



# Tip Of The Week

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## What is a Double-Cage Rotor?

A double-cage rotor has essentially two parallel rotor bar circuits built into the rotor. One set is deeper (closer to the shaft) and the other set is commonly smaller and shallower (closer to the stator). At start-up, the reactance of these bars is large compared to the resistance, resulting in most of the current flowing in the outer bars closer to the stator. These bars being smaller have a higher resistance giving the motor a higher starting torque. At low slip with the motor operating at speed, the frequency of the rotor current is low. This results in a lower reactance compared to the resistance of the bars. The overall rotor impedance is equal amongst both bars resulting in the current flowing equally through both sets of bars. With both sets of bars in play, there is a large cross section and a low resistance, resulting in a high efficiency.

You are invited to submit an Electric Motor Testing Tip of your own and receive a free PdMA mug or hat if we publish it! Contact Lou at 813-621-6463 ext. 126 or [lou@pdma.com](mailto:lou@pdma.com).

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