Rotational Inertia I

Tells how much "work" is required to get object spinning. Just like mass tells you how much "work" is required to get object moving.

$$\rightarrow$$
 K_{tran} = $\frac{1}{2}$ m v² Linear Motion

$$\rightarrow$$
 K_{rot} = $\frac{1}{2}$ I ω^2 Rotational Motion

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$$I = \sum m_i r_i^2$$
 (units kg m²)

Note! Rotational Inertia (or "Moment of Inertia") depends on what you are spinning about (basically the r_i in the equation).