

Diaphragm Compressors

From Mehrer > Plug-and-play units minimizing time and costs

BY ROBERTO CHELLINI



■ The smallest Mehrer diaphragm module will be introduced at theACHEMA exhibition in June.

Mehrer Compressors will introduce a line of diaphragm compressor packages in parallel with its reciprocating compressor offerings. The diaphragm compressors will be a plug-and-play, complete, high-pressure compression package. This new line will officially be presented atACHEMA, taking place June 15-19, in Frankfurt, Germany.

Capitalizing on its experience with reciprocating compressors, Mehrer has engineered a series of packages. These diaphragm compressors are available in the vertical, vee and horizontal configurations, in a modular layout to better match the process/plant characteristics. As with all diaphragm compressors, this type of machine is used to compress, without leakages and oil contamination, small volumes of gas at very high pressures; in this specific case, delivery pressures of 14,500 psi (1000 bar) are possible.

The membrane, which separates the gas-handling part from the mechano-hydraulic part of the machine, is stainless steel featuring triple sandwich con-

struction. A pressure sensor detects possible failure of one of the membrane layers and, for safety reasons, immediately trips the compressor.

The diaphragm diameter is selected as a function of the requested volume flow. The alternating movement of the diaphragm is obtained by uniformly applying a hydraulic oil pressure through an oil distribution plate. An oil-compensation pump assures an ideal oil volume between piston and diaphragm.

These compressors feature a very high compression ratio; depending on the process, they can perform a 15:1 compression ratio in a single stage.

The recycling service of large industrial processes when toxic gases are involved and minimum gas leakage is the main application for the Mehrer compressor packages. They feature a modular configuration in which the compressor unit can feature a variable number of diaphragm heads to increase the volume handled and, when required, more than one compressor stage to obtain a higher than 15 com-

pression ratio. These compressors are generally belt-driven by an electric motor at low speeds, 100 to 330 rpm.

All components come from German or selected European suppliers, completely assembled at Mehrer's Balingen, Germany, headquarters, and shipped as a plug-and-play unit to minimize site erection time and costs. The company is certified according to DIN EN ISO 9001:2008 [1].

Mehrer Compression specializes in the supply of compressors and compression systems tailored to the various processes of the chemical industry. Its crosshead reciprocating compressor line covers the 2.9 to 335 hp (2.2 to 250 kW) power range with delivery pressures up to 1160 psi (80 bar). Along with carbon dioxide (CO₂), biogas and hydrogen, Mehrer offers a fully integrated gas portfolio. [CT2](#)

Reference

[1] DIN EN ISO 9001, "Quality Management Systems - Requirements (ISO 9001:2008)," Trilingual version EN ISO 9001:2008.