

BEARINGS FOR ELECTRIC SUBMERSIBLE PUMPS

ABSTRACT

Anti-rotation bearing assemblies for electric submersible pumps are provided. An electric submersible pump includes a plurality of centrifugal pump stages, each stage including a rotating impeller and a stationary diffuser mounted on a shaft coupled to a motor. In use, the motor rotates the shaft, which rotates the impeller within the stationary diffuser. A bearing assembly can include a bearing sleeve disposed about the shaft and a bushing disposed radially between the bearing sleeve and the diffuser. The bearing sleeve rotates with the shaft in operation, and the bushing remains stationary with the diffuser. The bushing can have an external key that is received in a keyway or groove in the diffuser to act as an anti-rotation feature. In other variations, the bushing can have an eccentric or oblique profile, which can act as an anti-rotation feature.

Figure 1