Science & Technology

OEM - Lab - Pharmaceutical

Process Pumps – Science & Technology Division

To meet the increasing needs of specialised pumping applications encountered in the pharmaceutical, biotechnology, research & development, and OEM industries, Process Pumps has formed the Science & Technology Division to focus on supplying these industries with specialist products and knowledge.

Armed with high technology engineered pump and fluid processing systems, along with the many years of industry experience, the science and technology division can offer solutions for applications which may include the following requirements; precise flow, high pressure, repeatability, OEM integration, and compact designs.

Pump brands represented in particular by the division include:

- **Micropump gear and compact centrifugal pumps**
- **HNP Mikrosysteme gear pumps**
- **Liquiflo gear pump**
- **Ismatec (tubing, piston, and precision drives)**
- **March Manufacturing magnetic drive centrifugal pumps**
- **Lutz-Jesco dosing pumps**
- **Equflow flow meters**

Of course the Science and Technology Division also has access to the entire suite of pump and fluid handling products handled by Process Pumps (Australia).

Please read through the following pages to learn more about the above products, and if you have any questions please feel free to contact us and we will do our best to assist you

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Process Pumps – Science & Technology Division

Important links

Process Pumps (Australia): www.processpumps.com.au
Process Pumps (Australia) Science & Technology Division: www.processpumps.com.au/scitech
Micropump: www.micropump.com.au
HNP Mikrosysteme: www.hnp-mikrosysteme.de
Liquiflo: www.liquiflo.com
ISMATEC: www.ismatec.com.au
March Manufacturing: www.marchpump.com.au
Lutz-Jesco: www.jesco.de
Equflow: www.equflow.com

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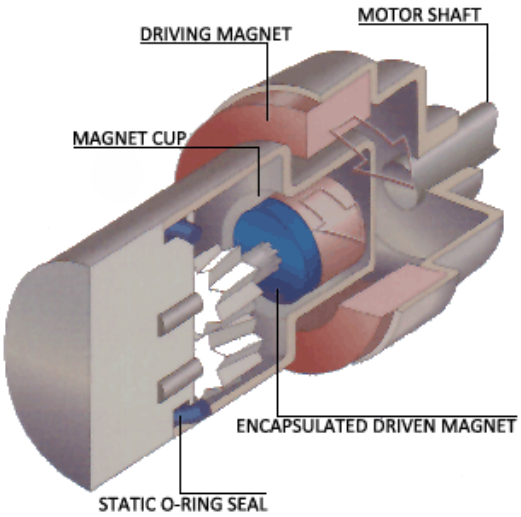
Micropump
Magnetic Drive Gear Pumps

Whether you use the cavity style or the revolutionary suction shoe design, Micropump gear pumps are engineered to deliver peak performance in any application with flow rates to 42 L/min.

External gear pumps provide a more continuous, pulseless flow than many other positive displacement pumps. The rigid design of the gears and housing allows for high pressures and the ability to pump viscous fluids.

Manufactured in a wide range of chemically resistant materials, these compact, magnetically driven gear pumps provide accurate fluid delivery in a durable, leak-free design that can be customized to fit many OEM applications.



Mag-Drive Principal

Benefits

- Magnetic coupling for leak-free operation
- Pulseless delivery for a smooth and continuous flow
- Strong chemical resistance
- High dependability
- Compact designs
- Excellent repeatability
- Easy to field service

Performance Envelope by Pump Series

Product Series	Flow Rate Range (Litres/min)	Max. Differential Pressure (PSI)	Max. System Pressure (PSI)
GA	0.0085 – 0.55	75	200
GAH	0.0085- 0.55	75	5000
GB	0.13 - 6.4	125	300
GC	0.41 – 12.0	125	1500
GD	1.74 – 12.0	125	1500
GJ	0.16 – 5.2	80	300
GK	1.6 – 9.5	80	1500
GL	2.3 – 13.5	125	1500
GM	6.1 – 21.4	125	1500
GN	12.25 – 42.9	100	1500

Micropump GL, GJ, & GA Series Pumps

Website: www.idex-hs.com

Motor Selection

To meet the needs of our customers, a wide variety of motor configurations are available, these include:

AC

Shaded Pole, TEFC and Ventilated
Explosion Proof
Permanent Split Capacitor
IEC and NEMA flanged Industrial Motors (single/three-phase)

DC

Brush Type
Brushless (For long life/continuous duty applications)
Electromagnetic (no moving parts)

Air Motors

GAST Vane type air motors

Programmable Drives

For batch control and accurate dispensing

The GA and GJ series pumps can be fitted with the I-Drive assembly which features the pump, motor, and controller packaged into a compact integral unit.

Micropump I-Drive

Valve-Less Piston Pumps

Micropump also manufacturers the PF series valve-less piston pump. Designed for highly viscous fluids, this pump maintains high volumetric efficiency at elevated pressures for precise dispensing and continuous metering applications. Because there are no inlet/discharge valves, clogging issues have been greatly reduced and also features low wear and tear characteristics on the pump components.

The PF series pump comes standard with a 24-72VDC stepper motor and control equipment can also be supplied.

PF series valve-less piston pump

HNP Mikrosysteme
Microannular Gear Pumps

HNP Mikrosysteme GmbH

Due to careful material selection and advanced microtechnology design as well as high manufacturing precision micro annular gear pumps open a new dimension in pump technology.
Four series of rotary positive displacement pumps allow precise and nearly pulsation-free dispensing of smallest quantities of liquids. The dosage volumes cover the sub-micro litre to litre range for both nonlubricating and highly viscous liquids.

HNP Mikrosysteme offers also comprehensive micro-dosing systems. The most significant characteristics of the pumps are their small dimensions, high operating lives as well as high dosage precision even for the smallest amounts of non-lubricating liquids. Thanks to DC drives and comfortable control the pumps offer high functionality and are easy to operate.

The High Performance as well as the Hermetic and Chemically Inert mzr® Pump Series are employed in application fields such as chemical process technology, assembly as well as dosage and filling techniques. The Low Pressure Pump Series corresponds to the requirements of instrumental analytics, fuel cells and OEM applications as far as dosage of low viscosity liquids is concerned.

The Modular Series allows customized material selection for each component of the pump depending on chemical compatibility with the manipulated liquid.

- **High dosage precision**
  Precision CV < 1 % at low volumes
- **Min. dosage volume 0,25 µl**
- **Low flow rates**
  1,5 µl/min...1152 ml/min
- **Compact dimensions**
- **High differential pressures**
  Achievable even for low viscosity liquids
- **Long service life**
  wear-resistant tungsten carbide and ceramics
- **Broad viscosity range**
  0,3 – 1.000.000 mPas
  Solvents, water, adhesives, paints, grease, gel
- **Pulseless delivery, low shear stress**
  Rotary micro annular gear technology

Website: www.hnp-mikrosysteme.de

HNP Mikrosysteme
Microannular Gear Pumps

HNP Mikrosysteme GmbH

Range of Products

Low pressure series

- compact dimensions
- low pressure range
- tungsten carbide Ni-based, stainless steel 316L seals: PTFE, FPM, optional: EPDM, FFPM
- low viscosity liquids
- DC-motor with graphite brushes

High performance series

- industrial equipment
- tungsten carbide Ni-based, stainless steel 316L seals: PTFE, FPM, optional: EPDM, FFPM
- differential pressure range 40 bar (max. 150 bar)
- low and high viscosity liquids
- DC-servomotor with integrated controller
- modular system: fluidic seal module, heat insulation module, electrical heating, double shell heating and cooling module, reduction gear, high-power motors

Ex-Pumps

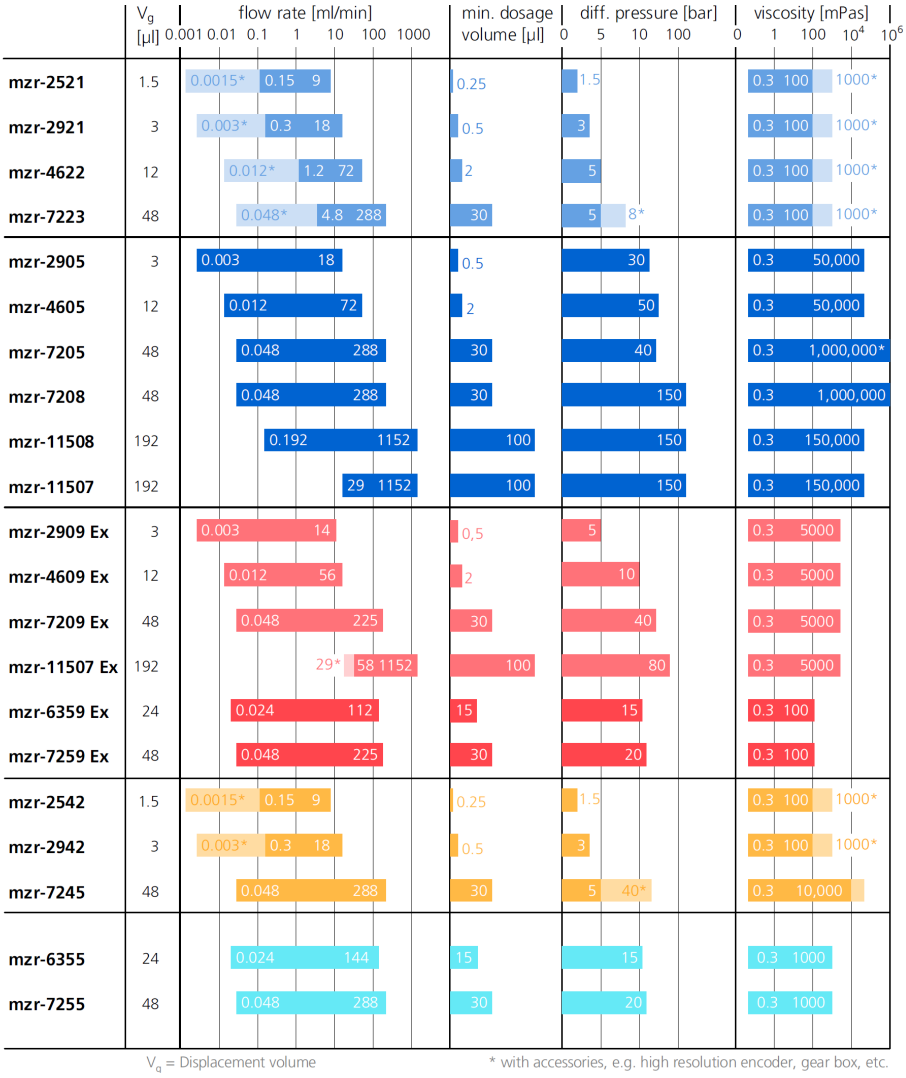
- for pump heads of high performance series and the hermetic inert series
- Ex-certification ATEX, EU directive 94/9/EEC
- CE Ex II 2 G c T4 X, CE Ex II 2 G c T5 X
- tungsten carbide Ni-based, stainless steel 316L or ceramics, alloy C22 seals: PTFE, FPM, optional: EPDM, FFPM

Modular pump series

- chemically inert, compact dimensions
- configurable materials: ceramics, opt. tungsten carbide; alloy C276/C22, optional PEEK™; seals: PTFE, FPM, optional: EPDM, FFPM.
- DC-motor with graphite brushes

Hermetic inert pump series

- chemically inert materials
- industrial equipment
- Al_2O_3, ZrO_2 ceramics, alloy C22, SSiC, Kalrez®
- hermetic magnetic coupling
- DC-servomotor with integrated controller



V_g = Displacement volume

* with accessories, e.g. high resolution encoder, gear box, etc.

Website: www.hnp-mikrosysteme.de

Liquiflo Chemical Processing Pumps
Gear Pumps

Liquiflo specializes in the design and manufacture of high-alloy gear pumps for the chemical processing industry. Their extensive experience and wide offering of corrosion and wear resistant materials enable them to engineer pumps capable of handling some of the most difficult and challenging chemical applications. These include pumping acids, caustics, corrosive salts, solvents, polymers and other types of chemicals, as well as hot or cold, viscous, extremely thin and hazardous liquids.

Liquiflo offers a large selection of standard Sealed and Mag-drive pumps, repair kits, parts, options and accessories, which are available for immediate delivery. In addition, Liquiflo can customize pumps to meet your specific requirements.

Liquiflo Max Series Gear Pump with Flanges

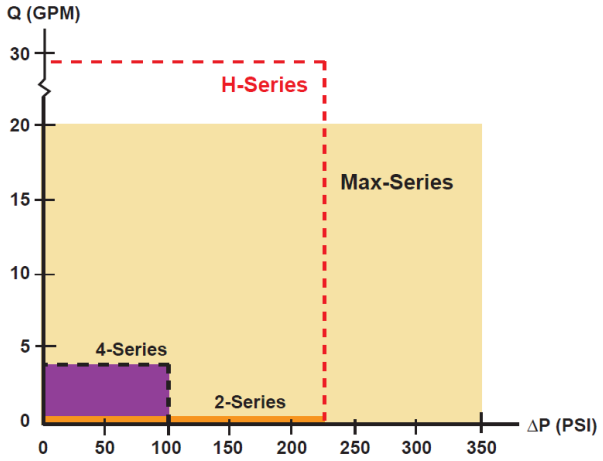
Markets Served by Liquiflo Gear Pumps

- Adhesives and coatings
- Chemical plants
- Fertilizers
- Food & dairy
- Pharmaceuticals
- OEM applications

Motor Options

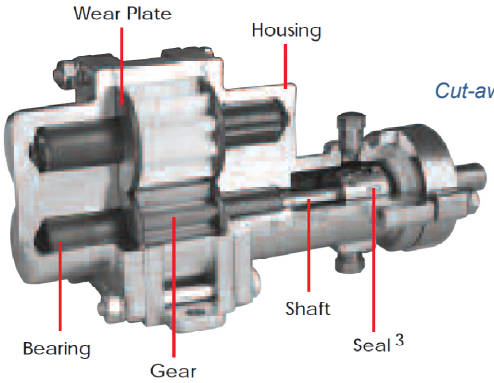
Liquiflo pumps are generally fitted to IEC or NEMA industrial AC or DC motors, this allows them to be used in applications where continuous, reliable operation is required. Both long coupled and close coupled options are available across the whole range.

Performance Envelope of Liquiflo Gear Pumps



Reliability

By using self lubricating internal components, combined with optionally coated shafts (i.e. tungsten carbide) Liquiflo has mastered the art of developing a long life, durable gear pump, allowing long term reliable operation, with low total cost of ownership, no matter how difficult your application is.



Cut-away image of H-series gear pump
[3] internal mechanical seal option shown

Website: www.liquiflo.com

Liquiflo Chemical Processing Pumps
Gear Pumps

Below you will find a brief summary of the Liquiflo gear pump range.

2-Series: Ultra Low-Flow Gear Pump

The 2-Series Mag-Drive Gear Pumps were designed for low-flow applications. Their compact and rugged design makes them ideal for many applications, including chemical dosing and metering, pipeline sampling and wastewater treatment. The 2-Series pumps are available in corrosion-resistant 316 SS construction and deliver **flows up to approximately 113 l/hr (1.8 l/min) at differential pressures up to 15.5 bar (225 PSI).**

4-Series: Low-Flow Gear Pump

The 4-Series Mag-Drive Gear Pumps were designed for OEM applications such as chemical feed systems. These pumps offer a large selection of materials to cover a wide variety of chemical processing applications. A unique feature of the 4-Series pump is its parallel port connections located on the front of the pump.
The 4-Series pumps are available in 316 SS, Alloy-C or Titanium construction and deliver **flows up to 13.25 l/min at differential pressures up to 6.9 bar (100 PSI).**

H-Series: Heavy Duty Industrial Gear Pump

The H-Series Gear Pumps were designed as an upgrade to Liquiflo's original 3-Series. With similar outside dimensions and capacities, the H-Series incorporates larger diameter shafts and bearings, allowing them to handle higher pressures with extended service life.
The H-Series pumps are available in 316 Stainless Steel or Alloy-C construction, and Sealed and Mag-drive versions with **flows up to approximately 113 l/min and differential pressures up to 15.5 bar (225 PSI) with 20.7 bar (300 PSI) possible on some models.**

Max®-Series: High-Pressure Gear Pump

The Max-Series pumps feature helical gears and relieved wear plates for smoother and quieter operation and intrinsic reduction of gear separation forces. Their unique and durable design will assure extended life in high pressure pumping applications. The Max-Series pumps are available in Sealed and Mag-Drive versions with **flows up to 75.7 l/min and differential pressures up to 24 bar (350 PSI)**
The basic material of construction is 316 SS with Titanium available for select models.

Custom Pump Configurations

One highly desirable feature of the Liquiflo pump philosophy is the ability to custom build pumps to suit special applications. If your application will not suit a standard pump build due to factors such as abrasive liquid characteristics, high temperatures, high/low viscosities then Liquiflo will use their many years of experience, combined with high technology materials to work out a pump solution that suits your application needs.

Website: www.liquiflo.com

ISMATEC®
Laboratory Pumps

ISMATEC manufacture advanced technology laboratory pumps, suitable for use in a wide range of applications. Along with these pumps, accurate, highly repeatability, flexible drive solutions are provided. Many drives can be integrated into OEM applications and can interoperate with existing controlling systems.

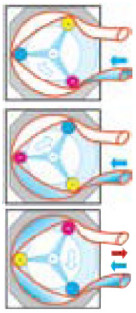
The range of ISMATEC pumps can be broken up into three categories.

1. Tubing Pumps
2. Gear Pump
3. Valve-less Piston pumps

Each of these categories suits various applications, more information can be found below.

The Multipurpose Tubing Pump

Tubing pumps work on the peristaltic pump theory, where a roller (or several) compresses a tube forming a progressive cavity. This results in a gentle flow capable of developing respectable pressure, can handle particles, and eliminates virtually all wearing parts apart from the tube itself



The peristaltic principal

Application range of tubing pumps

Industries	Application	Special Media
Beverage	Analytical	Abrasives
Biotechnology	Fermentation	Cell cultures
Cemical	Filtration and separation	Corrosives
Environmental	Galvanic Process	Paints and pigments
Food	Research and development	Printing inks
Paint	Water waste and water treatment	Solids content up to %60
Pharmaceutical		
Plating		
Printing		

With a wide variety of tubing materials available, finding a compatible material is not problem. Additionally many pump heads can be of a multi-channel design, allowing up to 24 tubes to be driven off a single motor. Below you will find a summary of tubing pumps available,

IPC / IP and IPC-N / IP-N
Low pulsation, highest accuracy

This microprocessor controlled tubing pump is fitted with 8 rollers per channel to ensure low pulsation and high accuracy. With flow rates from 0.002 to 44 ml/min per channel for the IPC & IP range and 0.4µlmin to 11ml/min for the IPC-N & IP-N range.

4 channels 8 channels 12 channels 16 channels 24 channels

IP & IP-N pumps can operate as standalone units, or can also be controlled via analogue inputs .
IPC & IPC-N pumps can additionally be controlled by a PC via an RS232 connection.

REGLO Analogue / Digital

The smallest calibrateable dispensing pump (178mm x 100mm footprint)

This compact tube pump utilises the handy 'click 'n' go' cassettes, which allow quick tubing changes when required. With up to 12 rollers low pulsation can be guaranteed with excellent repeatability. The REGLO Digital pump comes complete with integrated dispensing functions for ease of operation.

REGLO Digital with 4 channel cassette

Technical Data Analogue / Digital

- 2 or 4 channel pump head
- Choice of 6, 8, or 12 rollers
- Click 'n' go cassettes with automatic pressure mechanism (each channel use varying tubes)
- 3 – stop tubing
- Differential pressure 1 bar

Specifications, REGLO Analogue		Specifications, REGLO Digital	
Motor type	DC motor	Motor type	DC motor
Speed	2 channel 3.2 – 160 RPM 4 channel 2.0 – 100RPM	Speed	2 channel 1.6 – 160 RPM 4 channel 1.0 – 100RPM
Speed setting	2-99%, 1% resolution 2-digit potentiometer	Speed setting	RPM: Resolution 0.1RPM Flow Rate: µl/min or ml/min
Power consumption	20 watts	Power consumption	20 watts
Mains connection	230VAC 50Hz 115VAC 60Hz	Mains connection	230VAC 50Hz 115VAC 60Hz
Protection rating	IP30	Protection rating	IP30
Inputs	0-5, 0-10VDC, & 4-20mA speed Start/Stop Rotation direction	Inputs	PC controllable via RS232

REGLO *Quick*™

Very fast tubing change-over

The REGLO *Quick* is a single channel, 4 roller variation of the REGLO Analogue seen above. It features a higher flow rate for the individual channel than both the REGLO Analogue and Digital series, with the added benefit of a quick tubing change-over system

Specifications	
Motor Type	DC motor
Speed	3.2 – 160 RPM
Speed setting	1-99% resolution 1% 2- digit potentiometer
Power consumption	30 Watts
Mains connection	230VAC 50Hz 115VAC 60Hz
Protection rating	IP30
Inputs	0-10, 0-5VDC, & 4-20mA speed Start/Stop Rotation Direction

REGLO Quick

Website: www.ismatec.com

Ecoline
Economical and powerful

The Ecoline range of ISMATEC tubing pumps feature high flow rates and simple operations. With single and multichannel options available these are suitable for applications where complex control is not required. Despite the simple robust design, they still feature analogue inputs for controlling various functions.

Ecoline VC-MS/CA8-6
0.005–150 ml/min

8 channels

6 rollers

Ecoline VC-MS/CA4–12
0.003–83 ml/min

4 channels

12 rollers (low pulsation)

Click'n'go cassettes with automatic pressure setting

3-stop tubing

Differential pressure 1 bar

Ecoline VC-Easy-Load
0.23–1600 ml/min

1 channel

3 rollers

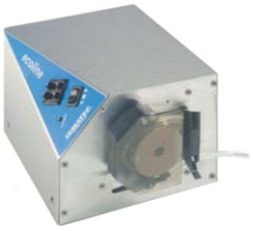
Easily accessible pump-head

Allows rapid tube change

Pump-head PSF housing (Polysulfone)

Standard tubing 1.6 mm

Differential pressure 1.5 bar



Ecoline VC-360
0.25–1300 ml/min

1 channel

3 convex rollers treat the liquid and tubing gently

Hinged tube-bed for easy and rapid tube change-over

Standard tubing 1.6 mm

Differential pressure 1.5bar

Ecoline VC-280
1.7–5400 ml/min
Ecoline VC-380
1.6–5000 ml/min

1 channel

2 or 3 convex rollers treat the liquid and tubing gently

With exchangeable rotor e.g. for lower pulsation, higher flow rates, or elevated differential pressures

Standard tubing 1.6 mm

Differential pressure 1.5bar

Specifications

Motor type	DC motor
Speed	3.5 to 350 RPM
Speed setting	1-99% resolution 1% 2-digit potentiometer
Power consumption	100 watt
Mains connection	230VAC 50Hz 115VAC 60Hz
Protection rating	IP 30

Applications

Ecoline VC-280
To apply protective lacquer to cartons

Ecoline VC-380
As recirculating pump for coolant in thermostat bath

Ecoline VC-360
Externally controlled spectrophotometer cuvette filling

Ecoline VC-MS/CA8-6
8-channel flushing of the tubing system of a digital fabric printing machine

Website: www.ismatec.com

Process drives for tubing, gear, and piston pumps

ISMATEC process drives are ideal for many applications as they feature flexible pump mounting options, Are reliable, accurate, and repeatable with stand-alone and integrated features. When selected for tubing pump applications pump heads can be changed with no tools required. This means one drive can suit many applications simply by exchanging the pumphead.

These drives are also available for use with the Micropump range of magnetic drive gear pumps (see pages 4-5) and the ISMATEC range of piston pumps which are detailed further down.

BVP Standard	MCP Standard (Dispensing Option)	BVP Process	MCP Process (Dispensing Option)
3 digit potentiometer 14 pump heads to suit Quick changeover pumps 2.4-240 RPM 0.1% Speed resolution Analogue inputs: Speed: 0-10VDC 0-5VDC 4-20Ma Start/stop & rotation Power: 230VAC 50Hz 115VAC 60Hz	Fully programmable drive Can set flow rates 1-240 RPM 20+ pump heads to suit 4 program memories PC Control via RS232 Analogue inputs: Speed: 0-10VDC 0-5VDC 4-20Ma Start/stop & rotation Power: 230VAC 50Hz 115VAC 60Hz	Membrane keypad 20+ pump heads to suit Stainless steel housing 1-240 RPM 0.1% Speed resolution Analogue inputs: Speed: 0-10VDC 0-5VDC 4-20Ma Start/stop & rotation Power: 230VAC 50Hz 115VAC 60Hz **IP65**	Fully programmable drive Can set flow rates 1-240 RPM 20+ pump heads to suit 4 program memories PC Control via RS232 Analogue inputs: Speed: 0-10VDC 0-5VDC 4-20Ma Start/stop & rotation Power: 230VAC 50Hz 115VAC 60Hz **IP65**

Flowmaster FMT300
Heavy duty process tube pump

The ISMATEC Flomaster tube pump is the highest capacity single channel pump in the ISMATEC range. With a Stainless Steel housing and easy tube change interface, this pump is ideal for fluid transfer in the biotechnology, pharmaceutical, and food & beverage industries.

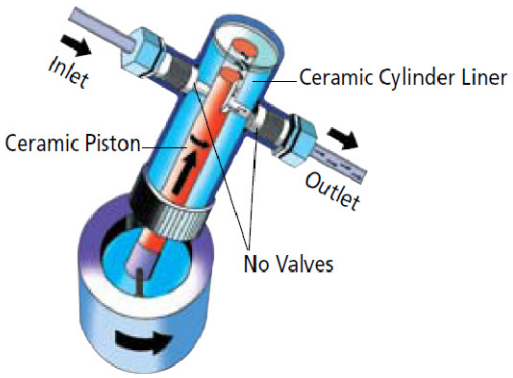
37ml/min to 13 l/min	Motor Type: DC
Single channel	Speed: 5 – 500 RPM
3 convex SS rollers	Speed Resolution: 0.1 RPM
Auto-stop when tube bed open	Power Consumption: 50W
Overload protection	230VAC 50HZ
	115VAC 60Hz
PLC compatible interface	I65 Enclosure protection
Easy tube change	

Website: www.ismatec.com

Rotary piston pump heads
Suit REGLO & MCP drives

ISMATEC rotary piston pumps are ideal for applications where highly corrosive media needs accurate dispensing. As they are of a rotary piston design, there are no valves which can clog up on viscous liquids, and having only a single moving part, wear and tear is minimised.

Please find a summary of the available piston pumps below



Valveless piston pump principal

RH00 Pump heads
Drives and flow rates:
REGLO *Analogue*
0.045 – 45 ml/min
REGLO *Digital*
0.1 – 45 ml/min
MCP Process
0.025 – 45 ml/min




Type	RG00.CKC-LF	RH00.SKY-LF	RH00.STY-LF	RH00.CTC-LF
Piston	Ceramic	316 Stainless Steel	316 Stainless Steel	Ceramic
Cylinder base	Kynar	Kynar	Tefzel	Tefzel
Cylinder liner	Ceramic	Carbon	Carbon	Ceramic
Lip seals	Rulon AR	Rulon J	Runlon J	Rulon AR
Gland washers	PTFE	PTFE	PTFE	PTFE
Max. Temperature	100°C	60°C	60°C	100°C
Max. Pressure	6.9 Bar	6.9 Bar	6.9 Bar	6.9 Bar
Flow Ports	Kynar UNF ¼"-28	Kynar UNF ¼"-28	Kynar UNF ¼"-28	Kynar UNF ¼"-28

RH0 Pump heads
Drives and flow rates:
REGLO *Analogue*
0.09 – 90 ml/min
REGLO *Digital*
0.2 – 90 ml/min
MCP Process
0.050 – 90 ml/min



Type	RH0.CKC / FMI 005	RH0.CK-LF / FMI 013	RH0.CTC / FMI 006
Piston	Ceramic	Ceramic	Ceramic
Cylinder base	Kynar	Kynar	Tefzel
Cylinder liner	Ceramic	Ceramic	Ceramic
Lip seals	Rulon AR	Rulon AR	Runlon AR
Gland washers	PTFE	PTFE	PTFE
Max. Temperature	100°C	100°C	100°C
Max. Pressure	6.9 Bar	6.9 Bar	6.9 Bar
Flow Ports	4mm i.d Tube fitting	Kynar UNF ¼"-28	4mm i.d Tube fitting

RH1 Pump heads
Drives and flow rates:
REGLO *Analogue*
0.18 – 180 ml/min
REGLO *Digital*
0.4 – 180 ml/min
MCP Process
0.1 – 180 ml/min



Type	RH1.CKC / FMI 007	RH1.CK-LF / FMI 015	RH1.CTC / FMI 008
Piston	Ceramic	Ceramic	Ceramic
Cylinder base	Kynar	Kynar	Tefzel
Cylinder liner	Ceramic	Ceramic	Ceramic
Lip seals	Rulon AR	Rulon AR	Runlon AR
Gland washers	PTFE	PTFE	PTFE
Max. Temperature	100°C	100°C	100°C
Max. Pressure	6.9 Bar	6.9 Bar	6.9 Bar
Flow Ports	4mm i.d Tube fitting	1.6mm i.d. Tube fotting	4mm i.d Tube fitting

Due the wide range of products and OEM solutions ISMATEC can provide, we recommend you consult with the sales staff at Process Pumps to assist in determining the ideal solution for your applications.

A full colour detailed ISMATEC catalogue can also be provided on request or downloaded online from www.ismatec.com

MCP Process drive with rotary piston pump fitted

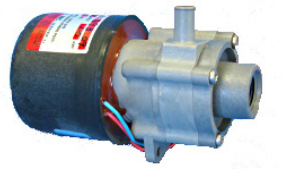
Click 'n' go cassette used in tubing pumps

March Manufacturing
Magnetic Drive Centrifugal Pumps

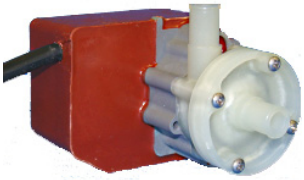
Since 1954 March manufacturing has been developing high quality magnetic drive centrifugal pumps in a wide variety of sizes and configurations. Using high quality plastics and both standard and specialised motors to suit a wide variety of chemical applications. With over 20 models of pumps, there is almost certainly one to suit your application needs.

These pumps are reliable, quiet and fully serviceable, and been of magnetic drive design there are mechanical seals and they are virtually leak-proof.

Below you will find a brief summary of pumps often found in the OEM and laboratory industry.



March 893 Series
Polypropylene Construction
Brush and Brushless DC motors
12VDC & 24VDC Options
Submersible and open air option
Flows to 11 l/min, head to 3.3 metres
Special materials available
Temperature: Polypropylene to 87°C Polysulfil: to 121°C



March 1 Series
Polypropylene Construction
AC Motor 230V 50Hz or 115V 60Hz
Ideal for circulation systems
Submersible and open air option
Flows to 9 l/min, head to 1 metre
Special materials available
Temperature: Polypropylene to 87°C

March 3 Series
Polypropylene Construction
AC Motor 230V 50Hz or 115V 60Hz
Ideal for low flow chemical transfer
Flows to 33 l/min, head to 4.5 metres
Submersible and open air option
Special materials available
Temperature: Polypropylene to 87°C

March 802 dual head pump
Polypropylene, kynar & ryton
AC Motor 230V 50Hz or 115V 60Hz
1 motor, 2 pumps
Quiet operation
Flows to 26 l/min, head to 3.9 metres
Special materials available
Temperature: Polypropylene to 87°C

March 335 Series
Polypropylene Construction
AC Motor 230V 50Hz or 115V 60Hz
Ideal for high head applications
Flows to 45 l/min, head to 20.7 metres
TEFC motor fitted as standard
Special materials available
Temperature: Polypropylene to 87°C

If you think you have an application that may suit a March pump, please feel free to contact the sales staff at Process Pumps and we will be able to assist you determining the best pump for your situation.

Website: www.marchpump.com

Lutz-Jesco
Dosing Systems and Chemical Feed Pumps

Lutz-Jesco have a proud history of manufacturing high quality metering pumps and chemical feed systems. From the small MAGDOS range of solenoid driven pumps to the larger MEMDOS mechanically driven pumps. Their range includes the following pumps and features:

MAGDOS

The **MAGDOS** line of solenoid driven diaphragm metering pumps combines state-of-the-art microprocessors with durable mechanics.

- 0.1 to 105 l/hr capacity
- Pressures to 16 bar
- Manual control with stroke frequency adjustment
- Proportional chemical feed via external pulse inputs
- Connection for level controls and alarm signals
- PVC, polypropylene, PVDF, PTFE, and Stainless Steel materials

MEMDOS E

The MEMDOS series is an economical line of motor driven, mechanical diaphragm metering pumps with the base model being the MEMDOS E, which is a manually operated version.

- Capacities to 350 l/hr
- Pressures to 10 bar
- Manual stroke adjustment
- 10:1 turndown ratio
- Compact design, small footprint
- IEC industrial motor, flameproof option if required
- PVC, polypropylene, PVDF, PTFE, and Stainless Steel materials

MEMDOS DX

For applications requiring control by an external control signal, the intelligent **MEMDOS DX** offers state-of-the-art microprocessor control. By integrating the speed control, the MEMDOS DX eliminates the need for the further expense of additional variable speed controllers.

- Integrated speed control
- Wide selection of input signals accepted
- Manual control mode available
- Turndown ratio up to 1400:1
- Compact design, small footprint
- Output alarm and pulse speed control
- PVC, polypropylene, PVDF, PTFE, and Stainless Steel materials

Many more types of diaphragm and piston type metering pumps are available from the Lutz-Jesco range, along with a wide range of associated dosing equipment such as injection nozzles, pressure loading valves and inline mixers. Please don't hesitate to contact us for more information.

Equflow
Turbine Flow Meters

Equflo manufacturer a unique range of compact flow meters, ideal for use in a wide range of industries. Their range includes economical plastic flow meters constructed from PFA suitable for OEM applications to highly chemical resistant models made from PVDF. Stainless Steel flow meters are also available along with batch control systems and other associated equipment.

Process Pumps is pleased to present the following information regarding the Equflow range.

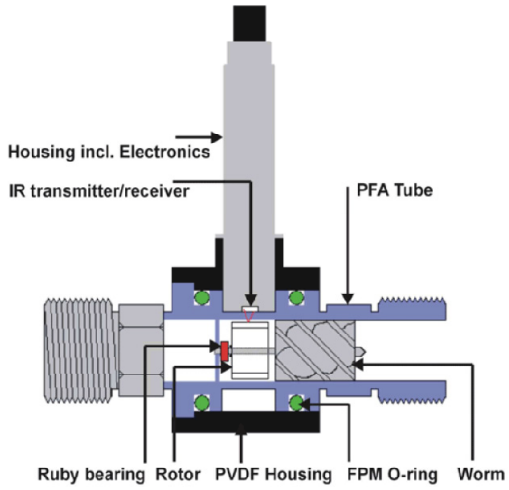
Disposable PFA turbine flow meter

This model is developed to perform a fast exchange of the flow tube (hygienically reason e.g. in pharmaceutical industry). The flow meter is suitable for clear and opaque, neutral, corrosive and aggressive liquids, fuel and for periodic monitoring.
The flow tube is assembled in the flow system. For measurement and calibration the easy to remove housing is placed around the tube and measuring can take place.

Characteristics:

Turbine flow sensor with high resolution output,
Flow Measuring by revolutionary IR turbine reflection.
PFA / Teflon for high chemical and corrosive resistance
High accuracy and repeatability (“swiss made”)
Suitable for opaque liquids
Programmable pulse output
PFA meet all the requirements of the US Pharmacopeia Class VI
BSE/TSE certificate available
All wetted parts are made of Teflon®/PFA with ruby bearing.
The flow tube can be sterilised up to 160º C.

Model	0045	0085
Inner diameter (mm)	4.5	8.5
Flow range	0,06 – 2.0 l/min	0.5 – 20 l/min
Accuracy	1% of reading	1% of reading
Repeatability	<0.15%	< 0.15%
Wetted parts	PFA / Ruby	PFA / Ruby
Tube connection	¼” NPT or 7mm barb	¼” NPT or 12mm barb
Tube length (mm)	52mm	60mm
Liquid temperature range	-20 to 80°C	-20 to 80°C
Maximum pressure	20 bar	15 bar
Viscosity range (cSt)	0.8 – 10	0.8 – 10
K Factor (Water)	110,000	6,350
Power supply	5 – 30 Vdc	5 – 30 Vdc
Output signal	5 – 30V square wave	5 – 30V square wave
Power consumption	34mA at 5V	34mA at 5V
Electrical lead	PVC 1 metre	PVC 1 metre



Flow meter design

Website: www.equflow.com

Equflow
Turbine Flow Meters

Standard PFA flow meter

The PFA flow sensor of Equflow has low flow sensing capabilities in a wide range of applications, and is suitable for clear- , opaque, neutral, corrosive and aggressive liquids including fuel.

An ultra light-weight turbine follows the fluctuation of flow very accurate and generates a high resolution IR reflected digital output signal. In either flow controlled or monitoring applications, the PFA flow sensor can measure flow rates and totalize.

Characteristics:

Turbine flow sensor with high resolution output,
Flow Measuring by revolutionary IR turbine reflection.
PFA / Teflon for high chemical and corrosive resistance
High accuracy and repeatability (“swiss made”)
Suitable for opaque liquids
PFA meet all the requirements of the US Pharmacopeia Class VI
BSE/TSE certificate available
All wetted parts are made of Teflon®PFA with ruby bearing.

Model	0045	0085	0125
Inner diameter (mm)	4.5	8.5	12.5
Flow range	0,06 – 2.0 l/min	0.5 – 20 l/min	1.5 – 40 l/min
Accuracy	1% of reading	1% of reading	1% of reading
Repeatability	<0.15%	< 0.15%	< 0.15%
Wetted parts	PFA / Ruby	PFA / Ruby	PFA / Ruby
Tube connection	¼” NPT or 7mm barb	¼” NPT or 12mm barb	½” NPT or BSP
Tube length (mm)	52mm	60mm	72mm
Liquid temperature range	-20 to 80°C	-20 to 80°C	-20 to 80°C
Maximum pressure	20 bar	15 bar	10 bar
Viscosity range (cSt)	0.8 – 10	0.8 – 10	0.8 – 10
K Factor (Water)	110,000	6,350	2,050
Power supply	5 – 30 Vdc	5 – 30 Vdc	5 – 30 Vdc
Output signal	5 – 30V square wave	5 – 30V square wave	5 – 30V square wave
Power consumption	34mA at 5V	34mA at 5V	34mA at 5V
Electrical lead	PVC 1 metre	PVC 1 metre	PVC 1 metre
Resolution in µl/pulse	9	158	488

Equflow
Turbine Flow Meters

Stainless Steel turbine flow meter

The SS flow sensor of Equflow has low flow sensing capabilities in a wide range of applications, with neutral-corrosive- aqueous- and opaque liquids including fuel.

Outstanding performance in high pressure applications.
An ultra light-weight turbine, follows the fluctuation of The flow very accurate and generates a high resolution IR-reflected digital output signal. In either flow controlled or monitoring applications, the Stainless Steel flow sensor can measure flow rates and totalize.

Characteristics:

SS Turbine flow sensor with high resolution output,
Measuring by revolutionary IR Turbine reflection.
Stainless Steel - PFA parts for high corrosive resistance
Outstanding performance for high process pressure
High accuracy and repeatability (“swiss made”)
Also suitable for opaque liquids
All wetted parts are made of SS.316 / PFA with ruby bearing.

Model	0045	0085	0125
Inner diameter (mm)	4.5	8.5	12.5
Flow range	0,06 – 2.0 l/min	0.5 – 20 l/min	1.5 – 40 l/min
Accuracy	1% of reading	1% of reading	1% of reading
Repeatability	<0.15%	< 0.15%	< 0.15%
Wetted parts	SS / PFA / Ruby	SS / PFA / Ruby	SS / PFA / Ruby
Tube connection	¼” NPT or BSP	⅜” NPT or BSP	½” NPT or BSP
Tube length (mm)	72.6mm / 40mm Ø	72.3mm / 40mm Ø	73.6mm / 45mm Ø
Liquid temperature range	-20 to 80°C	-20 to 80°C	-20 to 80°C
Maximum pressure	20 bar	20 bar	15 bar
Viscosity range (cSt)	0.8 – 10	0.8 – 10	0.8 – 10
K Factor (Water)	110,000	6,350	2,050
Power supply	5 – 30 Vdc	5 – 30 Vdc	5 – 30 Vdc
Output signal	5 – 30V square wave	5 – 30V square wave	5 – 30V square wave
Power consumption	34mA at 5V	34mA at 5V	34mA at 5V
Electrical lead	PVC 1 metre	PVC 1 metre	PVC 1 metre
Resolution in µl/pulse	9	158	488

Website: www.equflow.com

Equflow
Turbine Flow Meters

Disposable PVDF turbine flow meter

This flowmeter has low flow capabilities in a wide range of flow processes and is mainly developed to perform a fast exchange of the flow tube in single-use applications. (hygienically reason e.g. in Pharmaceutical- and Bio medical industries).

In spite of the name 'Single-use' these devices are suitable also for long term measurement.

Characteristics:

Performs a fast exchange of the flow tubes
High resolution square wave output
Flow Measuring by revolutionary Infra Red turbine rotor reflection
PVDF for high chemical and corrosive resistance
High accuracy (< 1%) and repeatability (< 0,15%)
Also suitable for opaque liquids
Programmable pulse output
PVDF meets all the requirements of the US Pharmacopeia Class VI
The flow tube can be sterilised up to 140º C.
Gamma radiation resistant up to 50 kGy

Model	0045	0085
Inner diameter (mm)	4.7	9.3
Flow range	0,03 – 2.0 l/min	0.3 – 20 l/min
Accuracy	1% of reading	1% of reading
Repeatability	<0.15%	< 0.15%
Wetted parts	PVDF / Ruby	PVDF / Ruby
Tube connection	7mm barb	12mm barb
Tube length (mm)	53mm	62mm
Liquid temperature range	-20 to 80°C	-20 to 80°C
Maximum pressure	25 bar	20 bar
Viscosity range (cSt)	0.8 – 10	0.8 – 10
K Factor (Water)	100,000	4,500
Power supply	5 – 30 Vdc	5 – 30 Vdc
Output signal	5 – 30V square wave	5 – 30V square wave
Power consumption	34mA at 5V	34mA at 5V
Electrical lead	PVC 1 metre	PVC 1 metre

Batch controller

The Equflow batch controller system, used in conjunction with the Equflow range of flow meters is capable of controlling up to two pumps simultaneously. With simple operation and a wide range of input and output functions it's guaranteed to make designing your process system a breeze.

Main features

Capable of controlling 2 pumps
Includes calibration program
PC Communication via USB

Website: www.equflow.com

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