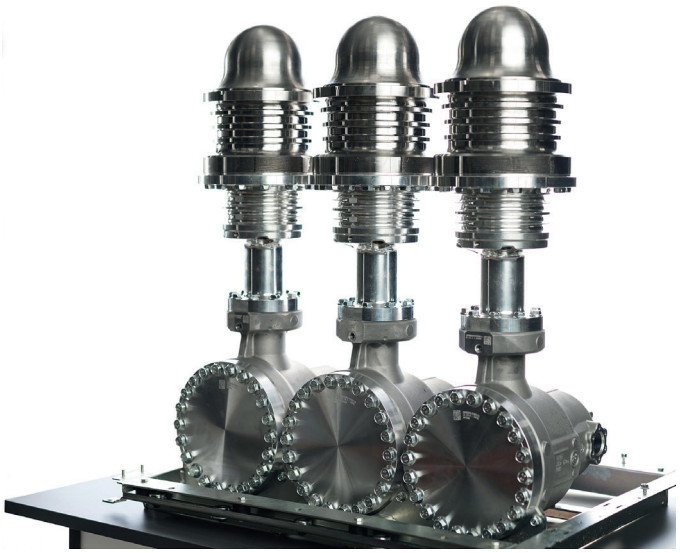
Boostheat

Clean parts for more reliable compressors

Boostheat's compressors are exceptionally efficient. Their reliability is strengthened by the appropriate cleanliness of the components used in this innovative technology.



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OUR CUSTOMER

Corporate name
Boostheat

Business activity
Established in 2011, this French company has designed, developed and patented a thermal compressor whose efficiency allows the energy consumption of the boilers to be reduced by up to 50%.

Production
The industrial production of this boiler started in 2017. The first systems were put into service in 2019.

The new-generation boiler designed by Boostheat consumes fifty percent less gas than other heating solutions. The secret behind this is the combination of a condensing boiler and a heat pump which uses a patented thermal compressor. However, such a performance level requires a compression system composed of parts made with extreme accuracy. Particulate contamination also needs to be closely monitored as it is likely to adversely affect the operation of the valves or the leak tightness between the cylinders and the pistons. Since the clearance between certain components is rather small, particulate contamination may also cause a reduction of performance, binding or premature wear.

Determining the right level of cleanliness

To determine a level of particles that is acceptable in terms of both quantity and size, the French manufacturer relied on Cetim's expertise. The operation of the compression system was thoroughly analysed, taking into account the motions of the different parts, the clearances and the fluid flows. This made it possible to define particulate contamination requirements for each of the components involved. More or less severe constraints were defined based on the function and criticality of each component in the mechanism, and based on the ability of their suppliers to meet the requirements.
"This study allowed us to revise the design of certain components in order to reduce their susceptibility to contamination", says Jean-Luc Margand, Industrial Manager with Boostheat.
The next step then consisted of making sure that, before assembly, the parts complied with a determined level of particulate contamination. Some suppliers agreed to implement a suitable washing process, when others preferred to wait until the volume of orders became sufficient. *"Therefore, we invested in a washing machine that we selected with the help of Cetim, whose specialists proved their skills with regard to particulate contamination throughout the project"*, says Jean-Luc Margand.

Cetim's asset

**Cetim has the required expertise to use the design files to carry out a functional analysis of a mechanical device.
The objective is to determine mechanical motions and flows, depending on the fits and clearances between the parts.
At the same time, an appropriate level of cleanliness guarantees optimum operation of the system and avoids premature wear.**

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