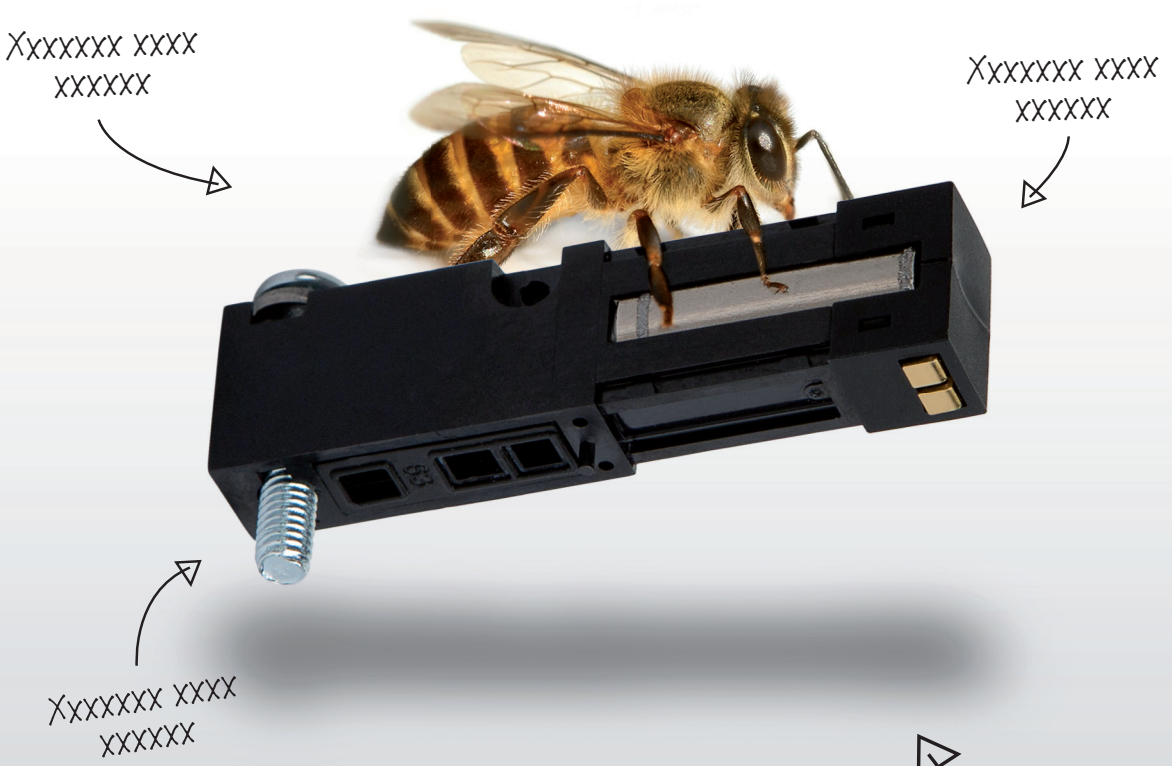
IMI FAS®

FLEXISOL

...Because size does matter...



Engineering GREAT Solutions

IMI Precision Engineering

Contents

Innovation, products and service

IMI Precision Engineering

Engineering GREAT solutions through people, products, innovation and service

IMI Precision Engineering is a world-leader in fluid and motion control. Building close, collaborative relationships with our customers, we gain a deep understanding of their engineering needs and then mobilise our resources and expertise to deliver distinctive products and solutions.

Wherever precision, speed and engineering reliability are essential, our global footprint, problem-solving capability and portfolio of high performance products enables us to deliver GREAT solutions which help customers tackle the world's most demanding engineering challenges.

> **Reliability**
We deliver and support our high quality products through our global service network.

> **High performance products**
Calling on a world-class portfolio of fluid and motion control products including IMI Norgren, IMI Buschjost, IMI FAS, IMI Herion and IMI Maxseal. We can supply these singly, or combined in powerful customised solutions to improve performance and productivity.

> **Partnership & Problem Solving**
We get closer to our customers to understand their exact challenges.

Expertise in the Life Science Sector

With over thirty years of experience in the life science sector and the well-recognised brands IMI FAS and IMI Norgren, IMI Precision Engineering is one of the leading names in the custom design and manufacture of precision fluidic and motion control components and assemblies for the OEM instrument manufacturer. We are well used to designing for the precise control, repeatability and safety needs of the industry.

Our market-driven product portfolio, designed to meet the demanding performance requirements in medical devices, diagnostic and analytical instrumentation applications, features niche or platform products and technologies, supported by regular new product launches. Renowned in the industry are IMI Precision Engineering's brands, IMI FAS and IMI Norgren, specializing in miniature solenoid valve technology, microfluidics, precision liquid handling solutions and analytical instrument solutions respectively. IMI Precision Engineering, Engineers GREAT Solutions, by reducing the size of OEM devices while enhancing accuracy, throughput and fluid control performance. Our components are designed for optimal 'size to performance' ratio with smaller footprints, higher repeatability and lower operating power.

IMI FAS FLEXISOL, our latest little creation

IMI Precision Engineering furthers its valve product offering with the addition of the new IMI FAS 6.5mm FLEXISOL, a direct acting 2-way or 3-way valve, designed for compact environments and easy installation.

Developed to deliver optimum performance and all-round efficiency, IMI Precision Engineering has implemented a host of functional and practical features within its latest valve. With a footprint of 6.5mm, FLEXISOL has the flow characteristics of an 8mm valve, and lasts up to 50million life cycles.

Its small size and low power consumption means that it can be easily integrated with many portable medical devices and analytical instrumentation, providing a flow rate of up to 12 l/min (air, ΔP 2.5bar)

This valve is the smallest of its kind in the IMI FAS range, combining unique features and unmatched flow to size ratio. Our engineers have worked to streamline the integration process through its unique connection features. Only one fixation screw is needed to connect the valve to a manifold. At the same time, the valve's electrical pad will connect to a PCB on the manifold, avoiding the need for soldering and wiring.

Point of Care Testing, a global health challenge

Point of Care opens up new opportunities in the medical field and provides a new approach to local medical care by making the patient the centre of the process. In order to achieve this, POC tests (POCT) are performed, such that rapid medical checks can be done in situ rather than in a lab. It is therefore essential that the equipment and apparatus provide results of equal quality in order to provide an equally reliable, yet faster, diagnosis to save time in the decision-making process, meaning treatment can start sooner.

Thanks to recent progress in biotechnology, new assays have been developed. These tests, aimed at proteins, metabolites, nucleic acids, cells, microbes/ pathogens and drugs contained in a patient's sample (blood, saliva, urine, etc.) make it possible to perform a wide range of analyses, ranging from the flu to HIV infections to cardiac pathologies.

Manufacturers have access to many technological means to transport samples, chemicals, buffer solutions, etc. and to control the reaction rate within their devices. Some appliances do not require any fluidic components, such as valves and pumps, while certain, more advanced, pieces of equipment, require these elements for complex fluid control. In any case, the transport of the liquids in POCT instruments plays an important role because it may directly impact the results of the assays.

POCT: the marvelous machines:

POCT instruments are marvelous machines which enable fast and precise diagnostics. The challenge is to develop progressively smaller portable or transportable instruments with improved performances. The aim is to improve mobile healthcare and to bring down healthcare costs by improving patient care.

Simple and reliable solutions need to be developed in order to make POC available to as many people as possible.

In general, the growing POCT testing market requires:

- less cumbersome and simpler use of equipment
- fast testing procedures
- precise flow control
- reliability
- competitiveness

FLEXISOL: The marvelous solution

Developed to deliver optimum performance and all-round efficiency, IMI Precision Engineering has implemented a host of functional and practical features within its latest valve – FLEXISOL.

6.5 mm
Fits compact environment

0.8 W
Preserves the battery

8 g
Designed for portable applications

Design simple
Robust and reliable even in extreme situations

Up to 0.26 kV
Unmatched size to performance ration

FLEXISOL, save on overall costs with no compromise on performance

FLEXISOL's design makes it exceptionally easy to integrate. Its size and weight make the valve ideal for compact environment. For battery powered instruments, saving can be on the sizing of the battery.

The fastest installation ...
1 screw and 4 seconds mounting

Save space
Battery mounting of XXS-size valve

robust and almost no maintenance
"50 million cycles"

Fabrizio Maspero, Product Marketing Manager at IMI Precision Engineering, said

«Following over forty years of experience in life science and industrial automation, we have developed an unparalleled understanding of the daily challenges faced by our customers. Customers know they can build on our products, as we are continuously searching for ways to improve our solutions by reducing the size of our components, while enhancing reliability, accuracy, and performance».

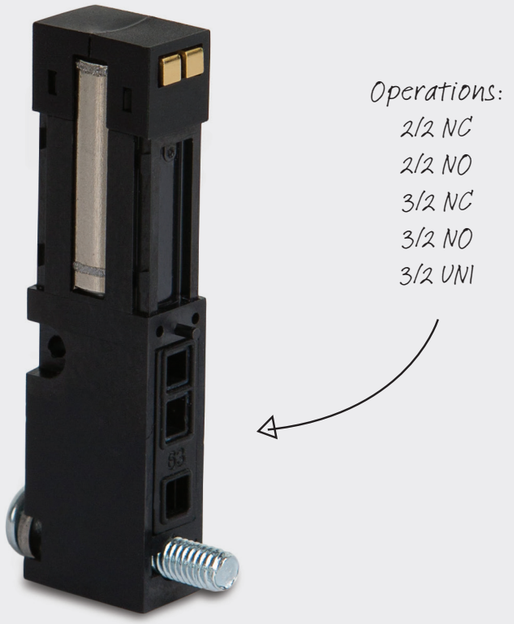
FLEXISOL in action

In the medical field, IMI FAS solenoid valves are successfully used in various applications. In anaesthesia machines, IMI FAS proportional valves play a crucial role in the dosing/mixing and the delivery of the gases. For sensor calibration, OEMs manufacturers rely on IMI FAS on/off valves. In flow cytometry and high-throughput sequencing systems, IMI FAS media separated valves can be advantageously mounted on IMI Norgren manifolds to optimize fluidic pathways and to reduce the contact between liquids and instrument.

As the quintessence of more than 40 years of experience, FLEXISOL is dedicated to the control of gases. The valve is especially adapted to POCT portable / transportable applications where the instruments can be submitted to shocks, vibrations and temperature changes. Wherever you use it, in a London ICU, in a rural clinic in Africa or in practice in the Midwest, FLEXISOL remains reliable and precise.

FLEXISOL can fulfill different roles within diagnostic instrument. In lab-on-chip applications, liquid transport through micro-channels can be regulated by pneumatic microvalves or PDMS membranes, which in turn can be accurately controlled by FLEXISOL.

Precise dosing of liquids within the instruments can also be achieved by controlling the pressure of liquid systems with FLEXISOL.

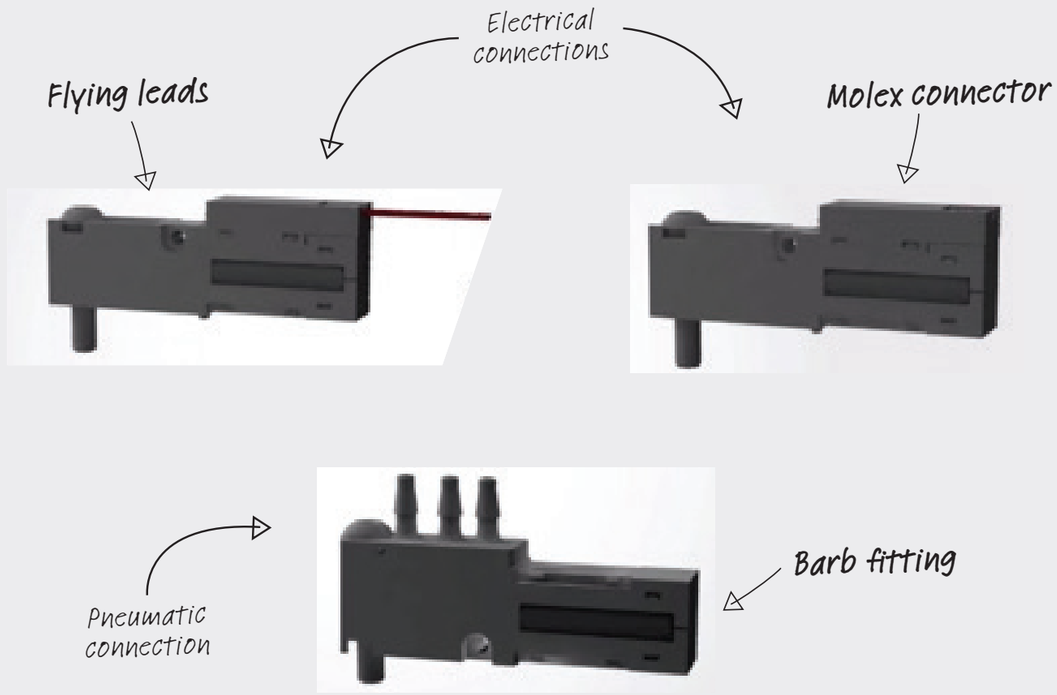


Flexible configuration

Designed to perfectly fit in various environments, FLEXISOL is available in different configurations. PAD, flying leads or MOLEX connectors are available for electrical connection. For a connection with tube, FLEXSIOL is available with barb connectors.

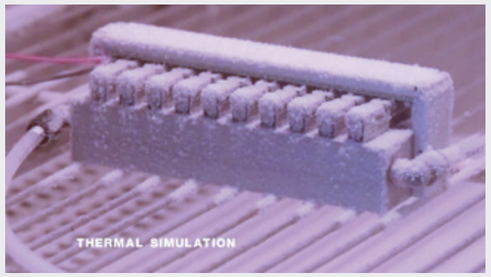
No matter your connection requirements, FLEXISOL will fit your instruments.

WE HAVEN'T THOSE IMAGES

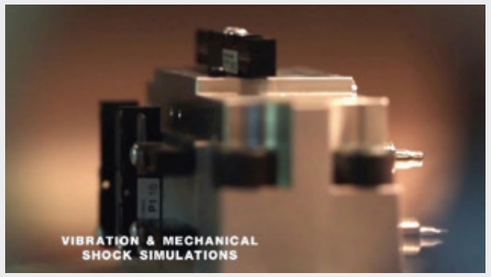


WE HAVEN'T
THOSE IMAGES

Laser welding of FLEXISOL



Laboratory simulation tests at lower temperatures to guarantee performances between 0 and 50°C



Vibration and mecanical shock simulations

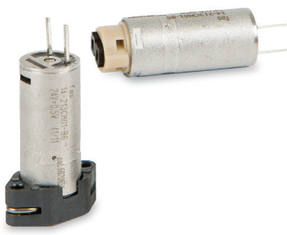
FLEXISOL, reliability under all conditions

FLEXISOL was developed to provide optimal performances and reliability in many situations.

As with all IMI FAS products, FLEXISOL has been subjected to numerous in-house lab tests before being launched. The valve has passed a series of standard tests simulating the working conditions based on vibrations, shocks, and temperature variations.

Advanced manufacturing methods and on process qualitly control have been developed to guarantee high quality and reliability.

IMI FAS valves for POC Testing Instrumentation

IMI FAS 6.5mm FLEXISOL	IMI FAS 8mm CHIPSOL	IMI FAS 8mm CHIPPROP	IMI FAS 8mm CHIPSOL MS
			
2/2 or 3/2, NC or NO valve	2/2 or 3/2, NC or NO valve	2/2 or 3/2 proportional valve	2/2 NC media separated valve
Orifice size: 0.8 and 0.9 mm	Orifice size: 0.5 to 1mm	Orifice: 1.0mm	Orifice: 0.8mm
Manifold mount or barb fittings	Cartridge mount	Cartridge mount	Manifold or cartridge mount
Pressure range: 0 to 2.5 bar	Pressure range: 0 to 8 bar	Pressure range: 0 to 0.1 bar	Pressure range: 0 to 2.1bar
Power consumption: 0.8W	Power consumption: 0.5W	Power consumption: 0.5W	Power consumption: 0.5W
Body: PPS Seals: NBR, FPM Internal parts: stainless steel, HNBR, FPM	Body: PPS Seals: HNBR Internal parts: Stainless steel	Body: stainless steel and brass. Seals: FPM Internal parts:	Material in contact with Fluid: PEEK Seals: EPDM or FFPM

Contact information

For further product information and datasheet, visit our FLEXISOL microsite:

www.imi-precision.com/FLEXISOL

IMI Precision Engineering operates four global centres of technical excellence and a sales and service network in 75 countries, as well as manufacturing capability in the USA, Germany, China, UK, Switzerland, Czech Republic, Mexico and Brazil.

For information on all IMI Precision Engineering companies visit **www.imi-precision.com**

Supported by distributors worldwide.

IMI

Precision Engineering

Due to our policy of continuous development, IMI Precision Engineering reserve the right to change specifications without prior notice.

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Engineering GREAT Solutions

IMI NORGREN

IMI BUSCHJOST

IMI FAS

IMI HERION

IMI MAXSEAL

For further information, scan this QR code or visit **www.imi-precision.com**