

CENTA POWER TRANSMISSION
LEADING BY INNOVATION



PURE POWER

RAIL PRODUCTS

ENGLISH

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

PURE POWER

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.

CENTA Power Transmission.
Leading by Innovation.

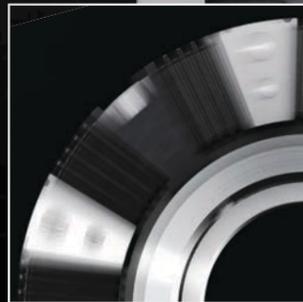


PRODUCT GUIDE

RAIL PRODUCTS

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LEADING BY INNOVATION



Torque Transmission

Coupling systems by CENTA combine an extremely compact design with an efficient torque transmission.

For high torques in confined spaces and optimal results even within narrow places such as bogies.



Misalignment Capability

CENTA's coupling systems convince with kinematics unique to the market. They offer the necessary misalignment capability for each application, maximized through numeric calculations and endurance tests (type test).

Ensuring a reliable compensation of misalignments even with short drive shafts and an efficient damping of vibration and noise.



Modularity

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

Ensuring fast and efficient deriving of customized solutions.



Mounting

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

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



Quality

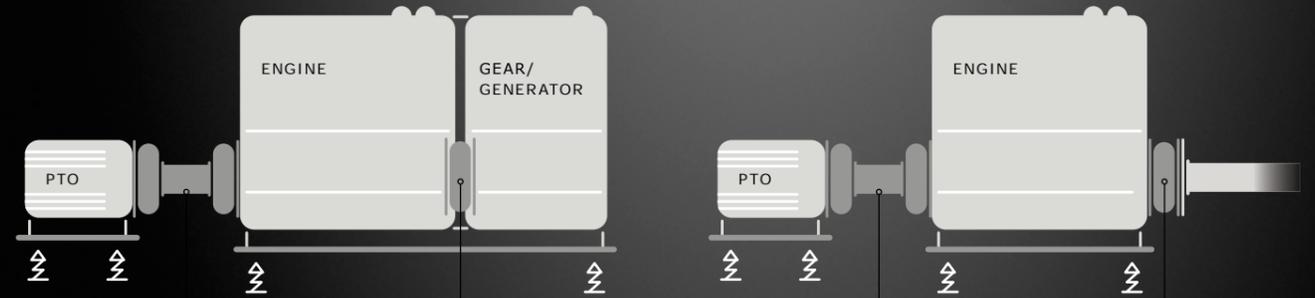
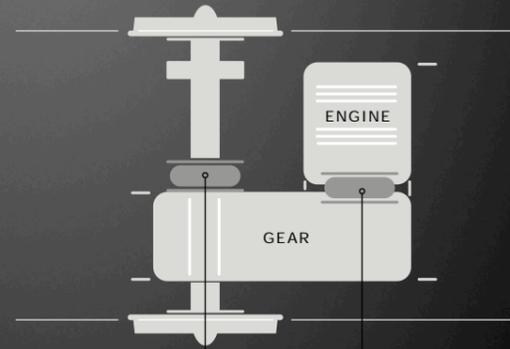
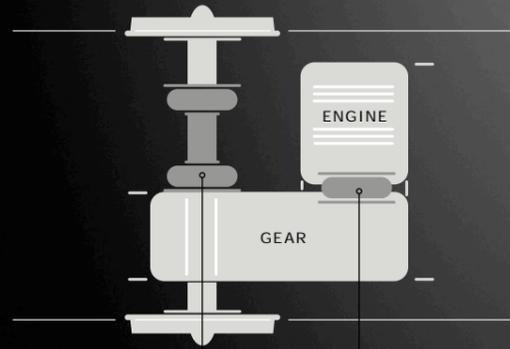
All core components used by CENTA are made of materials with inspection certificate 3.1 – or superior. Extended requirements have been specified for all system-relevant components.

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

CENTA Power Transmission.
Leading by Innovation.

www.centa.info

AREAS OF APPLICATION



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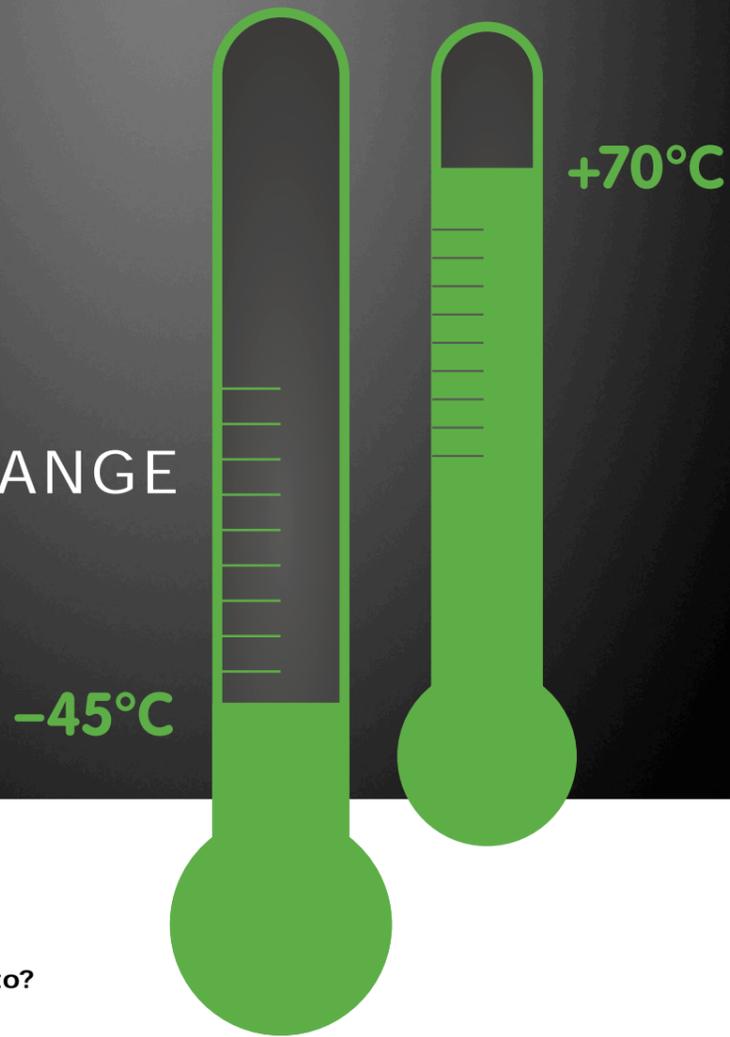
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Which product for your purpose?
We will gladly assist -> www.centa.info/contact

TEMPERATURE RANGE



What climate is your coupling exposed to?

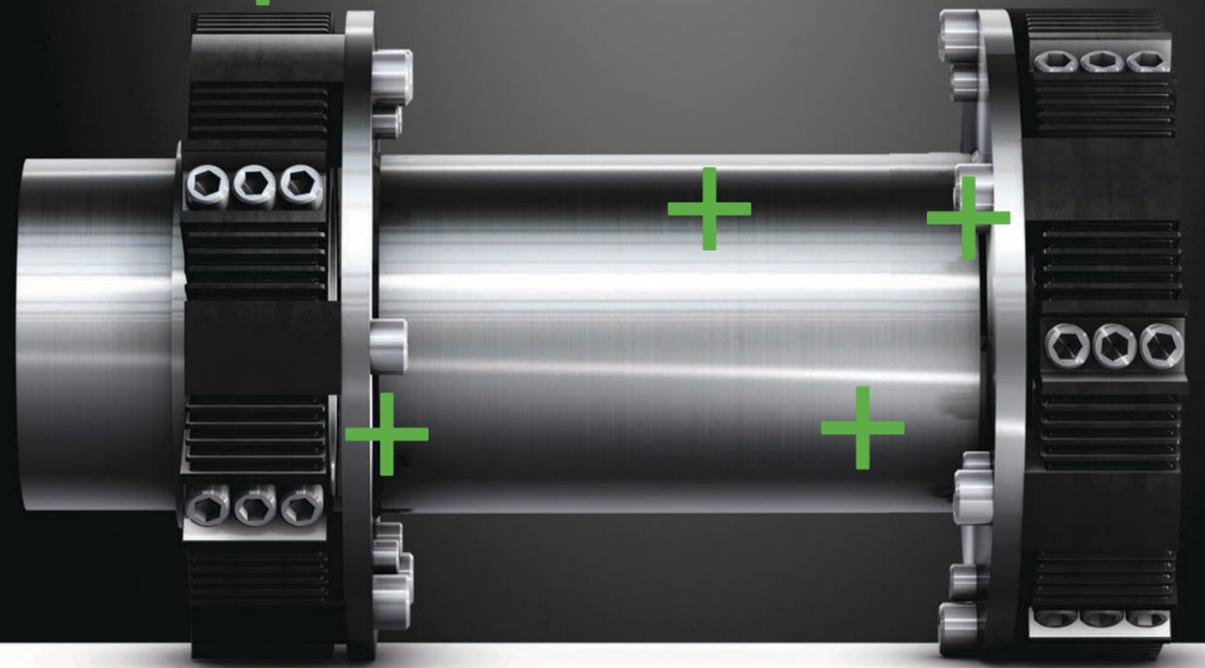
The demands on couplings used in rail applications are extensive: high temperatures due to narrow motor spaces and idling speeds with the motor running, diverse environmental influences such as cold, splashing water and loose gravel as well as mileage of more than a million kilometres. All of these demands require dependable and robust products.

All couplings for rail drives, as a standard, are suitable for normal temperatures, for elevated temperatures, as in encapsulated applications and for low temperatures down to -45 °C as well. To provide proof for low temperature suitability, the materials of all components and connecting elements are subjected to a systematic assessment with regard to viscosity, brittle fracture resistance and function as well as to supplemental stress tests at temperatures down to -56 °C.

In addition, all exterior coupling parts exposed to corrosion are coated, as a standard, to show a 480 hour resistance when subjected to a salt spray test per DIN EN ISO 9227. As an option, increased requirements are available on request.

CENTA > Prepared for every assignment.

LIFESPAN



How do you minimize your lifespan costs?

Product testing plays a central role at CENTA. A large number of in-house test beds covers the practical safety aspects of the coupling programme, be it for establishing a coupling's characteristic values, reviewing its life span or verifying the coupling's operation in customer specific type tests.

Therefore the CENTAFLEX-T, for example, was subjected to a six-month long verification process with different test runs conducted in parallel, which accounted for the special demands of the rail industry and the great number of possible use scenarios. The climax was an endurance test with operation under maximum misalignment and starting torque; the coupling successfully passed multiple 20 million load cycles.

The coupling elements are manufactured under standardized production in a controlled vulcanization process, which guarantees consistent high quality, dimensional stability and true running as well as identical characteristics of CENTA rail products.

CENTA > For optimal availability.

MOUNTING



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How quickly do you want to start operating?

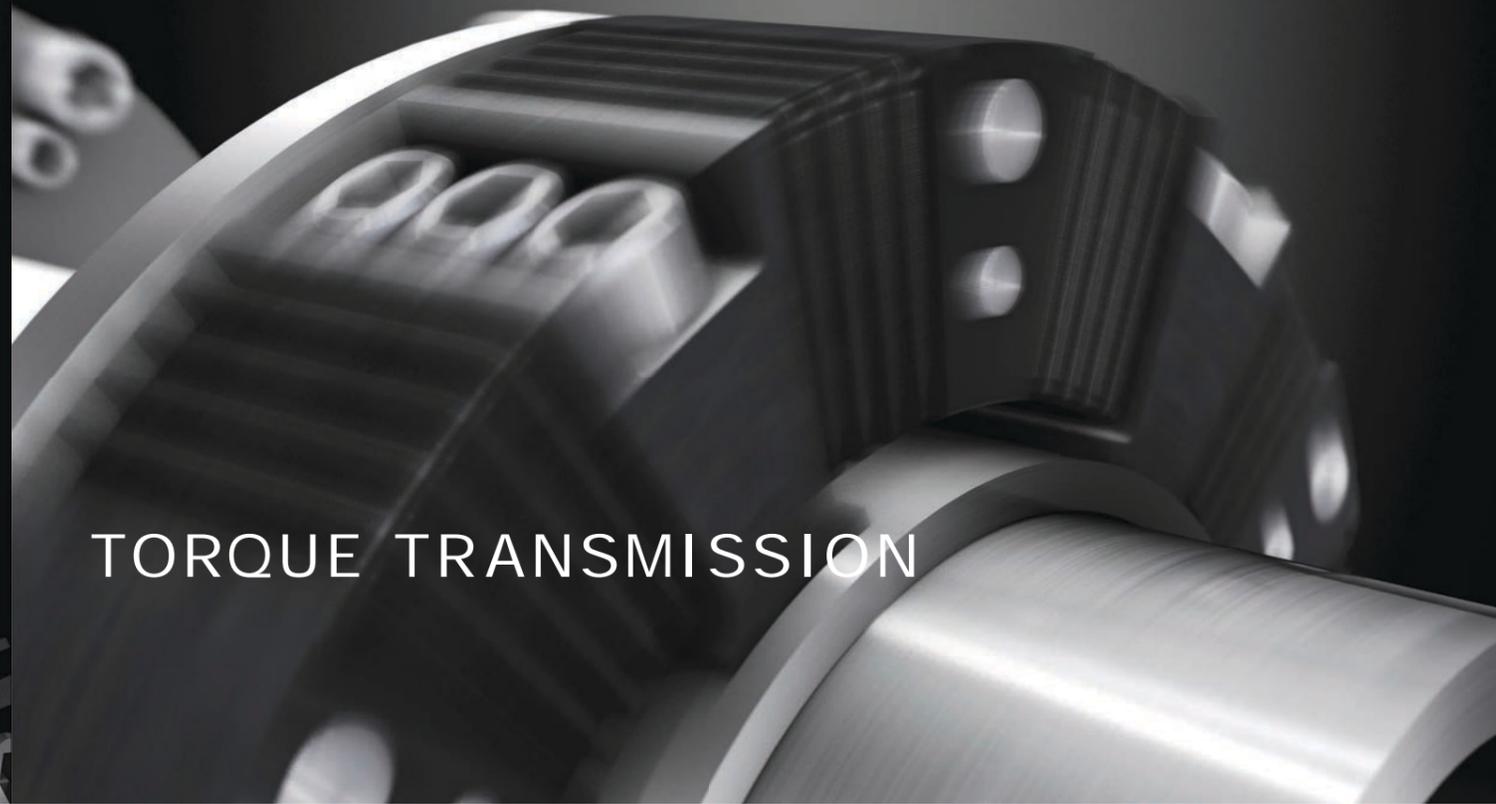
Space is also a valuable resource. This is why CENTA offers compact designs with utmost variability in length. Hence, the couplings adapt to the mounting space available – not the other way around.

Characteristic of CENTA's rail products is their great ease in mounting, achieved via the concept of axial-radial screwing. This applies for the CENTAFLEX-T, for example, where axial screwing of the coupling to the flange is then followed by radial assembly on the hub or shaft. This enables fast and simple integration of the coupling without a shaft star or spur gearing in the power train. At the same time, the rubber columns are subjected to prestress – entirely without hydraulic means – which is beneficial to the life span of the coupling.

The rail products from CENTA are even more convincing when service and maintenance are concerned: The coupling systems can be checked visually after mounting as well and disassembled radially without axial displacement of the connected units.

CENTA > Surprisingly simple and flexible.

TORQUE TRANSMISSION



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What can we do for you?

Hardly any performance area places more diverse demands on a coupling as the modern rail cars. Narrow spaces to build in, high torque during acceleration and braking, relative to the low stress and strain of the gliding motion and reactions by the rail track and sudden load impact due to slipping wheels: The couplings must provide optimal performance in every situation.

Thanks to the systematic compilation of these operating conditions, state-of-the-art research methods and the experience of more than 200 industries, CENTA succeeded in further optimizing the concept of the wedge type based gear output coupling already established.

The CENTAFLEX-T proves superior when compared to standard wedge type solutions by an extremely compact design and high performance density without trade-offs to the customer in terms of misalignment capability. As a result, the drive shaft star is no longer necessary. This reduces the number of different parts and the mass and makes frontal screwing of a coupling adapter resp. the manufacturing of expensive high-tensile output shafts redundant.

The CENTAFLEX-T is available in a variety of performance ranges up to 17 kNm starting torques. Even higher performances of up to 75 kNm operating torques are offered by the CENTALINK couplings.

CENTA > More than 40 years of expertise.

QUALITY



SERVICE

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How do you ensure your quality requirements?

When the going gets 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. With regard to core components, CENTA consciously relies on materials with inspection certificates of 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.

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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 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 RAIL APPLICATIONS

CF-A



CF-E



CENTAFLEX-A

Highly flexible coupling for a wide range of applications. For a maximum of design variants.

Based on a highly elastic rubber element subject only to compressive stress. Extremely high-performing design with high torsional elasticity. Dampens torsional vibrations and shocks and compensates considerable axial, radial and angular misalignments. Electrically insulating and thermally resistant in silicon design. For rupture-proof and backlash-free transmission of high torques.

Available as axially blind fitting design with radial mountability. Rubber element available as split element for quick replacement. In various lengths adaptable to the installation requirements if applied as homokinetic shaft.

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

CENTAFLEX-E

Flexible shaft coupling for a wide range of applications. For safe transmission of high torques.

Extremely robust and fail-safe jaw-type construction with elastomeric elements subjected only to compressive stress. Features medium torsional stiffness with progressive characteristic. For resonance-free operation and reliable transmission of high torques at low reaction forces. Dampens torsional vibrations and shocks and compensates axial, radial and angular misalignments. Heavy duty performance and compact dimensioning.

Available as homokinetic drive shaft in any length required by the installation. Axial blind assembly for minimum mounting effort.

torque range	0.28 to 40 kNm
temperature range	-25°C to 80°C
more information	www.centa.info/cf-e

CF-H



CF-T



CM-HTC



CM-S



CENTAFLEX-H

Torsionally stiff coupling with heavy duty performance. For resonance-free operation of diesel-hydraulic drives.

Based on a flexible element of heavy duty elastomer with built-in aluminium or steel bushes. Especially powerful and compactly dimensioned design with high torsional stiffness. Dampens torsional vibrations and shocks and compensates high axial as well as moderate radial and angular misalignments. At the same time very durable and economical. Oil-resistant and suitable for extremely high temperatures.

Blind assembly for minimum mounting effort. Available with CENTALOC clamping hub. With flywheel connections acc. to SAE. Also available for non-standard flywheels.

torque range	0.1 to 4 kNm
temperature range	-50°C to 150°C
more information	www.centa.info/cf-h

CENTAFLEX-T

Torsionally stiff wedge type coupling with optimised geometry. For high torques in confined spaces.

Based on a bridge bearing principle allowing a high power density and good misalignment properties. Torsionally stiff design, however, highly flexible in axial and angular directions ensuring reliable compensation of misalignments. Proves superior when compared to standard wedge type solutions by an extremely compact design and high performance density achieved by optimising its geometry and omitting the hubstar.

Also available as homokinetic drive shaft. Further handling, maintenance and cost benefits through a reduced number of wedged elements. Easy and safe integration into the drive train.

torque range	1.2 to 24 kNm
temperature range	-45°C to 80°C
more information	www.centa.info/cf-t

CENTAMAX-HTC

Torsionally highly flexible coupling with high energy loss. For drives subject to torsional vibration.

Torque transmission via a toothed outer ring onto a rubber element divided into two slim halves. With optimised higher allowable energy loss due to increased surface, reduced heat dissipation and effective ventilation. Dampens torsional vibrations and shocks and compensates axial, radial and angular misalignments. Proves superior when compared to standard double couplings by extremely compact dimensions and economic design.

Blind assembly for minimum mounting effort. With flywheel connections acc. to SAE. Also available for non-standard flywheels.

torque range	5.4 to 45 kNm
temperature range	-45 to 80°C
more information	www.centa.info/cm-htc

CENTAMAX-S

Robust coupling with high torsional flexibility. For resonance-free operation of drives susceptible to torsional vibration.

Torque transmission via a toothed outer ring onto a rubber element. Highly reliable and rupture-proof design for transmission of high torques. Characterised by high torsional flexibility. Dampens torsional vibrations and shocks and compensates axial, radial and angular misalignments. Effectively ventilated and with high allowable energy loss. Additionally oil-resistant in silicone design.

Blind assembly for minimum mounting effort. With flywheel connections acc. to SAE. Also available for non-standard flywheels.

torque range	0.1 to 24 kNm
temperature range	-45 to 125°C
more information	www.centa.info/cm-s

CD-M⁺



FH



CL



CX-V



CENTADISC-M⁺

Especially designed for single-bearing motors and generators is a variation of the CENTADISC-M, which consists of a membrane coupling supporting the rotorshaft on the gearbox resp. the generator bearing.

The CD-M⁺ is primarily designed as gearbox input coupling for the bogie in flanged electric drives. A special design of this coupling is also applied for main drives up to SAE 21, as well as for fast-running applications depending on the misalignment compensation requirements.

With the application of specific surface coatings, life span and misalignment capacity was increased even for demanding applications. As an option, a calibrated overload element (slip coupling) can be integrated. Available as a single or double membrane coupling according to situation.

torque range	1.4 to 10 kNm
more information	www.centa.info/cd-m

CENTA FH

Flange bearing to protect engine crankshafts from high bending moments. For compensation of high forces resulting from large deflection angles of connected components.

Robust flanged bearing housing made of tempered aluminium. Extremely easy maintainable design on durable bearing. Takes up reaction forces and transmits them to the flywheel housing for the protection of the crankshaft and its bearing. Also available with speed-controlled centrifugal clutch for soft engagement of connected components. Extremely light-weight and compact design. Effectively ventilated.

Minimum mounting and maintenance effort. Preassembled as unit for flywheel connections acc. SAE.

torque range	0.77 to 24 kNm
temperature range	depends on coupling
more information	www.centa.info/fh

CENTALINK

Torsionally stiff drive shaft with outstanding kinematics. For reliable misalignment compensation and smooth operation.

Equipped with links designed for push and pull, and bolted together with flexible rubber bushes. Extremely high-performing and torsionally stiff design with linear characteristic. Unique design with ability to compensate axial, radial and angular misalignments. In addition, offers the utmost degree of electrical insulation and reliable interruption of structure-borne noise.

Reduces installation time to a minimum and keeps lifecycle costs low. Available in optional intermediate and special sizes within the wide standard series.

torque range	3.3 to 150 kNm
temperature range	-45°C to 80°C
more information	www.centa.info/cl

CENTAX-V

Torsionally highly flexible intermediate coupling with linear characteristic. For drive concepts with cardan shafts.

Safe transmission of torque via a highly flexible precompressed rubber element with precisely centred plain bearings. Characterised by high torsional flexibility with linear characteristic. Dampens torsional vibrations and noise, ensures smooth operation and long service life of the connected units. Also effectively ventilated and with high allowable energy loss.

Available with flywheel connections acc. to SAE and various cardan connections. Also available for non-standard flywheels. Flange bearing CENTA FH recommended for larger deflection angles.

torque range	0.23 to 50 kNm
temperature range	-45°C to 80°C
more information	www.centa.info/cx-v

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.

www.centa.info/contact

CENTA RAIL PRODUCTS

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



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