



$$\sum \Pi_A = 0: \quad \frac{q_d}{2} \cdot z + F_{add,top} \cdot z + V_d \cdot \cot \alpha_v \cdot \frac{z}{2} - V_d \cdot \frac{z \cot \alpha_v}{2} - q_d = 0$$

$$\Rightarrow F_{add,top} = 0$$

$$\sum N = 0: \quad \boxed{V_d \cdot \cot \alpha_v = F_{add,bottom}}$$