



Research heralds improved compressor packings

Work at Hoerbiger has improved engineers' understanding of heat generation in dry compressor packings, leading to the promise of better packing performance

Fundamental research on how heat is generated in non-lubricated compressor packings paves the way towards improved performance from the next generation of glands and packing materials, according to compressor sealing systems manufacturer **Hoerbiger Compression Technology**.

The company supplies valves, rings and packings, control systems and other components for reciprocating compressors. The Hoerbiger R&D team presented

their work in March at a conference of the European Forum for Reciprocating Compressors in Prague, Czech Republic.

Running compressors without oil cuts costs and improves environmental performance, the presenter explained, but is challenging for components such as piston rod seals. Lack of lubrication means that more frictional heat is generated, and the resulting temperature rise can shorten the life of the packing considerably.

Knowing the temperature of any particular packing ring can help engineers choose suitable packing materials, but the problem is complex because temperatures vary along the length of the piston rod, especially for short-stroke compressors.

The R&D team developed a mathematical model of temperature distribution along the piston rod and in the packing rings. The complex model includes heat transfer to and from the gas, and frictional heat generation in the packing rings calculated from the differential pressure across each ring.

They tested the model against measurements from a specially-built experimental compressor fitted with pyrometers to measure piston rod temperature with a response time of less than 2 ms. Agreement with the model was very good. The result, say the researchers, should be better performance from future compressor sealing systems. The full paper is available on request; send an e-mail to: info-hkth-marketing@hoerbiger.com with subject: "Paper Sealing - EFRC/Prague".

Hoerbiger Compression Technology (Vienna, Austria) is a business unit of the Hoerbiger group (Zug, Switzerland). Hoerbiger is a leading global player in compression technology, automation and drives, with 5,300 employees and 2006 sales of around €730 million. As well as compressor components and services, Hoerbiger manufactures pneumatic and hydraulic systems for vehicles and machine tools, and components and systems for vehicle transmissions.

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Research gives valuable insight into temperature distribution in packings