



Fluid Control

Our product brands:

IMI Buschjost

IMI FAS

IMI Herion

Innovative Solutions

for the Food Processing, Beverage & Packaging Industry



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.



Our market leading product brands

The combination of our product brands' trusted reputation and long history underpins our position as a leading global supplier fluid control technologies.

Fluid Control

Our product brands:

IMI Buschjost

IMI FAS

IMI Herion

IMI Buschjost

Successful in the market for over 80 years, IMI Buschjost is a market leading range of process and multimedia solenoid valve technology and system solutions.

IMI FAS

The IMI FAS range offers a comprehensive portfolio of globally acclaimed miniature fluid control solutions which provide successful, consistent performance at the heart of demanding applications. Specialising in miniature solenoid valve technology for 10 mm and 15 mm valve applications.

IMI Herion

For over 50 years the IMI Herion brand has specialised in solenoid valves, NAMUR valves and hydraulic solutions for mechanical and pneumatic press and press safety technology.



IMI Buschjost



IMI FAS



IMI Herion



Our Global Reach

With established manufacturing facilities globally, we have the capability to cope with the most demanding of international projects. With a sales and service network in 50 countries, we have the reach and capability to ensure continuity of supply and local support where it is needed.



Delivering expertise,
solutions and value industry

to the food and beverage industry

Reliability through expertise and experience

IMI has dedicated over 25 years to meeting the unique needs of the global food and beverage industry, delivering pioneering products and bespoke solutions.

Close collaboration with customers, and a search for innovation that offers real Breakthrough Engineering, has resulted in millions of hours of reliable service from our PET bottling, ink jet, processing & packaging, dispense and food service equipment.

From handling 40 bar air for PET bottle blowing, to aggressive solvents in ink jet printing; from wash-down chemicals to lime scale-free coffee machines, we have an impressive track record of helping the world's largest food companies improve efficiency, save energy and optimise performance.

Setting the standard

Whether it's FDA-compliant materials or solutions for ATEX environments, our intimate knowledge of supplying components and solutions for applications in the food, splash and non-food zones, helps ensure your system meets relevant regional and international standards, and codes of practice.



Beverage Dispense



Coffee Machines



PET Bottling



PET



Processing & Packaging



Sorting



Dairy



Meat Processing



Packaging

Beverage Dispense

Beverage dispense applications require high-quality, reliable systems and low maintenance costs, together with hygienically designed and washdown approved components.

Our high performance solenoid actuated plastic valves are permitted according to NSF and FDA, reliably control cold water, hot water, steam and the necessary cleaning processes, and are suitable for a number of beverage dispense applications including:

- Coffee machines
(Fully automatic & semi automatic)
- Drinking water dispenser
- Vending machines
- Cold & hot water devices
- Soft drink machines
- Ice cream machines

Robustly designed, these solenoid valves are resistant to all media, specifically water. Water quality can vary considerably globally, with various degrees of hardness and calcification. The solenoid valve materials are perfectly designed to meet the various requirements and ensure the required corrosion resistance, high reliability and long service life.

Product Highlights

- Reduction in the number of fittings when using valve chains
- Reduction of potential leakage points
- Corrosion resistant & increased service life
- "Plug and use" concept – quick installation of modules (up to 7 valves can be linked)
- Glow wire resistant acc. to IEC/EN 60695
- Use of approved wetted materials in accordance with NSF, FDA, and BfR
- VO (EG) 1935/2004
- UL recognized coils available on request
- For Milk, Flavours & Syrup, Water, Steam
- Single or stackable valves
- Resistant to limescale
- Up to 15 bar
- Up to 125°C
- 100% Leadfree
- 100% Nickel free

Products for Beverage Dispense



Series 83150,
2/2-way
single valve

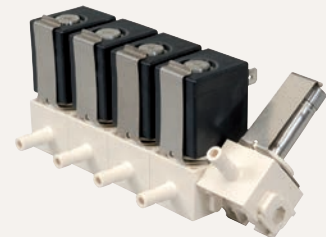


TruControl™
2/2-way valve
(interlinkable)

Special design
8591352
2/2-way
single valve



Special design
8590440
2/2-way valve
(interlinkable)



Series 8590820,
3/2-way valve
(interlinkable)

Special design
8591410
3/2-way valve

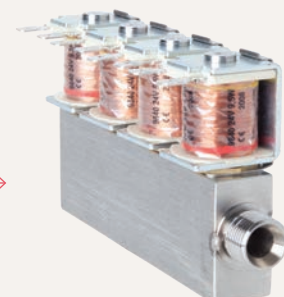


Series 83153,
2/2-way valve
(interlinkable)



Series 84070 / 84080,
2/2-way valve

4-fold manifold



PET

Bottling

Building on three decades of PET engineering excellence, we remain a pioneering force in this sector, constantly driving performance and reliability improvements. Our patented plastic piston technology and experience in valve positioning allows us to reduce dead space volume and increase productivity.

Filling

Food safety is a vital consideration in filling applications. To avoid the possibility of contamination, we ensure that all system components directly or indirectly in contact with the main food/drink product – such as cylinders for filling valves, for example – are engineered from corrosion resistant, non-toxic and non-absorbent material.

Rotary stretch blow moulding

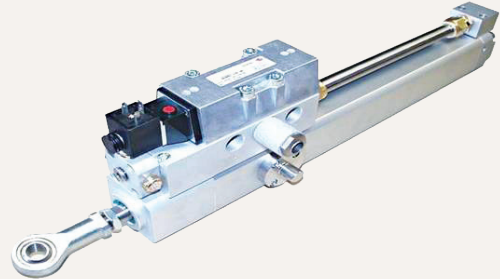
IMI is a complete 'air' solution supplier to the PET industry. Our expertise covers 7 bar standard pneumatics to 20 bar P1 and 40 bar P2 solutions, including 11 functions on the blowing wheel for valving, as well as 24 functions for air recovery and management.

Our range offers 40 bar blowing blocks, cooling valves, air recovery products & solutions, pneumatic stretch actuators, and capping cylinders for hot & cold fill processes.



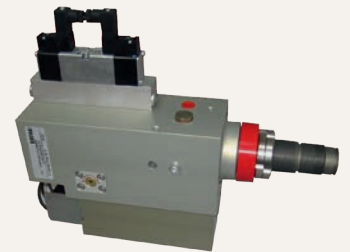
Products for PET Bottling

Pneumatic stretch actuators



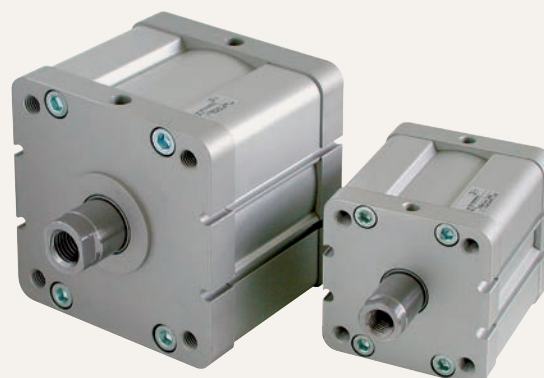
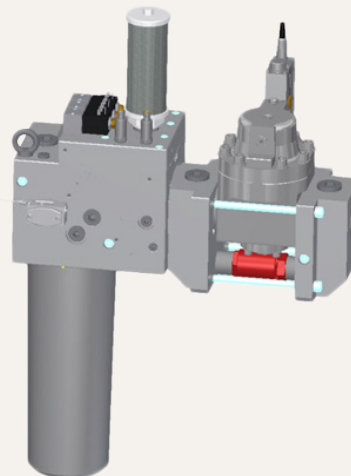
Cooling valves

Capping cylinders for hot fill & cold fill processes

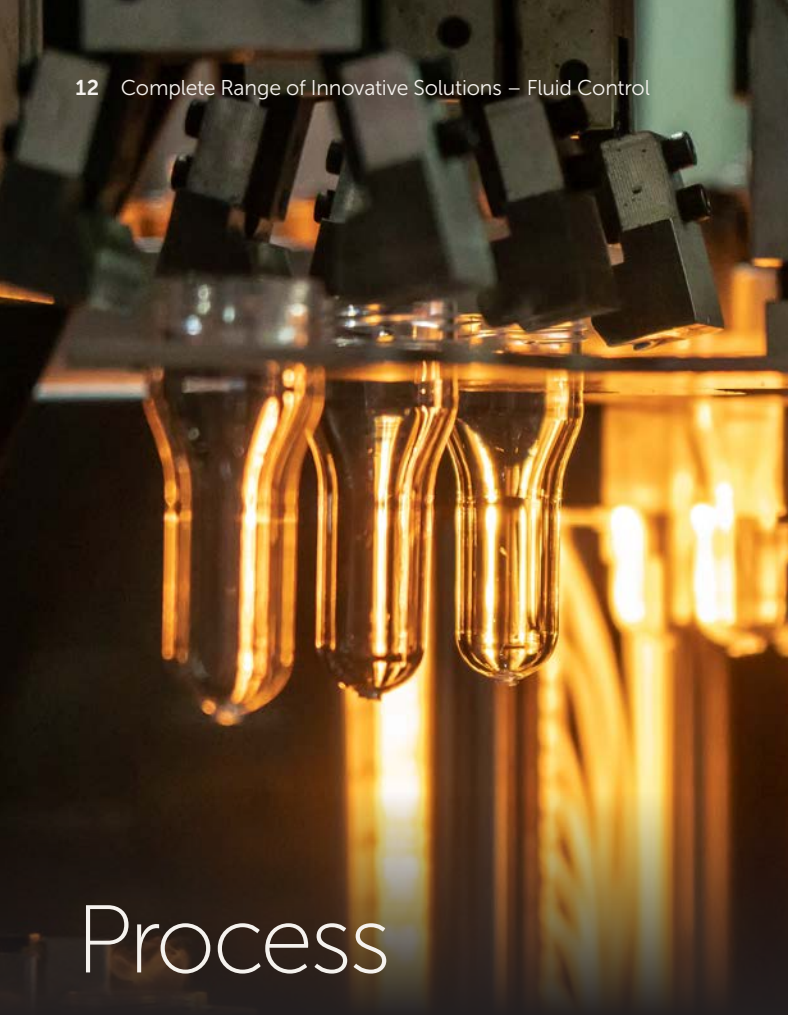


40 bar blowing blocks

High pressure filter with safety valve ISO 13849 Pld, KAT 3 SF and Dome regulator



Cylinders for filling valves



Process

Automation

Through our global technical centres, and local support, IMI uses the latest materials and technologies to offer a range of standard and hygienic solutions for process automation applications. These include:

- Flexible, compact valve islands with Devicenet, Profibus and Ethernet protocols for all your process control needs
- A range of corrosion-resistant stainless steel products
- High flow angle seat valves to handle steam and aggressive fluids
- High quality diaphragm valves that are resistant to corrosion
- Proportional control valves that offer an accurate and stable response, with lower air consumption
- A comprehensive selection of pressure switches & sensors
- Air preparation equipment available in modular units to deliver a continuous supply of clean, dry and CO2 free (<1 ppm) gas



Products for Process Automation

Valve Islands



Stainless steel solutions

Proportional control



Air Preparation equipment



Ball valves

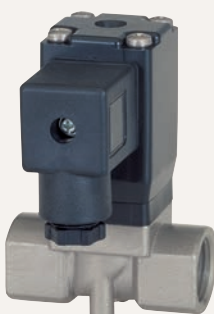
Angle seat valves



Sterile air for food & beverage



Diaphragm valves



Pressure switches & sensors



Sorting

Machines

Sorting machines use a combination of mechanical and optical sorting technologies to separate or sort similar items. Different ejection systems are required depending on the items being sorted, with safety, speed and reliability being a priority for end users. We provide a broad range of solutions for sorting applications including food, beverage and grain sorting.

- Pusher systems for bottles and boxes
- Air Ejection Systems for small goods e.g. grains, rice
- Mechanical ejection systems (flaps) for Bigger Products e.g. Potatoes
- Inspection camera cleaning
- Water flow control



Products for Sorting Applications

Plastic solenoid actuated valves
for water splashing



Valve islands & fittings



High speed valves
for ejectors



High speed ISO cylinders
to drive flaps and let the food flow



IVAC
for fast response time
(5 cycles per second)





Dairy

Production

Our range of robust, rugged and reliable pneumatic products, offer a solution for applications in the dairy industry:

- Herd management including drafting systems and parlour gates for cow segregation
- Automated milking systems
- Animal feed
- Cluster cleaning
- Scraper systems
- Milk processing (pasteurising, filling and packaging)
- Cheese making



Products for Dairy Production

Cylinders



IMI ELION Electric Actuators to provide accurate and repeatable positioning.



ISOLine cylinders with heavy duty wiper seal and adjustable cushioning system for changing loads. Stainless steel versions also available.

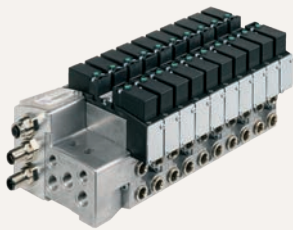


IVAC Integrated valve and actuator to reduce energy consumption, weight and installation time.



Cleanline cylinders hygienically designed according to EN1672- 2 with an IP67 protection class for washdown applications.

Valves



VS18 for Process Control



Series 83150, 2/2-way valve for milking system cleaning and sterilising



Series 82400, 2/2-way seat valve for cleaning and sterilising



84520, 2/2-way diaphragm valve for cleaning steam valve

Air Preparation



Excelon® Plus air preparation with best in class water extraction (98% at 100% flow)



Stainless steel air preparation for corrosive and washdown applications



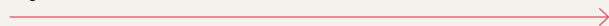
Meat

Processing

From air preparation to valves and actuators, our robust and reliable products offer a solution for any application in the meat processing industry:

- Knocking Pen
- Meat Tensioning
- Transfer Chain
- Gates
- Sorting
- Blood Processing
- Hand Wash Basin
- Cleaning and Sterilisation
- Multistage Hide Puller
- Door Controls
- Cheese making

Cylinders



ELION Electric Actuators to provide accurate and repeatable positioning.



ISOLine cylinders with heavy duty wiper seal and adjustable cushioning system for changing loads. Stainless steel versions also available.



IVAC Integrated valve and actuator to reduce energy consumption, weight and installation time.

Products for Meat Processing

Cylinders



Cleanline cylinders hygienically designed according to EN1672- 2 with an IP67 protection class for washdown applications.



Special cylinders to tenderise meat. Designed to eliminate bug traps with customised hooks to carry out the tensioning operation.

Valves



Valves kits available to replace the common knee wand found in most abattoirs - Stainless steel pilot valve with a Super X valve, fittings and silencers designed to avoid wastage of water.



Valves for use in the cleaning and sterilization unit and vertical water scalding process for cleaning equipment like hooks and tongs.

Air Preparation



Excelon® Plus air preparation with best in class water extraction (98% at 100% flow)



Stainless steel air preparation for corrosive and washdown applications



Non-Food

Area

IMI aims for design excellence in all areas. Even though this stage of the process involves no contact with food, our engineers look not only to meet, but also to set quality standards using materials that are easy to clean and resistant to corrosion.

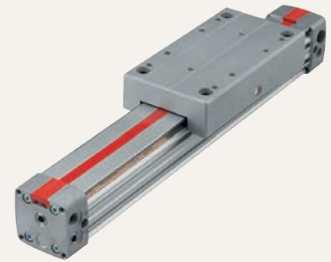
Our products and solutions include air preparation for pneumatic components; Stepper, rodless and guided cylinders; vacuum products; angle seat valves; valve islands with common industry protocols and IVAC for optimised energy savings of up to 50%.

- Conveying
- Secondary packaging
- Palletising
- Dispensing equipment for consumer and industrial adhesives, sealants and coatings
- Thermoforming packaging
- Modified atmosphere packaging
- Gas sterilisation flow control



Products for Non-Food Area

IVAC for optimised energy consumption saving up to 50%



Rodless cylinders



Valve Islands

Air Preparation

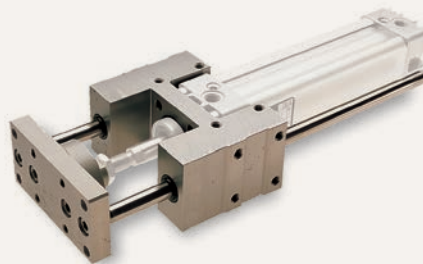


Angle seat Valves

Stepper cylinders



Solenoid Valve



Guided cylinders

Vacuum products





Functional Safety Solutions for Safety Technology

Machinery Directive 2006/42/EC and DIN EN ISO 13849 Part 1 and Part 2

With an effective date 29.12.2009 the Machinery Directive 2006/42/EC replaced the previous Machinery Directive 98/37/EC and defines fundamental standards of Machine Safety in the European domestic market. Only machines, that comply with the demands of the Machinery Directive, are allowed to be introduced on the European market. This includes new machines as well as existing machines that have experienced significant or considerable variations or modifications or have served a different use. In accordance with conditions of the Machinery Directive and the guideline, compliant machines must be furnished with CE-labelling, Declaration of Conformity and the required user information. The harmonized standard DIN EN ISO 13849 (Model B Standard) assists the Machinery Directive with the technical implementation of the safety demands and reliable control systems. It provides generally important principles in terms of the planning and evaluation of safety-related parts of a control system, control system architecture as well as the quality of risk mitigation and the validation procedures for the safety function, categories and Performance Levels of safety-related parts of controls.

A machine should be constructed to guarantee safety as much as possible. Any potential danger must have its risk reduced/minimized by protections or measures e.g. a pneumatic safety control system. For unavoidable residual risk, the corresponding necessary documentation must be provided. A comprehensive and standardized risk assessment will take place at the beginning of the process for the evaluation of the machinery safety.

If in the risk analyses hazardous movements were detected then, in accordance with the danger, counteracting safety functions must be defined and provided. Only after more precise definition of the actual safety function can the corresponding subsystems of the safety control system be adequately executed and interpreted.

- Safe exhausting of a system
- Stop of a hazardous movement
- Stop and obstructing of a hazardous movement
- Reversing a hazardous movement
- Protection against accidental start-up and many others

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graph TD
    Start([From risk analysis  
(DIN EN ISO 12100)]) --> 1[1 Identify the safety functions (SF)]
    1 --> 2[2 Setting the properties of each SF]
    2 --> 3[3 Determination of the required PL (PLr)]
    3 --> 4(( ))
    4 --> 4[4 Realizing the SF, identifying the SRP / CS]
    4 --> 5[5 Determining the PL of the SRP / CS from  
Category, MTTFd', DCavg', CCF  
Software and systematic errors]
    5 --> 6{6 Verification:  
PL ≥ PLr?}
    6 -- yes --> 7{7 Validation:  
Requirements met?}
    6 -- no --> 4
    7 -- yes --> 8{8 All SF analyzed?}
    7 -- no --> 4
    8 -- yes --> End([to Risk analysis  
(DIN EN ISO 12100)])
    8 -- no --> 4
    
```

The flowchart illustrates the iterative safety analysis process according to DIN EN ISO 12100. It begins with 'From risk analysis (DIN EN ISO 12100)', leading to step 1: 'Identify the safety functions (SF)'. Step 2 is 'Setting the properties of each SF'. Step 3 is 'Determination of the required PL (PLr)'. A junction point leads to step 4: 'Realizing the SF, identifying the SRP / CS'. Step 5 is 'Determining the PL of the SRP / CS from Category, MTTF_{d'}, DC_{avg'}, CCF' and 'Software and systematic errors'. A bracket labeled 'for every SF' encompasses steps 4, 5, 6, and 7. Step 6 is a decision: 'Verification: PL ≥ PLr?'. If 'no', it loops back to step 4. If 'yes', it proceeds to step 7: 'Validation: Requirements met?'. If 'no', it also loops back to step 4. If 'yes', it proceeds to step 8: 'All SF analyzed?'. If 'no', it loops back to step 4. If 'yes', it leads to 'to Risk analysis (DIN EN ISO 12100)'.



- SF = safety function
- PL = performance level
- SRP/CS = safety related parts of control systems
- MTTFd = mean time to dangerous failure
- DC avg = average diagnostic coverage
- CCF = control cause failure



Lean

Manufacturing

IMI are dedicated to Lean Manufacturing and Continuous Improvement to improve the quality and delivery of our products and customer service by increasing value and reducing waste.

We follow key lean principles to ensure we focus on our customers needs and optimise our products, processes and services to provide the following benefits to our customers:

- Increased manufacturing efficiency
- Reduced unplanned downtime and shutdowns
- Reduced lead times and inventory
- Optimised new product development
- Agile engineering partnerships

Benefits for the customer

- Increase of plant efficiency and life time
- Cost reduction due to less unplanned downtime and shutdowns
- Optimal realization of new product designs – in time, on cost, at quality
- Short reaction- and lead times supporting on time availability of planned and unplanned orders
- Customized transport- and packaging solutions reducing stock receipt time and increase environment protection
- Innovative solutions based on cooperative and agile engineering partnerships

