

Effects of Change in Parameter on Machine Screw Characteristics

When selecting Machine screws and nuts for a given application it is important to understand the relationship between various screw and nut parameters. A change to a single parameter can affect the whole system. For example, increasing the length of the machine screw will decrease the allowable critical speed of operation. Thus, a longer screw length may require slower operation (critical speed). Refer to the chart below as you consider the requirements of your specific application.

Increasing this Parameter	Affects this Parameter	Causing it to
Screw Length	Critical Speed	Decrease
	Column Load	Decrease
Screw Diameter	Critical Speed	Increase
	Inertia	Increase
	Load Capacity	Increase
	Column Load	Increase
Lead	Torque Input	Increase
	Positioning Accuracy	Decrease
	Angular Velocity	Decrease
Angular Velocity	Critical Speed	Decrease
Mounting Rigidity	Critical Speed	Increase
	System Stiffness	Increase
Load	Torque Input	Increase
	Column Load	Decrease

Consideration must be given to the pressure-velocity relationship (P-V) when selecting machine screws and nuts that have demanding duty cycles. Contact Joyce/Dayton with the specific application requirements.

sales@joycedayton.com
 800-523-5204
www.joycedayton.com