



# Fluid Control

Our product brands:

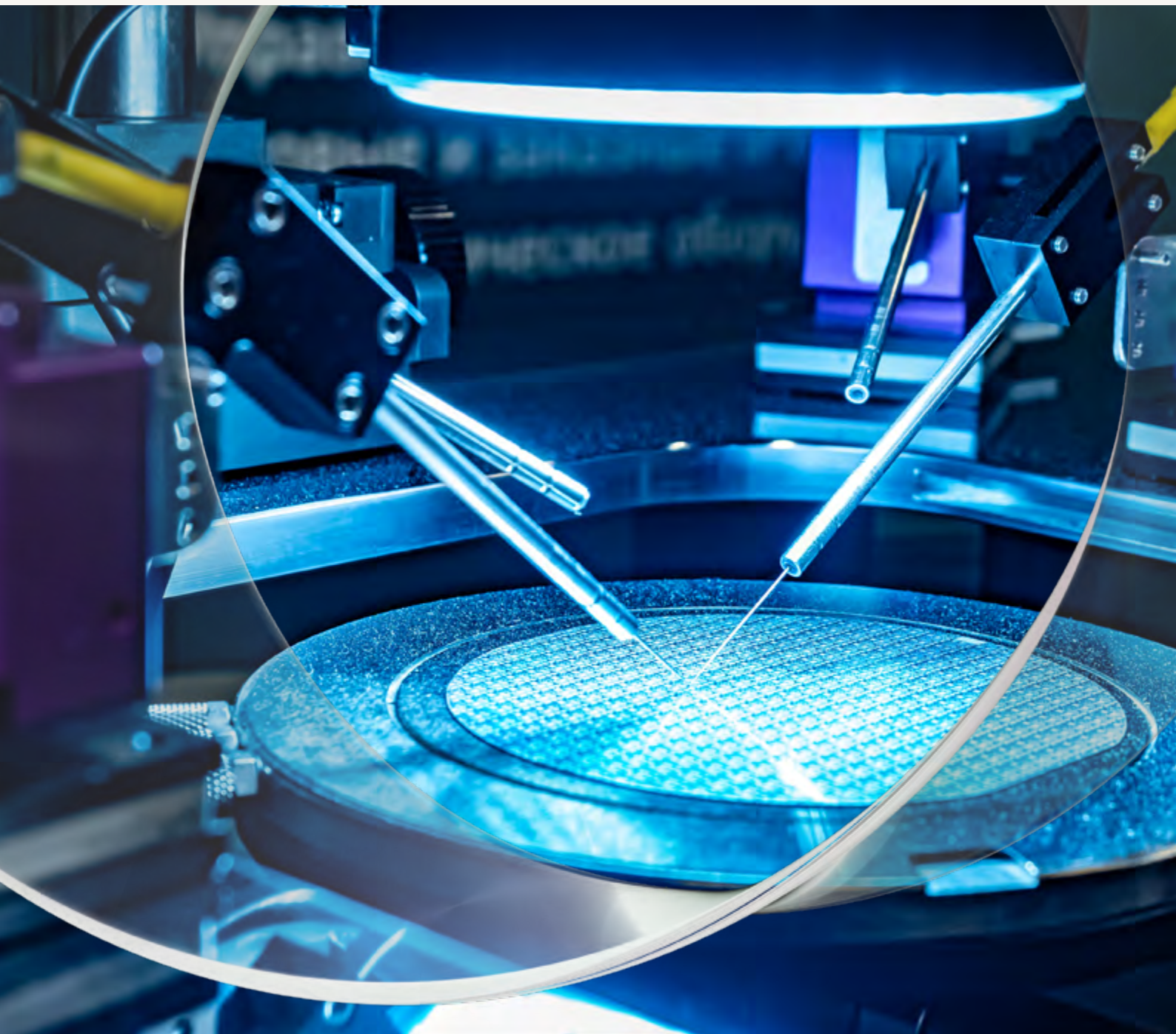
IMI Buschjost

IMI FAS

IMI Herion

**Semiconductor Industry Solutions**  
**Precision Fluid & Motion Control**

Breakthrough  
engineering for  
a better world



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# Breakthrough engineering for a better world

We create breakthrough solutions which accelerate the safety, reliability and performance of everyday processes. Our valves and complete system solutions control liquids and gases, enabling machine builders to improve design functionality and keep safety and sustainability at the forefront of innovation.

For over 80 years, we have helped our customers improve the reliability and efficiency of their machines for diverse end markets. Working in close customer partnership, we continuously push the boundaries of technology, offering a wide selection of components and tailored solutions. Meeting equipment manufacturers' needs includes everything from helping provide traceability for consumers, to reducing waste in critical resources and delivering a premium cup of coffee.

Through flexible, scalable and agile innovation, we help our customers solve their current challenges and create competitive advantage for the future.

Breakthrough engineering you can count on.

# Precision Control in Semiconductor Manufacturing Process

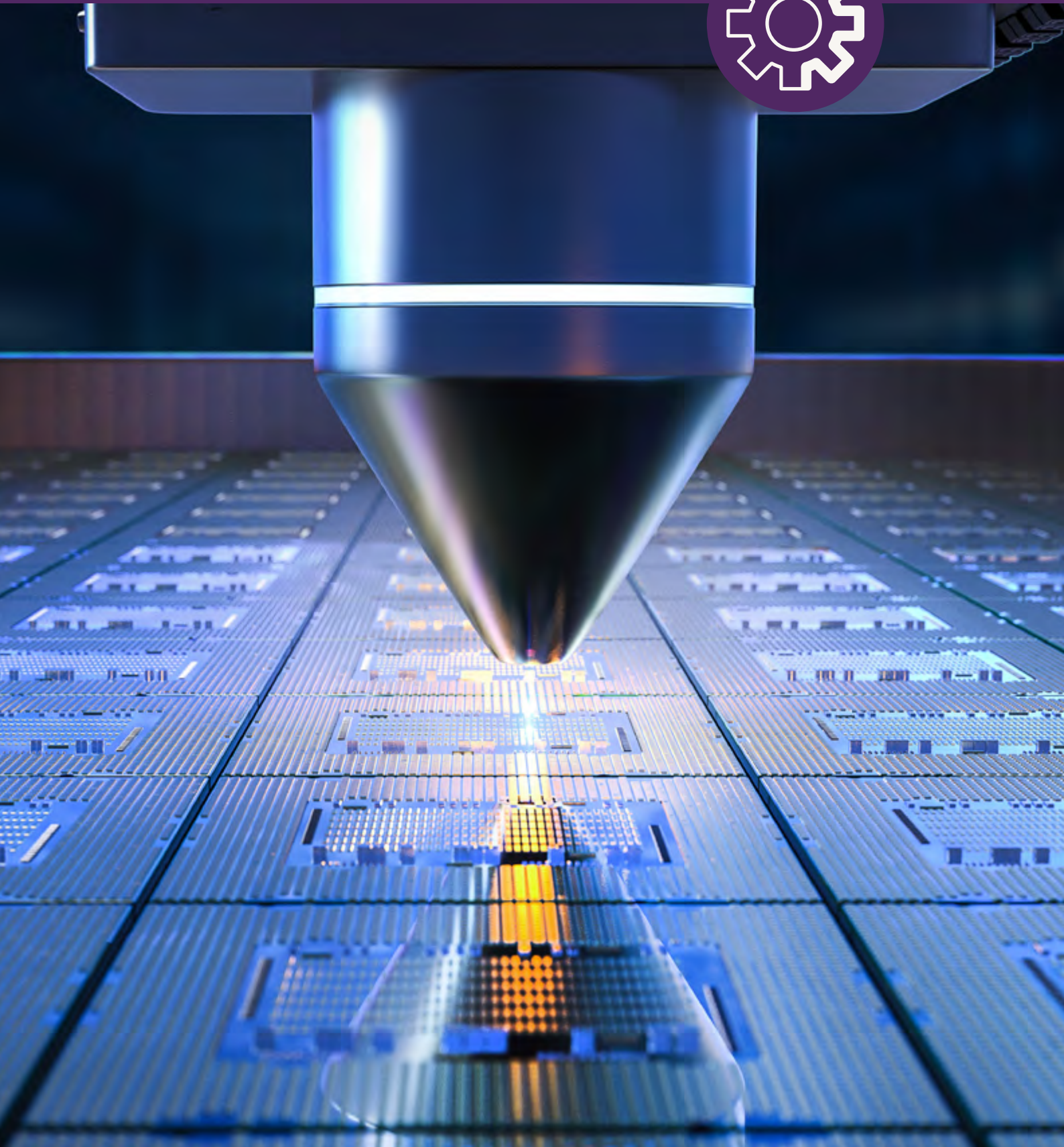
We are aware of the importance of stability and reliability to the entire semiconductor manufacturing process. We offer a wide range of products that can be used in each process. These products are capable of handling and controlling medias with various chemical types and temperatures and can maintain their precision performance and repeatability even during long working hours or under certain working conditions. (e.g., high temperature, hygienic environment, etc.)

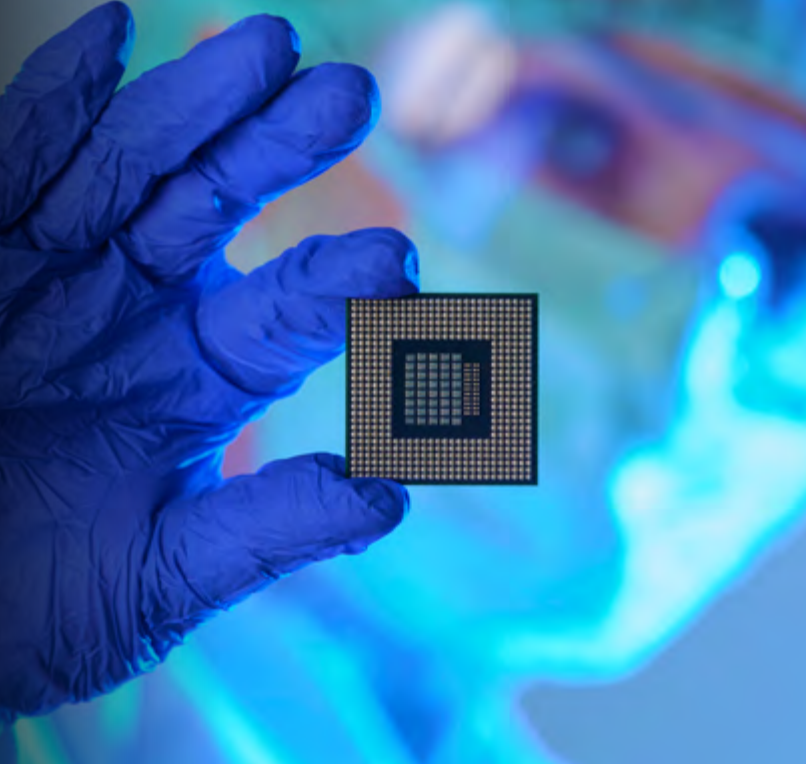
●● We provide products with high precision and outstanding performance, and we assist customers in developing future markets together based on comprehending their unique engineering and technical challenges. ●●





# Precision Control in Semiconductor Manufacturing Process



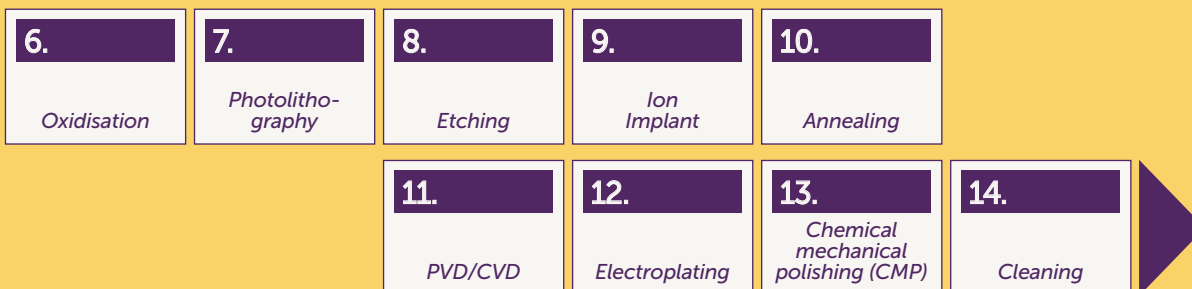


●● Precise fluid & motion control are critical across the entire semiconductor manufacturing process, and we have a wide product range to help. ●●

### Wafer Fabrication



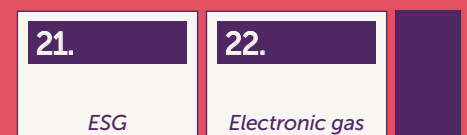
### Front End Process



### Front End Process



### Others





# IMI Solutions & Capabilities for Semiconductor Manufacturing Process

## Valve Islands

- Compact and light weight. Neat solution reducing leakage and human errors
- Multipole, Fieldbus, Industrial Ethernet and IO-Link options available
- Highly customisable, easy to configure using online configurator

## Mass Flow Controller

- Excellent precision and accuracy in controlling various gases
- Wide dynamic range
- Compact size, reduced footprint

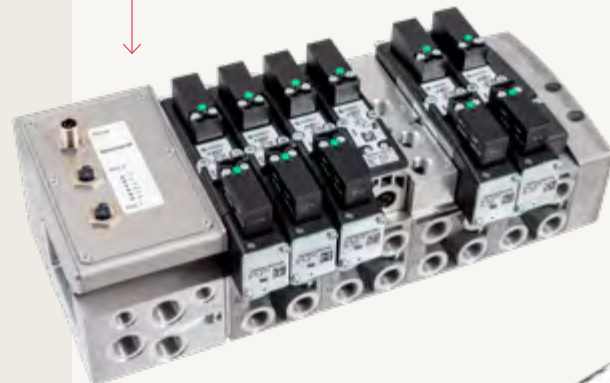
VR Series Valve Island



VM Series Valve Island



VS Series Valve Island



CHIPREG Mass Flow Controller (MFC)



## Miniature Proportional Valves

- Wide range to choose from covering wide flow range and size
- Market-leading performance proven in various analytical instrument and life science applications



8 mm CHIPPROP  
Miniature  
proportional valve



16 mm  
FLATPROP  
Direct acting  
proportional valve



16 mm FASPROP  
Low flow  
proportional valve

## On/Off Valve & Media Separated Valve

- Wide range to choose from covering wide flow range and size
- Long life cycle
- Aggressive & sensitive media capable
- 50% less internal volume than alternative valves in same size class
- Low power consumption



6.5 mm FLEXISOL  
Direct acting 2-way  
& 3-way valves

15 mm MICROSOL  
Direct acting  
solenoid valve



10 mm  
PICOSOL  
Direct acting  
solenoid valve



8 mm  
CHIPSOL  
Direct acting  
solenoid valve



## Proportional Pressure Control Valve

- IP65 protection
- Reliable, rugged, open loop control
- Successful application in semiconductor equipment helping customer avoiding any vibrations from impacting the wafer in photolithography process



← VP10 Proportional Pressure Control Valve

## Diaphragm Valve

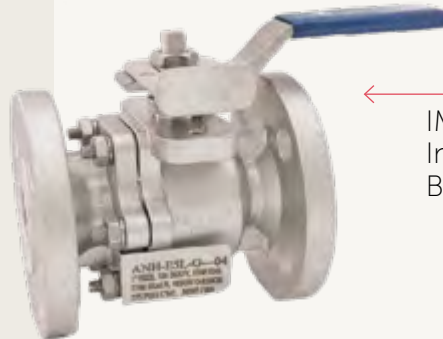
- Diaphragm made of alloy with excellent corrosion-resistance performance
- Standard flow coefficient (Kv), customizable
- Full immersion capability up to 200°C
- Suitable for ultrahigh-purity applications

→ 82560 2/2-way Diaphragm Valve



## Ball Valve

- Suitable for CMP process to control corrosive slurry
- Rated for full vacuum
- Unique Adjust-O-Seal feature allowing in-line valve adjustment to compensate for normal wafer on valve seats
- Two-piece "split body" design
- Upstream and downstream bubble-tight sealing capability allowing valve body cleaning, purging and draining



← IMI PBM Industrial ANSI Ball Valve

↓ Pneufit C composite fittings

## Fittings

- Wide options available in terms of material, size, shape



↑ Pneufit S Stainless Steel push in fittings

Find out more  
[www.imiplc.com](http://www.imiplc.com)



## Redundancy Valve Manifold (RVM)

- Suitable for controlling and ensuring continuous supply of electronic gases into semiconductor manufacturing process
- Smart redundancy valve manifold system offering safety and/or availability based on requirement
- Integrated design offering neat solution with reduced leakage and human errors, easy to troubleshoot
- Wide options available with various certification



V85 Redundant Valve Manifold

V83 Redundant Valve Manifold



## Air Preparation

- Highly customisable with filter, regulator, lubricator
- Wide options available in terms of material, size, flow rate, pressure range
- AMT dryer with core technology on Absorbent Media Tube (AMT) to effectively remove water droplets from gas supply into semiconductor manufacturing processes without need to filter post-dryer dust



Excelon® Plus

B38P High flow filter/ regulator



AMT Dryer



## Actuators

- Pneumatic and electric actuators
- Compatible with other valve and air preparation components to form customized solutions to solve specific problems

IMI ELION Electric Actuators



ISOLine™ Standard Cylinders





### Auxiliary Products



← Tubings



← Cadent™ 3 Syringe Pump



← 34D & 54D Pressure Switch



→ ICO3S Solenoid Valve

## Custom Solutions

- We are capable of designing and manufacturing customised solutions to suit your needs and help our customers solve problems and achieve goals
- Integrated manifold solutions, fluidic systems, control panels, skids, IIOT smart diagnostic solutions



### Control Cabinets

- Individually designed for your application
- Simplifies installation and commissioning
- Maintenance friendly with enhanced safety and security
- Ideal for arduous environments
- Suitable for ATEX applications



### Control Panels

- Pre-assembled control solutions
- Reduced design and logistics costs
- Reduces inventory holding
- Ready to install

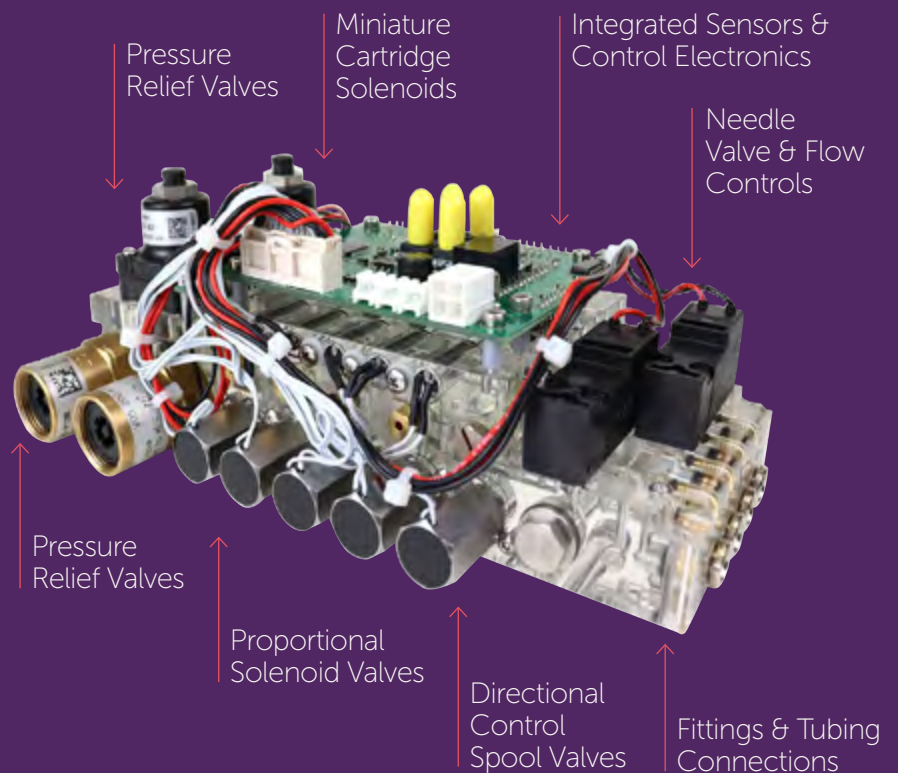


### IIOT Smart Diagnostic Solution - Pascal Series K

- Pascal Series K Leak Finder performs diagnostic tests at the equipment site, and transforms simple data into an effective equipment health program, providing a deeper understanding of system performance.

## Custom Fluidic Manifolds

IMI's manifolds are constructed incorporating the latest technologies and production techniques and available in a variety of materials. Whether you need a simple machined manifold or a fully integrated fluidic circuit in a multi-layer manifold, IMI's team of experienced engineers and technicians design and build a manifold specific to your unique application requirements.





# Success Stories

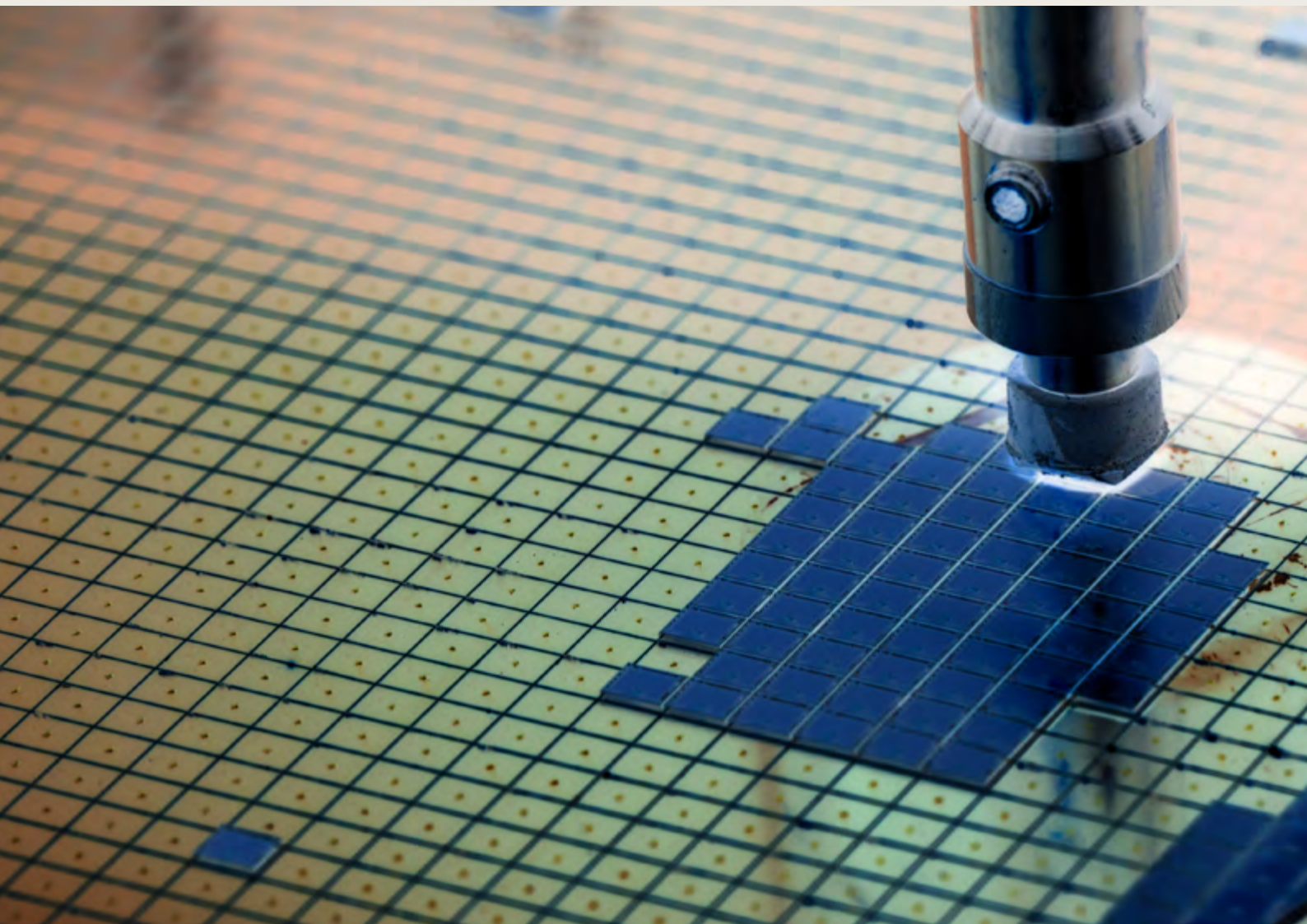
## Case Study #1

### Integrated Flow Control Manifold for Photolithography Process

- Photolithography is one of the most essential steps in semiconductor manufacturing process.
- Patterns are optically imaged onto a silicon wafer using a high-energy UV laser focused on microscopic droplets of molten tin to produce a plasma.
- This process is done within a vacuum to eliminate all potential airborne contaminants

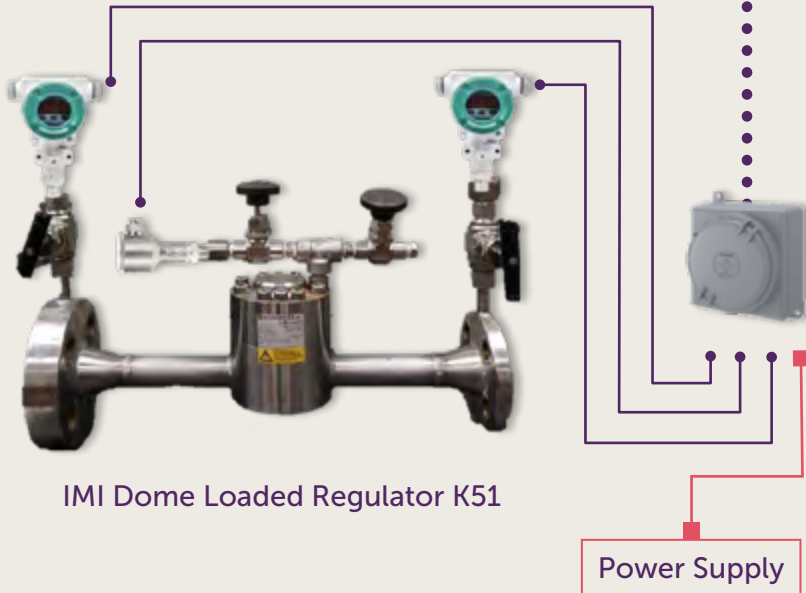
IMI offers an integrated flow control manifold solution which is helping to flow purge gas through vacuum pumps to remove hazardous gases/by-products from the vacuum pump after each lithography cycle

Thousands of IMI solutions are being supplied to world-leading semiconductor OEMs globally every month! IMI team offers great technical and customer service to our customers ensure stable supply during uncertain times





IO Gateway +  
Ex d enclosure  
+ electronics



## Case Study #2

### Electronic Gas Control Solution

- Electronic gas is widely used in many semiconductor manufacturing processes
- Stable and Uninterrupted electronic gas supply is essential for continuous semiconductor manufacturing process. Disruption in gas supply could lead to unplanned line stop which may result in significant loss in production yield
- Some electronic gases are rare, expensive and/or hazardous, therefore minimum leakage is essential for chip manufacturer to save cost and for health and safety

IMI works closely with market-leading gas suppliers and chip manufacturers and offers customised solutions to ensure stable gas flow and smart solutions to detect leakages with IIOT solution.



IMI operates four global centres of technical excellence and a sales and service network in 50 countries, as well as manufacturing capability in Brazil, China, the Czech Republic, Germany, India, Mexico, Switzerland, the UK and the USA.

Supported by distributors worldwide.

For further information, scan this QR code or visit

[www.imiplc.com](http://www.imiplc.com)



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

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