

Vehicle Suspension Spring System

Abstract

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A vehicle suspension spring system (1) for a vehicle wheel station includes a hydraulic cylinder or strut (2) having a piston (3) which divides the cylinder volume into a main oil volume (4) and an annular oil volume (5). The main oil volume (4) communicates via a first oil passage (6) with a first accumulator (8) having a main gas volume (10). The annular oil volume (5) communicates via a second oil passage (7) with a second accumulator (9) having an auxiliary gas volume (11). The oil in each accumulator (8, 9) is separated from the gas by a separator piston or diaphragm (16, 17). A third oil passage (12) with an isolating valve (13) interconnects said first and second oil passages (6, 7). Operation of the isolating valve (13) is regulated by a controller (18). At least one sensor (19) for sensing a parameter associated with vehicle attitude is connected to the controller (18). The controller (18) is operable for switching the isolating valve (13) between open and closed positions for altering spring stiffness of the strut (2) in response to said sensed vehicle attitude parameter when the vehicle is in motion.

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Fig. 1