Folding Adirondack Chair Project

Build this attractive Adirondack chair for the most comfortable seat this summer. The uncluttered design updates the classic style with clean lines and modest proportion. Best yet, it collapses for convenient storage at the end of summer.

PROJECT INFO

Average Rating
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This updated Adirondack chair is perfect for patios, porches and lawns. Buy extra material - you'll want to make more than one.

The chair design features bolts and wing nuts that you remove to fold the chair for end of summer storage.

Instructions:

Before you start

Most home-shop woodworking projects require reasonable precision but still allow for a few minor discrepancies in parts sizes, hardware placement, and other features. That's true for this folding Adirondack chair as well, except for the components that allow it to fold for storage. These parts, as well as the locations of the bolts holes for the pivot points, are critical to getting this project right. But don't let that intimidate you from stretching your woodworking skills.

The trick here is to make plywood templates or patterns that you can use to duplicate parts consistently. (See the Parts Diagrams PDF.) After tracing the pattern outline on your workpiece and rough-cutting the shape with a jig saw, use a router with a flush-trim bit to follow the contours of the template and finish shaping the part. Also, drill the pivot bolt holes (using a drill press) while the template is still attached.

For this project, we made plywood templates for the stretchers (A), legs (B), and the arm rests (H). Most of the other parts are simple enough to cut with just your table saw or other standard equipment, but be sure to use cutoff stops and other accessories to ensure consistent part sizes.

Project Resources:
Cut and label the parts as needed, using these diagrams as guides and adjusting for fit.

PROJECT CUTLIST PROJECT DIAGRAM

Cut parts first
A project like this calls for some patience, as you have a number of parts to cut and some of them are intricate. But once they are produced, the assembly is a simple process you'll wrap up in an hour or two. Start by producing the pattern templates mentioned earlier. These represent the foundation of your project, so take time to get them right and your job with the actual parts will be much easier. Take special care with the stretchers (A) and the legs (B), because they are key components for the folding feature.

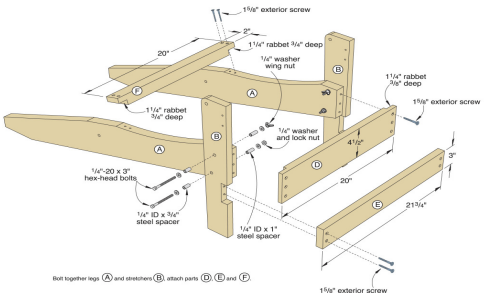
Note that our pivot bolts are all 1/4-inch diameter but that the holes for them are 3/8 inch in diameter; this is to allow for the steel spacers we use as inserts. To ensure accuracy, drill all holes with a drill press rather than a portable drill. Squeeze a little epoxy adhesive into each hole that gets a steel spacer and then press the spacer in. These metal sleeves act as bushings to create a stronger connection and to prevent the elongation of the holes that would otherwise occur with repeated usage.

Some parts must not only be cut to certain sizes but also machined to create joinery or other features (see illustrations). For example, the legs (B) get notches cut in their front edges to accept a rail (E) that helps brace the assembly. Also, the apron (D) and the rear seat rail (F) each have their ends rabbeted so they fit securely over the stretchers (A) and produce accurate spacing. Many parts will also have to be drilled for screws; see the illustrations for more information.

As you work your way through the parts list, you'll see that we used cedar for most of the chair parts, with a few exceptions. First, the pivot blocks (I) are cut from 3/4-inch plywood, a better choice for these small parts because the cross-grain layers of the plywood prevent splitting. Second, the three cleats for the chair back (J,K,L) are cut from pressure-treated pine, which is a slightly stronger material and less prone to splitting if the ends are stressed, as they are in this chair design. The lower and middle cleats (K, L) need 3/16-inch holes drilled into their end grain as shown, to receive the lag screws that allow the pivoting/folding feature. If your drill press table tilts 90 degrees to allow clamping the stock vertically, that's the best technique for this step.

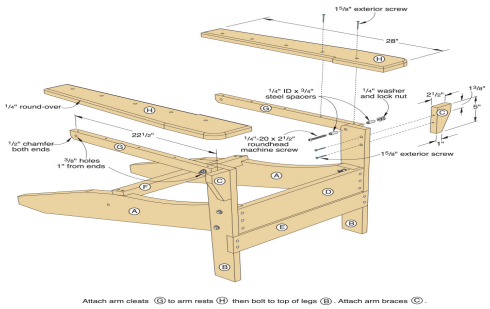
After you drill the ends, clamp them in a vise with the narrow (3/4-inch) edges against the vise jaws, then affix a C-clamp in the other direction, on the wide faces. Thread one of the lags screws into the hole to cut the thread; the vise/clamp pressure will help prevent splitting of the wood, and when you assemble the chair later the lag screws will drive much easier.

If you are applying a stain or paint finish to your chair(s), it's easier to do that at this point, while the parts are still separate. However, don't apply finish to the leg notches where the front rail seats, the front ends of the stretchers, and the small flats on the stretchers where the rear seat rail will attach.



Assembly, Stage 1
Now your patience and diligence in fabricating and finishing the parts will pay off. Start by bolting the stretchers and legs together as shown, in right-hand and left-hand assemblies. The upper bolts get the wing nuts, as these will be the ones you remove when you want to fold the chair for storage.

Most parts of this chair project connect with bolts or screws, but the next three pieces get glued and screwed in place to form a strong support frame. First, attach the apron (D) to the front ends of the stretchers as shown, followed by the front rail (E) below. Then glue and screw the rear seat rail (F) in place as shown; it should sit 15-1/4 inches back from the near edge of the apron.

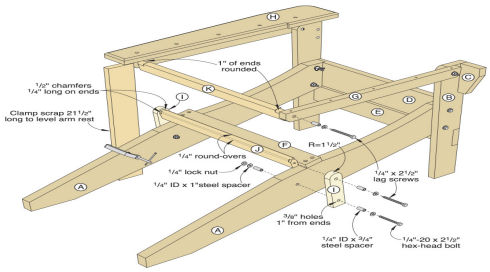


Next, attach the arm cleats (G) to the arm rests (H) with screws as shown, and bolt the front ends of these sub-assemblies to the top ends of the legs.

Bringing it together

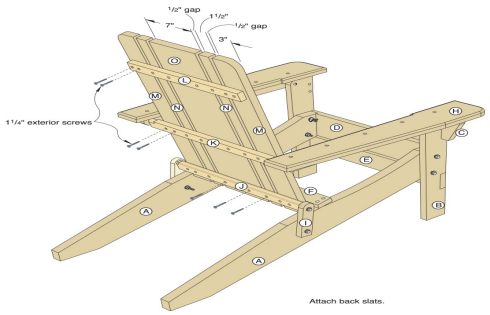
At this stage, the lower frame of the chair is together. Now all that's left is the back assembly and the pivots that allow it to fold.

Here you want to work from the bottom up, so attach the pivot blocks (I) to the stretchers with the 2-1/2-inch bolts and then use lags screws to install the lower cleat (J) between them. Don't overtighten the lag screws here or you'll risk stripping the threads or splitting the end of the cleat. With this cleat secured, attach the middle cleat (K) to the rear ends of the arm assemblies as shown, again with the 1/4-inch lags screws.



Mount pivot blocks (I) to stretchers (A), then attach part (J). Attach part (K).

For convenience, mark the slat spacing (including the 1/2-inch gaps) on the front of these rails before you start attaching the back slats. Fit the first slat (M) in place onto the cleats and align its lower end flush with the bottom edge of the rear seat rail (F). This provides a consistent reference point so you can line all the slats up easily. Attach the slat by driving 1-1/4-inch screws from the back, through the cleats. Install the remaining slats (N, O) the same way, then attach the upper cleat (L) with screws as shown.

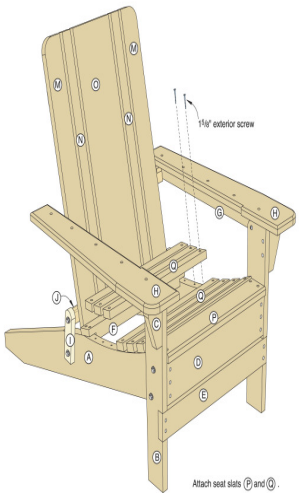


Attach back slats.

Now all that remains are the seat slats, starting with the front one (P). Use 1-5/8-inch screws to secure this to the apron and stretchers as shown, allowing a 1/4-inch overhang along the front. This should result in approximately 13 inches of open space at the seat area. Cluster the seven narrow seat slats (Q) here, edges together, then measure the gap that remains between them and the front slat. On our chairs that gap was about 2-1/4 inches; divide the dimension by 8 (the number of gaps between slats) and cut a spacer strip that width to help you position the slats evenly; it should equal approximately 5/16 inch. Attach the slats with a single 1-5/8 screw at each end, aligning them flush with the outer surfaces of the stretchers.

Assuming the finish is completely dry, your chair is ready for a test sit. Check all the bolt connections to ensure they are snug but not binding, then go ahead and "set a spell." We think you'll agree these chairs make an attractive and comfortable addition to your deck or patio.

When the time comes to put them away for the winter, simply remove the wing nuts and upper bolts at the leg/stretcher connections, swing the pivot blocks up to collapse the back of the chair, and fold everything together for storage. Reinsert the bolts and wing nuts in their original holes in the legs so you don't misplace them.



Attach seat slats (P) and (Q).

NOTE: The chair should fold easily if you follow this sequence; if it resists or makes creaking noises like something is binding, don't force it closed or you'll risk causing damage. Just do a quick visual check of all the pivot points and make sure that the rear pivot blocks are swung back into a more upright position that allows the back to fold down.

Customer Comments

Write a comment

By: **Dragonsknight**

January 17, 2013

By adding a stop block on the outside of the seat behind the front leg and a cleat and catch under the chair seat to the front support of the legs, you can make this witout using the removable bolt and wingnut.

helpful **0**

By: **ConfusedBuilder** Top 100 contributor

December 22, 2012

On the parts diagram I think there is a missing value. Looking at the stretcher (part A) in the upper right corner 17 3/4" is listed as a dimension from right corner but there is nothing listed for top to bottom or an angle.

helpful **0**

Response from the
Lowe's Creative Ideas Team

By The LCI Team,
December 27, 2012

Thanks for the head's up! We are working to update the diagram, so check back soon.

By: **ConfusedBuilder** Top 100 contributor

November 29, 2012

The cutting diagram dimensions are confusing, 7/8" is listed for the cedar boards but a 1 inch board is planed down to 3/4". Also should the cedar boards be kiln dried.

helpful **1**

Response from the
Lowe's Creative Ideas Team

By The LCI Team,
November 30, 2012

We think the nominal name of the board is tripping you up. Take 1-in x 4-in boards for example. They are cut as a full 1-in x 4-in board and have wood removed from the face and two edges leaving a rough surface that brings the boards to 7/8-in thick x 3-1/2-in wide. If it is a pine board, like the pressure treated wood in the list, it is surfaced on all four faces and loose the additional 1/8-in and therefore, measure 3/4-in x 3 1/2-in.

The key with any project is to start with the directions and cut the boards as you proceed. Once you have 3 or 4 parts cut, it will always be important to measure and cut as you proceed to account for variations in the material.

And, no the cedar does not need to be kiln dried. It will dry over time.

We hope this helps... Good luck!

By: **woodchuck**

June 8, 2012

where are the lengths for stretchers "a" and vertical legs?

No pdf cutting list would download.

These measurements are not shown in the diagrams at the right of the written steps.

helpful **0**

Response from the
Lowe's Creative Ideas Team

By The LCI Team,
June 8, 2012

Make sure that your web browser is up-to-date and try loading the diagrams again. The length for the stretches (A) is 41-1/2-in and the legs are 20-1/2-in long.

By: **GI**

June 6, 2010

Great plans, but note that the shopping list is not accurate. Make your list from the cutting diagram.

helpful **0**

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PROJECT RESOURCES

Parts and Side Section Diagrams (PDF, 1.7MB)
Materials and Cutting List (PDF, 1.3MB)

PROJECT DETAILS

Skill level: Advanced

Rough cost estimate: $183

Tools You'll Use:

Workbench with vise
Tape measure
Angle square or combination square
Portable circular saw with straightedge guide
Power miter saw
Table saw
Portable jig saw
Drill press
Jointer
Thickness planer
Router and bits (1-1/2-inch carbide-tipped flush-trim bit, 1/4-inch round-over bit)
Corded or cordless electric drill with bits (3/16-inch with countersink; 3/8-inch twist orbrad-point drill)
#2 Phillips screwdriver or driver bit
Assorted clamps
Sanding block with medium-grit abrasive
Paintbrush

Lowe's List for one chair:

2 2x6x8-foot cedar boards (#58758)
4 1x8x8-foot cedar board (#7505)
1 1x4x8-foot Top Choice treated board (#201711)
1 24x48-inch precut piece of 3/4-inch Arauco or similar plywood (#35677)
1 box Primeguard Exterior screws, 1-1/4-inch (#10777)
1 box Primeguard Exterior screws, 1-5/8-inch (#16967)
Exterior-grade wood glue (#1444)
Exterior-grade stainable wood filler (#8374)
Epoxy adhesive with syringe applicator (#20934)
1 gallon exterior-grade solid-color stain (#291460)
10 steel spacers 1/4 x 3/8 x 3/4-inch long (#137118)
4 1/4-20 x 3-inch hex bolts (#63315)
4 1/4-20 x 2-1/2-inch hex bolts (#63314)
4 1/4-20 x 1-1/2-inch round-head machine screws (#136391)
2 1/4-20 nylon-insert locknuts (#63306)
30 1/4-20 wing nuts (#58095)
2 1/4 x 2-1/2-inch lag screws (#310687)

*Does not include taxes, which vary by market, or the cost of tools. Pricing for commodity items may vary due to market conditions.
**Availability varies by market for lumber species and sizes.