



# Technical Paper

## Chemical and process industry

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## Application of Coal Slurry Pumps in the Pressurized Coal Slurry Gasification Process

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## Summary

To a great extent, the efficiency of coal gasification units is depending on the availability and reliability of the pumps that are feeding the coal slurry into a gasifier. As a general rule, positive displacement pumps are applied for this duty. Apart from a maximum of availability these units have to ensure minimum pulsation and a maximum of accuracy of the feed rate.

With a reasonable redundancy and overall diagnostic system double hose-diaphragm pumps are increasingly superseding traditional diaphragm pumps. At the heart of this pump are two hydraulically actuated hose-diaphragms, which are arranged one inside the other, though the pump needs only one of them to operate. The coal slurry passes the pump in a linear flow path and is in contact with the inside of the primary hose-diaphragm and the check valves only so that erosion and corrosion are reduced to minimum.

Double hose-diaphragm pumps are designed without any flat diaphragm. This allows for a slim, cylindrical design of the pump heads and accordingly reduced overall dimensions. Double check valves ensure a maximum of feeding accuracy, which is indispensable for the proper balance within the gasifier. Double hose-diaphragm pumps are not only applied for the feeding of the coal slurry from the intermediate tank into the gasifier (high pressure units), but likewise for the transportation of the coal slurry from the slurry tank into the intermediate tank (low pressure units).