



Nuts – Overview and Dimensions

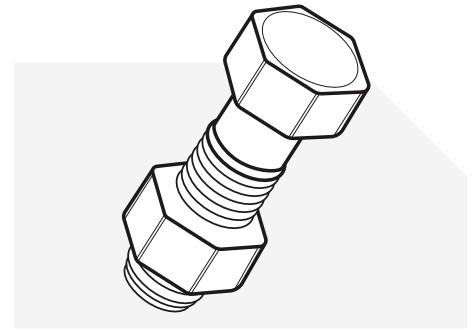
Nuts are a common type of fastener which contain an internal threaded hole. They are designed to be used with screws and bolts to secure them in place and prevent axial movement. For example, to secure two metal plates, a bolt or screw would be passed through them and a nut would be used at the other end. Hence, the clamping force is provided by the nut and the head of the bolt or screw.

Common Types of Nuts

Hex Nuts, Hex Bolt and Nuts

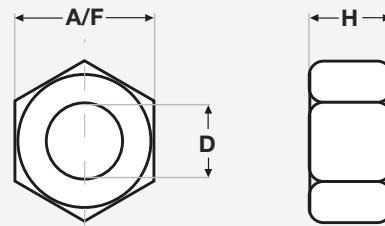
One of the most common nuts is the hex nut. These are hexagonal shaped nuts with internal threads that connect to the external threads of a screw or bolt. They are used with screws or bolts to connect and secure two metal or wooden parts. The parts are secured on either side by the head of the screw or bolt and the hex nut at the bottom to prevent lateral movement.

Applications: Used in light to medium duty applications which require a secure connection between two components.



Imperial Nuts Measurements

The sizing of these nuts are usually based on the diameter of the internal thread and the height of the nut. The chart also includes the dimension 'A/F' which stands for 'across flats'. This is the distance between the two flat sides of the hexagonal nut.

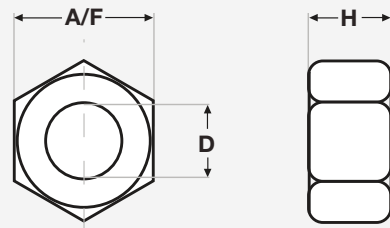


Size				Grade 5 & 8 Hex		Nyloc		2H Hex	
Diameter	Unc T.P.I.	UNF T.P.I.	UN8 T.P.I.	A/F	Height	A/F	Height	A/F	Height
3/16	24	32		3/8	1/8	3/8	15/64		
1/4	20	28		7/16	7/32	7/16	5/16		
5/16	18	24		1/2	17/64	1/2	11/32		
3/8	16	24		9/16	21/64	9/16	29/64		
7/16	14	20		5/8	21/64	5/8	29/64		
1/2	13	20		3/4	7/16	3/4	19/32	7/8	1/2
9/16	12	18		7/8	31/64	7/8	41/64		
5/8	11	18		15/16	35/64	15/16	3/4	1 1/16	5/8
3/4	10	16		1 1/8	41/64	1 1/16	7/8	1 1/4	3/4
7/8	9	14		1 5/16	3/4	1 1/4	63/64	1 7/16	7/8
1	8	12		1 1/2	55/64	1 7/16	1 3/64	1 5/8	1 1/64
1 (UNS)		14		1 1/2	55/64	1 7/16	1 3/64		
1 1/8	7	12	8	1 11/16	31/32	1 5/8	1 11/64	1 13/16	1 7/64
1 1/4	7	12	8	1 7/8	1 1/16	1 13/16	1 25/64	2	1 7/32

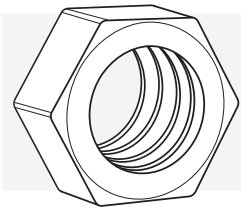


Metric Nut Measurements

The sizing of these nuts are usually based on the diameter of the internal thread and the height of the nut. The chart also includes the dimension 'A/F' which stands for 'across flats'. This is the distance between the two flat sides of the hexagonal nut.



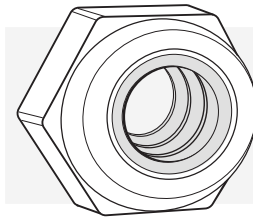
Size		Class 5, 8 & 10 Hex		HSFG Structural		Nyloc		Flange		
Metric Coarse	Metric Fine	A/F	Height	A/F	Height	A/F	Height	A/F	Height	OD
M3x0.5		5.5	2.4			5.5	4.0			
M4x0.7		7.0	3.2			7.0	5.0	7.0	4.6	10.0
M5x0.8		8.0	4.0			8.0	5.0	8.0	5.0	11.8
M6x1.0		10.0	5.0			10.0	6.0	10.0	6.0	14.2
	M8x1.0	13.0	6.5			13.0	8.0			
M8x1.25		13.0	6.5			13.0	8.0	13.0	8.0	17.9
	M10x1.0	17.0	8.0			17.0	10.0			
	M10x1.25	17.0	8.0			17.0	10.0			
M10x1.5		16.0	8.4			16.0	10.0	15.0	10.0	21.8
	M12x1.25	19.0	10.0			19.0	12.0			
	M12x1.5	19.0	10.0			19.0	12.0			
M12x1.75		18.0	10.8	22.0	12.5	18.0	12.0	18.0	12.0	26.0
	M14x1.5	22.0	11.0			22.0	14.0			
M14x2.0		22.0	11.0			22.0	14.0	21.0	14.0	30.0
	M16x1.5	24.0	13.0			24.0	16.0			
M16x2.0		24.0	13.0	27.0	16.5	24.0	16.0	24.0	16.0	34.5
	M18x1.5	27.0	15.0			27.0	18.5			
M18x2.5		27.0	15.0	30.0	18.5	27.0	18.5			
	M20x1.5	30.0	16.0			30.0	20.0			
M20x2.5		30.0	16.0	32.0	20.5	30.0	20.0	30.0	20.0	42.8
	M22x1.5	33.0	18.0			33.0	22.0			
M22x2.5		33.0	18.0			33.0	22.0			
	M24x1.5	36.0	19.0			36.0	24.0			
	M24x2.0	36.0	19.0			36.0	24.0			
M24x3.0		36.0	19.0	41.0	24.5	36.0	24.0			
M27x3.0		41.0	22.0	46.0	27.5					
M30x3.5		46.0	24.0	50.0	30.5	46.0	30.0			
M33x3.5		50.0	26.0	55.0	33.5					
M36x4.0		55.0	29.0	60.0	36.5	55.0	36.0			
M39x4.0		60.0	31.0							
M42x4.5		65.0	34.0							
M48x5.0		75.0	38.0							
M56x5.5		85.0	45.0							
M64x6.0		95.0	51.0							
M72x6.0		105.0	58.0							



Hex Nuts HSFG

High Strength Friction Grip Hex Nuts are specifically designed for HSFG bolts. These are bolts used in heavy duty construction applications such as bridges. They are designed to be permanent and withstand vibrations that are cyclical in nature.

Applications: Construction and other areas which experience heavy cyclical vibrations.



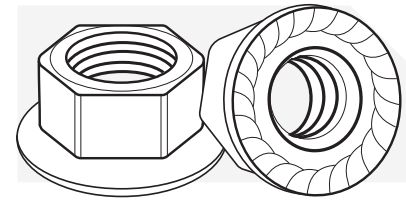
Nyloc Nut

Also known as: nylon-insert lock nut, elastic stop nut, polymer-insert lock nut

These are nuts with a small nylon or polymer insert at one end of the nut. The insert is not threaded and the diameter of the insert is slightly smaller than the nominal diameter of the threaded metal part.

The insert locks the screw or bolt in place due to the smaller diameter of the insert, which presses against the screw and deforms around it.

Applications: Places where the screw or bolt could become undone due to vibrations.

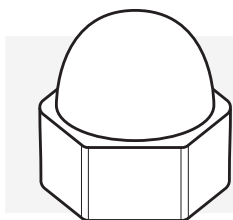


Serrated Flange Nut

Serrated flange nuts have a flange on one end that behaves like a stationary, non-spinning washer. The flange helps to distribute pressure from the nut more evenly in the component it is being secured to. The 'washer' has serrations cut at an angle to prevent rotation of the nut and stop it from loosening.

Applications:

Where spinning washers are not needed, serrated flange nuts can make assembling faster since there's no need to assemble the wash and nut separately.

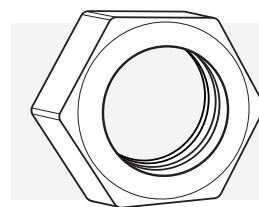


Dome nuts

Also known as: blind nut, acorn nut, cap nut, dome nuts

These are nuts where one end is sealed off with a dome shape. Unlike hex nuts, where both ends are exposed.

Applications: Aesthetic reasons or for safety reasons (e.g. to protect from sharp threads).

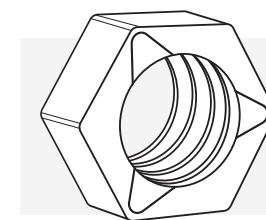


Half hex nut

Also known as: thin nuts, jam nuts, hex lock nuts.

These are hex nuts that are half the height of a regular hex nut.

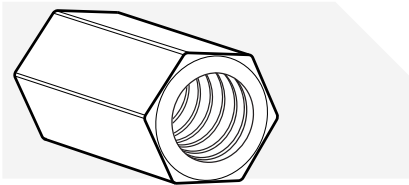
Applications: Usually used when a normal hex nut is not sufficient on its own.



Conelock nut

Conelock nuts are hex nuts that have a conical top and a flat bottom surface with chamfered corners. Near the top, it contains imperfect threads which distort under torque from an external thread. This helps to lock the nut in place against vibrations and sudden shocks.

Applications: Prevent screw or bolt from loosening due to vibrations.

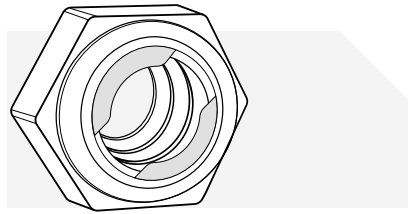


Coupling Nut

Also known as: Extension nut

Coupling nuts are cylindrical elongated nuts with internal threading. They are used to connect two male threads together and to create longer thread assemblies from shorter parts.

Applications: To connect two externally threaded parts together in applications such as threaded rod or piping.

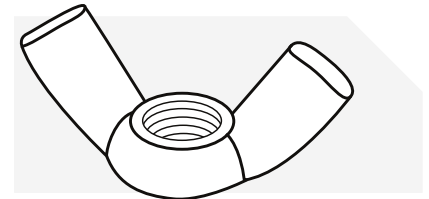


Fujilock nut

Also known as:
Fuji bearing locknuts

These are nuts which use a metal spring at the top of the nut to lock the bolt or screw in place. The spring applies a radial compressive force on the bolt or screw.

Applications:
Typically used for a automotive purposes, such as mountings disc brakes, due to the locking mechanism being metal it can withstand higher temperatures unlike nylocs.

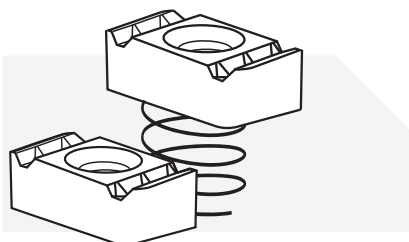


Wing Nut

Also known as:
Butterfly nuts

Wing nuts contain two extensions at the end of the nut, which make them easier to grip with your thumb and finger while securing it.

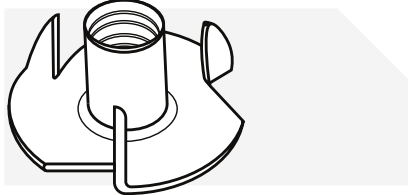
Applications:
Used in places that are hard to reach and where equipment such as spanners can't be used.



Strut Nut

Rectangular shaped nuts with internal threading with a spring attached at the bottom. They also contain 'grooves' on either side that can fit and slide along the sides of a metal channel.

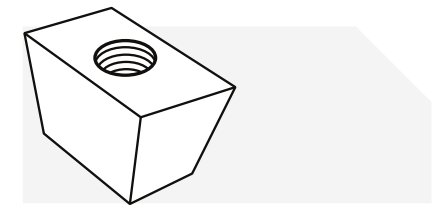
Applications:
Secure junction boxes, fittings, electrical panels.



Tee Nut

Tee nuts have a long cylindrical body with a flange at the top to create a flush surface with the workpiece. The flange has blade-like projections around it that are designed to cut into materials like wood or composite materials to make a permanent connection.

Applications:
Places that require permanent connections in wood, composite material.



Wedge Nuts

Block-shaped nuts that have chamfered edges at the top that are designed to slide into a metal channel or rail profile.

Applications:
Composite decking floors.

ⓘ The data provided in this document is for general guidance only and should not be solely relied upon when working to stringent specifications. We recommend consulting with qualified experts regarding any technical queries. This information may change without written notice.