



Global defence systems driven by David Brown



Defence Centre of Excellence

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David Brown working at the heart of defence systems

David Brown has become an integral part of defence worldwide. As the industry has evolved, we have been at the very core of things, meeting new challenges with unique solutions, it has given us unrivalled knowledge and experience it has also taught us that in order to truly understand the world of engineering you must work within it, not alongside it.

Main Battle Tanks
Infantry Fighting Vehicles
Armoured Personnel Carriers
Artillery Systems
Submarines
Warships

Main Transmissions
Accessory Drives
Turret Drives
Pump Drives
Final Drives
Transfer Cases
Test Rigs



ENGINEERED AROUND YOU: David Brown has been an integral part of industry for over 150 years. Everything we produce is driven by your needs, which is why we immerse ourselves in the demands you face. We know the best way to solve a problem is to look at it from every possible angle. This is engineered around you.

Worldwide experience and expertise

David Brown has accumulated vast experience during our long history in the defence sector, working with a range of global customers on a wide variety of projects. The knowledge and experience gained from these projects enables us to provide bespoke military solutions that are perfectly tailored to our customers' requirements.

The defence sector has seen us design and manufacture more than 10,000 gearboxes all engineered and supplied to the highest quality. Our specialist knowledge of defence systems has led David Brown to develop cutting-edge solutions for many of the world's groundbreaking projects and alongside renowned industry players including:

UK MOD
BAE Systems
Defence Support Group
Rolls-Royce
Thales
Multipart
General Dynamics

L-3
US Government
Industriewerke Saar
ARIS S.p.A
NAMSA
Singapore Technologies Kinetics
Doosan



Driving global systems

- Long and proud history of designing and manufacturing gear and transmission systems
- Defence technology has been incorporated into several generations of British main battle tanks, including the formidable Challenger 2
- David Brown transmissions drive frigates, destroyers and nuclear powered submarines throughout the world's oceans.
- The knowledge and experience gained, enables us to provide bespoke military solutions that are perfectly tailored to our customers' requirements.

LAND DEFENCE PRODUCTS



Land defence

Internationally recognised as the most capable and innovative supplier of bespoke power transmission systems for armoured fighting vehicles to aircraft carriers, David Brown combines an impressive design and manufacturing capability with unrivalled resource strength – to develop advanced gearing solutions for the most demanding requirements.

Key references for land

- Centurion MBT
- Chieftain MBT
- Challenger 1 MBT
- Challenger 2 MBT
- Titan & Trojan Engineering Vehicles
- CRARRV Engineering Vehicles
- AS90 Self Propelled Howitzer
- CVR(T) Infantry Fighting Vehicle
- MLRS Weapons System
- M2/M3 Bradley Infantry Combat Vehicle



Wheeled armoured vehicles

Wheeled vehicles have unique driveline requirements. We have the experience and expertise to offer bespoke solutions for differential, combination, speed change, bevel, hub and transfer gearboxes for all types of wheeled vehicles. We can also offer re-design and upgrade of third party designed transmission products to meet enhanced vehicle weight requirements.

Key features:

- A range of capabilities in support of all driveline transmissions
- Complete unique configured drivelines
- Can offer solutions for gearboxes from engine to wheel hub applications



Tracked armoured vehicles

Supplying several generations of main battle tank including the latest Challenger 2, David Brown also manufactures under license – an example being the HMPT500 Hydro Mechanical Transmission for the US Army's Bradley platform and NATO's Multiple Launch Rocket System.

Key features:

- A range of capabilities in support of main cross drive transmissions and final drives
- Design and development
- Remanufacture, upgrade, repair and overhaul

Key references for armoured vehicles

- Chieftain MBT
- Challenger MBT
- Challenger 2 MBT
- Titan / Trojan ETS
- CVR(T)
- Stormer
- Shielder
- M1117 Armoured Security Vehicle
- M270 Multiple Launch Rocket System
- M2/M3 Bradley

MARINE DEFENCE PRODUCTS



Marine defence

David Brown has extensive experience of working in partnership with ship and submarine prime contractors, design consultants and ship operators to produce optimised transmission solutions for surface and sub-surface platforms.

Our expertise embraces the design, development, manufacture, through-life service and repair and overhaul of drive systems across a wide range of surface and submarine vessels.

Key features:

- Main transmissions for surface combatant including Frigates, Destroyers, Aircraft Carriers, OPVs
- Auxiliary transmissions
- High integrity gear solutions for the world's grey ship fleets

Key references for marine

- Main transmissions
- Configurations include
 - Gas turbine
 - Diesel
 - CODAD
 - CODOG
 - CODAG
 - COGOG
 - COGAG
 - CODLAG
- Accessory drive systems
- Weapon launch systems



Surface ships

David Brown gearboxes drive frigates and destroyers across the world, operating in the most demanding applications where failure is not an option.

Key features:

- Proven solutions based upon our enviable heritage covering a vast range of ship types, roles and duties
- Flexible and innovative design concepts to suit specific ship requirements
- Enabling ship designers to consider a variety of solutions to arrive at the optimum propulsion package



Submarines

The world's leading nuclear powered attack submarines are dependent on David Brown gearboxes both for low noise primary transmission and weapons launch systems.

Key features:

- Highly specialist application of power transmission to the weapons discharge system.
- Unique heat treatment capabilities
- Compact gear arrangements
- Highly accurate and modern machine tools, backed by metrology equipment which is second to none

Key references for ship and marine

- Maestrale Frigate
- Type 22 Frigate
- Type 23 Frigate
- Type 42 Destroyer
- Type 45 Destroyer
- Patrol Boats
- Coast Guard vessels
- Invincible Class Aircraft Carrier
- Offshore Patrol Vessels
- Attack Submarines (SSBN)
- Fleet Submarines (SSN)

Defence capabilities

David Brown stands at the cutting edge of transmission and gearing technology solutions, building on a wealth of experience in land, sea, space and air. An inherent understanding of the industry, combined with an appreciation of the commercial factors, enables David Brown to play a pivotal role in the long term partnerships between defence suppliers and procurement bodies.

Global capability

The scale and complexity of defence development demands the through life global service and support offered by David Brown. Our global capability ensures we adhere to our philosophy of customer proximity, by developing long term enduring relationships by placing in-depth expertise and experience at the heart of the markets we serve.

Design & development

Our partnering capability is perfectly illustrated by our commitment to raise gearing technology to a new level of excellence. This is borne out through cutting edge programs in land, submarine and surface vessels programmes.

Value through innovation

David Brown has been responsible for many of the developments that have helped to define advances in armoured warfare and add value to defence solutions. It has developed and supplied TN54E transmission for the Challenger 2 main battle tanks to deliver new levels of reliability and performance and has formulated ground breaking arrangements for the maintenance of the units. This innovative 'smart procurement' initiative, covering the lifetime of the Challenger 2 system, will make significant savings for the UK Ministry of Defence.



Aftersales

With fully qualified field service engineers ready to fly out at a moment's notice, we can work alongside your own personnel anywhere in the world and provide you with the specialist on-shore or off-shore support you need. Our engineers can install, inspect your transmissions, equipment and provide inspection services with advice tailored to meet your needs.

Full asset management

David Brown understands your manufacturing needs and that's why we continue to develop and invest in new processes to increase our capabilities and provide better service for you, our customer. We provide support from the beginning and beyond, working to the highest standards and giving ultimate control and traceability of parts. Through partnerships with our global suppliers, David Brown is able to provide authentic, original parts to ensure continued product integrity.

David Brown has a lifetime of experience in supporting end users in service, whether it's the supply of parts or complete overhaul service projects – we have a solid reputation for understanding and resolving service issues.

Services offered

- On-Site Services
- Repairs, Overhauls and Upgrades
- Service and Repair
- Strategic Spares Management
- Support of Retrofit and Upgrade Programmes

Test facilities and test rigs

David Brown through substantial investment in modern plant, new products and people has skilfully developed an expertise in the design, installation and commissioning of advanced technology automated test rigs for a wide range of products including automotive transmissions, marine main propulsion gearboxes and pumping sets. Test rigs have been developed for internal test facilities and for customers abroad, including Jordan and Oman for main battle tank test facilities.

Special purpose test rigs

Special purpose test rigs have been built for projects for the British Army on the Challenger 2 (TN54), CVRT (TN15), Stormer (T300) and Shielder (T303) programmes. A multi purpose test rig is installed on site for testing of the HMPT transmission for the US Bradley and NATO MLRS vehicles, this rig can be adapted to test transmissions up to 600hp at speeds of up to 2,500 rpm and output loads up to 20,000 Nm per side. We also have modular and adaptable test rig facilities for testing and developing final drives, differential units and auxiliary drives under various tilt / gradient positions.

Data capture and rig control

David Brown can provide data capture and rig control systems for test rig facilities as illustrated below, or for in vehicle test programs, providing the necessary test instrumentation, data capture systems and after test analysis and reporting. Using on site equipment David Brown can offer test solutions based on the customer's specifications

Test solutions

- Testing parameters, using a combination of motors, cardan shafts, couplings, transfer drives and dynamometers
- Drive motors up to 4000 Hp
- Dynamometers producing up to 4000 Hp
- Speeds up to 15,000 rpm dependant on load conditions

