



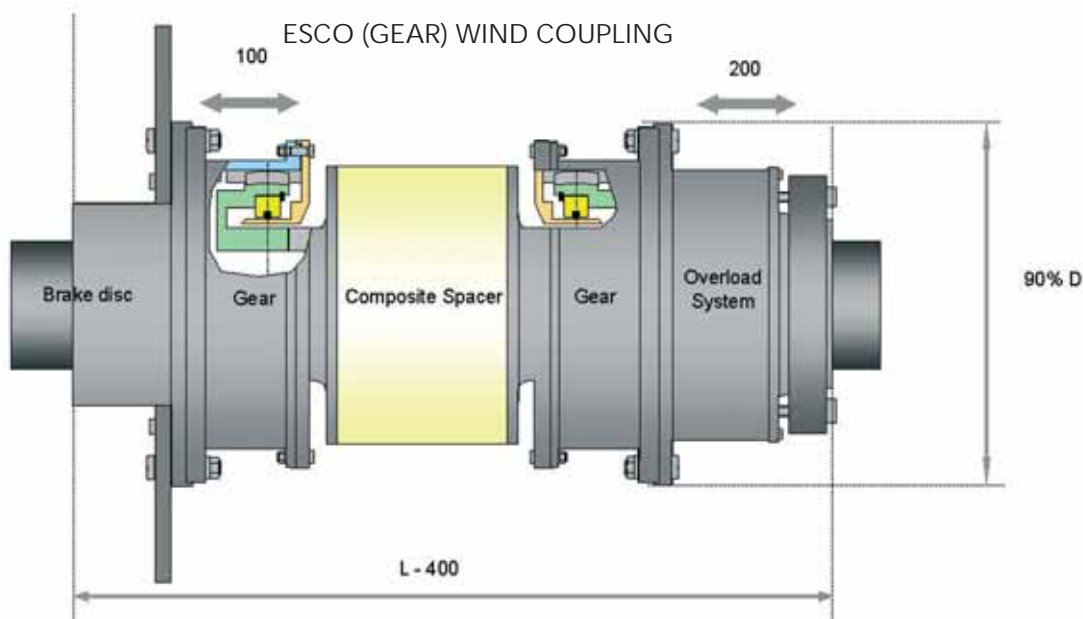
DWMO / FWMO

COUPLINGS FOR WIND TURBINES
with integrated torque limiter



By introducing a new range of wind turbine couplings, Esco Couplings N.V. allows wind turbine operators to benefit from a maximum and continuous energy production, avoiding stops due to irregularities of the grid, according to the latest E-ON directives.

- For power range of 60 KW till 5 MW.
- Maintenance free coupling, some internal parts greased for life.
- Special Multi-crown gear profile for perfect load distribution.
- Reduced length (compared to disc) due to higher misalignment capacity (up to 4°).
- High balance performance, low vibration levels.
- Available, on request, with surface protection according to ISO 14713-C3 specification (20 years).
- Absorbs exceptional short circuit torque from generators and grid variations.
- Electrically insulated.
- Optionally supplied with Esco's patented EIOS Overload protection System / Torque limiter.
- Integrated brake disc.
- Easy installation.
- Compact and light.

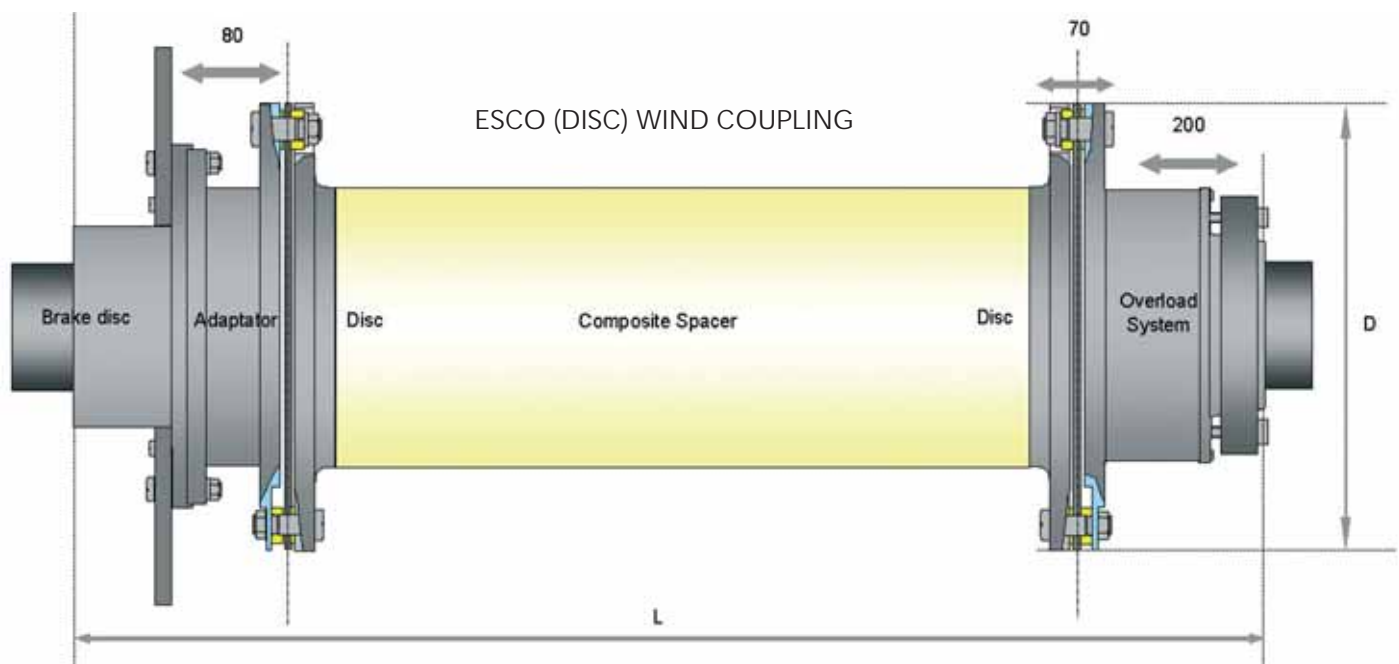


escowind couplings

ESCODISC DWMO for WIND TURBINES



- For power range of 60 KW till 5 MW.
- Maintenance free coupling, no lubrication.
- Corrosion resistant discs in stainless steel, optimized shape and thickness, 4 to 6 bolts.
- Available with surface protection according to ISO 14713-C3 specification (20 years).
- Absorbs exceptional short circuit torques from generators and grid variations.
- Electrically insulated.
- Absorbs high misalignment combinations up to 2°.
- Integrated brake disc.
- Marginal axial loads generated by the misalignment compared to all other concepts (universal, gear, elastomeric couplings).
- Optionally supplied with Esco's patented EIOS Overload Protection System / Torque limiter.
- High balance performance, low vibration levels



EIOS (Esco Integrated Overload System / Torque Limiter)

The Esco overload protection system is a reliable system, shaving peak torques dynamically at a repeatable and factory set value, independent from the assembly personnel at the site.

- Unique concept integrated in the generator side hub.
- Calibrated to required slipping torque within a tolerance of +/- 10%.
- Repeatability of the accidental slipping torque.
- Automatically re-engaged at nominal torque value condition.
- No operator intervention needed.
- Thousands of slips possible during a life time.
- 20 years life cycle.



In combination with the Esco overload protection system, Esco Couplings N.V. offers a choice of gear and disc couplings, coping with critical requirements such as:

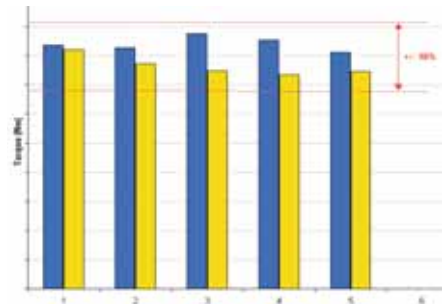
- Reduced axial and radial reaction forces
- High transient misalignment
- Friendly & easy mounting
- Reversing torques



- Electrical insulation
- Corrosion protection
- High life cycle
- Reduced weight

The ESCO Integrated Overload System is not mounted directly on the shaft, which results in the following advantages:

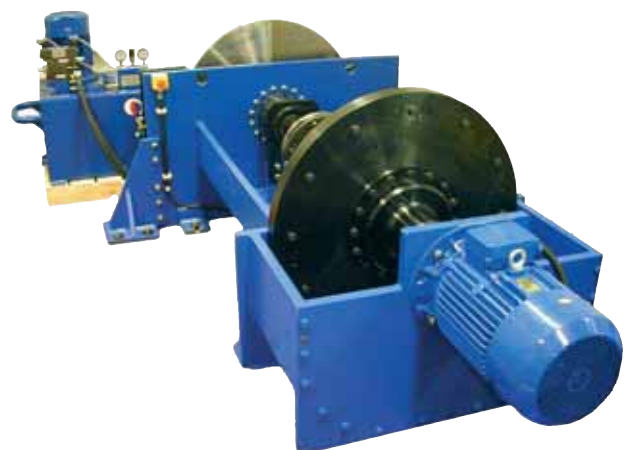
- Pressure of the mating surfaces does not depend on machine shaft tolerance.
- System is calibrated by ESCO on its test bench before being mounted on the machine. Only ESCO's responsibility is involved in the parameters influencing the calibration of the system



Experience at Esco Couplings N.V.

Major investments in test benches and electronic torque measuring devices enables ESCO to register the actual behaviour of the WIND TURBINE couplings and the dedicated torque limiters.

Since 1997 we are in the process of improving the overload protection systems, of which over 1000 units are in operation in the field



A statement that right from the beginning was incorporated in Esco Coupling's long term philosophy:

Enhanced knowledge generates better products.

- Esco Couplings N.V. is a technically driven organization, and is specialized in the creation, manufacturing and worldwide marketing of (special) couplings.
- R & D and engineering specialists represent 12% of our total Belgian work force.
- Information technologies and techniques utilized are playing a central role in our activities (CAD / Finite elements analysis, test benches)
- A modern production facility with CNC - machines, and state-of-the-art resource planning software, combined with subcontracting activities in several countries guarantee high-end products for extreme conditions and long life cycles (20 years).



Quality is our middle name

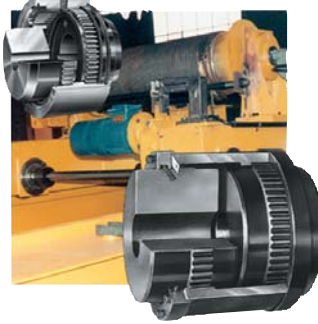
- Quality is not confined to the technical aspects at Esco Couplings N.V.
- We speak about quality management: quality is employed as a management tool.
- ISO 9001:2000 DNV certified company
- Product certificates available. (DNV, ABS, etc...)



Other coupling types available



Escogear CST / CST...M



Escogear FST



Escodisc DLC / DMU / DPU



Escogear NST



Escoflex A-R-S-T
Esconyl A-B-C



Escorail FTRN /FTRNO



Escospeed DHSU - GHS



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