20-P-MOM-JK-423

$m_A = 14 kg$

$m_B = 15 kg$

$\Delta_s = 0.15 m$

$k = 4900 N/m$

$m_A v_{A1} + m_B v_{B1} = m_A v_{A2} + m_B v_{B2}$

$0 = m_A v_{A2} + m_B v_{B2}$

$v_{A2} = \frac{-m_B v_{B2}}{m_A}$

$T_1 + V_1 = T_2 + V_2$

$\frac{1}{2} k s^2 = \frac{1}{2} m_A v_{A2}^2 + \frac{1}{2} m_B v_{B2}^2$

$k s^2 = m_A v_{A2}^2 + m_B v_{B2}^2$

$k s^2 = \frac{m_B^2 v_{B2}^2}{m_A} + m_B v_{B2}^2$

$v_{B2} = \sqrt{\frac{k s^2}{\left(\frac{m_B^2}{m_A} + m_B\right)}} = 1.884 \frac{m}{s}$

$v_{A2} \quad v_{A2} = -2.018 \frac{m}{s}$