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2007 Paper Abstract for the EFRC
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Title: Torsional Vibration & Reciprocating Compressors

Abstract:

Torsional vibration is a very important consideration when designing reciprocating compressor machinery. Inherent vibratory torque produced from reciprocating machinery can result in catastrophic failure of crankshafts, motor shafts, couplings and auxiliary equipment if a system is improperly designed. Quite often, a torsional analysis has incorrect assumptions that may jeopardize the system design. This paper identifies the critical components and common shortcomings of torsional analyses. Key issues include: Load Step Selection & Optimization, Fatigue Analysis, Detuning Devices (inertia, soft couplings, & speed limitations), and OEM Limits

Brief Biography: Thomas Stephens has spent the last 9 years with Ariel Corporation in the Technical Services Department, primarily working with vibration and performance related issues. Thomas has B.S degree in Petroleum Engineering from the Colorado School of Mines (1993), and has obtained a PE in machine design (2004) and Category IV vibration certification from the vibration institute (2005). He has published several papers regarding torsional vibration at multiple machinery conferences.