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(54) Title: PARTICLE FREE SHIELD ASSEMBLY FOR SPINDLE MOTOR

(57) Abstract: In a motor having a fixed shaft and a ball bearing with inner and outer races mounted near one end of the shaft, a magnetic seal is provided which is supported from a seal support which is integrated with or adhesively attached to the back iron which rotates with the hub, the seal magnetic pole pieces extending around the shaft and holding ferrofluid between the ends of the pole pieces extending around the shaft and holding ferrofluid between the ends of the pole pieces and the shaft. A vacuum press holds the shield piece and heats the shield to a temperature so that the inner radius of the washer-shaped seal piece is larger than the outer diameter of the shaft. The press then lowers the shield over the outside diameter of the shaft; the shield is positioned by providing a positioning surface on the vacuum press which butts against the end of the shaft, with the vacuum holding portion of the press extending lower than this alignment surface to place the shield on the outside of the shaft. As the shield cools, it presses against the outside surface of the shaft and is fixed in place. The seal support includes a catcher recess which faces the shaft and is in a position to catch any stray metal particles.



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