# Mechanical seals for Bioreactors used in the pharmaceutical industry

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Mechanical Seals used on Bioreactors, Fermenters, Mixing Vessels and Dryers in the **Pharmaceutical** and **Food** industries must avoid any potential product contamination.
Their design must comply with the **NBF/GMP** (Good Manufacturing Practices) guidelines and have a profile that allows for **CIP** (Clean in Place) **and SIP** (Sterilisation in Place) processes.
Construction materials must be certified by the **FDA** (Food & Drug Administration).

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GTAF

With nearly 60 years of experience, **Fluiten** is a leading company in the mechanical seals installed into chemical – Pharmaceutical sector.
Especially into the **Pharmaceutical sector** it is crucial to avoid contamination that can deteriorate the process titer, causing huge production losses.
The **Mechanical Seals** installed between the rotating shaft process fluid where the reaction takes place must avoid air infiltration from the atmosphere (the process is often vacuum-sealed) and to limit the leakage of the barrier fluid required for the correct operation of the seal.

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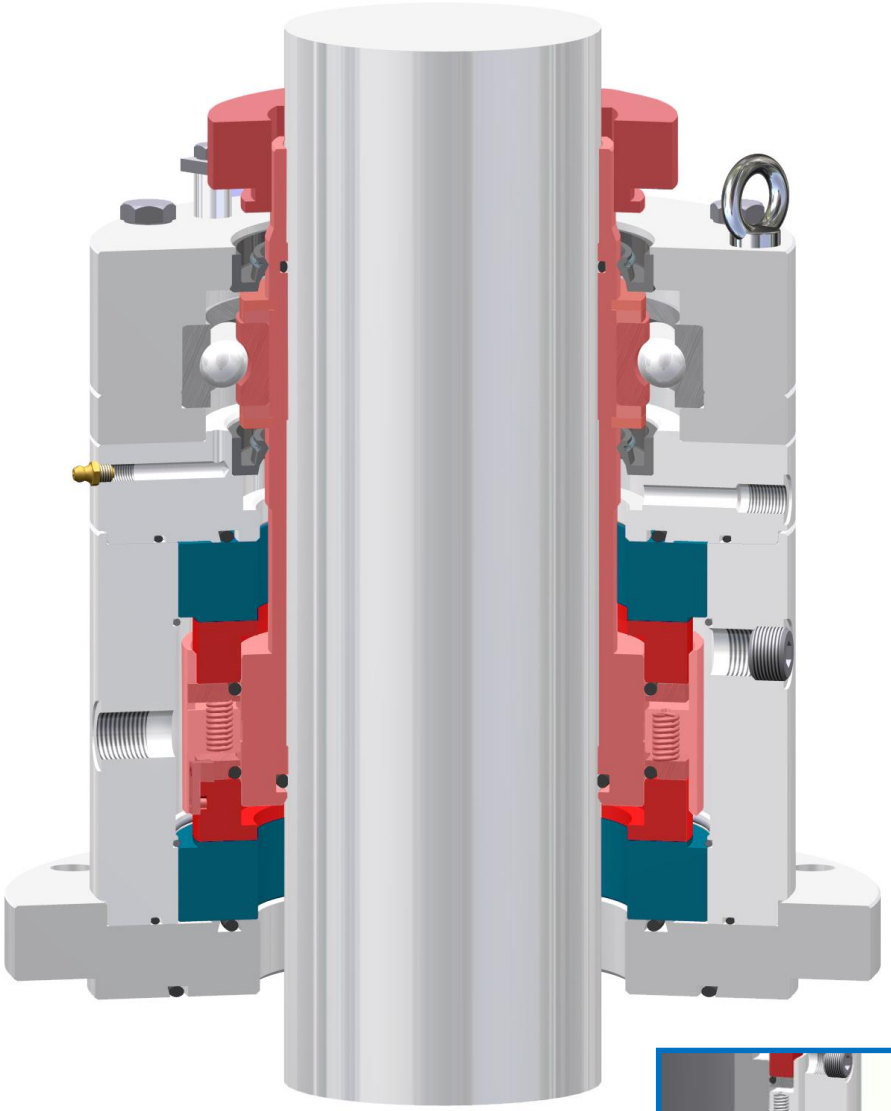

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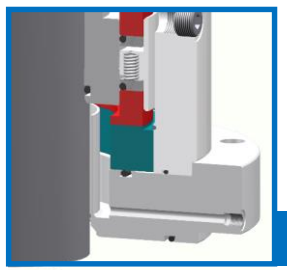
The **GT1910D** seal has been developed to have for a neutral gas barrier (usually nitrogen) between the process and the atmosphere.
The seal rings work without of friction and therefore avoiding wear and the releasing of harmful particles from the process thanks to cutting-edge "**FLUILIFT**" technology.
The **hydrodynamic grooves** made on the Silicon Carbide sealing surfaces allow to have lift off effect, creating for a very limited gap between sliding surfaces (few microns), therefore the absence of contact limits the flow of neutral gas towards the process.



Sanitary flange

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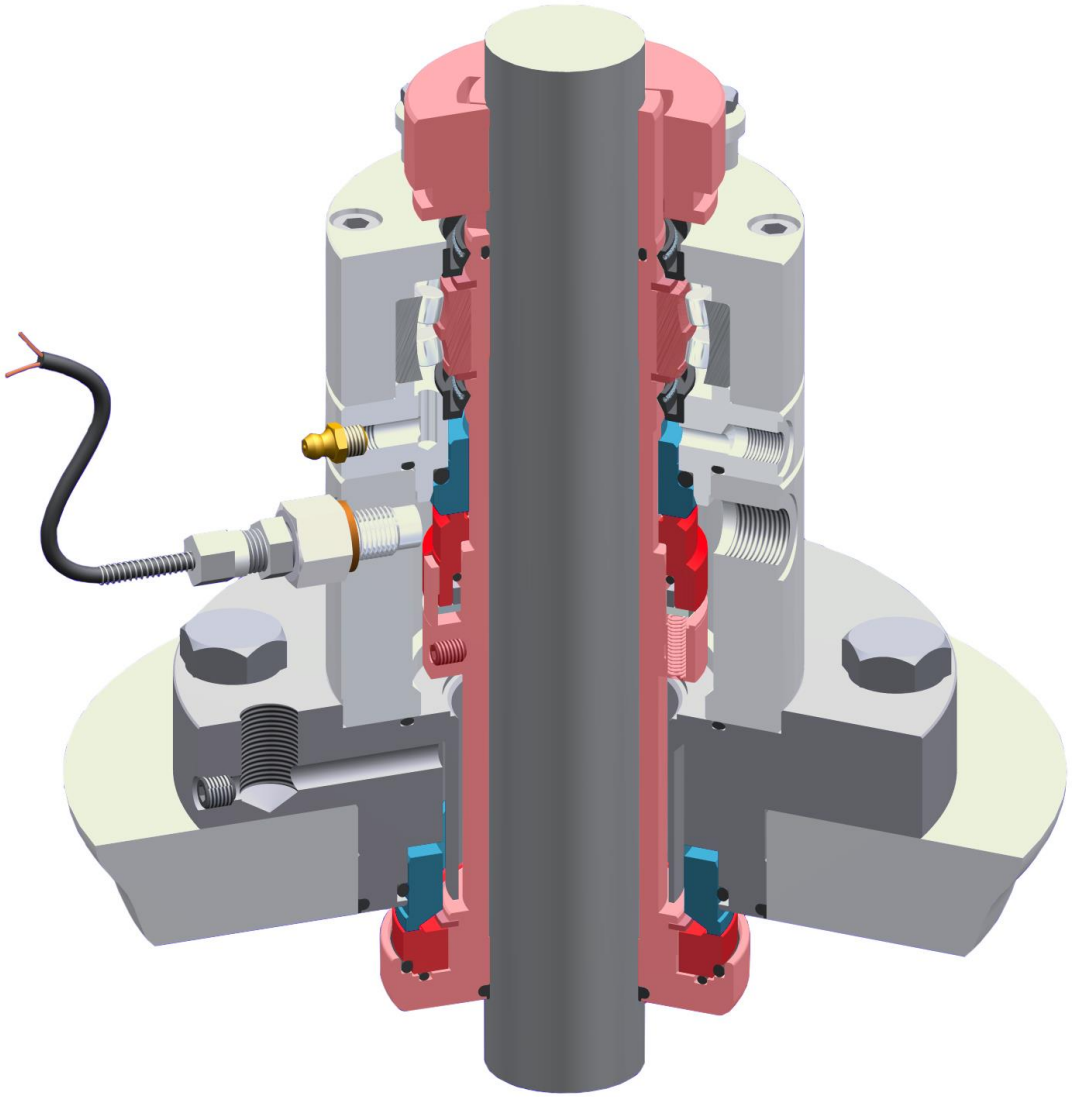

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**GTAF** Type Seal is another model designed by Fluiten that can be pressurised with nitrogen, allowing the seal rings to work in absence of friction and therefore avoiding wear and releasing of harmful particles for the process thanks to cutting-edge "**FLUILIFT**" technology.
This alternative feature has been designed with seal rings on the product side with a "**clean profile**" in order to avoid having gaps in which bacteriological formation may occur.

*Contact **Fluiten** Sales-Technical Staff for more information and to choose the best-suited solution for your needs.

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