

Question #71570, Physics / Other

Dear expert, please provide an answer to the question below within 12 hours.

A 100 gram bullet is fired from a 10 kg gun with a speed of 1000 m/s. What is the speed of recoil of the gun?

**Solution:**

According to the principle of conservation of momentum,

$$m_b v_b = m_g v_g ;$$

$$\text{hence } v_g = \frac{m_b v_b}{m_g} ;$$

$$v_g = \frac{0.100 \times 1000}{10} = 10 \text{ m/s}$$

**Answer:** the recoil speed is 10 m/s.

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