



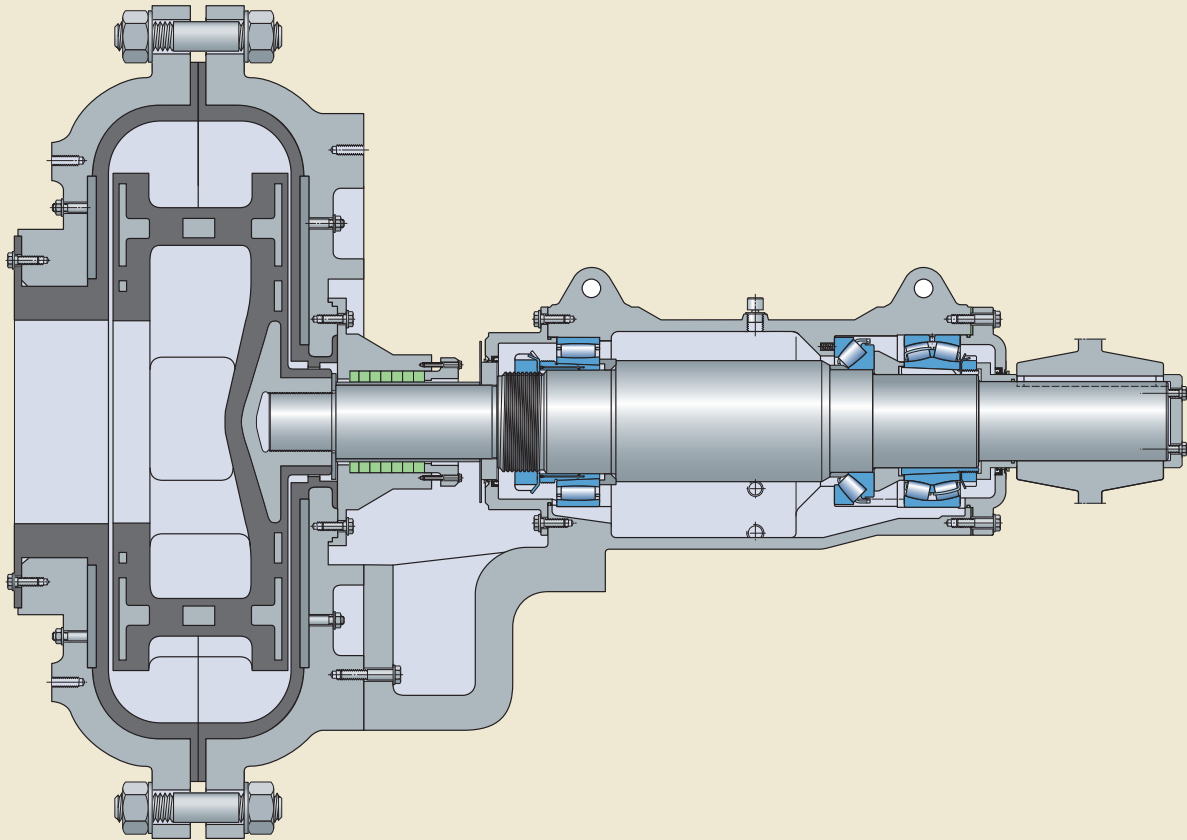
Increase mean time between failure of heavy-duty slurry pumps with unique shaft solutions from SKF.

When a heavy-duty slurry pump is subjected to severe cavitation and abrasives, the resulting wear and damage to the impeller cause an imbalanced condition. Though it is virtually impossible to eliminate the imbalance, it is possible to substantially reduce the damage that it causes.

To reduce the damaging effects of impeller imbalance, the SKF total shaft solution, combines unique bearing and seal arrangements with SKF adapter sleeves and special mounting tools. With this combination of SKF products, your pump bearings will run cooler, smoother and longer – providing extended service life for your customers and added value for you.

The SKF self-aligning bearing solution

SKF's unique self-aligning bearing system uses a spherical roller bearing in combination with a spherical roller thrust bearing on the dry end of the pump shaft, and a CARB® toroidal roller bearing on the wet end of the shaft. This unique bearing system can substantially reduce vibrations caused by impeller imbalance. The CARB bearing also accommodates thermal elongation of the shaft within the bearing, to avoid the problem of induced axial loads on the bearings; enabling the system to tolerate heavier axial loads for improved flow rates and efficiency.



1 SKF bearings for the locating positions

When an SKF Explorer spherical roller bearing and an SKF Explorer spherical roller thrust bearing are combined properly, they can:

- Accommodate up to 1.5° of shaft misalignment
- Resist wear and damage caused by contaminants to extend service life
- Maximize the effects of the lubricant to reduce heat generated by the bearings, and increase service life
- Accommodate considerably heavier thrust loads than other types of similarly sized thrust bearings
- Simplify mounting or dismounting when used in conjunction with adapter sleeves

2 CARB bearings for the non-locating position

To accommodate thermal expansion of the shaft, pump designers traditionally use a cylindrical roller bearing on the wet end of the shaft. However, these bearings do not accommodate the vibrations or shaft deflections that typically occur at the first signs of impeller imbalance. As a result, SKF recommends using a CARB bearing on the wet end of a shaft.

Key benefits include:

- Accommodate thermal expansion of the shaft within the bearing, to virtually eliminate the problems caused by induced axial loads
- Tolerate shaft misalignment to reduce edge loading
 - Tight fit on the inner and outer rings prevent fretting corrosion and limit shaft vibrations

3 Adapter sleeves/ hydraulic nuts

Mounting and dismounting a bearing on a tapered shaft is a precise and time-consuming task. Done incorrectly, internal clearance will be either too small or too large, and the bearing will fail prematurely. To install bearings in heavy-duty slurry pumps accurately and easily every time, the SKF drive-up method is recommended. This method uses a hydraulic nut, a hydraulic pump, adapter sleeves, lock nuts and locking devices that were specially designed to maximize bearing service life.

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