STUDY OF ORIFICE PLATE TYPE CONCENTRIC AND SLOTTED FOR GAS FLOW MEASUREMENT

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Abstract

Orifice is a very important tool in the industry, especially in the oil and gas industry, where the use of this orifice is used to create a whole difference in pressure between the upstream and downstream value that will be generated from the pressure of a fluid intake. Concentric orifice used in PT.Vico Indonesia has the disadvantage, that it has very large pressure losses that would result in an increase in pressure loss. Pressure loss is the difference of incoming pressure on the upstream side to the downstream side of the pressure after passing through the orifice is usually shown through the difference in the pressure between the upstream and downstream. Slotted orifice is a tool in a variety of studies have shown that it have a performance that is better than the standard orifice because design of orifice plate are influenced by the upstream side of the orifice and produces relatively small pressure loss, static pressure could return more quickly than standard orifice. Design to be used on slotted orifice area must have the same diameter with concentric orifice in order to diperbandingakan, where dalam this thesis is used as much as 5 slotted holes and 16 pieces in platenya. Therefore, this study was conducted to analyze the pressure loss coefficient that occurs between concentric and slotted orifice type using CFD software. From the observation of pressure loss coefficient values obtained for concentric orifice Fe-37 pressure loss coefficient value of 3.54, with a variation of 5 slotted orifice hole FE-37 type of pressure loss coefficient value of 3.48, and slotted orifice with a variation of 16 holes of type FE-1602 at 3.37. Orifice concentric FE-1602 type of pressure loss coefficient of variation of 2.58 slotted orifice with 5 holes FE-1602 type of pressure loss coefficient value of 2.54 and slotted orifice with a variation of 16 holes of type FE-1602 amounted to 2.43.

Key Words: Orifice Concentric dan Slotted, Coefficient Pressure Loss, CFD
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