

## **Fitting.Made.Easy. Technical Bulletin**

### **Thread Galling**

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Thread galling is a common concern with stainless steel fittings. When two surfaces come into contact with each other there can be adhesion which can cause a tearing of the metal on the thread. This is referred to as thread galling.

Galling will cause threads to not seat properly which will cause the fitting to not seal properly and ultimately fail. While thread galling can occur when proper installation and use is followed the problem is easily preventable.

Thread galling will not occur with SAE, UNC straight threads or BSPP (British Parallel Port, **when assembled correctly.** Whereas, NPT and NPTF thread fittings can gall. Fitting made with the NPTF thread, experience-controlled thread galling, by design. **See OmegaOne Technical Bulletin discussing Taper Threads.**

OmegaOne stocks both flare fittings (TX) and flareless (F) which are straight threads. BSPP fittings are available as a non-standard. OmegaOne flare fittings (TX) follow torque SAE specifications and will not gall unless the torque specification is exceeded. Flareless (F Series) nuts are manufactured with a Moly-Coating to lubricate the threads preventing thread galling.

Both male and female thread ports do not experience galling, when properly installed. Those thread ends are designated in OmegaOne part numbers with a G at the end of the part number. The following all designate straight thread ends available on OmegaFlare and OmegaBite fittings: GC LGC GE GBT GRT

Pipe fittings, both NPT and NPTF can very easily gall. BSPT (British Taper Thread) can also easily gall. The same care given NPT/F threads should be taken for BSPT. OmegaOne manufacturers many fittings with pipe threads. Our P series fittings are all manufactured to the NPTF standard. OmegaOne Flare fittings (TX) and Flareless fittings (F) are made with mating ends that are NPTF.

Preventing thread galling is simple. Though straight thread fittings do not (generally) gall, thread galling can occur if the fitting is over-torqued. Overtightening fittings involving a swivel nut can cause thread galling as well as compromise the 37° seat.

When installing fitting using a swivel nut proper alignment is critical to ensuring a correct seat and seal. Over tightening a swivel nut can cause damage to the seat and eventually gall threads if the threads are over worked. Please reference the torque specifications per the SAE J514 standard for flare fittings.

SAE torque specifications are written based on a dry seal. With straight thread fittings that use an O-ring **it is advisable as long as the oil is compatible with the O-ring in use and the fluid in the system.** JIC (SAE J514 standard) straight thread flare fittings (male to female swivel) may be lightly lubricated with SAE-10W oil or light application of anti-seize lubrication. This allows for easy service of the swivel connection when needed.

There are preventative measures which can be taken to protect stainless steel pipe thread fittings from thread galling. With both NPT and NPTF tapered pipe thread fittings (P Series) it is advisable to use anti-seize lubrication. Both tape and either pipe dope or anti-seize lubrication will help prevent thread galling with stainless steel fittings with a tapered thread.

Please see our additional Technical Bulletin covering Thread Types.

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With further sales and product specification information, contact OmegaOne,  
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