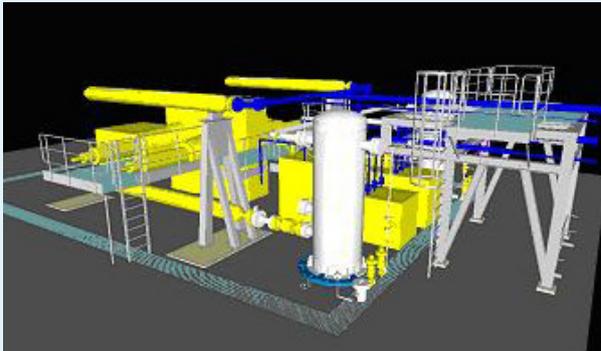


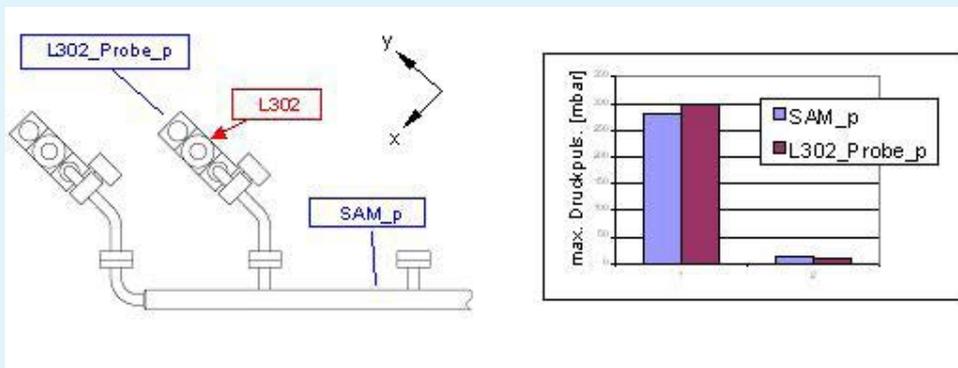
MACHINE DYNAMICS

Natural gas storage at Lesum: Good pulsations

Because of increased vibrations at the cavern heads in the natural gas storage of the Exxon-Mobil Production Deutschland GmbH at Lesum a combined metrological-theoretical investigation was carried out. Both operated reciprocating compressors were variable-speed and single-stage with 4 cylinders in a boxer motor assembly. As reduction measure on the basis of the required boundary conditions, additional pulsation dampers (fig. 1) were designed as acoustic filter on the pressure side. After the installation, a check of the current situation was carried out by a control measurement. Figures 2 and 3 illustrate the impressive results due to the specific design of the newly installed dampers.

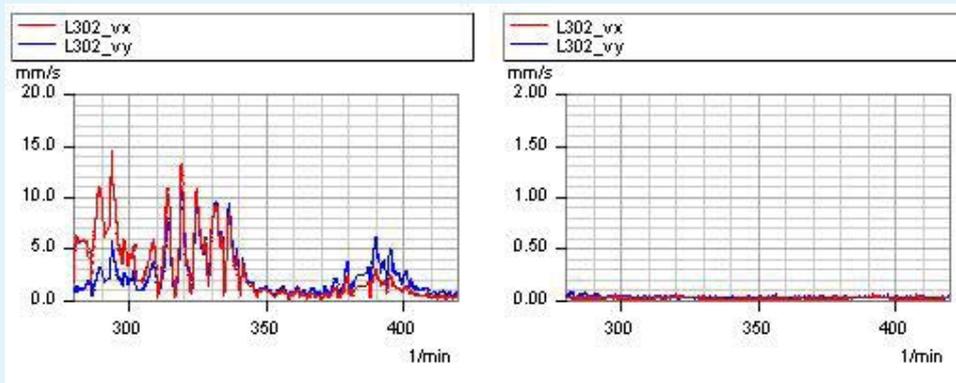


Modification by installing a vertical two-chamber damper.



Positions of pressure (blue) and vibration measuring points (red) at the cavern head as well as maximum pressure pulsations, initial state (1) and modification (2).

MACHINE DYNAMICS



Cavern head vibrations during initial state (left) and after modification (right).



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