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Visual Glossary Of Screws, Nuts and Washers

Written by mike on October 25th, 2011 [Follow @msenese](#)

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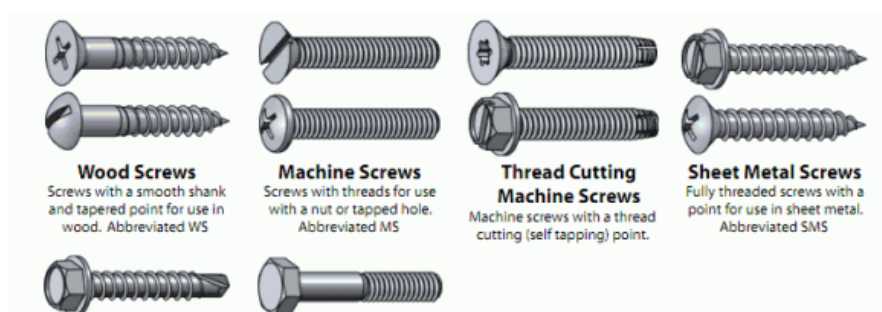
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(Makers and DIY'ers: Make sure to [add me on twitter](#) and [subscribe to my feed](#).)

[BoltDepot](#) has a great selection of [charts](#) used to identify and explain the wide variety of screws, bolts, nuts, washers and other pieces used for building just about every project you can imagine. [Wood screws](#), machine screws, carriage bolts, lag bolts, square heads, [torx](#), ogee washers and more.

There's even a section about the [grade/strength types](#) of the different materials used for the fasteners. Very handy indeed.

Types of Screws





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.



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

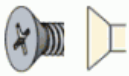
Mating screws have a shoulder that matches the diameter of the sex bolts they are used with.



Hanger Bolts

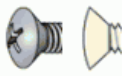
Hanger bolts have wood thread on one end and machine thread on the other end.

Types and Styles of Screw Heads



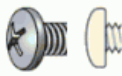
Flat

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



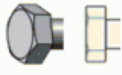
Truss

An extra wide head with a rounded top.



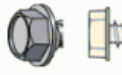
Round

A domed head. Abbreviated RH



Hex

A hexagonal head. Abbreviated HH or HX



Hex Washer

A hex head with built in washer.



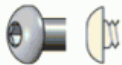
Slotted Hex Washer

A hex head with built in washer and a slot.



Socket Cap

A small cylindrical head using a socket drive.



Button

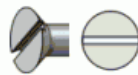
A low-profile rounded head using a socket drive.

Screw 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 can not be removed without special tools.



Square









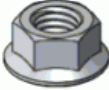
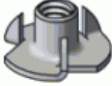
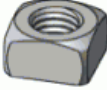
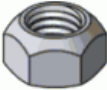


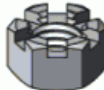

Also known as Robertson drive. Abbreviated SQ or SD.












Torx

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

Nut Types

 <p>Hex A six sided nut. Also referred to as a Finished Hex Nut.</p>	 <p>Heavy Hex A heavier pattern version of a standard hex nut.</p>	 <p>Nylon Insert Lock A nut with a nylon insert to prevent backing off. Also referred to as a Nylock.</p>	 <p>Jam A hex nut with a reduced height.</p>
 <p>Nylon Insert Jam Lock A nylock nut with a reduced height.</p>	 <p>Wing A nut with 'wings' for hand tightening.</p>	 <p>Cap A nut with a domed top over the end of the fastener.</p>	 <p>Acorn Acorn nuts are a high crown type of cap nut, used for appearance.</p>
 <p>Flange A nut with a built in washer like flange.</p>	 <p>Tee A nut designed to be driven into wood to create a threaded hole.</p>	 <p>Square A four sided nut.</p>	 <p>Prevailing Torque Lock A non-reversible lock nut used for high temperature applications.</p>
 <p>K-Lock or Kep A nut with an attached free-spinning external tooth lock washer.</p>	 <p>Coupling Coupling nuts are long nuts used to connect pieces of threaded rod or other male fasteners.</p>	 <p>Slotted Slotted nuts are used in conjunction with a cotter pin on drilled shank fasteners to prevent loosening.</p>	 <p>Castle Castle nuts are used in conjunction with a cotter pin on drilled shank fasteners to prevent loosening.</p>

Washer Type

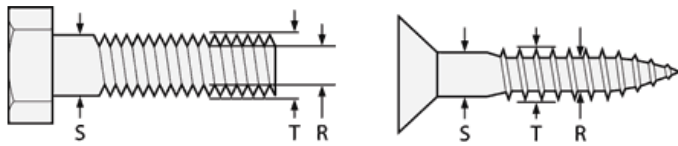
 <p>Flat A flat washer, used to distribute load. Available in SAE, USS and other patterns.</p>	 <p>Fender An oversize flat washer used to further distribute load especially on soft materials.</p>	 <p>Finishing A washer used to obtain a 'finished' look. Usually used with oval head screws.</p>	 <p>Split Lock The most common style of washer used to prevent nuts and bolts from backing out.</p>
 <p>External Tooth Lock A washer with external 'teeth'. Used to prevent nuts and bolts from backing out.</p>	 <p>Internal Tooth Lock A washer with internal 'teeth'. Used to prevent nuts and bolts from backing out.</p>	 <p>Square A square shaped washer.</p>	 <p>Dock Dock washers have a larger outside diameter and are thicker than standard.</p>
 <p>Ogee Thick, large diameter, cast iron washers with a curved or sculpted appearance. Typically used in dock and wood construction.</p>			

Measuring

There are several different locations on a fastener where one can measure the diameter.

The most commonly used diameters are:

- **Thread Diameter (T).** Also called major diameter.
- **Shank Diameter (S).**
- **Root Diameter (R).** Also called minor diameter.



Nuts and Washers

Both nuts and washers are sized by the fastener they fit. For example a 1/2 inch nut fits a 1/2 inch bolt and a 1/2 inch washer fits the same bolt.

Note: When purchasing nuts the [Thread Count](#) or Pitch must also match that of the bolt. For more information please see our [About Thread Pitch and TPI](#) page and or [How Fastener Measurements are Notated](#) page.

Specific Types

Hex Bolts

The diameter of a hex bolt is the Shank diameter, expressed in inches for US bolts and Millimeters for Metric Bolts. Because this is approximately the same as the Major or Thread diameter the thread diameter measurement can be used for fully threaded bolts.

Machine Screws

Machine screws are measured in the same way as hex bolts above. US machine screws under 1/4 inch are then cross referenced to a size number. See our [US Machine Screw Diameter Table](#).

Socket Head Screws

Socket head screw diameter is measured in the same way as [machine screws](#).

Carriage Bolts

Carriage bolt diameter is measured in the same way as hex bolts.

Lag Bolts

Lag bolt diameter is measured in the same way as hex bolts.

Wood Screws

Thread diameter is used when measuring wood screws. The measurement is then cross referenced to a size number. See our [Wood Screw Diameter Table](#).

Sheet Metal Screws

Thread diameter is used when measuring [sheet metal screws](#). The measurement is then cross referenced to a size number. See our [Sheet Metal Screw Diameter Table](#).

Shoulder Bolts

Only the shoulder diameter is used when measuring shoulder bolts.

Hit up boltdepot.com and get your next project planned out correctly. Good stuff!

Also: don't forget about the \$38 (and free shipping) [Leatherman Skeletool](#) offer on Amazon. I love that one — still can't believe how cheap they're selling it.

Related posts:

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Very informative pictures. Could you advise source of them and usage rights, as we would like to use some on out website (www.andrewsfasteners.uk) instead doing pictures of every fastener.

Regards

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Nanfei • 2 years ago

Good

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Supercobra12 • 6 years ago

Don't forget about hardened or high strength flat washers which feature a bevel around the inside diameter to provide clearance for the machined bevel between the shank/head of most hex bolts. Critical in preventing cracking of higher grade bolts in high stress applications.

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pravin1 • 6 years ago

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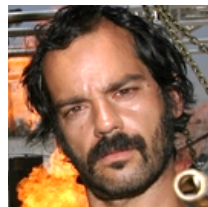
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I've previously worked at [Wired](#) and [ReadyMade](#) magazines, writing about how to utilize new technology in our everyday lives.

This site is where I keep a list of instructions for fun projects I've done, am working on, or draw inspiration from. I encourage everyone to get involved — get up and make something!

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New product in my store — mini skull silicone molds!



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