

$k = 200$
 $m = 1.2 \text{ kg}$
 $P. 2 \text{ al. } 219$
 No load loss
 $m = 100 \text{ g}$
 ME

$V_{\text{max}} = 3.6 \text{ m/s}$
 $V = ?$
 $V = 0$

a) MAX comp. $= x =$
 $ME = ME'$
 $\frac{1}{2} m v^2 = \frac{1}{2} k x^2$
 $x = \sqrt{\frac{m v^2}{k}}$
 $x = \sqrt{\frac{1.2 \text{ kg} (3.6 \text{ m/s})^2}{200 \text{ N/m}}}$
 $x = 0.279 \text{ m}$

b) $ME = ME'$
 $\frac{1}{2} m v^2 = \frac{1}{2} m v'^2 + \frac{1}{2} k x^2$
 $(1.2)(3.6)^2 = (1.2)(v')^2 + (200)(0.1)^2$
 $15.552 = 1.2 v'^2 + 2$
 $13.552 = 1.2 v'^2$
 $v' = 3.36 \text{ m/s}$

c) $F = ma$
 $F = kx$
 $ma = kx$
 $a = \frac{kx}{m}$
 $a = \frac{(200)(0.1)}{1.2}$
 $a = 16.7 \text{ m/s}^2$

May 16-10:46 AM