

PLYMOUTH, Mich., Sept. 16, 2013 /PRNewswire/ -- With its Hygienic Usit® ring, Freudenberg Sealing Technologies Process Seals has developed the first step toward completely new hygienic standards for screw connections in the food, beverage, chemical and pharmaceutical industries. For the first time, complete screw connections meeting Hygienic Design standards are achievable with the combination of Hygienic Usit rings and highly polished NovoNox screws and cap nuts.

The innovative combination of special EHEDG-conforming washers – the Usit rings – and special NovoNox screws makes it possible to safely eliminate the danger of contamination at all screw connections for hygienic equipment and devices.

The Hygienic Usit that Freudenberg has developed in accordance with Hygienic Design is external-sealing and cleanly closes off the area between the screw and the surface from any type of external influence, reliably protecting the product whenever necessary. The configuration of a Usit ring with its externally vulcanized, trapezoidal, elastic rubber sealing bead minimizes dead space where deposits can form. The sealing bead is made of 70 EPDM 291, which conforms to FDA and EU VO 1935/2004 and is nonhazardous based on USP Class VI (121 degrees C; 250 degrees F).

NovoNox designed the screw and fastening nut especially for this Freudenberg development. The hygienic solution for the screw connections was developed jointly. As part of the solution, the trapezoidal contour of the sealing bead creates a form closure with the flange seat of the screw, establishing optimal sealing. The special screws also have no sharp-edged ridges, die marks, uneven head contacts or impressions on their heads. This ensures that the sealing bead will not be damaged as the screw is tightened. In addition, the special screws are polished completely to a high gloss with a mean surface roughness of $Ra < 0,2$ micrometer to a maximum of $Ra 0,04$.

The combination of the Hygienic Usit, the even surface of the screw flange seat, the polished surfaces and rounded screw and nut corners achieves a high degree of hygiene for the entire screw connection. Impurities can neither adhere to it nor penetrate it. This also reduces the danger of contamination in the screw connections to the absolute minimum.

Written by Australian Business

The Hygienic Usit is specially designed for hexagonal screws with flange in accordance with DIN EN 1665 and defined as standard for the nominal sizes of M5, M6, M8, M10, M12 and M16. NovoNox also provides the appropriate screws in the sizes M5 to M16. Other dimensions are possible upon request.

About Freudenberg-NOK Sealing Technologies

Freudenberg-NOK Sealing Technologies is the Americas joint venture between Freudenberg and Co. in Germany and NOK Corp. in Japan. Freudenberg-NOK is a leading producer – through its Automotive, Merkel, Process Seals and Simrit sales channels – of advanced sealing technologies for a variety of markets including: aerospace; agriculture; appliance; automotive; construction; diesel engine; energy; food and beverage; heavy industry; and pharmaceutical.

Founded in 1989 under the legal name Freudenberg-NOK General Partnership, Freudenberg-NOK is headquartered in Plymouth, Mich. and operates more than 20 facilities across the Americas. For additional information, please visit

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