

Motor and Drive Validation

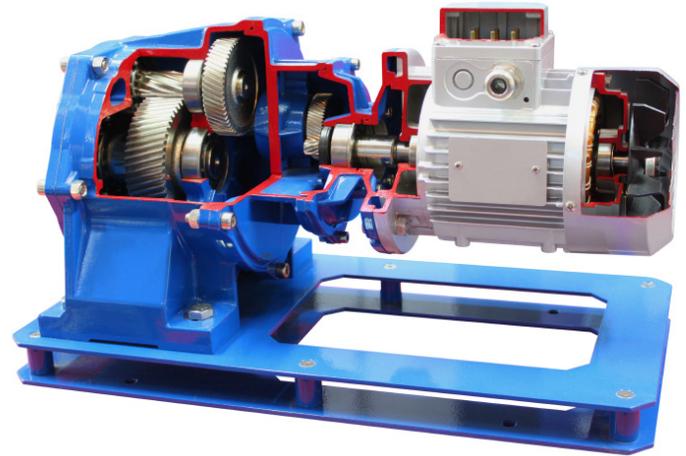
OEMs typically purchase motors to be included in the equipment they sell. Often the OEMs that work with Advanced Energy do not have a resident motor and drive expert on staff and rely on their vendors for advice. Vendors are very knowledgeable about their products and offer many solutions for issues that may arise; however, vendors do not always take an independent view and consider other options outside of the products they offer. Having an independent expert advocating for the best motors and drives in your equipment can improve existing products and speed new product development to market. Warranty claims are often tracked carefully by OEMs and at times can spike. If they are motor related you need an independent source dedicated to solving the issues.

Advanced Energy's team of motor and drive experts have the experience and tools to validate your motor and drive products and be your independent source. When you need to know what the best motor solution is for your equipment, let Advanced Energy be your independent source.

We have the equipment, experience and experts to help you make motor and drive decisions with confidence. For more than 20 years our nationally-accredited motor and drive test lab has helped us serve a variety of OEMs with an abundance of needs.

Here is a small sampling of the types of equipment we have improved with our motor validation services:

- Packaging Equipment
- Automotive Equipment
- HVAC Equipment
- Pumping Equipment
- Mining Equipment
- Earth Moving Equipment
- Extrusion Equipment
- Smaller Appliances



“The information we’ve obtained from these tests has been invaluable. It has enabled us to make informed decisions about our performance objectives and on behalf of our customers who expect a trouble-free, quality product from us.”

*--Vice President of Engineering
Hennessy Industries*

Motor and drive validation is a process that involves analysis of the products and testing. We recommend all of the following be considered when comparing motors to one another.

INSPECTION BUILD ANALYSIS

When selecting a motor vendor, it is best to disassemble samples and compare them to one another — even a motor you have used for years. Manufacturing defects or design differences can be easily pointed out, documented and even changed by the vendor before proceeding further.

PERFORMANCE CHARACTERIZATION

We recommend a set of sample motors be tested to fully define torque over a given speed range (speed/torque curves). Performance under design loads with continuous temperature monitoring is an excellent indicator of reliability, as heat kills motors (Heat Runs).

ENDURANCE TESTING

We design endurance tests based on your equipments' operating characteristics and the duty cycle your motor will experience under the equipments' full warranty period. We discuss worst-case scenarios for your equipment. Once test parameters are defined, we recommend potential replacement motors be placed in test with known motors for comparison. If any motors fail during the test we provide failure analysis.

POST-ENDURANCE TESTING

We recommend you consider speed torque curves and heat runs again to make certain performance has not degraded beyond an acceptable level. We feel a comparison between the known motor and its potential replacements be tested for comparison because you know the history of motor performance in your equipment.

POST-ENDURANCE BUILD ANALYSIS

During the endurance testing, all motors tested will experience wear and may never fail. No endurance test can account for all of the potential faults a motor might see during operation. Knowing which components in the motor experience the most wear can lead to design improvements in the motor before you take shipment on your first order from a new supplier.

IN-PROCESS INSPECTION

In order to maintain quality with any supplier — especially a new one with little prior history serving you — inspection is beneficial. Let us design your on-going program for motor receiving inspection and keep your reputation in the marketplace high. Options to consider with this service range from in-house inspection by your own staff on the production floor to random sample testing in our lab.

VFD COMPATIBILITY TESTING

We test drives too! Concerned about drive performance or compatibility in your machines? Let us help alleviate these with validated product testing. Harmonics, rise time, dV/dT, efficiency and system efficiency are just some of the performance characteristics we test for. Whatever the speed and torque requirements may be for your application we can replicate them in our lab. We are the only lab accredited to test for the Air-Conditioning Heating and Refrigeration Institutes' (AHRI) drive certification program under AHRI 1210.

FOR MORE INFORMATION:

visit www.advancedenergy.org/mad

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