

Press Release

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Controlling Pressure Efficiently: Gas Pipeline Operators in the USA Rely on Voith Coupling Technologies

Paving the way for an even more economical operation of installed systems is one of Voith's main goals in the oil and gas industry. The company demonstrated this once again, when having equipped in excess of 35 compressor systems throughout the USA. There, highly flexible K couplings and HyGrip connection couplings ensure that the process gas equipment that generates gas pipeline pressure for transportation or underground storage continues to remain operational throughout the year and throughout the changing power conditions.

The purpose of the gas compression equipment is to maintain pipeline pressure in the most cost effective way possible, ensuring maximum revenue returns. Dual drive gas compression sets have proven themselves in the market to be a cost effective means to ensuring this even when power conditions at site are not favorable to maintain process operations. While single drive systems customary in the USA use either a gas engine or an electric motor drive, dual drive compressors combine both alternatives. This allows the package to run on more cost efficient electricity by default. But should the motor become unavailable or the grid demand rises and thus increases the price for electricity, the prime mover can be switched over to the gas engine on the fly due to the incorporation of a SSS Clutch between the gas engine and electric motor.

A dual drive package from the Standard Equipment Company (SEC) in Houston makes this technically feasible. In this package, a highly flexible Voith coupling type K is installed between the gas engine and the electric motor, thus protecting the driveline from the damaging torsional vibrations exhibited from the reciprocating motion of the gas engine when in operation. Another Voith coupling is installed between the electric motor and the compressor. It isolates the electrical motor from the damaging



torsional vibrations emitted by the reciprocating compressor, when running on purely electrical motor operation. The HyGrip connection couplings are installed on either side of the electrical motor, to aid in removal and refit.

SEC has ordered in excess of 35 packages and continues to order packages from Voith for BR 210 and BR 260 series K couplings of size 90 with rated torque of 82 kNm as well as another ten K couplings of the same series in the size 75 with a rated torque of 28 kNm as compressor sets. The most important advantage of these highly flexible couplings for the operating company is: They dampen critical torsional vibrations and shift resonance frequencies to below the idle speed. This extends the lifetime of all the drive components connected.

On new sites, it can take up to 18 months to receive approval and installation of three-phase power. Another major advantage in that particular situation is that the dual drive package allows the site to solely operate on the gas engine prime mover during this period. Then, after three- phase power is linked to the site, the package can simply be switched over to the more cost effective electric motor driven prime mover.

In the market of gas compression, machine uptime is critical. When driving packages by either gas engine or electric motor, the package becomes redundant as soon as the prime mover requires overhaul or repair. With the dual drive package from SEC, this issue becomes a thing of the past, because they always have an alternate prime mover they can switch to. If it's the gas engine that is out of service, the engine is simply disconnected from the driveline to allow work to proceed. If it's the electric motor that requires overhaul or repair, the installed HyGrip couplings can simply be removed from the motor shaft, reinstalled onto a dummy motor shaft. The dummy is temporarily installed into the driveline and replicates the mass inertia of the motor once it is removed. The whole process takes only a few hours of downtime, ensuring the package has the maximum uptime for gas compression.

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Compressor systems in the USA, equipped with highly flexible couplings and HyGrip connection couplings from Voith



Voith highly flexible K coupling in the driveline of a compressor system

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Voith highly flexible K coupling for damping torsional vibration peaks

Voith Turbo, a Group Division of Voith GmbH, is a specialist for intelligent drive solutions and systems. Customers from highly diverse industries such as oil and gas, energy, mining and metal processing, mechanical engineering, ship technology, rail and commercial vehicles rely on advanced technologies from Voith Turbo.

Voith sets the standards in the markets energy, oil & gas, paper, raw materials, and transportation & automotive. Founded in 1867, Voith employs more than 39,000 people, generates €5.3 billion in sales, operates in about 50 countries around the world and is today one of the largest family-owned companies in Europe.

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