

ABSTRACTSINGLE-PHASE VARIABLE RELUCTANCE MOTOR HAVING PERMANENT
MAGNETS EMBEDDED WITHIN A PHASE WINDING

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A single-phase variable reluctance motor is disclosed. The motor includes a stator having a pair of projecting poles defining a principal axis and a rotor mounted on a rotatable shaft co-axial with the principal axis of the stator. The stator may have inwardly extending poles that terminate in a central bore and the rotor may be rotatably disposed in the central bore. In such an embodiment, the stator poles are arranged generally diametrically opposed to one another. The rotor is mounted on a shaft and has a pair of poles generally diametrically opposed from each other. The stator and rotor may be formed from laminations of a ferromagnetic material. Energizing coils are wound around one or more of the stator poles. When energized, the energizing coil(s) impart a torque on the rotor causing it to rotate. One or more permanent magnets are inserted into the winding(s) forming the energizing coil(s) to park the rotor in a preferred starting position when the motor is turned off. A pair of slot wedges is also provided to separate the energizing coils from the central bore. The slot wedges are inserted into notches formed in the stator poles to retain the slot wedges in the central bore. The slot wedges have cut-out portions which are aligned with the permanent magnets to expose them to the central bore.

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