

# Driven Mechanical Oscillator (resonance)

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<http://youtu.be/TqvJoKwkEVO>

At resonance, the amplitude of the oscillation is maximized. The phase of the oscillation is  $90^\circ$  ahead of the driving force.

The amplitude of the oscillation is given by  $A = \frac{F_0}{m\sqrt{(\omega_0^2 - \omega^2)^2 + \gamma^2}}$ .

The phase of the oscillation is given by  $\phi = \tan^{-1}\left(\frac{\gamma}{\omega_0^2 - \omega^2}\right)$ .

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### Resonant RLC Circuit

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<http://youtu.be/f5ZMBCSPqzY>

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