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HomeTECHNICALCOMPARE SIZEMETRIC NUT SIZESSizeDINISODIN934ISO4032ISO4033DIN555ISO4034TYPE ONETYPE TWOdSSMMMMM1 2.50 0.80M1.2 3.00 1.00M1.4 3.00 1.20M1.6 3.20 1.30 1.30M1.7 3.50 1.40 1.40M2 4.00 1.60 1.60M2.3 4.50 1.80 1.80M2.5 5.00 2.00 2.00M2.6 5.00 2.00 2.00M3 5.50 2.40 2.40M3.5 6.00 2.80 2.80M4 7.00 3.20 3.20M5 8.00 4.00 4.70 5.10 4.60 5.60M6 10.00 5.00 5.20 5.70 5.60 6.10M7 11.00 5.50M8 13.00 6.50 6.80 7.50 7.25 7.90M10 17.00 16.00 8.00 8.40 9.30 8.75 9.50M12 19.00 18.00 10.00 10.80 12.00 10.75 12.00M14 22.00 21.00 12.00 12.80 14.10 13.00M16 24.00 23.00 14.00 14.80 16.40 13.96 15.90M18 27.00 15.00 16.00M20 30.00 28.00 18.00 19.40 18.90 20.00M22 33.00 31.00 20.00 21.50 23.00 20.05 22.30M27 41.00 22.00 23.80 23.05 24.70M30 46.00 24.00 25.60 28.60 25.05 26.40M33 50.00 26.00 28.00 30.00 27.25 29.50M36 55.00 29.00 31.00 34.50 29.50 31.50M39 60.00 31.00 33.40 32.25 34.90M42 65.00 34.00 36.00 36.00 37.25 36.90M48 75.00 38.00 39.25 39.90M52 80.00 42.00 42.00 43.25 42.90M56 85.00 45.00 45.00 46.25 45.90M60 90.00 48.00 48.00 49.25 48.90M64 95.00 51.00 51.00 52.50 52.40M68 100.00 54.00 54.00M72 105.00 58.00M76 110.00 61.00M80 115.00 64.00M85 120.00 68.00M90 130.00 72.00M95 135.00 76.00M100 145.00 80.00M110 155.00 88.00M115 165.00 92.00M120 170.00 96.00M125 180.00 100.00M130 185.00 104.00M135 190.00 108.00M140 200.00 112.00M145 210.00 116.00M150 210.00 120.00M160

International Standard specifies selected sizes for screws, bolts and nuts in the diameter range from 1 mm to 64 mm of ISO general purpose metric screw threads (M) having basic profile according to ISO 68-1.These selected sizes are recommended also for general engineering use. These screw threads are selected from ISO 261. For thread designations see ISO 965-1. : Withdrawal of International Standard [95.99] ISO/TC 1 RSSupdates Check out our Help and Support NPS pressure tight straight pipe threads with lubricant or sealer. NPT and NPTF pipe threads - dimensions according ANSI/ASME B1.20.1/3. Acme trapezoidal threads. Tensile stress and Hooke's Law. BSPT - British Standard Pipe Taper threads & BSP or BSPF - British Standard Pipe Parallel (Straight) threads. Pipe threads where pressure tight joints are made on the threads - Part 1: Taper external threads and parallel internal threads. International Organization for Standardization - ISO - pipe, tube and fittings standards and specifications. Requirements for thread form, dimensions, tolerances and designation for fastening pipe threads. thread sizes. Metric threads spark plugs according ISO 28741. Dimensions of ISO metric trapezoidal screw threads. Pressure-tight joints made on the pipe threads. Lubrication effect on bolt tension and torque. ANSI/SO, DIN and JIS bolts. Minimum ultimate tensile and proof loads for metric bolts with coarse or fine threads. Metric steel bolts, screws and studs - proof and tensile strength. Recommended clearance holes and drill tap sizes. NPT - Briggs Standard Pipe threads - Taps and Drill Sizes. Applied threaded standards used for piping connections. ASTM steel bolts - proof and tensile strength. SAE steel bolts - grades ranging grade 1 to 8.2 - proof and tensile strength. Standard metric T-slots and T-nuts. Threaded bolts tensile stress area. Weight rating of threaded fastener products. Recommended thightening torque metric bolts. Printable fastener chart. Tensile strength and proof stress. ANSI/ASME B1.1 Unified National Screw Thread - UNC Coarse series and UNF Fine series. ANSI/ASME B18.2.3M Dimensions of Hex Bolts - Metric units. Wood screws - nominal shaft vs. diameter. BSPP (G) - British Standard Pipe Parallel and BSPT (R/Rp) British Standard Tapered Pipe for pipes and tapered threads - G/R/Rp. Taps and drill sizes used for Whitworth - ISO 7 and ISO 228 threads. Convert between metric and SAE (inch) wrench sizes with this comprehensive comparison chart. Find the closest equivalent sizes for your tools, whether working with US standard (SAE) or metric fasteners. ISO 4032 CSN 21401 PN 82144 UNI 5588 EU 24032 DIN 934 Hex Nut Dimensions (Coarse Threads) d s max. e min. m max. M2 4 4.32 1.6 M2.5 5 5.45 2 M3 5.5 6.01 2.4 M3.5 6 6.58 2.8 M4 7 7.66 3.2 M5 8 8.79 4 M6 10 11.05 5 M7 11 12.12 5.5 M8 13 14.38 6.5 M10 17 18.9 8 M12 19 21.1 10 M14 22 24.49 11 M16 24 26.75 13 M18 27 29.56 15 M20 30 32.95 16 M22 32 35.03 18 M24 36 39.55 19 M27 41 42.22 22 M30 46 50.85 24 M33 50 55.37 26 M36 55 60.79 29 M39 60 66.44 31 M42 65 71.3 34 M45 70 76.95 36 M48 75 82.6 38 M52 80 88.25 42 M56 85 93.56 45 M60 90 99.21 48 M64 95 104.86 51 M68 100 110.51 54 M72 105 116.16 58 M76 110 121.81 61 M80 115 127.46 64 M90 130 144.08 72 M100 145 161.02 80 d s max. e min. m max. M6 x 0.75 10 11.05 5 M8 x 1 13 14.38 6.5 M10 x 1.25 17 18.9 8 M12 x 1.25 19 21.1 10 M12 x 1.25 19 21.1 10 M14 x 1.5 22 24.49 11 M16 x 1.5 24 26.75 13 M18 x 1.5 27 29.56 15 M18 x 2 27 29.56 15 M20 x 1.5 30 32.95 16 M20 x 2 30 32.95 16 M22 x 1.5 32 35.03 18 M24 x 1.5 36 39.55 19 M24 x 2 36 39.55 19 M27 x 1.5 41 45.2 22 M27 x 2 41 45.2 22 M30 x 1.5 46 50.85 24 M30 x 2 46 50.85 24 M33 x 1.5 50 55.37 26 M33 x 2 50 55.37 26 M36 x 1.5 55 60.79 29 M36 x 2 55 60.79 29 M36 x 3 55 60.79 29 M39 x 3 60 66.44 31 M42 x 3 65 71.3 34 M45 x 3 70 76.95 36 M48 x 3 75 82.6 38 The nut in hardware refers to a type of typical fastener that features a threaded hole. What are the different types of nuts to choose from, and what are their applications? In this guide, well get into an in-depth overview of various fastener nuts along with a size chart, metric/imperial dimensions, standards, and how to use them properly (installation, anti-loosening, torque, etc.). Hardware nuts come in many different shapes and types, each designed for specific uses in machines and structures. Most nuts are hexagonal because six sides make them easy to turn, requiring only a small twist to tighten or loosen. Some nuts, like dome and acorn nuts, protect bolt threads and look neat, while wing nuts have side wings that let you twist them by hand quickly, though they arent good for places with vibrations. Jam nuts are thin and help stop loosening when used with a regular nut, and flange nuts spread the load evenly like a washer, often used in cars. 1. Hex NutA hex nut, also known as a hexagon nut or hexagonal nut, features six flat sides, which makes it easy to grip with a wrench or a socket tool. The top and bottom are flat, and inside, it has spiral threads that match the bolts threads. When you screw the hex nut onto a bolt, the threads lock together tightly. Using a wrench on the six sides helps you twist the nut to tighten or loosen it. Uses:Hex nuts are used in cars, bicycles, furniture, and buildings, basically, any place bolts are used to hold parts together. Common Materials:Most hex nuts are made from steel, which is strong and durable. Stainless steel is also popular because it doesnt rust easily. Sometimes, brass or nylon-coated nuts are used to resist corrosion or for special electrical uses. 2. Heavy Hex NutThese nuts look like regular hex nuts but are thicker and have bigger flat sides. This gives more surface area for wrenches to grip and makes the nut stronger. Because they are bigger and thicker, heavy hex nuts can handle much more pressure and force without breaking or stripping. Uses:They are commonly found in heavy construction projects like bridges, buildings, and big machines where strong, heavy-duty fasteners are needed. Common Materials:Usually made from high-strength steel or alloy steel, sometimes heat-treated for extra toughness. 3. Nylon Insert Lock NutThis nut looks like a regular hex nut but has a small ring of nylon inside the top threads. The nylon is usually white or blue. As you screw the nut onto a bolt, the nylon ring squeezes against the bolt threads. This creates friction that keeps the nut from loosening on its own, even if the bolt vibrates or shakes. Uses:Used in engines, machines, and vehicles where parts move a lot and require preventing the nut from coming loose. Common Materials:Steel or stainless steel nut body with a nylon insert. 4. Jam NutA jam nut is a thinner version of a hex nut, usually about half the thickness or less. Its often used together with a regular nut. Tighten the regular nut first, then the jam nut is tightened against it. This jams the nuts together to stop them from loosening. Uses:Great for tight spaces or when vibrations might loosen a single nut. Common Materials:Steel, stainless steel, and sometimes brass. 5. Nylon Insert Jam Lock NutSimilar to a jam nut, but it also has the nylon insert inside the threads to provide extra locking power. Combines the jam nuts space-saving design with the nylon inserts locking ability to prevent loosening. Uses:Used in smaller or tight areas where vibration resistance is critical. Common Materials:Steel or stainless steel with nylon insert. 6. Wing NutA wing nut has two wide wings on opposite sides. These wings make it easy to grip and turn by hand. Because of the wings, you dont need tools to tighten or loosen them. Uses:Used when you need to assemble or disassemble things quickly, such as in bike parts, clamps, or temporary fixtures. Common Materials:Steel, stainless steel, brass, and sometimes plastic for lightweight applications. 7. Cap NutA cap nut looks like a hex nut but has a closed, dome-shaped top that covers the end of the bolt. The dome protects the bolt threads and prevents injuries from sharp bolt ends. Uses:Used on furniture, playground equipment, or anywhere you want a finished look and safety. Common Materials:Steel, stainless steel, brass, or plastic. 8. Acorn NutAlso called a dome nut, its similar to a cap nut but generally taller and rounder on top, resembling an acorn. Acorn nuts cover and protect the bolt end to get a safer and better looking. Uses:Popular on bicycles, motorcycles, and decorative applications. Common Materials:Steel (often chrome-plated), brass, or stainless steel. 9. Flange NutA flange nut has a built-in washer base (the flange) on one side, which looks like a washer but is part of the nut. The flange spreads the pressure over a larger area and prevents the nut from loosening easily. Uses:Common in automotive and machinery, where vibration is a problem. Common Materials:Steel, stainless steel. 10. Tee NutLooks like a flat hex nut with long, sharp spikes or prongs sticking out underneath. You push or hammer it into wood, and the spikes dig in, holding the nut firmly in place so the nut doesnt spin when tightening. Uses:Used to fasten bolts into wood, such as in furniture or wooden playgrounds. Common Materials:Steel, often zinc-plated for rust resistance. 11. Square NutA nut with four flat sides instead of six. The big flat sides make it easier to hold in place with a wrench or by hand. Uses:Common in old machinery, electrical work, or furniture assembly. Common Materials:Steel, stainless steel, brass. 12. Prevailing Torque Lock NutA prevailing torque lock nut is a one-piece hex nut with a flat bottom and a slightly cone-shaped (conical) top. Its corners are chamfered, which means they are slightly beveled or rounded. This nut locks by slightly distorting the threads at the top inside part of the nut. This distortion creates very strong friction between the nut and the bolt threads. Because of this friction, the nut resists loosening caused by shocks, vibrations, or any movement. It is a non-reversible lock nut, meaning once tightened, it is very hard to unlock without damaging the locking part. You must use a wrench or tool to tighten or loosen it, hand-turning won't work. Uses:Great for high-temperature environments where nylon insert cannot be used, such as in engines, turbines, or industrial machines. Common Materials:Steel, stainless steel. 13. K-Lock or Keep NutA hex nut with a thin, free-spinning toothed washer attached at its base. The washers teeth bite into the surface to stop the nut from coming loose. Uses:Used in automotive and machinery applications where vibration might cause loosening. Common Materials:Steel, stainless steel. 14. Coupling NutA long hexagonal nut, much longer than normal nuts, almost like a tube. It joins two threaded rods or bolts by threading onto both ends. Uses:Used to extend the length of bolts or threaded rods. Common Materials:Steel, stainless steel. 15. Slotted NutA hex nut with slots cut into the top surface. Used with a cotter pin that fits through the slots and a hole in the bolt to lock the nut in place, preventing it from turning. Both castle nuts and slotted nuts have slots on top and work with locking pins to prevent loosening. However, the castle nuts top is smaller in diameter, so the cotter pin can be wrapped and pinned against the nut, making the pin less likely to stick out. Slotted nuts dont have this feature and have the same diameter at the top as the wrenching area. Uses:Common in automotive steering or wheel assemblies, where safety locking is needed. Common Materials:Steel, stainless steel. 16. Castle NutCastle nuts, also called castellated nuts, are hex nuts with notches or castles cut around their top edge. These notches look like the walls of a castle, which is how they got their name. The top part of a castle nut is slightly narrower than the main body, allowing a special pin to be secured neatly. Castle nuts are used together with a cotter pin, R clip, spring pin, or safety wire. The bolt they screw onto has a hole drilled through its threaded end. After tightening the castle nut, you insert the cotter pin through the hole and through one of the nuts slots. Then, you bend or secure the pin so the nut cannot turn or loosen, even when there is vibration or movement. Uses:Automotive (especially on axles), aircraft, locomotives, and other machinery, where vibration could cause regular nuts to loosen. Common Materials:Steel, stainless steel, sometimes plated for corrosion resistance. What Are Best Nuts for Vibrations? When the components shake or vibrate a lot, nuts can slowly work themselves loose, the best nuts for stopping this are lock nuts, like nylon insert lock nuts and prevailing torque lock nuts. Kep nuts and castle nuts are also good options. These nuts resist loosening caused by vibration because they create extra friction or use physical locks to hold tight. Which Types of Nuts Are the Best for High-Temperature Environments? High temperatures can melt plastic parts, so nuts with nylon inserts are not good for hot places. The best nuts for high temperatures are prevailing torque lock nuts that use metal thread distortion and heavy hex nuts that are made of strong steel alloys that withstand heat and stress. These nuts keep their locking ability even in hot environments like engines or turbines. How to Prevent Nuts from Loosening? Using lock nuts like nylon insert or prevailing torque nuts. Adding washers, such as split lock washers or spring washers, that increase friction. Using cotter pins with castle or slotted nuts to physically lock the nut in place. Applying thread-locking glue (like Loctite) that sticks the threads together. Tightening the nut to the correct torque so it stays secure. What Is the Formula for the Torque of a Nut? Torque is the twisting force used to tighten a nut. The simplified formula to calculate the torque needed to tighten a nut is the same as the bolt torque formula.T=KFdWhere:T = Torque (usually in Newton-meters or foot-pounds)K = Nut factor or friction coefficient (depends on lubrication and materials, usually about 0.2)F = Axial force or clamp load (force you want the bolt to hold)d = Nominal diameter of the fastener (in meters or inches) Which Nuts Require Specific Tools for Installation? Most nuts just need a wrench or socket tool, but some require special tools: Castle nuts: Require a cotter pin plier or needle-nose pliers to install or remove the cotter pin. Slotted nuts: Also need special tools for cotter pins or safety wires. Prevailing torque lock nuts: Require a wrench with enough torque, sometimes special sockets if theyre in tight spots. Wing nut: Usually no tools needed, but if very tight, pliers might help. Tee nuts: Often hammered or pressed in, so a hammer or press tool is needed for installation. How to Disassemble Castle Nuts and Wing Nuts? 1. Castle Nut: Remove the cotter pin by straightening the bent ends and pulling it out with pliers. Use a wrench to turn the castle nut counterclockwise to loosen and remove it. Always replace the cotter pin with a new one when reassembling for safety. 2. Wing Nut: Because wing nuts have wings, you usually can turn them by hand counterclockwise to loosen. If too tight, use pliers gently on the wings to help turn it. Turn until the wing nut can be removed. Nut Standards for Dimensions (ISO, ASME, ANSI, DIN, BS, and More) Nut TypesStandardUnit or Measurement SystemHex (Hexagon) NutsANSI/ASME B18.2.2Inch (Imperial)Square NutsANSI/ASME B18.2.2Inch (Imperial)Hex Nuts, Style 1ANSI/ASME B18.2.4.1MMetricHex Nuts, Style 2ANSI/ASME B18.2.4.2MMetricSlotted Hex NutsANSI/ASME B18.2.4.3MMetricHex Flange NutsANSI/ASME B18.2.4.4MMetricHex Jam NutsANSI/ASME B18.2.4.5MMetricHeavy Hex NutsANSI/ASME B18.6.3Inch (Imperial)Prevailing Torque Hex NutsANSI/ASME B18.16.3MMetricPrevailing Torque Hex Flange NutsANSI/ASME B18.16.3MMetricWing NutsDIN 315 A/ DIN 315 D/ ISO 5448MetricHex Jam Nuts / Jam NutsDIN 439/ DIN 439 B/ ISO 4035/ ASME B18.2.4.5MMetricHex NutsDIN 555/ ISO 4034/ UNI 8214MetricSquare NutsDIN 557MetricLifting Eye NutsDIN 582MetricSpring Lock Washers, Form BDIN 127 BMetricSpecial Foundation Square NutsDIN 798MetricHex NutsDIN 934/ ISO 4032/ ASME B18.2.4.1MMetricHex Castle NutsDIN 935/ ISO 7035MetricHex Jam Nuts / Thin NutsDIN 936MetricNylon Insert Lock Nuts / Nylock NutsDIN 985/ ISO 7040/ UNI 7474MetricDome Nylock NutsDIN 986MetricHex Domed Cap Nuts / Acorn NutsDIN 1587/ PN 82121 / UNI 5721MetricHex NutsDIN 2510 Form NPMetricPrevailing Torque Hex Thin NutsISO 10511MetricPrevailing Torque Hex NutsISO 10512MetricPrevailing Torque All Metal Hex High NutsISO 10513MetricHex Nuts for T-SlotsISO 299/MetricHex High NutsISO 4033MetricHex Flange NutsISO 4161MetricHex Nuts With Large Across FlatsISO 4775MetricSlotted Hex Castle Nuts, High TypeISO 7036MetricHigh Castle NutsISO 7037MetricSlotted Hex Castle Nuts, Low TypeISO 7038MetricPrevailing Torque Nuts with Nylon Insert ISO 7040MetricPrevailing Nylon NutsISO 7041MetricPrevailing Torque All Metal Hex NutsISO 7042MetricHex Nuts with Coarse & Fine ThreadsISO 8673MetricJam Nuts / Thin Hex Nuts With Fine ThreadsISO 8675MetricHex NutsIS 1363 Part 3/ ISO 4034MetricHex NutsIS 1364 Part 3/ ISO 4032MetricHex NutsBS 3692MetricHex Machine Screw NutsBS 4183MetricHex NutsBS 4190MetricHex Thin Nuts / Jam NutsBS 4190MetricMetric Standard Nut Sizes Chart (ISO 4032) in MM1. Thread PitchThread pitch is the distance between the threads on the inside of the nut. It tells us how tightly or loosely the nut will screw onto a bolt. A smaller pitch means the threads are closer together, making the nut turn slowly but hold tightly. A bigger pitch has threads spaced farther apart, so you can spin the nut on faster.2. Width Across FlatsThe width across flats is the distance between two opposite flat sides of the nut. Think of the nut as a little hexagon. This measurement tells you how wide the nut is from one flat side to the flat side directly across from it. This size is important because it tells you what size wrench or spanner you need to tighten or loosen the nut.3. Width Across CornersThe width across corners is the distance from one corner of the nut to the corner directly on the opposite side. If you look at the nut from above, it looks like a hexagon with six points. This measurement is always a bit longer than the width across flats because it stretches across the nut diagonally. This helps make sure the nut can fit into places where space is measured from corner to corner.4. Height of the NutThe height of the nut is how tall the nut is from the bottom to the top. Its basically the thickness of the nut. This size matters because it affects how much thread the nut can hold onto the bolt. A taller nut can grip more threads, making the connection stronger and more secure.Nut SizeThreadPitchWidthAcrossFlatsWidthAcrossCornersHeightof

theNutmax.min.min.max.min.M1.60.353.203.023.411.301.05M20.44.003.824.321.601.35M2.50.455.004.825.452.001.75M30.55.505.326.012.402.15M3.5*0.66.005.826.582.802.55M40.77.006.787.663.22.9M50.88.007.788.794.74.4M6110.009.7811.055.24.9M81.2513.0012.7314.386.806.44M101.516.0015.7317.778.408.04M121.7518.0017.7320.0310.8010.37M14*221.0020.6723.3612.812.1M16224.0023.6726.7514.814.1M18*2.527.0026.1629.5615.815.1M202.530.0029.1632.9518.016.9M22*2.5343337.2919.418.1M2433635339.5521.520.2M27*3414045.223.8;

All dimensions are given in millimeters. * Non-preferred threads according to standard.Related Post(s) About us| Contact us| Disclaimer | Privacy PolicyCopyright 2013-2023 About us| Contact us| Disclaimer | Privacy PolicyCopyright 2013-2023 s - size of the hexagonn - height of the nutd - the nominal diameter of the thread Steel: 6.8,10,12 Stainless: A2,A4 Plastic: Plastic Pa Non Ferrous: Brass, Copper, Aluminium Thread: 6H Notes: - Table according to EN ISO 4032: Thread d preferred threads M1,6 M2 M2,5 M3 M4 M5 M6 M8 M10 M12 P 0,35 0,4 0,45 0,7 0,8 1 1,25 1,5 1,75 c max. 0,20 0,20 0,30 0,40 0,40 0,50 0,50 0,60 0,60 0,60 min. 0,10 0,10 0,10 0,15 0,15 0,15 0,15 0,15 0,15 0,15 da max. 1,84 2,30 2,90 3,45 4,60 5,75 6,75 8,75 10,80 13,00 min. 1,60 2,00 2,50 3,00 4,00 5,00 6,00 8,00 10,00 12,00 dw min. 2,40 3,10 4,10 4,60 5,90 6,90 8,90 11,60 14,60 16,60 e min. 3,41 4,32 5,45 6,01 7,66 8,79 11,05 14,38 17,77 20,03 m max. 1,30 1,60 2,00 2,40 3,20 4,70 5,20 6,80 8,40 10,80 min. 1,05 1,35 1,75 2,15 2,90 4,40 4,90 6,44 8,04 10,37 mw min. 3,20 4,00 5,00 5,50 7,00 8,00 10,0 13,00 16,00 18,00 min. 3,02 3,82 4,82 5,32 6,78 7,78 9,78 12,73 15,73 17,73 Thread d preferred threads M16 M20 M24 M30 M36 M42 M48 M56 M64 P 2 2,5 3 3,5 4 4,5 5 5,5 6 c max. 0,80 0,80 0,80 0,80 0,80 1,00 1,00 1,00 1,00 1,00 min. 0,20 0,20 0,20 0,20 0,30 0,30 0,30 0,30 0,30 0,30 da max. 17,30 21,60 25,90 32,40 38,90 45,40 51,80 60,50 69,10 min. 16,00 20,00 24,00 30,00 36,00 42,00 48,00 56,00 64,00 dw min. 22,50 27,70 33,30 42,80 51,11 60,00 69,50 78,70 88,20 e min. 26,75 32,95 39,55 50,85 60,79 71,30 82,60 93,56 104,86 m max. 14,80 18,00 21,50 26,60 31,00 34,00 38,00 45,00 51,00 min. 14,10 16,90 20,20 24,30 29,40 32,40 36,40 43,40 49,10 mw min. 11,30 13,50 16,20 19,40 23,50 25,90 29,10 34,70 39,30 s nominal = max. 24,00 30,00 36,00 46,00 55,00 65,00 75,00 85,00 95,00 min. 23,67 29,16 35,00 45,00 53,80 63,10 73,10 82,80 92,80 Thread d non-preferred threads M3,5 M14 M18 M22 M27 M33 M39 M45 M52 M60 P 0,6 2 2,5 2,5 3 3,5 4 4,5 5 5,5 c max. 0,40 0,60 0,80 0,80 0,80 0,80 1,00 1,00 1,00 1,00 min. 0,15 0,15 0,20 0,20 0,20 0,20 0,30 0,30 0,30 0,30 da max. 4,00 15,10 19,50 23,70 29,10 35,60 42,10 48,60 56,20 64,80 min. 3,50 14,00 18,00 22,00 27,00 33,00 39,00 45,00 52,00 60,00 dw min. 5,00 19,60 24,90 31,40 38,00 46,60 55,90 64,70 74,20 83,40 e min. 6,58 23,36 29,56 37,29 45,20 55,37 66,44 76,95 88,25 99,21 m max. 2,80 12,80 15,80 19,40 23,80 28,70 33,40 36,00 42,00 48,00 min. 2,55 12,10 15,10 18,10 22,50 27,40 31,80 34,40 40,40 46,40 mw min. 2,00 9,70 12,10 14,50 18,00 21,90 25,40 27,50 32,30 37,10 s nominal = max. 6,00 21,00 27,00 34,00 41,00 50,00 60,00 70,00 80,00 90,00 min. 5,82 20,67 26,16 33,00 40,00 49,00 58,80 68,10 78,10 87,80 Note: All the information provided on this website is provided on an as is and as commonly used in production basis and you agree that you use such information entirely at your own risk. 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ProductDateCountryDetailISO 912 / ISO 4762 A4-702025-06-18 08:09:44GermanySee Detailfasteners2025-06-13 15:21:51United StatesSee DetailISO 4762, M8x40ZP2025-06-04 11:34:31FranceSee DetailISO 4032-M4-A4-80 2025-03-04 01:43:30MalaysiaSee Detailanchor bolts/hook anchors2025-02-25 07:24:19GermanySee Detailfasteners2025-01-31 16:39:08United StatesSee Detailbolts and nuts material SA 1932025-01-22 11:23:55SlovakiaSee DetailCSN Fastener Replacement2025-01-06 15:09:34United KingdomSee Detailfasteners2024-09-22 23:25:25GermanySee DetailISO 4032 M102024-05-21 05:09:31IndiaSee DetailISO 4032 8 HDG2024-05-15 09:54:33GreeceSee DetailISO 4032-M4-A4-802024-05-15 08:34:06NorwaySee Detailfasteners2024-03-25 18:03:58CroatiaSee DetailISO 4032 Nuts2024-02-19 09:14:14FranceSee DetailISO 4032 8 Zn or DIN 934 2024-02-01 16:17:45United StatesSee DetailWasher M64 - ISO 70892024-01-05 01:34:23VietnamSee Detailfasteners2023-12-07 05:58:33CanadaSee DetailDIN 529 form A2023-08-29 07:52:49SpainSee Detailfasteners2023-06-21 11:37:12SerbiaSee Detailfasteners2023-05-25 05:51:06IndiaSee DetailFasteners2022-12-13 01:06:37TaiwanSee DetailISO 4014 +ISO 4032 CLASS 5.62022-11-03 08:53:47PolandSee Detailfasteners2022-10-06 16:18:15NetherlandsSee DetailISO 4032 M5-8 ZINC2022-09-14 07:12:14United Arab EmiratesSee DetailISO 4032022-08-04 15:33:18RomaniaSee DetailISO 4032022-08-03 18:26:57RomaniaSee DetailISO 4032022-07-29 15:51:5MexicoSee DetailNUT ISO 4032-M302022-07-25 06:56:43United StatesSee Detailfasteners2022-06-24 19:23:47KazakhstanSee Detailfasteners2022-04-08 09:03:23CroatiaSee DetailISO 4762 + ISO 4032022-03-24 07:40:10Czech RepublicSee Detail1421 Sphere; Iso nuts2022-02-17 06:38:33AustriaSee Detailnuts 10CrMo9-1(-1.7380) _25CrMo4-(1.7218)2022-02-08 15:03:33PolandSee DetailNut 10CrMo9-1(-1.7380) EN ISO 4032022-01-20 12:54:41PolandSee DetailISO 4032 & DIN 9762022-01-13 13:45:41United StatesSee Detailfasteners2021-12-11 07:19:15GermanySee Detailfasteners2021-10-27 12:04:05South AfricaSee DetailISO 4032021-10-15 06:55:48LatviaSee Detailfasteners2021-07-30 07:08:58Czech RepublicSee DetailISO 4014 and ISO 4032 ASME2021-06-25 15:30:23GermanySee DetailM24 - ISO 4032021-03-29 18:52:44United StatesSee DetailISO 4032-01-01 10:24:42AustriaSee Detailfasteners2021-03-01 18:49:22SpainSee DetailDIN 934 10 TZN2021-01-20 12:53:16SpainSee DetailNUT ISO 4032 M102020-12-02 15:05:36GermanySee Detailfasteners2020-08-24 14:10:58United StatesSee DetailISO 2016, ISO 4760, ISO 4032020-07-25 14:42:31GermanySee DetailStainless steel fasteners2020-05-27 06:33:11VietnamSee DetailNUT 7992020-05-19 12:23:52GermanySee Detailfasteners2020-05-19 07:27:48AndorraSee Detailfasteners2020-05-12 08:37:47United Arab EmiratesSee DetailSR EN 1515-3:2006, ISO 4032, SR7666-22020-02-06 09:20:46RomaniaSee DetailSTUD BOLTS2020-01-29 10:59:28United Arab EmiratesSee Detailurgent Request for Fastener-P1910240982019-10-25 08:04:02GermanySee Detailnuts2019-09-09 13:34:02GermanySee DetailISO 4032 M4 A4-702019-08-21 15:42:13United StatesSee Detailfasteners2019-08-09 14:36:16GermanySee Detailbrit dip galvanized fasteners2019-07-10 08:53:25Czech RepublicSee Detailfasteners2019-06-26 13:14:06IndiaSee Detailstainless steel fasteners2019-06-05 21:36:48MexicoSee Detailfasteners2019-05-20 05:15:12United StatesSee DetailU-bolts DIN 35702019-04-30 09:58:27GermanySee DetailHammer head bolts with nut2019-04-08 10:37:14GermanySee DetailFits bolts of different sizes2019-04-08 08:54:44GermanySee Detailfasteners2019-03-14 20:13:29United States See Detailfasteners2019-02-07 15:22:39United States See Detailfasteners2019-02-06 21:00:58United States See Detailfasteners2018-11-26 14:32:26GermanySee DetailISO 4032 , DIN 9342018-11-19 12:22:05Czech RepublicSee DetailFasterners for Lusail Project2018-11-07 07:59:43QataraSee DetailISO 4032 M122018-07-11 17:25:15Czech RepublicSee Detailfasteners2018-07-06 14:38:09EstoniaSee DetailHEX-NUT T1 M162018-06-18 15:21:23PolandSee DetailISO 4032 hex nuts, brass, M2, plain surface finish2018-05-29 16:25:28United States See Detailfasteners2018-04-21 19:04:21SlovakiaSee DetailDIN 79922018-03-26 12:15:00Czech RepublicSee DetailNut ISO 4032 (DIN 934) M45x1,5 -10 A2F2018-02-02 07:10:00GermanySee DetailBolts, nuts and washers2017-12-20 09:20:46IcelandSee DetailISO 4017, ISO 4032, U-Bolts2017-10-31 10:37:36TurkeySee DetailISO 40322017-10-18 13:28:34United Arab EmiratesSee Detail Related Resources: hardware Metric ISO Hardware Engineering Data Inch ANSI Hardware Engineering Data Fastener and Screw / Bolt Design, Formula & Calculations Width Across Metric Nut Flats The width across flats of nut shall be the distance measured, perpendicular to the axis of nut, overall between two opposite sides of the nut in accordance with the notes on respective dimensional tables. For milled- from-bar hex nuts, the nominal bar size used shall be the closest commercially available size to the specified basic width across flats of the nut. For milled-from- bar nonferrous nuts, the tabulated maximum (basic) width across flats dimensions may be exceeded to con- form with the commercial tolerances of drawn or rolled bar stock material. Metric Nut Thickness The nut thickness shall be the overall distance, measured parallel to the axis of nut, from the top of the nut to the bearing surface and shall include the thickness of the washer face where provided Standard Metric Hex Nuts, Types Styles 1 and 2 per. ANSI/ASME B18.2.4.1M and B18.2.4.2M All dimensions are in millimeters. Nominal Nut Dia. x Thread Pitch Width Across Flats, S Width Across Corners, E Thickness M Bearing Face Dia. Dw Washer Face Thickness C Max Min Max Min Max Min Metric Hex Nuts Style 1 M1.6 0.35 3.20 3.02 3.70 3.41 1.30 1.05 2.3 M2 0.4 4.00 3.82 4.62 4.32 1.60 1.35 3.1 M2.5 0.45 5.00 4.82 5.77 5.45 2.00 1.75 4.1 M3 0.5 5.50 5.32 6.35 6.01 2.40 2.15 4.6 M3.5 0.6 6.00 5.82 6.93 6.58 2.80 2.55 5.1 M4 0.7 7.00 6.78 8.08 7.66 3.20 2.90 6.0 M5 0.8 8.00 7.78 9.24 8.79 4.70 4.40 7.9 M6 1 10.00 9.78 11.55 10.89 5.20 4.90 9.1 M8 1.25 13.00 12.73 15.01 14.38 6.80 6.44 11.6 M10 1.5 15.00 14.73 17.32 16.64 9.1 8.7 13.6 0.6 0.3 M10 1.5 15.00 15.73 18.48 17.77 8.40 8.04 14.6 M12 1.75 18.00 17.73 20.78 20.03 10.80 10.37 16.6 M14 2 21.00 20.67 24.25 23.36 12.80 12.10 19.4 M16 2 24.00 23.67 27.71 26.75 14.80 14.10 22.4 M20 2.5 30.00 29.16 34.64 32.95 18.00 16.90 27.9 0.8 0.4 M24 3 36.00 35.00 41.57 39.55 21.50 20.50 32.5 0.8 0.4 M30 3.5 46.00 45.00 53.12 50.85 25.60 24.30 42.5 0.8 0.4 M36 4 55.00 53.80 63.51 60.79 31.00 29.40 50.8 0.8 0.4 Metric Hex Nuts Style 2 M3 0.5 5.50 5.32 6.35 6.01 2.90 2.65 4.6 M3.5 0.6 6.00 5.82 6.93 6.58 3.30 3.00 5.1 M4 0.7 7.00 6.78 8.08 7.66 3.80 3.50 5.9 M5 0.8 8.00 7.78 9.24 8.79 5.10 4.80 6.9 M6 1 10.00 9.78 11.55 11.05 5.70 5.40 8.9 M8 1.25 13.00 12.73 15.01 14.38 7.50 7.14 11.6 a M10 1.5 16.00 15.73 18.47 17.77 9.30 8.94 14.6 M12 1.75 18.00 17.73 20.78 20.03 12.00 11.57 16.6 M14 2 21.00 20.67 24.25 23.35 14.10 13.40 19.6 M16 2 24.00 23.67 27.71 26.75 14.80 14.10 22.4 M20 2.5 30.00 29.16 34.64 32.95 18.00 16.90 27.9 0.8 0.4 M24 3 36.00 35.00 41.57 39.55 21.50 20.50 32.5 0.8 0.4 M30 3.5 46.00 45.00 53.12 50.85 25.60 24.30 42.5 0.8 0.4 M36 4 55.00 53.80 63.51 60.79 31.00 29.40 50.8 0.8 0.4 2.90 2.65 4.6 M3.5 0.6 6.00 5.82 6.93 6.58 3.30 3.00 5.1 M4 0.7 7.00 6.78 8.08 7.66 3.20 2.90 6.0 M5 0.8 8.00 7.78 9.24 8.79 4.70 4.40 7.9 M6 1 10.00 9.78 11.55 11.05 5.20 4.90 9.1 M8 1.25 13.00 12.73 15.01 14.38 6.80 6.44 11.6 a M10 1.5 15.00 14.73 17.32 16.64 9.1 8.7 13.6 0.6 0.3 M10 1.5 16.00 15.73 18.47 17.77 8.40 8.04 14.6 M12 1.75 18.00 17.73 20.78 20.03 10.80 10.37 16.6 M14 2 21.00 20.67 24.25 23.36 12.80 12.10 19.4 M16 2 24.00 23.67 27.71 26.75 14.80 14.10 22.4 M20 2.5 30.00 29.16 34.64 32.95 18.00 16.90 27.9 0.8 0.4 M24 3 36.00 35.00 41.57 39.55 21.50 20.50 32.5 0.8 0.4 M30 3.5 46.00 45.00 53.12 50.85 25.60 24.30 42.5 0.8 0.4 M36 4 55.00 53.80 63.51 60.79 31.00 29.40 50.8 0.8 0.4 Metric Hex Nuts Style 2 M3 0.5 5.50 5.32 6.35 6.01 2.90 2.65 4.6 M3.5 0.6 6.00 5.82 6.93 6.58 3.30 3.00 5.1 M4 0.7 7.00 6.78 8.08 7.66 3.20 2.90 6.0 M5 0.8 8.00 7.78 9.24 8.79 4.70 4.40 7.9 M6 1 10.00 9.78 11.55 11.05 5.20 4.90 9.1 M8 1.25 13.00 12.73 15.01 14.38 7.50 7.14 11.6 a M10 1.5 16.00 15.73 18.47 17.77 9.30 8.94 14.6 M12 1.75 18.00 17.73 20.78 20.03 12.00 11.57 16.6 M14 2 21.00 20.67 24.25 23.35 14.10 13.40 19.6 M16 2 24.00 23.67 27.71 26.75 14.80 14.10 22.4 M20