

Continuing John Deere Conversion



The underside of the hood needs to be trimmed to have a consistent thickness.



The brass strip is bolted to the underside of the hood.



Using an old 4010 hood to bend the new 700A hood.



The new hood is soldered to the brass strip which was bolted to the underside of the hood. Also, the frame rails are installed and matched to the hood.



Using vise grips to hold the brass strips in place to create the leading edge of the hood.

This month, we continue transforming the Ertl Precision 5020 into a John Deere 700A. Last time we met, I walked you through the disassembly of the tractor, installation of the correct intake manifold, edging the chassis, painting the engine and reassembling the engine and the chassis. This month, we will transform the front half of the tractor, mainly the frame and hood.

With the JD 700A based on the 5020 platform, it is amazing how many features they share and how many differ. For instance, the wheelbase and hood length are the same, but the frame rails differ.

When John Deere produced the 5020, it was designed as an agriculture row crop tractor, so it was designed with as much visibility as possible. To accomplish this, the hood was designed with the nose sloping down, increasing the forward visibility. With the 700A, strength and weight were the priority.

The frame rails on the 5020 were designed for the ability to install saddle tanks or other frame-mounted attachments. With the 700A, frame-mounted equipment was not needed, but its strong full-length frame could take the beating of rough terrain.

To start this transformation, I begin with the frame rails. The frame rails on the 700A were full-length 8-inch rails that ran all the way back to the axle housings. To get this look, I use some 0.062x0.500x10 brass strips and bolt them to the side of the original 5020 frame. To do this, a few small modifications will need to be done to the tractor.

First, I laid the brass strips on the tractor as a test fit to see any obstacles. I could see that the hydraulic oil filter was in the way, since the 700A mounts the hydraulic oil filter on the outside of the frame rail. To fix this problem, I used a band saw to remove the filter from the chassis. Another test fit showed that the "bolt heads" on the frame were holding the strip away from a flush fit. So, I used my angle die grinder with the 2-inch 36-grit disc to grind the frame rail smooth. With both sides completed, it's time to mount the frame rails.

I use 0-80 countersunk bolts to bolt the new frame rails to the existing rails on the tractor. With the brass strip held in place on the tractor, I mark three bolting locations. With the frame marked, I drill the three holes in the strip with my 0.052 drill bit then I drill the tractor's frame to match. Then I use my 0-80 to tap through the frame, then drill the brass strip to 0.060 for bolt clearance, along with using a 0.250 drill to create the countersink. With the drilling and tapping complete, I install the 0.250-inch-long Phillips-head bolts, making the new frame rail. After both new frame rails have been installed, the overall length will have to be determined.

The next item on the checklist is the hood. As I mentioned earlier, the hoods on the 5020 and 700A are the same length, but the hood differs

from the front of the side screens forward. So the band saw comes into play, and it was time to determine where to cut the hood. I decide to cut the hood off directly in front of the side screen area. With one quick pass, I either have success or a larger scrap pile!

Next, I need to determine how much of the hood was removed. Using my caliper, I measure the part of the hood I cut off, then add the width of the band saw blade's cut and I come up with 1.250 inches of hood that I will have to replace.

So I need to build and mount the new hood. After a quick inspection of the hood, I decide that bolting the new hood to the old was going to be the only way. With the original hood being die-cast aluminum, it limits the mounting possibilities.

The 5020 hood has various thicknesses, which would make it difficult to mount. So I use my Dremel with a sanding disc to reshape the underside until the hood has a consistent thickness all the way across. I shape a piece of 0.062x0.250 brass strip to match the underside of the hood.

Like the frame rails, I drill, tap and bolt the brass strip to the underside of the hood, keeping 0.125 inch of the strip exposed and 0.125 inch under the hood.

With the first bolt tightened in the center of the hood, I hold the brass strip in place with a vise grips, drilling, tapping and bolting until I have five bolts holding the brass strip in place. I then trim the excess length to match the hood shape and move onto the next step. I chose to bolt the brass strip to the underside of the hood because brass can be soldered.

The next step is to build the new hood. I knew I was going to have to replace 1.250 of hood. For this, I use some 0.032x1.250 brass sheet stock.

I place the sheet on the underside of a scrap Precision 4010's hood and bend the strip around to create the new hood shape. Make sure the strip you are using is plenty long, so it can be cut to length later. Even if it is short, you can just solder an extension onto it.

With the shape I want achieved, I clamp the new hood to the brass strip I just bolted to the 5020 hood and proceed to solder the new hood to the old.

I make sure that when I install the hood back on the tractor, it fits with

ease. If any force is needed, it may cause a stress area that won't show up until the paint is complete and final assembly has taken place. Don't ask me how I know!

I then want to cut my sides to the correct length. Ideally, I want 0.020-inch clearances between the sides of the hood and the frame rails. With the hood installed, I mark the side pieces and cut them to length, making sure I leave them a little long. They can be trimmed easier than lengthened!

With the side panel parallel to the frame rails, I solder a piece of 0.062x0.500 brass strip to the inside of the hood, flush with the original front frame of the chassis. I then drill, tap and bolt the crosspiece to the frame of the tractor, using 0-80 bolts.

The next item on the list is making our new hood have the correct layback. From experience, I have found having the bottom of the hood set back 0.125 inch gives the hood the right look.

To do this, I mark the side panels with that 0.125 inch and then use my 12-inch disc sander to give it the shape. Using the disc sander gives me great control of the hood.

The next item is cutting the frame rails to length. I mark the frame rails to match the hood and cut them to length. I will then use some of the brass strip I cut off to create the front part of the frame and solder it in place to tie everything together.

The next step is adding the leading edge to the hood. To do this, I use a strip of 0.032x0.250 brass. Using a couple of vise grips and clamps, I work my way around the hood until I have the strip soldered all the way around.

Now it's time for the grille. For the look of a perforated steel grille, I use perforated brass sheet stock. I stand the hood up on the sheet and mark the shape of the hood on the sheet. I then install 0.125x0.125x0.500 brass square tubing 0.125 inch back from the leading edge of the hood to create a mounting area for the grille.

The next step is mounting the hood back onto the tractor. Once I am happy with the fit and finish, I rough cut the grille, with plenty of room to spare. I then proceed to test fit and trim until I am satisfied with the fit, but leaving the length of the grille long. I shape the bottom of the grille to the correct shape and then solder some 0.032 brass to the bottom of the grille. This gives the appearance of the continued leading edge all the way around the hood.

With the brass strip soldered to the grille, I trim it so the backside will sit flush to the front of the frame and then trim the opposite side so it lines up with the leading edge of the hood.

With the grille installed using a little super glue as a temporary holding device, it is time to give the tractor the final seal of approval. This may seem like a difficult challenge, but I promise all of you can do it with a little patience and some trial and error.

My tool of the month is a simple obvious tool—my locking pliers or vise grips. I have a couple 5-inch and a few 8-inch vise grips. Although I have never needed the strength of the 8-inch, I have found it quite handy as a counterweight more than once, especially when I am painting!

The next time we meet, we will focus on the back half of this industrial beast. TF



The front of the new hood with the grille cut to fit and brass square tubing soldered in place to hold the grille.

Living just northwest of Dyersville, Iowa, in the heart of farm country and farm toy replica country, Chuck Steffens has found a niche in the toy world, building high-detailed replicas in his spare time. He shares his experiences with Toy Farmer readers, hoping to lead other collectors to personalize one of their own tractors. Comments or suggestions can be directed to csteffens@wildblue.net.

