

## Abstract

Permanent magnet housing spaces 3b and spaces 3c for flux barrier are formed within a rotor 3, and a minimum value of a distance from a portion on a boundary face of the permanent magnet housing space in a rotor surface side which portion corresponds to an edge section of a permanent magnet 4 in its width direction to boundary faces of the both spaces in a rotation shaft side of the rotor 3 is determined to be greater than a distance of the permanent magnet housing space 3b in the thickness direction at an edge section of the permanent magnet 4 in its width direction, so that initial performance is maintained by preventing demagnetization of permanent magnet due to a negative magnetic field from occurrence, and decrease in cost of a brushless DC motor is realized by decreasing a volume of the permanent magnet.