Technical Bulletin

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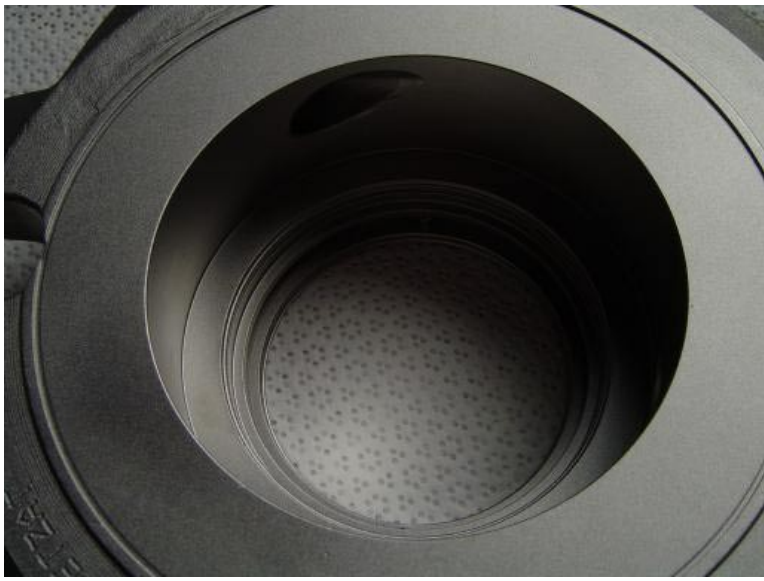
CLEANING OF MECHANICAL SEALS

Mechanical seals are used for sealing fluid-carrying sections at rotating components such as pump shafts. The seal is formed by two highly polished surfaces being forced against each other by a spring. One surface is attached to the rotating part and the other is attached to the stationary component. Generally one of the surfaces is a “hard” material such as silicon carbide or tungsten, while the other is made from a “soft” material such as carbon. In some cases a “hard”-“hard” combination is used. Mechanical seals are used in a wide range of industries e.g. foodstuffs and petrochemicals. Mechanical seals are also frequently used on board ship.

Contamination of the seals is mainly caused by the process medium. Very often this contamination is of an organic nature. In intermittently operating systems the degree of contamination is often much greater than in systems where the medium is continuously moving.

The cleaning of the seals involves several steps. The customer delivers the contaminated seals to Vecom. The seals are disassembled in a specially equipped area and after disassembly the various parts are inspected visually for wear. If there is excessive wear, the parts are rejected. Next the accepted parts are cleaned ultrasonically. Depending on the degree of contamination, various Vecom developed and manufactured cleaning agents are used. After the ultrasonic cleaning, the parts are force-dried using clean, hot air. When the components are dry the last traces of contamination are removed by ceramic bead blasting. After the final stage of the cleaning process the parts are carefully packed to prevent damage during transport back to the customer.



When mechanical seals are overhauled, a large proportion of components can be reused following cleaning. Because the cost of cleaning parts is much less than the price of purchasing new parts, it is financially attractive to opt for cleaned parts. An added advantage is that the cleaning procedure is often much faster than the delivery time required for new parts. Reusing parts makes it possible to carry a smaller stock of expensive new components.

Author:
Mr. ing. S. Hartman (Product Manager) and Mr. B. Hammerstein (Works Manager Metal Laundry Maassluis)
Reactions and/or questions: e-mail: tb@vecom.nl

For more information about ceramic bead blasting and ultrasonic cleaning in general: see TB 2005-07 en TB 2004-21