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Understanding what different wood joints there are and how each one of them can be used in your projects is key to getting the most out of your woodworking hobby. They provide strength to your assembly while adding to the overall appearance and function. The 14 joints that follow represent a few of the more popular techniques used in woodworking. Take a look at each one to determine what will work best for your future builds. Woodworking Joints Explained Butt Joint Level of Complexity: BEGINNER This joint is one of the oldest and most basic designs that can be used in simple projects. Butt joints are a simple construction that is fast to make. Most hobbyists begin their joinery because of these features. How it is made As the name implies, this joint butts the edges and ends of boards together. Glue and fasteners keep the joint in place. It is worth noting that gluing edges together produces a stronger bond than gluing two ends (or an end to an edge) together. Tools needed One reason that this woodworking joint is so popular, especially among beginners, is that you need very few tools. You will need a saw and wood glue to assemble pre-dimensioned boards and some way to clamp them as they dry. Rough-sawn timber requires extra tools to create clean edges to butt together. Many hobbyists and professionals use fasteners for assembly. You will need a hammer (or a drill and bits) for this. Other considerations The weakest point of connection will be the open grain on board ends. Add strength by using biscuits or dowels. Pocket holes are a popular option for added strength as well. We will talk more about biscuits, dowels, and pocket joints further in this article, so make sure to keep reading to the end. Best uses in the shop This is ideal for your first projects. It is also an option when using a pocket hole jig on furniture pieces. This is fast to make You need minimal tools It can be reinforced These are a weak design Aesthetically less-appealing Miter Butt Joint Level of Complexity: BEGINNER Also called a miter joint outside of North America, this design improves upon the butt joint by hiding the end grain of boards. It is used to form a corner on projects and provides a flush surface for similar angles to connect. How it is made You will mark the desired angle across the surface of your boards. Cutting along the line will create the miter you need. The joint fits together with glue, but adding a spline of some type will increase its overall strength. Tools needed You will need a miter box, combination square, or T-bevel to lay out the desired angle. Pencils can place the line, but a layout knife will create more accurate results. A miter saw, or a table saw can be set for angled cuts, while hand-held tools will need a guide to cut straight. Traditional hand saws can easily follow a knife trench as you saw. Other considerations Reinforcement is critical to make this joint serviceable. Placing a spline along the end of the boards or on the face of the connecting boards provides durability. Best uses in the shop It is the go-to joint for picture frames. You will find it handy to use for geometric shapes on projects with more than four sides. DIYers can use it outside of the shop. Cleaner looking than a butt joint Useful for geometric shapes Easy to cut Requires additional support Limited use outside of framing Dowel Joint Level of Complexity: BEGINNER Another simple technique is using dowels to strengthen butt joints. Wooden dowels have reinforced furniture joints for many years and are used to help maintain alignment during glue-ups as well. A dowel can also replace stripped fasteners to remove play in butt and miter joints. How it is made Dowel joints are made along the edges or ends of boards. Holes with a dimension similar to the dowels are placed evenly along both mating surfaces. You will insert half of the dowel into one piece of wood and the other half into the other. Pushing the boards together seals the joint, hiding the dowels inside. Tools needed Your layout is critical to keeping the holes aligned on each piece of wood. That will require a measuring rule and something to mark holes. A drill and bits are needed too. Dowel jigs save time and create accuracy by maintaining bit alignment. Other considerations Adding glue to the dowel hole adds to its holding power. Remember to provide approximately 1/16-inch extra depth to the hole for the wood glue to gather as you push the dowel into place. Best uses in the shop A dowels width creates a better hold than nails or screws. Use it over other fasteners unless speed is a factor. Helps with board alignment Thicker than nails or screws Can replace stripped screws Misalignment can be difficult to fix They take longer to set up Rabbet Joint Level of Complexity: Beginner Many woodworkers graduate from the butt joint to the rabbet joint early in their journey. This design is simple to make and provides hobbyists with a fast joint with 3/4 less end-grain exposure than a butt joint. How it is made You will cut a channel on the face of the board near its end. This groove will be the width of the material it is connecting with, providing two surfaces to hold the joint. Using dowels or fasteners adds to its overall strength. Tools needed Traditional hand tool users need chisels, saws, or a rabbet hand plane to make the groove. Using a power saw will be faster, with a dado stack in a table saw, making this a one-cut process. Other considerations Gluing both faces of the channel offers a stronger hold than a single face can. The rabbet does create a portion of end grain that is thinner and easier to damage, so caution is needed when adding fasteners through this section. Best uses in the shop Novice woodworkers will appreciate the joints ability to hide end grain. The only section visible will be the end grain on the rabbet (half of what a butt joint exposes). That makes it applicable to the quick box or cabinet designs, including chest of drawers, that beginners will want to make. It can be made quickly Provides more gluing surface Less end-grain exposure Requires reinforcement Channel cut weakens end grain Tongue and Groove Joint Level of Complexity: INTERMEDIATE Larger projects, including wood flooring or wall panels, are easier to create using the tongue and groove joint. Each board has a tongue on one edge and a groove that fits it on the other. The lumber is slotted together to form a larger panel piece. How it is made Hand or power tools remove wood from both edges of the board. The tongue or groove shape runs the entire length of your timber, allowing you to slot the tongue of a board into the groove on another. Tools needed Tongue and groove joints were common before plywood became popular. Many specialty planes are available to create these joints. A wood router is the go-to power tool for most woodworkers, though. A good router table speeds up the process and is safer. Other considerations This joint does not require glue. The movement offered here is good at handling wood movement. A groove should be deep enough to accept the tongue and provide an extra gap at the bottom. Best uses in the shop It should be used on joints in wood pieces with interior angles greater than 180 degrees (reentrant angles). These joints are a good choice for large panel projects around the house and can be used for cabinets or boxes. Creates solid floor and panel joinery Handles wood movement better Good for use on reentrant angles Requires a router Best suited for edges Lap Joint Level of Complexity: BEGINNER/INTERMEDIATE The lap joint offers the ease of a butt joint, but it uses the face as a gluing surface instead of the end grain. Two boards lap over each other at the joint and are cut to keep the pieces flush. How it is made The half-lap joint removes half of the boards thickness, allowing the pieces to remain flush as the ends overlap. A mitered version creates a 45-degree angle on the joint, providing a mitered look with a less gluing surface. A cross lap creates a half lap on the end of one board while cutting the opposing lap along the length of the other piece. A more intricate dovetail can be cut for the cross-lap joint, preventing the tail from pulling from the cross-lap it sits in. Tools needed You will need marking and layout equipment, as well as cutting tools to make lap joints. Table saw sleds designed to make these joints will produce clean results. Hand planes and chisels work as well, but they will take longer. Other considerations Adding dowels to pin the lap joint together will add considerable strength. Adding different colors of wood dowels provides visual contrast. Best uses in the shop This workhorse joint is ideal for cabinet-making or temporary framing projects. It can be made quickly Surfaces are easy to access It can be made temporary The basic design is brittle Boards need to be of similar dimensions Dado Joint Level of Complexity: INTERMEDIATE The dado joint is similar to a rabbet joint, with the difference being location. It is cut on the face of a board instead of the end, like a rabbet joint. How it is made The joints width is equal to the thickness of the board that will rest in the dado. Layout and marking tools will indicate the location of each dado on the board. Multiple passes with a standard saw blade (or single cut with a dado stack) establish the walls and clear out material. A chisel can break away standing fibers and smooth the bottom of the groove. Tools needed Layout tools measure distances, and marking tools will indicate where to cut. Hand-made dados will require chisels and saws. Making a dado with power tools requires a circular saw blade. The table saw is faster (and safer) than a circular saw. Dado blades come as a stacked set or as a single wobble design. Other considerations A through dado is the most common, but other designs can hide the joint. Stopped and blind dado cuts hide the dado from one or both edges of the board. Best uses in the shop These are the go-to design for shelving. It can be used without extra support, giving a clean look without fasteners or brackets. Hides end grain Provides support for shelving It can be glued on three sides Requires more work Limited uses outside of shelving Box Joint Level of Complexity: INTERMEDIATE The box joint provides a strong bond due to its larger gluing surface. The fingers and grooves also provide contrast between the end and sides of wood fibers. The alternating grain direction creates a visual effect without using dyes or stains. How it is made Mark fingers at predetermined intervals. Sections of wood are cut out between each finger. The cuts shift on the mating piece, allowing the fingers to interlock when they are placed together. Tools needed Layout and measurement tools locate your cuts. Guides speed up the marking process. Use a marking knife to score across the grain if you are cutting with hand saws. A table saw cuts quickly, especially if you make a sled that allows you to shift the workpiece as you cut. Here again, a Dado blade works faster. Single blades leave material behind that needs to be cleaned with a chisel or file. Other considerations Using the same wood for each side provides a lighter change between grain directions. Add more contrast by alternating the type of wood for each side. Altering the size of the fingers (or grooves) changes the look of your joints. Best uses in the shop Woodworkers use this joint when connecting the walls of boxes. It can be used on tool chests or dressers, as well. Provides lots of gluing surface Uses straight cuts It can be varied for looks End grain stands out Does not lock like a dovetail Dovetail Joint Level of Complexity: INTERMEDIATE The tail shape of this joint naturally prevents the joint from pulling apart. It offers a variety of designs that focus on functionality and appearance. You can learn to make it early on in your woodworking journey, but you will also spend a lifetime mastering it. How it is made Pins and tails are cut into the end of your board. Connecting pieces use an alternating pattern that allows the wood to merge at 90 degrees, locking them in place. This joint has a high tensile strength on its own, so glue is the only reinforcement you will add. Tools needed A router and dovetail jig cut each pin or tail at set intervals. A guide is mandatory here to keep things properly aligned and to prevent gaps in your fit. Traditional hand tool users use marking jigs to offer spacing and the desired angle for each component. Once marked, use hand saws to cut the walls, and chisels remove the waste. Other considerations The research will tell you how hot of a topic dovetail angles are. The ratio will not matter for functionality. It comes down to what looks right to you. Best uses in the shop The looks and strength of this joint make it popular for all types of projects. Boxes, cabinets, and chest of drawers use dovetail joinery. It resists separation Various designs available Size and number can be altered Harder to align Requires angled cuts Pocket Joint Level of Complexity: BEGINNER You will find many options to improve the strength of your butt or miter joints, including the addition of pocket joints. These add length to the fastener and allow it to penetrate the fibers at an angle, which adds strength when attaching the ends of boards. You can also install them anywhere on the woods surface. How it is made You will use a drill guide or pocket-hole jig to bore a hole at a predetermined angle. This joinery can be made on the ends, edges, and faces of a piece of wood. Tools needed A drill and bits are required to make the hole and to drive in the screws. A clamp will help hold the guide jig in place as you work. Finally, a drill guide or pocket-hole jig is required to make the pocket joint. Other considerations This design requires that you drill holes in the face of the boards. Drilling the on the interior board faces or the bottom of boards will hide the pocket holes from view. Some hobbyists also use putty to fill the pocket hole. Best uses in the shop You will use it to improve butt and miter joints. It is also a good option when connecting lumber that varies in thickness, as well as strengthening edge joints. Secures boards of different thicknesses Improves butt and miter joints Does not require glue Makes visible holes Requires a specialty guide jig Biscuit Joint Level of Complexity: INTERMEDIATE A biscuit joint is no harder to make than a dowel joint is. The difficulty increases with biscuits, however, as they are often used to keep lumber straight during glue-ups. That requires more holes along the edges than a butt joint at the end of your wood. You also need a specialty tool that is limited to this specific task. How it is made You will use a biscuit joiner to place grooves into the edge of boards about every six inches. Oblong biscuits (shaped like a football) are inserted into those slots and glued in place. Clamps or a hammer can force the boards together, sealing the joint. Tools needed Layout tools are needed to mark the holes consistently. You will also need a biscuit joiner. You can substitute your router on flat edges if you do not own a biscuit joiner. While you could make your own, pre-made biscuits are available at reasonable prices. Other considerations Biscuit joiners have size ratings that indicate what biscuits to use. Also, try using masking tape to mark for alignment without marring your boards surface. Best uses in the shop Biscuits keep boards from shifting. You will not need as many clamps or cauls with biscuit joints. They are also better than dowels or other fasteners in plywood or other sheet materials. Works in plywood Thinner than dowels Provides alignment for glue-ups Requires a biscuit joiner More room for errors Bridle Joint Level of Complexity: ADVANCED The bridle joint connects two pieces of wood using tenon and mortise-style joinery. This joint runs the full width of the tenon piece. A variation known as the T-bridle places the mortise in the middle of the board instead of the end. How it is made The corner bridle joint has the mortise and tenon carved into the ends. Approximately 1/3 of the material is removed from the center to form the mortise. The tenon requires you to remove 1/3 from each face of the board. Tools needed A variety of hand and power tools can be used to make the corner joint. A T-bridle tenon is made with similar tools. Routers, saws, and chisels are popular choices. Saws will require multiple passes, and a chisel is a must for surface cleanup. Other considerations A good bridle joint is tight. Loose joints are weak, and they do not look as good as a snug bridle joint. Accurate measurements keep the boards flush during assembly, too. It is best to remove less material as you work. This makes it easier to sneak up on a snug fit. Best uses in the shop These provide a stronger joint for picture frames. They can be cleaned up after assembly as well. Good for making workbenches A stronger corner option for frames The Joint is not visible on the board faces Takes time to set up and make Deep mortises are harder to clean Mortise and Tenon Joint Level of Complexity: ADVANCED The mortise and tenon are popular woodworking joints, especially when connecting two pieces at a right angle. Woodworking enthusiasts consider it one of the strongest joints when glued or locked in place. It is similar to the bridle joint mentioned previously, though it is better suited to thicker wood pieces. How it is made A mortise is cut into the board. The stub mortise is shallow, while the stub mortise is carved through the entire piece. You can taper a mortise to accept a wedge also. Tenons stand at the end of the lumber. Stub tenons are short. Conversely, through tenons stick out from the back of a through mortise. Tools needed Planes, saws, and chisels cut the components. Power tools are a good option here, but this is a popular joint for traditional hand tool users as well. You will need a hammer and chisel to clean up the mortise, no matter what type of tools you prefer. Other considerations Sloopy fits make this joint less effective. It will not be as visible as a bridle joint, so you need to test it and fit it continuously as you trim. Best uses in the shop These ancient wood joints are usable in most projects. They are common on furniture legs and cabinet frames. Strong joint Lots of variety Can be made with or without glue/fasteners Mortise walls are hard to keep straight You will need some hand tools Finger Joint Level of Complexity: ADVANCED Novice woodworkers often say finger joint when they mean box joint. Finger joints best resemble the fingers in a pair of clasped hands. This joinery extends the length of wood and provides a visual contrast when different species join together. How it is made The layout is similar to that of a box joint. Its design elements are thinner, so consistent spacing is necessary throughout the joint. Material is removed between each finger. The pattern is rotated for the mating piece, allowing the fingers to slide together. Unlike a box joint, the finger joint connects boards in line with one another instead of an angle. Tools needed Dedicated woodworkers can cut the fingers with hand saws. Most woodworkers use a router equipped with a finger bit to make the thin cuts needed. Other considerations These joints take time to mark and cut, even with power tools. Use jigs when possible to speed up the marking process and to guide your router in creating proper spacing. Best uses in the shop It is useful for combining scrap pieces to make longer boards. You can also use different species to make decorative patterns for your project. This joint is also useful outside of the shop. Use it to connect wooden floor slats or pieces for a door. It will also connect wall molding effectively. It is very decorative Makes longer boards Various applications Fingers are brittle until connected Time-consuming to make Form And Function These wood joints provide you with a variety of ways to assemble your projects. You can select easy patterns to get you started and progress to more advanced joints as your skill improves. Speed and strength are two factors that will dictate which joinery you will use. A designs overall appearance can also be a factor, especially with furniture pieces and boxes that serve as showcase items as much as they do for their functionality. The WoodWork Zone reviews all products independently. When you buy via the links on our site, we may earn an affiliate commission at no cost to you. Woodworking joints are the connections between boards that make up the structure of a piece. There are many different types of wood joints, each with its own unique set of characteristics and purposes. This article aims to educate readers on different types of wood joints and how they can be used in real-life scenarios. Well start by going over some basic knowledge about jointing before we go into detail about specific wood joint types. Take note that there are also metal fasteners available for use depending on your projects needs (i.e., screws, nails). Keep reading below to learn more! Jomegat at the English Wikipedia, CC BY-SA 3.0, via Wikimedia Commons Butt joints have been around for centuries and are among the simplest types of wood joints to create. These were used quite a bit in older furniture, though thats not necessarily because they are strong its more about their ease of construction when done with hand tools. How to build them: The wood pieces to be joined are laid side by side on a flat surface. The outside of the first piece should face downwards, while the inside of the second piece should face upwards. At this point, sandpaper can be used to clean up rough spots if necessary. Glue is spread onto both surfaces and clamped together until dry. Best for: These types of wood joints are commonly used in construction and repairs, but this type of joint could be helpful in all kinds of projects. It is also easily made and great for repairing furniture or small projects. Fred the Oyster, CC BY-SA 4.0, via Wikimedia Commons This type of wood joint is typically used in constructing cabinets and similar furniture. One piece of wood is placed on top of the other with a gap that will be filled by glue to form one cohesive unit from two separate pieces of wood. How to build them: The wood pieces are lined up so that the edges of each piece meet. Any gaps between the boards should be filled with putty or a similar substance to create a smooth surface. The pieces are then clamped together until dry and finished as desired. It may be helpful to use some sort of clamping device, like a C-clamp or bar clamp, to hold together pieces that are difficult to line up. Best for: The type of wood joints can be used in furniture or cabinets, but it could also be beneficial on smaller projects such as boxes or chests. It is not the strongest joint available, but it is faster and easier. Also Read: Types of Wood Jointer GreyCat, CC BY-SA 3.0, via Wikimedia Commons A type of wood joint that uses the end grain from two pieces of wood at right angles to form an interlocking pattern is known as the mortise and tenon joint. This type of joint can be made by cutting one of the pieces with a mortising machine that cuts out a rectangular slot on both sides simultaneously; alternatively, it could be created using chisels if working on small projects such as boxes or trays. The second piece, called the tenon, has its end grain affixed to the mortise created in the other piece. This type of joint is not as strong in compression, but it has some advantages that make it appealing to use on certain projects. When properly made and glued together, a mortise and tenon joint is often stronger than its components when faced with tension forces or bending. How to build them: After creating the rectangular hole, called the mortise, smaller cuts are made along one side of the box, separating the material into two thinner planks. The second plank is then cut at an angle so that one side of each end grain overlaps. The protruding pieces can be trimmed down flush if desired. Wood glue should be applied to both ends before joining them together; this step is critical for keeping these wood joints together. Once the glue has dried, nails or screws may be used to attach the tenon into place. Best for: The mortise and tenon joint is one of the strongest types of wood joints available, but it can be time-consuming to make depending on how adept you are with carpentry tools. It is best suited for creating furniture such as tables or cabinets since they require strength when faced with tension forces or bending. This type of joint should not be used on projects that need to withstand large amounts of weight in compression. Dusheme, CC BY-SA 4.0, via Wikimedia Commons The tongue and groove joints are used widely in the manufacture of woodworking products. It is a type of wood joint that involves interlocking with each other at the ends by means of protruding sections or tongues which are vertical slats along with one piece, and grooves which are kerfs cut out on the mating part that fit into them. Both pieces must be set up to ensure correct orientation and alignment before gluing together can occur; this may involve some sanding or shaving down if needed. How to build them: In order to cut the grooves, you will need a table saw, or a circular saw and then finish it with sandpaper. The result should be vertical slats of equal thickness similar to the thickness of the wood board. The process used for cutting tongues on both pieces is more complicated use a router equipped with a straightedge guide and a suitable bit for this purpose. Best For: Tongue and groove joints are most commonly used in flooring, countertops, cabinets, crown moldings, baseboards, and radiator covers, among others: they provide a range of finishes while helping to conceal imperfections in the wood grain. They can also help to bring an interesting design element into any project that utilizes them. CC BY-SA 3.0, Link Dovetail joints are very strong, and they have been used for thousands of years, as their name implies. Theyre also great to look at slide the top piece into place, and youll see why this joint is so popular among woodworkers. These are some of the strongest types of wood joints out there, but theyre also pretty complicated some would even say fidgety. If youve got access to tools that you can use to put them together, dovetail joints are perfect for making small boxes or other items that need to be strong and look great. How to build them: The dovetail joint works by interlocking one piece with another; a tail protruding from the end of one board locks in a groove cut into the end of the mating strip. Theyve been around for centuries and were originally found in carpentry, furniture building, and shipbuilding most likely because they dont require any fasteners or clamps to hold them together. Many people associate dovetail joints with fine furniture pieces, which should always be attached using glue rather than nails or screws. While this is true for the best examples of dovetail construction youll find in finely-built pieces; its not always necessary to use glue during construction when using these joints especially if one is using less expensive wood and the project isnt going to be subject to much stress. A good example of a non-glued dovetail joint can be found on many modern bookshelves as long as they arent subjected to constant pressure against their sides, they should work just fine without being glued together first. Best For: If youre building casework, furniture pieces, or other products where there is a lot of force against the moving parts (such as drawers), dovetails should definitely be considered theyll help ensure your project lasts for many years while looking good in the process. One thing to remember is that dovetail joints require accurate measurements and work best when used on pieces that have been sanded smooth before assembly. Also Read: Best Glue for Cutting Boards CC BY-SA 3.0, Link The biscuit joint has become quite a popular woodworking technique over the past several decades, and for a good reason its easy to assemble (with glue), it helps conceal natural variations found in many types of lumber, and looks great when finished. You may have heard them called plate joinery because of their flat shape, which is one of the reasons they are commonly used in drawer construction. How to build them: A plate joiner is a good choice for cutting biscuits, as you need very accurate cuts if you hope to end up with a smooth fit between boards or pieces of wood. A machine can cut through several layers at once and provide tight-fitting joints that require little to no sanding. The cutters are also available in different sizes depending on the size of biscuit you hope to create and the thickness of your wood. Best For: Biscuits work best when assembling smaller items like drawers or cases, which could benefit from a less-durable type of joint because they arent subject to the same forces as other types of furniture pieces. Biscuit joints dont require much sanding, and they also work great when you need to create dowels at the same time; however, some woodworkers would say that they arent very durable because biscuits can slip out over time. Derekbalsley, Public domain, via Wikimedia Commons These are becoming quite popular in the world of woodworking, mainly because they are very easy to assemble and require no special tools. This type of joint is an excellent choice for beginners who dont have much experience with woodworking or carpentry and need to create several projects at once. Although there has been some controversy as to whether the style should be called a pocket screw joint or a Kreg joint, it really doesnt matter because the result is the same. How to build them: A Kreg jig (or similar device) drills two holes in two separate pieces of wood, and your drill press creates matching countersinks so you can insert screws at an angle that hides the head of the screw. There are several types available for purchase, including models that attach to your drill press and those you can use with a handheld circular saw or sander. Best For: These joints work so well because they offer quick assembly and require no clamps, which means you can easily create multiple projects quickly. They also work well for attaching thinner pieces of wood (1/2-inch or less) to thicker material like plywood. One downside is that pocket hole joints arent as strong as other forms of joinery, which means they are better suited for projects where the joint will need minimal pressure against it such as a shelf thats only holding a few books. Derekbalsley, Public domain, via Wikimedia Commons This type of joining method is popular in the world of wood turnings because it creates a very tight and impressive-looking joint on projects like birdhouses, vases, or other hollow pieces. Miter joints are also often used when making framed mirrors, picture frames, and cabinet doors. How to build them: The key to success for this type of joint is making sure that your cuts are as precise as possible. The best way to achieve this is by creating a miter sled, which is essentially a guide for your miter saw that guarantees accurate results every time you make the cut. Once your pieces are cut and sanded down, you should also use wood glue with this type of joint for even better results. Best For: This is a strong type of joinery that works particularly well with smaller, lighter pieces like mirrors and picture frames. It can also be used to create simple boxes or drawers because there is no need to worry about clamping the joint while it dries. One drawback of this technique is that it can be difficult to achieve a perfect 45-degree angle, especially if you dont have access to specialty or professional tools. Fred the Oyster, CC BY-SA 4.0, via Wikimedia Commons A half-lap joint is a very popular type of woodworking joinery that can be used as either a butt or edge joint, depending on what you need for your project. For example, this type of joint works perfectly when creating table legs or other structural elements where you will see the joins from both sides, but its also great for attaching smaller pieces together in cases where you want them to stack (like drawers, boxes or bookshelves). How to build them: Start by creating your half-lap cuts and ensure that you get the right fit for each piece of wood. If there are any gaps between pieces, just fill them with wood filler before you screw them together. Best For: This type of joint is very easy to make for amateurs, and there are several ways you can do it (including using a router or table saw). One drawback of the half-lap technique is that you may need clamps or woodworking jigs in order to hold the pieces together while they dry. Jomegat, CC BY-SA 3.0, via Wikimedia Commons A dado joint is a special type of woodworking joinery that connects two pieces of wood at right angles. There are several different types available, but they all strengthen the connection by creating a reinforced shoulder for screws, nails, or even adhesives to grip onto. How to build them: You can create this joint with a table saw if you have one available, but its also very easy to do with a simple circular saw or even a router. As long as you are cutting your wood at the proper angle and depth (which is usually 3/4-inch for most projects), then you should get great results. Best For: This type of joinery is most often seen in butcher block tabletops and other kitchen projects, but it can also be used for cabinets, doors, or any place where you want maximum strength. The only drawback of the dado joint is that it requires some special equipment (like a table saw) in order to get the right fit unless you are just using scrap pieces of wood. Dirk Bartens, CC BY 3.0, via Wikimedia Commons Finger joints are a type of woodworking joinery that are often used to create boxes, drawers, or even cupboards and cabinets. They look great from the outside, and theyre simple enough for beginners to make with minimal effort. Finger joints can also connect two half-laps (this is known as a box joint or a cove and bead joint). How to build them: Start by cutting your pieces of wood at the proper angle for the finger joints, then use glue to secure them together. If you are creating an end-grain box, however, it is best to use dowels instead of glue because they create more surface area. Best For: As long as you have a table saw, this type of joinery is easy to create, and it looks attractive and professional when used on smaller projects like drawers or cabinets. Its also pretty quick to build once you cut all of the pieces at the same time. The only drawback is that it can be hard to get right on thicker pieces of wood. Jomegat, CC BY-SA 3.0, via Wikimedia Commons A rabbet is a special type of joint that connects two pieces of wood by means of an L-shaped shoulder, and it is usually created with a router or table saw. How to build them: Start by cutting your pieces at the proper angle, then use glue and nails/screws to secure them together. If you want the joint to look attractive, be sure to cut matching grooves on both halves so that it looks symmetrical. Best For: This type of joinery is very easy to make (since you can use a table saw or router), and its great for smaller projects like boxes, drawers, easels, picture frames, cabinets, or doors. The only drawback is that the joint can be hard to make on larger pieces of wood because it requires a bit more time and effort. Crati, CC BY-SA 3.0, via Wikimedia Commons A bridle joint is an attractive type of woodworking joinery that can be used to connect two pieces of a similar thickness. The bridle part means that one vertical member and one diagonal member connect the two. How to build them: Start by cutting your pieces at the proper angle, then use glue and dowels to secure them together. If you want the joint to look attractive, be sure to cut matching grooves on both halves so that it looks symmetrical. Best For: This type of joinery is pretty easy to make with a few practice pieces (you can use scrap pieces of wood for your first projects), but you will need some special equipment (like a doweling jig, dowel center, or even a drill press). The only drawback is that it can be hard to get the exact angles right if youre not using these special tools. Jomegat, CC BY-SA 3.0, via Wikimedia Commons Dowel joints are a type of woodworking joinery that connects two pieces of wood through means of an actual dowel (which can be made from any number of materials even toothpicks). How to build them: Start by cutting your pieces at the proper angle, then drill holes in both pieces for the dowel joint. Once you have the two pieces in place, use glue and a clamp to hold them together while it dries (youll also need a dowel jig or even a drill press for this one). Best For: Dowels are an effective way to connect two pieces of wood with minimal effort, and they come out looking very attractive. The only drawback is that it can be time-consuming to set up the process, and youll need special equipment to get everything right (like a doweling jig or a drill press). Many types of joints are used in woodworking, and each has its specific purpose. Weve listed some of the most popular ones so you can make an informed decision about which to use for your next project! For more information on these joints, please visit our blog post or contact us with any questions. Which type of joint do you think will be best for your upcoming woodwork project? Leave a comment below! I am a woodworker with over 21 years of experience crafting everything from furniture to ornamental pieces. I take pride in my ability to bring out the beauty of the wood I work with, creating unique and lasting objects. My passion for woodworking has been a life-long pursuit and I strive to push myself further and further with each new project. I am dedicated to the craft and take great satisfaction in the final product that I create.Read More. Learning how to join two pieces of wood together is an essential woodworking skill. There are many different wood joinery techniques you can use and in this post well cover the 18 most common types of wood joints and how each is made, as well as some tips on how to choose the right wood joinery method for you! 1. Square-Ended Basic Butt Joint This is the most simple and straight forward way of making 90 degree wood joints, but it is not always the strongest or the best choice for every project. In a square ended basic butt joint, one piece of wood butts up against another, most often perpendicularly at a right angle. Since glue alone is typically not strong enough to make a sturdy butt join, it is usually necessary to hold the pieces together with fine nails, screws or other types of fasteners to make the joint stronger. 2. Edge-to-Edge Butt Joint An edge to edge butt joint is similar to a square-ended butt joint, except pieces of wood are laid side by side on the edge. This is typically done to make a panel of wood from multiple pieces. This type of joint is not very strong and difficult to reinforce with metal fasteners. If the two pieces of wood you are joining together are more than 12 inches long, it is typically necessary to instead use an edge to edge dowel joint or biscuit joint which we cover in more detail later in this post. 3. Mitered Butt Joint Mitered Butt Joints are used to make a neat right-angle corner without any visible wood grain. While mitered butt joints typically look the neatest, they are not always the strongest or most durable so this type of joint is usually reserved for light duty projects such as photo frames. To make a mitered butt joint, cut the edge of the wood at a 45 degree angle. To fasten the two pieces together, add glue and clamp until the glue dries. 4. Tongue-and Groove Joint A tongue and groove wood joint is often used instead of edge to edge butt joints and it easily allows for one piece of wood to slide into another. Tongue and Groove joints are much more stronger and can typically be seen in applications such as flooring. To cut a tongue-and-groove joint by hand, it is usually necessary to have tongue and groove router bits. One bit is used to shape the tongue on one piece of wood and the one is used to make the groove. Cut the tongue first, then change the bit and make the matching groove. Tongue and groove router bits come in a wide variety of different sizes so make sure you order the right size that will fit your project. 5. Right Angle Dowel Frame Joints Dowel frame joints can be a lot stronger than you might think. Many furniture builders use dowel frame joints for a variety of different applications from chairs to dresser drawers and more. Note that fluted or spiral cut dowels are best as this gives additional grip compared to smooth dowels. Most hardwood stores sell packages of pre-cut wood dowels specifically for wood joinery that you can use. To make the dowel frame joint, drill two holes that match up with each other in 2 pieces of wood. Insert the dowels with some wood glue in one piece of wood, and then add glue and attach the second piece of wood so the dowels slide in the holes you drilled. In most cases, two dowels per joint are sufficient. Be sure they are at least a minimum of inch from both edges of the rail. For longer pieces of wood, you may want to use 3 or 4 dowels. The advantage to this method is it can be simpler to make than box joints or dovetail joints and doesnt require any specialized tools just a drill! 6. Edge-to-Edge Dowel Joint An edge to edge dowel joint is constructed very much like a square ended dowel joint, except in this case you are joining two pieces of wood side by side instead of perpendicularly at a 90 degree angle. Depending on the length of your project and desired strength, you can insert dowels every 6, 9 or 12 inches apart. The more dowels = more strength, so consider the application for what you are using the dowel joint for. 7. Biscuit Joints Biscuit joints are similar to dowel joints, except instead of dowels one uses biscuits which are small, flat oval shaped pieces of wood. Biscuit joints are not typically as strong as dowel joints, but most hardwood stores do carry the wood biscuits in stock. One disadvantage to making biscuit joints is they typically require a specific tool called a biscuit plate joiner. To make biscuit joints, the plate joiner is used to create slots where the biscuits will fit inside. You then glue together the biscuits into the slots with the adjoining piece of wood. 8. Mortise and Tenon Joint A Mortise and Tenon joint are one of the stronger types of wood joints and have been used for many different types of wood projects and even larger construction projects such as barns and sheds. The mortise is a hole and the tenon is a tongue that fits into the hole. One of the challenges with making mortise and tenon joints is ensuring the tongue and mortise fit each other. When making these joints, it makes sense to always cut the mortise first. This way you will have an easier time making the tenon fit exactly. Fortunately, one can typically do this with basic tools such as saw! Once the mortise and tenon are cut, you can then simply connect the two pieces with a bit of wood glue. 9. Corner Bridle Joint Similar to a mortise and tenor joint or tongue and groove joint, with a corner bridled joint you are creating a slot in one piece of wood and cutting the other piece of wood to fit into the slot. Many people often opt to insert two dowels through the side of the joint after the glue has set to improve the strength of this joint. 10. Mitered Bridle Joint The mitered bridle is cut in a similar fashion as the conventional corner bridle joint, but is a more attractive alternative, especially for uses like picture frames. To make a mitered bridle joint, you would cut the pieces of wood at a 45 degree angle, but allow for the tongue/groove portion of the joint to be square. 12. Half Lap Joint A basic half lap joint is only a little bit stronger than a regular butt joint, but it can offer somewhat of a neater appearance with much of the end grain concealed. Lap Joints are sometimes used to connect a drawer front to drawer sides or can be used when making a simple box. In a lap joint, pieces of wood are typically cut or notched in half and the two pieces are joined by overlapping one piece with the other. 13. Box Joints Box joints are an easy method of joining together pieces of wood when making a box. They are squares and square grooves cut out alternately on two edges of wood so that when you fit them together the squares line up to make a clean edge. They can often times be hand cut simply with a saw, although of course there are router accessories sold that can make cutting them an easier task. 14. Dovetail Joint Dovetail joints are probably one of the strongest types of wood joints and they can also give a nice look on a finished edge. Dovetail joints are often seen in box construction and drawer construction. Dovetails are similar to box joints, but the tails are cut at an angle to provide additional strength. Dovetail joints can be cut by hand using a saw or you can use a router. Cutting dovetail joints on a router is much easier when you make use of dovetail joint jig and template. Most router manufacturers sell this as an accessory. 15. Half Blind Dovetail Joint A half blind dovetail joint makes sense when you want to join together two pieces of wood for a box, but do not want the dovetails to be seen from both sides. Half blind dovetails are made very much in the same way as regular dovetail joints, except they are only cut half way through the corner, leaving a clean edge on the outside of the wood. This is a popular choice for drawer makers. 16. Sliding Dovetail Joints Sliding dovetail joints are another popular option with many uses. In this type of joint, rather than cutting individual dovetails, the entire length of one board is cut into the dovetail shape, while the other piece of wood has a long groove. Once the cuts are made, it is as simple as applying a little bit of wood glue and sliding the pieces of wood into place. While it is certainly possible to cut a sliding dovetail by hand, these are made easily on a router with the proper attachments and accessories. 16. Finger Joint / Comb Joint Finger joints are very similar to dovetail joints, but the edges are usually cut in a saw-blade or comb like pattern. Finger joints can be very strong, but some people do not like to use them because the zig-zag comb pattern is not something they want seen on the outside of their project. Of course, sometimes the design of these joints can be beautiful and add character to a piece. To make finger joints, it is usually best to use a specific finger / comb router bit in order to make sure the two edges will line up together. Once the pieces are cut, simply apply glue and allow to dry. 17. Dado Joint Dado joints are most commonly used when joining wood pieces together in a T-shape, such as making dividers in a box or drawer. This is a very simple joint to make, where you simply cut out a slot or groove for the other piece to fit in perpendicularly. They can then be attached with wood glue. 18. Rabbet Joint Rabbet joints are very similar to half lap joints and dado joints, where one half of each end is cut so that they fit together. They are relatively easy to make as it is a straight cut on each board. They can then be glued together. Rabbet joints are not the strongest, but it is a wood joinery technique that is often used in cabinet making and for the backs of shelving and drawers. Which Type of Wood Joint Should I Use For My Project? For many people, the type of wood joint you use is usually all a matter of personal preference. However, it is important to consider the use of the item you are making, as not all joints are created equal! Here are some things to consider: How Much Strength Do You Need? If you are building something that will be subject to everyday use, it makes sense to use one of the stronger types of joints, such as dovetail or box joints. For example, these two types of joints are frequently used in making drawers, which makes a lot of sense if you consider they are holding potentially heavy items and are opened at least once or twice a day if not more. Photo frames on the other hand are something that are very rarely touched and handled after the artwork or photo is inserted and they are hung on a wall. In that case, it makes sense that a simple miter butt joint will do! What Tools Do You Have? Another thing to consider is what tools you have available to you. While there are plenty of great router bits and accessories that make cutting out sophisticated joints easy, its not always in everyones budget to even own a router, let alone all the bits and templates. If budget is a concern, dowel joints are a great choice all you really need are the wood dowels which are usually sold in packages at hardwood stores and a drill and some wood glue. Box joints, dado joints, half lap joints, and rabbit joints are also good choices if you are on a budget because you can typically make these very simply with just a saw. Do You Want to Be Able to See the Joint? There are arguments on both sides on whether a joint should be visible or not. Some people who make decorative boxes for example might argue that a dovetail or finger joint adds to the overall design. On the other hand, someone may not like how the joint looks and instead opt for invisible joints, such as a half blind dovetail joint, biscuit joints or dowel joints. All in all, there are many great wood joinery techniques listed here to learn how to do and experiment with! I hope this list of different types of wood joints is helpful for you and of course Id love to hear from you in the comments section tell me what types of joints for woodworking you like to use in your projects below! Share copy and redistribute the material in any medium or format for any purpose, even commercially. Adapt remix, transform, and build upon the material for any purpose, even commercially. The licensor cannot revoke these freedoms as long as you follow the license terms. Attribution You must give appropriate credit , provide a link to the license, and indicate if changes were made . You may do so in any reasonable manner, but not in any way that suggests the licensor endorses you or your use. ShareAlike If you remix, transform, or build upon the material, you must distribute your contributions under the same license as the original. 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