

Naval Marine Solutions

IMI TRUFLO MARINE™

IMI ORTON™

IMI PBM™

IMI THOMPSON VALVES™

IMI REMOSA™

IMI BOPP & REUTHER™

**Breakthrough
Engineering**

Breakthrough Engineering

IMI Critical Engineering's family of specialist companies design, manufacture and service custom-designed valves and actuators that precisely control the flow of steam, gas and liquids under extremes of pressure and temperature, as well as intensely abrasive or corrosive operating conditions.

Our products are widely deployed on ships and submarines throughout the world.

In addition, our valves can be found in a myriad of industrial plants and processes, enabling the production of oil and gas, power, petrochemicals, metals, pharmaceuticals, cosmetics, food and

beverages, water and sanitation, pulp and paper, and ethanol and sugar.

Our engineering expertise means that we can make hazardous processes safer, cleaner, and greener. That is why we describe our purpose as 'breakthrough engineering for a better world'.

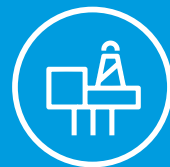
The Markets We Serve:



Marine



Nuclear



Oil & Gas



Process



Water



Petrochemicals



Metals



Sanitary



Power

IMI IMI Critical Engineering is a division of IMI plc

FTSE
250
company

IMI plc have 3 divisions:



- > IMI Critical Engineering
- > IMI Precision Engineering
- > IMI Hydronic Engineering



Manufacturing operations in 20 countries

c. 10,000 people employed around the world in > 50 countries



Why Partner With Us

Naval Marine

Failure at sea is not an option, and with thousands of valves on a naval submarine or surface ship, defence customers require extreme confidence in their suppliers. This is why over 36 navies worldwide trust and choose IMI Critical Engineering. Our products have been created to withstand the harshest of environments to avoid potentially catastrophic events. We support all submarine propulsion systems, including diesel electric, air independent propulsion (AIP) and nuclear.

50+ Years Naval Marine Legacy

IMI Critical Engineering have been a trusted partner to key Maritime programmes since 1962. We lead the world in the design, manufacture, supply and through-life support of high integrity valves, actuators, and pressure regulators and manifolds, for nuclear and naval marine applications.

A Global Through-Life Engineering Partner

At IMI Critical Engineering, customer collaboration is at the heart of all that we do. We listen to our partners to understand their specific requirements; embedding ourselves at every stage of a new submarine or surface ship build.

Highest Defence Standards

Our product portfolio is unparalleled, harnessing the expertise and engineering excellence of our workforce. Our products are meticulously designed and manufactured to the highest of defence & military industry standards, and fully qualified for naval use.

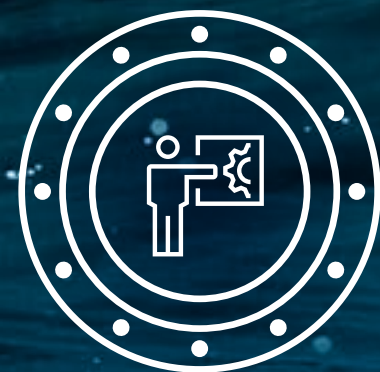
Deep Domain Understanding

IMI Critical Engineering's continued commitment and investment into research and development allows our highly knowledgeable and qualified engineers to innovate new solutions. Our capability to provide mission critical products and through-life support is proven by our long-standing involvement in current and future naval marine programmes.

Our Naval Marine Brands

- IMI TRUFLO MARINE
- IMI ORTON
- IMI PBM
- IMI THOMPSON VALVES
- IMI REMOSA
- IMI BOPP & REUTHER

[The Trusted Partner]



Consultancy

With decades of experience throughout submarine warship programs around the world, IMI Critical Engineering have established a substantial network of partners and experts; no matter the subject or complexity of the challenge, IMI is well equipped to provide the best solution.



Design

IMI Critical Engineering employs a proven design process. This includes seconding engineers into customer technical teams, FEA / CFD simulation services, and environmental qualification design. We draw on lessons learned from navies globally, ensuring that we always offer best-in-class products.



Qualification

IMI Critical Engineering valves are used in critical applications and therefore undergo stringent validation and quality assurance through prototype testing followed by factory acceptance testing on each valve produced.



Manufacture

With ongoing investment in the latest machining and test technologies to keep our cutting-edge designs manufacturable at the highest efficiencies and quality standards, we stand ready to deliver on the promises we make to our customers.



Through-life Support

By choosing parts and spares from IMI Critical Engineering, installed and tested by our own field service engineers, operators can be confident that they are made to the same high specification and quality standards as our original parts.

Valve Doctors®

Our Valve Doctors™ are IMI Critical Engineering's top technical experts who can help our customers solve the most demanding engineering challenges - from diagnosis of problems to evaluating process requirements, and optimising configurations.

Our Valve Doctors™ operate on-site wherever they are needed to solve customers' process flow problems. They optimise plant performance, in power, nuclear, oil & gas, and petrochemical plants around the world.

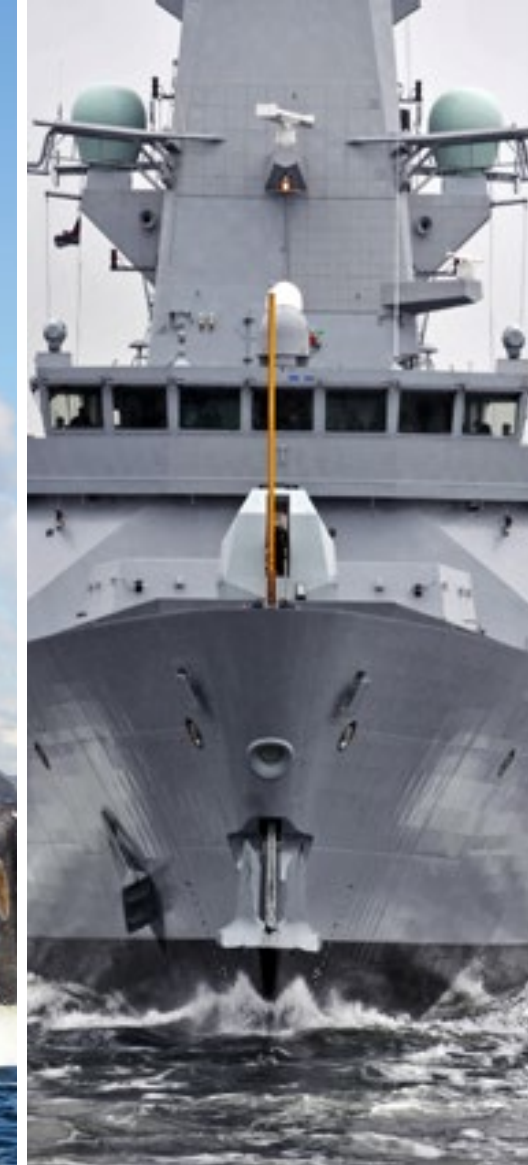


Information Security

IMI Truflo Marine holds Cyber Essentials Plus, a Government backed scheme designed to help businesses protect themselves against cyber-attacks.

The scheme provides guidance to organisations and is focussed on 5 critical security controls with the aim of protecting UK businesses from the latest external threats and vulnerabilities and is now a requirement for many UK government contracts.





IMI TRUFLO MARINE

IMI Truflo Marine meticulously design and manufacture to the highest of industry standards. **All valves are fully qualified for naval use.** This includes physical underwater explosion (UNDEX) testing where applicable, and high flow capability and quick shut off - vital to the functioning of critical systems during high intensity combat.

IMI THOMPSON VALVES

IMI Thompson Valves have over 50 years' experience supplying naval equipment to a global client base. **Pressure reduction and fluid control solutions,** which include regulators, solenoid valves, and bellows sealed valves, are designed for reliable performance and meet the customer's most challenging operating conditions.

IMI ORTON

IMI Orton produces specialist **isolation and control butterfly valves** for use on surface ships for sea water, fresh water and cooling systems, and for use on surface ships and submarines for heating, ventilation and air conditioning (HVAC) applications with firesafe specifications. IMI Orton's dedicated aftermarket department, supplies spare parts and field service to clients.

IMI BOPP & REUTHER

IMI Bopp & Reuther have been providing **safety valves** for submarines for 40 years, and they can be used to control all the vital systems on board - fresh water, sewage, oxygen, sea cooling water, battery cooling, fuel, and weapons. All valves are designed and extensively tested in-house, and field service engineers are available to service installed valves.

IMI REMOSA

IMI Remosa provides highly specialised **diesel exhaust valves** for submarines and actuation control systems for both submarines and surface ships. All products are custom-designed to meet a customer's specific requirements, manufactured and tested in-house and meet the necessary industry certifications and standards.

IMI PBM

IMI PBM's seawater valves are available in a **vast array of alloys to prevent corrosion,** are ABS Type approved, and are in use in both commercial and naval vessels. Applications include: bilge, ballast, fuel (traditional and LNG), black and grey water, sea-chest, injection, NSF drinking water and more.

Our Brand
Portfolio

Localisation



In-country Support

We work with countries around the world and are committed to having a presence in the country in which we are operating, to offer support and to ensure responsiveness.

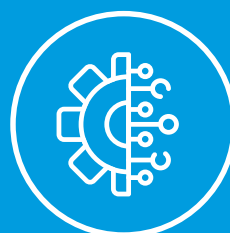
Any company with which we party is fully vetted and inspected to ensure that they maintain the same standards to which we operate.



Global Reach

IMI plc have 20 manufacturing facilities across the globe. These manufacturing facilities are located in Europe, America, and Asia.

IMI plc operate in over 50 countries and employ over 10,000 people.



Technology Transfer

We will work with local IMI sites or third parties to transfer the full value chain of design, manufacture, and strip and survey capability.

This will allow full local capability to achieve sovereignty and self-sustainment.



Knowledge Transfer

Our customers have full access to our experienced team of engineers, technicians, and assembly specialists for their local workers.

There is also access to a broad range of training and educational processes at our facilities and on-site at customer locations.

Engineering support is available via email, video conferencing and local in-market support.































































Connect






















































Connect: Worldwide, Fast, Remote Assistance

IMI Critical Engineering Connect uses a wearable augmented reality (AR) audio-visual headset which connects your field technicians with one or multiple experts across our global knowledge network.

By offering remote guidance equipment to the customer as part of the service agreement, Connect can provide maintenance and troubleshooting for any valve technology without any delay.

 Australia  > Anzac Class Frigate  > Huon Class MHC  > Collins Class (SSK)	 Canada  > Halifax Class Frigate  > Victoria Class (SSK)	 Ecuador  > Type 209 (SSK)	 Greece  > Super Vita Class  > Hydra Class Frigate  > Glavkos Class (SSK)  > Papanikolis Class (SSK)	 Israel  > Dolphin Class (SSK)	 New Zealand  > Anzac Class Frigate
 Argentina  > Type 209 (SSK)	 Chile  > Type 209 (SSK)	 Egypt  > Type 209 (SSK)	 India  > Talwar Class Frigate (P17)  > Type 209 (SSK)	 Italy  > Type 212A (SSK)	 Norway  > Ula Class (SSK)
 Brazil  > NAM Atlantico LPH  > Niterói Class Frigate  > Inhaúma Class Corvette  > Barroso Class Corvette  > Type 209 (SSK)	 Colombia  > Type 209 (SSK)	 France  > Scorpène (SSK)  > Barracuda (SSN)	 Indonesia  > Bung Tomo Class Corvette  > Type 209 (SSK)	 Malaysia  > Lekiu Class Frigate  > Kedah Class Corvette (MEKO A100)	 Oman  > Qahir Class Corvette
	 Denmark  > Absalon Class MSS	 Germany  > Brandenburg Class Frigate  > Type 212 (SSK)  > Type 214 (SSK)	 Netherlands  > Walrus Class (SSK)	 Pakistan  > Tariq Class Frigate (T21)	






























 Peru  > Type 209 (SSK)	 Republic of Korea  > KDX-2 Class Destroyer  > KSS-2 Class (SSK)  > Type 209 (SSK)  > Type 214 (SSK)	 South Africa  > Valour Class Frigate (MEKO A-200)  > Type 209 (SSK)	 Taiwan  > Hai Lung Class (SSK)	 United Kingdom  > Type 23 Frigate  > Type 45 Destroyer  > Sandown Class Minehunter  > Queen Elizabeth Class Aircraft Carrier  > Hunt Class Minesweepers/Minehunter  > Wave Class Large Fleet Tanker (A)  > Albion Class Assault Ship (LPD)  > Vanguard Class (SSBN)  > Trafalgar Class (SSN)  > Astute Class (SSN)	 USA  > ESB-3 Support Vessel  > Littoral Combat Ship (LCS)  > Island Class Patrol Boat  > Cyclone Class Patrol Boat  > Sentinel Class Cutter  > Heritage Class Cutter  > Response Boat - Medium  > Inland Construction Tender  > Polar Class Icebreaker
 Portugal  > Type 214 (SSK)	 Saudi Arabia  > Al Jawf Class Minehunter	 Spain  > Álvaro de Bazán Class Frigate (F100)  > Segura Class Minehunter  > S-80 (SSK)	 Thailand  > Chakri Naruebet Class Aircraft Carrier	 Turkey  > Aydin Class MHV (Type MHV 54-014)  > Yavuz Class Frigate  > Type 209 (SSK)	 Venezuela  > Type 209 (SSK)
 Qatar  > Barzan (Vita) Class	 Singapore  > Type 218SG (SSK)				

Surface Ship Systems Support

- | | | | |
|---|--|---|--|
|  Black Water |  Brown Water |  Cryogenic |  Diesel Cooling |
|  Drinking Water |  Fire Suppression |  Fresh Water |  Fuel Oil |
|  Fuel System |  Grey Water |  High Pressure Air |  Hull Isolation |
|  HVAC |  Hydraulic |  Lubricating Oil |  Sea Water |

Submarine Systems Support

- | | | |
|--|--|---|
|  Air Intake |  Battery Cooling |  Black Water |
|  Brown Water |  Cryogenic |  Diesel Cooling |
|  Diesel Exhaust |  Drinking Water |  Fire Suppression |
|  Fresh Water |  Fuel Oil |  Fuel System |
|  Garbage Disposal Unit |  Grey Water |  High Pressure Air |
|  Hull Isolation |  HVAC |  Hydraulic |
|  Hydrogen System |  Lubricating Oil |  Nitrogen System |
|  Nuclear Containment |  Nuclear Steam Supply |  Oxygen System |
|  Sea Water |  Sewage |  Weapons Handling |

Environmental Testing

Our valves can be designed and tested in accordance with **multiple international standards** upon request.

IMI have deep experience in the design, and quantification of critical products to the following standards:

- > DEF-STAN 00-35
- > DEF-STAN 08-123
- > DEF STAN 59-411
- > DEF STAN 02-375
- > DEF STAN 08-120
- > STANAG 4141
- > MAP 01-470
- > BR 3021
- > MIL-STD-810
- > MIL-V-24509
- > MIL-S-901
- > MIL-STD-167-1A
- > MIL-STD-740-2
- > MIL-STD-1474E

Our valves can be designed and tested in accordance with multiple international standards upon request.

- > Shock testing - underwater explosion (UNDEX)
- > Shock testing - impact testing
- > Vibration testing
- > Accelerated corrosion
- > Thermal shock
- > Airborne noise
- > Fluidborne noise
- > Cyclic fatigue
- > Flow testing
- > Ingress Protection testing
- > Fire testing
- > Leach testing

IMI Truflo Marine

Westwood Road, Witton, Birmingham, B6 7JF - United Kingdom

IMI Orton

Via dei Bazachi, 50 - 29121 Piacenza - Italy

IMI PBM

1070 Sandy Hill Road, Irwin, PA 15642 - United States

IMI Thompson Valves

17 Balena Close, Creekmoor, Poole, BH17 7EF - United Kingdom

IMI Remosa

Viale Pula 37, 09123 Cagliari, Sardinia - Italy

IMI Bopp & Reuther

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