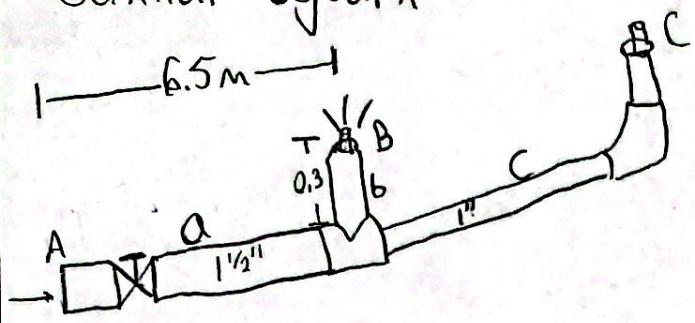
Gunnar Ogburn



400 kPa

$$\frac{P_A}{\gamma} + \frac{V_A^2}{2g} + z_A = \frac{P_B}{\gamma} + \frac{V_B^2}{2g} + z_B + h_{L_{A-B}}$$

(I) $\frac{400}{9.81} - 0.3 = 40.47$

$40.47 = \frac{V_B^2}{2g} - \frac{V_A^2}{2g}$

(II) $\frac{V_B^2 - V_A^2}{2g} = 198,713.246\,Q_b^2 - 39,251.999\,Q_a^2$

(III) $K_r \frac{V_A^2}{2g} = 340\, f_a \frac{1}{2g} \frac{16 Q_a^2}{\pi^2 D_a^4} = 267,185.955\,Q_a^2$

$0.346585 \quad 770124.2233$

(IV) $K_{Tee} \frac{V_A^2}{2g} = 47,102.39898\,Q_a^2$

(V) $K_{red} \frac{V_B^2}{2g} = \quad Q_b^2$

(VI) $K_{sp} \frac{V_B^2}{2g} = 50\, f_t \frac{1}{2g} \frac{16 Q_b^2}{\pi^2 D_b^4} = 198,713.2457$

$0.050968396 \times 3898753.881$

$Q_a = Q_b + Q_c$

(VII) $f_a \frac{L_a}{D_a} \frac{V_A^2}{2g} = 6,696,535.262\, f_a Q_a^2$

(VIII) $f_b \frac{L_b}{D_b} \frac{V_B^2}{2g} = 2,347,006.843\, f_b Q_b^2$

$40.47 = 6,696,535.262 + 2,347,006.843\, f_b Q_b^2 + 275036.364 Q_a^2 +$

Bernoullis From A to C

$40.47 = 6,696,535.262\, f_a Q_a^2 + \quad f_c Q_c^2$