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Five to Thirty Minute Chair

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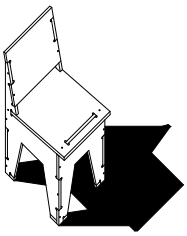
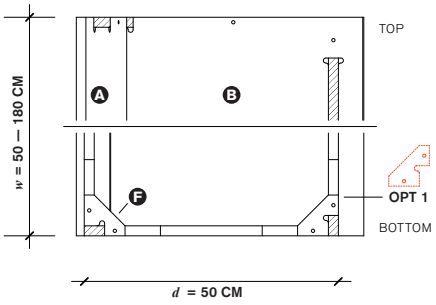


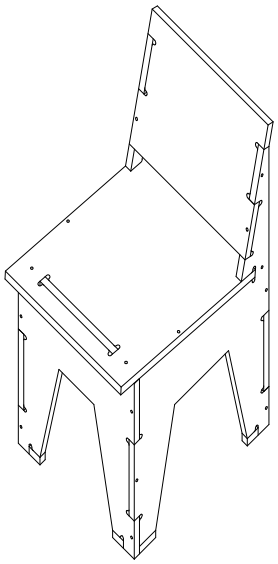
Five to Thirty Minute Chair

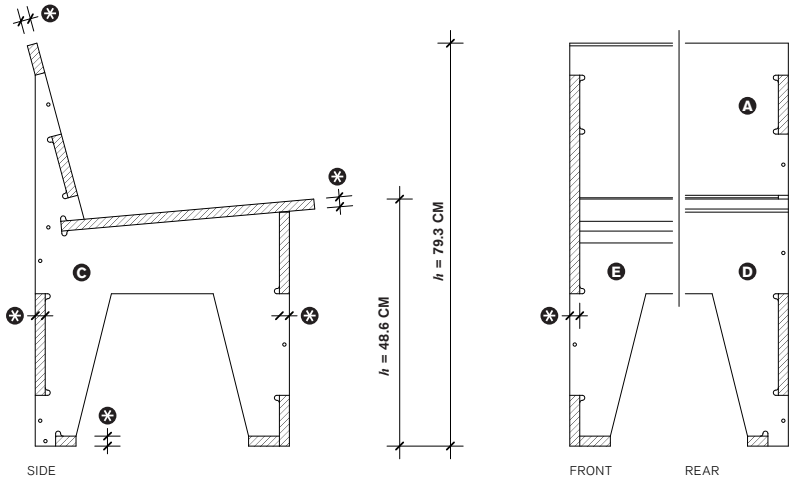
The Five to Thirty Minute Chair is a multi-purpose side chair, which can be made of almost any material and finished as desired.

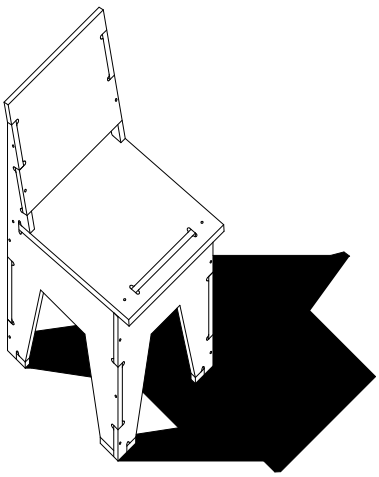
Two chairs can be milled from a single 4’x8’ sheet, with each comprised of 10 flat, interlocking pieces that are easily constructed and secured with screws, pegs or adhesives.

The Five to Thirty Minute Chair can also be accessorized with a 3D printed Peg & Foot Kit. You can find 3D .stl files at thingiverse.com/AtFAB for 3D printing in ABS plastic.









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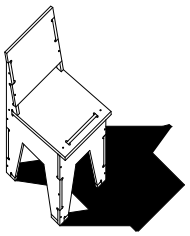


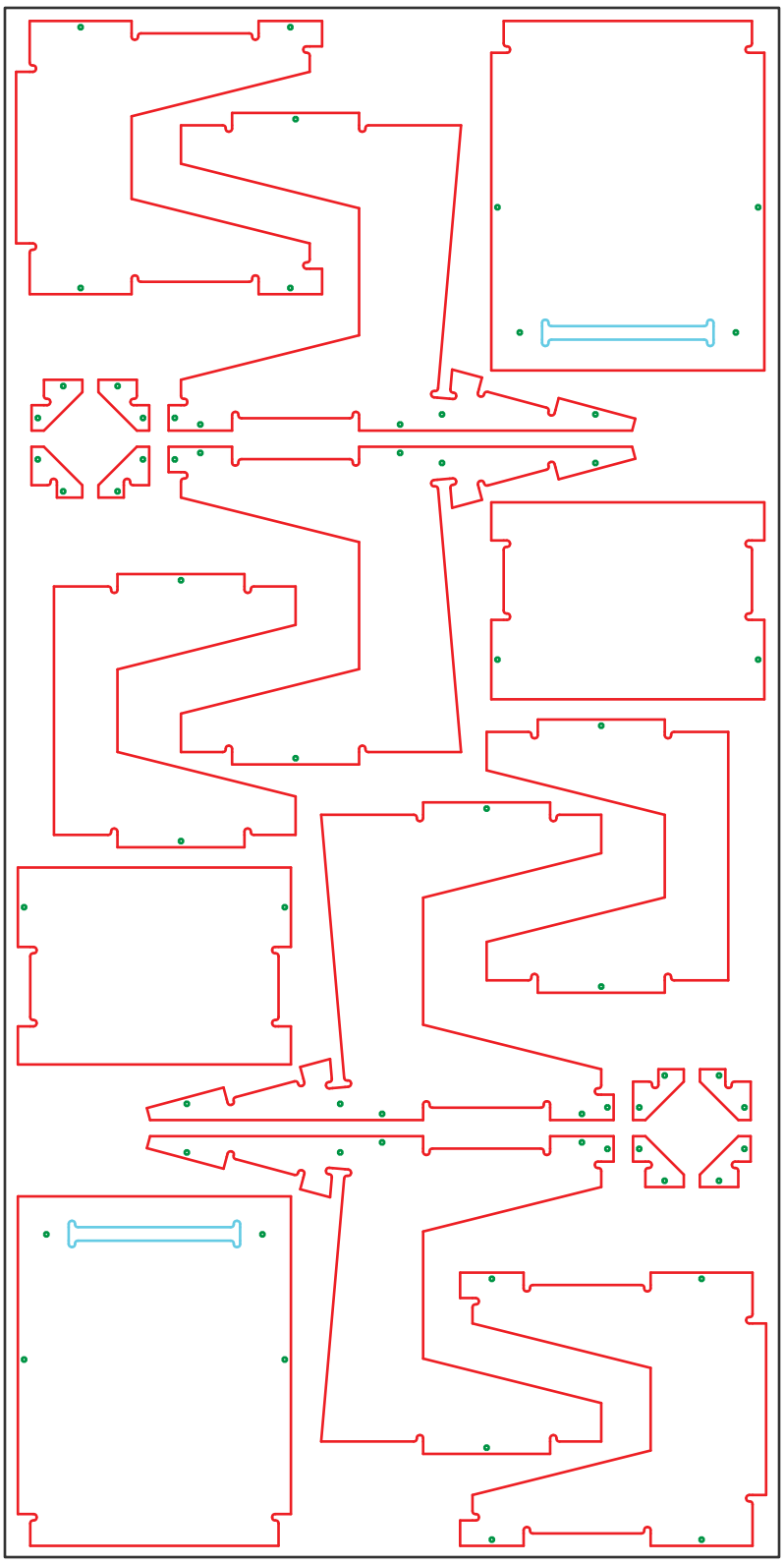
Five to Thirty Minute Chair

DIGITAL CUT FILE

Cut file provides 2 Chairs that can be cut from a single 4'x8' sheet of 18.5 (3/4") material

KEY

- Red Lines = outside cuts
- Cyan Lines = inside cuts
- Green Circles = drilled holes (adjust diameter to match your fastener size)



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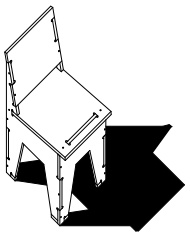


Five to Thirty Minute Chair

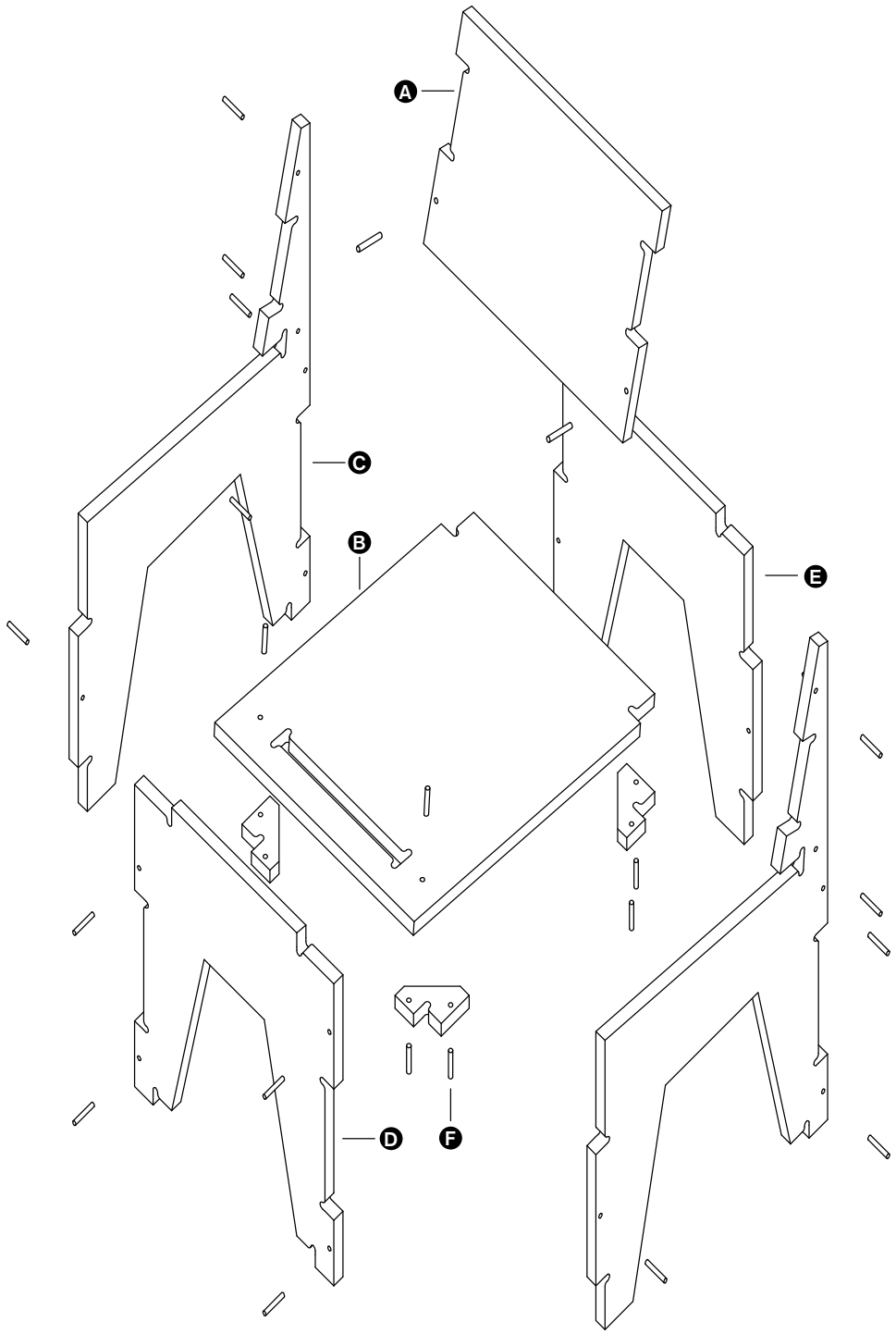
ASSEMBLY INSTRUCTIONS

ASSEMBLY

Slot part B into part D. Fit side parts C, then part E. Secure temporarily with painters tape. Add parts A & F, also secure with tape.

FASTENING

Starting from part D, work around chair to fasten. If using pegs, drill holes through pre-drilled holes and into the edge of opposing part. Insert pegs. For hardware, screw directly through pre-drilled hole and into opposing part. If gluing, omit fastening holes from CNC files. Apply adhesive to interior face of tabs on all parts.



CHAIR PARTS			LINEAR INCHES
A	Seat Back	1	64
B	Seat	1	98
C	Sides	2	249
D	Front Legs	1	78
E	Back Legs	1	83
F	Feet	4	47
Total per Chair		10	619 + 28 holes
Total per File		20	1238 + 54 holes

MATERIAL SUPPLIES

Fasteners	28 pegs or screws
	or glue/adhesive
Painters Tape	for assembly
Drill	for pegs or screws
Rubber Mallet	optional for tighter fitting joints
Blanket	for protecting pieces & floor during assembly

OPTIONAL ACCESSORIES

Peg & Foot Kit	3D print fasteners & feet*

*stl files found at thingiverse.com/AtFAB

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Fabrication Suggestions

These suggestions, which come from our research experience, are our best effort to share insights about the fabrication process. They are by no means comprehensive; we always welcome your feedback.

PLANNING YOUR MATERIALS

- Simpler AtFAB furniture objects require a single sheet, while the larger complex pieces require 6 or more. We advise purchasing a 20% material surplus for testing.
- Cut files provided are scaled for 18.5mm (3/4") Hardwood Veneer Plywood (we used Home Depot's PureBond successfully in many of our prototypes). Some objects will require ½" sheet material for infill parts, shelves and drawers.
- Consult sheet material supplier and manufacturer instructions for finishing prep. Different sandpaper grits for edges and for faces of lumber products is useful, and wrapping sandpaper around dowels is helpful to sand the inside of the curved sniglets.
- If sealing, coating, painting or finishing your furniture piece in some way, consult manufacturer instructions for finishing with oils, waxes, paint and sealers.
- AtFAB's design using slots, tabs and notches makes objects easy to assemble with a couple of people. Moving quilts to protect the pieces and your floor are handy.
- Blue painters tape is especially helpful in holding pieces together as you assemble your object.
- For increased durability, we recommend securing joints with dowels. The cut files provide these dowel holes for the CNC to pre-drill into the face of the furniture pieces.
- If securing joints wtih dowels, a hand drill and ¼"x1½" pre-cut hardwood dowels of oak, maple or walnut have worked well with our plywood prototypes. Ask your material supplier for recommendations.
- The pre-drilled holes can accommodate mechanical fasteners, and they can be elminated altogether if you prefer to glue pieces together.
- CNC machines require their own supplies, consult your fabricator to find out recommended bit sizes for CNC routers, masking to protect your materials, and anything else the machines need.

FABRICATION HINTS

- DXF cut files are provided. After importing into the CNC Machine's proprietary CAM software, check that polylines remain continuous and closed, and inflected sniglet curves are consistent with the drawing included in this document.
- Every AtFAB object has inside cuts, outside cuts and drilled holes. These are separated by layers in the DXF file and noted on the accompanying sheet in this document. Cutting on the appropriate side of the line is critical to ensure tabs and slots fit together.
- Inside cuts (especially slots) may leave a piece of waste material that can be vibrated out of place and interfere with cutting. Secure this piece or pause the machine to remove it on the final pass.
- A lower cutting speed and greater number of passes produce a more refined edge that requires less sanding/filing.

USING THE TEST PIECE

Before proceeding with your entire job, test your sheet material and machine settings to ensure AtFAB pieces fit together as intended:

- Using your 20% material surplus, cut the test-piece provided in AtFAB_test.dxf
- Multiple settings can be evaluated by cutting multiple test pieces and "bracketing" toolpath offsets, cutting speeds, bit sizes, etc with each piece.
- Finish the test piece(s) as you would your furniture object. Evaluate how the slots and the tabs of the finished test pieces fit together.

A successful fit using 18.5 (¾") plywood allows 1-3 business cards to easily pass between the joints. If not:

- Measure the thickness of your sheet material in several places to see if it matches the slot dimensions in the cut files.
- If your material thickness is greater than 18.5 (¾"), CAD files can be scaled by up to 1-2% to adjust for your actual material thickness.
- Alternatively, you can incrementally increase bit diameter settings in your CAM software without changing your actual bit. This will enable the machine to remove slightly more material as it cuts on the same toolpath.
- Do not offset the CAD polylines to make fit adjustments. This will make AtFAB slots smaller and tabs bigger, ensuring ill-fitting pieces.

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TERMS & CONDITIONS

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