



Tip Of The Week

April 23, 2012

Motor Efficiency vs. System Efficiency

When estimating motor efficiency, it is important to remember the difference between motor efficiency and system efficiency. A motor's nameplate efficiency gives an indication of how efficient the motor will run at the nominal rated horsepower. Adding system components such as gears, couplings, etc., adds additional losses that need to be accounted for. For example, a 95% efficient motor running at rated load has a shaft output horsepower of 95 KW which requires 100 KW input power to the motor (we are neglecting reactive power for this example). Assume a gear box with one engagement has an efficiency of 90% at rated load (assumed to be equivalent to that of the motor). The output shaft of the gear box will then be reduced to 85.5 KW (90% x 95 KW). The system efficiency is then only 85.5% (85.5 KW output/100 KW input).

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.

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