GLOSSARY

ACORN NUT = A nut (so-called because of its shape) that has a domed top so that it prevents contact with the external thread.

ALLOY STEEL = A mixture (or alloy) of ordinary steel added to other metals besides carbon with the specific purpose of attaining certain characteristics such as higher strength. A few exceptions to this definition exist, however, so that a chromium content above 4% is not considered alloy steel and above 12% is considered stainless steel.

ANAEROBIC ADHESIVE = An adhesive which hardens in the absence of air, such adhesives are often used as a thread locking medium.

ANSI = Stands for American National Standards Institute.

ANTI-SEIZE COMPOUND = An anti-seize compound is used on the threads of fasteners in some applications. The purpose of the compound depends upon the application. It can prevent galling of mating surfaces such compounds are frequently used with stainless steel fasteners to prevent this effect from occurring. In some applications it is used to improve corrosion resistance to allow the parts to be subsequently dis-assembled. Thirdly, it can provide a barrier to water penetration since the threads are sealed by use of the compound.

ASME = Stands for American Society of Mechanical Engineers.


BEARING SURFACE = The part of a fastener such as the washer face of a nut or under the head of a machine screw that actually comes in contact with the part it fastens.

CHAMFER = A slight rounding on the end of a fastener or the edges of a hex nut for ease of assembly or smoother appearance.

GALLING (also called SEIZING) = When two metals or fasteners stick together and cannot be easily loosened. In tightening fasteners, for example, pressure builds on threads as metals rub against each other, and the passive film preventing corrosion on stainless may not for due to lack of oxygen.

GALVANIC CORROSION = An accelerated degree of corrosion occurring when two different metals are in contact with moisture, particularly sea water.

GIMLET POINT = A threaded cone point usually having a point angle of 45-50 degrees.

HARDENED WASHERS = The force under the head of a bolt or nut can exceed, at high preloads, the compressive yield strength of the clamped material. If this occurs excessive embedding and deformation can result in bolt preload loss. To overcome this hardened washers under the bolt head can be used to distribute the force over a wider area into the clamped material. A more modern alternative is to use a flange headed nuts and bolts.

HEAT TREATMENT = Heating often combined with cooling at controlled temperatures in order to strengthen and harden a fastener.

HYDROGEN EMBRITTLEMENT = Hydrogen trapped under the surface of a fastener can later cause ruptures. It is generally associated with carbon and alloy steels, not stainless. There may be no external signs of corrosion before a break occurs.

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ISO = Stands for International Organization for Standardization.

IFI = Stands for Industrial Fasteners Institute.

JAM NUT = A thinner nut that is "jammed" against another nut to prevent loosening.

KEPS = A pre-assembled nut and washer assembly (the washer is attached to the nut so that it won't fall off).

LOCK NUT = A nut which provides extra resistance to vibration loosening by either providing some form of prevailing torque, or, in free spinning nuts, by deforming and/or biting into mating parts when fully tightened.

NON-FERROUS = Metals without iron. Brass and silicon bronze are non-ferrous; stainless is often characterized as non-ferrous, but it is not non-ferrous.

NYLOC NUT = A torque prevailing nut that uses a nylon patented insert to provide a locking feature.

PITCH = The distance between two adjacent threads measured at the outside diameter of the threads.

PREVAILING TORQUE = The torque required to run a nut down a thread on certain types of nuts designed to resist vibration loosening. The resistance can be provided by a plastic insert or a noncircular head.

PROPERTY CLASS = A designation system which defines the strength of a bolt or nut. For metric fasteners, property classes are designated by numbers where increasing numbers generally represent increasing tensile strengths.

ROLL THREADING = Forming threads on a fastener by pushing or rolling dies against the fastener without any removal of metal. Roll thread in, as opposed to cut threading, hardens the material making the threads stronger.

SAE = Stands for Society of Automotive Engineers.

SEMS = A screw and washer assembly. A screw or bolt which has a captive washer. The washer is frequently loose on the plain shank of the fastener, the shank diameter being equal to the effective diameter of the thread; the thread being rolled from this diameter.

SET SCREW = A set screw is a threaded fastener that is typically used to hold a sleeve, collar or gear on a shaft to prevent relative motion. It is a threaded member that normally does not have a head. Unlike most other threaded fasteners it is basically a compression device normally used to generate axial thrust.

SHANK = That portion of a bolt between the head and the threaded portion.

SHEAR STRENGTH = Measured by the push or pull against the side of a fastener until the fastener breaks (for example, moving an object continually against the side of a screw that is protruding from a wall). As a rule of thumb, shear strength is two-thirds of tensile strength.

SOCKET HEAD CAP SCREW = A screw with a round head with usually a hexagon indentation in the head for tightening purposes. Used on machine parts and is typically made from high strength steel.

STUD = A fastener which is threaded at both ends with an unthreaded shank in between. One end (which often has a thread tolerance which results in more thread interference) is secured into a tapped hole the other is used with a nut.

TAP BOLT = Fully threaded bolt.

TENSILE STRENGTH = A common measure to compare the strength of a fastener. It is the load needed to pull the fastener apart.

THREADLOCKER = Can be a term used for a number of vibration resistant products but is now usually reserved for threadlocking adhesives. Specifically, a liquid anaerobic adhesive applied to nut or but thread, once hardened it fills the inner spaces between the threads to produce a solid plastic of a known shear strength.

UNC = Stands for Unified National Coarse
UNF = Stands for Unified National Fine
WASHER FACE = A circular rim on the underside of the head of a bolt or on one side of a nut with the purpose of providing a flat bearing surface.
YIELD = The resistance to a load pulling on the middle of a fastener until the fastener shows permanent deformation.
YIELD STRENGTH = The amount of pressure required to cause permanent deformity.
ZINC ELECTROPLATING = Zinc electroplating is a common way to protect threaded fasteners from the effects of corrosion.
18.8 = 300 series stainless steel having approximately (not exactly) 18% chromium and 8% nickel. Term "18.8" is used interchangeably to characterize fasteners made of 302, 302HQ, 303, 304, 305, 384, XM7 and other variables of these grades with close chemical compositions, there is little overall difference in corrosion resistance among the 18-8 types, but slight differences in chemical composition do make certain grades more resistant than others against particular chemicals or atmospheres. "18-8" has superior corrosion resistance to 400 series stainless, is generally non-magnetic, and is hardenable only by cold working.