

Spindle Ordering and Maintenance Tips

Estimating Machining Power

Knowing how much power is required to perform a machining operation is useful when planning new machining operations, or for optimizing existing machining operations. It is also vital information to have when properly selecting a spindle.

The available power on any machine tool spindle limits the size of the cut it can take. When large amounts of metal must be removed from a work piece, it is advisable to estimate the cutting conditions that will utilize the maximum power from the machine. Some machining operations will require only light cuts for which the machine obviously has enough power; in these cases estimating the power required may not as necessary for success.

Whenever possible, the maximum power available on a machine tool should be use when heavy cuts must be taken. The cutting conditions for utilizing the maximum power should be selected in the following order:

1. Select the maximum depth of cut that can be used;
2. Select the maximum feed rate that can be used;
3. Estimate the cutting speed that will utilize the maximum power available on the machine.

This sequence is based on obtaining the longest tool life of the cutting tool and at the same time obtaining as much production as possible from the machine. The life of a cutting tool is most affected by the cutting speed then by the feed rate, and least of all by the depth of cut. The maximum metal removal rate that a given machine is capable of machining from a given material is used as the basis for estimating the cutting speed that will utilize all the power available on the machine.

For more information, contact one of our friendly spindle associates at 847.680.8833 today!