

Innovative solutions for sustainable and durable rotating applications

Application

Fluid:	Nitrogen containing acids
Pressure:	0.5 bar(g)
Temperature:	120°C
Speed:	8 m/s (3000 rpm)
Shaft diameter:	50 mm

Challenge

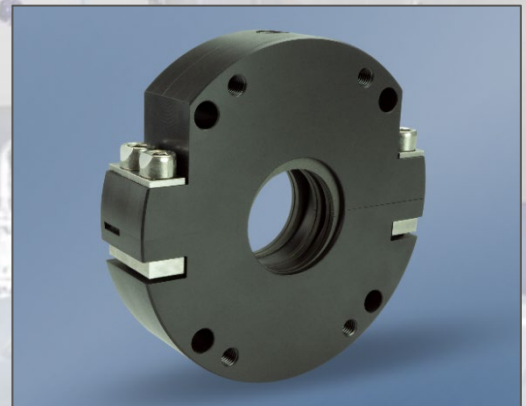
Sealing of a blower for nitrogen containing hydrochloric, nitric and formic acid.

Route Cause

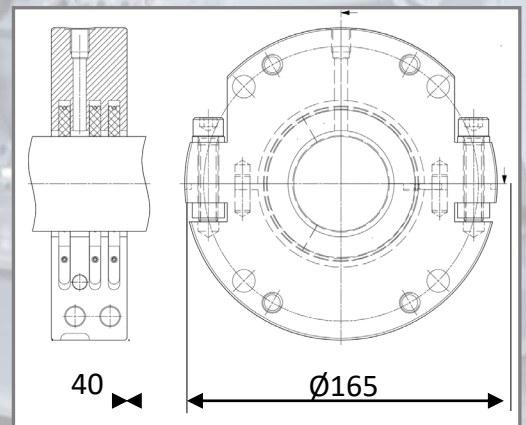
Typically, titanium or nickel-based alloys like Hastelloy are used when components get in contact with acid gases. These materials are usually expensive. Reducing the cost for the seals while maintaining the same quality is necessary.

Solution

A carbon floating ring seal with a split housing made of SK91 was designed for the application. The high-performance polymer withstands highly corrosive atmospheres and is well available at a low price. The electrical surface resistance allows the application in hazardous atmospheres. A leakage test was performed up to pressures of 2 bar(g) and showed good sealing behavior. The total cost of the seal was reduced by 30 percent compared to a standard seal.



Shaft seal housing made of SK91



Carbon floating ring seal SDW20 made of SK91 for shaft diameter 50

FIELD CASE

Carbon Floating Ring Seal for Acid Gases with SK91 Casing

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