Q&A Session for Introduction to the Motorized Lead Screw

Date: Wednesday, October 22, 2014

Q: Which stepper motor bearings actually support axial loads greater than a few lbs/f?

A: Standard stepper motors use radial bearings and a spring washer to preload. The MLS uses oversize bearings and have removed axial free play as the product is designed for lead screws and axial loads.

Q: What is the max load possible?

A: The NEMA 23 has a load capacity of 200 lbs. Refer to the brochure for other available sizes.

Q: Can the motors and screws be purchased separately for spares and field assembly?

A: Yes, this is one of the key features of the Taper-Lock design. Since the design isn't permanently affixed, we encourage trying multiple configurations for prototyping and holding minimum inventory for maintenance.

Q: Velocity smoothness – optimize motor windings for harmonic resonance? Numbers? How much better than customers?

A: The resonance point in an application is a function of the MLS as well as the application parameters and installation. Noise reduction is a feature but one that must be based on specific application testing. Also for smoothness, this is can be dependent on the type of motor driver used and step size. Smaller step increments, or micro steps, will result in a smoother running system.

Q: Are drive electronics available?

A: Yes, please contact Thomson for recommendations.

Q: What are the expected Lead-Times?

A: Standard product is stock but requires screw machining and therefore 1-2 weeks. Large quantity orders and customization will be reviewed by case.

Q: Is the RN 'internal nut' field replaceable?

A: No, the nut is integrated into the motor. We can replace the motor and screw separately though.

Q: Are there provisions for encoder mounting?

A: No, this is a future offering.

Q: Does Thomson offer external support bearings (pillow-block or flange) for all the different screw sizes?

A: No, we do not offer standard supports for all units. BSA has a limited range of end supports available, please contact Thomson or review catalog.

Q: HOW LARGE A DIAMETER WILL THE LEAD SCREW GET IN THE FUTURE? WILL THIS LINE BE LIMITED TO SMALL SIZES?

A: Current offering is NEMA 11 – NEMA 23 and the maximum lead screw diameter is 10mm. We will evaluate the market need for NEMA 34 and NEMA 42 as future sizes.

Q: IS THE STANDARD PRODUCT SELF LUBRICATING?

A: All lead nuts are self-lubricating. Thomson recommends using additional lubrication in most applications.

Q: with power off, is the screw held stationary? Can you turn it by hand?

A: The stepper motor must be energized to have holding torque.

Q: Does the outboard end of the screw need to be a fixed bearing config, or can the motor bearings handle the translated axial load?

A: The motor bearings are sized for the fully rated axial load. Thomson recommends an outboard bearing to increase life and system performance but it isn’t necessary.

Q: Can you have multiple rotating nut style motors on a single lead screw?

A: Interesting idea and yes.