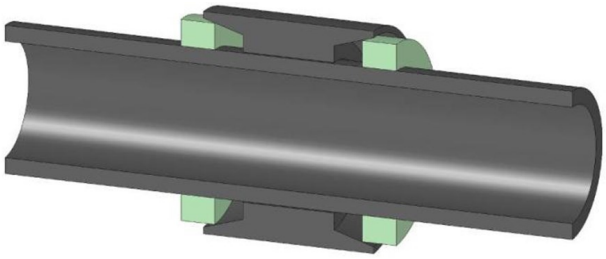
TI 049

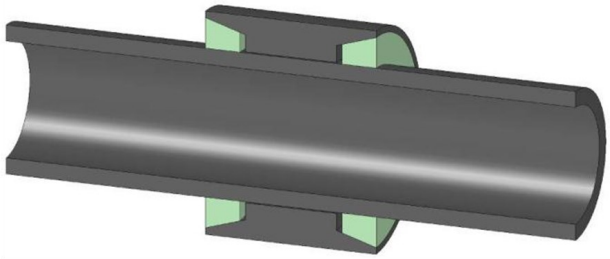
Sealing System Configuration for SR Series SiC Shell & Tube Heat Exchangers

Technical Information

The standard design of GAB Neumann CORRESIC® shell & tube heat exchangers includes a double sealing system consisting of two fluoropolymer gaskets and a sealing cartridge. This system ensures the highest operational reliability, even under tough process conditions, e.g. at extreme temperatures, with cyclic thermal loads, with large pressure differences and with highly corrosive or adhesive media.



CORRESIC® sealing system, before compression



CORRESIC® sealing system, after compression by the tube sheets

The sealing system configuration (materials and geometry) considers the operational / design conditions:

Thermal requirements define the geometrical design of the sealing cartridge. The fluoropolymer materials used expand and shrink drastically based on thermal impact. Optimal sealing forces are reached by shrinking gaskets. It is also necessary to prevent gasket locking as to avoid extrusion, which would then damage the gaskets, especially at high temperatures.

The process media defines the gasket materials and geometry of the cartridge. On the utility side, partially fluorinated gaskets (FKM „Viton®“-type) are used. On product side, fully fluorinated gaskets (FFKM „Kalrez®“-types) are incorporated.

The following configurations are available:

- FKM-S: utility side standard design, partially fluorinated
- FKM-LT: utility side low temperature design (T<-10°C), partially fluorinated
- FFKM-S: product side standard design, fully fluorinated
- FFKM-LT: product side low temperature design (T<-10°C), fully fluorinated
- FFKM-NA: product side nitric acid design, fully fluorinated
  (considers HNO3 expansion effects on FFKM to avoid extrusion / gasket damage)

Damaged gaskets resulting from locked gasket material at high temperatures and consecutive extrusion of gasket materials into crevices in tube and tube sheet

For further information on our SR series CORRESIC® shell & tube heat exchanger please refer to the corresponding Product Information and Data Sheet (SR-1) .

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Graphite and SiC Heat Exchangers and Process Equipment