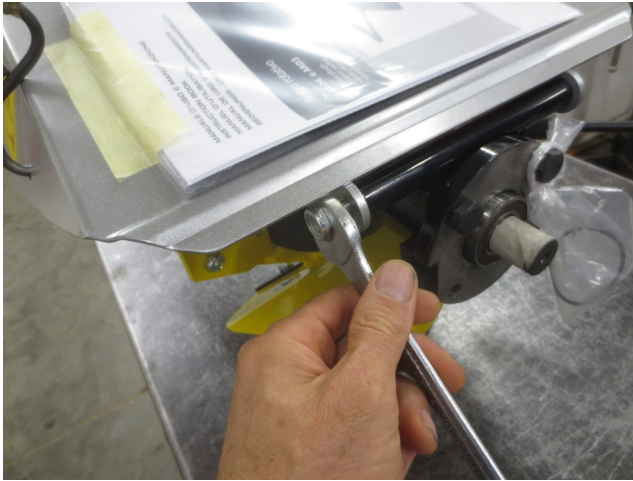


BERTA ROTARY PLOW MAIN HUB REMOVAL



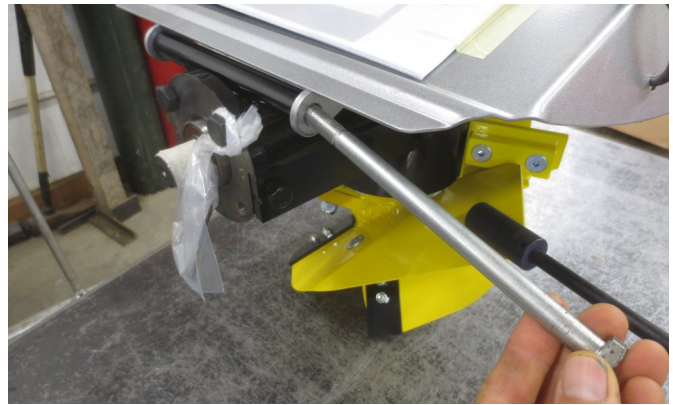
1. Remove the Nut from the end of the front hood-mounting bolt (takes a 19mm or 3/4" wrench or socket)



2. The nut, removed. **IMPORTANT NOTE:** The long bolt will NOT just slide out at this point...it is actually **THREADED** into the bracket on one side! So the bolt must be **UNSCREWED**.



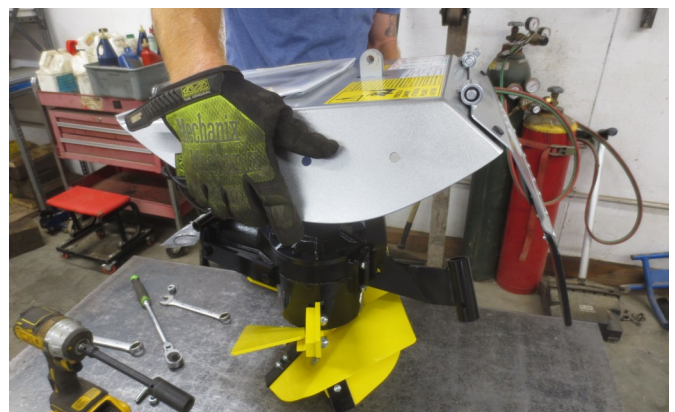
3. Using a 19mm or 3/4" socket or wrench, unscrew the bolt until it clears the far-side bracket...



4. ...THEN the bolt will slide out.



5. Remove the bolt & nut on top of the hood (17mm heads)



6. Remove the rotary plow hood.



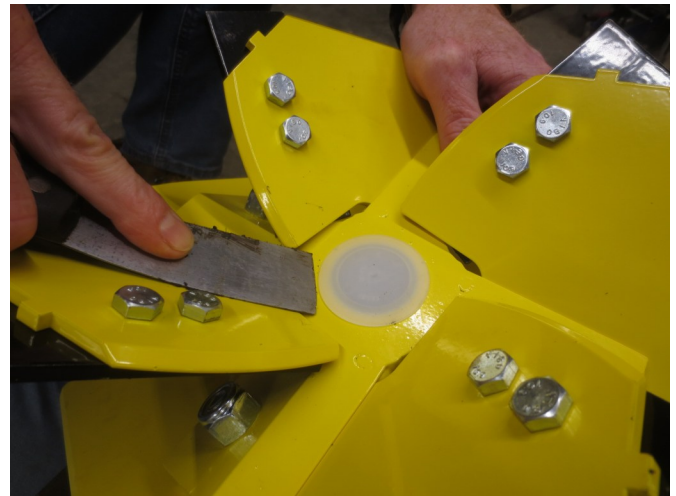
7. In this picture, we are pointing at the 2 “grass cutting blades” at the top of the plowshare/hub assembly (they are just squared-off steel blocks, they are not actually sharp)



8. Flip the plow over, and, using some wood or steel blocks, support the weight of the plow by the two “grass cutting blades” shown in the previous picture



9. Detail showing “blade” supporting the plow (both sides should look like this) Make sure to have everything on a HARD surface...concrete is best.



10. Using a putty knife, pocketknife or flat-tip screwdriver, pry out the plastic plug in the center of the hub (might be buried under some dirt)



11. Using a 19mm or 3/4” socket, remove the center bolt (standard thread...lefty-loosey). If needed, block the hub with a piece of wood to keep it from turning



12. Remove the center bolt, lockwasher and thick washer



12. Spray some GOOD penetrating oil down in between the outside of the shaft and the inside of the hub, and down the “keyway” slot. (Kroil, PB Blaster). Let sit a few minutes.



14. The hub is swedged down onto a long, tapered shaft coming out of the gearbox. You need to break the taper loose. Remove the washers from the center-bolt...



15. ,,,and re-install the center bolt WITHOUT the washers.



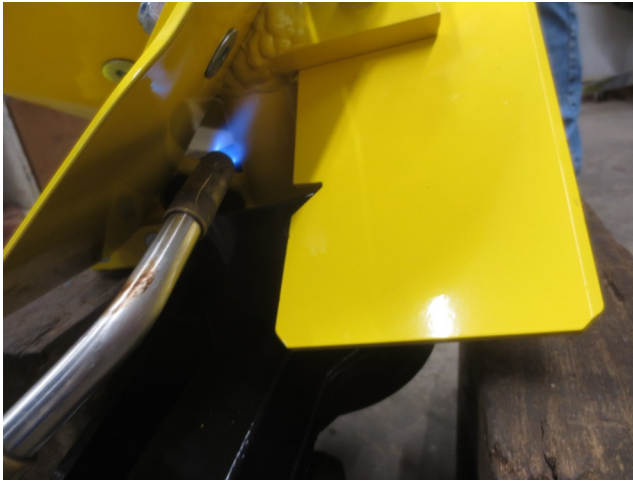
16. You do not have to get it really tight, just screw it in until it bottoms out. The bolt will protect the threads in the shaft when you start knocking on it with a hammer...



17. Rest a large punch or drift (aluminum or brass is best, but steel if you have no other choice) against the head of the bolt and WHACK it with a good-sized hammer (best to have a heavy glove on the hand holding the punch)



18. What you are doing is essentially trying to beat the shaft loose from inside the hub, and break the taper loose. If it is really stubborn, you can apply heat with a propane torch...



19a. ...make sure to apply heat evenly to both sides of the hub...



20. Continue whacking / heating until the shaft finally breaks loose, at which point the gearbox will just fall out onto the floor. You can then remove the hub / plowshare assembly. The bolt will probably be ruined by all the beating at this point, but it is a fairly common metric bolt: 12mm diameter, 35mm long, 1.75 thread pitch. 8.8 metric hardness grade is adequate. We keep them in stock at Earth Tools.



21. If you need to replace the bottom oil seal, you will see that it is installed from the INSIDE of the gearbox. So the gearbox top cover needs to be removed (13mm wrench or socket), and then tap on the bottom shaft (still with the bolt installed in the center) with a hammer. The shaft will PUSH the gearbox cover off. The oil seal can then be pried up & out of the housing with a flat-tip screwdriver, and a new seal installed by driving it down into place with a socket & extension or a piece of pipe. NOTES: 1. MAKE SURE not to damage the inner lip of the seal when driving in!! 2. Put a bit of oil on the OUTSIDE of the seal before driving it into the housing. 3. MAKE SURE that you orient the new seal the same direction as the original one! ("open" side UP)



22. Re-assemble in reverse order. (NOT PICTURED: Use RTV silicone gasket sealant when replacing top gearbox cover.) Smear a very thin layer of Anti-Seize compound (or grease) on the shaft before sliding the hub assembly back on...this will help make it easier to remove next time! Torque the center hub bolt to 65 foot-pounds.

**If you have questions or need parts:
Contact Earth Tools at 502-484-3988 or
service@earthtools.com**