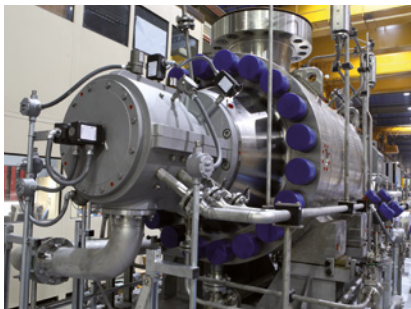


## CASE STUDY

# Largest Custom Designed Pumps

To ensure cavitation-free operation of high-power, high-pressure injection pumps, relatively high-suction pressures are often needed. This is traditionally provided by a separate booster pump, which can lead to a drive train of up to five components. The complexity of such trains requires expert maintenance and can be a source of unreliable performance. A major Middle Eastern oil company had operational problems with one such set originally supplied by one of Sulzer's competitors.



The finished pump ready for despatch

### The challenge

The five machine train was prone to mechanical and hydraulic failures. Stripping down, rebuilding and re-aligning the pumps and gearboxes was complicated and time-consuming. The client wanted to replace the existing arrangement with a single pump. However, the suction conditions required a large-diameter, relatively low-speed, double suction multistage barrel casing design, which did not exist at that time.

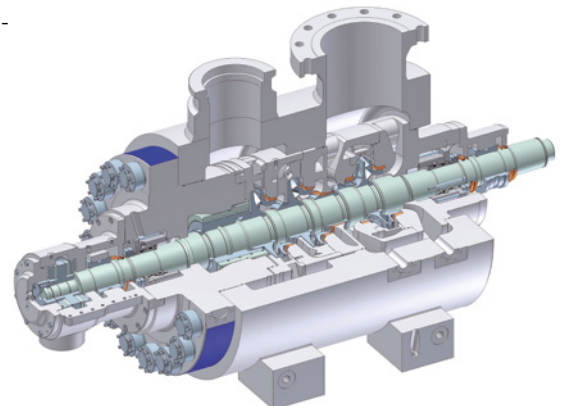
### The solution

Sulzer custom designed a 15.6MW double suction multistage pump with an impeller diameter of 700 mm. Through the use of our own mechanical and hydraulic design tools, we gave special consideration to the inlet design to help ensure a service life of at least 40,000 hours. The pump was the largest size of this type yet designed by Sulzer.

Using a 15MW slave motor in place of the site gas turbine, Sulzer completed thorough pump testing and demonstrated that the pump met all predicted hydraulic and mechanical performance parameters.

### Customer benefit

In place of the previous complex arrangement, the customer now has a single pump driven by the original gas turbine via a gearbox. Sulzer's careful attention to the mechanical design and suction performance of the pump effectively removed the weaknesses of the original installation. The new single pump also eliminates the complexities of driving a booster via an additional gearbox. The new arrangement is proving to be inherently more reliable and will be simpler to service when required.



Cross section showing double suction arrangement

### The Sulzer difference

As one of Sulzer Pumps core business segments, the oil and gas industry runs sophisticated production and pipeline transportation processes requiring reliable pumping solutions that meet stringent industry specifications.

Our continuous investment in state-of-the-art design tools allows us to quickly produce special one off pump solutions with the confidence that they will perform to the desired technical parameters when put into service.

#### Contact

tim.handley@sulzer.com

#### Applicable markets

Oil & Gas

#### Applicable products

HPcp

[www.sulzer.com](http://www.sulzer.com)

A10020 en (1.2017), Copyright © Sulzer Ltd 2017

This study is a general product presentation. It does not provide a warranty or guarantee of any kind. Please contact us for a description of the warranties and guarantees offered with our products. Directions for use and safety will be given separately. All information herein is subject to change without notice.