



$$G = \frac{Q_o}{E} \text{ so } E = \frac{Q_o}{G}$$

$$H = \frac{F}{Q_o} \text{ so } F = H Q_o$$

$$E = Q_i - F$$

$$\text{so } \frac{Q_o}{G} = Q_i - H Q_o \quad \frac{Q_o}{G} + H Q_o = Q_i$$

$$Q_o \left(\frac{1 + GH}{G} \right) = Q_i \quad \text{therefore } \frac{Q_o}{Q_i} = \frac{G}{1 + GH}$$

$$d) \frac{Q_o}{Q_i} = \frac{G_1 G_2}{1 + G_1 G_2 H}$$

$$= \frac{5 \times 0.25}{1 + (5 \times 0.25 \times 0.15)}$$

$$= 1.05 \text{ mm/V}$$

e) Used for heat treatment in furnace
Used for speed control in a factory on a conveyor belt.