

How to build a Cajon drum

PeteM 2019

This cajon 'drum' is to have an overall dimension of: 18" tall x 12" wide and 12" deep. For this size, the panel sizes must be:

Front/Tapa: 18" x 12" x **2mm**

Back panel: 18" x 12" x **1/2"**

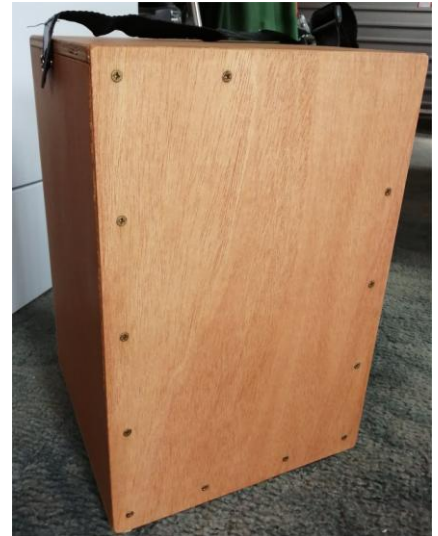
Side panels (x2): 17" x 11 1/2" x **1/2"**

Bottom/Top (x2): 12" x 11 1/2" x **1/2"**

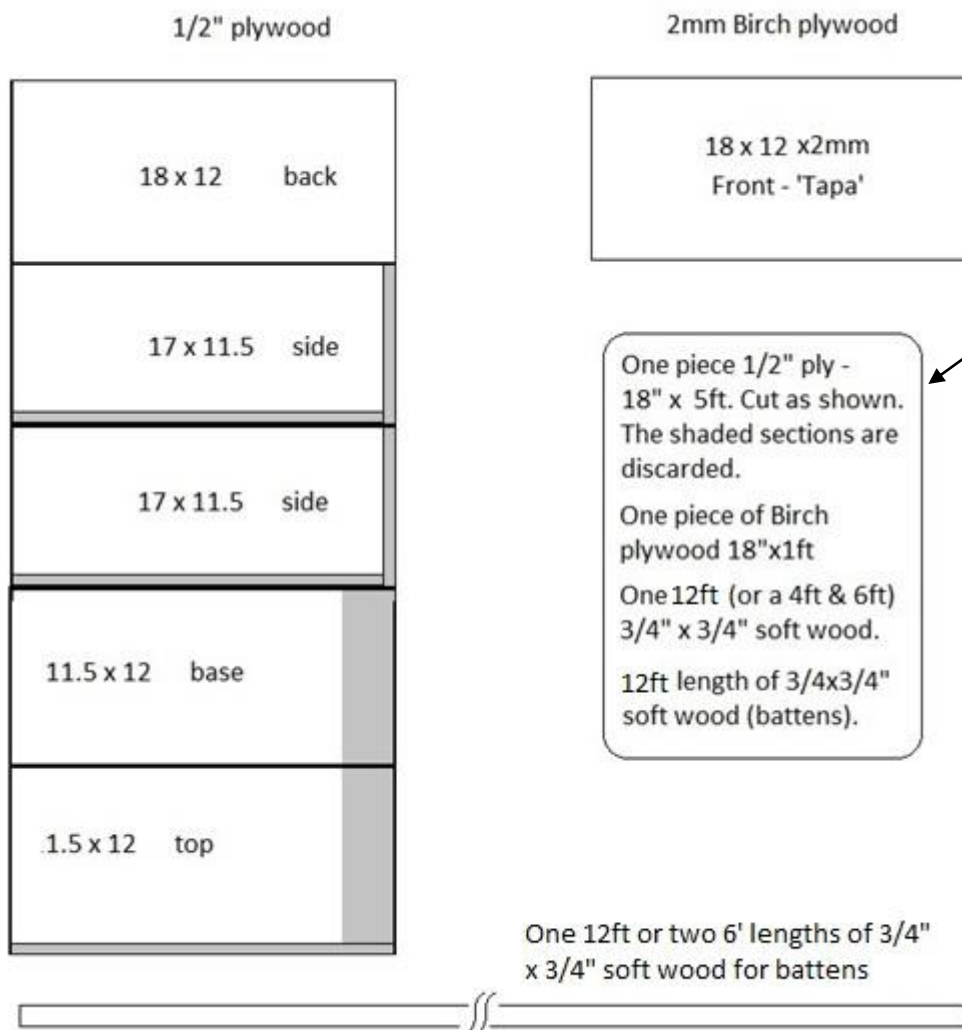
Battens: sides 4 off = 17" x 3/4x3/4";

Top & Base 4 off = 11" x 3/4x3/4". Total length approx.10ft.

(Note Both base and top are fitted INSIDE the sides)



front view - 2019



Preparing the wood

The overall wood pieces required are shown here.

The first sections of the Cajon Drum to be cut are the two side panels.

These are to be cut - **17"** tall by **11 1/2"** wide from **1/2"** plywood.

Cutting out the top & base

The second pieces to be cut out are the top and bottom.

The dimensions for the Cajon are **12"** wide by **11 1/2"** deep of 1/2" plywood.

Note: The finished cajon will have a depth of 12", as the back panel adds 1/2" to the depth!



Check the panel sizes and cut battens to lengths required. The 2019 model used battens in place of plastic fixings for top & base (as shown above).

Fixing battens to the side frames [28 of 30mm wood screws]



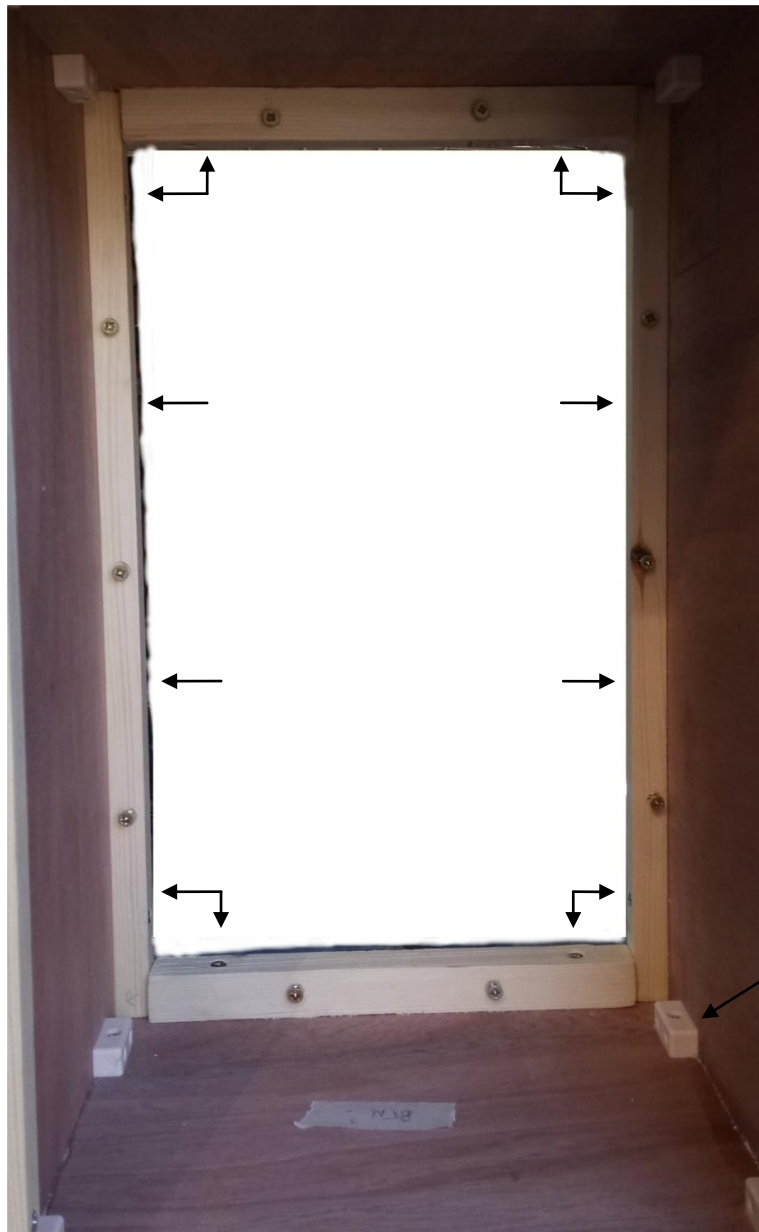
It is important that the structure is sturdy enough to support the body weight of an adult.

The addition of the two 3/4" x 3/4" battens (ie each 17" long) on the inside of each side panel give the additional support needed.

Cut the and fit the battens (x4) so that they lie along each edge of the sides.

Drill pilot holes to accept four, countersunk 30mm wood screws each side. Position these holes at 2" & 6" from the end of the battens and fix with wood adhesive.

Note: A further six screws (3 each side - see arrows) will pass through the battens to fix the battens to the back panel (but are NOT used to secure the front 'tapa' panel). It is easier if the holes for these eight are drilled before fastening the battens to the sides.



View - looking through the assembly from front to back

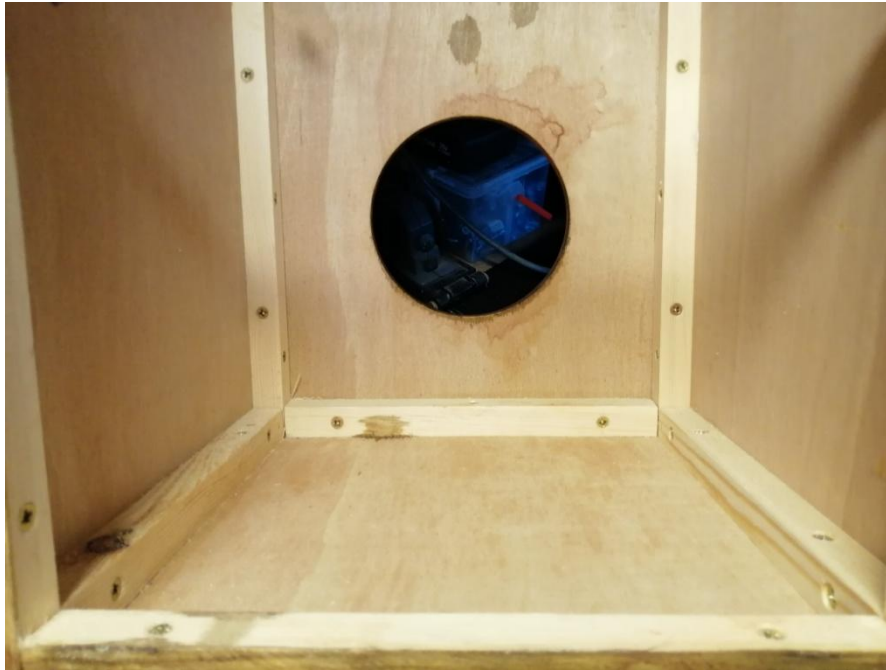
Visible are the 10 off 30mmx8mm wood screws fixing the battens to the side, base & top. Two positioned at centre of each side and the remainder at 3.25" from outer edge of assembly (ie avoiding the two side fixing screws). Pilot holes drilled with 3mm bit, clearance hole trough batten: 4mm bit with suitable CS.

Wood Screws reqd

- | | |
|------------|---|
| 25mm x 8mm | x24 for ABS fixings (or a further 16 if battens used) |
| 17mm x 7mm | x12 for Tapa front |
| 30mm x 8mm | x36 for battens to sides, base & top |

Fixing base & top to sides

In the later model (2019) the plastic corner fixings on each side of the base/side panel have been replaced by battens (ie 4 off x 10" 3/4" x 3/4"). These provide additional structural support for the overall assembly.

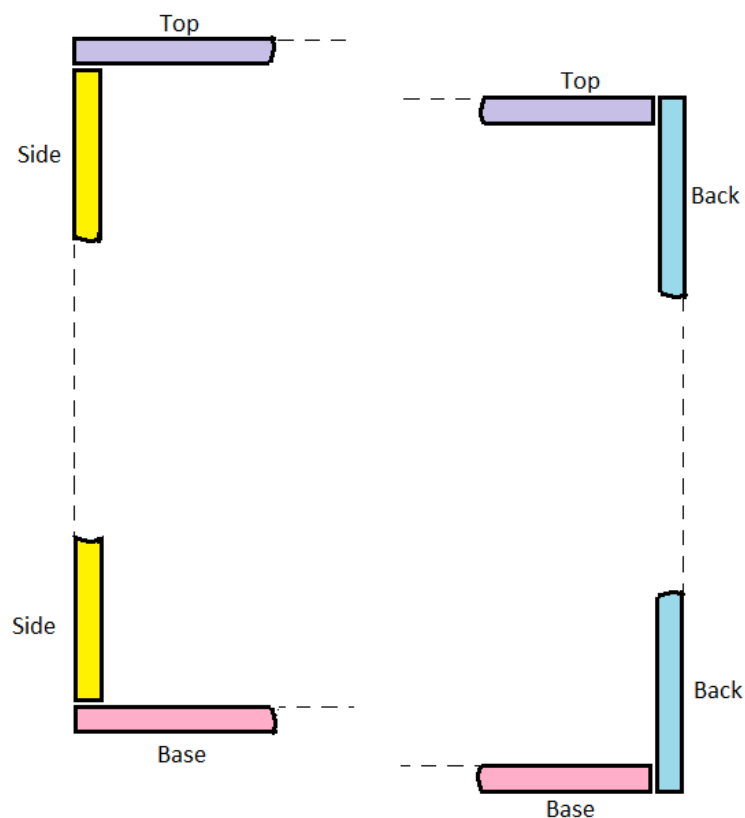


Note how the top is fitted over the side panel

These ABS fixing were replaced by wooden battens in the 2019 model. They secure the top & base to the side panels.



Below you can see how the **side to top/base** and also the **back to top/base** fit together. Of course the 'tapa' front panel will covers the top, bottom & sides.



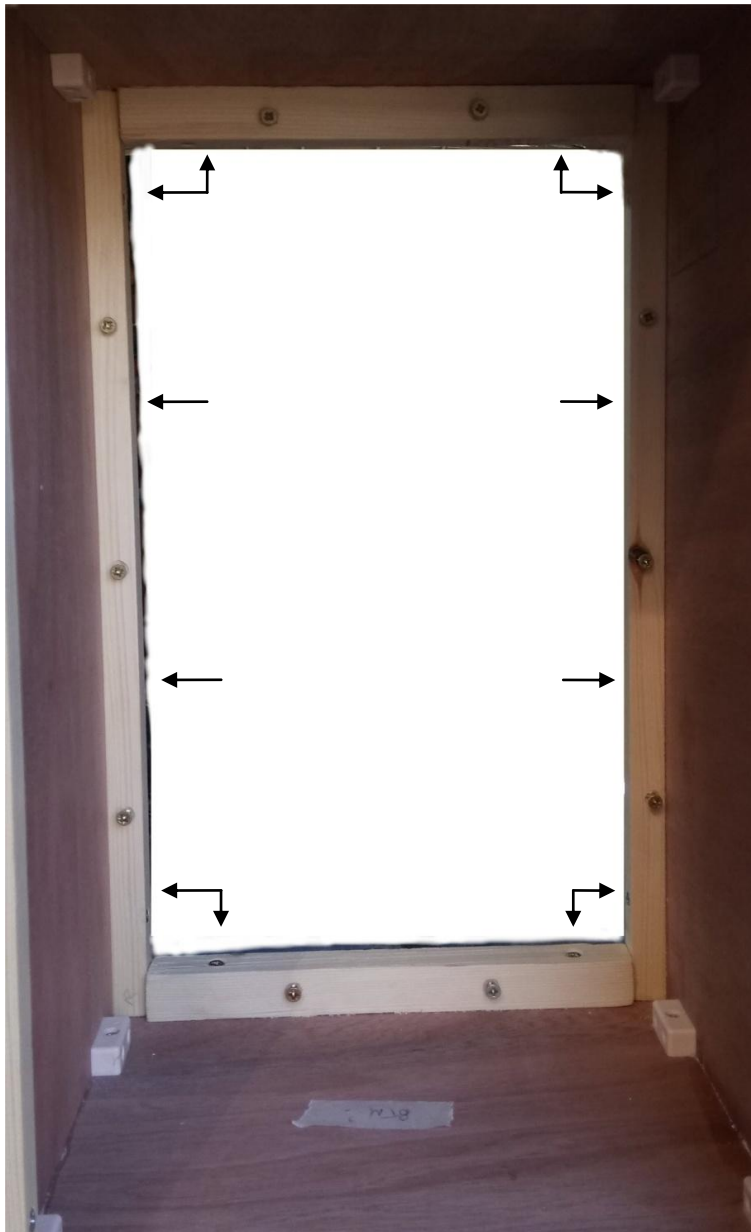
Cutting the sound hole in the back panel

Cut a 5" (approx) hole in the centre of the back panel. Position it at about 1/3rd of the way up from the base (ie approx 6" to centre). A 4 1/2" to 5" hole saw is ideal for this, although multiple holes could be drilled, the centre removed and the sides smoothed using sandpaper.

Fitting of the back panel

Four additional battens are fitted *between* the side battens. Two across the back & front, two across top & bottom (seen in next image).

Fit the back panel to the side frame, accessing through the open front of the assembly, using wood adhesive and fixing screws. Three screws along each side (see next image) and two along the top & base were used (ie x10). Again, this will ensure that the fixing screws are not visible from the outside of the assembly.



View - looking through the assembly from front to back

Note: This image shows the alternate method of fixing the top & base to the sides, using ABS fixings.

Visible are the **10 off 30mmx8mm** wood screws fixing the battens to the side, base & top. Two positioned at centre of each side and the remainder at 3.25" from outer edge of assembly (ie avoiding the two side fixing screws). Pilot holes drilled with 3mm bit, clearance hole trough batten: 4mm bit with suitable CS.

Wood Screws reqd

17mm x 7mm x12 for Tapa front

30mm x 8mm x36 for battens to sides, base & top

Note: If wooden battens are to be used to attach top & base to the sides, rather than ABS fixings, then an additional x16 off 30mm x 8mm will be required. However if ABS fixings are used then x24 off 25mm x 8mm screws will be required.

Preparing & fitting the snare mechanism

Although there are several approaches to producing the 'snare effect', I purchased a genuine 14" 20 strand drum snare.

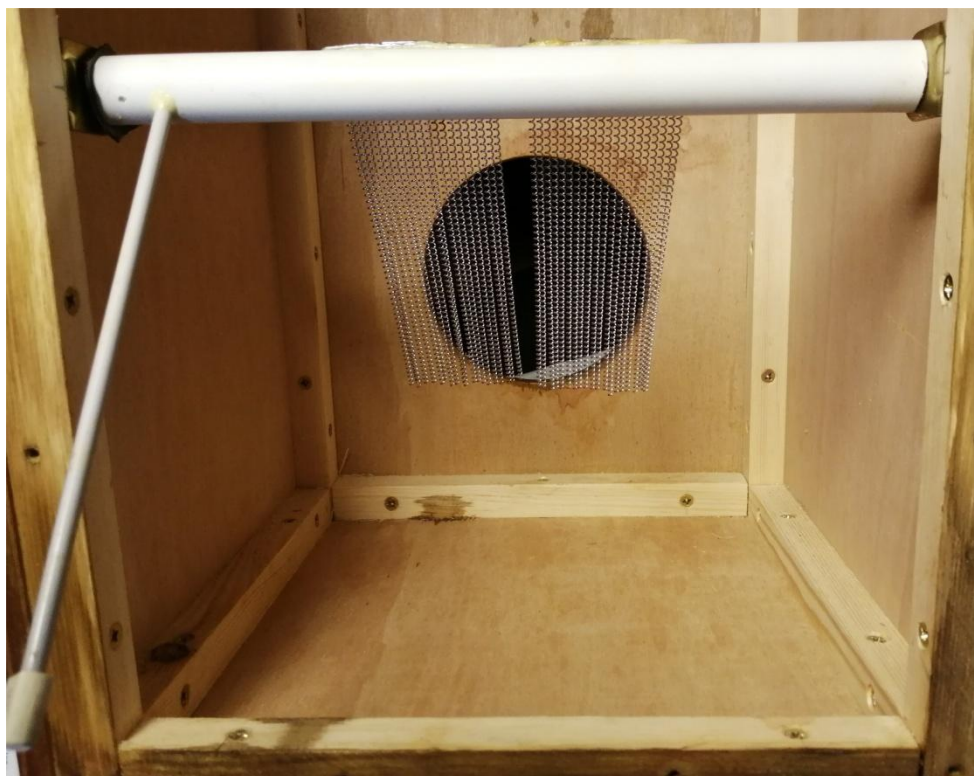
These are not expensive (eg ~£8 see: https://www.gear4music.com/Drums-and-Percussion/20-Strand-Snare-Wire-by-Gear4music-14/1J6B?utm_medium=email&utm_campaign=order-dispatch&utm_content=ord-line&utm_source=txn-email).



Cut the snare in half - to provide two identical 7" sections lengths.

Next, cut (& shape) a wooden support. This will sit inside the box at the 'front' (ie tapa) side and is best if it can be rotated. Doing so, will allow the snare springs to be brought closer or further from the face of the tapa.

The 14" snare cut into two, these are mounted side by side using wood screws.



Positioning of the snare Wires

With the snare support positioned half way down the sides, the snare wires are angled in towards the face of the Tapa, with the Tapa installed the wires press up against it.

A simple 'lever' is inserted in the snare support bar so that the position of the snares can be adjusted to allow for 'tonal presence' of the snares.



A pair of right angled brass brackets secure the support bar to the sides, while allowing the bar to be rotated.

This image shows the support bar, constructed from a length of plastic pipe. (Note: other versions have been attached to 3/4x3/4" square wood).

In this design, round wooden dowels have been inserted into each end of the rod allow for wood screws to provide a central fixing point.

These attach the support bar to right angled supports at each side.



Snare adjustment arm

The image below show the arm & snares in their preferred position in relation to the Tapa.



Snare & adjustment bar correctly positioned.

The Tapa front panel

For the Tapa, 2mm thick Birch plywood was used. The Tapa must be thin to allow it to give a little when it is struck to provide full tones.

The Tapa is fixed using (x12) 4.5mm cross-point cs screws. See next image of 2109 version.

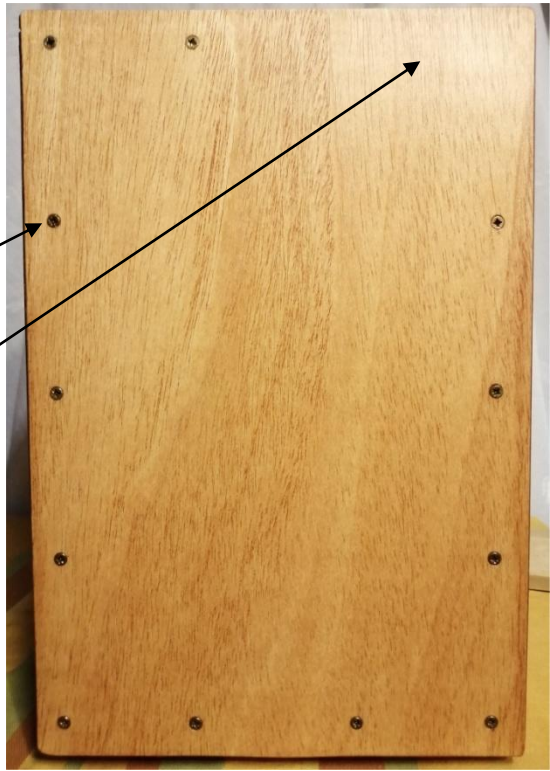
Note that the holes for the top-left hand section of the tapa have been omitted. This allows that section of the Tapa free movement, to enhance the snare effect and to produce a sharper sound when the Tapa top edge is struck.



At time of writing (April 2019) 2mm Birch plywood is available through Ebay. See:

<https://www.ebay.co.uk/itm/222978278875>

Showing the front panel 'Tapa' secured with 12 off 17mm screws, but that the top-right corner is not to be secured with screws.



The finished rear panel and sound hole.

Four rubber feet were fitted to each corner of the base of the Tapa.



Finishing off - a light wood stain ('pine') was used for the 2019 version. A final coat of varnish was not applied but remains an option.