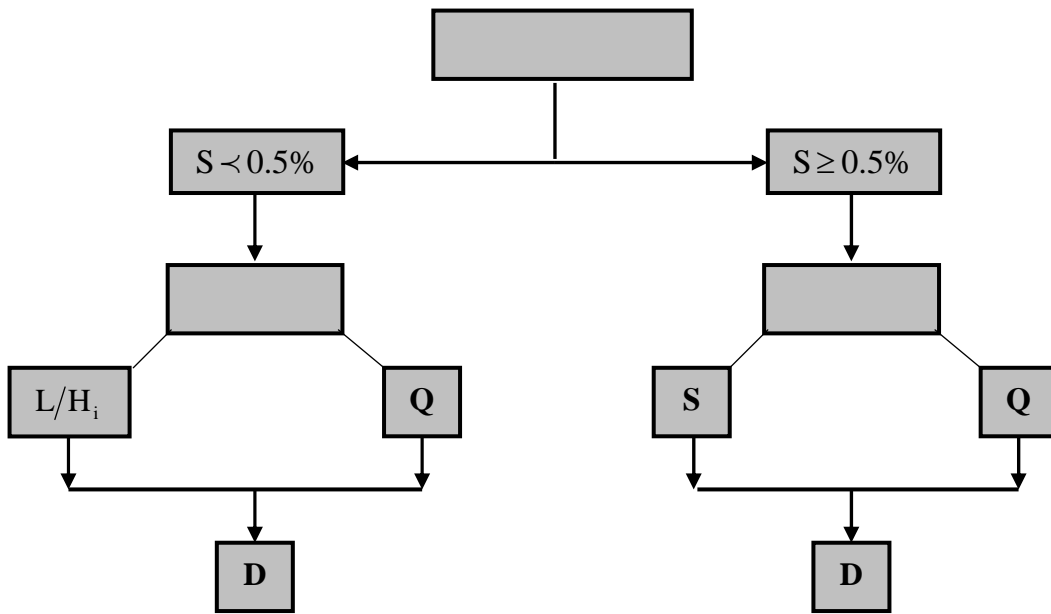


Q_L
 S
 Q_L
 (L/H_i)

$S \geq 0.5\%$
 $S < 0.5\%$

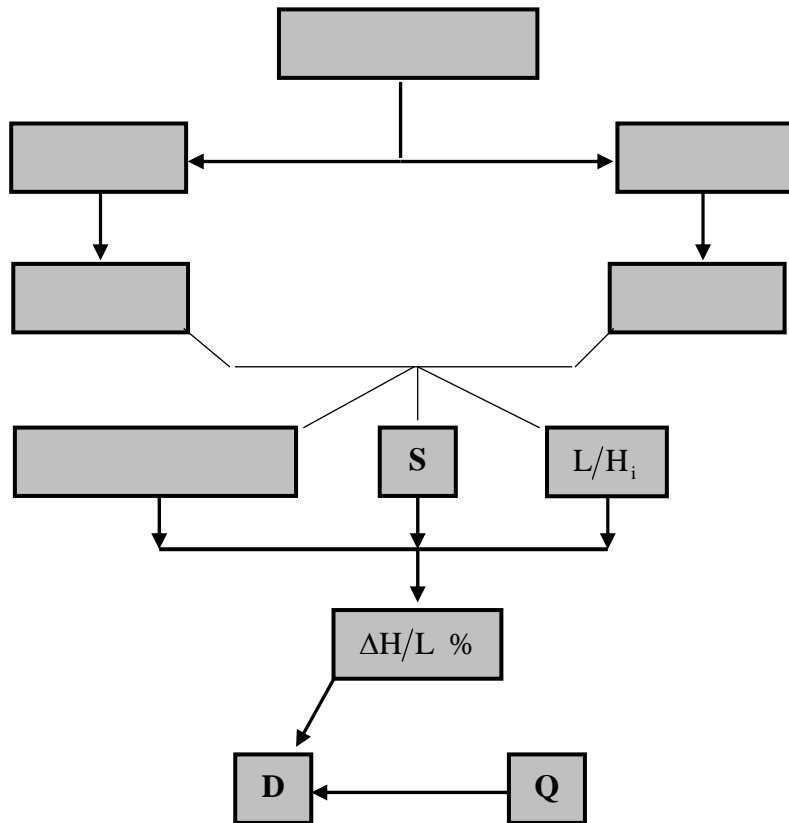


(L/H_i)
 (L/H_i)
 S
 $\%$

(L/H_i)
 $(\Delta H/L)$

(L/H_i)
 (L/H_i)
S
%

(L/H_i)
 $(\Delta H/L)$



$$\begin{array}{r}
 : \\
 \cdot \ell \\
 (L \quad \quad \quad) (\sum \ell) \\
 \quad (\sum \ell/L) \\
 \quad \quad \quad \cdot (\Delta H_e) \\
 \quad \quad \quad \cdot (\sum \Delta H_e) \\
 (\sum \Delta H_e/L) \\
 \quad \quad \quad) (\Delta H/H_i) \\
 \quad \quad \quad : \\
 \quad \quad \quad (\sum \ell/L)
 \end{array}
 \begin{array}{l}
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 \end{array}$$

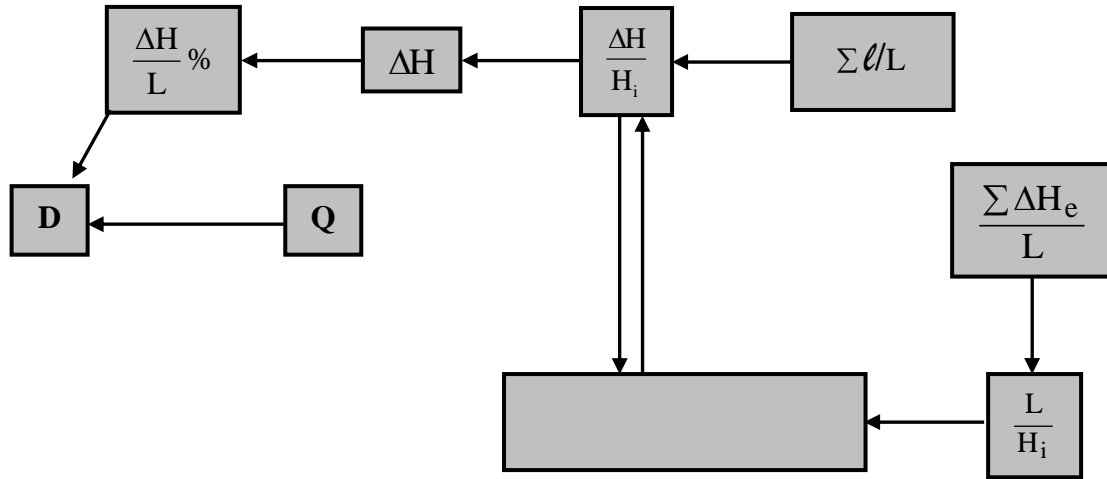
$$\begin{array}{r}
 (\sum \Delta H_e/L) \\
 (L/H_i)
 \end{array}$$

$$\begin{array}{r}
 \cdot (\Delta H/H_i) \\
 (L/H_i)
 \end{array}
 \quad (\sum \ell/L)$$

$$\begin{array}{r}
 (\Delta H/H_i) \\
 \cdot \\
 : \\
 (\sum \ell/L)
 \end{array}
 \begin{array}{l}
 (\Delta H/H_i) \\
 \cdot \\
 \% \pm \\
 (\Delta H/H_i)
 \end{array}
 \quad (\Delta H/H_i)$$

$$\begin{array}{r}
 \cdot (\Delta H/H_i) \\
 (\Delta H/L) \quad (\Delta H) \quad (H_i)
 \end{array}
 \quad \% \pm$$

$$(\Delta H/L)$$



$$H_f = 1.135 \times 10^6 \times \frac{Q^{1.852}}{D^{4.871}} \times L$$

$$H_i = H_o + H_f \pm \Delta H_e$$

$$\Delta H_s = \Delta H_L + \Delta H_F$$

$$\Delta H_s = 2.5 (H_a - H_n)$$

$$\Delta H_L = 0.45 \Delta H_s$$

$$\Delta H_F = 0.55 \Delta H_s$$

$$\text{TDH (Hpump)} = H_i + \Delta H_s + \Delta H_{S.M} + \Delta H_M + h_{LS}$$

$$\text{BP} = \frac{Q_{\text{pump}} \times H}{102 \times E_p}$$

