Sleeve Bearings

Conveniently repaired or replaced without disturbing machine alignment

Rotating electrical equipment perform highly critical functions. Any downtime can have a massive negative impact. An important function of any rotating machine is the role that bearings play. Motors and generators of all speeds must have some way to separate the rotating parts from the stationery parts but also require a link that can guide and control the machines motions. The incorrect alignment or initial cold setting of a machine higher than the drive or driven equipment, to allow for differential thermal growth, may considerably increase the risk of the bearing seals contacting with the shaft. With unsuitable seal material and geometry, considerable overheating may result, possibly causing damage as serious as a bent shaft.

Quartzelec has paid particular attention to this aspect of machine design and construction to ensure trouble-free operation and avoid expensive losses in production consequent upon breakdown. With this in mind Quartzelec recommend the GA sleeve bearings. With the split design of the bearing end-caps, seals, bearings and housing, enabling the active elements (white-metalled shells) to be conveniently replaced without disturbing the motor alignment or removing the motor half coupling – the GA sleeve bearing range provides the ideal solution.

Material

- Brass material seals substantially eliminate the possibility of catastrophic damage and achieve long and reliable operation for all rotating machines

Flexibility

- Forced lubrication, naturally cooled and water cooled options available

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Key Benefits

Ease of Maintenance

- Bearings at both ends are identical (with the exception of the cap) which facilitates the holding of spares
- The split design of bearing and housing enables the active elements (white metalled shells) to be conveniently replaced without disturbing the motor alignment or removing the motor half coupling
- The bearing end-caps and seals are also split for ease of replacement

Reliability

- All pedestal bearings are insulated to eliminate any possibility of circulating motor shaft currents which could damage the bearings
- Both pedestals are insulated from the baseplate, but an earthing strap is provided from the drive-end pedestal to the baseplate to allow for testing the bearing pedestal insulation resistance
- The bearing design ensures that full lubrication is available when the motor is switched off and throughout long deceleration times e.g. high-inertia fan drives

Why specify the GA bearing?

- Commonality of spares between DE and NDE bearings
- Reduced out-of-service time. Main bearing elements can be changed in-situ without decoupling the driven equipment

Technical Information

Pedestal sleeve bearing arrangement

When motor-speed and ambient temperature permit, a self-contained naturally-cooled arrangement is employed, incorporating an oil pick up disc which is fixed to the shaft to ensure a positive pick-up of oil.

Bearing shells

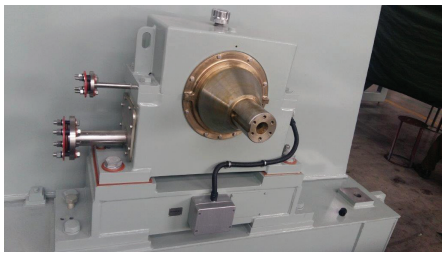
The metric bearing shells are of steel with tin-based white metal linings. The length to diameter ratio is 0.75:1, and dimensions are in accordance with DIN 7474 except for reduced chamfers to give the maximum area of white-metalled endfaces for location whilst running on no-load uncoupled.

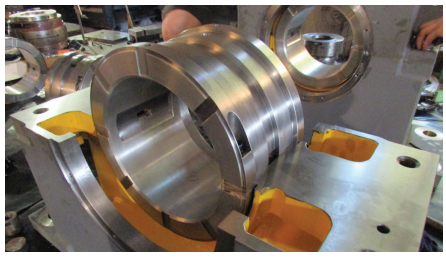
- For use with limited end float couplings
- Rotor endfloat up to +/- 8mm

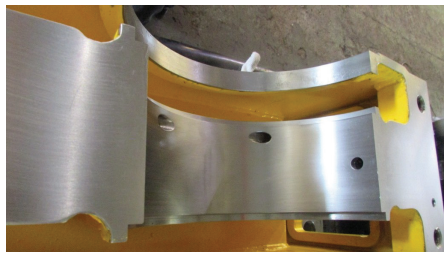
Auxiliary cooling

When natural cooling is inadequate for the motor speed and ambient temperature, two types of bearing arrangement are offered.

- Water cooled arrangement - A water-cooled, wire-wound tube heat exchanger is incorporated in the bottom reservoir
- Forced lubricated arrangement - The external oil supply entry is just below the centre-line of the bearing. The disc and scoop are still incorporated so that in the event of failure of the forced feed system a limited period of emergency running is possible, to allow for bringing the motor to a standstill so that the oil supply can be restored







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