

Making a repeatable cut off saw

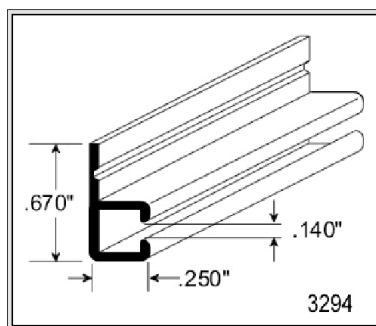
I started with the drillmaster mini cutoff saw from Harbor Freight Tools (\$27.99 plus shipping). This is a nice enough unit but I wanted a cut off saw that could be easily used to cut multiple pieces of equal length and this saw, as-is, would not do that.



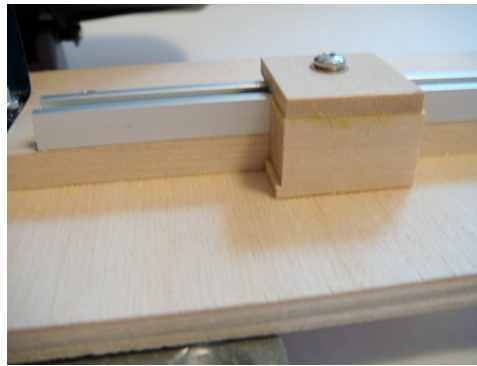
I removed the built in vice and built a new cutting base starting with a piece of 1/4" aircraft grade plywood 2 7/8" x 10 1/2". This size permits cutting up to 4 1/4" long pieces. You could make the base longer if you wanted to cut longer lengths. I then glued a piece of 1/4" basswood 1 5/8" x 10 1/2" to the "back" half of the base. This piece serves as the back of the cutting channel. I then glued a piece of 1/8" basswood 1" x 4.5" just to the left of the center of the basswood. This last piece serves as a stop to keep the blade from cutting too deep.

This assembly will be fastened to the saw base using two flat head 10-32 screws. One going through the pivot hole for the original vice and one going through the arc shaped slot used to lock the vice into position. I had to drill out the pivot hole to let the 10-32 screw fit. I countersunk the holes in the cutting base.

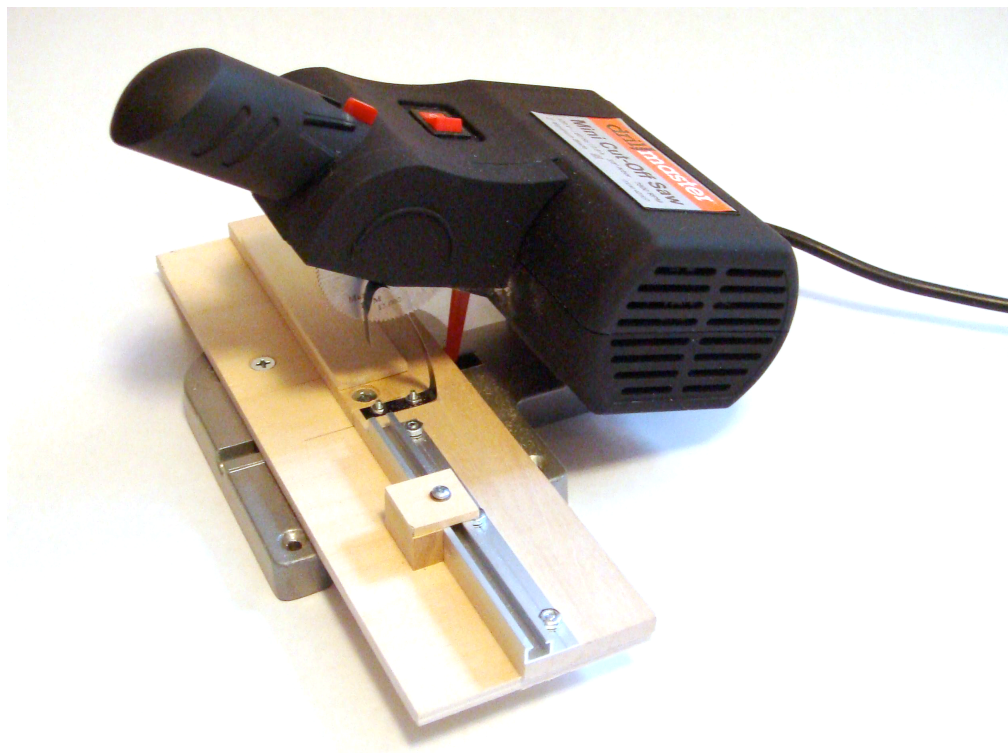
I made the track for the stop from a short piece of RV curtain track.



I had to buy an 8' piece, which was cheap, but, when shipping was included, cost more than the saw did. I bolted the curtain track to the base with 4-40 flat head screws. The slot in the curtain track is just the right width to allow a 4-40 nut to slide but not turn so I used a short 4-40 round head screw to clamp the stop which I made from a 1/2" square x 7/8" long basswood block and a 7/8" square of 1/8" basswood glued together. Note the lip at the bottom of the stop to provide a clean end point.



Finally I made an auto hold down from a strip of 1/4" wide spring steel positioned such that it is compressed when the saw is pressed down. I also had to buy a much more of this spring steel than I will ever use but it also was cheap. I bolted the spring steel to the base with 2-56 flat head screws.



Parts list:

drillmaster mini cutoff saw

<http://www.harborfreight.com/bench-top-cut-off-saw-42307.html>

RECMAR 3294 Aluminum Curtain Track - 8 Feet

<http://www.curtain-tracks.com/recmar-3294-8-aluminum-curtain-track-8-ft.html>

spring steel 1/4" x .005 -

<http://www.mcmaster.com/#catalog/119/3661/=lhdea6>

1/4" aircraft grade plywood sheet - 2 7/8" x 10 1/2"

1/4" basswood sheet - 1 5/8" x 10 1/2"

1/8" basswood sheet - 1" x 4.5"

1/2" x 1/2" x 7/8" basswood block

7/8" x 7/8" x 1/8" basswood sheet

10-32 x 7/8" flathead screw

10-32 x 5/8" flathead screw

2 x 10-32 steel nuts

3 - 4-40 x 5/8" flathead screw

1 - 4-40 x 1/4" round head screw

4 - 4-40 nuts

3- #4 lock washers

2 - 2-56 x 5/8 flathead screws

2 - 2-56 nuts

2 - #2 lock washers