Starting a John Deere Conversion

Hello again! With my last column, I began a series on "big" builds—a project that can require between 30 and 50 or more hours to complete. This month will be the next installment on the major transformation. Last time we met, I replaced the wheels on a Precision 5020 with those off the Precision 6030, giving the 5020 a much beefier stance. This month, we take those wheels back off and get serious!

The 700A, or what many would consider as the industrial version of the 5020, was built from 1966 to 1972 in Waterloo, Iowa, with a total of 370 models built, according to www.TractorData.com. With all of the same options available to the 5020, the 700A was normally a more stripped-down version. Most would have been used to pull discs or sheepsfoot packers, and having a three-point or PTO would have been cost-ineffective options.

The 700A had to be built to take abuse, since most industrial tractors were operated by hired help. Most ag tractors were driven by the owner, so extra care was typically given to them. To battle this difference, John Deere installed a full-length, 8-inch frame rail, which went all the way back to the rear axle housings, and an extra-heavy nose on the hood built out of plate steel.

To get our conversion under way, we will have to start by completely disassembling the Ertl 5020.

The first step is to remove the wheels we installed the last time we met. Then, remove the steering wheel by simply pulling it off. Then remove the instrument cluster on the dash. To do this, gently get behind it with a small, thin, flat-tipped screwdriver and pry forward until the dash is free. With the dash removed, two screws will need to be removed. Then the lever console will be free to come off, exposing another screw. Remove this screw and the back of the hood will be free. Now flip the tractor over. Under the nose of the tractor will be two more screws that need to come out and the hood will be free.

The seat will be next. To get started here, remove the horizontal cylinder that would be the three-point piston under the seat. To remove this, just gently pry it side-to-side and it will come free. After the cylinder has been removed, use a small flat-tipped screwdriver to gently pry off the dust shield under the seat. Once the shield lifts free, simply lift it up and out from under the seat.

Now it is just a matter of removing every screw and pin on the tractor. If you just turn the tractor around, you will see every screw and pin that needs to be removed. I start with the two screws holding the fenders, then the two screws for the fender dust shields, two screws for the seat assembly, two more screws for the platform and so on. Three pins used to hold the lower three-point will have to come out. I use a side cutter to grip the pins under their heads and pull them out. You will have loads of small parts and screws that you will want to keep track of, but this tractor comes apart nicely with no big secrets.

If you removed all of the screws, the two frame halves will come apart and reveal some more screws holding the engine in place. Once these screws have been removed, lift the engine out from the frame and the fun can begin.

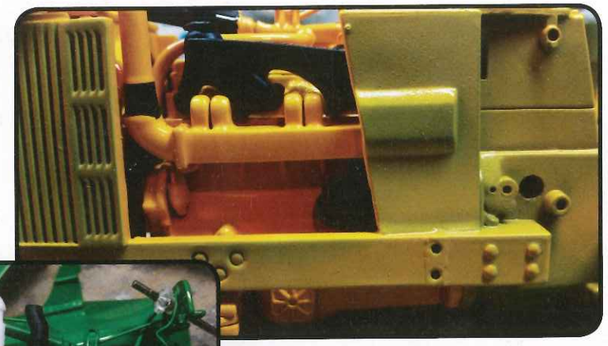
Now it will be time to focus on preparing the engine.

First, remove the radiator from the engine assembly. The radiator hoses will be glued to the engine, so you will have to be careful in separating them from the respective locations on the engine. With the hoses free, set the radiator aside and focus on the fan, alternator and front pulley assembly. Carefully get under the back side of these items and pry. They will be glued, but will come off.

Once the front of the engine has been disassembled, you will remove the starter. Again, get behind it and gently pry it off. Now for the intake manifold. Like the other items

The dash of the 5020 removed, exposing the rear hood screw.

The completely disassembled 5020.



Look closely and you will see the new intake manifold does not line up with the engine side shield.

Here is the 5020 engine with the original intake manifold removed and the new 3-D printed manifold installed.

on the engine, get on the back side and pry, being careful not to damage anything else. For now, leave the exhaust manifold on.

One of the differences between the Precision 5020 and the John Deere 700A is the intake manifold. The Precision 5020 has the older round single runner intake, while the JD 700A has the square dual runner intake manifold. Well, I could have left good enough alone, but this drove me NUTS!

I had a friend/co-builder draw a 3-D printed dual runner square intake manifold as a replacement for this engine. So, with the intake removed from the engine and the exhaust manifold still on, I proceeded to test fit and make small adjustments until I had the intake fitting the way I wanted it.

With the chassis stripped of parts and the engine stripped, it is time to paint. With all of the modifications that need to be done to this tractor yet, it may be hard to believe that I would want to start painting parts. But when these modifications are complete, I won't be able to get to some of these areas to paint. The insides and the neatly tucked away areas would stick out like a sore thumb if they are left green.

To prep these parts for paint, I use my glass bead cabinet and strip all of the paint off of the die-cast parts and lightly go over the plastic parts to give a good surface for the paint to bond to. After the parts have been stripped, cleaned and repainted with an automotive base/clear coat paint, it is time to start reassembling the tractor.

Install the parts back on the engine, and install the radiator, starter, fan, alternator, exhaust manifold and intake manifold. Once the engine is completely back together, slip it back into the frame and reinstall the screws that held it in place. Install the PTO/sway block assembly and any other part that needs to be in place before the casting halves are put back together and screws installed.

Now it is time to test fit the hood and see how nice that new intake manifold looks on the engine!

So I grab the hood and slip it back over the engine and I see something I do not like. The side shield on the hood assembly has a bend to match the intake manifold. The problem is the new dual runner square intake sits about 0.150 lower than the bend in the shield. Now what do I do?

I had to give this problem a little thought. Do I remove the intake and install the old one? No. Do I have a whole new intake built that would fit that extra 0.150? Do I just leave it as is and hope no one other than me sees it? No. I guess the only real option I had was to modify the side shield.

With my Dremel, I cut the side shield and move the bent section down to match. When I lowered the bent section that 0.150 and gave it a test fit, it looked good. The side shield lined up with the intake, but now what do I do with the gap that is left and how do I mount the bend back in so it won't be a problem later? To solve this problem, I grabbed a thin sheet of brass, something like 0.010, and cut it out to match the taper of the bend and use as a backer holding everything together. With the brass bent to fit, I used some epoxy and glued everything in place, then used some auto body filler to clean up the front side, along with some fill primer. The side shield looks great and no one would know the difference.

Well, I have the engine painted and reinstalled, the chassis is back together, the side shield on the hood lines up with the new intake manifold and it somewhat looks like the rough beginnings of a tractor again.

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Tool of the Month

Earlier in the article, I talked about using side cutters to remove the pins that are used throughout the 5020 or many tractors in the Ertl lineup.

The side cutters are just standard side cutters you can pick up at any hardware store. The only difference is that I grind the back side of the jaws, removing the "V" shape of the jaw and forming a right triangle shape. Doing this allows you to get closer to the tractor and under those pesky pressed-in pins. Here again is an inexpensive tool that is worth a fortune when you need it.

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.*