Mobile Pneumatics
Solutions for trailers, body builders, buses and specialist vehicles
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.
Experience and Expertise in Commercial Vehicles

With over 40 years experience working directly with global commercial vehicle manufacturers, IMI Precision Engineering offer a comprehensive range of pneumatic, hydraulic, electronic and vacuum solutions covering every major vehicle system, from the front bumper to the rear.

Our range of cab, chassis and powertrain solutions deliver fuel efficiency, emissions reduction and faster assembly times for the world’s leading commercial vehicle manufacturers. Acknowledged for their safe and reliable operation, our products are proven over millions of miles of reliable service. We understand the market trends, environmental challenges, emissions standards and specifications that matter to truck manufacturers and Tier 1 suppliers.
Powertrain Engine

We provide high performance pneumatic and electric control using innovative valve and actuation technology for all current and future engine control requirements. The solutions we provide meet the challenging temperature and vibration requirements of today’s heavy duty trucks and off-highway engines.

Typical Applications include:
> Inlet Throttle
> Variable-geometry turbocharger control
> Engine control multifunction valve block
> EGR Control
> Engine exhaust brake control SCR system and blue tank heating

Powertrain Transmission

Our transmission products are built to be reliable, robust and reduce weight. Solutions providing pneumatic assistance on manual transmissions and high performance solenoid valve technology for automated manual transmission (AMT).

Typical Applications include:
> Transmission gear shifting control
> Retarder control valves
> Manual transmission control
We offer both standard and customised pneumatic control solutions that comply with all regulatory requirements for use in primary and auxiliary applications, reducing leakage, improving reliability and lowering total cost of ownership. Precision engineered for functionality, durability and reliability, our compact designs occupy minimal space behind the dashboard, blending with the overall design of the dashboard and interior with custom-designed graphics and lighting options available.

Typical Applications include:

- Seat height and lumbar control
- Air horns
- Pneumatic switches
- Axle lift control
- Solenoid valves and valve arrays
- Manual pneumatic control valves
Our experience and expertise in the global Commercial Vehicle market has enabled us to work closely with a wide variety of customers who also need robust, reliable and proven solutions for pneumatic systems in their vehicles. We have been able to work with these customers to resolve challenging and critical applications across a range of industries, including:

- Trailer manufacturers
- Body Builders
- Bus & Coach manufacturers
- Specialist Vehicle manufacturers (mining, agricultural and marine)

To these customers we provide:

**Reliable, durable and proven products**
Companies who operate across global markets need systems which will work reliably through extremes of temperature and environment. Our products are specially designed to perform in these conditions, with a particular focus on climate, temperature, thermal shock, corrosion, vibration, and mechanical shock. We manufacture special filters and regulators to ensure optimum air quality to our range of valves, actuators and fittings.

**Precise proportional control**
For applications which require precise variable control of pressure or flow in a system we have a complete range of industry-ready solutions which offer a range of low power and high accuracy options.

**Smaller, lighter systems**
With space and weight at a premium, we continue to develop products which maximise performance and resilience while minimising weight and space-claim. Our range of cartridge valves, valve arrays and fittings manifolds are specifically designed to meet these industry needs.

**Industry certifications**
We continue to develop products to meet and exceed industry regulations where they apply – our range of DOT FMVSS fittings for air brakes are used throughout the world. We also have secured DNVGL and BV marine certification for our proportional I/P – meaning it can be used across the world.
Improved performance & efficiency

> Our proportional fluid flow control products have delivered benefits to the agricultural industry by enabling more precise and responsive dispense systems.

> Working with trailer manufacturers to develop pneumatic systems to extend the length of trailers which provide haulage companies with greater fleet flexibility.

> Our proportional pressure control products have helped to extend the life of cleaning brushes and high pressure jets in a range of specialist municipal vehicles across the world.

Reduced emissions

> Our marine-certified proportional pressure controllers have enabled shipbuilders and operators to reduce their emissions in line with new industry regulations.

> Our valve arrays have been adopted by leading off-highway manufacturers due to their resilience and performance in the most demanding conditions.

Improved comfort and ergonomics

> We have developed a standard range of in-cab pneumatic seat-height, lumbar and suspension products to enhance operator comfort.

> We have developed an industry-leading motorized climate control system for coaches which delivers precise and quiet operation for passengers, while also delivering operational efficiencies to coach operators.

Improved safety

> IMI Precision Engineering provide bulk liquid trailer manufacturers with pneumatic systems to control safety handrails on top of tankers to ensure operator safety.

> Our range of in-cab pneumatic control switches and control cabinets enable operators to remain at a safe distance during tipper unloading.

> We work with bus and coach manufacturers to supply a range of passenger door systems which include manual overrides and automatic reverse functions to ensure passenger safety.

> We also manufacture electro-hydraulic control units to compensate for over-steering on municipal vehicles.
IMI Precision Engineering has supplied push-in fittings for brake systems into the truck and trailer market for over 35 years. As haulage requirements have become more sophisticated we have developed our pneumatic capabilities to suit a wide range of systems and applications which are now found in today’s modern trailers.

Typical applications that we support today include:

- DOT FMVSS/ DIN 74324 brake fittings
- Fifth wheel applications
- Control panels and cabinets
- Pneumatic interlocks for safety critical applications
- Extendable trailer applications
- Safety handrail control
- ATEX-rated process valves for tankers
- Air preparation equipment
- Lubrication manifold
- Pneumatic pilot system for hydraulics
- Load cover/ automatic sheeting control
- Tipper and tailgate control
- Variable tank volume and evacuation control
- Suction control
Specialist bulk and tipper trailers often need pneumatic control of tailgates and specialist systems.

Our valves and actuators are used as pneumatic interlocks in a variety of applications - from car transporters to safety rails on bulk liquid tankers.
Trailer Applications

Bulk liquid tankers

Bulk liquid tankers have multiple applications and requirements for both pneumatic and fluid control. Access to the top of the tanker is typically required for a variety of reasons: valve operation, measuring levels, checking and inspection. IMI Precision Engineering have a range of valves, cylinders and accessory components used in the raising and lowering of safety rails on top of bulk liquid tankers to ensure that the driver/operator is protected when working on top of the vehicle.

ATEX certified valves

Operation of top and bottom filling valves also require pneumatic control, for which IMI Precision Engineering have a variety of applicable products. In many situations, these valves must conform to exacting ATEX safety standards.
**Trailer length variation**

Operators have developed their fleet to accommodate ever-changing demands on the loads and containers which they are hauling on our roads today. To ensure maximum efficiencies gained when operating a large fleet of trailers, extendable trailers have been developed to meet these demands.

The trailer length can be adjusted using a pneumatic system comprising cylinders and valves. Dependent on customer requirements, once the new trailer length has been achieved, it is locked into position either mechanically or pneumatically.

**DOT FMVSS Brake Fittings**

IMI Precision Engineering have manufactured and supplied Push-to-connect fittings to the commercial vehicle, trailer and OEM Tier 1 suppliers for over 35 years. Our customers around the world have achieved significant production efficiencies as these fittings save huge amount of time during assembly, both providing ease of access in tight spaces as no assembly tools are required and a substantial reduction in potential air leaks associated with traditional compression fitting systems. Our fittings are available in both inch and metric tube sizes with a broad range of different threads. All conform to industry requirements of DOT FMVSS 106 for inch tube and DIN 74323 for metric.
Body Builders

IMI Precision Engineering provide solutions for a wide variety of applications for industry OEMs and specialist body builders. We have a long history of supplying reliable, high-performance products designed to meet the challenging environments and problem-solving needs of the industry.

Typical applications that we support today include:

- Tailgate and tipper control
- Side-wall locking
- Pneumatic hand rail actuation
- Pneumatic pilot system for hydraulics
- Load cover/ automatic sheeting control
- Pneumatic interlocks
- Boom control/ counter balance
- High pressure jetting control
- Wide sweep brush positioning
- Proportional brush pressure control
- Variable tank volume and evacuation control
- Suction control
- Spreading/ gritting control
- Pneumatic trailer coupling

Actuators, valves and auxiliary fittings

Valve arrays and manifolds

Reliable actuators & valves for unloading
Other examples of specialist applications include pneumatic control of hydraulic systems as well as suction, boom counterbalance and tank filling/emptying.

Municipal vehicles and fuel tankers both have requirements for pneumatic control panels and cabinets to ensure driver/operator safety at all times.
Centralised pneumatic control cabinet

Due to the tough operating conditions in and around waste-removal vehicles it is beneficial to centralise the pneumatic control in the safe, clean and protected environment of a pneumatic control cabinet.

The benefit of this solution is that it prevents potential damage from both the manual/mechanical operation of the system and the external environment.

Sweeper brush positioning

Municipal vehicles place extreme demands on the pneumatic components in their systems due to the harsh environments in which they operate.

Proportional control is used to ensure the most consistent positioning of the pneumatic cylinders to achieve optimum cleaning performance.

Other benefits of this proportional control are fast and accurate obstacle avoidance, needed when navigating a variety of road and pavement conditions.

Body Builder Applications
**Tipper Control**

With the ever-increasing need to improve driver safety, tipper controls are now often located away from the areas of danger where the load is being emptied. This frequently results in pneumatic control being located in and around the cab environment, ensuring that the driver is out of harm’s way. IMI Precision Engineering have a varied ranges of valves that have been used in these applications for many years.

**Valve Islands**

Valve islands to control multiple functions in complex systems often found in fire-engines, road sweepers and other municipal vehicles.
Buses & Coaches

Passenger comfort and safety on today’s modern buses and coaches remains a high priority. IMI Precision Engineering supply a range of reliable and robust control valves for climate control and door-opening systems designed to operate in extreme temperatures.

Typical applications that we support today include:

- Climate control
- Door open/ close system
- Emergency door control
- Disabled access systems
- Articulated bus safety and damping systems
- Battery cooling for hybrid buses
- Urea tank heater
- DOT FMVSS DIN 74324 brake fittings
- Fuel filler caps (vented/ non-vented)
- Safety systems
IMI Precision Engineering have supplied door control systems for city buses and climate control systems for luxury coaches for many years.

Special actuators are used to maintain constant tensioning on main and auxiliary fan belts, delivering efficiency and ease of servicing.

Our high flow precision regulators control the response of the pantograph system according to height variations in electric overhead lines.
Bus & Coach Applications

Climate control

Our high performance range of 2 and 3-way motorized valves offer proportional and digital control of engine coolant (water glycol), enabling precise temperature control for passengers in buses and coaches.

Features & Benefits include:

- Digital control—damping closing reduces pressure shock
- Motorised proportional valve delivers constant flow and reduces pressure shock on the radiator, while power consumption closes off when a set point is reached.
- Ceramic discs are resistant to dirt and variation of temperature, ensuring a more reliable performance.
- Motor drive for flap control—EMV resistant and built to high IP classification (IP-6K9K), it includes a gold plated pin contact to deliver high torque with minimal back lash
- Coolant control valves for the temperature control of hybrid battery packs.
Door opening systems

Our pioneering pneumatic control door-opening system for buses and coaches offers:

- A complete, customised system built from two components: door opening block and pneumatic cylinders
- Integrated safety functions, including a manual override option and an automatic reverse function for obstacle detection
- Emergency valves
IMI Precision Engineering works with specialist off-highway manufacturers to deliver improvements in efficiency, safety and performance for a range of agricultural vehicles.

Typical applications that we support today include:

- Emission control
- Power Take Off Equipment
- Tyre inflation systems
- Proportional spray control
- In-cab seat controls
- In-cab climate control
- Crop spraying
- Harvesting
- Processing equipment
Crop spraying

Efficient and accurate crop spraying is achieved with our precise proportional control valves which vary dispense according to the changing terrain.

Our proportional pneumatic control systems enable accurate and efficient harvesting depending on the terrain and application.
Specialist vehicles
Mining & Construction

IMI Precision Engineering works closely with mining and construction vehicle manufacturers to deliver outstanding performance in the most demanding of applications.

Typical applications that we support today include:

- Dust filtration systems
- Drill flushing and cooling systems
- In-cab seat controls
- In-cab climate control
- Brake interlocks
- Emergency engine shut-off
- Traction control
IMI Precision valves help mining vehicle manufacturers keep their dust collectors operating at peak efficiency. Our valves also reduce energy consumption, are explosion-proof up to hazardous area 1/21, and performing consistently across a temperature range from -40°F to 284°F.

We supply pneumatic systems for a variety of road construction vehicles including asphalt spreaders, road rollers and road marking equipment.
IMI Precision Engineering works with marine engine manufacturers and shipbuilders to help them respond to the global industry drivers around emissions reduction and ballast water quality as well as developing bespoke solutions for specialist fishing, tanker and naval applications,

Typical applications that we support today include:
- Proportional turbo wastegate control
- High pressure air ignition systems
- Air preparation equipment
- Pneumatic pilots for hydraulic systems
- ATEX rated process valves

- Cryogenic valves for LNG
- LNG process valves
- Air start manifold for Diesel engine start applications
- High flow FRLs
The Type 140 I/P delivers reliable, marine-approved proportional control to pilot the position of turbo waste gates in marine engines ensuring optimum pressure to turbo for most efficient fuel burn, helping engine manufacturers to meet the new IMO Tier III Emissions Legislation of NOx and SOx.

Proportional pilot control of hydraulic system to lift fishing nets, protecting them from damage from the sea floor.
Our market leading product brands

Our world-class portfolio includes IMI Norgren, IMI Buschjost, IMI FAS, IMI Herion and IMI Maxseal.

Cylinders

<table>
<thead>
<tr>
<th>RA/8000 ISO/VDMA Tie Rod Cylinder</th>
<th>PRA/16200 ISO/VDMA Profile Cylinder</th>
<th>RT/57000 Roundline Cylinder</th>
<th>RA/190000 ISO Compact Cylinder</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material</td>
<td>Bore sizes</td>
<td>Function</td>
<td>Key Features</td>
</tr>
<tr>
<td>Aluminium barrel and end covers</td>
<td>Ø32mm to 320mm</td>
<td>Double and single acting</td>
<td>Conforms to ISO 15552</td>
</tr>
<tr>
<td>Stainless steel piston rod</td>
<td>Ø32mm to 125mm</td>
<td>Double and single acting</td>
<td>Heavy duty applications</td>
</tr>
<tr>
<td>Stainless steel piston rod</td>
<td>80mm to 63mm</td>
<td>Double and single acting</td>
<td>High temperature and hydraulic options</td>
</tr>
<tr>
<td>Stainless steel barrel and piston rod</td>
<td>Ø20mm to 125mm</td>
<td>Double and single acting</td>
<td>Conforms to ISO 21287</td>
</tr>
<tr>
<td>Stainless steel piston rod</td>
<td></td>
<td>Double and single acting</td>
<td>Medium duty applications</td>
</tr>
<tr>
<td>Stainless steel barrel and piston rod</td>
<td></td>
<td>Double and single acting</td>
<td>High temperature option</td>
</tr>
</tbody>
</table>

Valves

<table>
<thead>
<tr>
<th>Super X Manually &amp; mechanically operated Valves</th>
<th>V60...63 Solenoid operated Valves</th>
<th>VS18/26 Valve Islands</th>
<th>VM10/15 Valve Islands</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material</td>
<td>Port sizes</td>
<td>Function</td>
<td>Key Features</td>
</tr>
<tr>
<td>Polymer or Metal bodies</td>
<td>1/8”…1/4”</td>
<td>High performance</td>
<td>Robust and reliable</td>
</tr>
<tr>
<td>Stainless steel piston rod</td>
<td>1/8”…1/2”</td>
<td>Reliable and maintenance free</td>
<td>Modular and flexible</td>
</tr>
<tr>
<td>Stainless steel piston rod</td>
<td></td>
<td>Low power consumption</td>
<td>High efficiency filtration</td>
</tr>
<tr>
<td>Stainless steel piston rod</td>
<td></td>
<td>Field expandable with add-on stations</td>
<td>Compact size</td>
</tr>
<tr>
<td>Stainless steel piston rod</td>
<td></td>
<td></td>
<td>Lightweight design</td>
</tr>
<tr>
<td>Stainless steel piston rod</td>
<td></td>
<td></td>
<td>High flow to size ratio</td>
</tr>
</tbody>
</table>

Air Preparation

<table>
<thead>
<tr>
<th>Excelon</th>
<th>Miniature 07 Series</th>
<th>VOS Relief Valves</th>
<th>Stainless Steel Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material</td>
<td>Port sizes</td>
<td>Function</td>
<td>Key Features</td>
</tr>
<tr>
<td>Aluminum</td>
<td>1/4”…3/4”</td>
<td>Filters, Regulators and Lubricators</td>
<td>Robust and reliable</td>
</tr>
<tr>
<td>Zinc</td>
<td>1/8”…1/4”</td>
<td>Filters, regulators and filter/regulators</td>
<td>Modular and flexible</td>
</tr>
<tr>
<td>Brass and Polymer</td>
<td>1/4”</td>
<td>Protect from system over-pressure</td>
<td>Compact design with high flow</td>
</tr>
<tr>
<td>Stainless Steel</td>
<td>1/8”…1/2”</td>
<td>Filters, Regulators and Lubricators</td>
<td>Very high flow</td>
</tr>
<tr>
<td>Stainless Steel</td>
<td></td>
<td></td>
<td>Tamper resistant</td>
</tr>
<tr>
<td>Stainless Steel</td>
<td></td>
<td></td>
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<tr>
<td>Stainless Steel</td>
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</tbody>
</table>

Having proven their value over years, they stand amongst the most trusted names in fluid and motion control. Bringing added value benefits to all industries, our high performance products cover valves, valve islands, proportional and pressure monitoring controls, air preparation products and a comprehensive selection of pneumatic actuators – rodless, compact, roundline and rotary. We also have the specialist technical expertise for custom cabinet, panel or manifold solutions.
## Valves

### Cylinders

<table>
<thead>
<tr>
<th>Key Features</th>
<th>RM/2000 Compact Cylinder</th>
<th>M/146000 Rodless Cylinders</th>
<th>M/31000 Air Bellows</th>
<th>M/50 Switches</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bore sizes</td>
<td>Ø32mm to 100mm</td>
<td>Ø16mm to 80mm</td>
<td>2.75” to 26”</td>
<td>N/A</td>
</tr>
<tr>
<td>Port sizes</td>
<td>1/8”…1/4”</td>
<td>1/8”…1/2”</td>
<td>1/8”…1/4”</td>
<td>1/8”…1/4”</td>
</tr>
<tr>
<td>Function</td>
<td>Double and single acting</td>
<td>Double acting</td>
<td>N/A</td>
<td>Normally open and changeover</td>
</tr>
<tr>
<td>Material</td>
<td>Stainless steel piston rod</td>
<td>Aluminum barrel and end covers</td>
<td>Steel, aluminium or polymer end plates</td>
<td>Polymer body Polyurethane, PVC or silicon cable</td>
</tr>
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<td></td>
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</tbody>
</table>

### Key Features

- One third the length of tie-rod cylinders
- Medium duty applications
- High temperature application
- Static and dynamic load applications
- Medium duty applications
- High temperature application
- Conforms to ISO 15552
- High flow capacity
- Hydraulic options
- ISO/VDMA KIP Series 2, 3 & 6
- Diaphragm valves
- Excellent performance characteristics
- Low power consumption
- Compact design with retained collets
- Easy tube insertion
- Reliable and corrosion resistant
- Robust and reliable
- High flow performance
- Lockable adjustment
- Interchangeable “Click-on” solenoids
- Variety of products
- High reliability
- For multi fluids, gases and liquids
- Internally and externally threaded
- Stainless steel piston rod
- Aluminum barrel and end covers
- Steel, aluminium or polymer end plates
- High fluid temp range (180°C)
- High flow capacity
- High flow performance
- Interchangeable “Click-on” solenoids
- Medium duty applications
- High temperature option
- High vibration isolation
- Reed and solid state versions
- Cable and plug options
- Suitable for all cylinder models

## Fittings & Accessories

### Fleetfit

- **Material:** Brass
- **Port sizes:** Metric and imperial tube sizes, BSP and NPT thread options
- **Function:** Connector suitable for on board air brake systems
- **Key Features:** Push-in tube connection, robust and reliable

### Pneufit

- **Material:** Nickel plated brass or glass filled nylon
- **Port sizes:** Metric and imperial tube sizes, BSP and NPT thread options
- **Function:** Connector
- **Key Features:** Compact design with retained collets, easy tube insertion, reliable and corrosion resistant, many product options

### tubing

- **Material:** Nylon type PA12 or polyurethane, hardness Shore D52
- **Port sizes:** 3mm - 16mm
- **Function:** -
- **Key Features:** Range of colours for ease of identification, nylon tubing conforms to DIN 74324, polyurethanes offers excellent flexibility, high vibration isolation, robust and reliable, high flow performance

### Flow Controls

- **Material:** Brass, PBT
- **Port sizes:** Metric and imperial tube sizes, BSP and NPT thread options
- **Function:** -
- **Key Features:** Variety of products including banjo, block form, in-line and heavy duty applications, robust and reliable, high flow performance, lockable adjustment

### Silencers

- **Material:** Brass & sintered bronze, UHMW PE porous plastic
- **Port sizes:** M5, 1/8” - 1/8” - 1” NPT
- **Function:** Reduce noise levels of pneumatic equipment
- **Key Features:** Variety of products, prevent dirt ingress, screw directly into exhaust port, shock and vibration resistant to EN 61373, Category 1, Class A and B
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

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