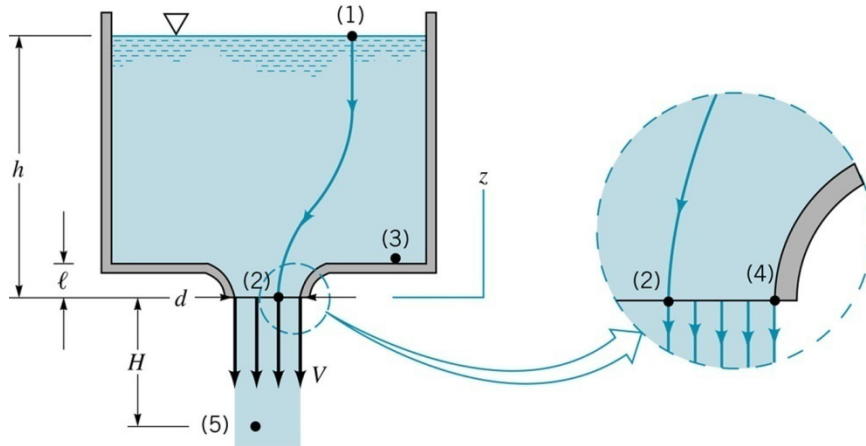


Free jets



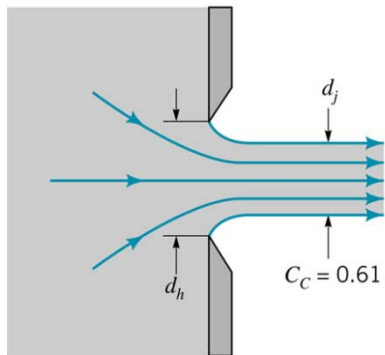
Fluid leaves the tank as free jet:

$$p_2 = p_4 = 0$$

If $v_1 \approx 0$: $v_2 = \sqrt{2gh}$ Eq (3.18)

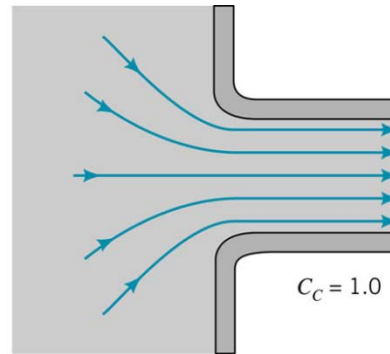
Free jets

Horizontal flow from a tank as free jet:

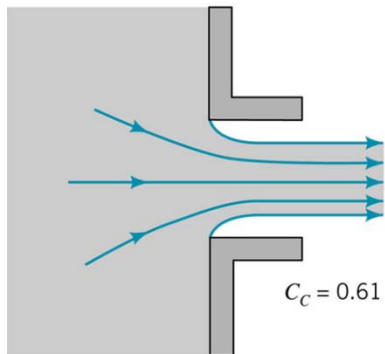


(a) Knife edge

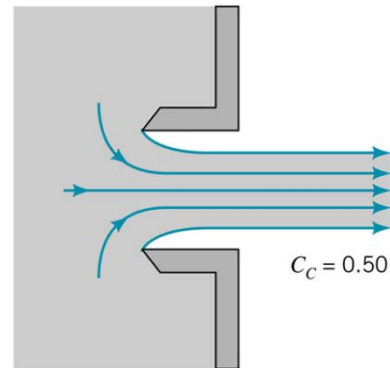
$$C_c = A_j/A_h = (d_j/d_h)^2$$



(b) Well rounded



(c) Sharp edge



(d) Re-entrant

Contraction coefficient of the exit:

$$C_c = \frac{A_{jet}}{A_{hole}} \leq 1$$

Vena contracta effect