

Balancing of Rotating Forces in I.C. Engines

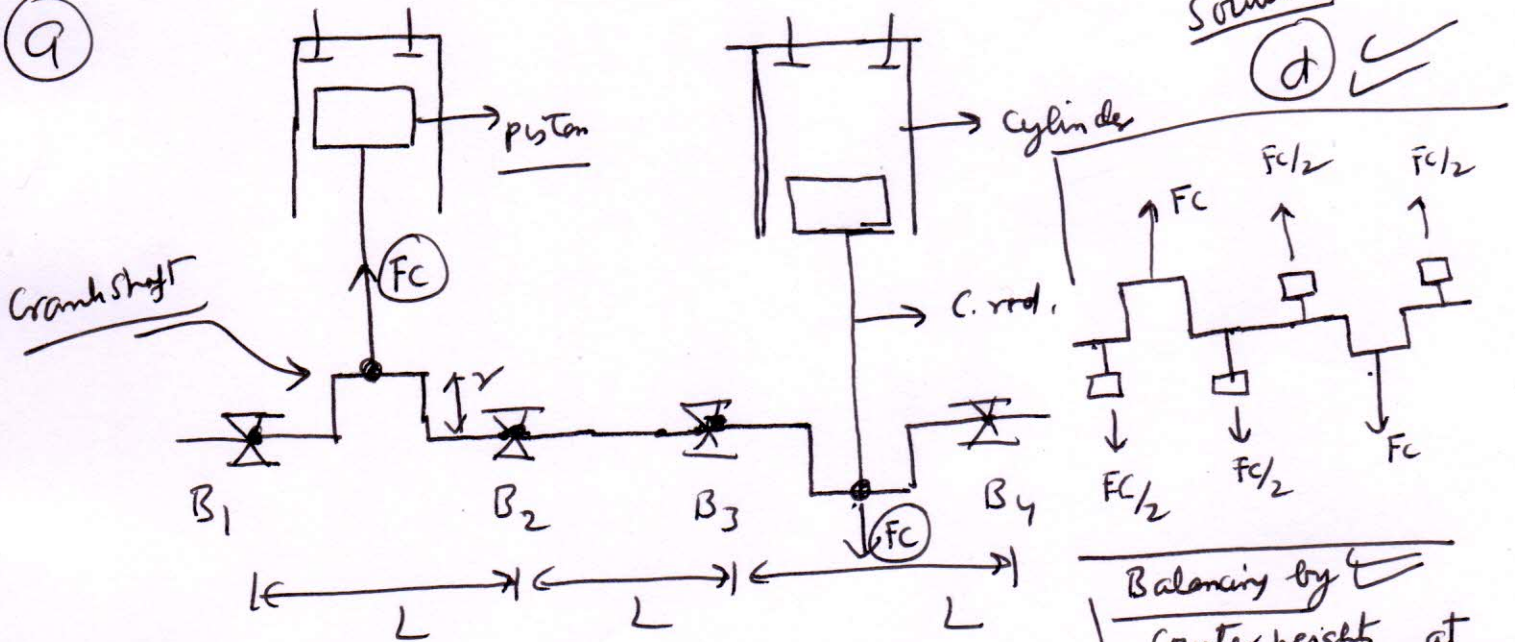
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Advanced Engine Design

3rd Sem. M.Tech. M.S.D

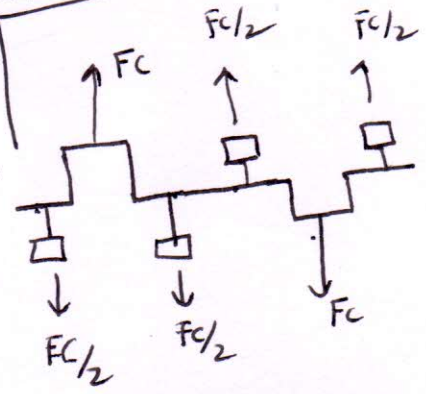
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(a)



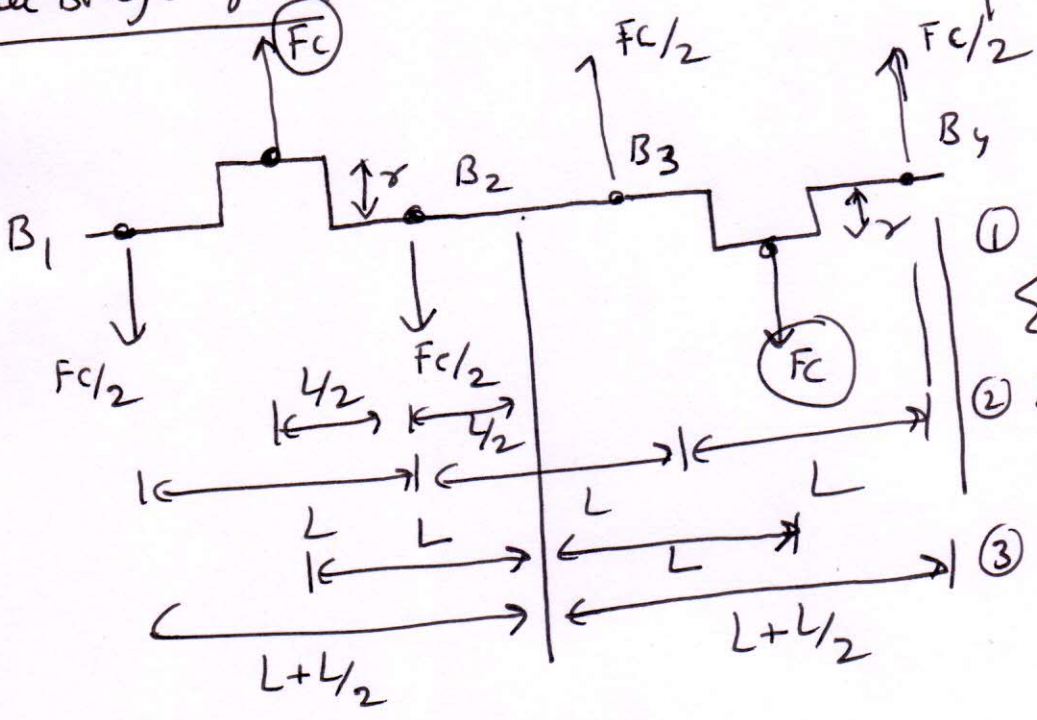
Solution

(d)



Balancing by Counter heights at each crank throw

(b) Free Body diagram



① $\sum F_x = 0$ ✓
 ② $\sum F_y = 0$ ✓
 $F_c - F_c = 0$
 ③ $\sum M = 0$

(c)

Conclusion

Unbalanced

① Dynamic couple / Rotating Moment → about the centre between two forces

$M = F_c \times 2L$

$2L =$ distance between two forces in opposite direction about the centre