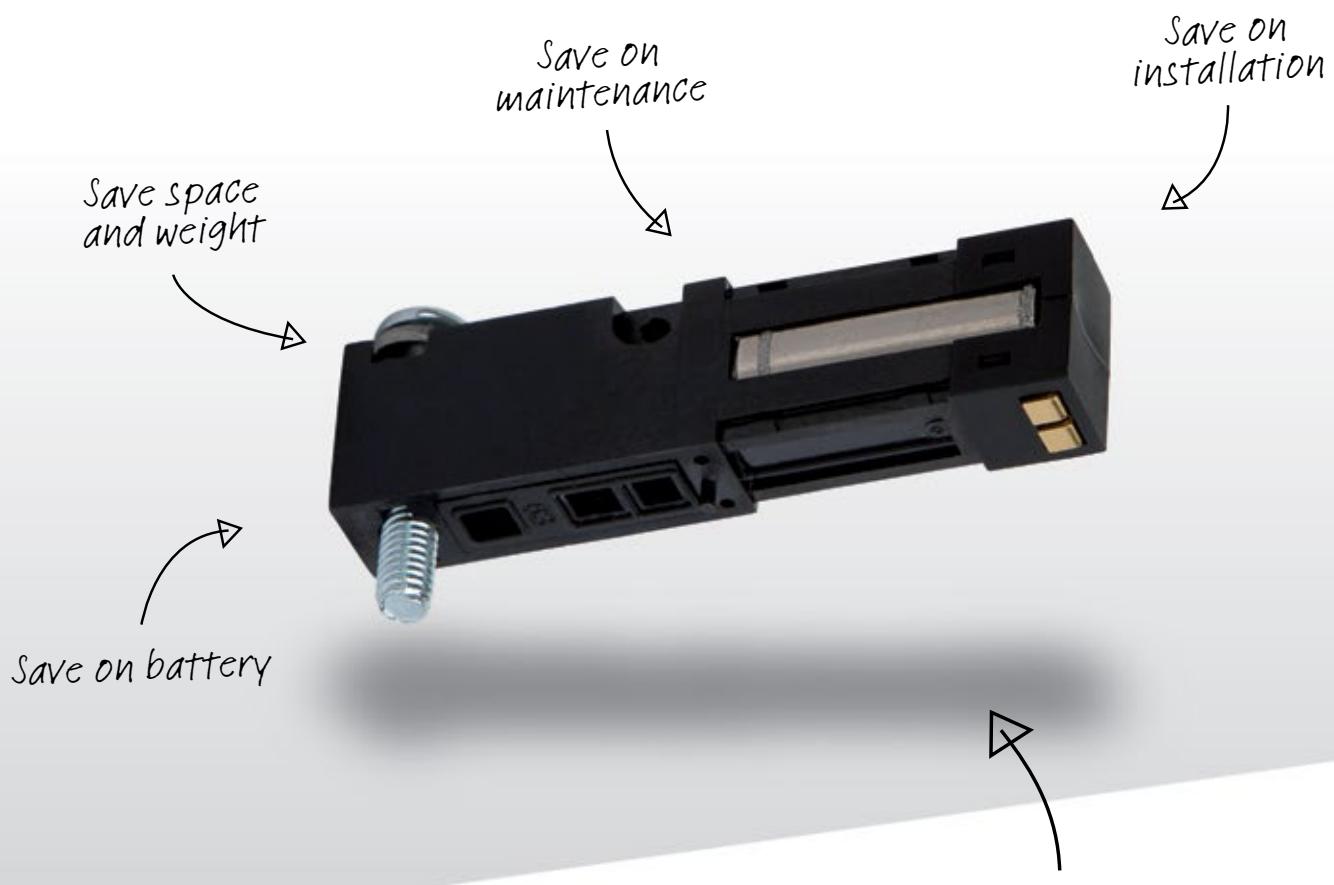


# FLEXISOL

## Save on overall costs, with no compromise on performance



Engineering  
**GREAT** Solutions

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Innovation,  
products  
and service

# 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 experts in 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. IMI Precision Engineering's brands, IMI FAS and IMI Norgren, specializing in miniature solenoid valve technology, microfluidics, precision liquid handling solutions, fully integrated sub-assemblies of fluidic components and manifolds. 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 power consumption.



## IMI FAS FLEXISOL, our latest little creation

IMI Precision Engineering furthers its valve product offering with the addition of the new IMI FAS 6.5 mm 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 on/off valve.

- Flow of a 8 mm valve in a 6.5 mm
- Up to 12 l/min (air, ΔP 2.5 bar)
- 50 million life cycles

Its small size and low power consumption means that it can be easily integrated with many portable medical devices and analytical instrumentation.



# Point of Care Testing, a global health challenge

Point of Care (POC) 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 diagnostic can be done locally rather than in a centralized 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 Instruments: the marvellous machines

POCT instruments are marvellous machines which enable fast and precise diagnostics. The challenge is to develop progressively smaller portable 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 POCT available to as many people as possible.

In general, the growing POCT market requires:

- > Smaller instrument size
- > User friendly for push button results
- > Reliable and robust tests
- > Fast time to results
- > Disposable and low cost tests

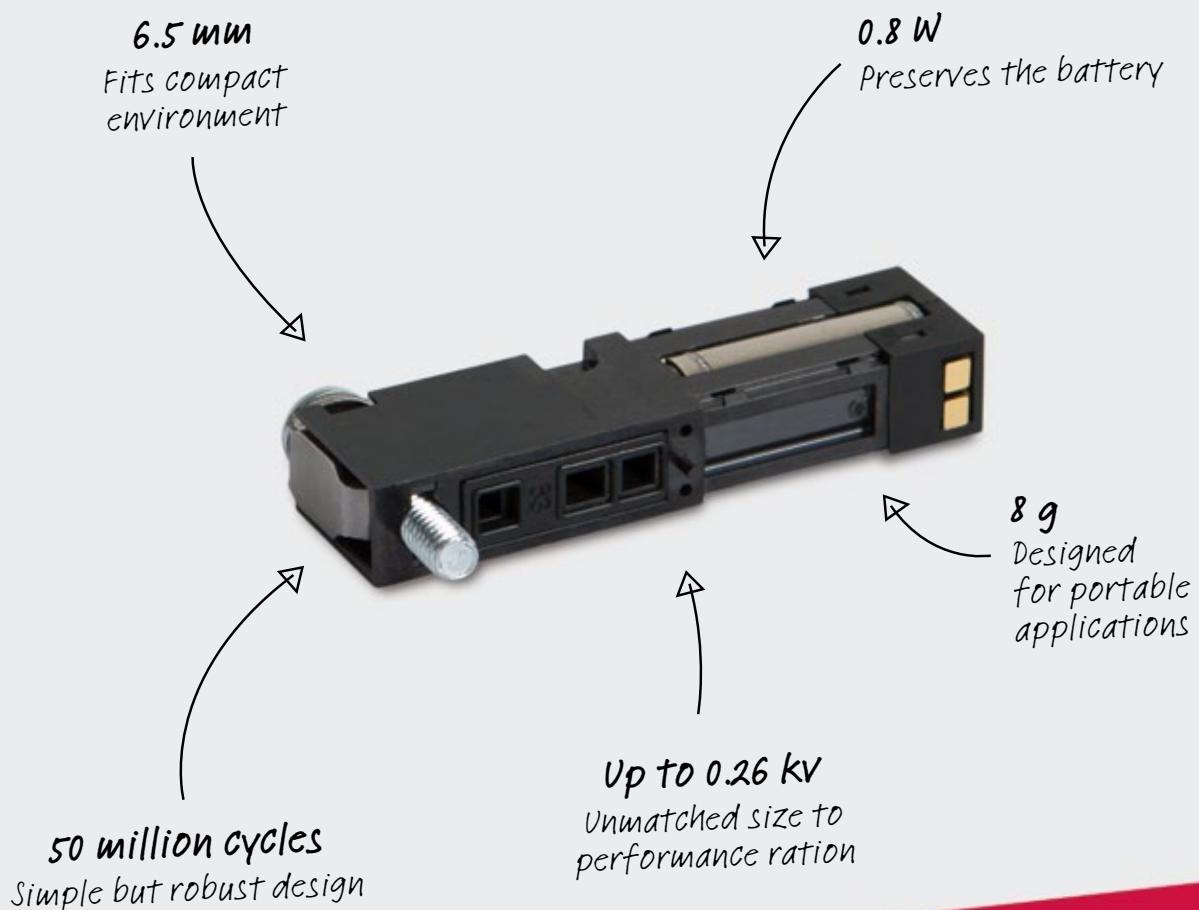


# FLEXISOL:

## The marvellous solution

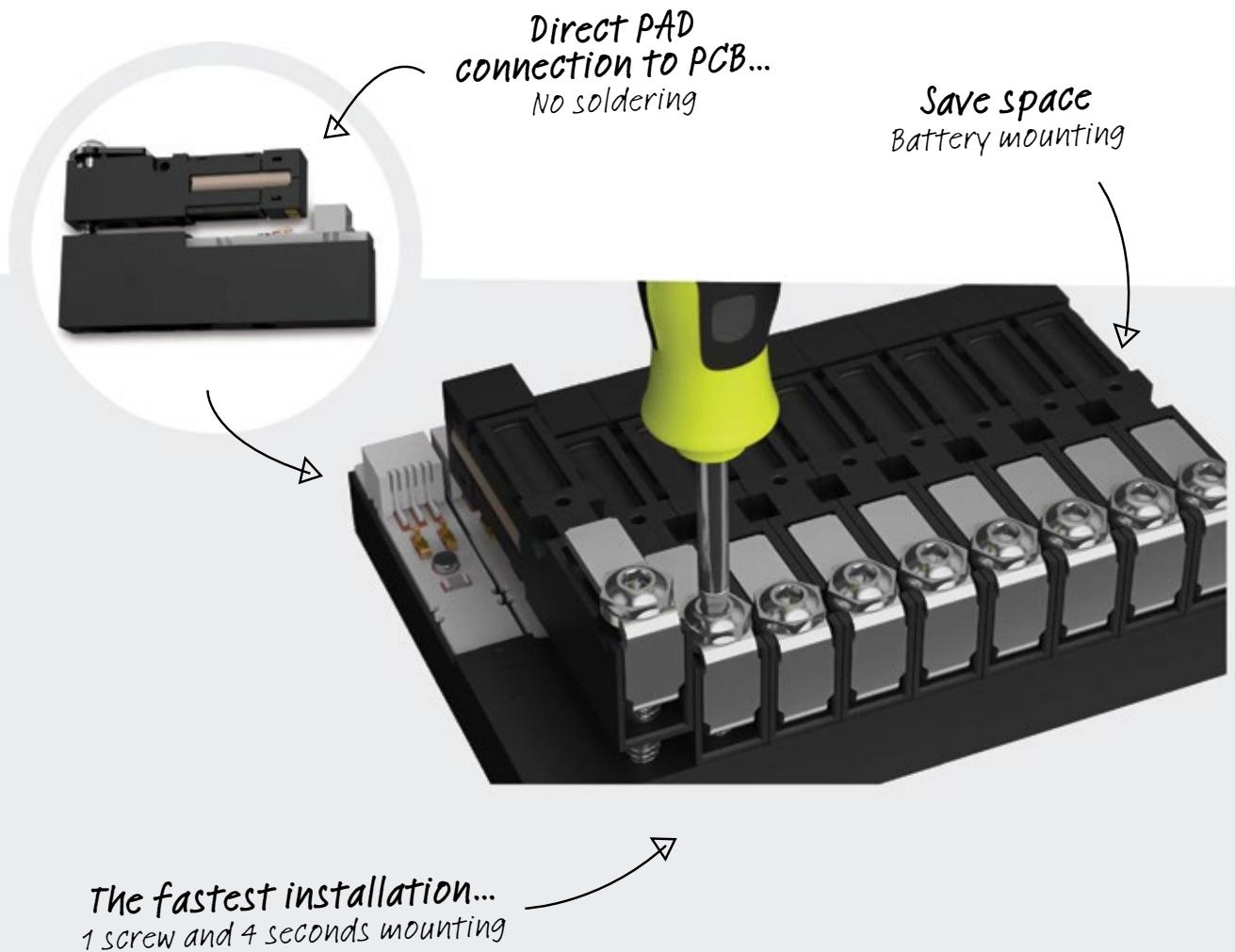
Developed to deliver optimum performance and all-round efficiency, IMI Precision Engineering has implemented a host of functional and practical features within FLEXISOL.

FLEXISOL 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 printed circuit board (PCB) on the manifold, avoiding the need for soldering and wiring.



## 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. In the case of powered instruments, their low power consumption enables an overall system design with a smaller battery.



**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.*

Fabrizio Maspero  
Product Marketing Manager  
IMI Precision Engineering



## 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, OEM 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.

The valve is especially adapted to POCT portable applications where the instruments can be subjected 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. Pairing the Flexisol with a multilayered acrylic subassembly makes it the perfect compact solution for market leading POC instrumentation.

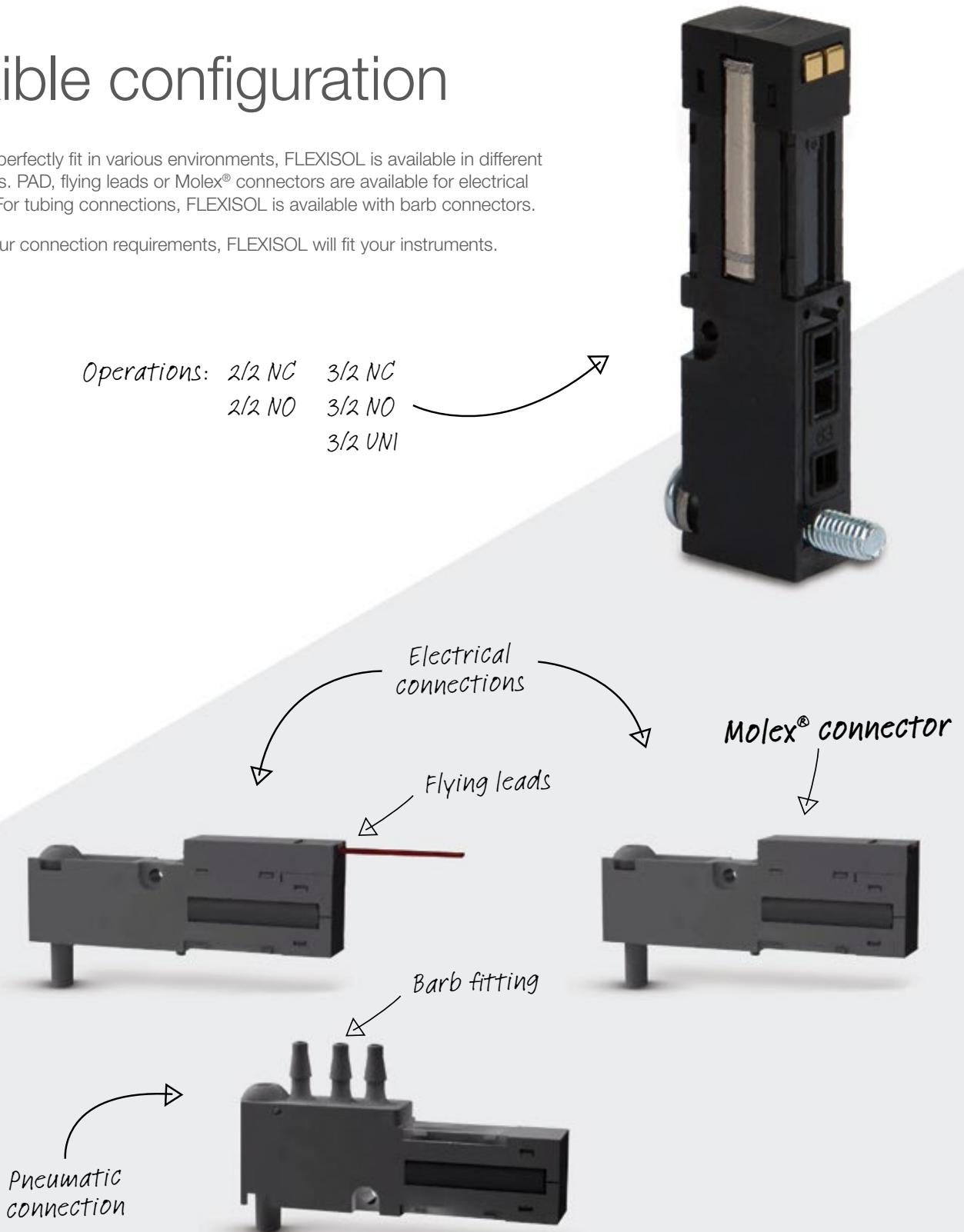
Precise dosing of liquids within the instruments can also be achieved by controlling the pressure of liquid systems with FLEXISOL.

# 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 tubing connections, FLEXISOL is available with barb connectors.

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

Operations: 2/2 NC    3/2 NC  
2/2 NO    3/2 NO  
3/2 UNI



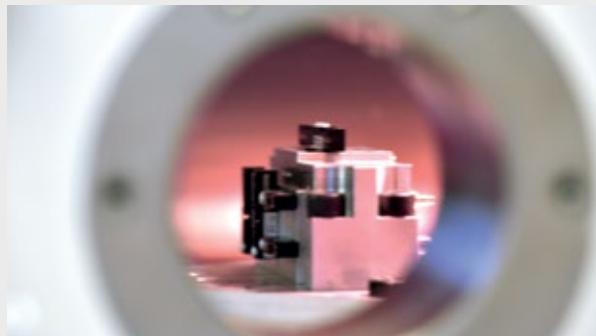
## FLEXISOL, reliability under all conditions



Laser welding of FLEXISOL



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



Vibration and mechanical shock simulations

FLEXISOL was developed to provide optimal performance 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 standardized tests simulating the working conditions based on vibrations, shocks, and temperature variations.

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

# IMI FAS valves for portable applications

IMI FAS 6.5 mm FLEXISOL



IMI FAS 8 mm CHIPSOL



IMI FAS 8 mm CHIPPROP



IMI FAS 8 mm 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 1 mm	Orifice: 0.2 - 1.0 mm	Orifice: 0.8 mm
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 8 bar	Pressure range: 0 to 2.1 bar
Power consumption: 0.8W	Power consumption: 0.5W	Power consumption: 0.5W	Power consumption: 0.5W
Seals: NBR, FPM Internal parts: stainless steel, HNBR, FPM	Seals: HNBR Internal parts: stainless steel	Seals: FPM Internal parts: stainless steel and brass	Seals: EPDM or FFPM Internal parts: PEEK

## Contact information

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

[www.imi-precision.com/FLEXISOL](http://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.**



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