



Press release

## **Couplings in construction machinery powertrains**

*Werdohl, Germany, February 2022.* Spring couplings from Torsion Control Products (TCP) are ideal for use in construction machines powered by modern diesel engines. Thanks to their special torsional elasticity, these durable, robust couplings damp the vibration from the powertrain and remain serviceable even under the harshest operating conditions. Torsion Control Products is part of the US manufacturing corporation The Timken Company. Within the organisation of roller bearings specialist Timken, a division was created for further powertrain components, including the Torsion Control Products brand couplings as well as couplings and components from PT Tech und Lovejoy. These are now presented here for use in the powertrains of mobile construction and process machines.

"The variety of different powertrains fitted in construction machines is enormous," says Dr.-Ing. Peter Jaschke, head of Business Development at Torsion Control Products in Werdohl, Sauerland. "As a rule, the objective of every construction machine manufacture is to develop a long-lasting powertrain that is perfectly compatible with the construction vehicle and its work process, and that functions reliably in the harsh operating conditions. This requires working side by side with a partner which not only knows and can deliver a component, but also develops, manufactures and distributes many different products. This makes it possible to derive added value from the very beginning when developing a powertrain, through professional consultation and the technical implementation of customer requirements."

Using the example of a conceptualised powertrain, Dr. Jaschke presents a few core competencies of the brands cited above. Torsional vibration is certainly generated by the diesel-engine drives in construction machines, but also by many process machines such as the milling drums in road planers, the chipper drum in wood chippers, or even crusher drives. "The aim is to influence these vibrations in such a way that none of the powertrain components suffer any damage. The steel spring couplings from Torsion Control Products are ideal for precisely this purpose." They can be adapted to the specific requirements through a wide range of different configurations. Particularly the spring characteristic and the damping property are important in



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this context, and an optimised selection is made on the basis of a torsional vibration calculation. The Smart Damping technology is especially effective here in eliminating undesirable transmission rattling.

Hydraulic Power Take-Offs (HPTO) from PT Tech engage the drive train by a multiple disc clutch. "Besides the sophisticated design of their discs, they are also equipped with a specially developed controller, which enables them to accelerate high moments of inertia without causing the discs to overheat," says Dr. Jaschke. If hydraulic pumps also need to be driven, the HPTOs can also be fitted with up to four additional power take-offs. Special adapters are available to enable the pumps to be connected directly.

If the drive train has to be protected from high overloads, Dr. Jaschke recommends torque limiters from PT Tech, or – depending on the specification – shear pin couplings from Lovejoy: "It is most important, particularly in the case of overload couplings, to ensure that they function reliably and protect the powertrain. The torque limiters operate on the basis of spring-loaded friction discs. Presettable spring assemblies allow the pressing forces to be applied extremely precisely over long periods of time, thereby ensuring an even mode of action."

As part of Timken since 2017, Torsion Control Products has been developing, producing and distributing a wide range of torsionally soft couplings for mobile machinery for more than 30 years. The spring coupling series is available in various variants, and covers a torque range from 27 Nm to 27.000 Nm. Besides construction and roadbuilding machinery, typical application areas include agricultural vehicles, transmissions, hydrostatic pump drives, powershift transmissions and hybrid drives in mining machinery and industrial plants.

**Images:**

Image 1: Spring coupling from Torsion Control Products



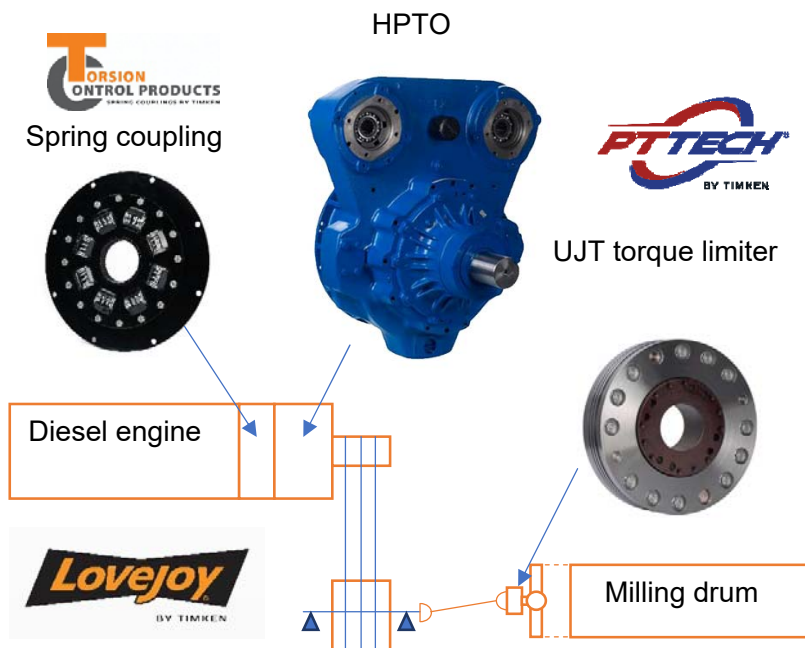
Image 2: UJT torque limiter from PT Tech



Image 3: Hydraulic Power Take-Off (HPTO) from PT Tech



Image 4: Conceptualised example of a hypothetical powertrain with spring coupling from Torsion Control Products, hydraulic power take-off (HPTO) from PT Tech and torque limiter from PT Tech



*(Note: Unfortunately, this graphic is not available in higher resolution)*

### Company information:

Torsion Control Products has been developing, producing and distributing a wide range of torsionally soft couplings for mobile machinery for more than 30 years. In April 2017, the power transmission specialist joined the listed US-based Timken Company (NYSE: TKR; [www.timken.com](http://www.timken.com)). Timken engineers, manufactures and markets bearings, gear drives, belts and industrial chains. In addition to coupling specialists Torsion Control Products, R+L Hydraulics, Lovejoy and PT Tech, the Timken product and services portfolio includes the brand names Groeneveld, Cone Drive, ABC Bearings, EDT, Carlisle, Rollon and Diamond Chain.

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