SELECTING THE CORRECT BOLT

Picking Bolt Length and Calculating Bolt Stiffness (kb)

- Find the nut height (Hn).
- Find the washer thickness (t).
- Find the thread length (Lt).
- Pick Preferred bolt length (L).
- Calculate the unthreaded length of the bolt (Lbu).
- Subtract 1" from the unthreaded length of the bolt.
- The result is the length of the bolt (L).
- Calculate the area of the unthreaded portion of the bolt (A).
- The area of the threaded portion of the bolt is (At).

Finding Thread Length (Lt)

- Inch series bolts
  - Lt = 2D + 2L
- Metric series bolts
  - Lt = D + L

More Calculations

- Calculation of the unthreaded length of bolt (Lbu):
  - Lbu = Lt - 1
- Calculation of the threaded portion of the grip (Gt):
  - Gt = Total length of graft - Unthreaded length of bolt (Ad)
- Calculation of the area of the unthreaded portion of bolt (Ad):
  - Ad = (d - D)

Calculation of bolt stiffness (kb)

kb = (AdAt - E)

Ad = Lt + At - d

Table 1: Dimensions and Tolerances of Standard SAE, Metric, and ACRB (All dimensions are in Inches)

Table 2: Dimensions and Tolerances of Standard SAE, Metric, and ACRB (All dimensions are in Millimeters)

ARP FASTENER LUBE

It's difficult to determine the amount of torque required to provide the correct preload and clamp force of a given fastener. For example, when applicable, it is preferred to use a torque wrench simply by observing the friction between the male and female threads. To ensure that all ARP fasteners provide the optimum level of service, the installed residual torque is calculated and verified experimentally using a specific quality lab. It is important to note that the friction coefficients of lubricants vary depending on the make and model of the fastener, so it is difficult to consistently produce the exact amount of clamp with the fastener to clamp the components together. Therefore, ARP has developed an ultra-consistent lubricant and recommends the use of one of our premium grades: AMERICAN LUBE or THREAD SEALER to precisely duplicate the recommended tightening specifications provided with all ARP fasteners.

- Premium grade with rust and corrosion inhibitors.
- Linear lubrication range: -20F to 150F.
- Load range: 180,000 psi.
- Other applications: Primary assembly lube for engine components, press fitting, gear trains, and general machinery.
- Thread Sealer:
  - Suits lined or painted surfaces.
- Effective range: -20F to 300F.
- Insulation range: 0-1,000V (resistance).
- Application delivers a flexible seal over steel and aluminum, steel, stainless steel, and various plastic coatings, under gaskets, and natural gasket (FG).

ARP recommends the use of AMERICAN LUBE for all fasteners.