

LNG Solutions

 IMI CCI

 IMI ORTON

 IMI PBM

 IMI STI

 IMI TRUFLO ITALY

**Breakthrough
Engineering**



IMI Critical Engineering is a world-leading provider of critical flow control solutions that enable vital energy and process industries to operate safely, cleanly, reliably and more efficiently.

- We are a leader in the valve, actuator, and position control technologies required for LNG production;
- We serve every part of the LNG production process, from gas production, transmission, liquefaction, transportation, regasification, storage, and distribution;
- Our products increase plant efficiency, safety, and reliability;
- We are a trusted partner for maintaining valve assets, from parts and field service, to upgrades and problem solving.

Key brands

IMI CCI

IMI CCI is well known for engineering, manufacturing, and servicing critical flow control technology across the power, nuclear, oil, and gas industries.

IMI ORTON

IMI Orton is an international leader in the manufacture of triple offset metal-seated valves, large diameter double-eccentric butterfly valves and concentric rubber-lined valves, for on-off and control service.

IMI PBM

IMI PBM manufactures ball valves for sanitary and industrial applications. Combining specific application requirements with customized engineering and quality manufacturing practices to provide innovative solutions.

IMI STI

IMI STI is a global leader in valve actuation products, including linear and quarter turn actuators, smart and traditional positioners, and all types of accessories.

IMI TRUFLO ITALY

IMI Truflo Italy is a leading provider of specialized ball valves for the oil, gas, chemical and petrochemical industries.

An introduction from Jackie Hu, Divisional Managing Director.



Breakthrough engineering for a better world

IMI Critical Engineering has long been recognised as a world-leading provider of flow control solutions, which allow vital energy and other process industries – from LNG producers to on and offshore oil fields, from petrochemical plants to pharma and process industries, from sanitation to smelting plants – to operate safely, cleanly, reliably and efficiently.

These industrial plants and processes are vital to our modern lives, helping to produce the energy, resources and materials that underpin our lives.

Many of our products have a direct and positive impact on the world, by helping to reduce carbon emissions, improve safety, and making processes more efficient. In other words, our products make dangerous processes safer, as well as cleaner and greener. That is why we describe our purpose as 'breakthrough engineering for a better world'.

IMI Critical's products control the flow of steam, gas and liquids in the harshest operating environments. They are designed to withstand temperature and pressure extremes as well as intensely abrasive or corrosive operating conditions. With over 750,000 valves, including 250,000 bespoke valves, installed in critical industrial plants and processes worldwide, no-one knows more than IMI Critical about operating hazardous processes safely, efficiently and with minimum environmental impact.

Customers come to IMI Critical because of our expertise in solving process control problems going back well over 100 years. We provide bespoke engineering solutions, including additive manufacturing (or 3D printing). Our Valve Doctors® are available to provide expertise and assistance to clients with intractable problems. Our Field Service engineers are available to help diagnose and maintain installed valves.

Please come and talk to us and find out how we can make your plant run more safely, cleanly and efficiently.

Jackie Hu

Divisional Managing Director
IMI Critical Engineering

Key products

840 Series

1" - 8" | 150#, 300#, 600#

Tight Shutoff | Easy Maintenance | Flexible Trim Design

IMI CCI's 840 Series valves have a cage-guided construction that reduces plug vibration, and provides stable performance throughout travel.



DRAG® Compressor Recycle Anti-Surge Valve

4" - 42"

<1 Sec stroke time | Precise control | Quick Change Trim | Class VI, V Shutoff

IMI CCI DRAG® flow control technology with reliable fast stroking actuation. The DRAG® disk stack controls flow velocity to provide low noise and exceptional reliability.



Rotary DRAG®

2" - 36" | Class 150# - 2500#

Low Noise | Low Vibration | High Rangeability

IMI's Rotary DRAG® control valve combines premium DRAG® flow control technology into a ball valve. With high rangeability required on the main feed gas line, this valve can simplify the pipe layout and start-up sequence, while reducing the number of valves used.



MV Butterfly

3" - 120" | 150# - 1500# | -321°F - 1200°F

Triple Offset | Torque Seated | Zero Leakage | Bi-Directional | SIL 3

The IMI Orton MV design provides a long term and reliable solution for LNG applications of all types. The Shut off performance is unmatched by other technologies in LNG, and can easily be automated for emergency shutdown applications, including HIPPS.



MV Royal

3" - 120" | 150 - 1500 | -321°F - 1200°F

In-Line Maintenance | SIL 3

The IMI Orton MV Royal Series offers two replaceable sealing elements and an offset top entry access design for easy inline maintenance.



Transmitter Isolation Valve

1"x2", 1"x3", 2.5"x3" (port x flange) | 150# - 600# | < 800°F

Minimal Dead Space | Positive Shut-off | In Stock

The IMI PBM Transmitter Isolation Valve (TIV) is for positive isolation of a transmitter from the process media. It incorporates flush/drain/calibration ports to safely maintain transmitter reliability without process interruption.



Cryogenic Ball Valves

1/2" - 4" | -320°F - 400°F

Superior Performance | MSS SP-134 Leakage Criteria | API 607 Fire Tested

IMI PBM cryogenic ball valves offer superior reliability in the most severe cryogenic applications. Welded end valves are designed to be installed without disassembly, saving valuable installation time.



Instrumentation Isolation

1/2" - 4" | 150# - 2500#

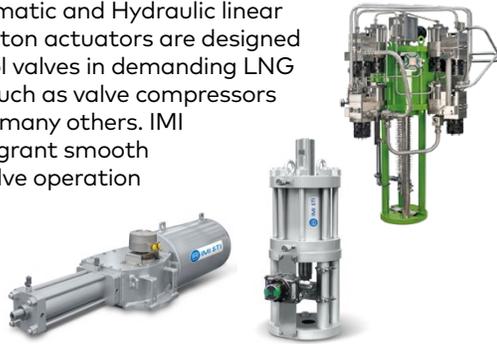
Quarter Turn | Welded or Bolted Body | Bleed or Gauge Ports

IMI PBM's Instrument valves are used for positive isolation of process media from various measurement instruments. The single and double block & bleed valves offer safer, lower fugitive emission, and our a more reliable solution to traditional needle valves.



Pneumatic and Hydraulic Actuation

IMI STI's Pneumatic and Hydraulic linear and Rotary piston actuators are designed to drive control valves in demanding LNG applications, such as valve compressors antisurge and many others. IMI STI actuators grant smooth and precise valve operation without any maintenance for the whole operating life.

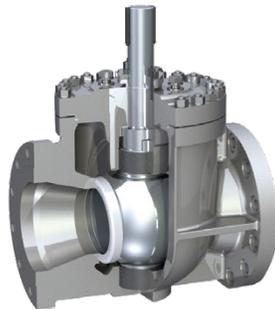


Wedge Ball Top-entry

1/2" - 24" | 150# - 2500#
|-321°F - 1200°F

Springless Wedge Design

IMI Truflo Wedge Ball features the unique "Springless Wedge Design". Designed and manufactured to meet the most stringent requirements in all critical applications in LNG plants, LNG Carriers, and LNG Terminals.



Control Systems

IMI STI actuators are designed with a patented "plug-in" connection system to allow for a wide range of customer-tailored accessories and control systems to meet the most demanding and critical operating conditions for compressor anti-surge applicatoin that requires high performance, fast operation with a high level accuracy, and precision positioning.



Top-entry Ball Valve

"1/2"" - 60"" | 150# - 4500# |
-321°F - 1200°F

SPE/DPE | DB&B | In-Line Maintenance | SIL3

IMI Truflo trunnion mounted, top entry high performance ball valves are engineered to meet international standards like API 6A, API 6D, ASME B16.34, ISO 17292 and others on request.



Side-entry Ball Valve

1/2" - 60" | 150# - 4500# | -321°F - 1200°F

SPE/DPE | DB&B | SIL3

IMI Truflo trunnion mounted, side entry high performance ball valves are engineered to meet international standards like API 6A, API 6D, ASME B16.34, ISO 17292 and others on request.



Twin Double Block and Bleed

1/2" - 36" | 150# - 4500# | -321°F - 1200°F

SPE/DPE | In-Line Maintenance | SIL3

IMI Truflo Italy side entry and top entry DB&B ball valves are bolted construction to allow full replacement of the internal components in case of service. Balls are trunnion mounted to allow easy and reliable operation and low stroking torque under the most extreme service conditions.

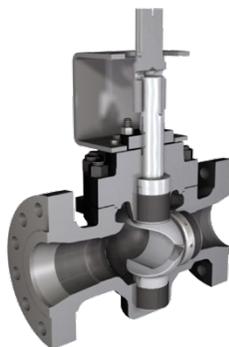


C-Rex™

1" - 40" | 150# - 2500# | -321°F - 1200°F

Cavity Free | In-Line Maintenance | Double Eccentric | Bi-Directional

The IMI Truflo C-Rex™ Valve is engineered for excellence in the most demanding services; High Cycle Switching Applications, Emergency Shutdown, Solid/Slurry Media, High Temperature, and Cryogenic. The simple and robust, top entry design has fewer parts and allows for in-line maintenance to reduce downtime.



O-Rex™

1" - 40" | 150# - 4500# | API 6A to 15000 | -321°F - 1200°F

Cavity Free | In-Line Maintenance | Double Eccentric | Bi-Directional | Pigable

The IMI Truflo O-Rex™ Valve is engineered for excellence in the most demanding services; High Cycle Switching Applications, Emergency Shutdown, Solid/Slurry Media, High Temperature, and Cryogenic. The simple and robust, top entry design has fewer parts and allows for in-line maintenance to reduce downtime.



LNG Expertise

Growth in demand for natural gas globally has increased over the past decade and is set to grow rapidly in the years ahead.

This growth is being driven by both higher demand, thanks to increased interest in clean energy, and by better supply, as a result of higher liquefaction capacity, and better transport and storage capabilities, which means that natural gas can be liquefied and transported from producing regions to distant countries safely and economically.

IMI Critical Engineering plays a key role in all aspects of the LNG process, from gas production, transmission, liquefaction, shipping, regasification, storage and distribution.

Proven technologies

IMI Critical is a leader in the valve, actuator and position control technologies required for LNG production. Our valves, actuators and positioners support the growing need to access remote locations, including the Floating Production Storage and Offloading (FPSO) and Floating Liquefied Natural Gas (FLNG) facilities, as well as LNG carriers and receiving terminals.

IMI CCI continues to use its expertise in the control and efficiency of compressors. Its patented designs bring intelligence to the compressor anti-surge valve (ASV): by pre-empting signals initiated by the compressor controls, the anti-surge valve is able to reduce the "dead time on seat" by a factor of 10, to ensure the compressor does not trip. This technology, together with large capacity and manifold mounted controls, considerably increases the compressor efficiency and performance.

Our products are designed to increase plant efficiency and operate in extremes of pressure and temperature, so that processes can operate safely, and with the utmost reliability, in harsh environments.

IMI Critical parts consistently provide reliable and efficient operational performance that have proven tangible economic benefits for LNG operators, including:

- lower maintenance costs of both valves and compressors;
- higher EHS standards through source treatment of potential noise issues;
- consistently faster startups of their plants;
- substantially lower energy costs (which are the largest contributing factor to overall life costs) by allowing more efficient running of the compressor through improved ASV control.

Compressor efficiency

IMI Critical has designed compressor protection for over 30 years, and our anti-surge and hot gas bypass valves protect the compressor, surrounding plant and personnel. Our lightweight, high-flow body designs accommodate the modular build concepts common to many liquefaction facilities today. Our custom trim designs control velocity, energy and vibration while providing high accuracy in positioning, speed of operation and overall safety to the compressor.

Safety in isolation and control

Safety in any plant is of paramount importance. IMI Critical's transmitter isolation valves (TIV) isolate process media from a pressure/level transmitter, protecting the safety of maintenance personnel, while allowing maintenance without process disruption. Traditionally, this type of isolation required a series of valves and rings that introduce potential emissions leak points. The TIV valve has been designed to have a minimal dead space and positive shut-off with instrument calibration ports, ball cavity clean in place (CIP) ports, and a self-locking handle as standard. LNG liquefaction plants, receiving terminals, and re-gasification terminals have many applications that require isolation and/or control solutions. IMI Critical's installed base of isolation and rotary control valves enhance critical applications in the LNG process, including the transfer of LNG via unloading arms to/from the jetty, storage of LNG at cryogenic temperatures, boil-off-gas (BOG) flaring, and re-gasification of LNG for metering and export.



Aftermarket Service and Support

Your trusted partner over the valve lifecycle

Having chosen world-class components, looking after them properly will help operators achieve higher productivity, safety and profitability. IMI Critical is a trusted partner for a wide range of Engineering Procurement Companies (EPCs) and operators, and offers a full range of aftermarket services, including:

- parts, spares and field service
- commissioning, installation and testing of new valves
- managing planned plant outages
- improving plant performance
- upgrades to latest technology available today

Our team of experts includes our renowned Valve Doctors® as well as application engineers with specialist knowledge of a wide range of applications and the most advanced valve technologies.

Process flow problems? Call an IMI Critical Valve Doctor®

Valve Doctors® are IMI Critical's recognised team of problem solving experts. They love nothing more than to solve a difficult process flow problem, and help customers to optimise plant performance in some of the most demanding industrial processes around the world.

Today, IMI Critical has over 90 Valve Doctors® worldwide. They who combine advanced engineering and technical expertise with industry and application knowledge. As they are in high demand from customers, Valve Doctors® carry out over 1,000 customer visits annually to power, nuclear, oil & gas, and petrochemical plants.

To be certified as a Valve Doctor®, engineers undertake a rigorous training programme which can take up to seven years to complete. "It is widely acknowledged as the highest level of application engineering in the severe service industry," says Chris Peterson, IMI Critical's Valve Doctor® Programme Chairman, Global Director of Advanced Engineering Services. The programme covers valve design, plant operation, system layout and control system integration. Training is delivered through traditional classroom tuition, interactive training sessions, online training modules, "hands on" laboratory sessions, and mentoring from an accredited Valve Doctor®.

The Valve Doctor® programme's dedication to developing the next generation of technical experts has helped IMI Critical to attract and retain some of the best engineers in the business.



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