Open Source Intubation Box

https://intubationbox.com/
https://goodsforgood.co/

originally developed by
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prepared for production by
Urban Plough Furniture
Materials for CNC fabrication

3/16” x 4’ x 8’ Acrylic
Weld-On 4 Acrylic Adhesive or equivalent plastic welding adhesive
Masking Tape

Bits
1/4” upshear
1/4” downshear
1/2” downshear
3/16” upshear

Notes
Recommended gluing method: https://www.youtube.com/watch?v=hT6Ow_cBTps
Note curing times and handle with care while moving before fully cured.
Step 01
Remove adhesive backing from sheets and use a wire brush and razor blade to remove burrs and waste.

Place the top panel on a clean work surface with the grooves facing up. This panel is symmetrical along its X and Y axes, so don’t worry about orientation.

Step 02
Insert the front and back panels. You can identify which end gets inserted by the small tenons at the insertion end of the piece. Once seated, put the left and right sides into place. These also have tenons to make insertion easier.

Use the trueing triangles to make sure the box is square, and then use masking tape to temporarily hold parts in place.

Apply glue into the narrow slot at the base of the tenon of one piece. Apply pressure and hold firmly for one minute. Once secure, proceed to glue the remaining parts into the top panel.

Wait 10 minutes before proceeding to Step 03.

Step 03
Rotate the box onto its right side and, following the process described in Step 02, glue the front and back panels to the right panel.

Wait 10 minutes before proceeding to Step 04.

Step 04
Rotate the box onto its left side and, following the process described in Step 02, glue the front and back panels to the left panel.

Wait 10 minutes before handling further.
Materials for non-milled fabrication

3/16” x 4’ x 8’ Acrylic
Weld-On 4 Acrylic Adhesive or equivalent plastic welding adhesive

Assembly

Recommended gluing method: https://www.youtube.com/watch?v=hT6Ow_cBTps

Note curing times and handle with care while moving before fully cured. Only use tools rated for working with plastic/acrylic.

1. Wear nitrile gloves. And keep a square handy.
2. Start with the left or right panel, laying it on a flat clean surface.
3. Take a rear panel and hold it upright in its position.
4. Make sure you are seated flush in your dado, against the shoulder, as well as with the top edge of your dado. Where the top will cap the unit should be flush. While piece is held square in place, apply solvent to the inside of the dado carefully as shown in the instructional video. Hold/check square with equal downward pressure for 60 seconds. At this point, your panel is bonded enough to move on to another piece.
5. Position the front panel in it’s dado, with arm holes (which are off center) closer to the top of the unit. Repeat step 4.
6. Repeat steps 2-5 for the second unit before adhering the other side panel. This gives the rear and front panels proper bonding time before inverting.
7. Once first and second units are at equal assembly with one side, and the rear and front panels are bonded, lay the other side panel and place it so you can carefully lift, invert and place bonded pieces into its corresponding dados. Repeat step 4 and do the same for the second unit.
8. Come back to the first unit. Take a top piece and lay flat in front of you.
9. Carefully, pick up the rest of the assembly by placing hands on left and right panels, and focusing pressure where your rear and front panels support the unit. Lift and place into dados in your top piece. Focus on 1 to 2 dados at a time, and repeat step 4.
10. Repeat step 9 for your second unit and you’ll have two complete intubation cubes.
Design for non-milled fabrication

Note:
If you do not have access to a mill, version 1.20200324 can be produced by hand by cutting pieces as shown on this page and assembling per the instructions on the following page.

Notes:
All material is 3/16" thick.
All cuts occur 1/8" from the outside edge and are 1/4" wide, 3/32" deep; shown in red.
(Not to scale.)