Fasteners and Sealants

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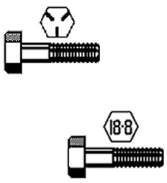
Bolt Identification

- Bolt diameter
- Thread pitch
- Bolt length
- Bolt strength grade

Bolt Strength Rating

- The strength of a bolt is identified by grade markings on the fastener
- Standard
  - count the number of marks and add two
  - 0 to 8 is available
- Metric
  - a rating between 4.6 and 10.9 is shown directly on the fastener



Bolt Size

- Bolt diameter
- Shank length
- Thread length
- Bolt head size
  - Not used in bolt designation

Thread Pitch

- Standard bolts are rated in the number of threads per inch
  - coarse and fine
- Metric bolts are rated by the distance between the threads in millimeters

Clamping Force

- Clamping force is adjusted by measuring a the rotational force used to tighten and stretch a fastener
- Bolts are often tightened in stages
- Final clamping force may be adjusted by rotating the bolt a certain number of degrees

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Trim Adhesive

- Trim adhesive is used to stick gaskets in place while assembling engine components
- Use only enough to stick the gasket in place

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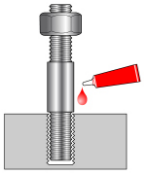
Red Anaerobic Thread-lock

- Anaerobic sealers cure in the absence of oxygen when confined between two surfaces
- Prevents fasteners from loosening and is used in high temperature areas
- Not recommended for aluminum



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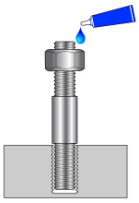
Blue Anaerobic Thread-lock

- Cures when confined between two surfaces and is used to prevent bolts from loosening after they have been properly tightened
- Does not lock as tightly as the red thread-lock and may be used on aluminum



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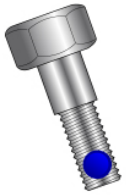
Pre-applied Sealant or Adhesive

- Some fasteners have a pre-applied adhesive/ sealant
- Activated by the assembly process
- Pre-applied fasteners need to be replaced when they are removed or recoated with the same adhesive/sealant, as specified



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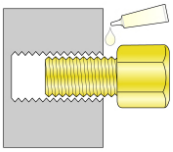
Teflon Pipe Sealant

- Anaerobic Teflon pipe sealant is used to prevent fluids from leaking past the threads of a component that goes into a coolant or oil passage
- Low-strength, slow-curing sealant
- Not used to prevent components from loosening



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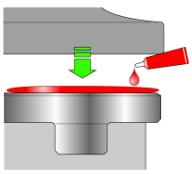
Anaerobic Gasket Maker

- Flexible anaerobic gasket maker is used on rigid machined flanges with less than a 0.010 inch gap
- Provides an instant seal when the flanges are assembled
- Recommended for use on aluminum, iron, and steel



Silicone Sealant

- The Silicone Sealant is a form-in-place, silicone rubber gasket, and multi-purpose adhesive/ sealant that dries in quickly
- If the parts to be sealed are not assembled within the specified time, the sealer must be removed and re-applied