

ABSTRACT

A magnetic gravity compensator comprises a stator (1), a rotor (2), a base (4) and an adjustment mechanism (6). The stator (1) is disposed on the base (4), and the rotor (2) is levitated with respect to the stator (1). The stator (1) comprises a central cylindrical magnet (11) that is fixed to the base (4) by the adjustment mechanism (6) and consists of at least two arc magnets (111). The adjustment mechanism (6) has a first end fixed to the base (4) and a second end securely connected to the at least two arc magnets (111). The adjustment mechanism (6) is configured to drive the at least two arc magnets (111) to synchronously move radially with respect to a central axis of the central cylindrical magnet (11) so as to change a magnetic circuit between the central cylindrical magnet (11) and the rotor (2), and thereby adjust a magnetic levitation force between the stator (1) and the rotor (2).