



FASTENERS

Product Category



Machine Screws & Hex Bolts



Nuts & Washers



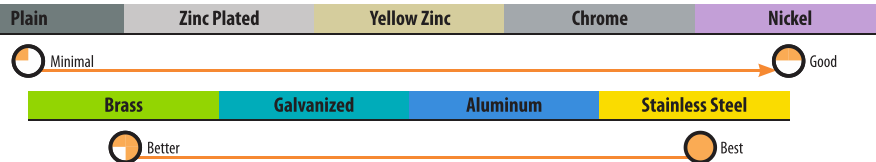
**Sheet Metal Screws, Carriage Bolts
& Wire Goods**



Wood Screws & Lag Screws

Materials & Plating

Finish



Rust Resistance



It is not recommended to use dissimilar metals when mating parts for assemblies.

Stainless Steel

There are 3 primary classifications of stainless steel, 18.10, 18.8, and 18.0. The higher the second number the more corrosion resistance.

Classes:

18.0

Stainless steel contains 18% chromium, 0% nickel, least amount of corrosion resistance, magnetic

18.8*

Stainless steel contains 18% chromium, 8% nickel, mid-range amount of corrosion resistance, non-magnetic

18.10

Stainless steel contains 18% chromium, 10% nickel, highest amount of corrosion resistance, non-magnetic

There are multiple grades of stainless steel and are specific to their application. They range from class 200 to 600, the most common are class 300. Within this class you will find 301, 302, 304, 316, and 316LMV.

Grade:

301 - 302

High Carbon, highly magnetic, lower rust resistance

304*

Most Common, highest combination of strength and anti-corrosive properties

316

Lower Carbon, lower strength, but higher anti-corrosive properties. Common in Marine applications

316LMV

Higher anti-corrosive properties. Common in surgical applications.

** Everbilt fasteners sold in THD feature class 18.8 and grade 304 stainless steel.*

Note: None of these are immune to corrosion over time to high levels of chlorine or salt water.

HOW TO SELECT YOUR PRODUCT . . .

Head Types



PAN HEAD: Provides a low large diameter head, with high outer edge along the outer periphery of the head where driving action is most effective for high tightening torques. For general applications.



FILLISTER HEAD: Designed with a smaller diameter than the round head, the Fillister is higher with a correspondingly deeper slot. Can be shaved & drilled.



FLAT HEAD: To be used where finished surfaces require a flush fastening unit. Used in all applications where a flush surface finish is desired.



BUGLE HEAD: Possesses a smooth progression from the shank to the angle of the head. Used to attach drywall to wood or metal studs.



TRUSS HEAD: A low large diameter head used to cover larger diameter holes. Preferred in applications where minimal clearance exists above the head. Provides a trim finished appearance.



HEX HEAD: Standard type of wrench-applied hex head, characterized by clean, sharp corners trimmed to close tolerances. For general applications.



HEX FLANGE: A type of bolt head featuring a 1-piece hex washer head with a flat bearing surface. The flange eliminates the need for a flat washer and compensates for a misaligned hole.



WAFER HEAD: A countersunk head with a flat top surface and a cone-shaped bearing surface. Provides a larger bearing surface and flush fit in wood and softer materials.



SQUARE HEAD: A square shaped external wrenching head, offers a large bearing area for positive gripping. Used for aesthetics or in restoration to maintain original appearance.



FRAMER: Features a mild bevel toward the base of the screw head & usually has serrations on the underside to grip the mating surface. Used in metal framing, tracking, and light gauge metal studs.



BINDER HEAD: Features a 10% larger bearing surface than pan heads and may have an undercut on the bearing surface near the shank.



THUMB HEAD: A tall head and ridged or knurled sides, or a flat vertical head, intended to be tightened and loosened by hand.



PLOW BOLT: Two types, with flat heads, and domed head. Both types have a countersunk head and square neck to prevent turning when the nut is tightened or removed. Primarily used in heavy equipment.



DOWEL SCREW: Dowel screws have wood screw threads on either end. Generally used in furniture applications, or when joining two pieces of wood together.



ROUND HEAD: General purpose head with high crown and deep recess. For general applications and where fastening material is too thin to allow counter sinking.



OVAL HEAD: A countersunk head with a rounded top surface for attractiveness of design. Commonly used when a more decorative finished look is desired.



FLAT UNDERCUT: A countersunk head with a flat top surface with a 100 degree angle providing a flat bearing surface on the underside of the head. Used in all applications where a flush surface finish is desired.



TRIM HEAD: Constructed with a smaller profile than the Bugle Head, trim heads are designed for use in finishing work where visibility of the screw is not desired.



MODIFIED TRUSS: Has a low rounded top with a flat bearing surface greater in area than a round-head screw of the same nominal size.



HEX WASHER HEAD: Designed with an indented top surface, six flat sides with an all in one flat washer that provides a flat bearing surface.



SOCKET HEAD: High-strength tension fasteners with a knurled head circumference designed for clamping assemblies. Used in machinery, automotive and fixturing applications.



PANCAKE HEAD: Similar to the wafer head but without the cone-shaped bearing surface. Provides an extremely low profile, and a nearly flush surface finish.



CHEESE HEAD: A type of head that is very thick with a smaller bearing surface allowing for a deep slot for increased driving power.



BUTTON HEAD: A dome shaped low-profile head. Offers a wide bearing surface with a smooth finished appearance.



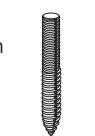
CURVED HEAD: Contains no drive, and a square neck allowing for engagement in the wood surface from beneath the head. Tightening is done by installing the nut on the threads until it engages the rear surface of the material being joined.



KNURLED HEAD: Knurled head provides a positive grip for finger tightening in light clamping or lighting applications.



ELEVATOR BOLT: Features a square neck which resists turning when the nut is tightened or removed, the large head provides a greater bearing surface for soft materials. Used often in conveyor systems.



HANGER BOLT: Contains wood threads on one end and machine threads on the other end of the bolt. These fasteners are generally used in furniture. An example of their use is fastening a peg leg to an ottoman.

HOW TO SELECT YOUR PRODUCT . . .

Point Styles



BLUNT Point: A flat tip point style found in most hex bolt and machine screw products and designed to accept a female threaded mating part.



TYPE A Point: A type of self-tapping screw for use in thin metal. Used with drilled, punched or nested holes in sheet metal, and other combinations of material.



TYPE AB Point: A self tapping screw combining the locating point of Type A with the finer thread size and pitch of Type B. Normal limitations of type B apply.



TYPE B Point: A self tapping screw for use in heavier metal. Larger root diameter with finer thread pitch for light and heavy sheet metal non-ferrous castings, plastics, impregnated plywood, and other materials.



TYPE BP Point: Same as Type B but has a cone point for use where holes are slightly misaligned.



TYPE 1 Point (Type D): A thread cutting screw with single flute for general use. Produces a fine standard machine screw thread for field replacement.



TYPE 17 Point: A thread cutting screw for wood with a coarse tapping screw thread and a special long sharp point fluted to capture chips.



TYPE 23 Point (Type T): A thread cutting screw in the fine thread series offering maximum thread cutting area and excellent chip clearing, with minimum tightening torques.



TYPE 25 Point (Type BT): Similar to type 23 point except with coarse Type B thread. For plastics and other soft materials with large chip clearing and cutting edges.



TYPE F Point: A thread cutting screw with machine screw thread with blunt tapered point, having multi-cutting edges and chip cavities. For heavy gauge sheet metal, aluminum, zinc and lead die castings, cast iron, brass and plastic.



REAMER Point: For specialized applications specifically fastening wood to steel or aluminum. Self-drilling wings will break off once it has reached contact with the steel.



SELF-DRILL Point: Self-Drilling Screws (TEK Screws), are similar to sheet metal screws but with a "drill bit-style" point that drills its own pilot hole. There are several points styles including type 2, 3, 4 & 5 drill points depending on thickness of material to be fastened together.



SELF-PIERCE Point: Produces more secure sheet metal assemblies. This fastener can be used as self-drilling screw or used to drive thru pre-punched holes or no holes in light gauge sheet metal.



CUP Point: A special cup section supplied on the end of the threaded member having a depression in the end to reduce the area in contact with the surface which increases its holding and locking power under pressure.



KNURL Point: Generally used to secure one object within another. The serrated ridge on the knurl cup set screw helps reduce loosening due to vibration.



FLAT Point: A flat point screw has a flat surface on one end. This type of screw is used for frequent relocation of parts where minimal shaft deformation is required.



CONE Point: Offers a smooth surface, accurate length, and a sharp point which can be produced to any desired contour to fit your particular requirements.



DOG Point: A straight pointed section reduced in diameter slightly below the root diameter of the thread, usually extending in length about two-thirds the diameter of the thread. Recommended for ease in starting, to insure against stripping fine threaded products.



1/2 DOG Point: The half dog point screw has a flat tip protruding from one end which is normally located into a groove in a shaft and allows the shaft to rotate whilst retaining the part in place.



CHISEL Point: Point style with two 45 degree angles at the tip of the stud or rod designed for mixing of chemical components inside of a drilled hole, most often for anchoring applications.



NAIL Point: Usually supplied with an approximate 45° included angle having a sharp point and slightly squared surface. Used for impinging or locking against wood or other soft material.

Drive Types

-  **Phillips**
-  **Frearson**
(Reed and Prince)
-  **Slotted**
-  **Combo**
-  **Robertson**
-  **Quadrex**
(Phillips Square)
-  **Square Slot Combo**
-  **Hex Head Phillips**
-  **Pozidriv**
-  **Supadriv**
-  **Hex Socket (Allen)**
-  **Phillips II**
-  **MorTorq**
-  **Polydrive (Ribe)**
-  **Torx (Star)**
-  **Torx Internal (6 Lobe)**
-  **12 point (Ferry)**
-  **Triple Square (XZN)**

Common screw drive prone to cam-out (stripping) when high torque is applied.

Similar to Phillips, but features a sharp tip and larger angle in the V shape. Improved torque with reduced risk for cam out (stripping). Improved version of the Phillips drive intended to handle more torque.

Driven by flat screw driver often used in wood working applications. Prone to cam-out (stripping) when high torque is applied.

Versatile drive that can be used with slotted or Phillips screw drivers.

Resistant to cam-out when high torque is applied. Tapered socket retains screw even if shaken.

Designed as a combination Phillips and Robertson drives, this drive handles increased torque than its individual counter parts.

Combination Robertson and slotted drive. Driven by either a flat screw driver or Robertson driver. Increased resistance to cam out (stripping) during installation.

Combination drive that combines two of the most popular drives in one. Prone to cam-out when high torque is applied. For use with wrench or Phillips driver.

Improved version of the Phillips drive intended to handle more torque.

Allows a small angular offset between the screw and the screwdriver. Has superior bite, with less risk of cam out (stripping).

Compact and easy to drive.

Designed for reduced risk of cam out (stripping), higher torque, and off-angle drivability.

Lightweight, low-profile and high strength drive, with full contact over the recess ring reducing the risk of cam out (stripping)

Spline shaped with rounded ends. This drive resists camming out and is primarily used in high-torque applications.

Possesses 8 points of contact with bit making it ideal for projects requiring high installation torque.

Features square shaped lobes that allow for higher torque and minimize wear.

Can be installed and removed with a 12 point socket. Features increased torque ability. Used in the automotive industry.

Features 12 equally space tips and is often used in high-torque applications. Can be removed with Standard Robertson bits.

Security Drives

-  **Triangle Recess**
-  **Security Hex Socket**
-  **Security Torx**
-  **Tri-Wing**
-  **Torq-Set**
-  **Spanner**
(Snake Eyes)
-  **One-Way (Slotted Tamper Proof)**
-  **Spline Drive**
-  **Double Hex**
-  **Bristol (Flute Socket - 6 Flutes)**
-  **Pentalobular**
-  **TorxExternal**
-  **Clutch - Type A**
(Butterfly)
-  **Clutch - Type G**

Drive that uses a triangle-shaped recess in the screw head for better tamper resistance. Used in children's toys, vacuum cleaners, fan heaters, and elevators.

Prevents unauthorized tampering with the screws. This drive has a hole in the bit tip; its counterpart in the screw head fits into this hole, thus ensuring that only the matching assembly tool can be inserted into the screw head.

Similar to the Torx/Star, this drive has a hole located in the tip and the screw head that has a small pin that prevents unauthorized tampering with the screws.

A winged security profile consisting of three edges. Primarily used in household appliances and in the aerospace industry.

A security profile drive consisting of four edges that are shifted asymmetrically to the centre.

The primary advantage of this profile is the surface of the screw head, which is broken only by the two small rectangular pins and is otherwise solid. It prevents over-tightening of the screw. Not suitable for transmitting high torque.

Tamper resistant drive designed to only be turned in one direction. Cam out will occur when even minimal torque is applied in the direction to unscrew it. A special removal tool (a one-way screw extractor) must be used.

Features twelve splines. Used in high torque applications as this design resists cam out (strip out). Often used in applications as tamper-proof lug nuts, cylinder head bolts, and other engine bolts.

Drive with a socket shaped as two offset hexes. Standard hex keys can be used with these sockets. Capable of allowing more torque than a six-point.

Designed to have almost all of the turning force applied at right angles to the fastener spline face, thus reducing the possibility of cam out (stripping). Often used in softer, non-ferrous metals.

A five-pointed tamper-resistant system. Often found in newer electronic applications.

Designed for better tamper resistance, the torx external drive features a screw head in the shape of a torx screwdriver bit.

Also known as standard clutch, these drives are designed to for tamper resistance. Common in automobiles, trucks and buses.

Recommended for applications requiring frequent removal that do not require friction hold.

Size

How to Measure Screws & Washers

Fastener Length

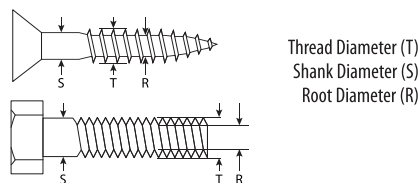
Typically, fastener length is measured from where the surface of the material will be when the fastener is completely installed to the end of the fastener.



For instance, on fasteners where the head sits above the surface (i.e. pan head screw, hex bolts), it will be measure from under the head to the end of the faster. Whereas fasteners that sit flush to the surface (i.e. flat head screw) are measured from the top of the head to the end of the fastener.

Measuring Diameter

The most common measure of a fastener diameter is the thread diameter also known as major diameter. Shank diameter is the diameter between the head and the threaded portion of the bolt (S). The root diameter, also known as the minor diameter, is the diameter of the bolt at the root or of the external thread (R).



Thread Pitch/Thread Count (TPI)

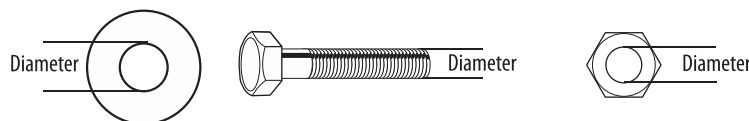
Thread count, also known as TPI, is only used with US fasteners and is the number of threads per inch measured along the length of the fastener.



Thread pitch is used in place of thread count for metric fasteners. Thread pitch is the distance between one thread and the next.

Nuts & Washers

Both nuts & washers are sized by fit. For example, a 3/4" washer fits a 3/4" bolt



Thread Specifications

Standard / Imperial

Bolt Diameter	#0000	#000	#00	#0	#1	#2	#3	#4	#5	#6	#8	#10	#12
Coarse (Threads per Inch)					64	56	48	40	40	32	32	24	24
Fine (Threads per Inch)	160	120	90	80	72	64	56	48	44	40	36	32	28

Bolt Diameter	1/4"	5/16"	3/8"	7/16"	1/2"	9/16"	5/8"	3/4"	7/8"	1"	1-1/8"	1-1/4"	1-1/2"
Coarse (Threads per Inch)	20	18	16	14	13	12	11	10	9	8	7	7	6
Fine (Threads per Inch)	28	24	24	20	20	18	18	16	14	12	12	12	12

Metric

Bolt Diameter	M2	M2.5	M3	M4	M5	M6	M7	M8	M10	M12	M14	M16	M18	M20
Standard	.4	.45	.5	.7	.8	1.0	1.0	1.25	1.5	1.75	2.0	2.0	2.5	2.5
Fine								1.0	1.25	1.5	1.5			
Extra (Super) Fine									1.0	1.25				