CENTA POWER TRANSMISSION
LEADING BY INNOVATION

REXNORD | CENTA

PURE POWER

WIND PRODUCTS

ENGLISH

PURE POWER

CENTA redefines POWER.
POWER, to us, is more than merely strength.

POWER, to us, is the passion to find the best solution. To continuously improve successful concepts. To set new standards in performance, flexibility and service.

Each product bearing the name CENTA puts POWER into practice in a unique way. Ensuring pure power. Removing troublesome influences. Enabling optimal results.

CENTA Power Transmission.
Leading by Innovation.

PURE POWER – generated day by day with several thousands of CENTA coupling systems. Worldwide.

WIND PRODUCTS

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LEADING
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www.centa.info

Kinematics

CENTA’s coupling systems convince with kinematics unique to the market and their extremely short dimensions.

Ensuring a reliable compensation of misalignments and a smooth operation for compact nacelle measurements.

Modularity

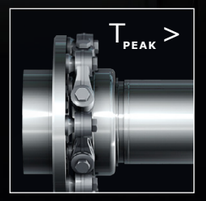
The coupling programme of CENTA is available as a broad standard series. Its modular concept allows any intermediate sizes and special designs.

Ensuring fast and efficient deriving of customised solutions.

Quality

All components used by CENTA are made of materials with inspection certificate 3.1 – or superior. Extended requirements have been specified for all system-relevant components.

Ensuring traceability of components and a long lifespan at highest quality standards.



Overload protection

Load holding torque limiters complement CENTA’s standard delivery programme; they can combine with all types of couplings.

Ensuring effective overload protection inside the plant and operational-safe torque transmission.

Mounting

By dispensing special tools and enabling radial installation of the couplings, CENTA has reduced mounting work to a minimum.

Ensuring fast and time-saving mounting of the coupling systems.

POWER ENGINEERING

With whom do you want to implement your project?

It all begins with the art of engineering, creative ideas and a whole lot of knowhow. With 25 years of experience in design, development and manufacturing of coupling systems for wind power applications, CENTA is one of the pioneers in this market. Numerous new developments and milestones verify: CENTA is “Leading by Innovation”.

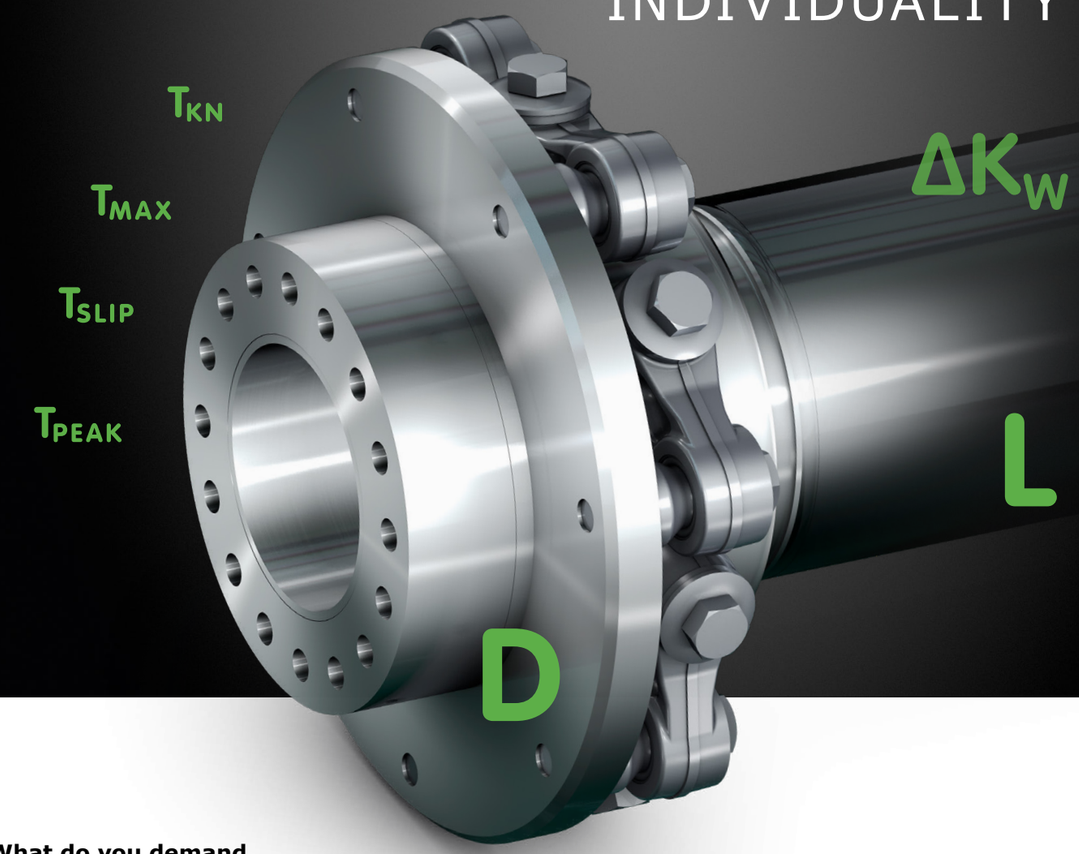
Before a product can be branded as CENTA, many drafts have to be prepared, analysed and configured for all conceivable applications. The best and most reliable solutions are then subjected to torsional vibration analysis as well as multibody and finite element analysis. All CENTA components are of high endurance strength. Several test beds, each of them for different tasks and performance ranges, cover the practical safety aspects of the coupling programme.

These include testing the characteristic curves, endurance tests for verifying rated torques, overload tests as well as test beds for calibrating overload couplings or for high resp. low temperatures. Close cooperation with external research facilities and engineering and consulting companies allows quick implementation of newly developed concepts.

Today, CENTA has the most comprehensive coupling programme in the wind power market, with a modularity allowing fast and efficient deriving of customised solutions.

CENTA › Your competent partner right from the start.

INDIVIDUALITY



What do you demand from your coupling?

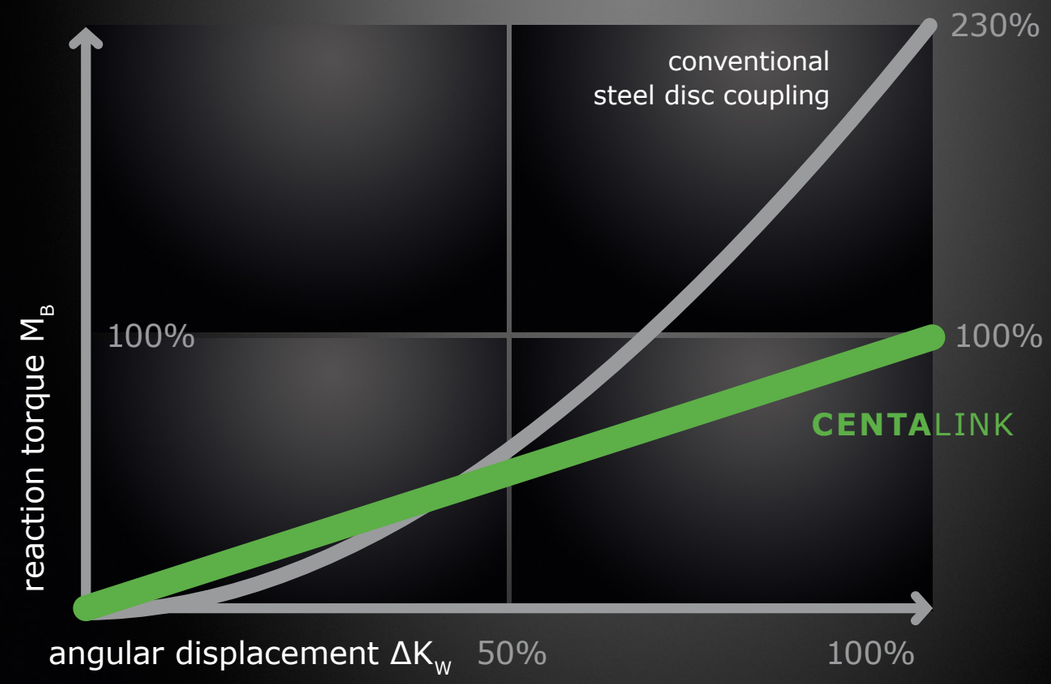
Powerful performance can be found in things large and small. This is why CENTA’s product portfolio for wind power ranges from small couplings with a rated torque of 4 kNm to medium couplings with rated torques of 10 to 25 kNm up to constructions covering several hundreds of kNm.

Coupling technology must follow individual requirements – and not vice versa. Hence, individuality for CENTA means customising products in every detail to create the optimum solution for the respective application and requirement profile. The modularity of CENTA’s coupling systems allows all types of intermediate sizes and special designs. Whether solutions are for confined spaces, systems with or without brake discs or overload units or a customised shaft connection: For CENTA, customised solutions are part of the standard programme.

Whatever scope of supply and services you may request: CENTA supports you with expert consultations and the experience of several thousands of coupling units per annum, proving their worth in tough applications worldwide. And rendering every single CENTA coupling a masterpiece.

CENTA › As individual as your system.

MISALIGNMENT CAPABILITY



What must your coupling endure?

Whether it is the CENTAFLEX–A for lower to medium performance ranges or the CENTALINK, allowing angular displacements up to 2 degrees under rated operating conditions resp. 6 degrees in an exceptional case: CENTA coupling systems convince with kinematics unique to this market.

As a client, you will profit twice from this superiority. On the one hand, misalignments due to installation and operation are reliably compensated. On the other hand, you do not have to spare compact dimensions for your plant: The shafts can be designed in very small dimensions.

All coupling systems for wind power applications are available from 6 to 50 kNm within the standard series. Due to the modular concept, this range is open-ended without compromises in terms of misalignment capability.

CENTA › Unique misalignment capability.

What’s your choice?

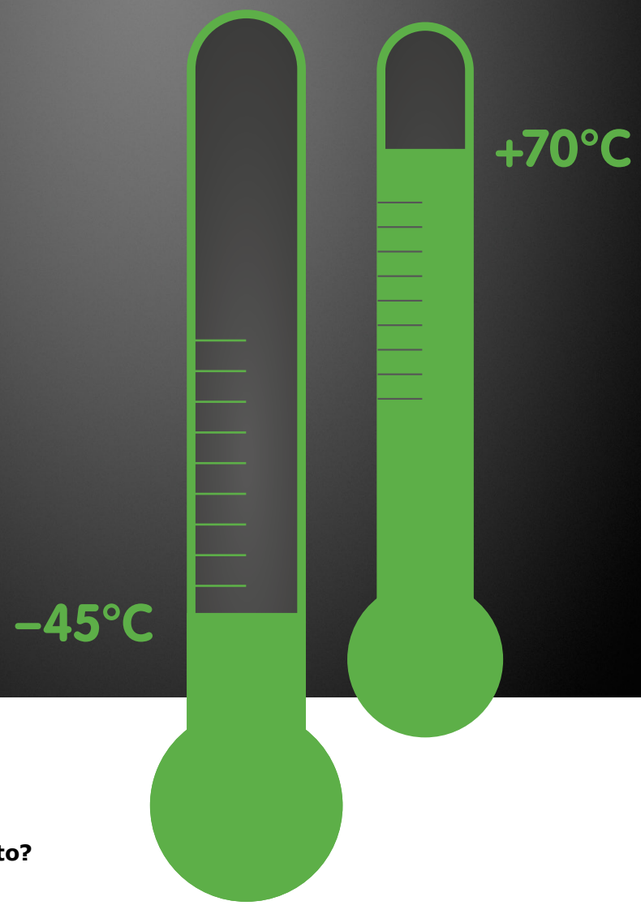
Contrary to the standard steel disc couplings, that possess a design-inherent progressive characteristic, the stiffness of CENTA’s coupling systems remains uniform.

Choosing a solution made by CENTA means: The restoring resp. reaction forces, which might negatively impact the connected machinery, are significantly smaller, in particular in the presence of high misalignment levels. This is achieved by the link technology developed by CENTA. The links – designed for push and pull and screwed with each a cylindrical and a spherical rubber bush – compensate misalignments by their intrinsic movement via the uniform elasticity of the rubber bushes.

This results in a superior cardanic misalignment capability and consequently smaller restoring resp. reaction forces with a linear characteristic. An effective protection for your plant from damaging mechanical loads.

CENTA › Sophisticated in every detail.

TEMPERATURE RANGE



What climate is your coupling exposed to?

Wind power plants are exposed to extreme temperatures, as are all plant components. Therefore CENTA couplings were designed for a temperature range of –45°C to +70°C.

All couplings of the CENTALINK type are suitable for installation in locations with normal temperatures (NCV) as well as low temperatures (CCV) down to –45 °C. In order to fulfill overall CCV requirements, the materials of all components and connecting elements were subjected to a systematic assessment with regard to viscosity, brittle fracture resistance and function as well as to supplementary stress tests at temperatures down to –56 °C.

Whether –45 °C during standstill or +70 °C during operation: CENTA couplings display a unique temperature resistance.

CENTA › Temperature resistant for all applications.

SAFETY

How do you protect your plant?

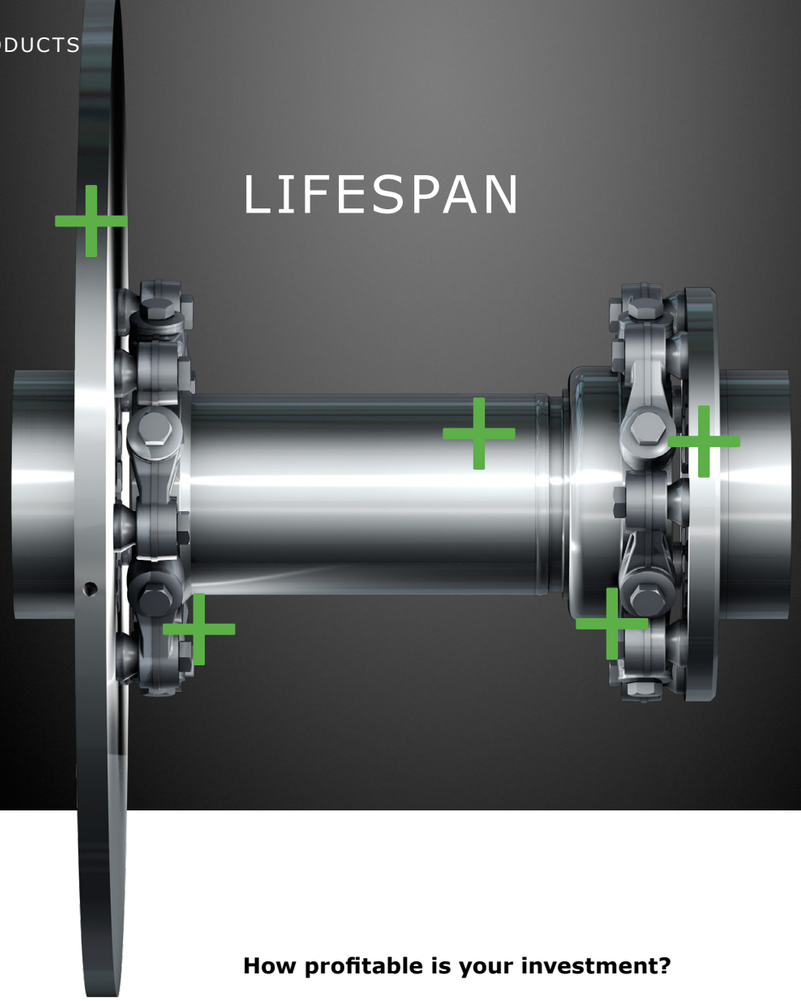
Safety comes first. This is why CENTA does not compromise in terms of electrical insulation. While standard solutions use glass-fibre tubes for insulation purposes, the more economic construction principle for CENTA coupling systems is based on natural rubber bushes. They provide electrical insulation against leakage current and protect the drive train simply, yet effectively, against electrical corrosion. Compared to solutions with steel disc couplings, the use of a glass-fibre tube can be spared. In the case of extraordinarily high insulation requirements, all CENTA coupling systems are also available with a glass-fibre tube.

Another decisive advantage is the quadruple interruption of structure-borne noise via the elastic rubber bushes – CENTA's contribution to reducing noise emission in wind turbines. In addition, moderate material damping effectively prevents axial vibrations in the intermediate tube.

Additional protection is provided by the Multislip Torque-Limiter, an axial disc slip unit with prestressed spring, encapsulated against environmental influences, mounted in the intermediate tube or on the generator shaft. When the preset slip torque is exceeded, friction inside the slip-through unit unlocks without noticeable decline of torque. This is repeated with unique accuracy many thousand times for the entire lifespan of the coupling.

CENTA › More safety for your plant.

LIFESPAN



How profitable is your investment?

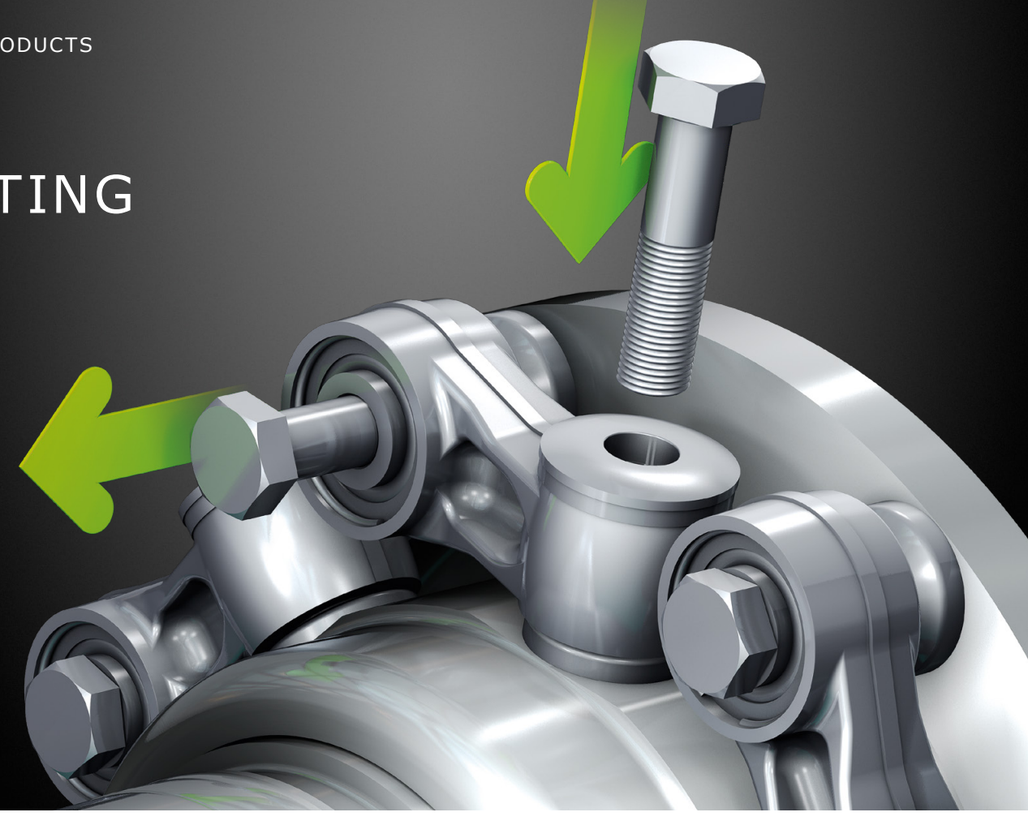
Failsafe operation is crucial for the profitability of your plant. This is why CENTA's coupling systems for wind power applications are wear-free, require only low maintenance and include emergency operation features.

The ability to perform visual checks of the coupling systems after mounting reduces service and maintenance to a minimum. Each link can be dismantled individually. Removal of the middle portion of the coupling is not required. Even the coupling itself can be dismantled completely without axial displacement of the generator.

In addition, all exterior coupling parts exposed to corrosion are coated, as standard, to meet the requirements of corrosion class C3 long (onshore) resp. C4 medium. As an option, more demanding requirements, such as C4 long (offshore), can be supplied on request.

CENTA › A long-term investment.

MOUNTING



How quickly do you want to connect to the grid?

Space is also a valuable resource. This is why CENTA offers smaller building designs with utmost variability in length. Hence, the couplings adapt to the mounting space available, permitting implementation of significantly more compact nacelle measurements.

Since the couplings are not clamped and can be mounted merely by using a hydraulic torque wrench, expenses for initial installation are reduced to a mere few hours. Specially trained staff of the CENTA service team assists you during prototype installation and initial assembly, trains the assembly fitter operators and performs displacement measurements to verify alignment.

CENTA also opts for full flexibility where shaft connections are concerned: a space-saving direct flange connection, clamping sets, feather key connections as well as oil-press fit, to mention only a few of the possibilities completed so far. Pre-dimensioned standard clamping sets designed for minimum space requirements and easy assembly are available. Experience from practice put into practice.

CENTA › Surprisingly simple and flexible.

QUALITY

SERVICE

How do you ensure your quality requirements?

When the going get's tough, quality is priceless. With an exemplary Quality Management *iQ*, CENTA ensures products that withstand the roughest assignments.

Every single part can be traced, pre-specified materials properties are continuously controlled. In every stage of production, test and calibration records confirm the high quality. CENTA consciously relies on materials with inspection certificates 3.1 or components with superior characteristics.

CENTA's coupling systems are more than the sum of their parts. CENTA entertains the vision of intelligent products that meet the highest requirements in terms of design and quality. Why should you settle for less?

CENTA › Quality that pays off.

What kind of service do you expect?

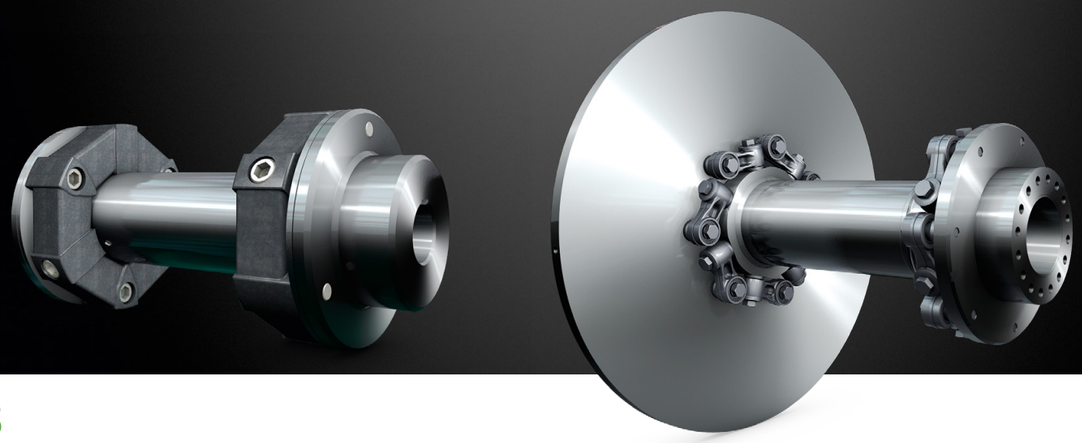
Whether during project planning and design, initial assembly and training, during servicing, measuring and maintenance work, or when procuring urgently needed spare parts: CENTA is at your disposal during each and every stage of your project.

Ten subsidiaries and 27 agencies combine to form a strong sales and service network ensuring expert consulting, local warehouses and quick replacement service all around the world. The 300 employees of the CENTA group, among them staff specially trained and equipped for work on wind turbines, have only one goal: to offer you the best service possible.

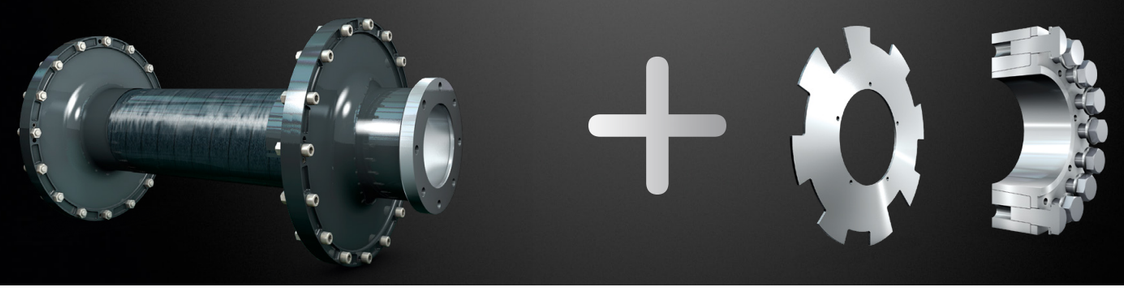
Wherever you are, the CENTA service team will be with you on site: around the globe, 24 hours a day, seven days a week.

CENTA › More service than you expect.

PRODUCTS FOR WIND POWER



CENTA WIND PRODUCTS



CENTAFLEX–A

Highly flexible coupling compensating misalignments, for applications in lower performance ranges up to 1 MW. More than 10 million pieces in use worldwide.

For power transmission requiring operating safety and overload impulse tolerance. Combines compensating displacements with elasticity for smallest mounting spaces. Based on an electrically insulating basic elastomer element, which allows considerable misalignment in radial, axial and angular direction. Also applicable without overload coupling, due to its high torsional flexibility.

Available for wind power applications in performance ranges of 4 to 12.5 kNm nominal torque. Adaptable to the actual mounting environment in any length. Radial mounting, easy to handle. Also available as glass-fibre construction.

nominal torque range:	4 to 12.5 kNm
temperature range:	– 45°C to 80°C
more information:	www.centa.info/cf-a

CENTALINK

Backlash free and torsionally stiff link coupling with outstanding kinematics. One of the coupling solutions most frequently used in the industry.

Convinces with a unique displacement ability for axial, radial and angular misalignments. Very short dimensions with minimal restoring resp. reaction forces (linear characteristic). Combines high performance, electrical insulation, moderate vibration damping and minimal mounting effort in only one coupling system.

Available within a modular concept standard series for operating torques from 6 to 50 kNm. Higher performances individually realisable on request. Also available as glass-fibre construction.

nominal torque range:	6 to 50 kNm
temperature range:	– 45°C to 80°C
more information:	www.centa.info/cl

CENTADISC–C

Robust and torsionally stiff membrane coupling for compensating misalignments, made of fibre-reinforced technical plastic. For drive systems in light-weight design.

Convinces with extremely low weight and high-degree electrical insulation. Double cardanic system with two fibre-reinforced membranes in serial arrangement. Allows considerable misalignments in axial and angular direction. Exceptionally durable and corrosion resistant.

Available for nominal torques from 3 to 40 kNm. Radial mounting without displacement of the aggregates. Standard design with glass-fibre reinforced intermediate tube for electrical insulation.

nominal torque range:	3 to 40 kNm
temperature range:	– 40°C to 110°C
more information:	www.centa.info/cd-c

ADD-ONs

Torque limiters

Load holding torque limiters are available for all types of couplings, suitable for mounting in the intermediate tube as well as on the generator shaft. Delivered with pre-set slip-through torque and individual calibration record.

Shaft connections

The complete range of customary connections can be implemented. Pre-dimensioned standard clamping sets ensure quick availability. Designed for integration of a brake disc and/or an initiator plate for drive speed measurement.

Special components

Whether it is equipment for torque measurement, recording overload events or adapters for handling and adjusting devices: Special components adapted to the respective mounting situation are available.

CENTA › Development partner for wind power.

YOUR COUPLING

Let’s talk about it!

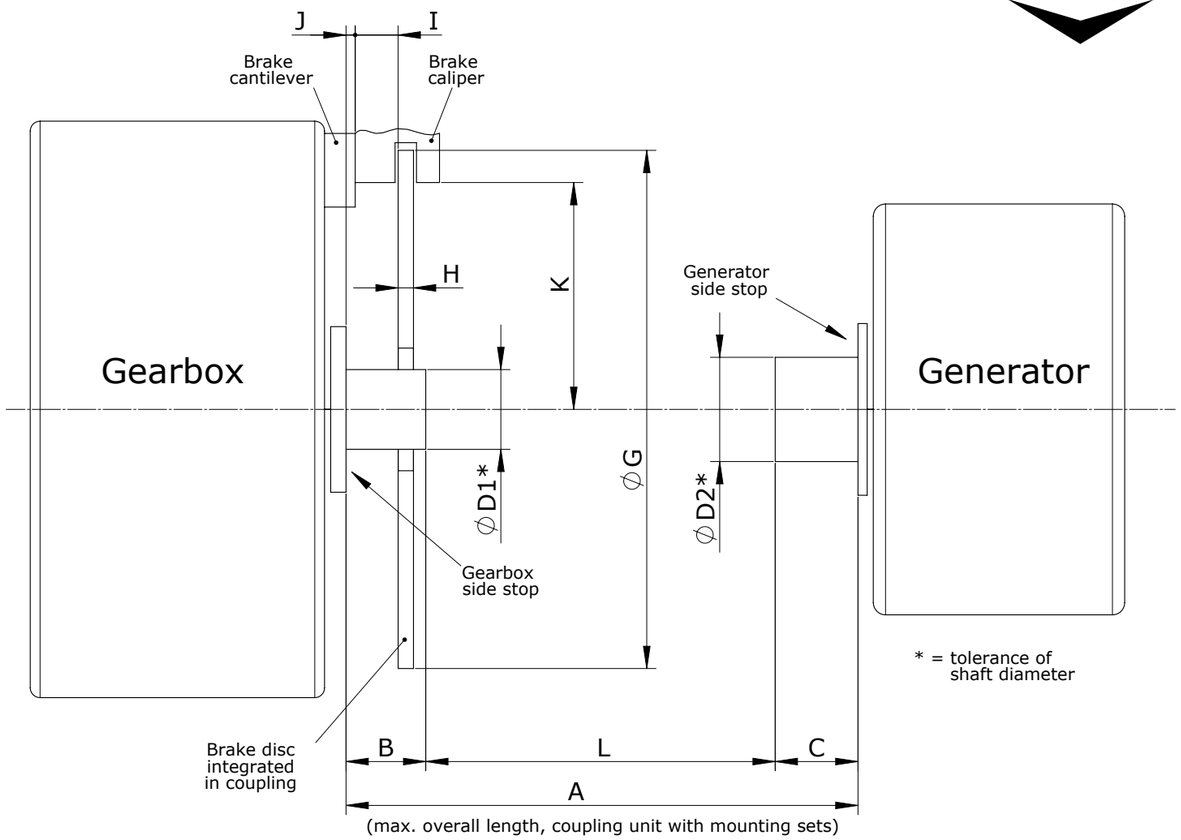
Regardless whether you have a first draft or a finished copy, whether you need a standardised solution or a completely new design: It all starts with a conversation with CENTA.

The adjoining data sheet offers a first impression of the respective mounting situation, the basis for our conjoint project planning and communication.

Take the opportunity and make the most important information available to CENTA.

www.centa.info/contact

Use this sheet for your
CENTA inquiries



PROJECT

name of customer	
name of wind turbine	
electrical power of the wind turbine	MW

DIMENSIONS

according to drawing above

A	mm	
B	mm	
C	mm	
D1	mm	*(with tolerance)*
D2	mm	*(with tolerance)*
G	mm	
H	mm	*(with tolerance)*
I	mm	*(with tolerance)*
J	mm	
K	mm	*(with tolerance)*
L	mm	

TECHNICAL DATA

electric resistance		kOhm
operating speed		U/min
maximum speed		U/min
torque at rated power		Nm
maximum torque in operation		Nm
minimum slip torque		Nm
maximum slip torque		Nm
direction of rotation of the gearbox shaft *view from generator shaft towards gearbox*	☐ CW ☐ CCW	
maximum braking torque		Nm
brake disc material		
corrosion protection	☐ C3	☐ C4
temperature range	☐ NCV	☐ CCV

CENTA WIND PRODUCTS

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CENTA is the leading producer of flexible couplings for rail, industrial, marine and power generating applications. Worldwide.

WWW.CENTA.INFO/CONTACT

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