A Study On Wide Range Gas Flow Piston Prover

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In order to expand the flow range of piston prover, and improve the calibration efficiency of small gas flow meters, Shanghai institute of measurement and testing technology developed a new wide range gas flow piston prover, which is made of stepper motor, big and small pistons, piston cylinder, precision lead screw, encoder, vacuum generator, pressure transmitter, temperature transmitter and control system. The piston prover is designed with vertical structure, the outer diameter of the piston is used as main traceable standard. The working pressure of piston prover can be adjusted from (0 ~ 3) kPa, it can be regulated flowrate accurately with perfect flow stability.The experiments show that the piston prover can be calibrated all kinds of gas flow meters with flow range of (1 ~ 7000)ml/min, it can calibrate the flowmeters with intake method or exhaust method,especially suitable for calibration micro or small critical nozzles, gas leakage meters,soap film flowmeters, MFCs, laminar flowmeters and etc.