

Head Shapes

This section of the handbook details the more common head shapes you are likely to come across on a day to day basis.

To describe or recognize any Headed Fastener, the obvious start point is the Head. The head style must be expressed in standard terminology intelligible to the Fastener Industry, for obvious reasons.

Hexagon

This will also be referred to as "Full Bearing Hexagon" or Hex. The head is the same as in the second sketch except there is no washer face.

Customers usually make no distinction between **Washer Faced** versus **Full Bearing Heads** on hexagon bolts.

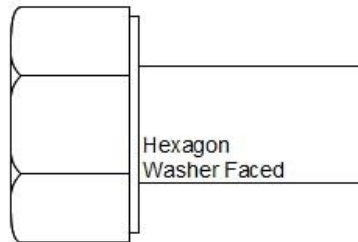
For low tensile, or mild steel products, production in either full bearing or washer faced condition is at the discretion of the manufacturer. Hexagon = 6 sides of the head.



Hexagon Washer Faced

Normally referred to simply as Hexagon or Hex. The washer face is the feature on the underside of the head.

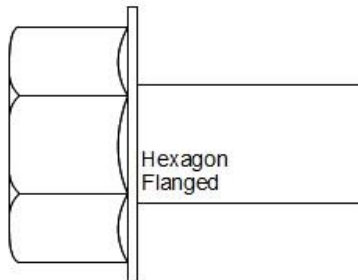
Fastener standards require that all high tensile bolts be Washer Faced.



Hexagon Flanged

Often incorrectly called Hexagon Washer Faced, or Hex Washer, by many people in the industry.

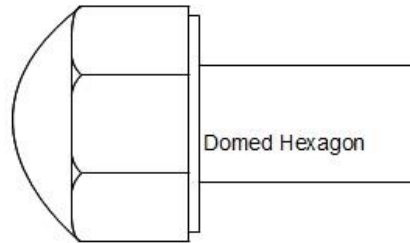
To avoid confusion use the term "Hexagon Flanged".



Domed Hexagon

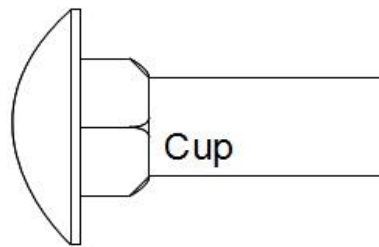
This is the standard head on Track Bolts, which are spare parts for earthmoving equipment. The description “Track Bolt” implies domed hexagon head.

The head is also usually induction hardened.



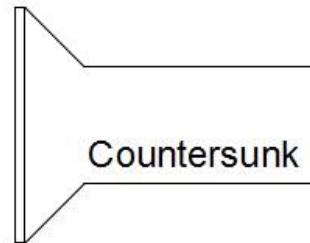
Cup

A shallow domed head. The head is drawn here with a square under the neck, as is normally found on Coach Bolts. Also known as Carriage or Cup Square head bolts.



Countersunk

Found on bolt, screw and socket recess products. In bolt products there may also be squares or nibs formed under the head, creating the various forms of plow bolts and Mill Liner bolts. (See “Under Head” Features)

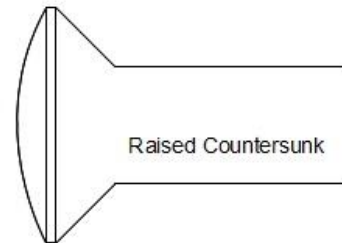


Raised Countersunk

Found mainly screw products, it is a domed top on a countersunk base.

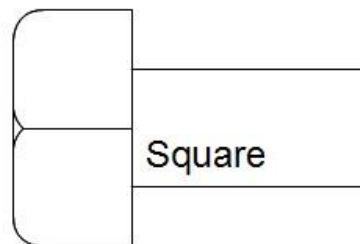
In screws this head is often called “oval”.

Bolts may also have a square under the head, such as a plow bolt, or nibs, as in Mill Liner bolts.



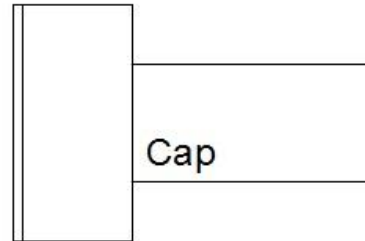
Square

Except for Square Head Case Hardened Cup Point Set Screws, there are few standard square head products to deal with. Square head bolts were used on Power Lines for many years, but with the advent of metrication the opportunity was taken to rationalize.



Cap

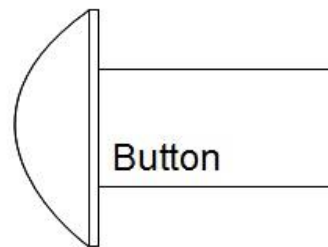
The standard head shape on the range of Socket Head Cap Screw products.



Button

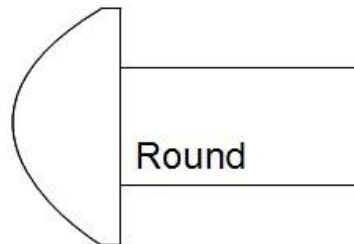
Normally found in standard fasteners in the socket recess product range. Although less common, Torx drive Button heads are also available.

Also see Button head at end of this section.



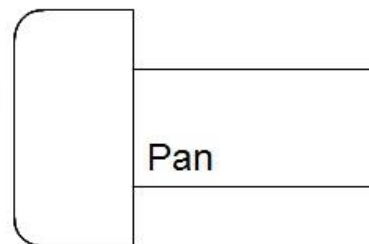
Round

A deeper domed head than cup, or mushroom heads. It is nearly hemispherical in shape. This head is found mainly on woodscrews and imperial metal thread products.



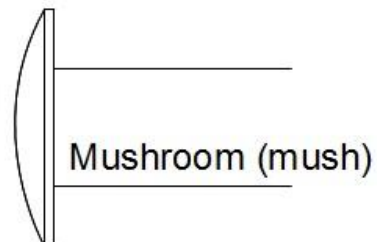
Pan

Major products featuring this head shape are self-tappers and metric metal threads. Note that the head is shallower than round head and that the top of the head tends to be flat. Much kinder on drivers than Round head



Mushroom (Mush)

Another domed head shape from the screw product range. Note that the head diameter is larger and the head thinner than pan or round heads. Typically Gutter Bolts have Mushroom Heads.



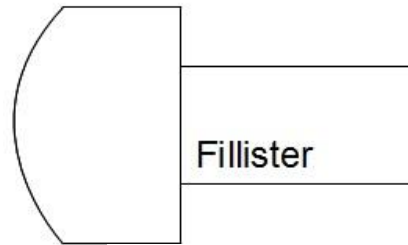
Cheese

Again, a head shape from the screw product range normally found on imperial metal threads. Used widely in the electrical and appliance industries, as the deep slot provides excellent driving.



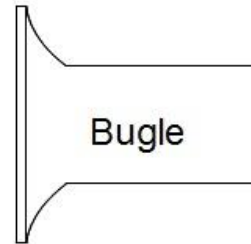
Fillister

Fillister head is an uncommon head shape but is sometimes requested by customers on metal threads. Basically it is a domed top on the Cheese Head.



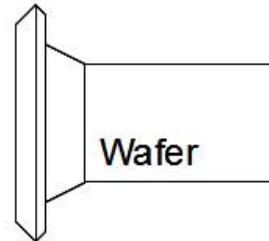
Bugle

This head shape is a normally used only on screw product. In particular fasteners used to screw plasterboard to steel or timber studs. The curved countersunk beds into soft surfaces.



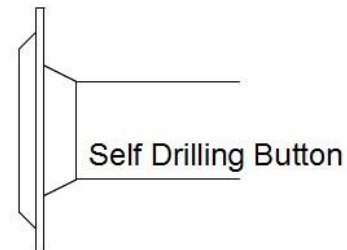
Wafer

Another head shape used mainly on screws for the building industry. Most commonly, the head is found on self-drilling screws. Always has a recessed drive.



Button

This style of Button head is found only on self drilling screws, for fixing metal to metal where a wide flat head is needed for increased load bearing area. Always has a recessed drive.

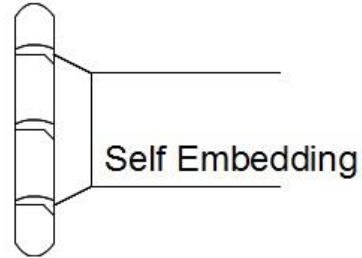




Self-Embedding

A flat head with reaming cutters and flutes designed to produce a flush finish when fixing cement boards. Found on self-drilling screws.

Always has a recessed drive.



Most screw products are available in a variety of drive types.

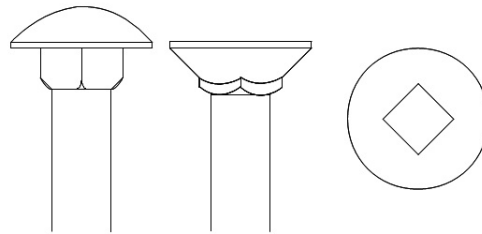
For the sake of clarity and simplicity, drive features have not been included in the sketches.

Under head Features

All headed fasteners display under head features. The Nature of the feature is really determined by the application of the fastener. Common under head features are examined in this section.

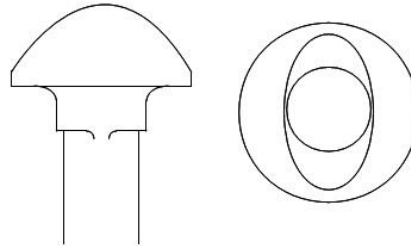
Square

Most commonly found on cup head bolting. During tightening, the square embeds in timber or fits into a square hole in metal. In this manner the bolt is prevented from rotating as the nut is tightened.



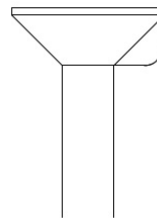
Oval

This feature is normally only found on Cup Oval Fish bolts, and motorway guardrail bolts. It is another means of preventing bolt rotation during tightening.



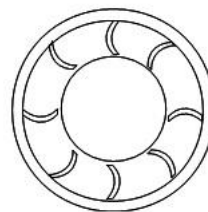
Nibs

Nibs of various shapes are often found on Liner Bolts. Like many under head features they prevent bolt rotation while the nut is tightened.



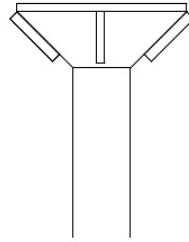
Serrations

The two main purposes of this feature are to prevent loosening rotation of a fastener once it is installed and tightened, and to aid in achieving the proper connection of electrical wiring. The nibs are often relied upon to remove paint thus achieving a metal to metal connection.



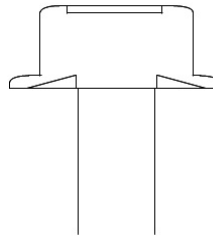
Ribs

This feature is formed on the underside of screw heads to provide the screw with the ability to self countersink into timber materials.



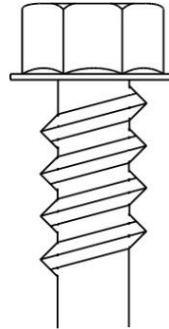
Washer Recess

Often overlooked, but where the fastener is intended to be used with a neoprene sealing washer, the underside of the head will be formed to accommodate the washer.



Threads

On some building fasteners, threads are placed immediately beneath the head. The threads engage with the steel roofing sheet to assist in producing a firm, water tight fastening.



Reaming Cutters

Under head reaming cutters provide fasteners with the ability to self embed in building materials such as cement sheet, hardboard and plywood. Usually found on self drilling screws.