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# Building a Custom 4-Row Planter

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## A with Honors Project

For my A with Honors Project I assisted others in building a custom 4-row planter with the Precision Agriculture Department for our company partner Helena Chemical. We started with an old International planter. We stripped it down to bare bar, taking all of the row units and wheels off. Then we had to grind off all of the unwanted pieces of metal so the bar was completely bare all the way around. We filled the bar with concrete so that it would weigh enough as it went through the field. After the bar was filled with concrete, it was painted John Deere green to match the John Deere row units that would be mounted. Next, we put the row units together. This required taking the row units completely apart and installing the new hardware. Once the new row units were together, we mounted them on the bar so the rows would be planted exactly 30 inches apart.

After the row units were mounted, the vac system, hydraulic system, and tank mounts were fabricated. The first thing that needed to be done was mounting the new hydraulic system, because the tractor was not big enough to run the planter. Adding this new hydraulic system allowed a small tractor that did not have adequate hydraulics to run this planter through a PTO pump. Once the hydraulic system was mounted, the vacuum system was installed. The vacuum system sucks the seeds into the meters to attach them to the seed plates in the meters. Next, the tank mounts had to be custom fabricated for each of the 2 tanks that would be mounted. This took some time because each tank mount had to be perfectly measured, cut, and welded. Once the mounts were fabricated they were added to the bar with the tanks and all of the plumbing required.

The final step was the attachment of the electronics and the newest precision equipment. The precision equipment that was applied to the planter included: vApply, FurrowJet, delta downforce, dual hybrid meters and boxes, and clean sweeps. All of these play a very important role in the function of the

custom-built planter. The vApply and FurrowJet will allow us to apply starter fertilizers right into the furrow with the seeds as they are being planted. The delta downforce allows us to maintain even seed depth across the entire field. Clean sweeps will clean stalks and other debris out from in front of the opening disks so that they do not end up in the furrow. And finally, the dual hybrid meters and boxes will allow us to plant different varieties of corn as we drive through the field.