

Case study: Consistent sealing performance for continuous catalyst regeneration application

TOMBO™ No. 1891-NM Kammprofile gasket



Industry

Petroleum refining

Customer

Crude oil refinery

Background

Customer used large diameter spiral wound gaskets in Continuous Catalyst Regeneration (CCR) where temperatures reached 550°C in the petroleum refining process. However, the spiral wound gasket came apart during transportation. They decided to find alternative sealing solutions that would help them resolve this issue and provide better stable sealing performance. Their requirements were for the gasket to provide stable sealing performance under high operating temperature and to limit damages to gasket, leakages and increased equipment operating temperatures.

Challenges faced

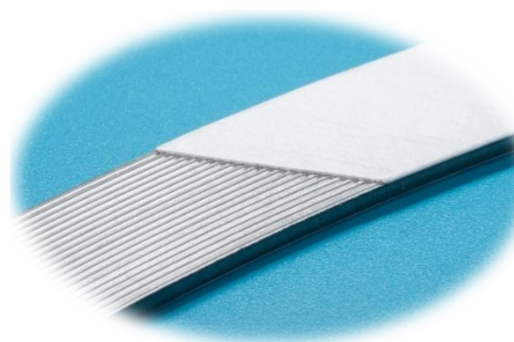
The main requirement was to find a gasket that had both structural stability and heat resistance performance above 550°C. Spiral wound gaskets with alternative materials were not an option due to the need of inner ring for reinforcement and lower structural stability. Moreover, spiral wound gaskets are also prone to the risk of buckling which further increases the likelihood of gasket damage and subsequent leakages. For this reason, it was necessary to find a completely different gasket.

Solution and benefits

To fulfil customer's requirements, the technical team selected TOMBO™ No.1891-NM Kammprofile gasket. It is a semi-metallic gasket with concentric grooves on both sides of a metal ring and NM sheet attached as a surface material. Furthermore, NM sheet is a novel innovation by

NICHIAS. As such, it is structurally more stable than spiral wound gaskets. This gasket doesn't come apart during transportation like a spiral wound type. Due to TOMBO™ No. 1891-NM design, it is also suitable to be used in large diameter pipeline exceeding diameter 1000mm whilst maintaining its sealing stability. The NM sheet then provides heat resistance up to 1,000°C, resulting in minimal leakages at 550°C. In this way, the gasket is able to maintain the seal for longer period of time than other commercially available gaskets. Ultimately, NICHIAS was able to assist customer with reducing risks of gasket damage, leakages and the solution provided a stable sealing performance under high operating temperatures as required.

For more information, please visit:
<https://www.nichias.co.jp>



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