

Abstract

**CYLINDRICAL VCM MAGNETIC GRAVITY COMPENSATOR, VCM AND
ASSEMBLY THEREOF**

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The invention discloses a cylindrical voice coil motor (VCM) magnetic gravity compensator, a VCM and assembly thereof in the related technical field of VCM, wherein the magnetic gravity compensator includes a rotor and a stator; the rotor includes a rotor support and a rotor permanent magnet, the longitudinal section of the rotor support is U-shaped, and the rotor permanent magnet is mounted at the U-shaped opening; the stator includes a stator core, a stator magnet assembly and a stator shaft; the longitudinal section of the stator is E-shaped, the stator core is mounted on two parallel sides outside the E-shape, the stator shaft is mounted on the shaft at the center of the E-shape, the stator magnet assembly includes a stator permanent magnet and a stator magnetic block overlapped to each other, the stator magnet assembly is sleeved on the periphery of the stator shaft, and the stator permanent magnet is located between the stator magnetic block and the E-shaped bottom; the two parallel sides of the U-shape fit into the two gaps formed by the three parallel sides of the E-shape; the magnetic gravity compensator has the characteristics such as simple manufacturing process, easy combination with the VCM, good rigidity, low temperature rise, etc.

(Fig. 2)