



RESEARCH PAPER

Performance evaluation of hydraulic ram

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Abstract : A hydraulic ram, is a cyclic water pump powered by hydropower. It takes in a water at one “hydraulic head” (pressure) and flow rates and outputs water at a higher hydraulic head and lower flow rate. The device uses water hammering effect to develop pressure and allows a portion of input water that powers a pump to be lifted to a point higher than the water originally started. The hydraulic ram was developed using the materials such as PVC pipe, swing check valve, PVC elbow, PVC tee, threaded fittings, plastic bottle, rubber pipe, hose connector valve, etc. The developed hydraulic ram was tested for its performance for different supply heads, such as 0.5 m, 1.0 m, 1.5 m and 2.0 m, respectively. Maximum discharge of 3.84 l/min was obtained at 3 m delivery head of 2 m supply head. The maximum efficiency of 67.00 per cent was obtained at 0.5 m supply head with 1.5 m delivery head.

Key Words : Hydraulic, Ram, Performance, Head, Supply, Delivery

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