

Q&A EU Ball Screw 101 Webinar

Q: Do ball screw and lead screws qualify for marine applications?

A: Yes, we have application in marine environments. These typically will require special material considerations or special coatings to protect against corrosion. Lead screw assemblies are made from 300 series stainless steel for the screws and bearing grade plastics for the nuts and are therefore ideally suited for many marine applications. Ball screws must have hardened races and therefore require special coatings (cadmium plating, thin dense chrome, or other) to protect against corrosion as the material options are limited.

Q: How do you avoid lubrication for vacuum purposes?

A: Thomson would recommend vacuum grade grease for most vacuum applications. Dry film lubricants have also been successfully used for vacuum grade applications. Please consult with Thomson customer service to determine the best lubricant for the environment in a specific application.

Q: What kind of magnetic permeability do your ball screws have (I assume you use a 440C steel)?

A: Standard stainless steel ball screws are made from 17-4ph (1.4542) stainless steels and utilize 440C (1.4125) stainless steel ball bearings. Ball screws can be fabricated from any heat treatable stainless steel and selection depends on the application. Ceramic (silicon nitride) ball bearings are also an alternative to metal balls in select applications.

Q: So ball screws CAN'T be used in vacuum?

A: Ball screws assemblies made from all steel components are acceptable in most vacuum grade applications. Some ball nuts have plastic components and therefore are not suitable for some applications. Thomson has utilized ball screws in many vacuum grade applications using all metal components and vacuum grade grease.

Q: Permeability is important in one application where it is near a high magnetic field. Influencing the field is not desired. Recommendations?

A: Lead screws would be recommended based upon the materials of construction (300 grade stainless steels and plastic or bronze nuts). Alternative materials are also more readily available for lead screws as the components are not required to be heat treated.

Q: What sort of wipers grease for marine?

A: The selection of wipers and grease for any application is based on the environment and application parameters. Typically mechanical components in marine applications are

submerged in an oil bath when possible. Thomson does have applications with ball screws submerged in water and operating without lubrication but this comes at a cost of life of the products. Specific application details should be discussed with Thomson customer support for designing the correct product into an application.