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rail
aftermarket

The wind industry driven by David Brown

solar
mining
power
oil & gas



The wind industry driven by David Brown

As the environmental impact of using fossil fuels becomes clearer, the importance of sustainable forms of energy continues to grow. We recognise the challenges the industry faces in making renewable energy a much bigger part of low carbon economies all over the world. As a leader in the global engineering industry for more than 150 years, David Brown offers the experience, expertise and resources to help our partners meet and overcome these challenges.

David Brown works within the very heart of the wind industry, providing engineered gear systems and extensive aftermarket services. We have developed a strong reputation for gearing excellence and innovation, and our main focus is on applying our vast pool of knowledge and experience to your needs and circumstances.

David Brown's global coverage means that wherever you operate, we are right there with you, delivering the precision engineering

and support you need to keep your gear systems running smoothly. Our combination of wind industry expertise allied with core gearing knowledge makes David Brown uniquely placed to deliver its mission to provide global gearbox services that revolve around you.

Whether it's a brand new gearbox or tailored maintenance programme, we have the knowledge, resources and global reach to make it happen.

ENGINEERED AROUND YOU: the name David Brown has been an integral part of industry for more than 150 years. This is because everything that we produce is driven by client needs. We completely immerse ourselves in the demands you face, because we know that the best way to solve a problem is to look at it from every possible angle. This is engineered around you.



Optimised total systems for a wind powered future

David Brown has a proud reputation for high performance engineering – and it's knowledge that we're happy to share. Proudly collaborative, we provide complete visibility of our engineering input to deliver robust, reliable, intelligent gear systems that deliver better performance over longer operational lives. We're also happy to work with other component providers across your supply chain to deliver the optimum drive train solution.

With a total life offering, we're here to ensure the right wind turbine gearbox is supplied to your exact specifications and that every aspect of our aftermarket services, from inspections, repair and upgrade is unsurpassed. We are working on wind turbine gearbox designs that exceed industry technological standards. By working in collaboration

with our customers we can gather and share data which explores the longevity of wind turbine gear systems. This will lead us towards planned intervention and maintenance, protecting our customers from difficult repair activities and costly downtime.



Mission critical performance

With the capability to design and manufacture complete wind turbine gearboxes, we ensure they deliver optimum performance to your turbine drive train. Drawing on our experience and expertise of supplying mission critical industries like aerospace, mining, oil & gas and defence, our design capabilities and methods are the basis for current BSI and international gear standards

David Brown has a longstanding reputation for absolute assurance through high quality manufacturing. All our wind turbine gearboxes are designed to ISO 9001:2008 quality systems. They also meet the requirements of standards organisations such as IEC and AGMA - this ensures you are supplied with the best gearbox for your application.

In addition to our comprehensive process control procedures, David Brown is a committee member of ISO/TC 60, which is responsible for the development of the most up to date wind turbine transmission standard: IEC 61400 – 4 Wind Turbines Part 4.

We're investing in the future too – partnering with world-leading research and engineering centres to develop the next generation of smaller, lighter, high efficiency technologies that will take wind power to unsurpassed levels of performance.

Added value

- Designs for fully integrated or modular drive trains
- Gearbox output speeds optimised for chosen generator
- Market differentiating gearbox designs
- Total power efficiency and weight minimisation
- Design for lowest cost of energy and through life costs

Onshore

David Brown has established a state of the art wind turbine gearbox manufacturing facility in China. Our Joint Venture Company, Shinri David Brown designs and manufactures 1.5MW and 3MW wind turbine gearboxes, combining technical expertise with volume production.

Key benefits

- David Brown has an extensive track record as a designer, developer and manufacturer of heavy and precision power transmissions across many industrial sectors
- We can support manufacturers requiring volume production for onshore and near shore applications
- Proven technology and comprehensive test procedures for enhanced gearbox life and reliability centred design



Offshore

David Brown is ideally placed to be the supply chain partner for turbine OEMs looking to develop assembly facilities in the UK for Round 3 prototyping and production. David Brown has UK facilities capable of prototype development and testing through to serial production for gearboxes in the 5MW to 10MW range.

Key benefits

- David Brown has a long history of developing large scale, multi-megawatt precision power transmission systems
- To minimise through life support costs, David Brown has developed intrinsically reliable and maintainable gearbox solutions for inaccessible offshore applications
- Innovative architectures and technologies for high power density solutions



Whole life support

We pride ourselves on working closely with our customers and our team are there to support you over the whole life cycle of your gearbox. Our gearbox repair teams provide ongoing support and work in consultation with you to conduct stringent testing and failure analysis. We work closely with you to monitor performance, providing regular inspections and full asset management to proactively deliver solutions and maximise turbine availability. Within our global network we have the capability to manufacture our own components meaning we don't rely on third party suppliers and have total quality control.

Aftermarket services

- On-site services
- Repairs, overhauls and upgrades
- Retrofit replacement gearboxes
- Asset management
- Condition monitoring
- Consulting and failure analysis including strain gauging

Endoscopic inspection

Regular in situ inspections can help identify issues before they cause failure and are therefore an ideal way to prevent future difficulties and reduce maintenance costs. With the latest video endoscope technology, we can inspect the gearbox, main bearing and yaw gearbox thoroughly with minimum downtime. All David Brown service engineers are trained to work at height, giving you and your business greater flexibility. Our recommendations are always based on our expert understanding of your specific needs and what's more, we design and manufacture new upgraded components to ISO 9001:2008 quality standards.

Upgrades

Upgrades are ideal when serial failures occur in the same gearbox. To keep your wind turbine up and running, we'll thoroughly inspect and analyse your gearbox to find solutions to any recurring problems.

Our upgrade capabilities include

- Upgrades to lubrication systems
- Installation of condition monitoring equipment
- Failure mode identification and elimination
- Gear tooth geometry optimisation
- Enhanced bearing configurations
- Implementation of new technologies

Local and responsive

We pride ourselves on adding value to our customers' assets. Expansion of our global service capability brings us closer to our customers and allows us to support their requirements for locally delivered, responsive aftermarket services.

Added value

- Our wind turbine gear system support is operational across five continents
- Standard processes for assured quality across the globe
- Rapid turnaround times for inspection and supply of replacement assets





Global capabilities

We have developed a strong reputation for gearing excellence and innovation and our main focus is on applying our knowledge and experience to your needs and circumstances. That's wherever you are in the world, whenever you need us.

The global wind aftermarket is focused entirely on speed. With downtime extremely costly, the need to maximise availability is paramount. David Brown can provide one-off aftermarket services, or we can deliver a preventative maintenance programme that looks after the gearbox during low wind seasons or scheduled downtime. Our global approach with local delivery is core to our aftermarket offering and David Brown is committed to an ever increasing service centre presence that focuses first and foremost on customer needs.



Preventative maintenance

Our research shows that reactive maintenance for the average utility scale wind farm can cost \$1.5 million more – each year – than preventative maintenance. Our preventative maintenance programme proactively looks after your wind turbine gearbox with regular inspections to monitor potential issues and minimise downtime. We can hold replacement gearboxes as strategic spares enabling rapid replacement in case of gearbox failure.

Global support

- Manufacturing
 - Australia
 - China
 - Canada
 - France
 - South Africa
 - UK
 - USA
- Service centres
 - Australia
 - Chile
 - China
 - France
 - India
 - Indonesia
 - South Africa
 - UAE
 - UK
 - USA
- Sales offices
 - Australia
 - Brazil
 - Chile
 - China
 - Indonesia
 - Morocco
 - Singapore
- Planned service centres
 - Brazil
 - Peru
 - Philippines
 - Zambia
 - USA