Customizing an A-C 220

The project started with a new-in-the-box Allis-Chalmers 220.

Hello again! This month, the build is going to be much simpler than the John Deere 700A that has been the focus of the last few months. I plan on working on an Allis-Chalmers 220 to match the one owned by a neighbor of mine. He has been begging me for quite some time to build him a model of his tractor and I have been avoiding it for long enough, so here we go!

After picking up a new-in-the-box 220 at the Gateway Mid-America Toy Show in St. Louis, Mo., for a reasonable price, I had the base model to start with and now it is time to get the modifications going!

The neighbor's 220 is quite a unique machine. It is equipped with 30.5x32 rear wheels and 16.5x16.1 front wheels, a full set of suitcase weights, along with a chrome exhaust and precleaner.

So, I get the tractor out of the box to see what it is going to take to get this tractor built. First, I remove the original wheels. To remove the rear wheels, I use my side cutters to bend one of the axle caps, releasing the grip it has on the axle shaft, then slide off the rear wheels. To remove those front wheels, I just give them a good tug and they are off. Yes, I got lucky. With the wheels removed, the next area I focus on is the front slab weight.

The Ertl A-C 220 comes with a starter slab and three cast weights molded right into the casting. The 220 I need to build has the starter weight, but also has a weight bracket and suitcase weights up front, so this is going to be a little more complicated than a simple wheel swap, but should not be horribly difficult.

With the weights molded into the casting, they give a nice line to follow for cutting them off. I take the tractor to the band saw and follow that line across the tractor to cut off the weight. I then use my angle die grinder and clean my edges, making a nice smooth surface. But now this nice smooth surface has a big hole in it. My solution to this problem is body filler. It may not be the best solution, but the area on this tractor is well-protected due to the weight bracket and suitcase weights in front of it.

To get back to the modification, I insert some masking tape into the casting hole that the slab weight once covered. I use the tape to keep body filler from falling into the

The wheels and three cast weights have been removed.

This brass tubing will slide over the axle stub and I will simply glue the stub in place using epoxy and the wheels will be mounted for good.

casting. With the masking tape in place, I proceed to fill the hole with body filler, sanding it smooth as if it was never there.

With the slab weights removed and the hole filled, it is time to install the weight bracket. I have casted a metal weight bracket and suitcase weights for these 220s, so I grab one of my brackets and hold it in place. With the bracket in place, I see that the bolt head casted in the frame rails will have to be removed to have a nice flush fit between the bracket and the frame. Carefully using my angle die grinder, I remove those bolt heads, leaving a smooth frame rail, but messed-up paint. We will get to that later. Now that the frame rail is smooth, I once again set the weight bracket in place. Using a No. 52 drill bit, I drill the frame and tap it, using a 0-80 tap, then bolt the bracket on.

Now that the weight bracket has been installed, I proceed to install the front rims. Ertl tractors of this era have a pressed-on front tire over an axle stub, which makes mounting the replacement wheel a lot easier.

First, I clean the paint off of the axle shaft using my Dremel and a sanding wheel. Removing the paint gives the new rims a good mating surface, so there isn't as much play when the rim is mounted. With the paint removed, I use my caliper and find out the axle stub measures 1/4 inch. Well, I cast my rims using a 3/16 hole, so I know I am going to have to drill the rim out to 1/4 inch. With the rim drilled, I give it a test fit to the tractor and see that the rims are set way too far out from the axle, which is an easy fix. I just remove material from the back of the rim until I have the rim sitting the correct distance from the axle.

With the front rim fitting correctly, the next challenge will be finding a way to mount the rims so they don't come off. With the axle stub on the tractor way longer than needed, it makes mounting the rims a cinch. I leave about 1/8-inch excess axle length and cut off the rest. With this 1/8 inch of axle, I will cut a piece

With the wheels too close to the fenders, I cut a piece of 3/16 inside diameter aluminum tubing 1/4 inch long and slip it over the axle.

of 1/4-inch inside diameter brass tubing. This brass tubing will then slide over the axle stub and I will simply glue the stub in place using epoxy and those wheels will be mounted for good.

Now that the front rims have been completed, I move to the rear wheels. Here again, I use my parts, namely the 30.5LR32 rear tire and the A-C rims. With these parts, I slip a 3/16 steel rod through the casting and give the wheels a test fit. I see that the wheels will be too close to the fenders. I can see there is about a 1/4-inch gap between the rim and the tractor's axle housing. To fix this problem, I cut a piece of 3/16 inside diameter aluminum tubing 1/4 inch long and slip it over the axle. I reinstall the wheel and check for clearances again. Tada! It's a perfect fit. Now just repeat on the opposite side.

We are getting close. The next project is the chrome exhaust pipe. To install the chrome exhaust pipe, I first remove the plastic muffler. I try the grab-and-pull trick to no avail. Finally, I give in and just cut it off.

With the muffler removed, I take a piece of 5/16 chrome pipe I have made and cut off a piece about 2 inches long. Using a step bit, I drill the hood of the 220 out until the hole diameter is 5/16 and slide the chrome pipe into the hood, giving it a precise fit.

The final task before paint is the precleaner. I look through the "Chuckville Salvage Yard" and find nothing I like. I then flip through the Dakotah Toys catalog and find nothing I like. But the customer and I choose the lesser of all evils. It was still bothering me that I could not find anything correct. The precleaner

The completed Allis-Chalmers 220 matches a neighbor's tractor.

on the customer's 220 was the common Donaldson precleaner Ertl uses on its 4020s and 1456s. But this model didn't have the screen on the bottom. A solution to this problem finally came to me. I took a precleaner off of a 4020 Precision and stuck it into the lathe and cut the screen off! With the screen removed, I then used a piece of brass tubing as the mounting tube and the correct precleaner was built and we are ready for paint!

Cutting the front weights off and the bolt head from the side of the frame rails left this 220 with some small areas that needed paint. I didn't want to have to paint the entire tractor, being it was a new-in-the-box tractor that was in excellent shape. To win this battle, I learned a trick back in my days at the body shop: Roll the edge of the tape you are applying to create a "soft edge," meaning the paint line is not as prevalent. Doing this saved me from painting the entire tractor. To do this, I mask the entire tractor, but keep the masking about 1/4 inch away from areas that need paint. I also try to use the natural line of the tractor (frame rail, hood line) to hide the paint lines. With the tractor masked, I then mask up to the edges and lightly roll the edge of the tape back. The trick here is to spray your paint on and soon after the paint has been sprayed, remove the layer of tape. If all goes well, the paint edge will smooth out, virtually disappearing, saving me from repainting the entire tractor and buying all new decals.

Now that everything is painted, it is time for the final assembly and then off to the customer! This is a nice example of a simple old casting Ertl tractor that took on a completely new look. If any of you would like to try this project or something like it, you can check out our new website, www.chuckysprecisionspullersandparts.com, for the parts used in this project and many more.

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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.*