

Water Injection Lift @ model

Relates pressure drop $\Delta p = p_{in} - p_{out}$ on the [choke](#) with the flowrate through the choke q arising from fluid friction with [choke](#) elements ([ISO5167](#)):

(1)
$$\Delta p = p_{in} - p_{out} = \frac{\rho \cdot (1 - \beta^4)}{0.125 \pi^2 d^4 C_d^2 \epsilon^2} \cdot q^2$$

where

ρ	fluid density
d	orifice diameter
D	pipe diameter
$\beta = \frac{d}{D}$	orifice narrowing ratio
C_d	discharge coefficient
ϵ	expansion factor

(2)
$$p_{wf,k} = p_{out} + \rho g z_k$$

(3)
$$q = \sum_k \frac{B_w(p_{e,k})}{B_w(p_{out})} \cdot J_k \cdot [p_{out} + \rho g z_k - p_{e,k}]$$

which is equivalent to [\(1\)](#).

See Also