

Sterile System

Complete sterile system, mechanical seal and sterile installation, out of one hand

EKATO Sterile System

More than 250,000 EKATO agitators are successfully operating worldwide in various industrial applications. EKATO's product range consists of efficient and tailor-made industrial agitators, entire agitator systems with reactor vessel, as well as complete process plants, which are individually designed for specific mixing requirements.



The EKATO GROUP Leading agitator manufacturer

Leading in the development and manufacture of industrial agitators, reactors, mechanical seals as well as vacuum process mixers and dryers for more than 80 years.

For the customers' processes we offer a wide spectrum ranging from engineering services up to process development and process optimization.

Based on a global network of subsidiaries and service centers, EKATO guarantees the availability and operational reliability of agitators and processing plants on site.



EKATO

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EKATO Sterile System

Special requirements on mechanical seals occur in the operation of sterile processes, such as food processing, in the pharmaceutical industry and in biotechnology. Therefore EKATO offers a complete sterile system consisting of a mechanical seal and a sterile installation. The EKATO sterile system is used when the vessel/process needs to be sealed from any germs and microbes by the mechanical seal.

The EKATO sterile system is an ideal solution for the process demand of a hot and completely sterile seal liquid where germs and microbes cannot grow. On the other hand it serves the mechanical seal's demand of cool seal liquid for seal face lubrication and cooling.

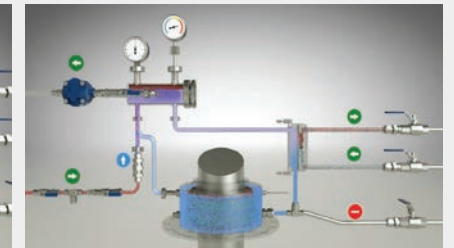
Functional Description



Step 1: Flow-through sterilization
Cleaning and sterilizing all parts with fresh steam during standstill of the agitator



Step 2: System-filling
Filling the system with sterile condensate during standstill of the agitator



Step 3: Continuous loop-operation
Cyclical sterilization of the condensate by fresh steam and additional cooling of the condensate by the heat exchanger during operation

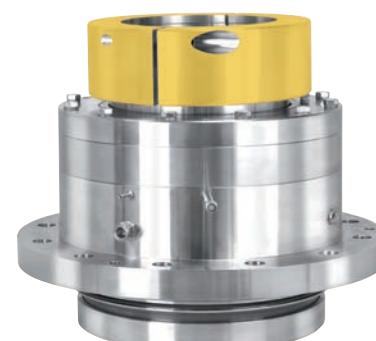
Benefits

- Complete sterile system, mechanical seal and sterile installation out of one hand (less interfaces)
- Self regulating system with very low energy consumption
- Optimized mechanical seal design without gaps (ESD34S / ESD44S)
- Sterile conditions in the storage vessel during operation: no germs and microbes growth
- Constant circulation and continuous sterilization of the condensate
- Overpressurized system due to steam pressure: no entry of external contaminations
- Seal liquid condensate with ideal operating temperature: extended seal lifetime

Operating parameters		Optional equipment
System pressure:	3 – 5 bar (abs.)	- Fill level meter for the storage vessel
System temperature:	130 – 150 °C	- Tube bundle heat exchanger instead of plate heat exchanger (improved cleanability)
Seal liquid temperature:	< 85 °C	- Aseptic sterile connections (DIN 11864-1) instead of industrial fittings
Steam consumption:	max. 25 kg/h	



- A Storage vessel with instruments and sight glass
- B Steam trap
- C Heat exchanger
- D Non-return-valve
- E Filter



Mechanical seal ESD34S / ESD44S for sterile applications

EKATO offers mechanical seals, specially designed for applications in sterile processes:

- Double acting liquid lubricated mechanical seals
- Ideal in combination with the EKATO sterile installation
- Gap-free design and polished surfaces for easy cleaning and no product fouling ($Ra \leq 0,8 \mu m$)
- Due to slanting surfaces the product flows away from the seal

