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June 21st 2010 ~ Monday Morning Minutes:

Motor Specifications for HVAC & Plumbing Building Trades

By Norm Hall

Thought I'd take break from the Sump and Sewage pump subject of the last few weeks and spend a little time talking about motor specifications for Plumbing and HVAC applications. R. L. Deppmann does not represent any motor manufacturers, but we obviously sell a lot of motors, since almost every pump has a motor on it. So let's start.

Motor efficiency specifications have changed. In 2007, the Energy Independence and Security Act (EISA) set new standards for motors built after December 19, 2010. Let's take a look at the new specifications.

Most of us are familiar with the terms High Efficiency from the NEMA (National Electrical Manufacturers Association) standard MG1 table 12.11 and Premium Efficiency motors from MG1 table 12.12. These tables may be found at: <http://www.nema.org/stds/complimentary-docs/upload/MG1premium.pdf>

The specifications are broken down by frame and horsepower. T frame motors are used in most base mounted pump and AHU applications. Pumps, such as the B&G 1510 and VSX, use T frame motors. C, JM, and JP frame motors are used on inline pumps and close coupled pumps, such as the B&G series 60, 80, and 1531 style.



(Subclass I)



(Subclass II)

The new standards have defined two subtypes for motors; subtype I and subtype II. Subtype I motors are T frame style from 1 HP to 200 HP. These motors must meet Table 12.12, which is referred to as Premium Efficiency. Subtype II include T frame from 200 HP to 500 HP. Subtype II also include U-frame (Old automotive specs), Design C (small inline pumps), Close-coupled pump motors, Footless motors and Vertical turbine hollow shaft motors, and fire pumps up to 200 HP.

It is important to understand that the standard *excludes submersible pumps*. Submersible pump motors are normally built by the pump people and are not available in higher efficiencies.


You may specify higher efficiencies than the standards, but make sure the product exists before doing so.

If you are in the R. L. Deppmann territory of Michigan and Northern Ohio and would like us to review your motor and pump specifications [CLICK HERE](#).

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