MAGNETORHEOLOGICAL FLUID DAMPER IN MODULAR STRUCTURE

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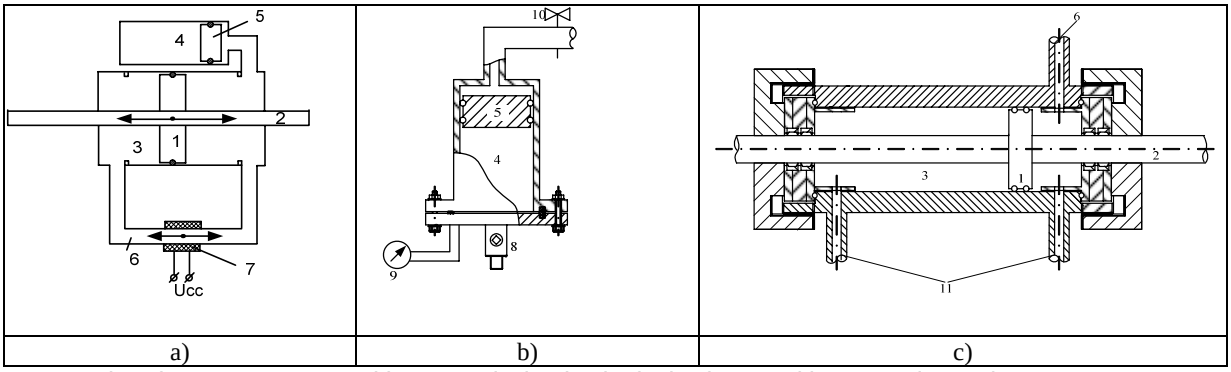
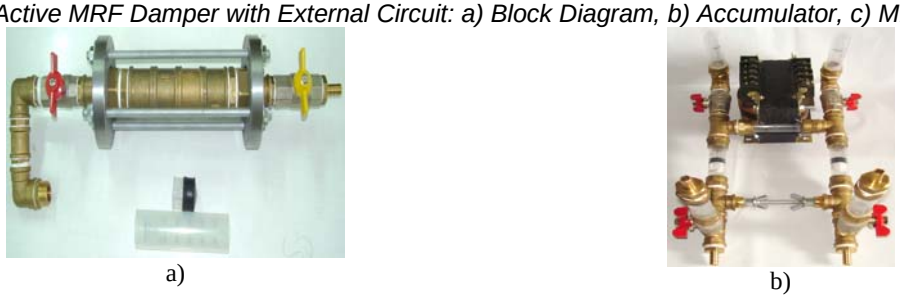
Key words: magnetorheological fluid, semi-active, by-pass circuit

In order to perform experimentally studies, in the paper it is presented a simple method which was elaborated to realize reliable, at low cost and reproducible semi-active dampers with magnetorheological fluids, having external magnetic circuit. The main components are common constitutive elements of industrial hydraulic drivers, having the supplementary advantages being manufactured in a large scale of overall dimensions and demanding minimal modifications. As accumulator, a similar type of hydraulic cylinder was used. The work of the whole damper can be optimized by modifying the nitrogen pressure and interior volume of accumulator. Another important advantage of this conception is the possibility to realize a modular structure composed by the damper, accumulator and magnetic field generator, interconnected by flexible elements.



a) b) c)

Semi-Active MRF Damper with External Circuit: a) Block Diagram, b) Accumulator, c) MRF Damper.



a) b)

a) Multifunctional Accumulator, b) Magnetic Field Generator, together with a Bypass [1].

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