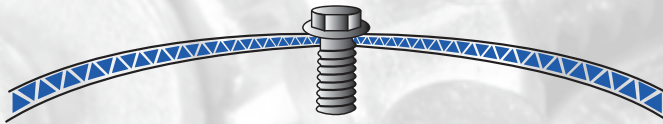


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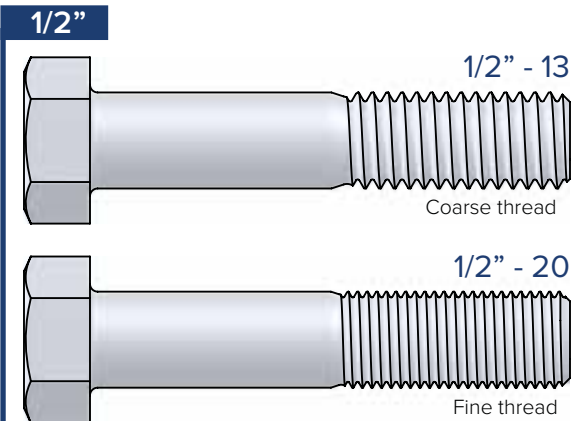
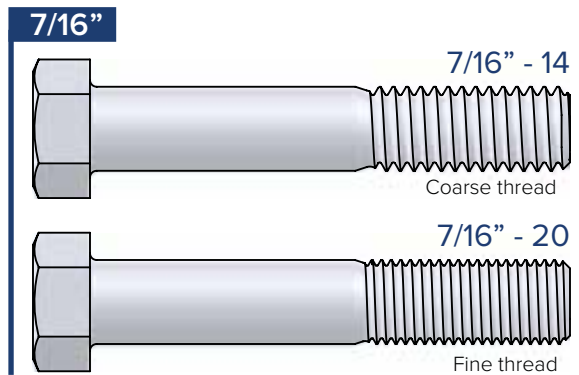
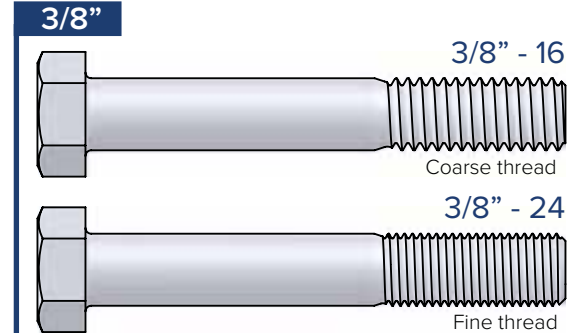
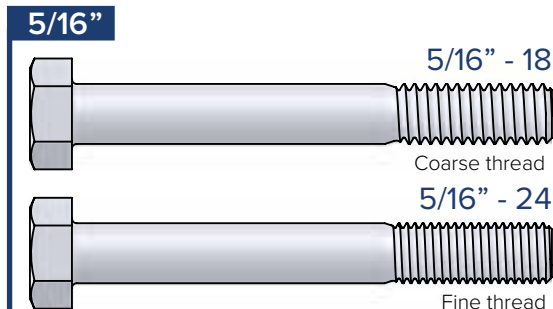
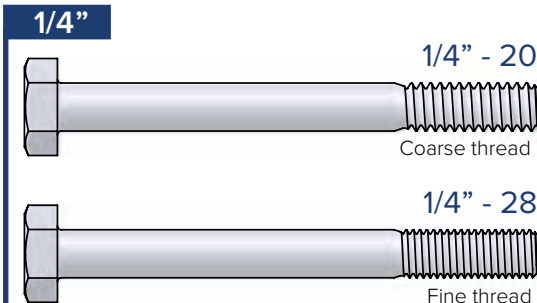
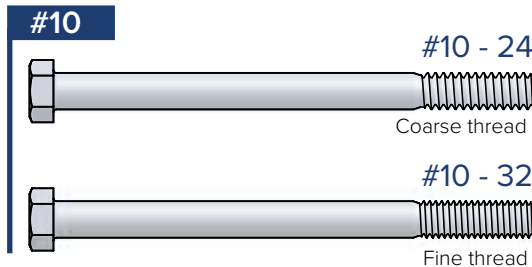
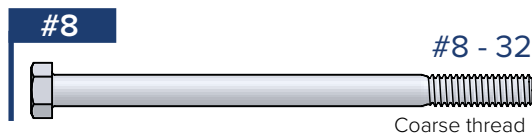
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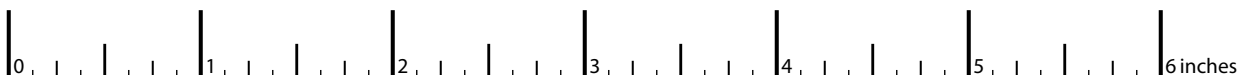
Hex Bolt Sizes and Thread Pitches Chart



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



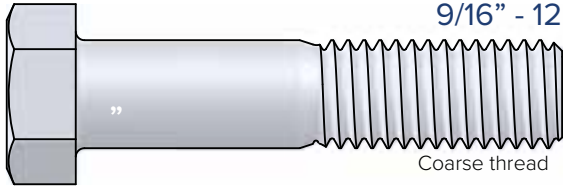
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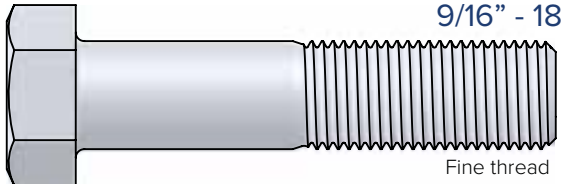


Hex Bolt Sizes and Thread Pitches Chart

9/16"

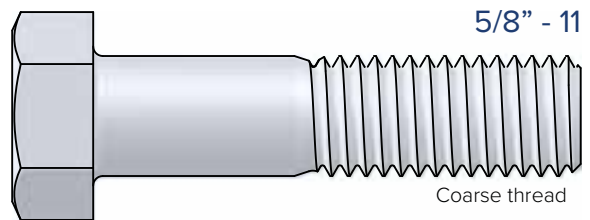


Coarse thread

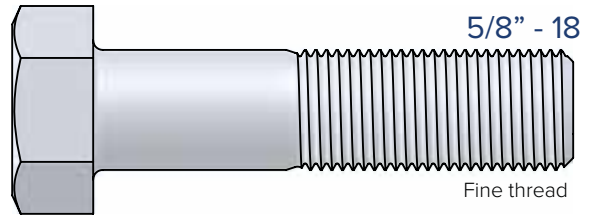


Fine thread

5/8"

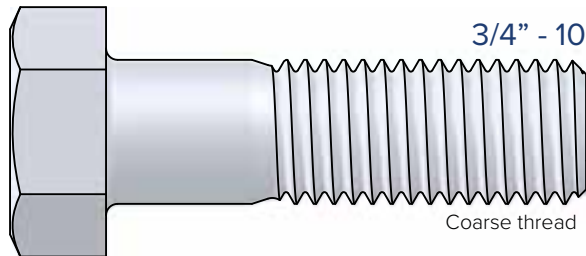


Coarse thread

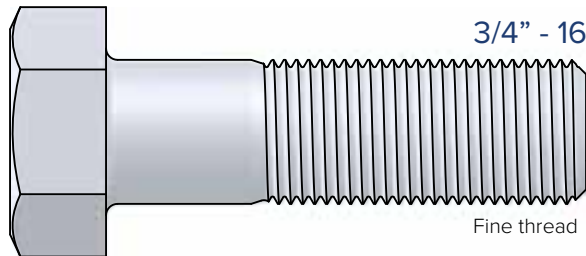


Fine thread

3/4"

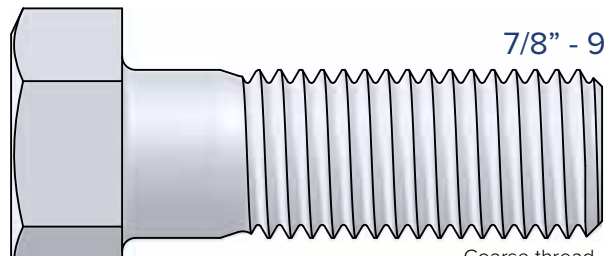


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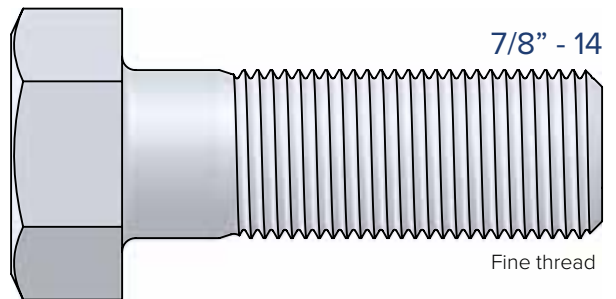


Fine thread

7/8"



Coarse thread

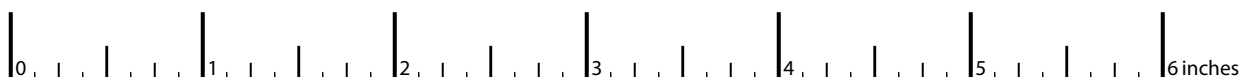


Fine thread



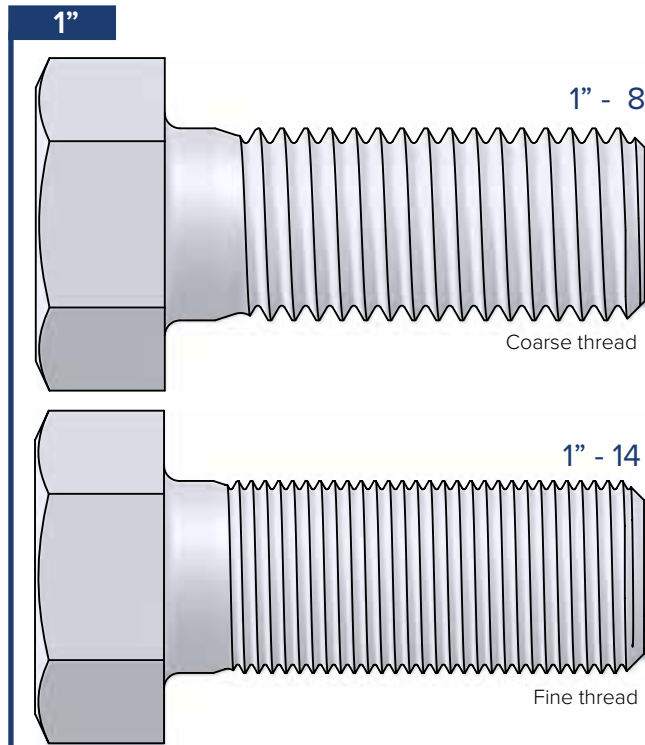
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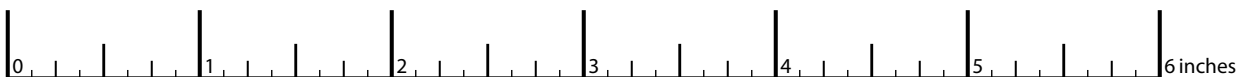




Hex Bolt Sizes and Thread Pitches Chart



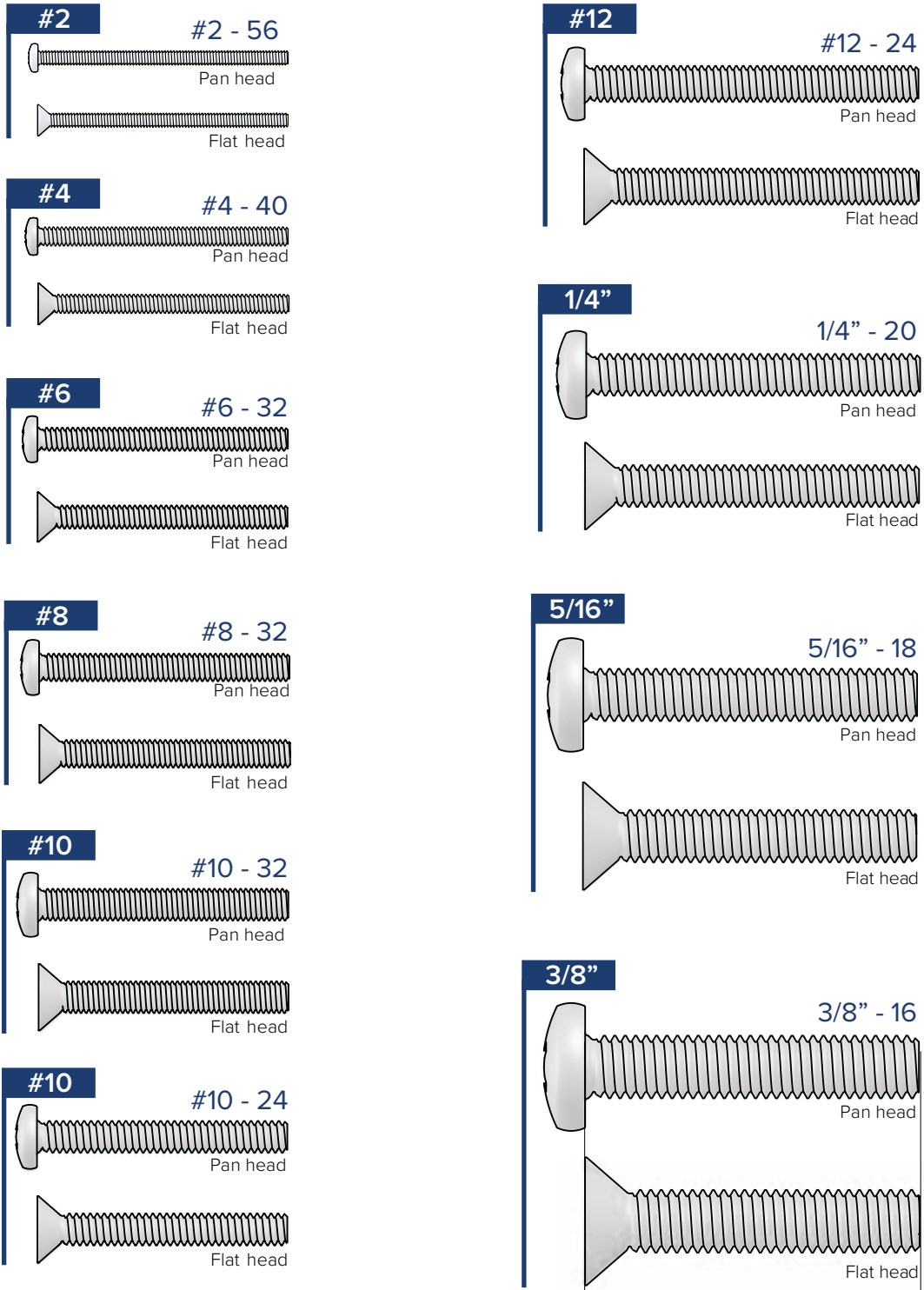
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Standard US Machine Screw Size Chart



*Length is measured from where the surface is assumed to be, to the end of the screw.



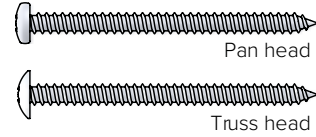
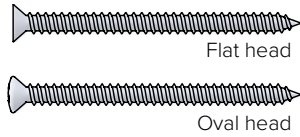
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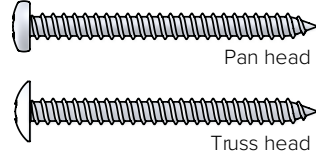
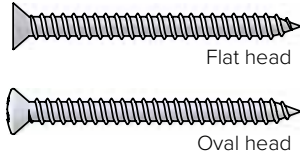


Sheet Metal Screw Size Chart

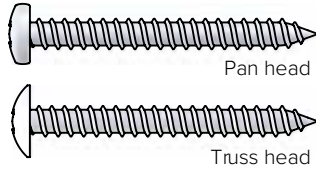
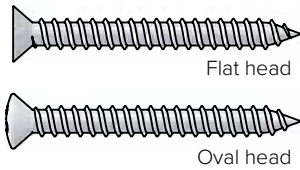
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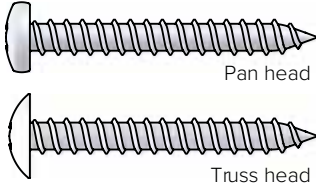
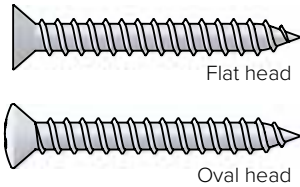
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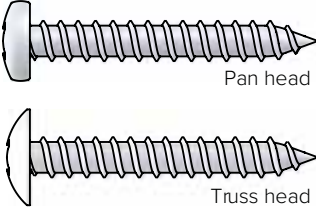
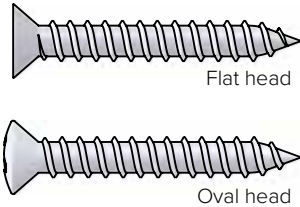
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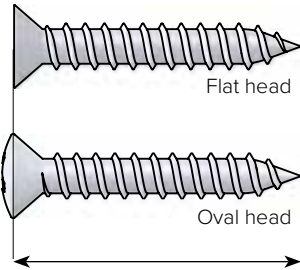
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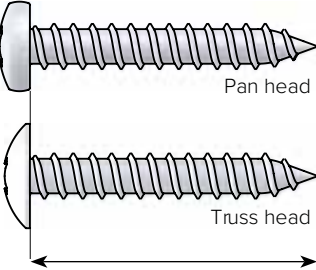
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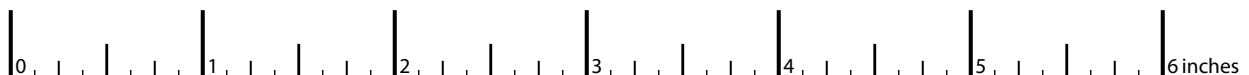
*Length is measured from where the surface is assumed to be, to the end of the screw.



*Length is measured from where the surface is assumed to be, to the end of the screw.

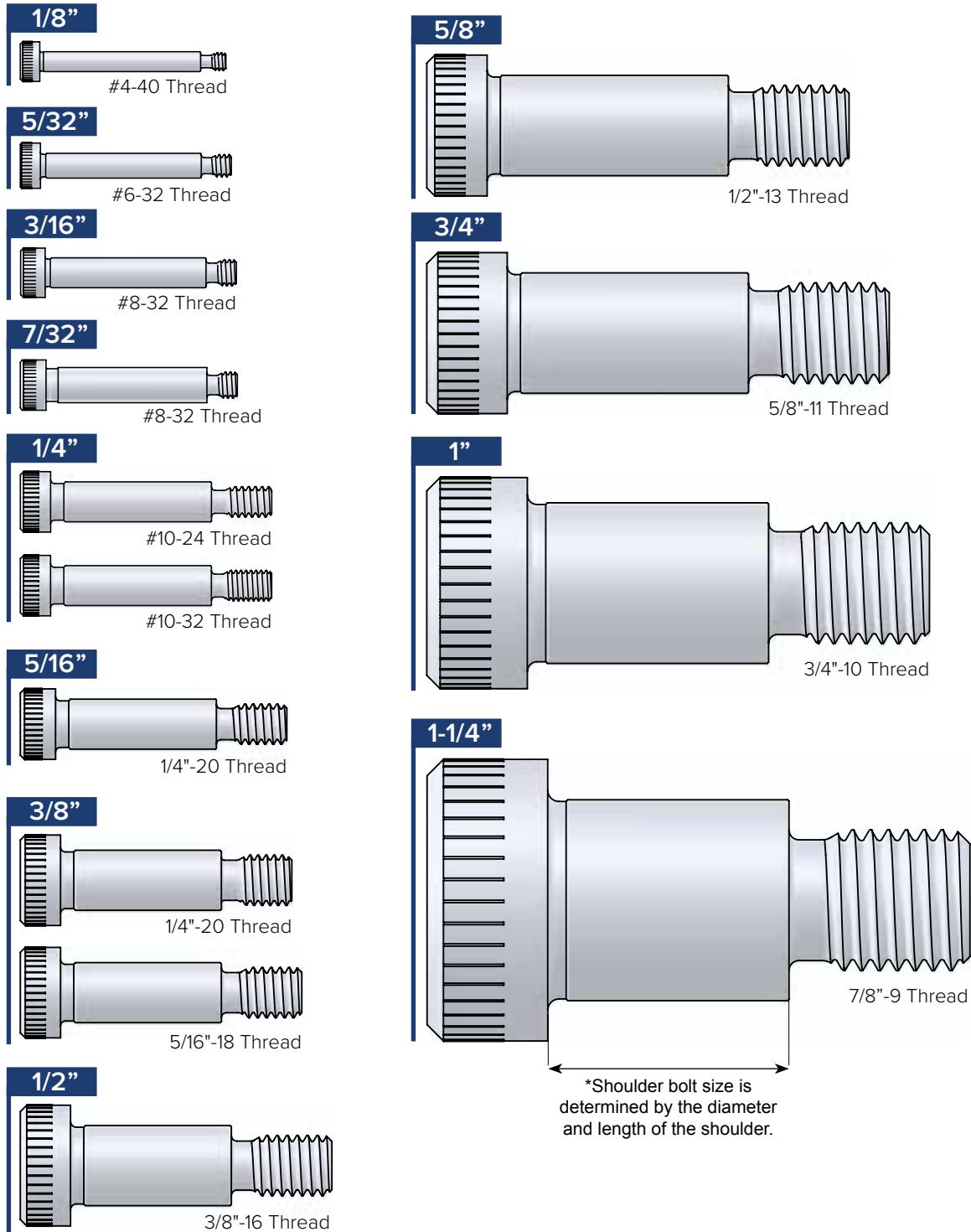


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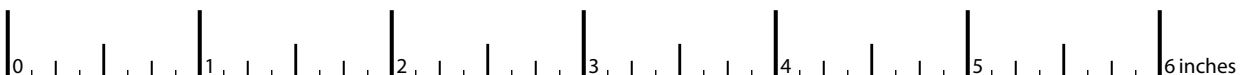




Shoulder Bolt Size Chart

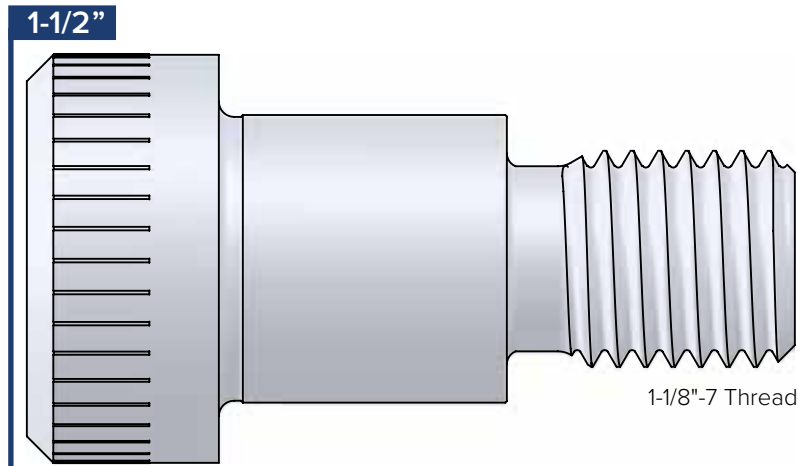


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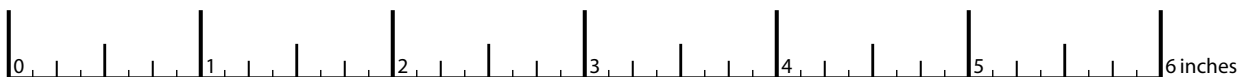




Shoulder Bolt Size Chart



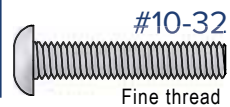
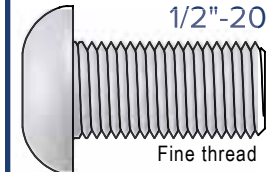
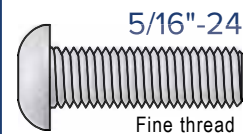
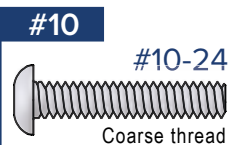
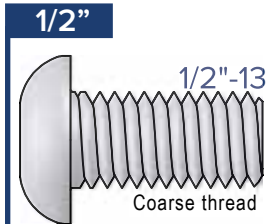
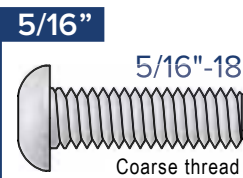
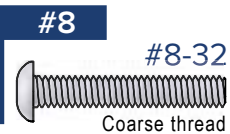
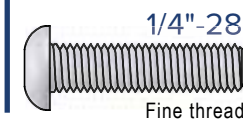
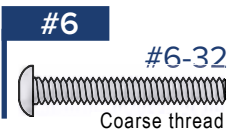
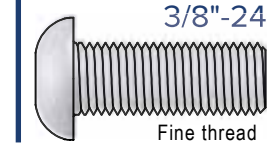
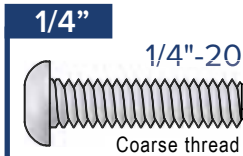
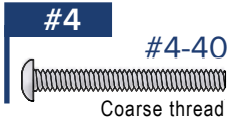
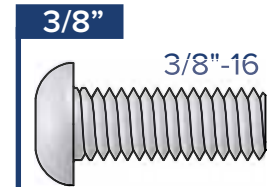
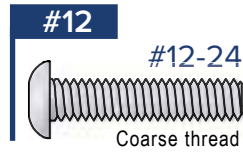
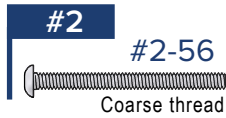
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Socket Button Head Size Chart



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

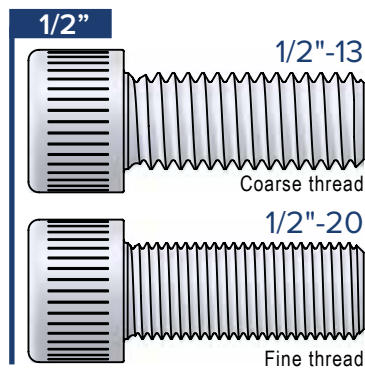
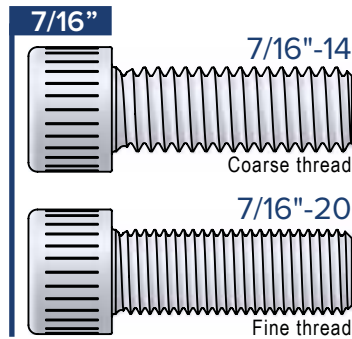
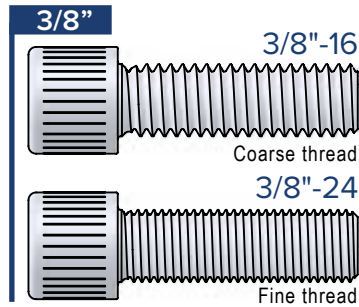
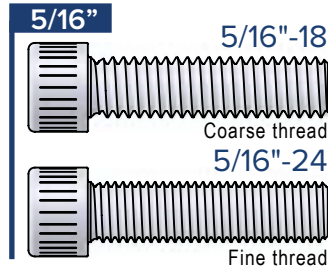
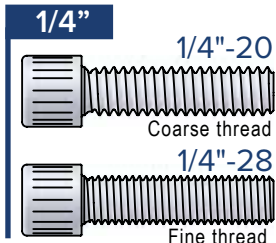
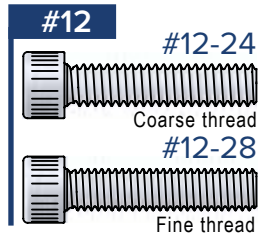
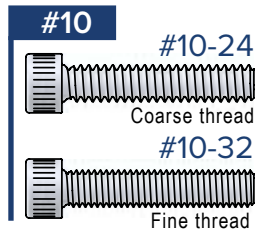
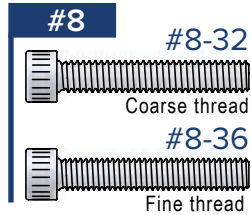
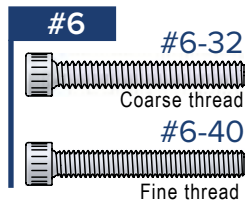
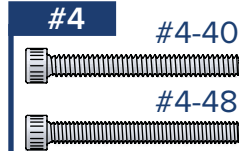
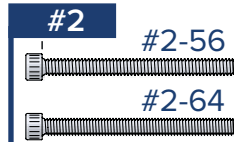


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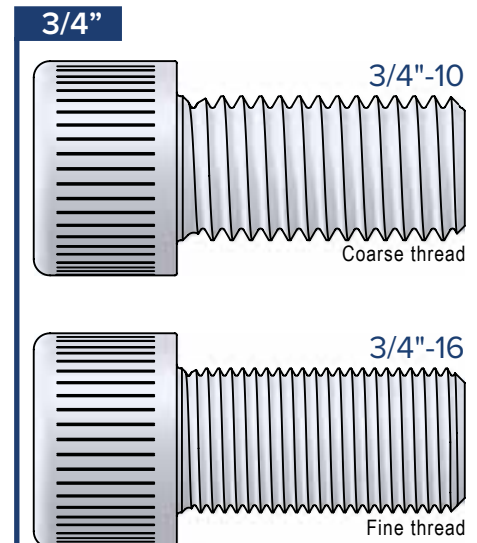
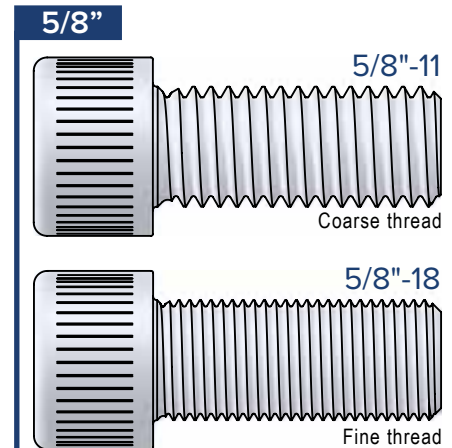
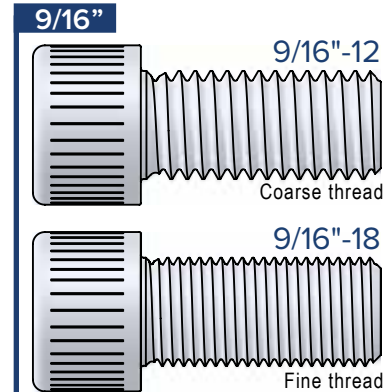




Socket Cap Size Chart



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

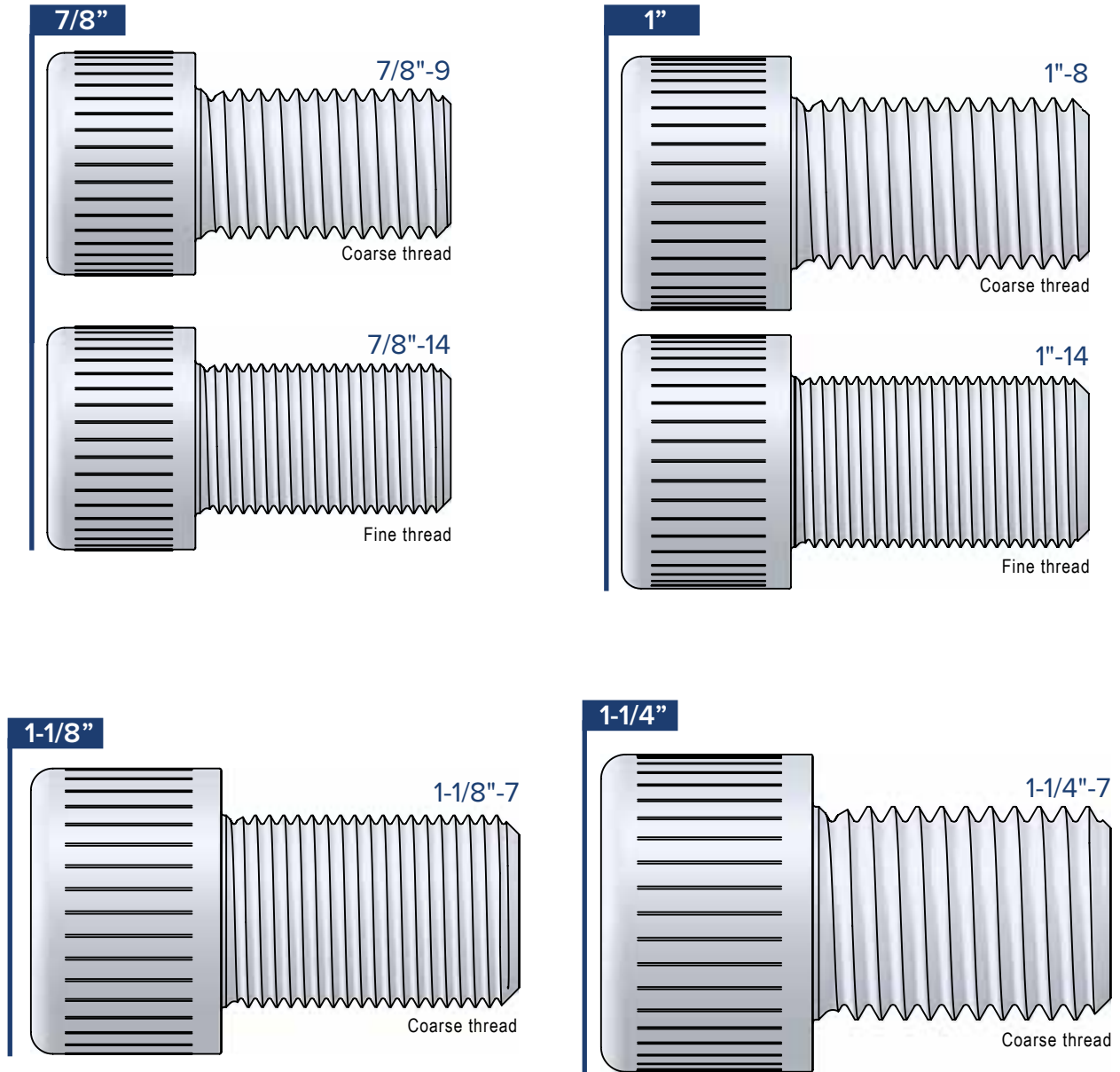


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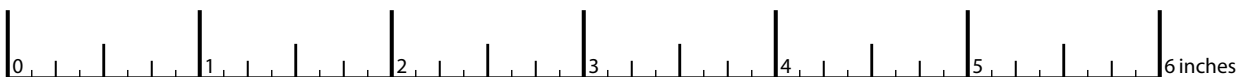




Socket Cap Size Chart

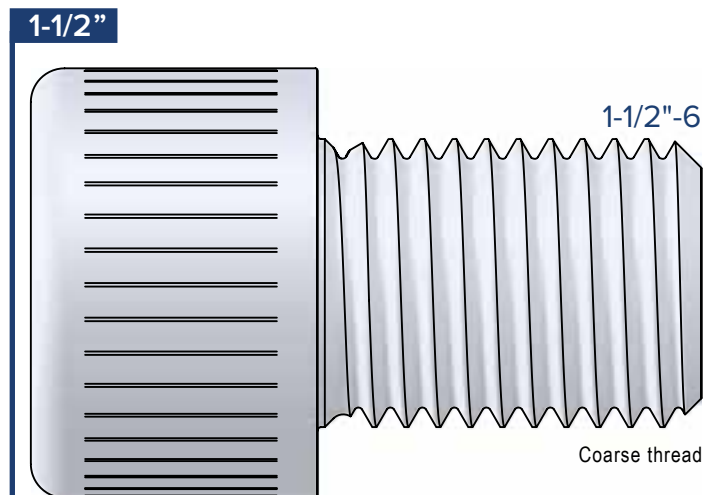
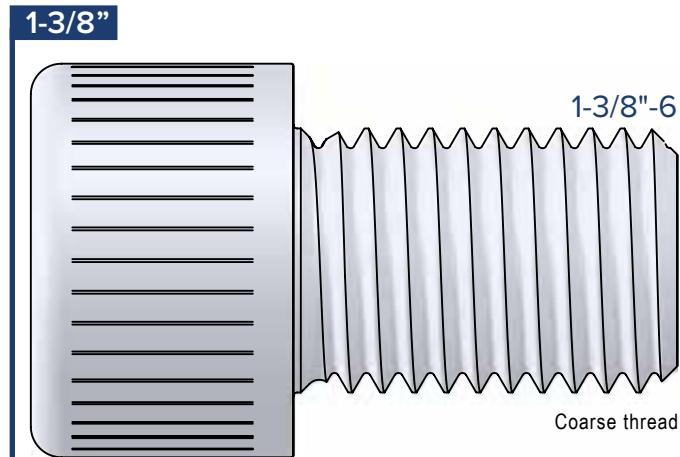


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Socket Cap Size Chart

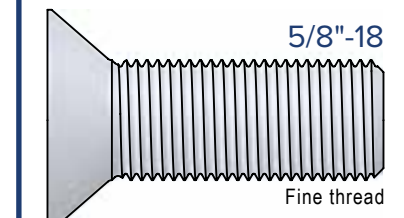
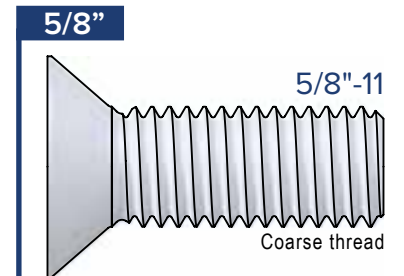
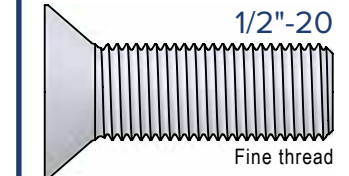
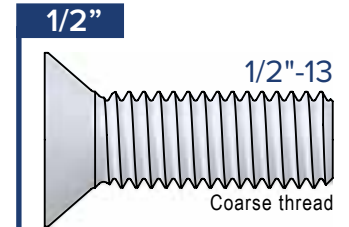
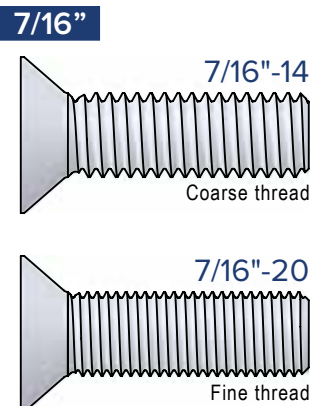
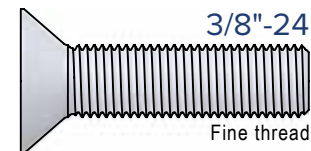
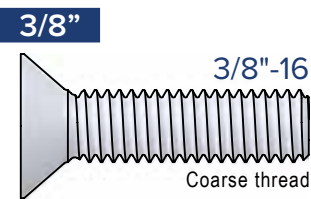
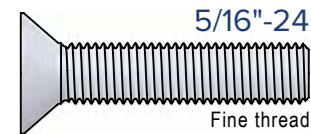
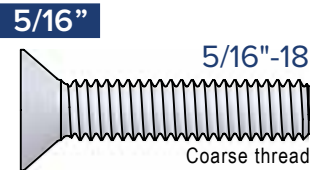
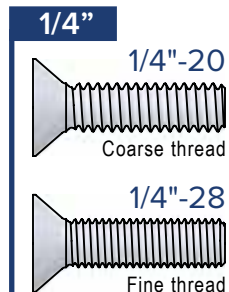
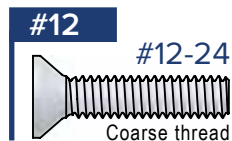
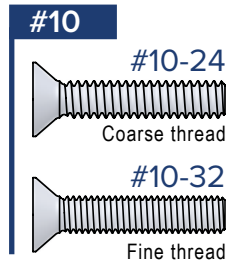
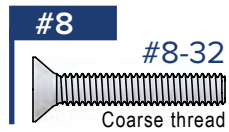
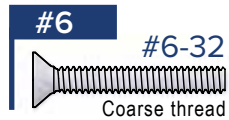
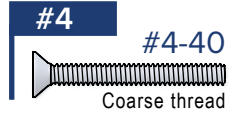
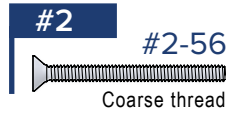


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Socket Flat Head Size Chart



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

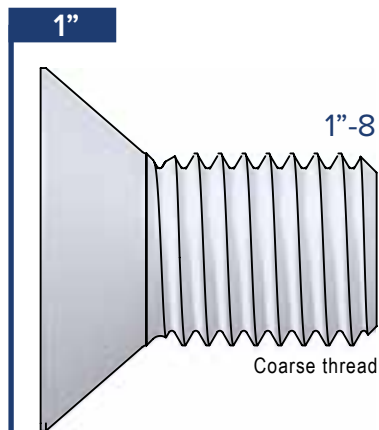
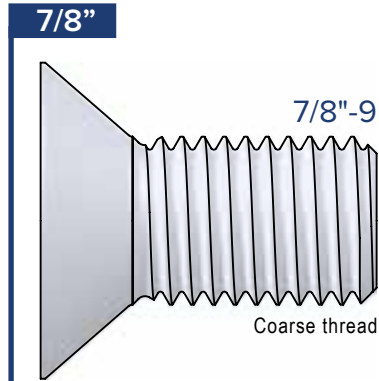


Make sure to print this chart to Actual Size (no scaling).
After printing, measure the scale check below to ensure correct scale

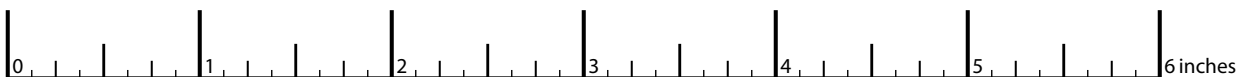




Socket Flat Head Size Chart
























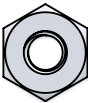
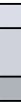
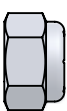

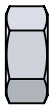


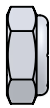







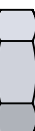
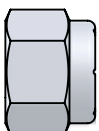



Make sure to print this chart to Actual Size (no scaling).
After printing, measure the scale check below to ensure correct scale





US Nuts Size Chart

		HEX	JAM	NYLOCK	JAM NYLOCK
#0			NA	NA	NA
5/32" wrench					
#1			NA	NA	NA
5/32" wrench					
#2			NA	NA	NA
3/16" wrench					
#3			NA	NA	NA
3/16" wrench					
#4			NA		NA
1/4" wrench					
#5			NA	NA	NA
5/16" wrench					
#6			NA		NA
5/16" wrench					
#8			NA		NA
11/32" wrench					
#10			NA		
3/8" wrench					
#12			NA		NA
7/16" wrench					
1/4"					
7/16" wrench					
5/16"					
1/2" wrench					
3/8"					
9/16" wrench					

Hex nuts with a diameter under 1/4" are called hex machine screw nuts.



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

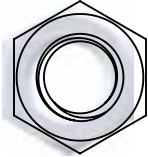




US Nuts Size Chart

7/16"

11/16" wrench

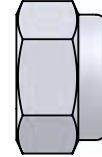
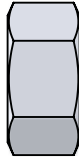


HEX

JAM

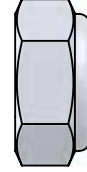
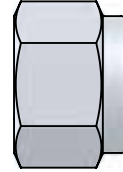
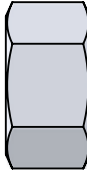
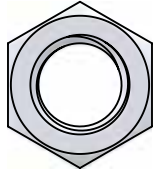
NYLOCK

JAM
NYLOCK



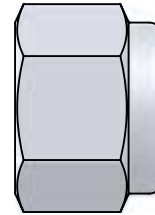
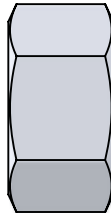
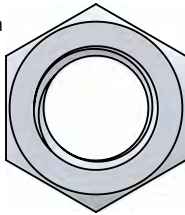
1/2"

3/4" wrench



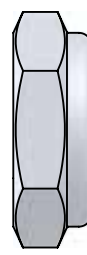
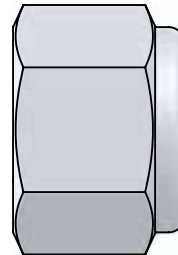
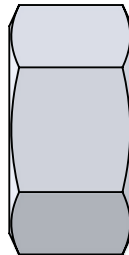
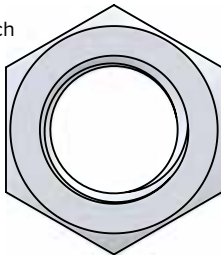
5/8"

15/16" wrench



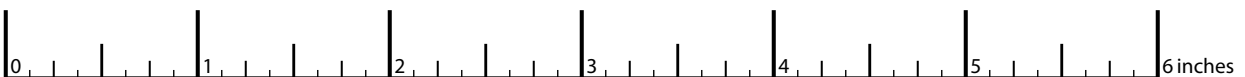
3/4"

1-1/8" wrench



Make sure to print this chart to Actual Size (no scaling).

After printing, measure the scale check below to ensure correct scale

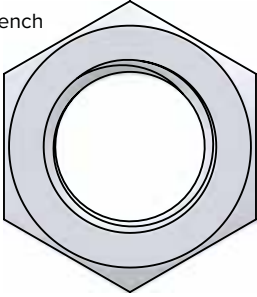




US Nuts Size Chart

7/8"

1-5/16" wrench

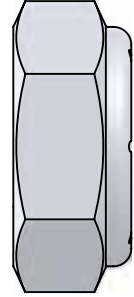
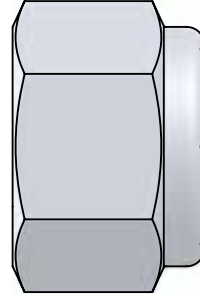
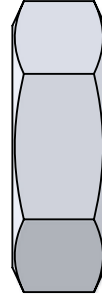
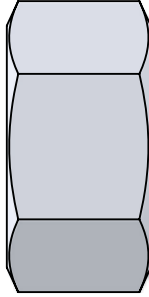


HEX

JAM

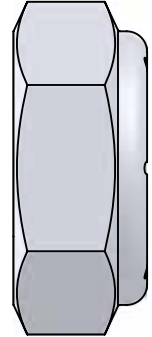
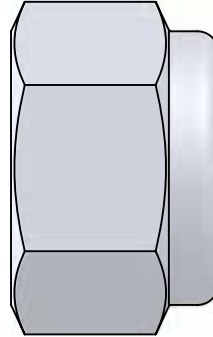
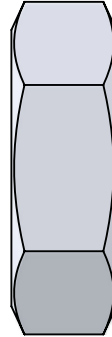
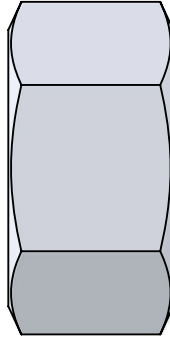
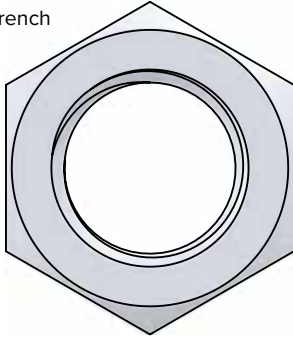
NYLOCK

JAM
NYLOCK



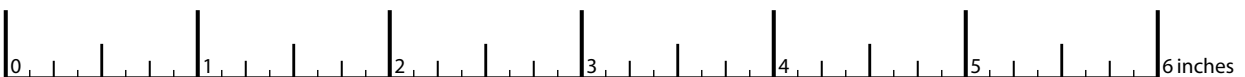
1"

1-1/2" wrench



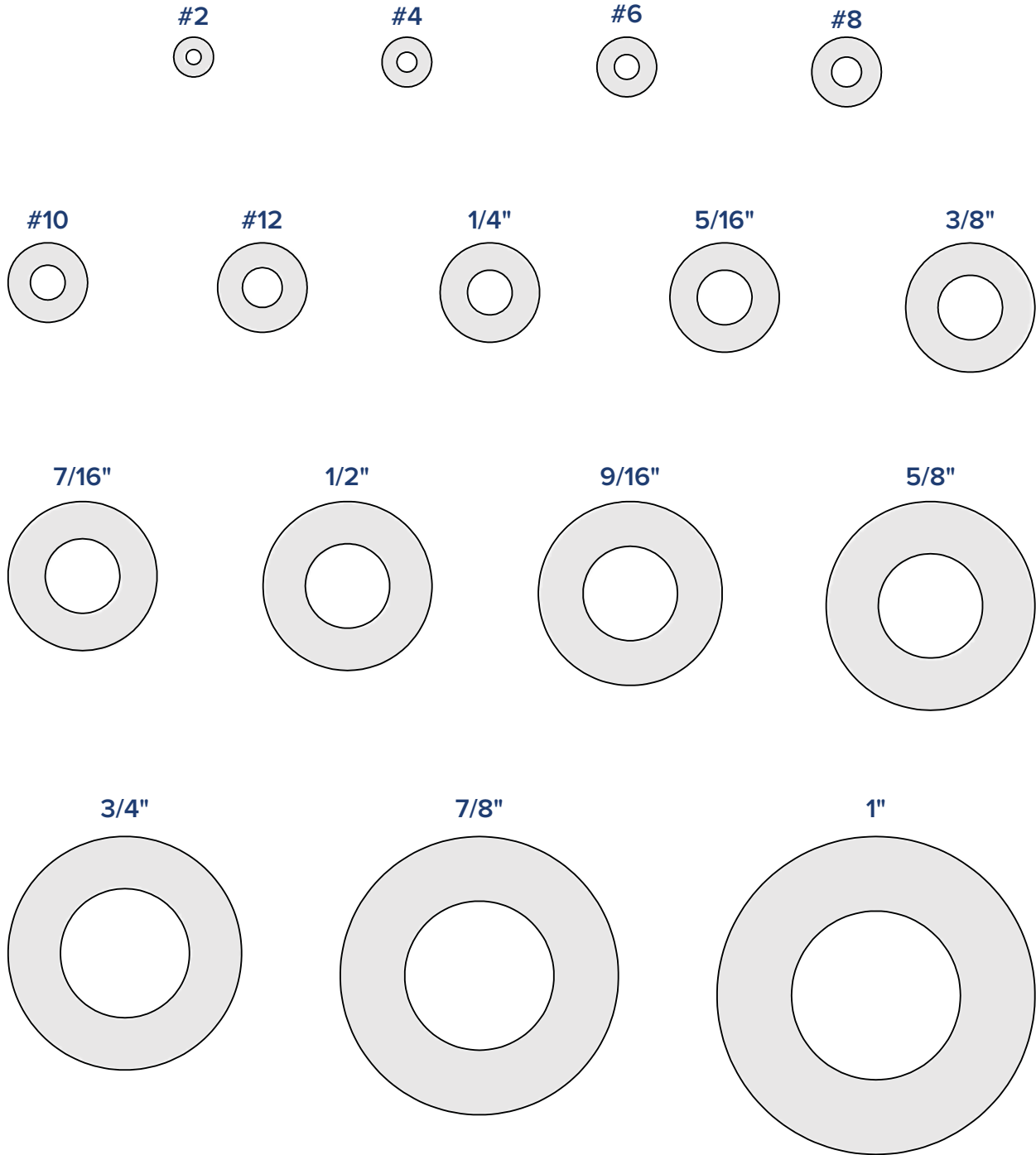
Make sure to print this chart to Actual Size (no scaling).

After printing, measure the scale check below to ensure correct scale





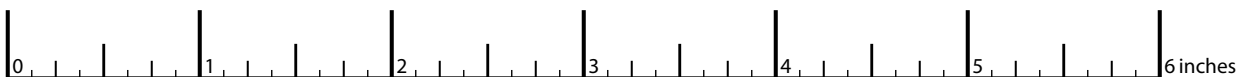
SAE Flat Washer Size Chart



*Washer sizes correspond to the screw/bolt diameter they fit.
For example, a 1/2 inch washer fits a 1/2 inch bolt.

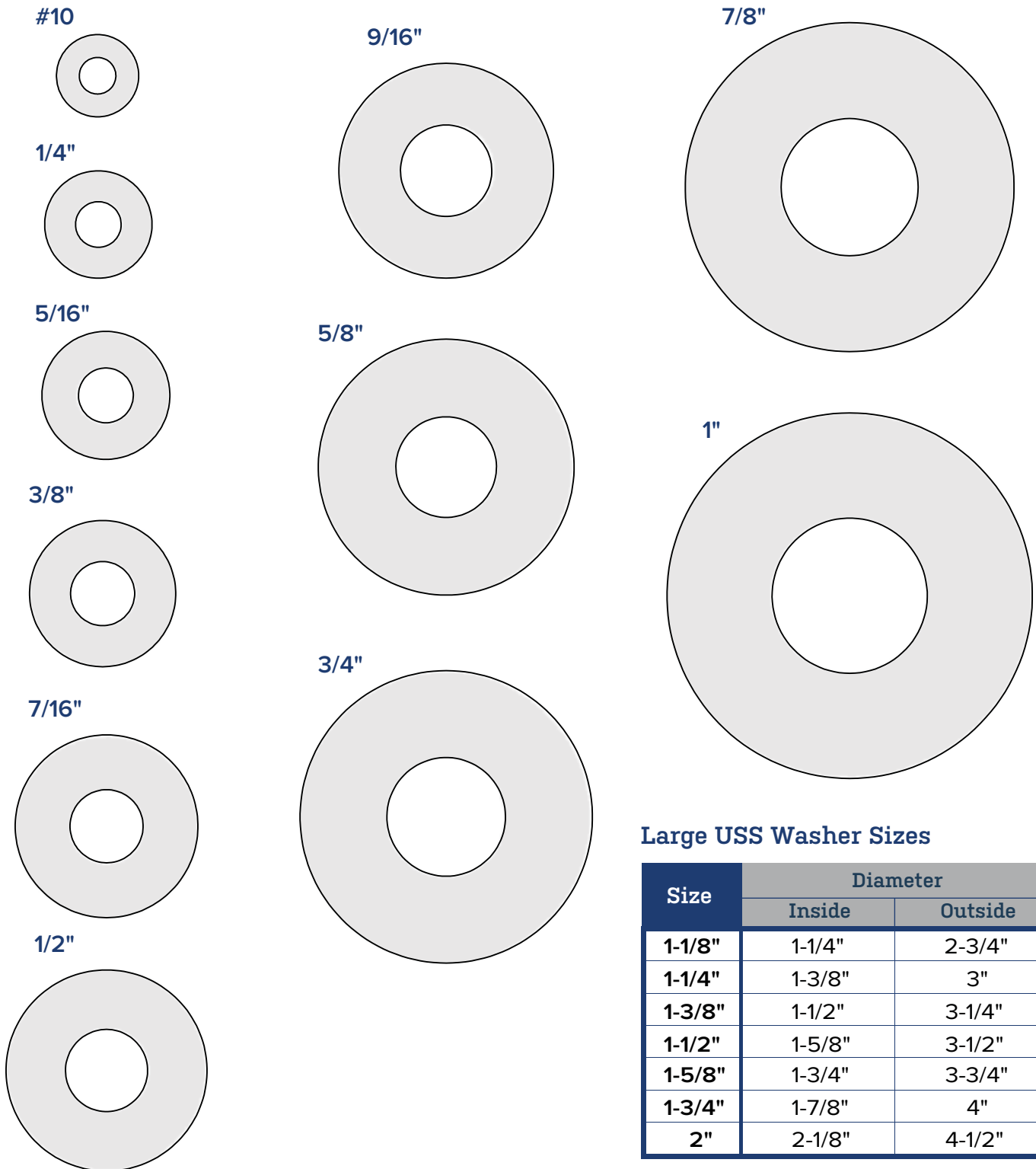


Make sure to print this chart to Actual Size (no scaling).
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USS Flat Washer Size Chart



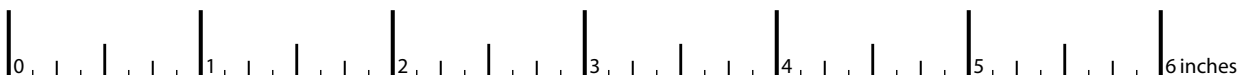
Large USS Washer Sizes

Size	Diameter	
	Inside	Outside
1-1/8"	1-1/4"	2-3/4"
1-1/4"	1-3/8"	3"
1-3/8"	1-1/2"	3-1/4"
1-1/2"	1-5/8"	3-1/2"
1-5/8"	1-3/4"	3-3/4"
1-3/4"	1-7/8"	4"
2"	2-1/8"	4-1/2"



Make sure to print this chart to Actual Size (no scaling).

After printing, measure the scale check below to ensure correct scale



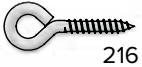


Screw Eye Size Chart

.056" wire



.062" wire



.072" wire



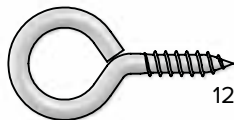
.080" wire



.120" wire



.105" wire



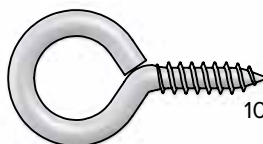
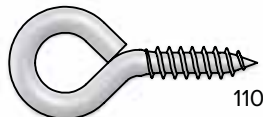
.120" wire



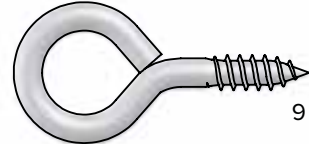
.135" wire



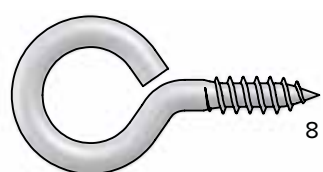
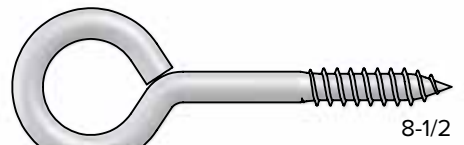
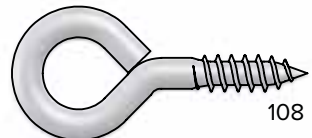
.135" wire continued



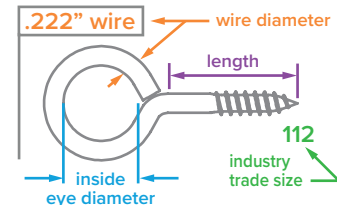
.148" wire



.160" wire



*Screw eyes are sold by industry trade sizes which correspond to a specific wire diameter, inside eye diameter and length.



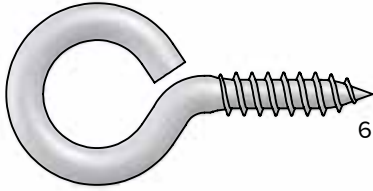
Make sure to print this chart to Actual Size (no scaling).
After printing, measure the scale check below to ensure correct scale



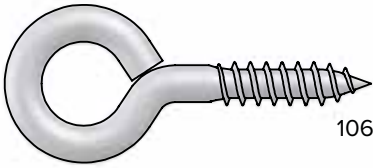


Screw Eye Size Chart

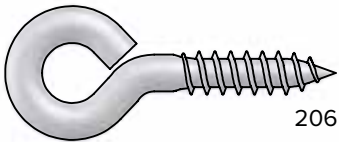
.192" wire



6

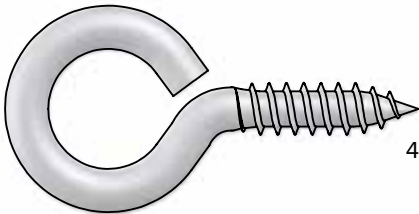


106

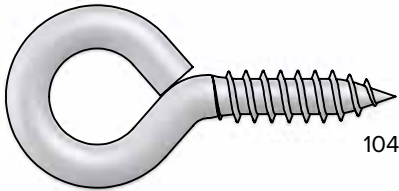


206

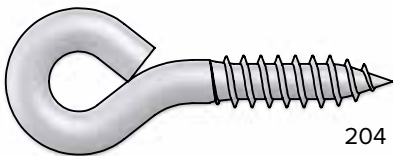
.225" wire



4

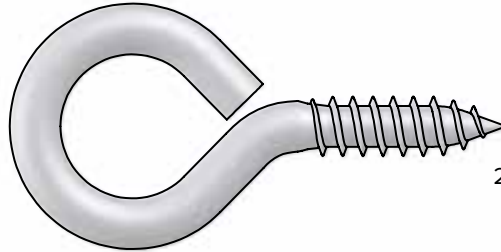


104



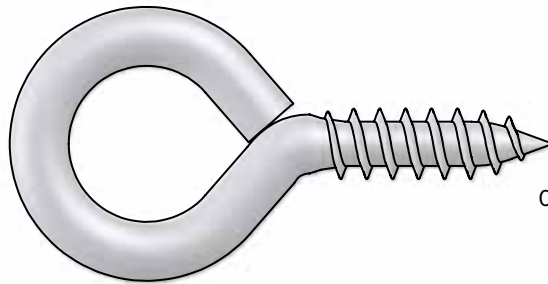
204

.264" wire



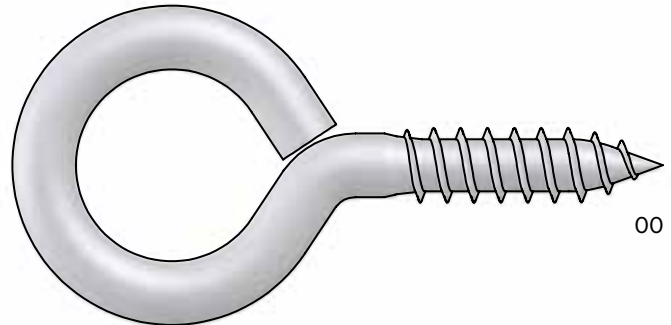
2

.307" wire



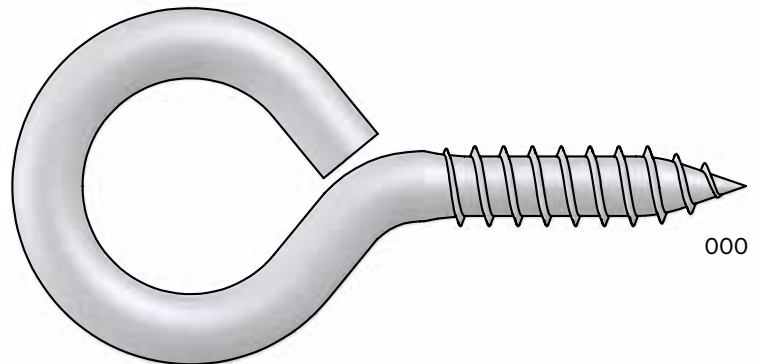
0

.331" wire



00

.365" wire

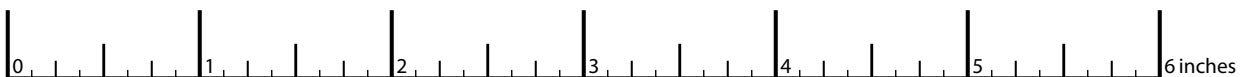


000



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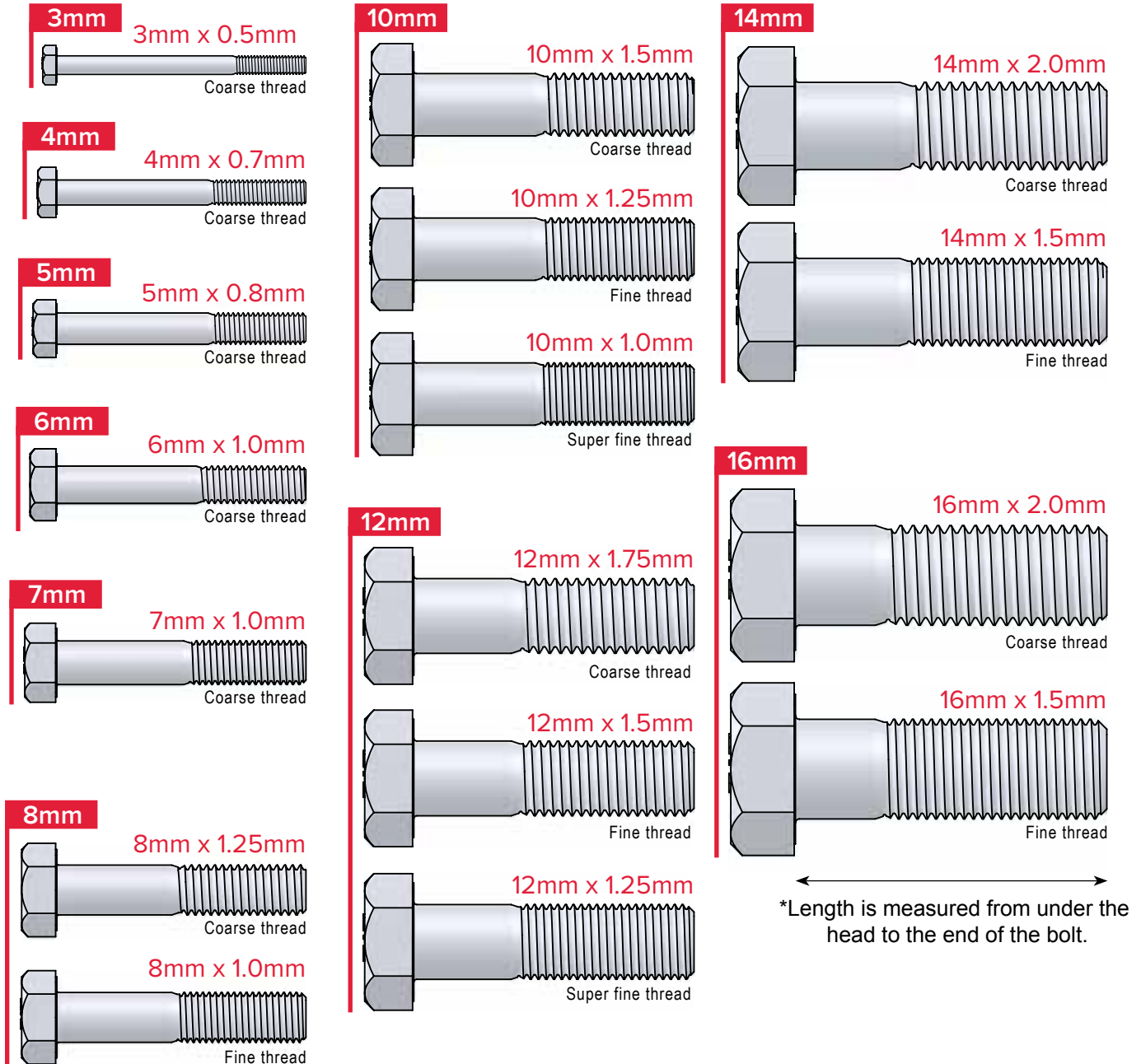
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Hex Bolt Sizes and Thread Pitches Chart



*Head sizes may differ from what is shown due to differences in metric standards.



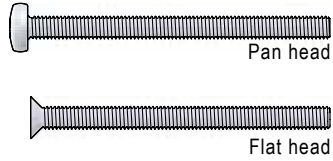
Make sure to print this chart to Actual Size (no scaling).
After printing, measure the scale check below to ensure correct scale



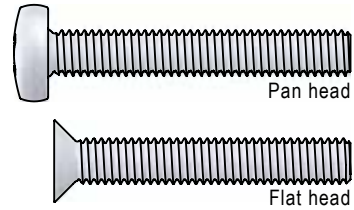


Metric Machine Screw Sizes

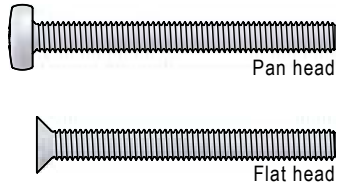
3mm x 0.5mm



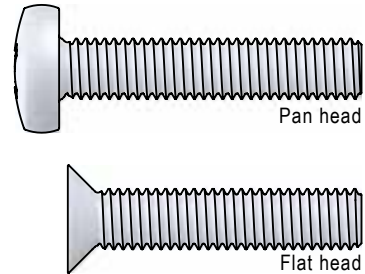
6mm x 1.0mm



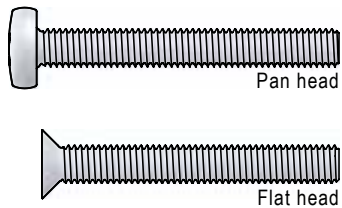
4mm x 0.7mm



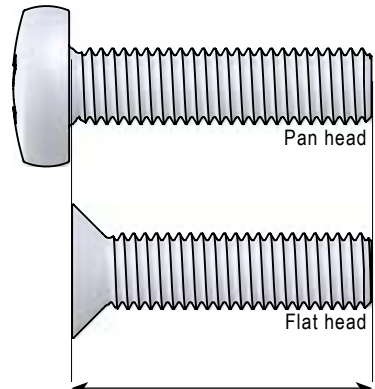
8mm x 1.25mm



5mm x 0.8mm



10mm x 1.5mm



*Length is measured from where the surface is assumed to be, to the end of the screw.



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





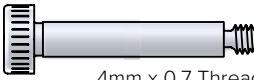
Metric Shoulder Bolt Size Chart

4mm



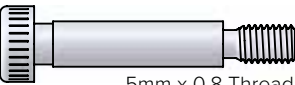
3mm x 0.5 Thread

5mm



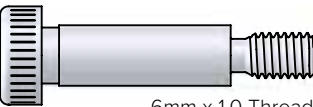
4mm x 0.7 Thread

6mm



5mm x 0.8 Thread

8mm



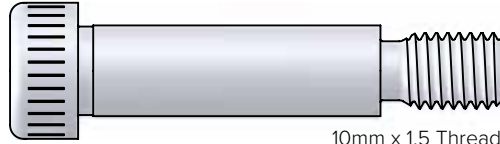
6mm x 1.0 Thread

10mm



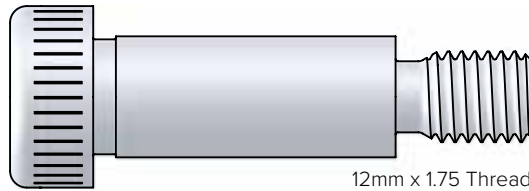
8mm x 1.25 Thread

12mm



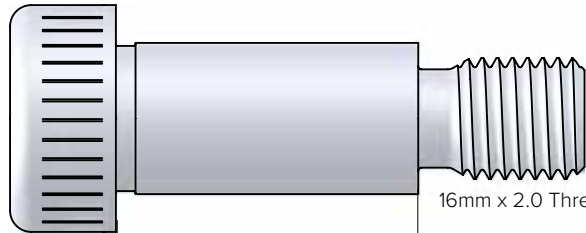
10mm x 1.5 Thread

16mm



12mm x 1.75 Thread

20mm

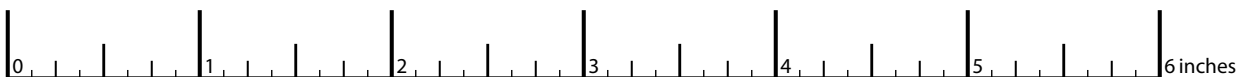


16mm x 2.0 Thread

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



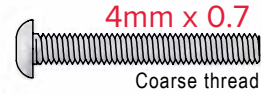
Make sure to print this chart to Actual Size (no scaling).
After printing, measure the scale check below to ensure correct scale



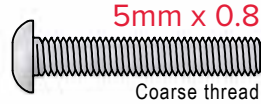


Metric Socket Button Head Size Chart

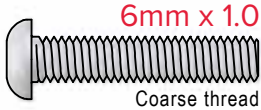
4mm



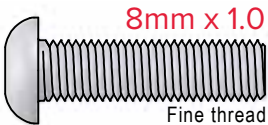
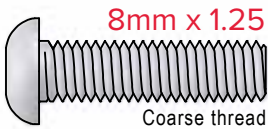
5mm



6mm

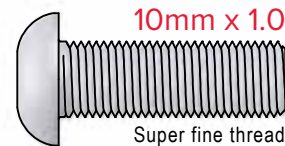
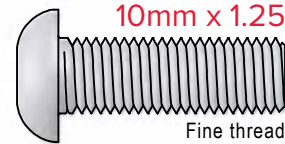
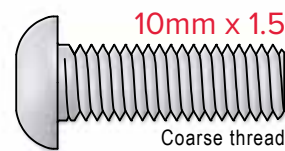


8mm

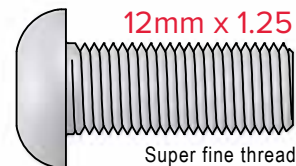
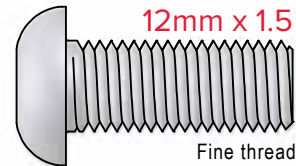
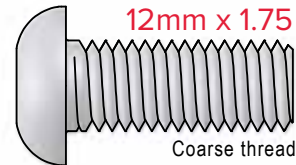


*Fastener length is measured from where the material surface is assumed to be, to the end of the fastener.

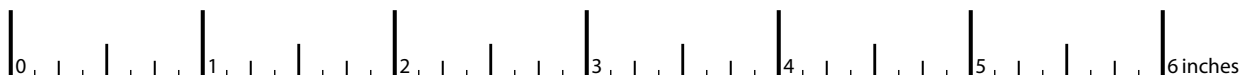
10mm



12mm

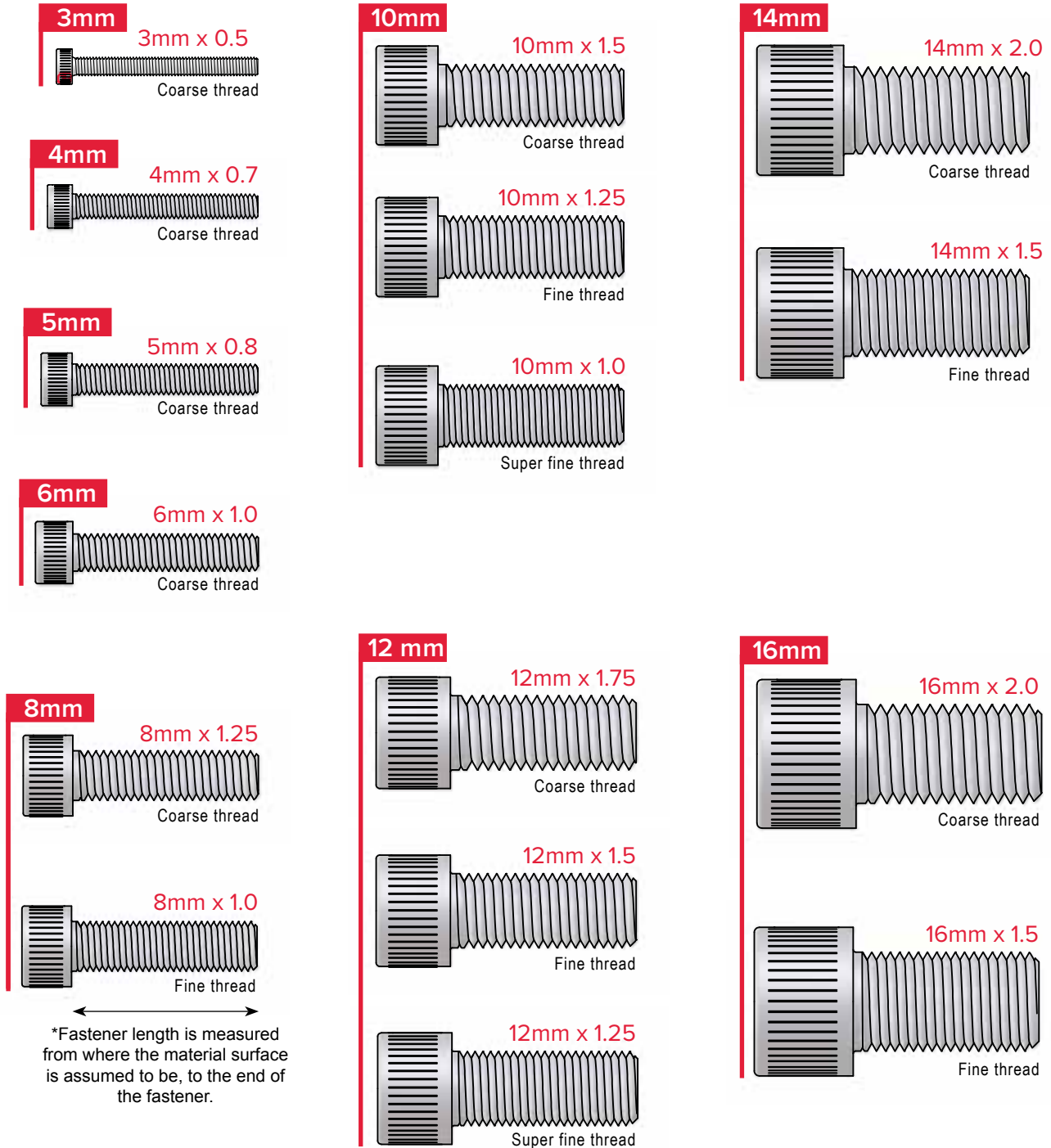


Make sure to print this chart to Actual Size (no scaling).
After printing, measure the scale check below to ensure correct scale





Metric Socket Cap Size Chart



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

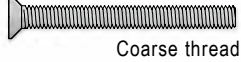




Metric Socket Flat Head Size Chart

3 mm

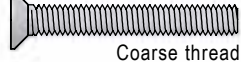
3mm x 0.5



Coarse thread

4 mm

4mm x 0.7



Coarse thread

5 mm

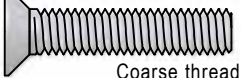
5mm x 0.8



Coarse thread

6 mm

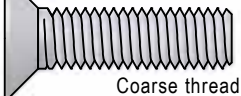
6mm x 1.0



Coarse thread

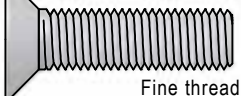
8 mm

8mm x 1.25



Coarse thread

8mm x 1.0

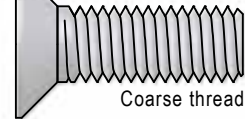


Fine thread

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

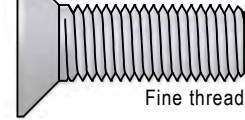
10 mm

10mm x 1.5



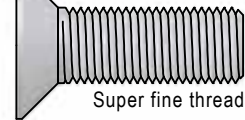
Coarse thread

10mm x 1.25



Fine thread

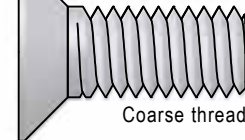
10mm x 1.0



Super fine thread

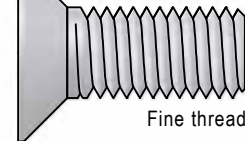
12 mm

12mm x 1.75



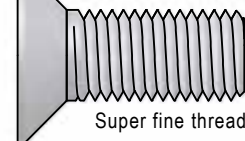
Coarse thread

12mm x 1.5



Fine thread

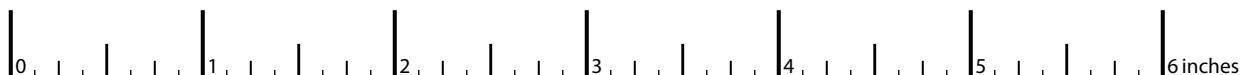
12mm x 1.25



Super fine thread



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





Metric Nut Size Chart

HEX JAM NYLOCK

2mm

4mm wrench



NA

2.5mm

5mm wrench



NA

3mm

5.5mm wrench



4mm

7mm wrench



5mm

8mm wrench



6mm

10mm wrench



7mm

11mm wrench



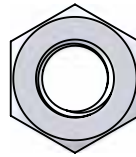
8mm

13mm wrench



10mm

17mm wrench



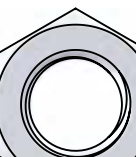
12mm

19mm wrench



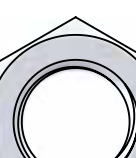
14mm

22mm wrench



16mm

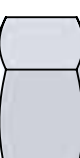
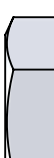
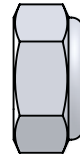
24mm wrench



HEX

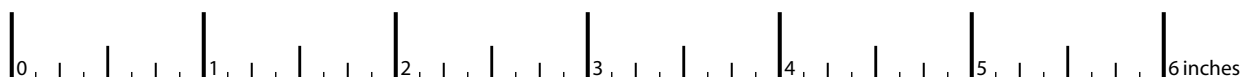
JAM

NYLOCK



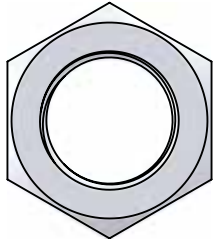
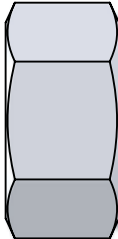
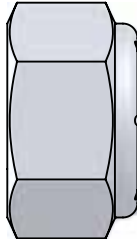
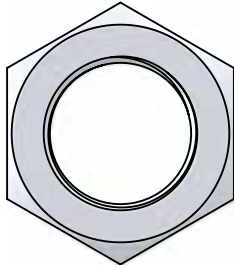
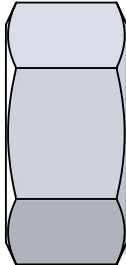
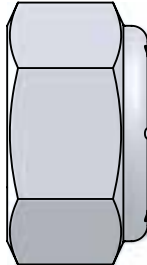
Make sure to print this chart to Actual Size (no scaling).

After printing, measure the scale check below to ensure correct scale



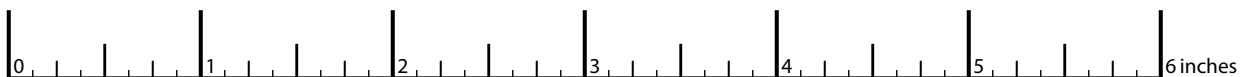


Metric Nut Size Chart

	HEX	JAM	NYLOCK
<div>18mm</div> <div>27mm wrench</div> <div></div>	<div></div>	<div></div>	
	NA		
<div>20mm</div> <div>30mm wrench</div> <div></div>	<div></div>	<div></div>	
	NA		



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





Metric Flat Washer Size Chart

1.6 mm



2 mm



2.5 mm



3 mm



3.5 mm



4 mm



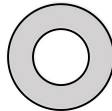
5 mm



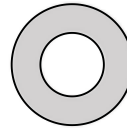
6 mm



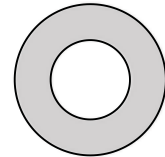
7 mm



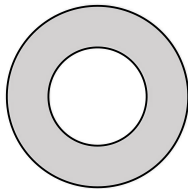
8 mm



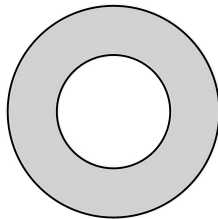
10 mm



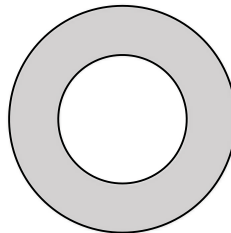
12 mm



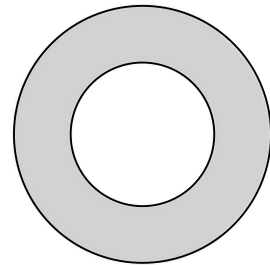
14 mm



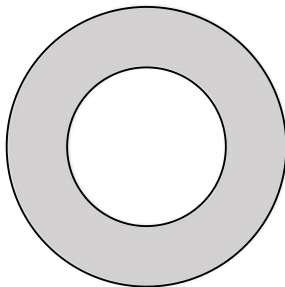
16 mm



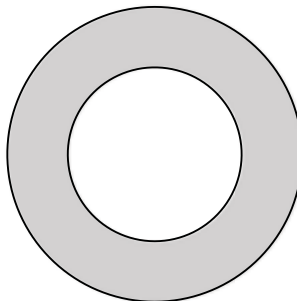
18 mm



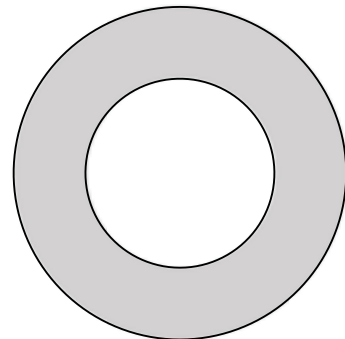
20 mm



22 mm



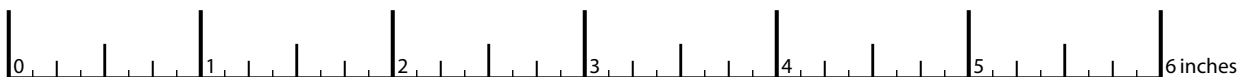
24 mm



*Washer sizes correspond to the screw/bolt diameter they fit.
For example, a 10mm washer fits a 10mm bolt.



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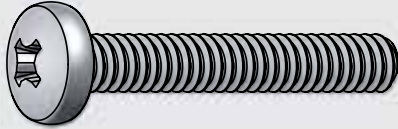
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Fastener Basics

Fastener Notation Example:



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

Fastener type

Material

Diameter

Length

Thread Count (TPI)

Drive Types



Phillips Slotted

Phillips and Slotted drives are common in screws, but prone to cam-out (stripping).



Combo

Combo drives, that can be used with either driver are available for many fastener types.



Frearson Pozidriv

Frearson and Pozidriv are similar to Phillips, but less prone to cam-out.



Hex Socket (Allen)

Hex Socket (Allen) drives are compact and easy to drive, but prone to cam-out.



Star Square (Robertson)

Star and Square drive are resistant to cam-out and can be installed single handed.

Note: Other than Frearson and Slotted, most drive types require the correct driver size for proper installation.

Head Styles



Hex Heads typically used with larger bolts and screws. Tightened with a wrench.



Pan Heads have a slightly domed head that sits above the surface.



Flat Heads typically installed in a countersunk hole to achieve a flat surface.



Round Heads tall domed heads, used for aesthetic purposes.



Oval Heads low domed and countersunk, used for aesthetic purposes.



Truss Heads slightly domed, with a wide head for a larger surface area.



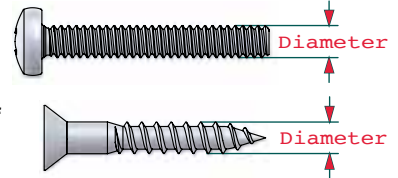
Socket Heads narrow with a socket drive. Can have knurled or smooth sides.



Button Heads has a medium dome, typically used with a socket drive.

Measuring Diameter

Most fastener diameters are measured on the outside of the threads.



Note: US diameters under 1/4" are given numbers instead of inches. The actual diameter of these fasteners is dependent on the fastener type. (Reference tables are available here and included in this fastener guide).

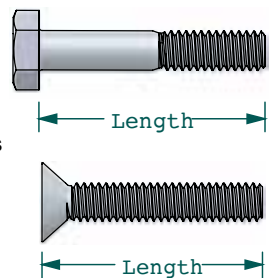
Thread Count & Thread Pitch

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

A fastener may be available in **coarse** (standard), **fine** or **super fine** thread.

Measuring Length

Fastener length is usually measured from where the material is assumed to be to the end of the fastener. Non countersunk fasteners are measured from under the head. Countersunk fasteners are measured overall.



Nut & Washer Sizes

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



3/8"-16 Hex Bolt



3/8" Washer

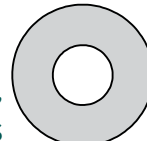


3/8" -16 Nut

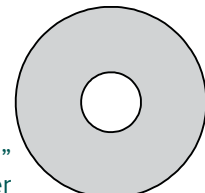
Different washer patterns have different outside diameters. Hardened US washers are available in USS (wider) and SAE (narrower) patterns. Fender washers have large outside diameters.



1/4" SAE

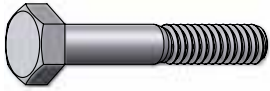


1/4" USS

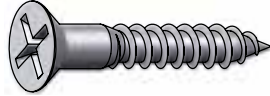


1/4" x 1" Fender

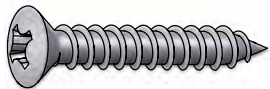
Common Fastener Types



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 called tap bolts.



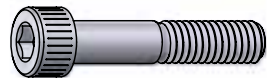
Wood Screws have large threads and a smooth shank for pulling two pieces of material together. They can be used in wood and other soft material.



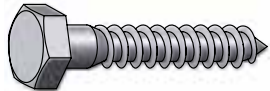
Sheet Metal Screws have sharp points and threads designed to be driven directly into sheet metal. They can also be used in softer materials like fiberglass, plastic and wood.



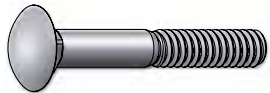
Machine Screws are fully threaded for use with a nut or in a tapped hole. May also be referred to as stove bolts.



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



Lag Bolts or Lag Screws are large wood screws with hex heads. Used often in construction and landscaping.



Carriage Bolts have smooth, domed heads with a square piece underneath which drives into the material to prevent spinning during installation.



Nuts are used to fasten machine threaded fasteners in through hole applications. Some nut designs have features which help to prevent loosening.



Washers spread the load over a larger surface area when tightening a bolt, screw or nut. Some washer designs have features which help prevent loosening.

Grade/Class & 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 fastener.

US bolt head markings



Low Carbon



Grade 5



Grade 8

Metric bolt head markings



Class 8.8



Class 10.9



Class 12.9

Note: Colors can vary significantly from the photos on this guide, do not rely on this guide for color matching.

Fastener Materials

Zinc Plated Steel

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 bluish tint or yellow depending on the exact process.



Hot Dipped Galvanized Steel

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 gray finish.



Stainless Steel

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



Chrome and Nickel Plated Steel

Smooth and polished appearance. The plating offers moderate corrosion resistance.



Brass and Bronze

Copper alloys with good corrosion resistance. More expensive than steel, these materials are typically used for decorative applications. There can be variability with color.





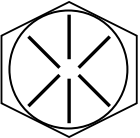
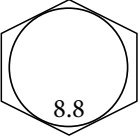

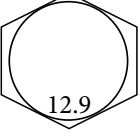
Alloy Steel

Highly hardened, usually black oxide and oil coated. Provides little corrosion resistance.





Bolt Grade Markings and Strength Chart

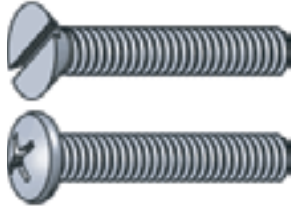
STANDARD INCH BOLTS					
Head Marking	Grade and Material	Nominal Size Rang (Inches)	Mechanical Properties		
			Proof Load (psi)	Min. Yield Strength (psi)	Min. Tensile Strength (psi)
	Grade 2 Low or Medium Carbon Steel	1/4 thru 3/4	55,000	57,000	74,000
		Over 3/4 thru 1-1/2	33,000	36,000	60,000
	Grade 5 Medium Carbon Steel, Quenched and Tempered	1/4 thru 1	85,000	92,000	120,000
		Over 1 thru 1-1/2	74,000	81,000	105,000
	Grade 8 Medium Carbon Alloy Steel, Quenched and Tempered	1/4 thru 1-1/2	120,000	130,000	150,000
Stainless markings vary. Most stainless is non-magnetic.	18-8 Stainless Steel alloy 17-19% Chromium and 8-13% Nickel	All Sizes thru 1		20,000 Min. 65,000 Typical	65,000 Min. 100,000 - 150,000 Typical
METRIC BOLTS					
Head Marking	Grade and Material	Nominal Size Range (mm)	Mechanical Properties		
			Proof Load (MPa)	Min. Yield Strength (MPa)	Min. Tensile Strength (MPa)
	Class 8.8 Medium Carbon Steel, Quenched and Tempered	All Sizes below 16mm	580	640	800
		16mm - 72mm	600	660	830
	Class 10.9 Alloy Steel, Quenched and Tempered	5mm-100mm	830	940	1040
	Class 12.9 Alloy Steel, Quenched and Tempered	1.6mm - 100mm	970	1100	1220
Stainless markings vary. Most stainless is non-magnetic. Usually stamped A-2	A-2 Stainless Steel alloy with 17-19% Chromium and 8-13% Nickel	All Sizes thru 20mm		210 Min. 450 Typical	500 Min. Typical

Fastener Categories



Wood Screws

Screws with a smooth shank and tapered point for use in wood.



Machine Screws

Screws with thread for use with a nut or tapped hole.



Thread Cutting Machine Screws

Machine screws with a thread cutting (self tapping) point.



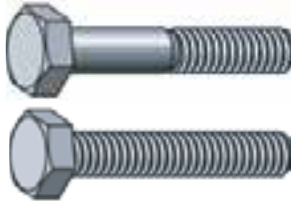
Sheet Metal Screws

Fully threaded screws with a point for use in sheet metal.



Self Drilling SMS

A sheet metal screw with a self drilling point.



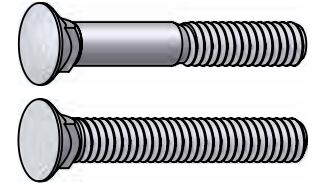
Hex Bolts

Bolts with a hexagonal head with threads for use with a nut or tapped hole.



Carriage Bolts

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



Plow Bolts

Similar to carriage bolts but used to attach the cutting edge of a plow to the plow blade.



Socket Screws

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



Lag Bolts

Bolts with a wood thread and pointed tip.



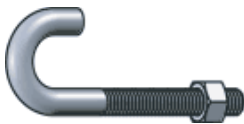
Eye Bolts

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



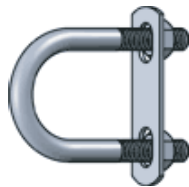
Eye Lags

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 in square bend.



Shoulder Bolts

Bolts used to create a pivot point, also known as stripper bolts.



Elevator Bolts

Elevator bolts are often used in conveyor systems. They have a large, flat head.

Fastener Categories



Sex Bolts

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



Mating Bolts

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



Hanger Bolts

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



Set Screws

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



Timber Bolts

Machine threaded fasteners with a wide domed head. The head has fins underneath that prevent the bolt from spinning during installation. Typically used in wood.



Cotter Pins

Cotter or split pins have two lines which are bend apart to hold them in place.



Rivets

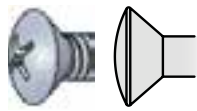
Used to join sheets of metal. During installation the rivet body is deformed to permanently lock in place. Blind rivets can be installed without access to the back side of the material.

Head Styles



Flat

A countersunk head with a flat top.



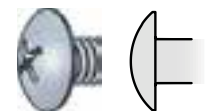
Oval

A countersunk head with a round top.



Pan

A slightly rounded head with short vertical sides.



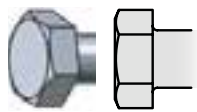
Truss

An extra wide head with a rounded top.



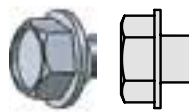
Round

A domed head.



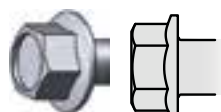
Hex

A hexagonal head.



Hex Washer

A hex head with built in washer.



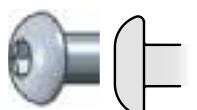
Hex Flange

A hex head with built in flange.



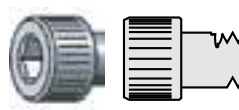
Slotted Hex Washer

A hex head with built in washer and a slot.



Button

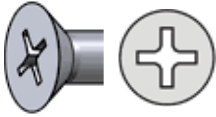
A low-profile rounded head using a socket drive.



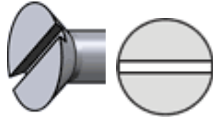
Socket Cap

A small cylindrical head using a socket drive.

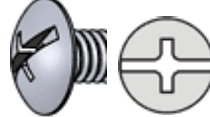
Drive Types



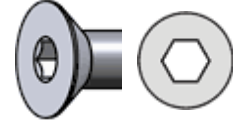
Phillips and Frearson
An x-shaped drive.



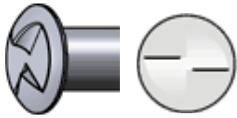
Slotted
A slot in the head.



Combination
A combination of slotted and Phillips drives.



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



OneWay
Installs with a normal slotted driver but can not be removed without special tools.



Square
Also known as Robertson drive.



Torx and Star
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.



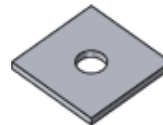
Split Lock
The most common style of washer used to prevent nuts and bolts from backing out.



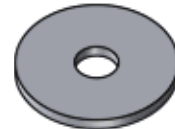
External Tooth Lock
A washer with external 'teeth'. Used to prevent nuts and bolts from backing out.



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 washers.



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



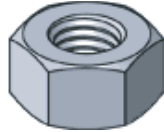
Sealing
A soft neoprene washer bonded to a metal backing. Used to seal out air/water or dampen noise and vibration.

Nut Types



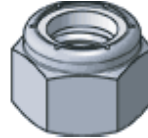
Hex

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.



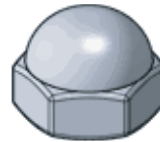
Nylon Insert Jam Lock

A nylock nut with a reduced height.



Wing

A nut with 'wings' for hand tightening.



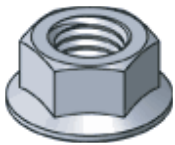
Cap

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.



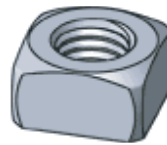
Flange

A nut with a built in washer like flange.



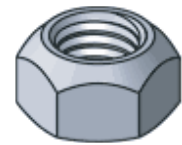
Tee

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



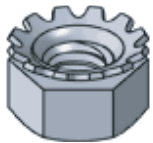
Square

A four sided nut.



Prevailing Torque Lock

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



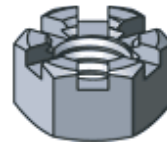
K-Lock or Kep

A nut with an attached free-spinning external tooth lock washer.



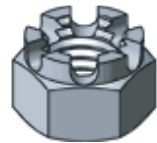
Coupling

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.



Pin Lock

A nut that does not require an high installation torque and can be installed and removed without thread damage.

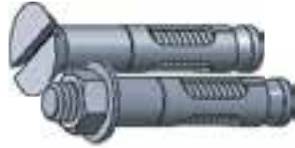


Anchoring Fasteners



Stud Anchors

Also called wedge anchors. One piece expansion bolts for heavy duty fastening into stone or solid concrete.



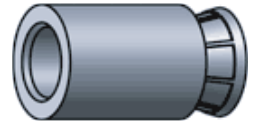
Sleeve Anchors

Heavy duty masonry anchors. Does not require a solid base material for installation.



Lag Shields

Medium duty anchors for use in concrete, brick or mortar. Using with a lag bolt.



Machine Screw Anchors

A two-piece machine thread anchor for use in stone, brick, or concrete.



Drop-In Anchors

A heavy duty machine thread anchor for concrete or stone.



Double Expansion Sleeves

Expansion anchor for masonry that ensures contact along the length of the hole.



Concrete Screws

Use in concrete, brick or block. A quick and easy way to fasten in light to medium duty applications.



Spring Toggle Wings

Non-removable fasteners that expand behind the material, e.g. inside a wall, for a secure grip.



Plastic Toggle

When these anchors are driven in they expand inside the hole for a secure grip. Drill hole the same size as the anchor. Non-removable.



Kaptoggle®

A non removable anchor commonly used for hollow spaces such as drywall and masonry block.



Conical Anchors

Plastic anchors used with sheet metal screw. Can be used in most materials.



Self Drilling Drywall Anchors

Quick-install plastic anchors used in drywall with sheet metal screws.



Wood Screw Anchors

This anchor is made of lead and can be used with wood screws or sheet metal screws.



Hollow Wall Anchors

Also called Molly Bolts. Used for light duty anchoring in drywall or other hollow walls.



Nail Drive Anchors

Non removable anchors that expand inside the hole when the nail like pin is driven.



Anchor Bolts

L shaped, machine threaded anchors. Typically embedded in concrete when it is poured.