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Investigation Vibration Damping in the Hydraulic Systems by Using an Accumulator

Abstract- *It is generally accepted that the vibration of fluid power systems considered to be one of the major problems that is normally occurred in the hydraulic system, which causes a noise and short life of its components. Accordingly, it should be reduced the efficiency as well as an increase leakage system. Hence, present study pays more attention to investigate a bladder an accumulator which was successfully added to the hydraulic system in order to reduce the vibrations that might be generated by the system and decelerate the actuator at the end stroke. Which variables are measured before relief and directional valve and at the linear cylinder body. It was found that the maximum percentage damping in vibration velocity at a position before relief and directional control valve and at cylinder body was 20%, 20.8% and 55% at 20 and 15 bar pressure supply respectively. Whereas, it was observed the acceleration was 11.3%, 12.5% and 50% at 40 bar pressure supply. Also, it was found that the piston begins decelerate gradually from distance 25cm in which equal to 1/6 of total stroke length with a period of time 5 seconds.*

Keywords: *Vibration, Damping, Hydraulic Systems, Accumulator.*

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