SEAL BEARING SEAL AND SUPPORT STRUCTURE

ABSTRACT

A bearing structure for a spindle motor is disclosed. The bearing structure provides a fluid bearing seal and support structure that may simultaneously addresses the problems of preventing oil leakage, of maintaining the bearing integrity under shock, of reducing oil evaporation and of minimizing distortion of the active bearing surface. The bearing structure includes a thrust plate (314) coupled to a shaft (380) and a bearing plate and load plate (240) coupled to a sleeve (230), wherein the load plate (240) urges the bearing plate (214) towards the thrust plate (314), and wherein an adhesive (250) is interposed between the load plate (240) and the thrust plate (314). The adhesive (250) may be an UV epoxy. The sleeve (230) is operatively coupled to a stator, and the stator rotates the sleeve (230) upon receiving a drive signal. The bearing further includes a diffusion barrier (270) disposed between the sleeve (230) and the stator. A second diffusion barrier (260) is disposed between the load plate (240) and the shaft (380). The bearing structure may also include an O-ring (222) disposed above the bearing plate (214) for sealing a gap between the bearing plate (214) and the sleeve (230).

Fig. 2