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Patent Search

Invention Title	HYBRID RADIAL FLUX BASED MULTI-POLE PISTON FOR MAGNETO RHEOLOGICAL DAMPER
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Abstract:

Title: HYBRID RADIAL FLUX BASED MULTI-POLE PISTON FOR MAGNETO RHEOLOGICAL DAMPER ABSTRACT A Hybrid Radial Flux Based Multi-Pole Piston for Magneto Rheological Damper comprising: a piston core is split into two or more layers within the cross section of piston core where each layer is designed to generate radial flux either inwards or outwards opposite to the adjacent layer; a coil is wound on to the areas of layers of the piston core where the flux is generated to the radial poles designed in each layer and a gap between two consecutive layers is maintained to provide space for the coil wound on a poles and to provide separation for each layer; and an outer cylinder to house a MR fluid within device and a gap between the piston core and the outer cylinder is maintained about 1mm in diameter to provide effective flow for the MR fluid and the magnetic field to alter the viscosity of the MR fluid subsequently, wherein the Hybrid Radial Flux Based Multi-Pole Piston for Magneto Rheological Damper is used to achieve effective flux density using radial and axial fluxes in the MR fluid gap resulting in effective damping force.

Complete Specification

Claims:CLAIMS

I/We Claim,

1) A Hybrid Radial Flux Based Multi-Pole Piston for Magneto Rheological Damper 100 comprising:

a piston core 101 is split into two or more layers 105 within the cross section of piston core where each layer 105 is designed to generate radial flux either inwards or outwards opposite to the adjacent layer;

a coil 102 made of copper is wound on to the areas of layers 105 of the piston core 101 where the flux is generated through the radial poles designed in each layer 105 and a gap between two consecutive layers is maintained to provide space for the coil 102 wound on the poles and to provide separation for each layer and number of poles required is optimally calculated by the number of turns of the coil 102, current carried by the coil 102, and the area consumed by the coil 102 and poles consecutively in the piston core 101; and

an outer cylinder 103 of thickness 4 mm to house a MR fluid within device and a gap between the piston core 101 and the outer cylinder 103 is maintained about 1 mm in diameter to provide effective flow for the MR fluid and the magnetic field to alter the viscosity of the MR fluid subsequently, wherein the Hybrid Radial Flux Based Multi-Pole Piston for Magneto Rheological Damper is used to achieve effective flux density using radial and axial fluxes in the MR fluid gap resulting in effective damping force.

2) The Hybrid Radial Flux Based Multi-Pole Piston for Magneto Rheological Damper 100 of claim 1, wherein all the poles irrespective of the number present in a particular layer has to generate magnetic flux in single direction in case the outer layer is inter connected (either radially inwards or outwards) else alternative generation of magnetic

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