



FIGURE 6-9. Elastic stop nut.

Nearly all elastic stop nuts are steel or aluminum alloy. However, such nuts are available in practically any kind of metal. Aluminum alloy elastic stop nuts are supplied with an anodized finish. Steel nuts are cadmium plated.

Normally, elastic stop nuts can be used many times with complete safety and without detriment to their locking efficiency. When reusing elastic stop nuts, be sure the fiber has not lost its locking friction or become brittle. If a nut can be turned with the fingers, replace it.

After the nut has been tightened, make sure the rounded or chamfered end of the bolts, studs, or screws extends at least the full round or chamfer through the nut. Flat end bolts, studs, or screws should extend at least $\frac{1}{32}$ inch through the nut. Bolts of $\frac{5}{16}$ -inch diameter and over with cotter pin holes may be used with self-locking nuts, but only if free from burrs around the holes. Bolts with damaged threads and rough ends are not acceptable. Do not tap the fiber-locking insert. The self-locking action of the elastic stop nut is the result of having the bolt threads impress themselves into the untapped fiber.

Do not install elastic stop nuts in places where the temperature is higher than 250° F., because the effectiveness of the self-locking action is reduced beyond this point. Self-locking nuts may be used on aircraft engines and accessories when their use is specified by the engine manufacturer.

Self-locking nut bases are made in a number of forms and materials for riveting and welding to aircraft structure or parts. (See figure 6-10.) Certain applications require the installation of self-locking nuts in channels, an arrangement which permits the attachment of many nuts with only a few rivets. These channels are track-like bases with regularly spaced nuts which are either removable or nonremovable. The removable type carries a floating nut, which can be snapped in or out of the channel, thus making possible the easy removal of damaged nuts. Nuts such as the clinch-type and spine-type which depend on friction for their anchorage are not acceptable for use in aircraft structures.

Sheet Spring Nuts

Sheet spring nuts, such as speed nuts, are used with standard and sheet-metal self-tapping screws in nonstructural locations. They find various uses in supporting line clamps, conduit clamps, electrical equipment, access doors, and the like, and are available in several types. Speed nuts are made from spring steel and are arched prior to tightening. This arched spring lock prevents the screw from working loose. These nuts should be used only where originally used in the fabrication of the aircraft.

Internal and External Wrenching Nuts

Two commercial types of high-strength internal or external wrenching nuts are available; they are the internal and external wrenching elastic-stop nut and the Unbrako internal and external wrenching nut. Both are of the self-locking type, are heat-treated, and are capable of carrying high-strength bolt-tension loads.

Identification and Coding

Part numbers designate the type of nut. The common types and their respective part numbers are: Plain, AN315 and AN335; castle AN310;