



Press release

Spring couplings from TCP enable optimum weight distribution

Werdohl, Germany, October 2018. Torsion Control Products (TCP) has developed a customized coupling configuration for a tractor manufacturer. With their unique torsional characteristics, the spring couplings used are especially suited to modern diesel engines that produce lower emissions and more power in smaller packages at lower operating speeds. With a sophisticated design, TCP was able to combine shaft bearings and coupling in a single assembly for the application described here.

The agricultural machinery manufacturer and long-time customer of Torsion Control Products wanted to develop a new tractor to meet the needs of the modern farmer. A key part was changing from having the transmission directly mounted onto the engine to having it remotely mounted in order to improve the weight distribution. A remote mount configuration requires a drive shaft to transmit torque between the transmission and engine. In order to accommodate this change, the customer needed a completely new type of coupling that could support the drive shaft while tuning the system and achieving the necessary performance.

The engineers of the American coupling specialist created a custom coupling configuration that provided shaft support and a coupling in one assembly. This coupling solution minimised costs by eliminating the need for a bearing housing while meeting the technical requirements of the application. The coupling is also short, which allows for a small deflection angle of the cardan shaft.

These products attenuate torsional vibration, isolate resonance, protect against overload and shock, reduce noise, improve the service life of bearings and gears, and increase system durability. The all-steel construction of the spring couplings is space-efficient and ensures a long service life, while their performance remains consistent throughout the products' lifespan. Ambient temperature has virtually no impact on the performance or durability of the couplings. They can be used in both lubricated and non-lubricated environments and continue to operate and attenuate drivetrain vibration in even the roughest applications. With their Smart Damping



Press release

system, the spring couplings can be tuned to supply damping only when needed and pure isolation when damping is detrimental. This reduces torsional spikes at startup, shutdown and transient events, improving durability and coupling life.

The range of spring couplings comprises various versions and covers a torque range from 27 to 27,000 Nm. In addition to agricultural vehicles, the couplings are used in gearboxes, hydrostatic pump drives, power shifts and hybrid transmissions in construction machinery and industrial plants.

Images:

Picture 1: Spring coupling from Torsion Control Products with drive shaft union



Picture 2: Examples of agricultural vehicles





Press release

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). Timken engineers, manufactures and markets bearings, gear drives, belts and industrial chains. In addition to the couplings specialists Torsion Control Products, R+L Hydraulics, Lovejoy and PT Tech, the Timken product and services portfolio includes the brand names of Timken, Philadelphia Gear, Carlisle, Drives, Interlube, Aerospace Bearing Repair, Cone Drive, and Rollon.

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TPR International would be grateful for a copy of the publication with this article.