Inner Cover for Langstroth Hive

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The design of this inner cover allows for considerable flexibility. The overall dimensions match that of a Langstroth hive, 19-7/8” x 16-1/4”. The height can be adjusted as needed. These plans are for a cover that is 1-1/4” high. If 1/4” plywood is used, there is a 1/4” reveal on one side and a 3/4” reveal on the other. You can have the 3/4” side down facing the top bars providing space for patties, or the 3/4” side can be used facing up giving space for dry feed or baggie feeding.

After you have cut all the pieces to size, a rabbet joint needs to be cut on the short (16-1/4”) pieces, 3/4” x 3/8”. This is easily done with a dado blade set, but if you’re not able to do it this way, here are the steps using a single blade on a table saw.

MATERIAL LIST

(1) piece 19-1/8” x 15-1/2” x 1/4” plywood
(2) pieces 19-1/8” x 1-1/4” x 3/4” pine
(2) pieces 16-1/4” x 1-1/4” x 3/4” pine

(Photograph shows material/parts for (4) inner covers.)
Adjust the saw blade so it cuts 3/8” high, and it leaves a shoulder 3/4” from the end of the board. Be sure to use the miter gauge for this operation. Make this cut on both ends of all the 16-1/4” pieces.

Attach a piece of wood (A) to the miter gauge that extends to the left side of the saw blade (photo shows 3” x 14” x 3/4”). Using another scrape piece of wood (B), hold it tight against the fence when making the second cut to complete the rabbet (C).

Adjust the saw blade so it is 3/4” above the table top. Adjust the fence so there is 3/8” between it and the blade. Using the jig above, make the second cut on all the 16-1/4” pieces.
On all the pine frame pieces, a dado is cut for the plywood, 1/4” wide by 3/8” deep. Cut the dado a 1/4” down from the edge. This will leave 3/4” on the other side of the dado. This will vary depending on the overall height you decide to make the inner cover.

Once complete, you will have equal number of long and short pieces for assembly. Two long and two short per cover.

Run a bead of glue in each dado and install long pieces onto the plywood. The plywood should not extend past the length of these pine frame pieces. Glue and attach the short pieces to the plywood, completing the frame.
Nail or staple the rabbit joints at all corners. Install a few staples around the inside edge, going through the plywood, thus locking it all together.

Layout a center line on the cover. Drill two holes with a hole saw. I used 1-1/4” hole saw. Any size close to that is acceptable. You want to end up with an opening that is about 3-1/2” long.

Use a jig saw and cut between the two holes.