Standard Fastener Guide
IMPORTANT: Make sure to print this chart to Actual Size (no scaling).
After printing, measure the scale check below to ensure correct scale.

---

Standard US Machine Screw Sizes

Length is measured from where the surface is assumed to be, to the end of the screw. Therefore, pan head screws are measured from under the head, and flat head screws are measured overall.

---

#4 - 40
#6 - 32
#8 - 32
#10 - 32
#12 - 24
1/4" - 20
5/16" - 18
3/8" - 16

Length
# Sheet Metal Screw Sizes

<table>
<thead>
<tr>
<th>Pan</th>
<th>Flat</th>
<th>Oval</th>
<th>Truss</th>
</tr>
</thead>
<tbody>
<tr>
<td>#4</td>
<td>#4</td>
<td>#4</td>
<td>#4</td>
</tr>
<tr>
<td>#6</td>
<td>#6</td>
<td>#6</td>
<td>#6</td>
</tr>
<tr>
<td>#8</td>
<td>#8</td>
<td>#8</td>
<td>#8</td>
</tr>
<tr>
<td>#10</td>
<td>#10</td>
<td>#10</td>
<td>#10</td>
</tr>
<tr>
<td>#12</td>
<td>#12</td>
<td>#12</td>
<td>#12</td>
</tr>
<tr>
<td>#14</td>
<td>#14</td>
<td>#14</td>
<td>#14</td>
</tr>
</tbody>
</table>

Fastener length is measured from where the material surface is assumed to be, to the end of the fastener.

**IMPORTANT:** Make sure to print this chart to **Actual Size** (no scaling). After printing, measure the scale check below to ensure correct scale.

<table>
<thead>
<tr>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6 inches</th>
</tr>
</thead>
</table>
Shoulder Bolt Size Chart

Shoulder bolt size is determined by the diameter and length of the shoulder.

NOTE: The smaller threaded section is the same length and diameter for all shoulder bolts with the same shoulder diameter.

IMPORTANT: Make sure to print this chart to Actual Size (no scaling). After printing, measure the scale check below to ensure correct scale.
Socket Button Head Size Chart

#2-56

#4-40

#6-32

#8-32

#10-24

#10-32

#12-24

3/8"-16

1/4"-20

1/4"-28

5/16"-18

5/16"-24

3/8"-24

1/2"-13

1/2"-20

Length

Fastener length is measured from where the material surface is assumed to be, to the end of the fastener.

IMPORTANT: Make sure to print this chart to Actual Size (no scaling). After printing, measure the scale check below to ensure correct scale.

0 1 2 3 4 5 6 inches
Socket Cap Size Chart

#2-56
#4-40
#6-32
#8-32
#10-24
#10-32
#12-24

1/4"-20
1/4"-28
5/16"-18
5/16"-24
3/8"-16
3/8"-24
7/16"-14
7/16"-20
1/2"-13
1/2"-20
9/16"-12
9/16"-18

Fastener length is measured from where the material surface is assumed to be, to the end of the fastener.

IMPORTANT: Make sure to print this chart to Actual Size (no scaling). After printing, measure the scale check below to ensure correct scale.

0 inches, 1 inches, 2 inches, 3 inches, 4 inches, 5 inches, 6 inches
Socket Flat Head Size Chart

#2-56
#4-40
#6-32
#8-32
#10-24
#10-32
#12-24
1/4"-20
1/4"-28
5/16"-18
5/16"-24
3/8"-24
7/16"-14
7/16"-20
1/2"-13
1/2"-20
5/8"-11
5/8"-18

Fastener length is measured from where the material surface is assumed to be, to the end of the fastener.

IMPORTANT: Make sure to print this chart to Actual Size (no scaling). After printing, measure the scale check below to ensure correct scale.
IMPORTANT: Make sure to print this chart to Actual Size (no scaling). After printing, measure the scale check below to ensure correct scale.
IMPORTANT: Make sure to print this chart to Actual Size (no scaling).
After printing, measure the scale check below to ensure correct scale.
USS Flat Washer Size Chart

#10
1/4"
5/16"
3/8"
7/16" 1/2" 9/16" 5/8"
3/4" 7/8" 1"

Important:
Make sure to print this chart to Actual Size (no scaling). After printing, measure the scale check below to ensure correct scale.

Large USS Washer Sizes

<table>
<thead>
<tr>
<th>Size</th>
<th>Diameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-1/8&quot;</td>
<td>1-1/4&quot;</td>
</tr>
<tr>
<td>1-1/4&quot;</td>
<td>1-3/8&quot;</td>
</tr>
<tr>
<td>1-3/8&quot;</td>
<td>1-1/2&quot;</td>
</tr>
<tr>
<td>1-1/2&quot;</td>
<td>1-5/8&quot;</td>
</tr>
<tr>
<td>1-5/8&quot;</td>
<td>1-3/4&quot;</td>
</tr>
<tr>
<td>1-3/4&quot;</td>
<td>1-7/8&quot;</td>
</tr>
<tr>
<td>2&quot;</td>
<td>2-1/8&quot;</td>
</tr>
</tbody>
</table>

0 1 2 3 4 5 6 inches
Screw Eye Sizes

- **.365” wire**
- **.331” wire**
- **.307” wire**
- **.264” wire**

**.365” wire**
- Size: 000
- Length: 4

**.331” wire**
- Size: 00
- Length: 104

**.307” wire**
- Size: 0
- Length: 204

**.264” wire**
- Size: 2
- Length: 106

**.192” wire**
- Size: 6
- Length: 206

**IMPORTANT:** Make sure to print this chart to **Actual Size** (no scaling). After printing, measure the scale check below to ensure correct scale.

| 0 | 1 | 2 | 3 | 4 | 5 | 6 | inches |
.160" wire

.135" wire

.120" wire

.105" wire

.080" wire

.072" wire

.062" wire

.056" wire

.148" wire

.135" wire

.092" wire

.135" wire (continued)

.105" wire

.092" wire
Fastener Basics

Common Fastener Types

Hex bolts, or hex cap screws, are used in machinery and construction. Can be used with a nut, or in a tapped hole. Fully threaded hex bolts are also known as tap bolts.

Wood screws have large threads and a smooth shank for pulling two pieces of material together. They can be used in wood and other soft materials.

Sheet metal screws have sharp points and threads, and are designed to be driven directly into sheet metal. They can also be used in softer materials like plastic, fiberglass, or wood.

Machine screws are fully trenched for use with a nut or in a tapped hole. Certain types are sometimes referred to as stove bolts.

Socket screws are machine screws with an internal hex socket (Allen) drive. Longer lengths may have a smooth shank.

Lag bolts, or lag screws, are large wood screws with hex heads. Typically used for wood construction and landscaping.

Carriage bolts have smooth, domed heads with a square section underneath that pulls into the material to prevent spinning during installation.

Nuts are used to fasten machine threaded fasteners in through-hole applications. Lock nuts help prevent loosening.

Washers spread the load over a greater surface area when tightening a bolt, screw or nut. Lock washers help preventing loosening.

Grade / Class and Fastener Strength

Fastener Grade (US) or Class (metric) refers to the mechanical properties of the fastener material. Generally, a higher number indicates a stronger, more hardened (but also more brittle) fastener.

US bolt head markings

<table>
<thead>
<tr>
<th>Grade</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Grade 2</td>
</tr>
<tr>
<td>5</td>
<td>Grade 5</td>
</tr>
<tr>
<td>8</td>
<td>Grade 8</td>
</tr>
</tbody>
</table>

Metric bolt head markings

<table>
<thead>
<tr>
<th>Grade</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.8</td>
<td>Class 8.8</td>
</tr>
<tr>
<td>10.9</td>
<td>Class 10.9</td>
</tr>
<tr>
<td>12.9</td>
<td>Class 12.9</td>
</tr>
</tbody>
</table>

Note: In addition to these markings, the head will often have a manufacturer stamp.

Fastener Materials

Zinc-plated steel is a low carbon steel for general use. Relatively inexpensive, with the zinc plating providing moderate corrosion resistance suitable for indoors or otherwise dry conditions. Color is either a blue-ish tint or yellow depending on the exact process.

Hot-dipped galvanized steel has a thicker zinc coating for better corrosion resistance, making it suitable for outdoor use. Because of the thick plating, only galvanized nuts and washers will fit galvanized bolts. The coating typically has a rough, dull grey finish.

Stainless steel offers good corrosion resistance, making it suitable for outdoor and marine applications, but is more expensive than zinc plated.

Chrome and nickel plated steel are smooth and polished for appearance. The plating offers moderate corrosion resistance.

Brass and bronze are copper alloys with good corrosion resistance. More expensive than steel, these materials are typically used for decorative applications. Colors can vary significantly.

Alloy steel is highly hardened and usually black oxide and/or oil coated, offering little corrosion resistance.

Note: Do not rely on this guide for color-matching. The appearance of these materials sometimes differs significantly from the photos.
How Fasteners are Notated: An Example

Machine screws, Phillips pan head, Stainless steel 18-8, #12-24 x 1"

**Fastener types**

- Phillips
- Frearson
- Pozidriv
- Slotted
- Combo
- Hex socket (Allen)
- Square (Robertson)
- Torx

**Head Styles**

- Hex heads are typically used with larger bolts and screws, and tightened with a wrench.
- Pan heads have a slightly domed head that sits above the surface.
- Flat heads are installed in a countersunk hole for a flat surface.
- Round heads are tall domed heads, used primarily for decorative purposes.
- Oval heads are a low domed and countersunk heads, used primarily for decorative purposes.
- Truss heads are slightly domed, with a wide head for an extra large surface area.
- Socket heads are narrow with a socket drive, and knurled or smooth sides.
- Button heads feature a medium dome. Typically used with a hex socket drive.

**Drive Types**

- Phillips and Slotted drives are common in screws, but prone to cam-out (stripping).
- Combo drives, that can be used with either driver, are available for many fastener types.
- Frearson and Pozidriv are similar to Phillips, but less prone to cam-out.
- Hex socket (Allen) drives are compact and easy to drive, but prone to cam-out.
- Torx and Square drive are resistant to cam-out and can be installed single-handed.

**Measuring Diameter**

For most types of fasteners, the diameter is measured on the outside of the threads.

*Note: US diameters under 1/4" are given as numbers (e.g. #12) instead of inches, in order of increasing size.*

**Thread Count and Thread Pitch**

Machine threaded fasteners specify a thread density in Threads Per Inch (US) or as a Thread Pitch in mm (Metric).

For a given diameter, a fastener may be available in coarse (standard), fine and sometimes super fine thread.

**Measuring Length**

Fastener length is usually measured from where the material is assumed to be to the end of the fastener.

Thus, countersunk fasteners are measured overall and non-countersunk fasteners are measured from under the head.

**Nut and Washer Sizes**

Nut and washer sizes indicate the screw or bolt they fit. For example:

- 3/8"-16 Hex Bolt
- 3/8" Washer
- 3/8"-16 Nut

Different washer patterns have different outside diameters. For example, hardened US washers are available in USS (wider) and SAE (narrower) patterns. Fender washers have large outside diameters.

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ISO 9001 Certified Company
www.classccomponents.com
Quality • Service • Versatility
Metric Fastener Guide
Metric Machine Screw Sizes

For Pan Head - Measure length from under the head to the end of the screw.

For Flat Head - Measure length from the top of the head to the end of the screw.

**IMPORTANT:** Make sure to print this chart to Actual Size (no scaling). After printing, measure the scale check below to ensure correct scale.

| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 |
|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|---|
| 4mm x 0.7mm | 6mm x 1.0mm |
| 5mm x 0.8mm | 8mm x 1.25mm |
# Metric Hex Bolt Sizes and Thread Pitches

(Note: Head sizes may differ from what is shown due to differences between metric standards)

<table>
<thead>
<tr>
<th>Bolt Size</th>
<th>Head Diameter x Pitch</th>
</tr>
</thead>
<tbody>
<tr>
<td>4mm x 0.7mm</td>
<td></td>
</tr>
<tr>
<td>5mm x 0.8mm</td>
<td></td>
</tr>
<tr>
<td>6mm x 1.0mm</td>
<td></td>
</tr>
<tr>
<td>7mm x 1.0mm</td>
<td></td>
</tr>
<tr>
<td>8mm x 1.25mm</td>
<td></td>
</tr>
<tr>
<td>8mm x 1.0mm</td>
<td></td>
</tr>
<tr>
<td>10mm x 1.25mm</td>
<td></td>
</tr>
<tr>
<td>10mm x 1.0mm</td>
<td></td>
</tr>
<tr>
<td>12mm x 1.75mm</td>
<td></td>
</tr>
<tr>
<td>12mm x 1.5mm</td>
<td></td>
</tr>
<tr>
<td>12mm x 1.25mm</td>
<td></td>
</tr>
<tr>
<td>14mm x 2.0mm</td>
<td></td>
</tr>
<tr>
<td>14mm x 1.5mm</td>
<td></td>
</tr>
<tr>
<td>14mm x 1.25mm</td>
<td></td>
</tr>
<tr>
<td>16mm x 2.0mm</td>
<td></td>
</tr>
<tr>
<td>16mm x 1.5mm</td>
<td></td>
</tr>
</tbody>
</table>

Length is measured from under the head to the end of the bolt.

**IMPORTANT:** Make sure to print this chart to **Actual Size** (no scaling). After printing, measure the scale check below to ensure correct scale.

<table>
<thead>
<tr>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6 inches</th>
</tr>
</thead>
</table>
IMPORTANT:
Make sure to print this chart to Actual Size (no scaling).
After printing, measure the scale check below to ensure correct scale.

Shoulder bolt size is determined by the diameter and length of the shoulder.
NOTE: The smaller threaded section is the same length and diameter for all shoulder bolts with the same shoulder diameter.
**Metric Socket Button Head Size Chart**

<table>
<thead>
<tr>
<th>Size</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>4mm x 0.7</td>
<td></td>
</tr>
<tr>
<td>5mm x 0.8</td>
<td></td>
</tr>
<tr>
<td>6mm x 1.0</td>
<td></td>
</tr>
<tr>
<td>8mm x 1.25</td>
<td></td>
</tr>
<tr>
<td>8mm x 1.0</td>
<td></td>
</tr>
<tr>
<td>10mm x 1.5</td>
<td></td>
</tr>
<tr>
<td>10mm x 1.25</td>
<td></td>
</tr>
<tr>
<td>10mm x 1.0</td>
<td></td>
</tr>
<tr>
<td>12mm x 1.75</td>
<td></td>
</tr>
<tr>
<td>12mm x 1.5</td>
<td></td>
</tr>
<tr>
<td>12mm x 1.25</td>
<td></td>
</tr>
</tbody>
</table>

Fastener length is measured from where the material surface is assumed to be, to the end of the fastener.

**IMPORTANT:** Make sure to print this chart to Actual Size (no scaling). After printing, measure the scale check below to ensure correct scale.

<table>
<thead>
<tr>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6 inches</th>
</tr>
</thead>
</table>
IMPORTANT: Make sure to print this chart to Actual Size (no scaling).
After printing, measure the scale check below to ensure correct scale.

Fastener length is measured from where the material surface is assumed to be, to the end of the fastener.
IMPORTANT: Make sure to print this chart to Actual Size (no scaling).
After printing, measure the scale check below to ensure correct scale.

<table>
<thead>
<tr>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6 inches</th>
</tr>
</thead>
</table>

Length

Fastener length is measured from where the material surface is assumed to be, to the end of the fastener.
IMPORTANT: Make sure to print this chart to Actual Size (no scaling). After printing, measure the scale check below to ensure correct scale.

<table>
<thead>
<tr>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>inches</th>
</tr>
</thead>
</table>

2mm
4mm wrench

2.5mm
5mm wrench

3mm
5.5mm wrench

4mm
7mm wrench

5mm
8mm wrench

6mm
10mm wrench

8mm
13mm wrench

10mm
17mm wrench

12mm
19mm wrench

Hex

Jam

Nylock

20mm

30mm wrench

18mm
27mm wrench

16mm
24mm wrench

14mm
22mm wrench

Hex

Jam

Nylock
Metric Flat Washer Size Chart

Washer sizes correspond to the screw/bolt diameter they fit. For example, an 8mm washer fits an 8mm bolt, and therefore has an inner diameter of just over 8mm.

IMPORTANT: Make sure to print this chart to Actual Size (no scaling). After printing, measure the scale check below to ensure correct scale.

0 1 2 3 4 5 6 inches
# Bolt Grade Markings and Strength Chart

## US Bolts

<table>
<thead>
<tr>
<th>Head Marking</th>
<th>Grade and Material</th>
<th>Nominal Size Range (inches)</th>
<th>Mechanical Properties</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Proof Load (psi)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Min. Yield Strength (psi)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Min. Tensile Strength (psi)</td>
</tr>
<tr>
<td>No Markings</td>
<td>Grade 2</td>
<td>1/4 thru 3/4</td>
<td>55,000</td>
</tr>
<tr>
<td></td>
<td>Low or medium carbon steel</td>
<td>Over 3/4 thru 1-1/2</td>
<td>33,000</td>
</tr>
<tr>
<td>3 Radial Lines</td>
<td>Grade 5</td>
<td>1/4 thru 1</td>
<td>85,000</td>
</tr>
<tr>
<td></td>
<td>Medium Carbon Steel, Quenched and Tempered</td>
<td>Over 1 thru 1-1/2</td>
<td>74,000</td>
</tr>
<tr>
<td>6 Radial Lines</td>
<td>Grade 8</td>
<td>1/4 thru 1-1/2</td>
<td>120,000</td>
</tr>
<tr>
<td></td>
<td>Medium Carbon Alloy Steel, Quenched and Tempered</td>
<td>All Sizes thru 1</td>
<td>20,000 Min. 65,000 Typical</td>
</tr>
</tbody>
</table>

Stainless markings vary. Most stainless is non-magnetic.

## 18-8 Stainless

<table>
<thead>
<tr>
<th>Class and Material</th>
<th>Nominal Size Range (mm)</th>
<th>Mechanical Properties</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-8 Stainless</td>
<td>All Sizes thru 1</td>
<td>Proof Load (MPa)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Min. Yield Strength (MPa)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Min. Tensile Strength (MPa)</td>
</tr>
</tbody>
</table>
# Metric bolts

<table>
<thead>
<tr>
<th></th>
<th>Class 8.8</th>
<th>Class 10.9</th>
<th>Class 12.9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material</td>
<td>Medium Carbon Steel, Quenched and Tempered</td>
<td>Alloy Steel, Quenched and Tempered</td>
<td>Alloy Steel, Quenched and Tempered</td>
</tr>
<tr>
<td>Tensile Strength</td>
<td>580 640 800</td>
<td>5mm - 100mm</td>
<td>1.6mm - 100mm</td>
</tr>
<tr>
<td>Yield Strength</td>
<td>600 660 830</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proof Load</td>
<td>16mm - 72mm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stainless markings vary.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Most stainless is non-magnetic.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Usually stamped A-2</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**A-2 Stainless**: Steel alloy with 17-19% Chromium and 8-13% Nickel

<table>
<thead>
<tr>
<th></th>
<th>All Sizes thru 20mm</th>
<th>210 Min. 450 Typical</th>
<th>500 Min. 700 Typical</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tensile Strength</td>
<td>210 Min. 450 Typical</td>
<td>500 Min. 700 Typical</td>
<td></td>
</tr>
<tr>
<td>Yield Strength</td>
<td>210 Min. 450 Typical</td>
<td>500 Min. 700 Typical</td>
<td></td>
</tr>
<tr>
<td>Proof Load</td>
<td>210 Min. 450 Typical</td>
<td>500 Min. 700 Typical</td>
<td></td>
</tr>
</tbody>
</table>

1MPa = 1N/mm² = 145 pounds/inch²
Fastener Type Guide
Fastener Type Chart

**Fastener Categories**

**Wood Screws**
Screws with a smooth shank and tapered point for use in wood. Abbreviated WS

**Machine Screws**
Screws with threads for use with a nut or tapped hole. Abbreviated MS

**Thread Cutting Machine Screws**
Machine screws with a thread cutting (self tapping) point.

**Sheet Metal Screws**
Fully threaded screws with a point for use in sheet metal. Abbreviated SMS

**Self Drilling SMS**
A sheet metal screw with a self drilling point.

**Hex Bolts**
Bolts with a hexagonal head with threads for use with a nut or tapped hole. Abbreviated HHMB or HXBT.

**Carriage Bolts**
Bolts with a smooth rounded head that has a small square section underneath.

**Lag Bolts**
Bolts with a wood thread and pointed tip. Abbreviated Lag.

**Socket Screws**
Socket screws, also known as Allen Head, are fastened with a hex Allen wrench.

**Set Screws**
Machine screws with no head for screwing all the way into threaded holes.

**Eye Bolts**
A bolt with a circular ring on the head end. Used for attaching a rope or chain.

**Eye Lags**
Similar to an eye bolt but with wood threads instead of machine thread.

**J-Bolts**
J shaped bolts are used for tie-downs or as an open eye bolt.

**U-Bolts**
Bolts in U shape for attaching to pipe or other round surfaces. Also available with a square bend.

**Shoulder Bolts**
Shoulder bolts (also known as stripper bolts) are used to create a pivot point.

**Elevator Bolts**
Elevator bolts are often used in conveyor systems. They have a large, flat head.
**Fastener Categories (continued)**

**Sex Bolts**
Sex bolts (a.k.a. barrel nuts or Chicago bolts) have a female thread and are used for through bolting applications where a head is desired on both sides of the joint.

**Mating Screws**
Mating screws have a shoulder that matches the diameter of the sex bolts they are used with.

**Hanger Bolts**
Hanger bolts have wood thread on one end and machine thread on the other end.

---

**Head Styles**

- **Flat**
  A countersunk head with a flat top.
  Abbreviated FH

- **Oval**
  A countersunk head with a rounded top.
  Abbreviated OH or OV

- **Pan**
  A slightly rounded head with short vertical sides.
  Abbreviated PN

- **Truss**
  An extra wide head with a rounded top.

- **Round**
  A domed head.
  Abbreviated RH

- **Hex**
  A hexagonal head
  Abbreviated HH or HX

- **Hex Washer**
  A hex head with built in washer.

- **Slotted Hex Washer**
  A hex head with built in washer and a slot.

- **Socket Cap**
  A small cylindrical head using a socket drive.

- **Button**
  A low-profile rounded head using a socket drive.
**Drive Types**

- **Phillips and Frearson**
  - An X-shaped drive.
  - Abbreviated PH

- **Slotted**
  - A slot in the head.
  - Abbreviated SL

- **Combination**
  - A combination of slotted and Phillips drives.
  - Abbreviated combo

- **Socket, Hex or Allen**
  - A hexagonal hole for use with an Allen wrench.

- **One Way**
  - Installs with a normal slotted driver but cannot be removed without special tools.

- **Square**
  - Also known as Robertson drive.
  - Abbreviated SQ or SD.

- **Torx**
  - A six-pointed star pattern, specifically designed to prevent cam-out and stripped heads.

**Washer Types**

- **Flat**
  - A flat washer, used to distribute load. Available in SAE, USS and other patterns.

- **Fender**
  - An oversize flat washer used to further distribute load especially on soft materials.

- **Finishing**
  - A washer used to obtain a 'finished' look. Usually used with oval head screws.

- **Split Lock**
  - The most common style of washer used to prevent nuts and bolts from backing out.

- **External Tooth Lock**
  - A washer with external 'teeth'. Used to prevent nuts and bolts from backing out.

- **Internal Tooth Lock**
  - A washer with internal 'teeth'. Used to prevent nuts and bolts from backing out.

- **Square**
  - A square shaped washer.

- **Dock**
  - Dock washers have a larger outside diameter and are thicker than standard.

- **Ogee**
  - Thick, large diameter, cast iron washers with a curved or sculpted appearance. Typically used in dock and wood construction.

- **Sealing**
  - A soft neoprene washer bonded to a metal backing. Used to seal out air/water or dampen noise and vibration.
Nut Types

Hex
A six sided nut. Also referred to as a Finished Hex Nut.

Heavy Hex
A heavier pattern version of a standard hex nut.

Nylon Insert Lock
A nut with a nylon insert to prevent backing off. Also referred to as a Nylock.

Jam
A hex nut with a reduced height.

Nylon Insert Jam Lock
A nylock nut with a reduced height.

Wing
A nut with 'wings' for hand tightening.

Cap
A nut with a domed top over the end of the fastener.

Acorn
Acorn nuts are a high crown type of cap nut, used for appearance.

Flange
A nut with a built-in washer like flange.

Tee
A nut designed to be driven into wood to create a threaded hole.

Square
A four sided nut.

Prevailing Torque Lock
A non-reversible lock nut used for high temperature applications.

K-Lock or Kep
A nut with an attached free-spinning external tooth lock washer.

Coupling
Coupling nuts are long nuts used to connect pieces of threaded rod or other male fasteners.

Slotted
Slotted nuts are used in conjunction with a cotter pin on drilled shank fasteners to prevent loosening.

Castle
Castle nuts are used in conjunction with a cotter pin on drilled shank fasteners to prevent loosening.