

Engine Test Stands

PERIFLEX® CS CARDAN SHAFT COUPLINGS

PROBLEM

A major manufacturer of custom driveline shafting for engine dynamometer test stands needed a flexible coupling solution to help control torsional vibrations. The manufacturer saw an opportunity to offer one of its large diesel engine customers a more complete driveline package by including the flexible couplings along with its cardan universal joints and CV (constant velocity) shafts. They wanted to team up with a reliable coupling manufacturer that could provide extensive technical support and agree to stock ample quantities of the specified couplings since engine test stand downtime costs can exceed \$10,000 per day.

SOLUTION

Ultimately, the driveline manufacturer chose to partner with Stromag, based on its high level of coupling engineering capabilities, including custom design, torsional vibration analysis, technical support, as well as stocking locations in the US and Europe.

After extensive collaboration, including application review, mathematical models and testing, Stromag's Periflex CS (PCS) cardan shaft couplings were selected to meet the challenging test stand application requirements.

Stromag engineers recently simplified and refined the PCS coupling design, resulting in significant advantages. The new coupling was much lighter and used just a few bolt connections, making life easier for the technicians that routinely change out the couplings for different engine-testing sequences.

The new design uses only two cast iron parts which reduced costs. Stromag's specially developed bearing material, along with an extra wide twin radial bearing design and centralized bearing support, have increased bearing life by 50-100% compared to competitor models, before rebuilding.

By converting to the new Stromag PCS coupling design, the number of test stand coupling/shaft combinations was reduced from 15 to 3, each with a unique bolt pattern to ensure that the wrong drive shaft cannot be installed with a particular coupling.

Regal Rexnord

Hansastraße 120
59423 Unna - Germany
+49 2303 102-0
customercare.eu@regalrexnord.com
stromag.com | regalrexnord.com

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HIGHLIGHTS

- Highly flexible ring element absorbs torsional impacts
- Axial and radial loads are carried by long life, wear-resistant bearings
- Torque range:
480-14,800 Nm
- Lightweight and easy to install
- Cardan shaft side available in a range of metric sizes
- Deflection angles up to 5° (greater angles on request)
- ATEX certified



Stromag™