



Abstract

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Title

35-2: Simulation of reciprocating compressor start-up

Summary

It is during the start-up phase of reciprocating compressors that the components in the drive trains generally have the greatest loads to bear. The modelling of the electrical induction motor, coupling, crank shaft, damper, etc. is extremely important in simulating start-up. Equally important, are the switching torque of the electrical motor and the instantaneous moment of inertia of the reciprocating compressor crank gear. The transient start-up process is described using a non-linear differential equation system.

Shaft torsional moments on the drive train and especially on the coupling, whether elastic or stiff, can then only be calculated using numerical simulation. This paper will describe some of the key elements in modelling and simulating drive train start-up carried out on already operational piston compressor units.