

PROCESS INDUSTRY

Rolling Bearing Solutions for Media Lubricated Pumps and Sealless Mixers

MEDIA LUBRICATED PUMPS

Standard bearings require a constant lubrication of grease or oil to successfully separate the rolling elements from the races. At media lubrication or dry run, the direct contact between steel rolling elements and steel raceways leads to cold-welding, abrasive wear, higher friction and temperature and therefore within shortest time to dramatic bearing failure.

CEROBEAR rolling bearing solutions which feature ceramic components are able to operate without a separating lubrication film. The diamond-like, covalently bonded, crystalline structure of Si_3N_4 or ZrO_2 ceramic comprises no free electrons, which - in turn - makes cold welding of the rolling element to any mating steel part physically impossible.

For media lubricated bearings load figures from catalogues are not valid. CEROBEAR bearing engineers will propose a bearing designs which perfectly meets your pumps operating requirements.



All-Ceramic Bearings in a Chemical Pump Application
Courtesy of Klaus Union GmbH

CEROBEAR rolling bearing design combines highest performance and perfect cleanability.

SEALLESS MIXERS

Especially for sealless mixer applications, CEROBEAR offers a variety of materials, which are certified for aseptic and medical use and are proven in numerous applications:

- All-ceramic bearings, using rings made of ZrO_2 or Si_3N_4
- Hybrid bearings, featuring rings made from Inconel, High-Nitrogen-Steel or AISI 440C
- FDA and USP Class VI compliant cage materials
- Chemically inert Si_3N_4 rolling elements, balls or rollers

The application optimized CEROBEAR rolling bearing design combines highest performance and perfect cleanability.

All utilized materials do withstand sterilization processes, whether they are conducted by hot steam or aggressive cleaning detergents.

Special inner geometries provide high load ratings without generating dead space. Carefully chosen materials allow low friction running and guarantee particle emission free operation, e.g. in the production of vaccines.



Bearings for Pharmaceutical Mixers require perfect Cleanability
Courtesy of liquittec AG