	AP2000 Diluent Syringe Pump
For technical information please ask for Datasheet Nr. MKT90036 or visit www.tricontinent.com	

C-Series Replacement Syringes

BASE MODEL

Product compatibility C-Series and MC-Series



FEATURES

With the replacement syringes for C-Series pumps, you have the choice between PTFE (best for chemical compatibility) or UHMWPE (best for buffered/abrasive reagents) seal materials - and the assurance that both are of the highest quality. Compatible with standard 3 cm stroke syringe pumps, the syringes feature top-quality borosilicate glass barrels. In addition, bore diameters are held to extremely tight tolerances.

• Seal Materials

UHMWPE - for best abrasion resistance and longest life
PTFE - for best chemical resistance

• Syringe Volumes

UHMWPE - 50 µL, 100 µL, 250 µL, 500 µL, 1 mL, 2.5 mL, 5 mL
PTFE - 50 µL, 100 µL, 250 µL, 500 µL, 1 mL, 2.5 mL, 5 mL, 12.5 mL

OPTIONS

• OEM Options

Custom volumes and configurations available

ORDERING INFORMATION

Part Number	Description
TCS 10070	50 µL UHMWPE
TCS 10071	100 µL UHMWPE
TCS 10072	250 µL UHMWPE
TCS 10073	500 µL UHMWPE
TCS 10074	1 mL UHMWPE
TCS 10075	2.5 mL UHMWPE
TCS 10076	5 mL UHMWPE
TCS 10080	50 µL PTFE (also recommended for MC6000)
TCS 10081	100 µL PTFE (also recommended for MC6000)

ORDERING INFORMATION

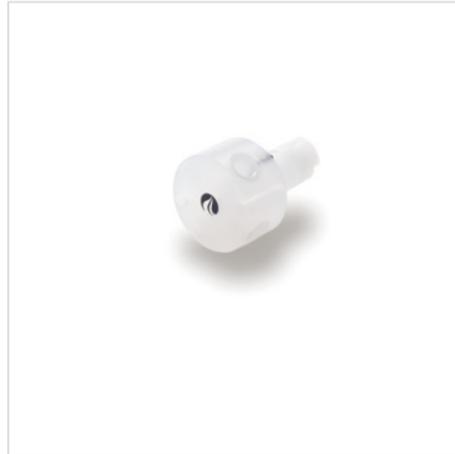
Part Number	Description
TCS 10082	250 µL PTFE (also recommended for MC6000)
TCS 10083	500 µL PTFE (also recommended for MC6000)
TCS 10084	1 mL PTFE (also recommended for MC6000)
TCS 10085	2.5 mL PTFE (also recommended for MC6000)
TCS 10086	5 mL PTFE (also recommended for MC6000)
TCS 10088*	12.5 mL PTFE *(Compatible only with the TriContinent C3000 and C2400 models, not suitable for any MC6000 model)

For technical information please ask for Datasheet Nr. MKT20033 or visit www.tricontinent.com

Rotary Valves

BASE MODEL

Compatible with C-Series Pumps and TriContinent Rotary Valve Controllers



FEATURES

Our rotary valves have been specifically developed to provide unsurpassed life and reliability in instrument applications using syringe pumps. We use a proprietary manufacturing process providing outstanding performance with inert polymers such as PCTFE, PTFE, PEEK and UHMWPE. Through special machining techniques and tooling, we achieve superior finishes ensuring excellent sealing between the stator and rotary plug leading to exceptional life. Longer life means less frequent replacement and longer instrument up-time resulting in exceptional value and customer satisfaction.



Limitations known from solenoid valves like leaking, Clogging, "pumping" and low CVs are avoided as well as seizing which often limits the life time of ceramic valves.

They are available in various configurations and come with 2-year warranty against defects in materials and workmanship.

OPTIONS

• Configurations

"Y" Valve 120° 3-port, 90° 4-port, Distribution 4-port & 7-port, T-Valve 3 & 4-port, 90° Loop Valve

• Materials

Body: PEEK, PCTFE
Rotary Plug: UHMWPE, PTFE

• OEM Options

Custom configurations possible



SPECIFICATION

Description	Materials (Body/Plug)	Part Number	Flow Path (Blue)
"Y" Valve 120° 3-port	PEEK/UHMWPE PEEK/PTFE PCTFE/UHMWPE PCTFE/PTFE	TCS 10020 TCS 10021 TCS 10022 TCS 10023	
90° 4-port	PEEK/UHMWPE PEEK/PTFE PCTFE/UHMWPE PCTFE/PTFE	TCS 10040 TCS 10041 TCS 10042 TCS 10043	
Distribution Valve	PEEK/UHMWPE PCTFE/PTFE	TCS 10062 TCS 10063	
T Valve 3-port	PEEK/UHMWPE	TCS 10115	
T Valve 4-port	PEEK/UHMWPE	TCS 10125	

Rotary Valves

ORDERING INFORMATION

Part Number	Description
C-Series Rotary Valves	
TCS10020	120° 3-port, ¼ - 28, PEEK/UHMWPE
TCS10021	120° 3-port, ¼ - 28, PEEK/PTFE
TCS10022	120° 3-port, ¼ - 28, PCTFE/UHMWPE
TCS10023	120° 3-port, ¼ - 28, PCTFE/PTFE
TCS10040	90° 4-port, ¼ - 28, PEEK/UHMWPE
TCS10041	90° 4-port, ¼ - 28, PEEK/PTFE
TCS10042	90° 4-port, ¼ - 28, PCTFE/UHMWPE
TCS10043	90° 4-port, ¼ - 28, PCTFE/PTFE
TCS10062	Distribution 4-port, ¼ - 28, PCTFE/UHMWPE
TCS10063*	Distribution 4-port, ¼ - 28, PCTFE/PTFE
TCS10115*	T 3-Port, ¼ - 28, PEEK/UHMWPE
TCS10125	T 4-Port, ¼ - 28, PEEK/UHMWPE
For technical information please ask for Datasheet Nr. MKT90034 or visit www.tricontinent.com	
XP Replacement Valves	
TCS10093	120° 3-port, ¼ - 28, PCTFE/PTFE
TCS10103	90° 4-port, ¼ - 28, PCTFE/PTFE
For technical information please ask for Datasheet Nr. MKT90035 or visit www.tricontinent.com	
MC6000 Replacement Valves	
TCS 10153	120° 3-port, ¼ - 28, PEEK/UHMWPE
For technical information please ask for Datasheet Nr. MKT90022 or visit www.tricontinent.com	

C-Series Accessories

ORDERING INFORMATION

Part Number	Description
TCS 10151	C-Series Evaluation Kit for use with all C-Series Pumps Includes: Power Supply, Tubing Kit, USB Converter/Cable Assembly and Quick Start Guide.
TCS 10171	Cable, RS232 to pump
TCS 10176	Evaluation Cable, RS232 and Bench to One C/MC-Series Device
TCS 10177	Evaluation Cable, USB to One C/MC-Series Device
TCS 10178	Evaluation Cable, XYZ to One C/MC-Series Device
TCS 10179	Cable, Daisy Chain Jumper
TCS 8152-09	Universal Power Supply
TCS 8246-71	Cable, Interface Converter to Pump
TCS 8698-02	USB/RS485 Converter
TCS 8698-03	Cable, USB-A/USB-B, 2-meter

Syringes and Accessories for BasePump and AP2000

ORDERING INFORMATION

Part Number	Description
TCS 0905	50 µL Dual Port Sample Syringe
TCS 0904	250 µL Dual Port Sample Syringe
TCS 0903	500 µL Diluent Syringe
TCS 0902	2 mL Diluent Syringe
TCS 0901	5 mL Diluent Syringe
TCS 0900	10 mL Diluent Syringe
TCS 0893	250 µL Single Port Sample Syringe
TCS 0894	500 µL Single Port Sample Syringe
TCS 0890	2 mL Single Port Sample Syringe
TCS 0895	5 mL Single Port Sample Syringe
TCS 0896	10 mL Single Port Sample Syringe
TCS 0779	Plungers (5/Pack) 50 µL for Dual Port Sample (2.740 L)
TCS 0780	Plungers (5/Pack) 250 µL for Dual Port Sample (2.740 L)
TCS 0783	Plungers (5/Pack) 250 µL Sample
TCS 0781	Plungers (5/Pack) 500 µL Diluent or Sample
TCS 0782	Plungers (5/Pack) 2 mL Diluent or Sample
TCS 0805	Plungers (5/Pack) 5 mL Diluent or Sample
TCS 0784	Plungers (5/Pack) 10 mL Diluent or Sample
TCS 0785	Small Polycarbonate Valves (10/Pack)
TCS 0786	Large Polycarbonate (10 mL syringe) Valves (10/Pack)
TCS 0983	Nylon Valves (10/Pack)
TCS 0891	Syringe Holder for Diluent / Polycarbonate Valve
TCS 0889	Syringe Holder for Dual Port Sample
TCS 0892	Syringe Holder for Single Port Sample
TCS 0984	Syringe Holder for Diluent / Nylon Valve
For technical information please ask for Datasheet Nr. MKT90032 or visit www.tricontinent.com	

AIR DISPLACEMENT PUMPS

Z-Pump

iR-Z-Pump

iZ-Pump

Z-Series Pumps

BASE MODEL

200 µL, 1000 µL, 2000 µL, 5000 µL



FEATURES

TriContinent's Z-Series pumps are electronic air displacement pipetting modules designed to be fitted on liquid handling robotic systems. Noted for their exceptional precision and accuracy, these syringe pumps are also available in a version that integrates a proximity sensor for easier homing and position detection. You can use the available interfaces to integrate Z-Series pumps with M-Series motion controllers, giving you a quick and easy way to produce a complete solution.

• Drive Recommendations

Pump should typically be driven with a 24 VDC bipolar chopper drive, 1/2 step, at rated current. Higher voltage may be required at higher step rates.

OPTIONS

• Available

in 200 µL, 1000 µL, 2000 µL and 5000 µL

ORDERING INFORMATION

Part Number	Description
TCS 0948	Z-Pump, 200 µL
TCS 0949	Z-Pump, 1000 µL
TCS 0950	Z-Pump, 2000 µL
TCS 0951	Z-Pump, 5000 µL
TCS 10005	Tip Adapter for 200 µL Z-Pump
TCS 10006	Tip Adapter for 1000 µL Z-Pump
TCS 10007	Tip Adapter for 2000 µL Z-Pump
TCS 10008	Tip Adapter for 5000 µL Z-Pump

For technical information please ask for Datasheet Nr. MKT90024 or visit www.tricontinent.com

Z-Series Instrument Ready Pumps

BASE MODEL

200 µL, 1000 µL, 2000 µL, 5000 µL



FEATURES

TriContinent's Z-Series pumps are electronic air displacement pipetting modules designed to be fitted on liquid handling robotic systems. Their instrument-ready versions provide exceptional precision and accuracy, especially when used together with the TriTon (XYZ) Robot from TriContinent.

• Drive Recommendations

Pump should typically be driven with a 24 VDC bipolar chopper drive, 1/2 step, at rated current. Higher voltage may be required at higher step rates.

OPTIONS

• Available

Available in 200 µL, 1000 µL, 2000 µL and 5000 µL

Accessories for Z-Series Pumps and Z-Series Instrument Ready Pumps

ORDERING INFORMATION

Part Number	Description
TCS 10000	200 µL Tips, 96/rack
TCS 10001	1000 µL Tips, 100/rack
TCS 10002	2000 µL Tips, 60/rack
TCS 10003	5000 µL Tips, 24/rack
TCS 0955	M-Series Controller/Driver for Z-pump (.5A Max)
TCS 0959	RS232/485 Converter Kit
TCS 0960	USB/485 Converter Kit

For technical information please ask for Datasheet Nr. MKT90029 or visit www.tricontinent.com

iZ-Series Robotic Pipette Pumps

BASE MODEL

iZ RP-High Speed, iZ RP-High Resolution



OPTIONS

• Accessories

Cover

Disposable Tips: 50 μ L, 200 μ L, 1000 μ L standard (clear) or capacitive (black), with or without filter

FEATURES

This electronic air displacement pipette pump uses high-precision glass syringes. It is fully programmable and delivers excellent and extremely accurate pipetting performance. With no tubing and no need for priming, the iZ-Series pump is also compact, lightweight and maintenance free – saving you both time and money. In addition, it comes with an integrated tip ejector, temperature sensor, optical tip sensor and pressure sensor (clogged tip detection).

The pump provides two modes of fully integrated liquid level detection:

- Capacitive (cLLD) utilizing conductive (black) disposable tips
- Pressure-based (pLLD) allowing use of clear disposable tips

• Interface

Type: RS232, RS485 or CAN

Format: (RS232/RS485) Data Bits - 8, Parity - None, Stop Bit - 1, Half Duplex, Data Terminal and OEM protocols

• Operating Conditions

Temperature 15°C to 40°C (59°F to 104°F)

Humidity 20 to 95% RH at 40°C (104°F)

MANUAL DISPENSERS AND PIPETTES

MiniPet

MiniPet

BASE MODEL

5 μ L, 10 μ L, 20 μ L, 25 μ L, 30 μ L, 35 μ L, 40 μ L, 50 μ L, 75 μ L, 100 μ L, 200 μ L



FEATURES

The MiniPet is ideal for use in routine applications requiring a high degree of accuracy. Its compact size, coupled with its precision and affordability, has made it the world's #1 micropipette. You can also choose custom colors and add your logo. The optional DeTipper bottle lets you remove the tips without touching them. The MiniPet uses standard 0 - 200 μ L yellow tips.

• Options

Custom options available for OEM customers only

Dispense Volume: 5 μ L - 200 μ L

Unit Color

Cap Pad Printing

Packaging

• OEM Requirements

A volume of 1000 units allows custom options.

ORDERING INFORMATION

Part Number	Description
TCS 0987	MiniPet 5 μ L, Red
TCS 0871	MiniPet 10 μ L, White
TCS 0872	MiniPet 20 μ L, Pink
TCS 0873	MiniPet 25 μ L, Orange
TCS 0916	MiniPet 30 μ L, Plum
TCS 0874	MiniPet 35 μ L, Light Blue
TCS 0875	MiniPet 40 μ L, Light Green
TCS 0876	MiniPet 50 μ L, Yellow
TCS 0926	MiniPet 75 μ L, Green
TCS 0877	MiniPet 100 μ L, Blue
TCS 0918	MiniPet 200 μ L, Teal
TCS 0342	0 - 200 μ L, Generic Eppendorf®, 1,000 / Bag
TCS 0824	DeTipper Bottle

For technical information please ask for Datasheet Nr. MKT90006 or visit www.tricontinent.com

EQUIPMENT FOR LABORATORY AUTOMATION

Microplate Washer

XYZ Robots

Valve Controller

MultiWash III

BASE MODEL

8 Port, 12 Port



FEATURES

The MultiWash III microplate washer is so reliable that it is currently the only one on the market with a two-year warranty. TriContinent designed it to be quick and simple to set up and operate, with color-coded, quick-connect fittings and a manifold that detaches easily for the rinse program. The MultiWash III is ideal for labs performing a variety of test types, as it can accommodate any size of well. It also includes overspill protection for added safety.

- **Power Requirements Consumption**
99-132 VAC/198-264 VAC, 50-60 Hz
30 watts maximum
- **Temperature Operating Storage**
10°C to 40°C (50°F to 104°F) Storage: 1°C to 40°C (34°F to 104°F)

OPTIONS

- **8 Port or 12 Port**
- **Standard Manifold** (ELISA Applications)
- or **Coaxial Manifold** (Cell Wash Applications)

ORDERING INFORMATION

Part Number	Description
TCS 0820	MultiWash III without Manifold
TCS 0820-01	MultiWash III with 8-Port Standard Manifold
TCS 0820-02	MultiWash III with 12-Port Standard Manifold
TCS 0820-04	MultiWash III with 8-Port Coaxial Manifold
TCS 0820-05	MultiWash III with 12-Port Coaxial Manifold
TCS 0835	8-Port Standard Manifold for MWIII
TCS 0836	12-Port Standard Manifold for MWIII
TCS 0838	8-Port Coaxial Manifold for MWIII
TCS 0839	12-Port Coaxial Manifold for MWIII

For technical information please ask for Datasheet Nr. MKT90027 or visit www.tricontinent.com

MultiWash III Accessories

ORDERING INFORMATION

Part Number	Description
TCS 0509	105 µM Filters, 10 / Pack
TCS 0721	Clear Dispense Needles, 0.020" I.D. with Installation Tool, 16 / pack 125 cc HDPE bottle with 3.65" tubing inlet and adapter. For use with Cat# 0980
TCS 0933	Reservoir Kit F Includes: One each Waste, Rinse and Wash bottle, cap with tubing, slip connectors and fittings.
TCS 0934	Replacement Wash Reservoir Cap assembly with slip connectors for use with Kits E and F
TCS 0935	Replacement Rinse Reservoir Cap assembly with slip connectors for use with Kits E and F
TCS 0936	Replacement Waste Reservoir bottle and cap with slip connectors for use with Reservoir Kits E and F
TCS 0943	Maintenance Kit and Syringe Assembly (Cat#'s 0944 and 0945) No tubing included.
TCS 0944	Maintenance Kit w/out Syringe Assembly. Includes: Four each inlet filters, thumbscrews and microstrip wells. Two each fuses, valves, valve covers, cleaning needle assemblies and needle installation tools. 16 needle shroud assemblies.
TCS 0945	Replacement Syringe Assembly Includes: One each valve cover and syringe set and two thumbscrews.
TCS 0946	Replacement Tubing Kit

TriTon XYZ

BASE MODEL

Single Arm, Dual Arm



FEATURES

The TriTon is an extremely quiet and smooth liquid handling robot. It offers highly precise and fully adjustable liquid level detection with a high degree of sensitivity. Featuring a tube stripper mechanism for cap piercing applications, the TriTon has a cap piercing force of over 10lb (4.54 kg). It is also scalable across all axes, making it suitable for multiple applications. The TriTon helps you minimize downtime with its full quadrature encoders that provide high-resolution error detection and fast recovery.

- **Power Requirement**

Input voltages = 24 VDC at 2 A (4 A for dual-arm)

- **Operating Conditions**

Storage Temperature: 0°C to 50°C (32°F to 122°F)
 Operating Temperature: 15°C to 40°C (59°F to 104°F)
 Operating Humidity: 85% RH at 31°C (87.8°F)
 decreasing linearly to 50% RH at 40°C
 Altitude: up to 2,000 meters

OPTIONS

- **Accessories**

- CCU for Tecan® RSP Emulation
- Probe collet
- Liquid level detection (capacitive)
- Proprietary tube stripper design
- Z-axis gripper bracket
- System legs
- Z-axis mounted pipette pump (no external tubing required)

Tecan® is a registered trademark of Tecan Group Ltd.

Rotary Valve Controller

BASE MODEL

Rotary Valve Controller



FEATURES

TriContinent's rotary valve controllers are designed for use with the C-Series rotary shear valves. They provide highly accurate control of the fluid flowing through the valves, along with fast actuation - achieving a performance of less than 250ms between neighboring ports. You can address up to 15 controllers individually and benefit from low total cost of ownership, as the controller drive has a long lifespan and is maintenance free.

- **Interface**

Type: RS232, RS485 or CAN
 Communication Rates: RS232/RS485 9600 or 38400 baud, CAN 100 K, 125 K, 250 K, 500 K, 1 M baud
 Format (RS232/RS485): Data Bits - 8, Parity - None, Stop Bit - 1, Half Duplex, Data Terminal and OEM protocols

- **Operating Conditions**

Temperature 15°C to 40°C (59°F to 104°F)
 Humidity 20 to 95% RH at 40°C (104°F)

OPTIONS

- **OEM Options**

- Custom configurations possible
- Valve pre-installed
- Pre-configured for specific valve

ORDERING INFORMATION

Part Number	Description
TCS 0920	Rotary Valve Controller
TCS 0959	RS232/485 Converter Kit
TCS 0960	USB/485 Converter Kit

For technical information please ask for Datasheet Nr. MKT90037 or visit www.tricontinent.com

PERISTALTIC PUMPS

SR10/30

SR10/50

SR10/100

SR18

SR25

Peristaltic Pumps

BASE MODEL

SR10/30, SR10/50, SR10/100



FEATURES

Thomas peristaltic pumps stand out due to their low maintenance requirements, as they are self-priming and the cassette (for the SR10) and tubing (for the SR25 and SR18) can be replaced rapidly. You can select from a variety of different tubing materials for these compact pumps and the SR10 in particular support endless tubing possibilities. All the Thomas peristaltic pumps are safe to run dry.

TYPICAL APPLICATION

- Chemical industry
- Medical industry
- Laboratory and analysis technology
- Food sector
- Hygiene, disinfection
- Industrial dishwasher
- Glass washing



Peristaltic Pumps

BASE MODEL

SR18, SR25



FEATURES

Thomas peristaltic pumps stand out due to their low maintenance requirements, as they are self-priming and the cassette (for the SR10) and tubing (for the SR25 and SR18) can be replaced rapidly. You can select from a variety of different tubing materials for these compact pumps and the S10s in particular support endless tubing possibilities. All the Thomas peristaltic pumps are safe to run dry.

TYPICAL APPLICATION

- Chemical industry
- Medical industry
- Laboratory and analysis technology
- Food sector
- Hygiene, disinfection
- Industrial dishwasher
- Glass washing



DIAPHRAGM PUMPS FOR LIQUIDS

1210

5002 F

Linear Pumps for Liquids

1210 Series

BASE MODEL

1210 DC, 1210 LC



FEATURES

The Thomas 1210 Series of diaphragm-based liquid pumps streamlines your application in that it is self-priming and handles a mixture of liquid and gas. It also offers excellent performance with high flow and pressure levels, while its compact form factor minimizes pulsation. The 1210 Series pumps also ensure bubble free transfer of gas/liquid media.

TYPICAL APPLICATIONS

- Ink Jet Printers
- Diagnostic Workstations
- Fuel Cells

5002F Series

BASE MODEL

5002F, 5002F Twin



FEATURES

Thomas' 5002F liquid pumps are easy to operate as they are self-priming and require no lubrication - and that maximizes uptime and reduces your maintenance costs. The pumps can also run continuously as well as when they are dry. The 5002F series is ideal for use with aggressive substances, as the pumps are made from strong materials that are highly resistant to corrosion or other damage by chemicals.

TYPICAL APPLICATIONS

- Chemical Industry
- Medical Devices
- Laboratory and Analysis
- Industrial Applications
- Hygiene

Consult factory for customized solutions

Linear Diaphragm Liquid Pump

BASE MODEL

LMF3 115/230 V AC, LMF3 12/24 V AC, LMF4 115/230 V AC, LMF4 12/24 V AC



FEATURES

Thomas' series of liquid pumps is very cost-effective as the pumps are self-priming, maintenance free and long-lasting. In addition, they are compact and quiet in operation.

TYPICAL APPLICATION

- Industrial Applications
- Medical Devices
- Laboratory and Analysis
- Dosing Applications
- HVAC
- Fuel Cells

DIAPHRAGM PUMPS FOR GAS

2002

3014

1410

1420

1610

1620

8221

Miniature Diaphragm Pumps

BASE MODEL

2002



FEATURES

Thomas' series of miniature diaphragm pumps is optimized for use in medical and lab environments, as the devices are ultra-compact and lightweight while offering low noise and vibration levels. They are also oil-less and maintenance free, making them cost-effective in operation.

TYPICAL APPLICATIONS

- Patient monitoring
- Anaesthetic control
- Gas detection devices
- Flue gas measurement
- Pipetting

3014 Series

BASE MODEL

3014



FEATURES

The 3014 Series of Thomas diaphragm pumps is quiet, compact and lightweight. With low vibration levels, these pumps are typically used for patient monitoring and similar applications. They are also cost-effective, with oil-less operation and low power consumption.

TYPICAL APPLICATIONS

- Patient monitoring
- Anaesthetic control
- Gas detection
- Flue gas measurement
- Pipetting

1410 Series

BASE MODEL

1410 LC, 1410 DC, 1410 BLDC



FEATURES

With the 1410 Series of Thomas diaphragm pumps, you benefit from their cost-effectiveness with oil-less operation, low power consumption and a long lifespan. The 1410 series is also very quiet. These pumps have a compact design and are also lightweight, making them ideal for use in small devices such as medical apparatus.

TYPICAL APPLICATIONS

- Medical devices
- Gas detection
- Analysis
- Battery operated systems

1420 Series

BASE MODEL

1420



FEATURES

The 1420 Series of Thomas diaphragm pumps offer very low vibration levels, making them ideal for use in sensitive medical and analysis equipment. You also benefit from their cost-effectiveness with oil-less operation, low power consumption and a long lifespan. The 1420 Series is also very quiet. Along with their compact design, these pumps are also lightweight.

TYPICAL APPLICATIONS

- Medical devices
- Analysis
- Battery operated systems

1610 Series

BASE MODEL

1610VD



FEATURES

The 1610 Series of Thomas diaphragm pumps is ideal for use in a medical and lab environment as the pumps offer low vibration levels and are extremely quiet in operation – even when running at maximum performance. The 1610s are recognized for their evacuation speed, which is up to 30% faster than the industry standard, as well as for their unparalleled stability. They also offer excellent reliability throughout their lifetime.

TYPICAL APPLICATIONS

- Medical Devices
- Gas Detectors and Samplers
- Laboratory Workstations and Analyzers

1620 Series

BASE MODEL

1620VD



FEATURES

The 1620 Series of Thomas is a double head version of the 1610 Series. Thomas diaphragm pumps are ideal for use in a medical and lab environment. The pumps offer low vibration levels and are extremely quiet in operation – even when running at maximum performance. The 1620s are recognized for their unparalleled stability and reliability throughout their lifetime.

TYPICAL APPLICATIONS

- Medical Devices
- Gas Detectors and Samplers
- Laboratory Workstations and Analyzers

Diaphragm Pumps

BASE MODEL

8221



FEATURES

The 8221 Series of Thomas diaphragm pumps is particularly efficient and cost effective as the pumps are oil-less - they do not require lubricating, eliminating the need for maintenance. Their excellent performance is combined with silent operation along with low vibration levels.

TYPICAL APPLICATIONS

- Autoclaves
- Analysers
- Vacuum ovens
- Rotation Evaporator
- Degassing
- Aspirators



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