



Abstract

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Authors

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Title

31-3: Assembly- and operation-conditions for compressor valves and lanterns and optimization of the package for different operation conditions

Summary

In most cases valves in a reciprocating compressor are kept in place and pre-stressed via the lantern, pressure screws and the valve cover. Depending on the application the necessary pretension force is sometimes difficult to determine due to the fact that the results for different load cases are inconsistent with one another. For instance it is possible that only during the warming-up of the compressor the lantern heats up and expands very quickly. This effect could lead to a plastic deformation of pressure screws and consequently to a pretension loss.

The necessary optimal pretension force depends on several factors like material properties, pressure, temperature, stiffness of the components and start-up procedure.

The paper will show the results of a transient temperature field analysis and the effects on the pretension force during the warm-up procedure for the compressor. A comparison of theoretical results with field experience will be given.