Dust Collector Pan for BT3000 Designed by Jim Frye

This project is the result of an attempt to create a prototype for a dust collector pan for the bottom to the BT3K cabinet. The idea here is to keep the dust from falling onto the items stored on the lower part of the saw stand. Since I have been planning to enclose the saw stand with a wood cabinet, I wanted to use the space below the saw for tool, blade, and jig storage. An additional goal was to improve dust collection inside of the saw and above it also. The aim is to collect more dust inside the cabinet and hopefully extend the life of the motor and other mechanisms in the cabinet by keeping it cleaner. The use of a dust collection system or shop vac is essential when using this pan.

There are no drawings for this project. I created it on the fly using a ruler, utility knife, hot melt glue gun, and some corrugated cardboard. The pan completely covers the bottom of the saw cabinet. The pipe sticking out of the back of the pan is a piece of an old shop vac wand and is used to clean out the collected dust in the pan with a shop vac. The pipe is normally plugged with an empty 35 mm film canister. The pipe extends far enough from the rear of the pan to clear a planned wood cabinet enclosure. The front and rear flanges of the pan are 2 1/2" wide, which is the same width as the saw stand angles. These get clamped between the stand and saw cabinet when the saw is bolted to the stand. The flanges on the sides are 1" wide and creased to be folded in half to 1/2" width. This way, they seal under the cabinet sides better. I designed this pan with 5 1/2" of drop at the rear so that the clean out pipe would clear the out feed table mount that is bolted to rear of the stand.

The first piece I made was the rear. It is just a triangle with the 2 1/2" flange on the long side (top edge) and hangs straight down at 90 degrees to the flange. The remaining two sides connect to a 1" wide bottom. This little flat allows the clean out pipe to sit closer to the bottom of the pan. A 1" wide hem is left on the sides and on the 1" wide bottom for attaching the side and front panels.

The two side panels were made next. They are mirror images of each other, but are the same size. The top edge of these was made to fit between the top flanges of stand. This top edge has the 1" flange that is folded in half as mentioned above. Since the side panels are right triangles, the rear edge of them is same length as the sloping lower edge of the rear panel. The lower edge of the side panels has a 1" wide hem added to it for joining to the front panel. I assembled the rear and side panels upside down on the workbench to ensure everything remained square. It helps to have some weights to hold things in square while gluing the joints.

The front panel is the same width as the rear panel and has a 2 1/2" flange on it. The length of the remaining edges of the front panel is the same as the lower edges of the side panels. The front panel also has a 1" wide edge at the bottom to mate with the one on the rear panel. The two lower edges of the front panel have 1" wide hems for joining to the side panels. In these joints, the hems on each panel overlap onto the adjoining panel surface. This gives the bottom of the pan a double width glue seam for extra strength. The front panel was also glued to the assembly on the workbench to maintain alignment.

After the pan was all glued together, I did a test fit in the stand with the saw unbolted. You have to remove the saw from the stand to install the pan. After trimming a few stray bits here and there to clear bolt holes, I took the pan back to the workbench and ran a bead of glue down all of the exposed joints (like a weld seam). I finished the pan with a spray coat of automotive silver paint and three coats of wiping varnish to make the cardboard less of a dust catcher. This resulted in a lightweight, but very stiff assembly. I'm sure a sheet metal pan would a better solution, but this was a prototype to test how well it works and it only took two hours to create.



