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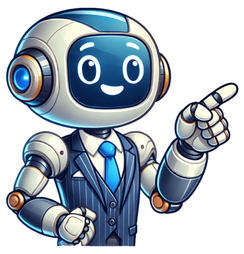

Download Article Download Article Screws come in a wide variety of shapes and sizes, so thread callouts are used to help identify them. The first time you see a callout can be a little confusing, but its pretty straightforward once you know what the numbers are meant to stand for. The callout basically corresponds to the length and diameter of the screws shaft. There are a couple of different labeling systems throughout the world, so keep in mind which one the callout uses. By understanding callouts, you will be better able to pick the right screws for any project. 1Look for a label with the callout printed on it. It is usually not printed on the screw. You have to look for a label on the packaging or on the shelf where you bought the screw. The callout looks like a long line of numbers and symbols, like #4-40 UNC-3A x .5.[1]If you are unable to identify the screw through its callout, you may need to measure it yourself. The easiest way to measure a screw is with a thread gauge or screw checker. 2Use the first number to figure out the diameter of the threads. The first number shows you the major diameter or the diameter of the grooves on the screw shaft. In the Unified Thread Standard (UTS) system, manufacturers list the diameter size as a number between 0 and 10, with 0 being the smallest and 10 being the largest. Screws larger than a #10 have a diameter listed directly in inches.[2]For example, on a #4-40 UNC-3A x .5 screw, #4 represents the diameter. It has a diameter of 0.112in (0.28cm).The diameter is sometimes listed as a fraction, such as . It has a diameter of 1/4in (0.64cm).To help decipher the number ratings, look up a conversion chart online. Advertisement 3Read the second number to find the number of threads per inch. It can also be called the thread pitch. Metal screws tend to have more threads per inch than wood screws, for instance. Coarse screws also have a larger pitch measurement than fine screws.[3]A #4-40 UNC-3A x .5 screw has 40 threads per inch. A -20 screw, by comparison, only has 20 threads.4Use the abbreviation to determine the thread standard if it is listed. The thread standard gives you additional information about the number of threads on the screw's shaft. Manufacturers often list it for the sake of accuracy. The most common one is UNC, which means Unified National Coarse. You may also see Unified National Fine (UNF) and some other standards.[4]If you see a callout like #4-40 UNC-3A x .5, the UNC tells you that you have a coarse screw.UNC or coarse screws are the most common type and used for general purposes. UNF or fine screws have a smaller pitch, making them stronger and more resistant to damage, such as from vibration.You may also see a J, like UNJC or UNJF. These screws are bigger and even stronger than regular screws.5Look for a number from 1 to 3 indicating the tolerance class. If the callout includes the tolerance class, it is telling you what kind of nuts or holes the screw is meant to fit into. A size 1 screw has the most space between its threads, so it fits more loosely when it is used. Size 3 is the tightest fit and used for accuracy. Size 2 screws are the ones you will end up working within most cases. Note that the tolerance class is also divided into A and B. For instance, you might see 2A and 2B screws, which are slightly different sizes. A represents the external threads on the screw shaft and B represents the internal ones.For instance, a callout of #4-40 UNC-3A x .5 corresponds to a 3A screw. This kind of screw is used for tight fits.If you plan on securing a screw with a nut, find one with a matching tolerance class.6Note if the screw has an LH for left-handed. Left-handed screws are unusual because they are threaded in reverse. When you turn a left-handed screw clockwise, it loosens instead of tightens. Left-handed screws are often used when parts could normally come loose, such as on bicycle pedals and other rotating parts.[5]For example, #4-40 UNC-3A x .5 is not a left-handed screw. A left-handed version would be labeled like #4-40 UNC-3A-LH x .5.Most screws you use at home will be right-handed screws. However, if you find a screw marked with LH, you will know to turn it in the opposite direction!7Use the final number to determine the screws length. The number indicating the length typically comes after an x. It also tends to be a small number similar to the diameter measurement, making it easier to spot when youre looking at a long callout. Most screws are measured from the end of the shaft to the bottom of the head. However, note that flathead screws, designed to sit flush when placed, are measured from the top of the head. For unified threads, the length is given in inches. A #4-40 UNC-3A x .5 screw is 0.5in (1.3cm) long.The length can be written as a fraction or a decimal, so you will also see screws labeled like #4-40 UNC-3A x . Advertisement 1Find the screw thread callout number. It wont be on the screw. Look to the packaging or store label for more information. If youre using a blueprint or another source of information, the label may also be there. The callout will look like a string of several numbers.[6]For example, a metric screw callout looks something like M12 x 1.75 x 85.If you arent able to find the callout, measure the screw yourself. If you have a nut or another fastener with a known size, you could also try securing the screw in it.2Note that the letter M means you have a metric screw. Screws with the metric labeling always have the letter M. Looking for the metric designation is important if you think you might have other types of screws mixed in. The metric labeling system has a slightly different callout than something like the UTS system.If you use different labeling systems at the same time, you may end up with screws that look similar but are a slightly different size. Always figure out the labeling system the callout uses.3Look at the first number to find the screws diameter. The diameter number will be listed next to the M. It corresponds to the width of the threads on the screws shaft. In the metric system, the diameter is always measured in millimeters.For instance, on a M12 x 1.75 x 85 callout, M12 is the diameter. It means the external threads are 12mm (0.47in) wide.4Read the next number to figure out the screws pitch. The pitch represents the distance in millimeters between the grooves on the screws shaft. It will follow an x after the diameter number. Specifying the pitch is important for distinguishing between coarse and fine screws. Coarse screws have a larger pitch than similarly-sized fine screws.[7]A M12 x 1.75 x 85 screw, for instance, has threads every 1.75mm (0.069in). The second number, 1.75, indicates the pitch.The metric labeling system doesnt label coarse or fine screws, so you have to pay attention to the pitch. Coarse screws are used in general applications, but fine screws are more resistant to damage.If you dont see a pitch size listed, assume that you have a coarse screw. Sometimes the pitch isnt listed because coarse screws are used much more frequently than fine screws.5Use the last number to determine the length of the screw. The length will follow an x. It is easy to tell apart from the pitch number because it is larger. Also, if you only see 1 number after the diameter listing, then you know youre looking at the length of a coarse screw. The length is always measured in millimeters.[8]For example, a callout of M12 x 1.75 x 85 corresponds to an 85mm (3.3in) screw shaft.Keep in mind that most screws are measured from the end of the shaft to the bottom of the head. The exception is flathead screws, which are measured from the top of the head. Advertisement Add New Question Question Are the male and female referring to the threads on the adapter? Or to the threads on the two pipes that can be connected with the adapter? Male and female refers to where the actual thread is. A Male thread is on the outside (think of the thread on the end of a nut or the socket for a light bulb. Question When referring to a screw thread, what does the "20" in 1/4" *20 mean? The 20 is the number of threads per inch. Question Can I sell online in bulk, since it is a rate per kg? Yes, no problem. Just make sure you also give the weights in imperial, to save confusion. See more answers Ask a Question Advertisement Thanks Thanks Show More Tips Advertisement Thanks Thanks Advertisement This article was co-authored by Barry Zakar. Barry Zakar is a professional handyman and the founder of Little Red Truck Home Services based in the San Francisco Bay Area. With over ten years of experience, Barry specializes in a variety of carpentry projects. He is skilled at constructing decks, railings, fences, gates, and various pieces of furniture. Barry also holds his MBA from John F. Kennedy University. This article has been viewed 1,480,377 times. Co-authors: 41 Updated: July 24, 2025 Views:1,480,377 Categories: Featured Articles | Screws and Screwdrivers PrintSend fan mail to authors Thanks to all authors for creating a page that has been read 1,480,377 times. "I was trying to reuse the stainless rod from a broken cafetiere to make a corner marker for the front corner of my car. The rod is 4.44 mm, which appears to be an Imperial no 9. I'll have to glue it either side of the rod to make the thread the bumper; I am not going to find a tap of that size, and even if I did, the expense would not be justified."..." more Share your story Skip to content In engineering and manufacturing, knowing metric thread sizes is essential. They help you choose the right fasteners and ensure all parts fit together perfectly. Balancing size, pitch, and thread class can be tricky but crucial. Understanding these factors avoids compatibility issues, making your projects more efficient and reliable. Thread SizeMajor (mm)Minor (mm)Pitch (mm)Pitch (mm)Tapping Drill (mm)Clearance Hole (mm)M11.00.729.250.8380.751.3M1.11.10.829.250.9380.851.4M1.21.20.929.251.0380.951.5M1.41.41.0750.301.2051.101.8M1.61.61.2210.351.3731.252.0M1.81.81.4210.351.5731.452.3M22.01.5670.401.7401.602.6M2.22.21.7130.451.9081.752.9M2.52.52.0130.452.2082.053.1M33.02.4590.502.6752.503.6M3.53.52.8500.603.1102.904.2M4.03.2420.703.5453.304.8M4.54.53.6880.754.0133.805.3M55.04.1340.804.4804.205.8M66.04.9171.005.3505.007.0M77.05.9171.006.3506.008.0M88.06.6471.257.1886.8010.0M99.07.6471.258.1887.8011.0M1010.08.2 (mm)M11.00.729.250.8380.751.3M1.11.10.829.250.9380.851.4M1.21.20.929.251.0380.951.5M1.41.41.0750.301.2051.101.8M1.61.61.2210.351.3731.252.0M1.81.81.4210.351.5731.452.3M22.01.5670.401.7401.602.6M2.22.21.7130.451.9081.752.9M2.52.52.0130.452.2082.053.1M33.02.4590.502.6752.503.6M3.53.52.8500.603.1102.904.2M4.03.2420.703.5453.304.8M4.54.53.6880.754.0133.805.3M55.04.1340.804.4804.205.8M66.04.9171.005.3505.007.0M77.05.9171.006.3506.008.0M88.06.6471.257.1886.8010.0M99.07.6471.258.1887.8011.0M1010.08.2 Metric thread sizes use a specific notation to detail the diameter, pitch, and thread class. Each component is crucial in defining the threads specifications, ensuring compatibility and performance in your projects. The diameter of a metric thread is measured in millimeters, represented by a number that indicates the threads outer diameter. Choosing the right diameter affects the strength and stability of the connection. While larger diameters offer more strength, they may not always fit smaller components, highlighting the trade-off between size and application. The pitch measures the distance between adjacent threads in millimeters and is vital for determining how snugly a fastener fits. A finer pitch provides a tighter fit, but it can complicate assembly. On the other hand, a coarser pitch makes assembly easier but might not be suitable for high-precision applications. Balancing pitch is crucial for achieving the right fit and functionality. Thread class signifies the tolerance level for thread dimensions and fit. It impacts how tightly the components connect and their overall strength. Higher classes offer tighter fits, reducing play but possibly increasing manufacturing complexity. Lower classes are easier to produce but may result in less precise fits. Understanding thread class helps you choose the right balance between precision and ease of use. Reading a metric thread size chart involves interpreting the provided dimensions and specifications to ensure you select the correct thread size for your project. This process helps avoid compatibility issues and ensures optimal performance. For example, a thread size of M10x1.5 indicates a diameter of 10 millimeters and a pitch of 1.5 millimeters. This size is suitable for a range of mechanical applications. Balancing these dimensions is crucial; a larger diameter might provide more strength but could be incompatible with smaller fittings. Similarly, while a finer pitch offers a more precise fit, it can be challenging to align correctly. Understanding these trade-offs helps you make informed decisions, ensuring that your chosen thread size meets the specific needs of your project. Understanding common issues with metric threads, such as cross-threading or incorrect sizes, helps you avoid problems and ensures proper functionality. Addressing these issues promptly can prevent damage and maintain the efficiency of your projects. Cross-threading occurs when threads become misaligned during assembly, leading to damage and a poor fit. This problem can be prevented by using proper alignment techniques and ensuring that threads are engaged correctly. While it may seem straightforward, achieving precise alignment can be challenging, particularly in high-torque applications. Ensuring proper tool use and alignment can minimize this risk, ultimately saving time and reducing potential damage. Selecting the correct thread size involves matching your projects requirements to the specifications listed in the thread size chart. An incorrect size can lead to weak connections or compatibility issues. Balancing factors such as diameter, pitch, and thread class is crucial for a successful fit. While it might be tempting to choose a size based on convenience, carefully reviewing the chart ensures that you meet your projects specific needs and avoid potential problems in the long run. 1 What is the difference between coarse and fine metric threads? Answer: Coarse threads have a larger pitch, meaning the distance between threads is greater. They are commonly used for general-purpose applications because they are easier to assemble and offer good resistance to vibration. Fine threads, on the other hand, have a smaller pitch and provide a tighter fit. They are ideal for applications requiring precision and a stronger grip but can be more challenging to align correctly. Choosing between coarse and fine threads depends on the specific needs of your project. 2. How do I determine the correct thread size for my application? Answer: To determine the correct thread size, refer to the metric thread size chart and consider your projects requirements. Start by measuring the diameter and pitch of the thread needed. For example, if the chart lists M10x1.5, it means the diameter is 10 millimeters, and the pitch is 1.5 millimeters. Match these measurements to your components to ensure a proper fit. Its crucial to balance these dimensions based on the strength, precision, and compatibility requirements of your application. 3. What are the common causes of thread damage, and how can I avoid them? Answer: Common causes of thread damage include cross-threading, over-tightening, and using the wrong thread size. Cross-threading occurs when threads are not aligned properly during assembly, leading to damage and a poor fit. Over-tightening can strip the threads and weaken the connection. To avoid these issues, ensure proper alignment during assembly, use the correct thread size, and avoid excessive torque. Regularly check and maintain tools and components to prevent thread damage and ensure reliable performance. Ever driven a screw only to have it poke out the other side or worse, fail to hold anything at all? Thats what happens when you use the wrong screw size. Whether you're putting up a shelf, mounting hardware, or assembling furniture, choosing the right screw keeps your hardware sturdy and helps it to last long.Screws may look simple, but they're precision-engineered for specific tasks. The right size affects not only how securely materials hold together, but also how easy installation is, how well the finish holds up over time, and whether the material stays undamaged.This guide covers everything you need to know:What screw size numbers actually mean (imperial vs. metric)?How to choose the right diameter and length for your material?When to use #6 vs #8 vs #10 screws?Which screw to use with which material?Well also walk you through material-specific recommendations for wood, metal, drywall, and more, so you never have to second-guess the hardware again.Lets take an example - Hanging a heavy mirror on drywall? Using a short or thin screw without proper anchoring is a recipe for disaster. With the right screw length and thread type, you get a secure hold that protects both the wall and the object.Lets start with the universal reference tool: the screw size chart.Screw Size Chart (Imperial + Metric)Finding the right screw size isnt just about guessing what looks right. It requires matching the correct gauge, diameter, and length to your material and application. This is where a screw size chart becomes an essential reference tool.Heres a more complete view of commonly used screw sizes:Screw Size Reference TableScrew SizeInch DecimalNearest FractionMetric Equivalent#00.060 in.1/16"1.52 mm#10.073 in.5/64"1.85 mm#20.086 in.3/32"2.18 mm#30.099 in.7/64"2.51 mm#40.112 in.7/64"2.84 mm#50.125 in.1/8"3.18 mm#60.138 in.9/64"3.51 mm#80.164 in.5/32"4.17 mm#100.190 in.3/16"4.83 mm#120.216 in.7/32"5.49 mm#140.250 in.1/4"6.35 mmCommon Imperial to Metric LengthsIf you're more familiar with inches but come across measurements in millimeters (or vice versa), this table helps you convert between the two. It's especially useful if you're using tools or hardware made outside the U.S.US (Inches)Metric (mm)US (Inches)Metric (mm)1/16"1.59 mm1-3/8"34.93 mm1/8"3.18 mm1-1/2"38.10 mm3/16"4.76 mm1-5/8"41.28 mm1/4"6.35 mm1-3/4"44.45 mm5/16"7.94 mm1-7/8"47.63 mm3/8"9.53 mm2"50.80 mm7/16"11.11 mm2-1/4"57.15 mm1/2"12.70 mm2-1/2"63.50 mm9/16"14.29 mm2-3/4"69.85 mm5/8"15.88 mm3"76.20 mm11/16"17.46 mm3-1/4"82.55 mm3/4"19.05 mm3-1/2"88.90 mm7/8"22.23 mm3-3/4"95.25 mm1"25.40 mm4"101.60 mm1-1/4"31.75 mmTips for Using This ChartGauge refers to the thickness of the screw shaft; the higher the number, the thicker the screw.Screw length is usually measured from where the screw meets the material to the tip. For flat heads, this includes the head; for rounded heads, it does not.Use conversion charts to match inch sizes to millimeters when working across U.S. and international standards.Whether you're upgrading cabinet hardware or framing out a structure, using a chart like this saves time, materials, and guesswork.How to Read Screw SizesIf you've ever looked at a box labeled "#8 x 1-1/2" screw" and had no idea what that meant, you're not alone. Screw sizes can be confusing at first glance, but once you understand how to read them, it becomes second nature.What Do the Numbers Actually Mean?The first number (like #6, #8, or #10) refers to the screws diameter or thickness.The second part (like 1-1/2") is the length of the screw, from the point to where the screw meets the surface of the material.Understanding DiameterThe screws diameter tells you how wide the shaft is. A higher gauge number means a thicker screw. For example:A #6 screw is 0.138 inches wideA #10 screw is 0.190 inches wideThis might not sound like a big difference, but when you're working with different materials (like soft wood vs. metal), it matters a lot.Identifying parts of a screw matter because:Head size: Determines what kind of driver fits the screw.Diameter: The shaft width, which impacts strength and fit.Length: Impacts how deep the screw can anchor into your material.Thread pitch: The distance between threads is important for grip and compatibility.Screw Lengths ExplainedWhen it comes to screws, length matters just as much as thickness. Choosing the right length ensures the fastener goes deep enough to hold, but not so deep that it splits the material or poles through the other side.How Is Screw Length Measured?Different types of screws are measured in different ways. Take a look at how the type of screw matters when youre measuring tits length.Flat head screws (countersunk): Length is measured from the top of the head to the tip.Round, pan, hex head screws: Measured from under the head to the tip.This distinction is crucial, especially when working on cabinets, drywall, or any visible surface.Mistakes to AvoidUsing too short a screw: weak grip, likely to pull out.Using too long a screw: may damage the surface or material behind it.Ignoring the material type: hardwoods need longer screws than softwoods for the same hold strength.Picking the right screw length keeps your projects secure, clean, and professional-looking. Next, well explore how to choose screws based on material because drywall, wood, and metal all play by different rules.Choosing the Right Screw Size by MaterialNot all materials are created equal, and neither are the screws that go into them. Using the right screw type and size for your material prevents cracks, stripping, or weak joins:Screw Recommendations by MaterialMaterialRecommended Screw TypeSize Range (Common)NotesWoodWood screws with coarse threads#6 to #10, 1"-3"Longer screws for load-bearing. Pre-drill in hardwood.DrywallDrywall screws (sharp or self-drilling)#6 to #8, 1-1/4"2"Use anchors for heavier loads. Dont rely on drywall alone.MetalSelf-tapping or machine screws#8 to #14, variesFine threads for thin sheet metal. Pre-drill pilot holes.Concrete/BrickMasonry screws with anchors1-1/4"3"Use anchors and hammer drills. Expansion anchors are preferred.Plastic/CompositeCoarse-thread wood or sheet metal screws#6 to #10Go slow to avoid cracking. Pre-drill recommended.Common Mistakes to AvoidUsing wood screws in metal: wont bite properly; likely to slip or strip.Skipping anchors in drywall: screws will loosen over time underweight.Overdriving screws in plastic: leads to fractures or stripped holes.Choosing screws too short for softwood or MDF: causes wobbly joints.Pro Tip: When in doubt, check both thread style and material compatibility. The screw should be matched not just by size, but by function: grip strength, thread pitch, and head shape all play a role.Next, well look at the most commonly used screw sizes, and where they show up in everyday hardware tasks.Common Screw Sizes and Their UsesSome screw sizes show up again and again in home projects, repairs, and even electronics. This section breaks down popular screw sizes, what they're used for, and why they work well in those situations.Popular Screw Sizes and Their Typical ApplicationsScrew SizeCommon UsesNotes#6 x 1"Light-duty wood joinery, trim, hingesIdeal for indoor applications where less force is required#8 x 1-1/4"Cabinets, furniture assemblyA go-to for interior wood connections#10 x 1-1/2"Drywall into studs, heavy framesOffers strong hold without splitting studs#12 x 2"Metal brackets, structural hardwareOften used where added grip strength is needed#14 x 2-1/2"License plates, decking clipsCommon in outdoor use; pair with corrosion-resistant coatingsM5 x 16mmAutomotive parts, light machineryMetric size, used in imported or precision buildsM4 x 10mmElectronics, appliance panelsVery small, precise threadingAdditional Tip: Keep These in Your Toolbox8 types you'll need for most basic household repairs and furniture builds:Screw Size FAQsWhat size is a #10 screw?A #10 screw has a diameter of approximately 0.190 inches (4.83 mm). Its commonly used for medium-duty fastening, like securing shelves or attaching heavy brackets to studs.Is #8 or #10 bigger?The higher the number, the thicker the screw. So yes, a #10 screw is thicker (and usually stronger) than a #8 screw.How do I measure a screw?Measure length from:The top of the head to the tip if the screw is flat or countersunk,Just under the head to the tip for round, pan, or hex heads.Use a caliper or ruler to measure the diameter across the threads.Can I use metal screws in wood?Technically, yes, but its not recommended. Metal screws usually have fine threads, which dont grip wood fibers well. For a strong, lasting hold, use wood screws with coarser threads.Whats the most common screw size?In household use, #8 x 1-1/4" is extremely common. Its great for furniture, light framing, and cabinetsDo screw threads matter?Yes. Coarse threads are better for soft materials like wood and plastic. Fine threads are ideal for metal or dense hardwoods where grip must be tighter and cleaner.Final Words!Getting the right screw is easy when you know the material, measure carefully, and use reference tools when in doubt. This guide gave you the foundation to make confident decisions, whether you're installing hardware, mounting a frame, or tackling a weekend project.Final Screw-Choosing Checklist:Know the material: wood, drywall, metal, etc.Use the correct diameter and thread typeChoose the right length based on thickness and depthAlways measure screw length correctly based on head typeKeep a size chart handyWhen in doubt, dont guess, check. And if youre building a toolkit, stock a mix of #6, #8, and #10 screws in 1"2" lengths with a few anchors. Its a small investment that prevents big headaches.Explore more screw guides, sizing charts, and installation tips at our knowledge center or visit the DK Hardware Supply Store for the hardware that gets the job done right. Also Read: In this guide, we demonstrate how to measure screw thread size for inch and metric systems of measurements. General Instructions Measure screw diameter, or screw size, by measuring the width of the threaded part of the screw. This corresponds to the first number of the thread size. For inches, any diameter smaller than 1/4" is indicated by a number, referenced in the table below (e.g. 8 corresponds to 0.164"). For metric screws, this is the number of millimeters preceded by the letter M (e.g. M6 corresponds to 6 mm). Measure thread spacing. This corresponds to the second number of the thread size. For inches, this is done by counting the number of threads in an inch. For metric screws, this is the length in millimeters between threads. Inch Thread sizes are specified by diameter and threads per inch. Diameter is also known as screw size. For those with a diameter smaller than 1/4", screw size is indicated by a number (e.g., #10 or No.10). For example, a 10-24 screw has 0.190" thread diameter and has 24 threads per inch. Inch Equivalents for Numbered Screw Sizes No.0 No.1 No.2 No.3 No.4 No.5 No.6 No.8 No.10 No.12 .060" .073" .086" .099" .112" .125" .138" .164" .190" .216" Metric Metric thread sizes are specified by diameter and pitch, which is the space between threads. For the size M6 1 mm, the pitch is coarse; while the size M6 0.75 mm has a fine pitch. If you don't know the pitch, choose coarse threads; they're the industry standard. For example, a M6 x 1 mm has a 6 mm thread diameter and has 1 mm between threads. Choose from our selection of screws. In stock and ready to ship. Junying Metal Manufacturing has developed high-level manufacturing technique in production fields of machining. Whether youre buying screws online or in-store, if you dont know how to read screw callouts, youll probably end up getting the wrong size.Although it might seem hard to understand screw sizes, its actually a lot simpler than what you think.Once you figure out the meaning of each number found in screw callouts, youll find that reading callouts and screw size charts is a piece of cake.You also might be familiar with reading imperial screw callouts.However, you can find some screw packages that are available in metric sizes only.So, its important to familiarize yourself with both of them.In this article, youll find all the information you need to read metric screw sizes easily. We also included an easy-to-follow metric screw size chart.Lets get started!Terms You Must Know to Read Metric Screw Size ChartsIf youre used to using the imperial screw sizes, reading screw sizes in mm might be confusing to you.Metric callouts look different from imperial ones. Thus, metric screw size charts will have different info than what is provided in imperial charts.So, well be starting by explaining how to read metric screw callouts first. This will help you use our metric screw size chart that is included further in the article.How to Read Metric Screw Sizes?A metric callout on a screw package usually looks like this: M6 1.00 25. So, what does this even mean?Typically, screw callouts contain three numbers whether for imperial or metric ones. Metric callouts usually contain:Screw diameterScrew pitchScrew lengthWell be explaining each definition of these to help you read our metric screw size chart.1. Screw DiameterUnlike imperial callouts, the metric screw size callouts always start with the letter M followed by a number. This number is the screw diameter.The screw diameter or major diameter is the outside diameter of the screw. In other terms, its the diameter of the screw shank.Dont get it confused with the US gauge. Just because theyre both written as the first numbers in callouts, doesnt mean that theyre the same thing.Its really complicated to understand the correlation between metric screw diameter and gauge.In this system, screw sizes are often referred to by a number followed by the symbol G or ga (for gauge). For instance, a #6 screw has a larger diameter than a #4 screw.Its important to note that screw gauges may vary depending on the specific standards used in different regions or industries.2. Screw PitchThe screw pitch is represented by the second number you see in the callout. It represents the distance between each thread on the screw in mm.You can find that the screw pitch isnt included in imperial callouts. Instead, youll find the number of threads per inch (TPI).In metric screw sizes, you usually find the screw pitch represented in the second column.You can also find two pitch columns. One for coarse screws and the other for fine screws.A coarse screw is a screw with a low number of threads along the screw. While a fine screw has a high number of threads.So, of course, the pitch number will be different between the two.In our metric screw size chart, we provide the pitch for both coarse and fine threads.3. Screw LengthThe screw length is the third and final number you find in metric callouts. Its measured differently depending on the type of the screw head.For countersinking screws, their length is measured from the top of their heads to their tips.This is because theyre designed to be installed flat or flush with the surface.On the other hand, non-countersinking threads are designed so that their heads remain above the surface.So, the screw length in this case is measured from beneath the head to the tip.To understand how to choose the right screw length for your project, check out this video:Example: Reading Metric Machine Screw SizesTo make sure that you understand how to read metric callouts on screw packages, lets try to read this metric machine screw callout:M3 1.25 30This callout means:The first number after the letter M is the screw diameter which equals 3 mmThe second number is the screws pitch which equals 1.25 mmThe third and final number is the screws length which equals 30 mmSince we also talked about imperial screw callouts, lets read this screw thread callout as well:#6 x 1 x 1/2We have here:The first number represents the US gauge number, which represents the diameter of the screw shaft. Its essentially a measurement of the thickness of the screws body.The second number represents the number of threads per inch which is 1The third and final number is the screws length which equals inchPro-tip, you might find some imperial callouts that contain only two numbers. These two numbers are the gauge number and screw length.What about the thread per inch number? In this case, it means that the screw has the standard number of threads.The Only Metric Screw Size Chart Youll NeedIn our metric screw size chart, youll find all the information you need to buy the right size of screws for your project. Our chart includes:Screw diameterScrew pitch for both coarse and fine screwsTap drill for both coarse and fine screwsFinally, clearance drillMetric Screw SizeMetric Screw DiameterScrew Pitch (Coarse)Tap Drill (Coarse)Screw Pitch (Fine)Tap Drill (Fine) Clearance DrillM110.250.750.20.81.2M1.21.20.250.950.211.4M1.41.40.31.10.21.22M1.61.60.351.250.21.41.8M1.81.80.351.450.21.62M220.41.60.251.752.4M2.52.50.4520.352.12.9M330.52.50.352.63.4M3.53.50.62.90.353.13.9M440.73.30.53.54.5M550.84.20.54.55.5M66150.755.26.6M77160.756.28M881.256.80.75 or 17.29M991.257.750.75 or 18.25 or 8M10101.58.51 or 1.158 or 8.7512M11111.59.51 or 1.2510 or 9.75M12121.7510.21.25 or 1.510.75 or 10.514M14142121.512.516M16162141.514.518M17171 or 1.516 or 15.5M18182.515.51. 5 or 216.5 or 1620M19191 18M20202.517.51.518.5 or 1822M24243211.5 or 222.5 or 2226M25251.5 or 223.5 or 23M27273242253 0M28281.526.5M28282 26M30303.526.52 or 328 or 2733M32321. 5 or 230.5 or 30M33333.529.523136M35352 or 333 or 32M36364322 or 334 or 3339M38381.5 or 236.5 or 36M39394352 or 337 or 3642M40401.5 or 338.5 or 37M42424.537.53 or 439 or 3845M45454.540.53 or 442 or 4148M48485433 or 445 or 4452M50502 or 348 or 47M52525473 or 449 or 4856M56565.550.52 or 454 or 5262M60605.554.545665FAQsHere are some common questions people tend to ask about metric screw size charts:1. What Does the Letter M Mean on Screw Packages?The letter M on screw packages refers to the metric system (ISO). So, when you see it at the beginning of a callout, it means that the measurements are in mm.2. What Is the Shank of a Screw?The shank is the part of the screw that lies beneath the screws head. It can be threaded all the way to the tip, partially-threaded, or not threaded at all.3. What Is the Difference Between Metric Machine Screw Sizes and Wood Screw Sizes? There isnt a noticeable difference between machine and wood screw sizes. However, the difference is in the physical characteristics.You can usually spot these with your eye, but youll definitely know when you try to fit one with another (weve all been there!).Machine screws always have an all-threaded shank with finer threads.Despite being smaller, theyre much stronger than other types of screws.To Sum UpHere you have it, our metric screw size chart that includes screw sizes in mm up to M60.As you can see metric callouts and metric screw size charts are much easier to read and understand than imperial.You only need to find the values for the screws diameter, pitch, and length.Now, you can go and purchase your screw package with all confidence. Good luck! Screws are listed in a couple of different ways depending on when and where they were produced. In the UK and Europe, screws are listed in a metric format. Most suppliers will only list the screw sizes in metric, for example, 5 x 70mm. Imperial units used to be used in the UK and are still in use in some countries such as the USA. Screws listed in Imperial units have the length listed in inches and the thread diameter listed by the gauge equivalent (see Imperial to metric screw chart below). When it comes to the length of screws, the most important thing to consider is the depth of the material that the screw needs to penetrate. If a screw is too long, it will protrude through the material and could potentially cause injury. Metric screws are listed by the diameter of the screw thread in millimetres by the length of the screw (in millimetres). The diagram below shows the diameter and length of a screw. For example, 4.5 x 40mm means the screw has a thread diameter (including teeth) of 4.5mm and the length from the head (assuming the head is flat) to the tip of 40mm (see diagram below). If the head is round or will protrude from the surface then the length of the screw is measured from under the head. The length represents the amount of screw screwed into the material. Dimensions of a screw In the case of imperial screws, the sizes are normally presented as the gauge by the length. The length of the screw is given in inches. The gauge represents the diameter of the thread of the screw. In the case of a wood screw with a countersunk head of the type shown in the diagram below, the width of the head of the screw (B) is approximately equal to twice the diameter of the shank of the screw (D). The angle of the countersink in this case (A) is equal to 90. Wood screw with a countersunk head With a round headed screw the length is measured from below the head because the length is classed as the amount of the screw that will be in the material it is screwed into. In the example of the wood screw with a round head shown below, the diameter of the head (B) is approximately equal to twice the diameter of the shank of the screw (D). The depth of the head (H) is approximately equal to 3/4 of the diameter of the shank (D). Wood screw with a round head Screw GaugeDiameter (inches)Diameter (mm)4/0 or 00000.0541.373/0 or 0000.0571.452/0 or 000.0601.5200.0631.6010.0661.6820.0802.0330.0942.3940.1082.7450.1223.1060.1363.4570.1503.8180.1644.1790.1784.52100.1924.88110.2065.23120.2205.59130.2345.94140.2486.30150.2626.65160.2767.01170.2907.37180.3047.72200.3328.43220.3609.14240.3889.86260.41610.57280.44411.28300.47211.99320.512.70360.55614.12400.61215.54Imperial to metric screw conversion chart Metric screw diameters are usually stepped up in a minimum of 0.5mm. The table below gives a choice of imperial gauges of each of the common millimetre metric diameters. Metric Screw SizeImperial SizeApproximate Equivalent Imperial Gauges 3 mm0.1184, 53.5 mm0.1386, 74 mm0.15784.5 mm0.17795 mm0.19710, 116 mm0.23612, 13, 147 mm0.27615, 16, 178 mm0.31518, 20Metric to imperial screw conversion chart The measurements of a screw typically consist of the diameter by the length. The diameter is usually the diameter of the shank including the thread the outside thread diameter, this measurement is then presented in millimetres for metric screws or by gauge (see conversion tables above). The length is then defined by the amount of the screw that will be in the end material (e.g. wood). So for example, for a screw with a round head, the length of the screw is measured from below the head to the tip, but for a countersunk head, the length of the screw is measured from the top of the head to the tip. The diagram below gives an example of the difference in length between a countersunk and a round head screw: The difference in length between a round head screw and a countersunk screw. The distance between the teeth is not usually of concern with wood screws but is very important with things like bolts where a matching thread size is required on the nut or material that the bolt is being screwed into. To find out the pitch of a thread you can use a thread gauge. A thread gauge usually consists of numerous strips of metal with various sizes of thread cut into them. To find out the thread size you systematically work your way through the various thread sizes until you find one that matches the pitch of the thread. Using a thread gauge to find the pitch of a thread. Sometimes the diameter component of a screw can be defined as M and a number; for example, M4. Coach screws (lag screws or lag bolts) are normally defined in this way. The sizes are defined by the standard DIN571. Instead of a head that takes a slotted or Phillips type screwdriver, the head of a coach screw is of the hexagonal nut type see diagram below. Similar to a round head screw the listed length of a coach screw doesnt include the depth of the head. Coach Screw Dimensions M numberThread DiameterHead Size / Spanner SizeM22mm4mmM2.52.5mm5mmM33mm5.5mmM3.53.5mm6mmM44mm7mmM55mm8mmM66mm10mmM77mm12mmM88mm13mmM1010mm17mmM1212mm19mmM1414mm22mmM1616mm24mmM1818mm27mmM2020mm30mmM2222mm32mmM2424mm36mmM2727mm41mmM3030mm46mmM3333mm50mmM3636mm55mmM3939mm60mmM4242mm65mmM4545mm70mmM4848mm75mmM5252mm80mmM5656mm85mmM6464mm95mmM7272mm105mmM8080mm115mmM number (thread diameter) to head size (spanner size) To use the M4 screw as an example, from the table above we can see that the head size of an M4 screw is 7mm, meaning that a 7mm spanner is required to fit the head of an M4 screw. The diameter of the M4 screw is 4mm this is the diameter of the thread (including the teeth).

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