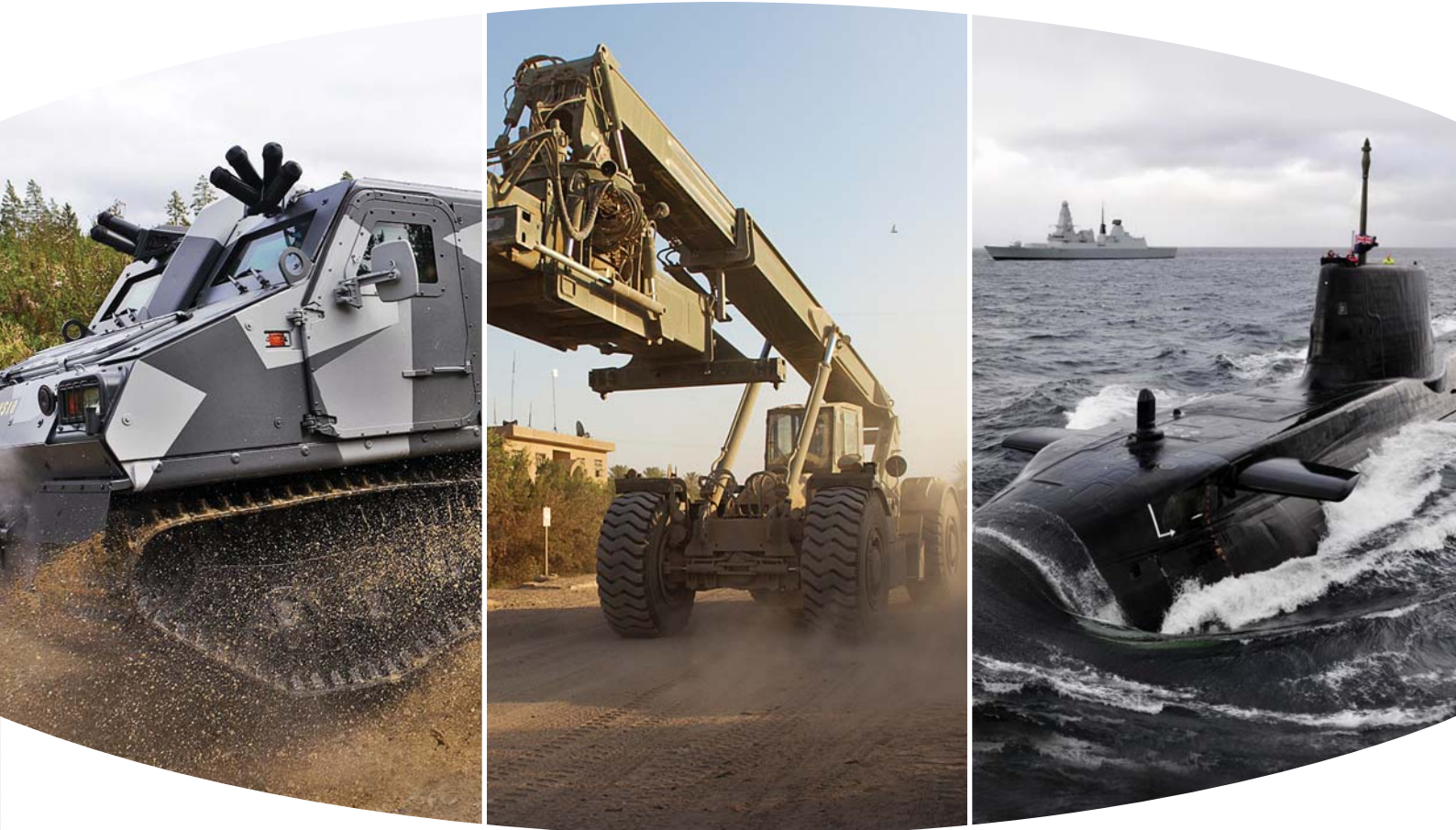


Trelleborg Industrial Antivibration Systems



Defence Technology







Elastomer technology for Defence










Trelleborg is a global industrial group operating in 40 countries and with worldwide sales of €3 billion. The group is best known to the defence community as a supplier of advanced polymer engineering solutions that play an essential role in equipment for land, sea and air forces. It contributes in two main areas, mobility and survivability.

Anti-vibration technology for Air Forces

In the aerospace sector, Trelleborg Industrial AVS offers the same range of sophisticated anti-vibration technologies – from engine mounts to instrument mountings. Current in-flight applications include UAVs, while there are also many other products specified in a support equipment, such as bowzers, tractors, tenders, gensets and radar installations.

Total Platform
Polymer Solutions

Trelleborg Industrial AVS (TIAVS) is a world leader in the design and manufacture of rubber/metal bonded components for noise and vibration isolation in engine mounting and suspension systems for marine, rail, off-highway and industrial markets. Since its foundation over 70 years ago, the company made many significant contributions to the defence technology of NATO and allied forces.

The company's head office in Leicester, UK also houses the main technical centre and extensive research and development facilities. Production is divided between Europe, India and China and all plants are approved to ISO 9001:2000 and ISO 14001.

As a group, Trelleborg offers an extensive portfolio of aerospace products, including seals for cockpits, fuel tanks, landing gear, missile systems, rudder and engine control actuation, wheel and brake systems.

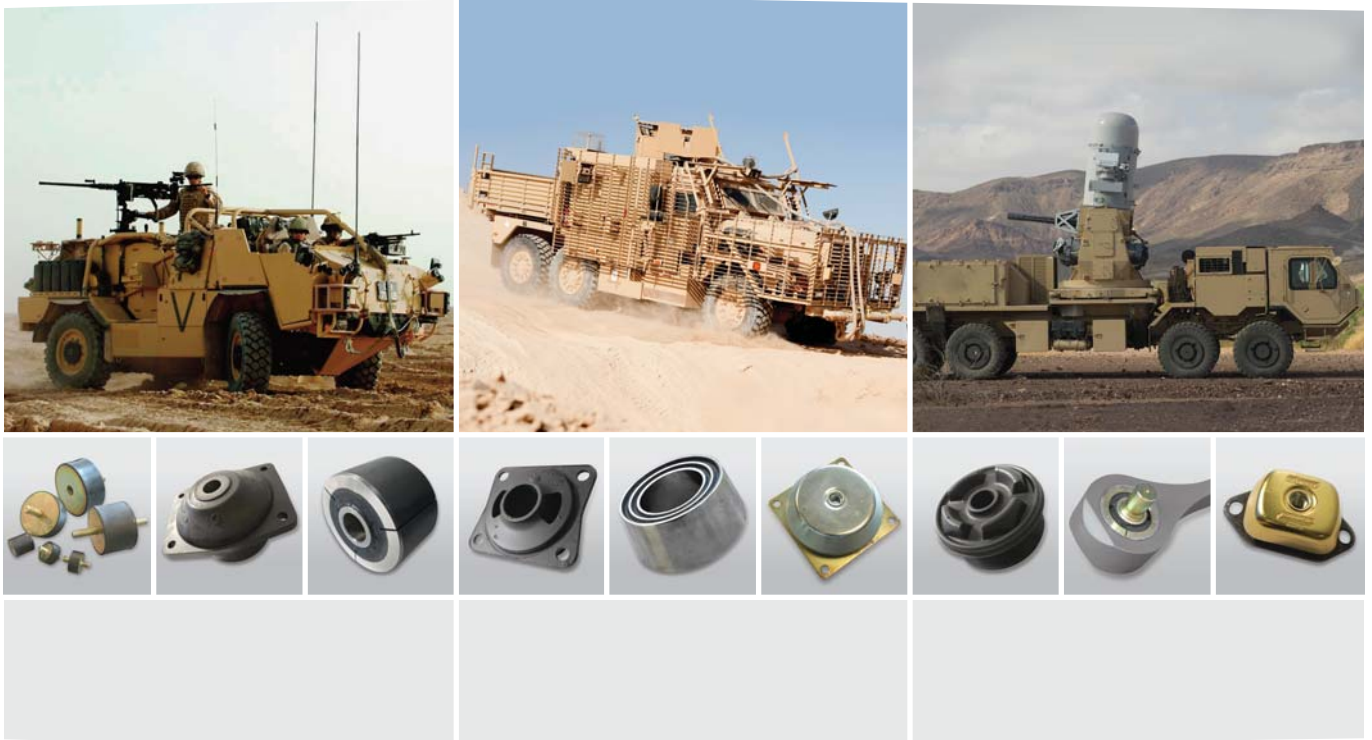
There are also polymer coatings to create aerodynamic flying surfaces, acoustic and anechoic signature control solutions, leading edge strips on wing fairings and engine rub mounts.





Anti-vibration technology for Land Forces

Trelleborg Industrial AVS contributes to the safety and survivability of land forces both through anti-vibration systems and through wheel and track products for armoured fighting vehicles.



The highlight of the AVF range is Trelleborg's third generation road wheel and track compound designed to withstand the toughest operational environments at both high and low temperatures. This advanced compound offers increased mechanical properties, reduced heat build-up and enhanced "chunk and chip" resistance. It is designed to ensure total bond security on a variety of substrates, including steel, aluminium and plastics, resulting in longer service life and reduced maintenance schedules.

The vast range of anti-vibration mountings offered by Trelleborg Industrial AVS finds applications not only in tracked and wheel vehicles but also in every kind of

mobile and off-road equipment including artillery pieces, compressors, generators, AC units and communication modules. Products range from instrument and seat mountings to engine mounts.

As part of its on-going commitment research and development, Trelleborg Industrial AVS has recently introduced Metalastik® SFR, a radical new flexible, fire-retardant coating for natural rubber components. This is believed to be the first protective coating to give a significant degree of fire protection to natural rubber while retaining all the material's natural elasticity. It has the ability to delay combustion, giving personnel more time to escape in the event of a vehicle catching fire.



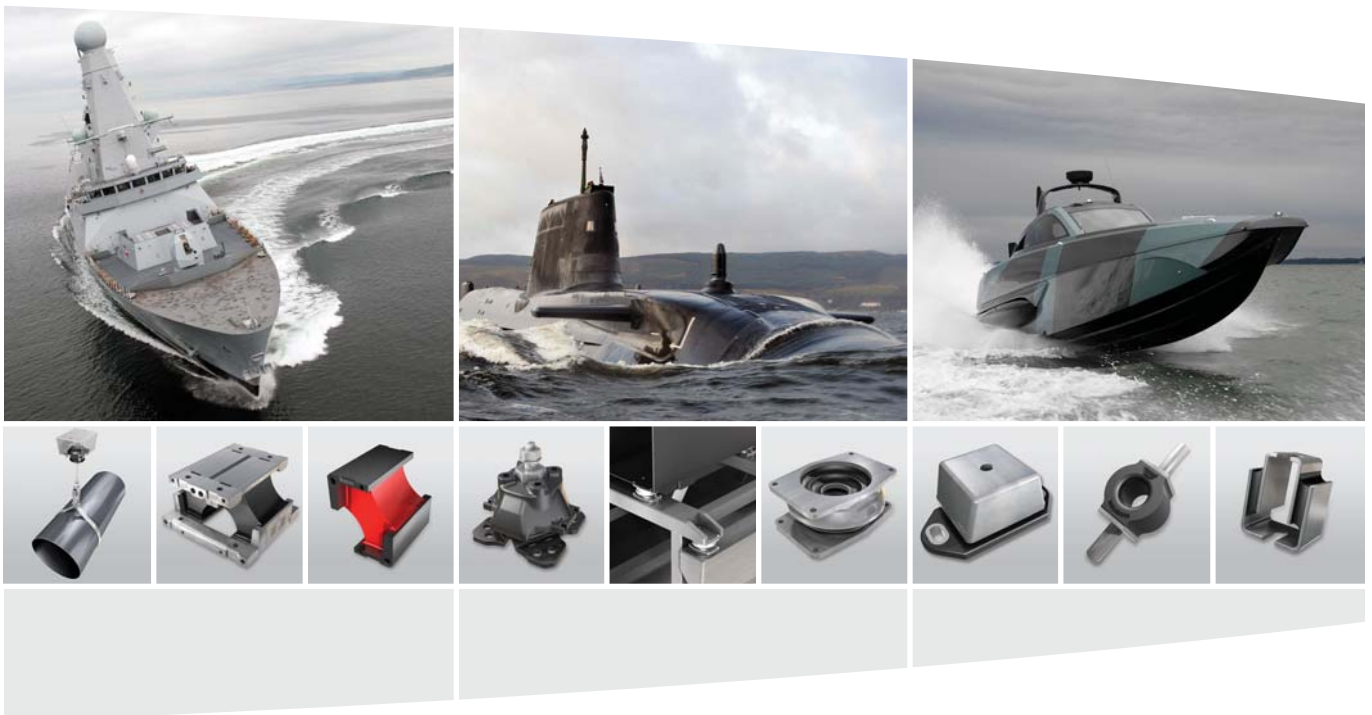


Anti-vibration technology for Marine Forces

Marine anti-vibration and shock mountings from Trelleborg Industrial AVS are specified by a growing number of navies and coastguards around the world, just as they have been by NATO ever since its foundation.

Protection against Storm and Shock Forces

The range undergoes a constant process of development, producing such recent innovations as the new HD Cushyfloat designed for launches and small patrol vessels employing pod propeller systems.



At the other end of the range, D, Super D and Cushymount™ XK mounts are used under machinery rafts and the main propulsion engines of the largest fighting ships such as the UK's new QE Class aircraft carriers. However, a typical application, such as the Astute Class submarine, contains over 20 different mounting systems, many especially designed by Trelleborg Industrial AVS, to isolate against shock impacts and suppress noise and vibration, which could otherwise reveal the vessel's position to an enemy and interfere with on-board systems.

There are Trelleborg Industrial AVS mounts for every kind of applications including gensets, electronic equipment

and propulsion machinery. All are designed to meet the highest standards of reliability, acoustic efficiency and shock protection in accordance with NATO and US MIL specifications.

They embody unsurpassed experience in shock attenuation and vibration isolation for naval and coastguard applications from assault craft to modern frigates, and from supply ships to the specialist and anti-magnetic technologies required in mine-hunting, submarines the Type 45 destroyer, US Navy LHD8 and LCS vessels, the Indian Navy's air defence ship (ADS project) and Pakistan's Munsif Class minehunters.



Technology and Development

By reducing vibration, shock and structure-borne noise, Trelleborg isolation systems make an important contribution to system reliability and performance both in ships, aircraft and land-based systems and vehicles. Trelleborg Industrial AVS develops solutions precisely

tailored to extreme technical requirements but which are also totally dependable in battlefield conditions. In terms of noise and vibration, no two applications are identical but in all cases we are constantly aware that operations and lives may depend on our products.



As a world leader in the design and manufacture of rubber/metal bonded components, Trelleborg Industrial AVS maintains an unrivalled catalogue of designs and polymer formulations, which provides the basis for constant innovation and development. Work focusses on the evolving challenges confronting our products in the defence sector. Close collaboration with our customers enables us to meet their current needs and also to understand and anticipate future trends.

Specifiers in the defence field are highly sophisticated both in terms of their technical requirements and also in the engineering and manufacturing standards they demand. As a long-term supplier to the sector, Trelleborg's reputation is built on the skills and experience of a highly committed and

integrated engineering team, excellent test facilities and a well-honed design and development process, all backed by stringent manufacturing and quality disciplines. Every stage, from design and materials selection through qualification to full series production, is subject to rigorous discipline and continuous monitoring.

All Trelleborg Industrial AVS products are tested in our own laboratories against a wide range of criteria, including ageing and environmental performance, to ensure that they will continue to meet specified performance standards throughout their working life. A comprehensive record of all parts, compounds and components provides full traceability and Trelleborg Industrial AVS is able to provide noise and vibration analysis in the field to customers who need this support.



Technology you can trust...

Trelleborg Industrial AVS believes that its strength lies in the ability to work in partnership with the customer. TIAVS focuses its resources of advanced technology and design on the customer's real and specific needs. Our know-how, skill and specialist expertise delivers cost-effective solutions and intelligent innovation.

We work to understand the environment in which you operate and the performance requirements that it dictates. Our reputation stands on products that you can rely on to perform in the most extreme conditions.

Working in close co-operation with the customer, our R&D team is constantly improving the function, durability and service life of Trelleborg products.

Trelleborg Industrial AVS uses state-of-the-art FMEA and simulation techniques to assess and overcome future challenges. Constantly looking for new and alternative materials, Trelleborg aims to advance polymer technology and develop the products of the future, ready to meet the life-expectancy and environmental demands of our expanding global customer base.



The Aerospace product portfolio includes seals for cockpits, fuel tanks, landing gear, missile systems, rudder actuation, engine control actuation, wheel and brake systems, and other generic aircraft engine applications, polymer coatings to create aerodynamic flying surfaces, acoustic and anechoic signature control solutions, antivibration mounts, leading edge strips on wing fairings and engine rub mounts.



Trelleborgs Land based portfolio includes antivibration and acoustic management systems, engine mounts, suspension mounts, control links, bushings, seat mounts, mass dampers, engine cooling systems, track systems and track pads, rubber coated wheels and rollers, flooring and matting, tyres, seals, munitions storage, dust skirts, mobile fuel and fluid storage, tents and inflatable shelters, polymer armoured panels, anti-ballistic paneling, coated microspheres to deter infrared detection, chemical protective suits, blast protection, body armour, asset protection and noise suppression.



Trelleborgs Marine based product portfolio includes acoustic tiles, acoustic and anechoic signature management systems, noise, shock and vibration damping solutions, thermal insulation, flooring, hovercraft skirts, seals for hatches, periscopes, missiles and torpedoes, engine cooling hose, ballistic panelling, light weight protective coatings, fire resistant deck (Vikodeck), bend stiffeners, submarine eye brows, torpedo guide strips, missile storage solutions, composite fabric reinforced bushings and bearings for pintle, rudder and steering applications, dry diving suits, fire retardant materials, sprinkler systems, fire stops, fender systems, navigation, marker and mooring buoys, dracone barges and anti-terrorist barriers.

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