Bearing Arrangement for a Drum-Displacer™

FAG

Examples of Application Engineering

WL 13 516 EA

Drum-Displacer ™ built by ANDRITZ OY, Finland, original equipment manufacturer

Photos: Andritz Oy

Andritz OY is regarded as the center of outstanding technical competence and know-how for pulp production and chemical recovery.
The company's wood processing technology covers all Kraft fiberline processes, from the chip feeding system to the cleaning of the bleached pulp.

The Andritz OY fiberline system incorporates the following process steps:

- Continuous cooking
- Removal of knots
- Screening
- Washing
- Oxygen delignification
- Bleaching

DD-Washer™

The Drum-Displacer ™ is a multistage pressure filter which is continuous operation and where pulp or other fibrous material is washed in a single drum.
It consists of a rotating drum surrounded by a housing. The housing is divided into several zones whose number corresponds to the number of washing stages.
The washing process is performed in 1 to 4 stages depending on the specific requirements and purpose.
The pulp fed into the Drum-Displacer™ has a consistency of 2,5 to 10 percent.

Technical data

Drum diameter	4 500 mm
Drum length	7 000 mm
Speed (rotation)	0,5...3,5 min^{-1}
Max. weight force	2 500 kN

Throughput: 2 000 ADMTPD (air dry metric tons per day) of unbleached, medium-consistency pulp.

Bearings

248/800-B-MB spherical roller bearings in FAG plummer block housings. The bearings' inner rings are axially located on the shaft journals.
The outer ring of the floating bearing is provided with a slide fit in the bearing housing. The bearings are subjected to such high loads that very high Hertzian pressures (ca. 1 900 MPa) are generated. However, experience shows that – due to the low speed – the bearings have a sufficient service life.

Fits

As the inner rings are subjected to circumferential load, they must be fitted tightly on the shaft with a p6 fit. The outer rings, which are subjected to point load, are given a relatively loose fit in the housing (H8) and therefore mounting is easy.

Lubrication

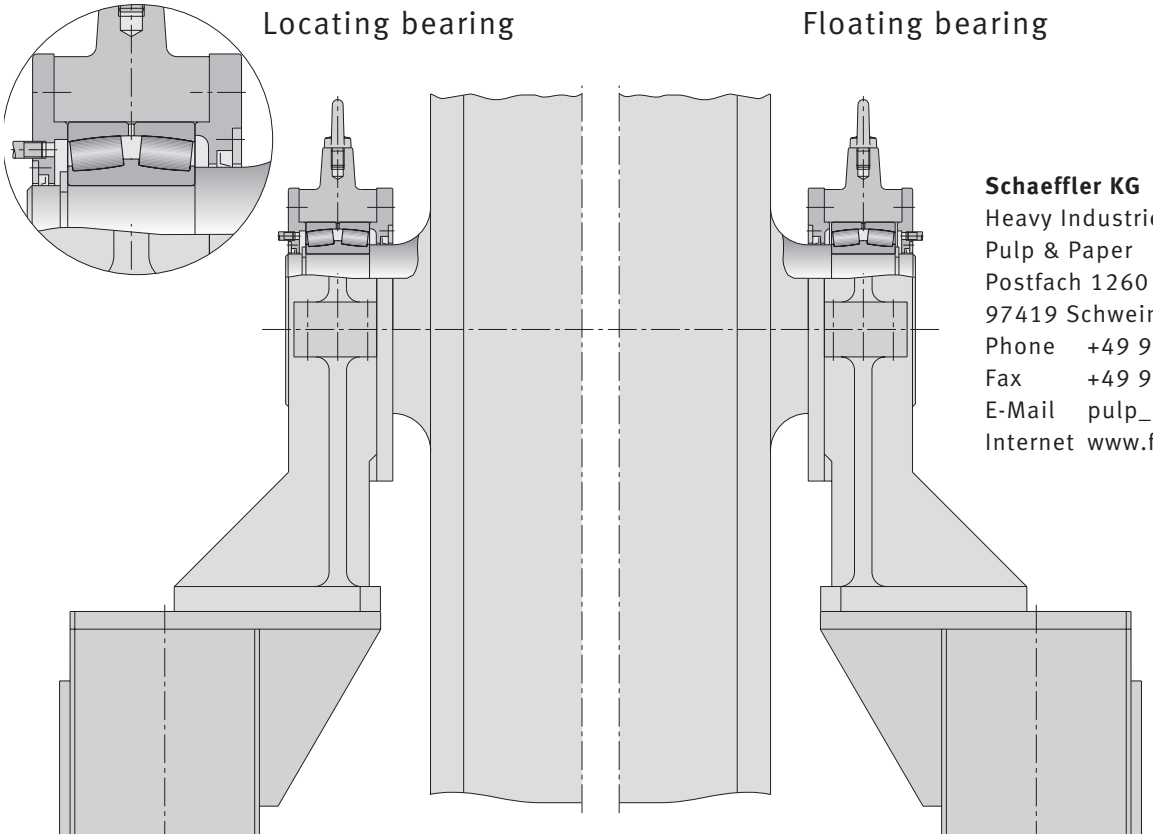
Most of the Drum-Displacer™ in operation to date are connected to central lubricating plants that supply both bearings with grease. The grease is fed to the bearings from both sides at the two o'clock position and at the ten o'clock position. A grease escape hole is provided near the bottom of each bearing housing. The bearings are lubricated with LOAD400 (L186V) grease. It is very suitable for bearings running under very high loads at low to medium speeds.
The amount of grease per bearing is 7 grams per day.

Sealing

Both bearings are sealed with single-acting lip seals both towards the drum and towards the outside to prevent the imgress of moisture and dirt from the environment.

Economic benefit to customers

- **Identical bearing and housing sizes for all DD-Washer™ designs built to date**
- **Shorter manufacturing time due to a standardised concept**
- **Simplified design, reduced data maintenance cost**



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