

Rotary Hoe Pro Adjustment

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Is the center pivot strong enough?

Some ideas here depend on the center pivot of the rotary hoe being strong enough to withstand all bending loads without the help of the mounting flange. The shaft and the bearing surface seem amply large - but the connection to the formed crossmember is suspect.

Upgrading the formed crossmember to a box tube, and running the pivot axle through both walls of the box tube, would dramatically strengthen this joint, but does raise some issues with mounting the fingers that go between the hoes.

Idea 1: Quick-Adjust Handles

Instead of nuts, use quick-adjust handles such as [McMaster-Carr 64835K82](#). On these, the operator can pull the handle upwards to adjust the angle of the handle without tightening or loosening the threads. You could put tabs that the handle would sit in so that it won't vibrate loose, similar to Precision Planting's FurrowForce. There's other handles like cam-locks that would be the same theme.

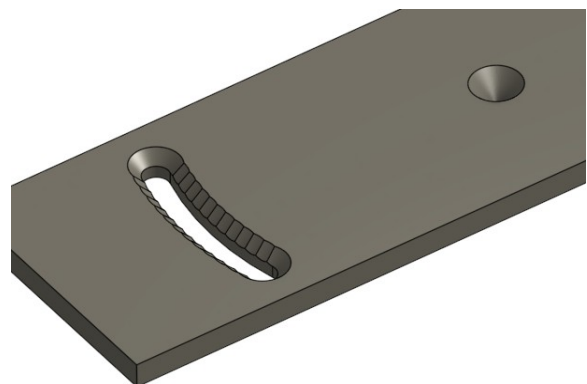


My thoughts: This is simple, and certainly makes adjustment easy, but I don't know that enough torque will be generated to hold if a slot is used. Not sure what the load rating on one of these handles is.

Idea 2: Quick-Adjust Handles With Countersinking Locks

Same as idea 1, but include some conical bushings between the handles and the plate. These would taper-lock into a series of countersinks when tightened down.

My thoughts: Adds a milling operation and custom conical bushings. Doesn't add much locking with the fine adjustments needed.



Idea 3: Quick-Adjust Center with Pins

This idea requires the center pivot to support all bending loads.

Replace the threaded studs with dowel pins. The dowels would be permanently pressed into the bottom bracket. The top bracket would contain a series of holes that these dowels could slip into on the top.

Capping the center pivot itself would be on an over-center handle, so that the operator could flip up the handle and “drop” the hoe wheel bracket. Once dropped, the hoe wheel bracket could be rotated until a new set of holes and pins are lined up, and then flip down the handle. This would engage the new set of holes and pins.

My thoughts: This requires the pivot joint to be good not only rotationally, but smooth axially. This adds a few more parts. I don't know how well this will lock the hoe wheel rotationally so that wobble at 0 degrees won't be a problem.



Idea 4: Turnbuckle

This idea requires the center pivot to support all bending loads.

Forget the mounting plate and the bolts altogether. Use a turnbuckle connecting the hoe bracket to the row unit weldment to adjust angle.

My thoughts: may still need to lock the turnbuckle in place and have a handle or grip for adjustment. Probably keep the angle indication plate.

