

## **Literature Release: A Comprehensible Guide to Servo Motor Sizing**

*By Copperhill Media Corporation*

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*The Importance of servo motor sizing should not be underestimated. Proper motor sizing will not only result in significant cost savings ; it also helps to design better motion control systems.*

The vast majority of automated manufacturing systems involve the use of sophisticated motion control systems that, besides mechanical components, incorporate electrical components such as servo motors, amplifiers and controllers.

The first straightforward task for the motion system design engineer, before tuning and programming the electrical components, is to specify – preferably the smallest - motor and drive combination that can provide the torque, speed and acceleration as required by the mechanical set up.

However, all too often engineers are familiar with the electrical details, but do lack the knowledge of how to calculate the torque requirements of the driven mechanical components. In other cases they try to size their application around the motor and spend valuable time to figure out how to move the load under the given circumstances. Such an approach will lead to improperly sized motion control applications.

The impact, economically as well as technically, is one of the topics in "A Comprehensible Guide to Servo Motor Sizing". It is estimated, that the purchase price represents only about 2% of the total life cycle costs of a servo motor system; about 96% is electricity. Proper servo motor sizing will help reduce costs.

Modern motor sizing software packages, such as VisualSizer-Professional (See: <http://www.visualsizer.com>), provide the convenience of computing all necessary equations and selecting the optimum motor/drive combination within minutes; they are, however, mainly used to circumvent the timely process of selecting a motor manually. While motor sizing programs can have an educational value to some degree, most of them do not provide any reference on how the equations were derived.

Some basic knowledge of inertia and torque calculations can have a profound impact on the motion system performance. Simple details, like when to use a gearbox in a motion system, may not only help to reduce costs, but will most certainly improve the system performance.

"A Comprehensible Guide to Servo Motor Sizing" will provide a comprehensive insight into the motor sizing process including detailed descriptions of inertia and torque calculations of standard mechanical components.

The author, Wilfried Voss, is the President of Copperhill Technologies Corporation, a company specializing in motor sizing software development for various motor manufacturers all over the world. In addition, Copperhill Technologies provides a free-of-charge generic motor sizing program, VisualSizer-Professional. Since 2005 the product offering has been extended to include technical literature on all aspects of motion control and fieldbus technologies.

Mr. Voss has been involved with motion control applications since 1985 as a specialist in the paper industry and in addition, since 1997, is also involved with fieldbus technologies, especially CAN (Controller Area Network) related technologies. He has a master's degree in electrical engineering from the University of Wuppertal in Germany. Mr. Voss has traveled the world extensively, settling in New England in 1989. He presently lives in an old farmhouse in Greenfield, Massachusetts with his Irish-American wife

and their son Patrick.

For more information log on to:

<http://www.copperhillmedia.com/ServoSizingBook.html>

To purchase the book from Amazon.com log on to:

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