

## Series 1000 and 1500

- Install the screw O-rings.
  - Install the lower cover without sealant, to align the cover and manifold. Secure it with the 11 perimeter screws.
  - Remove the lower cover, and apply sealant to the mating surfaces where the cover meets the transaxle housing.
  - Install the lower cover, tightening the screws to a torque of 135 to 185 in-lbs.
  - Position a new O-ring seal in the charge pump housing, and place the gerotor in the housing. If one edge of the outside of the gerotor is slightly rounded, it goes into the housing first. The flat edge rides against the lower cover.
  - Position the charge pump, rotating as necessary to align the gerotor pump with its drive shaft and to align the charge pump housing index marks.
  - Install the two socket head cap screws that secure the charge pump, and tighten them to a torque of 87 to 108 in-lbs.
- 33.19. Allow the bottom cover sealant to cure according to the sealant manufacturer's instructions, then fill the transaxle with fluid.
- 33.20. Any time the transaxle fluid has been refilled, it will be necessary to purge the air from the pumps. Air in the drive system will cause:
- Noisy operation
  - Lack or loss of power
  - High operating temperatures
- 33.21. **To purge** the air from the hydraulic system in the transaxle:
- Open the relief valve.
  - Start the engine.
  - Slowly cycle the drive pedal from full speed forward to full speed reverse 5 or 6 times, taking about 10 seconds to complete a single cycle.
  - Stop the engine and check the fluid level at the fluid level port near the back of the right side axle housing. The plug can be removed with a 1/4" Allen wrench. Top-up as necessary.
  - Close the relief valve.
  - Start the engine.
  - Slowly cycle the drive pedal from full speed forward to full speed reverse 5 or 6 times, taking about 10 seconds to complete a single cycle.

- Stop the engine and check the fluid level at the fluid level port near the back of the right side axle housing. The plug can be removed with a 1/4" Allen wrench. Top-up as necessary.
- Repeat as necessary until the transaxle operates normally.

33.22. Refer to Hydro-Gear manual BLN-52359 for complete repair instructions.

### 34. TRANSAXLE REPLACEMENT: HYDROSTATIC GT

- 34.1. Warrantable failures on Cub Cadet tractors are to be repaired by replacing the transaxle. Failed, warrantable transaxles will be called-back through Cub Cadet's vendor recovery system. Failures of Hydro-Gear transaxles are rare.
- 34.2. Outside of warranty, Hydro-Gear transaxles may be repaired or replaced at the discretion of the customer and servicing dealer.
- 34.3. Before condemning a transaxle, eliminate all possible external performance issues:
- Dragging brake
  - Maladjusted linkage
  - Partially open relief valve
  - Slipping traction drive belt/ low engine speed
- 34.4. Remove the cutting deck to gain access to the linkages that will need to be disconnected.
- 34.5. Lift and safely support the rear of the tractor.
- 34.6. Remove the rear hub caps, then the rear wheels using a 3/4" wrench. See Figure 34.6.



Figure 34.6

- 34.7. Disconnect the front of the brake rod from the brake pedal shaft by removing the cotter pin, and pulling the "L" at the forward end of the rod out of the hole in the brake pedal shaft.
- 34.8. Use the resulting slack in the linkage to disconnect the rear of the brake rod from the spring that joins it to the arm on the caliper. See Figure 34.8.

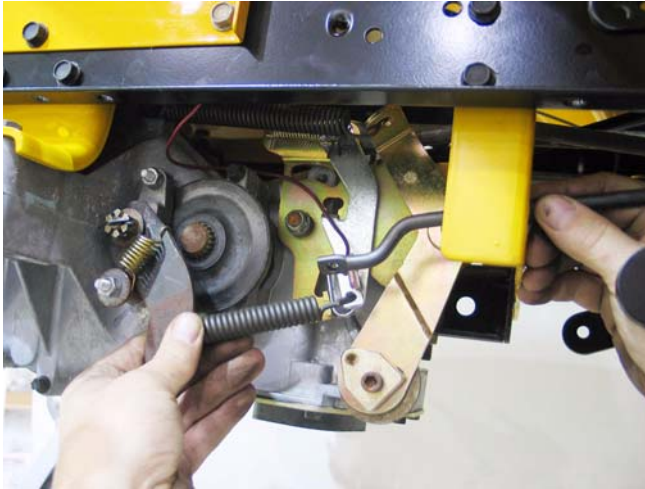


Figure 34.8

- 34.9. Remove the brake rod from the tractor.
- 34.10. Unplug the wire from the reverse safety switch (Red wire w/black trace on Rev-Tek equipped models, Yellow wire w/black trace on others).
- 34.11. Disconnect the ground wire from the transaxle using a 3/8" wrench and a 7/16" wrench. See Figure 34.11.

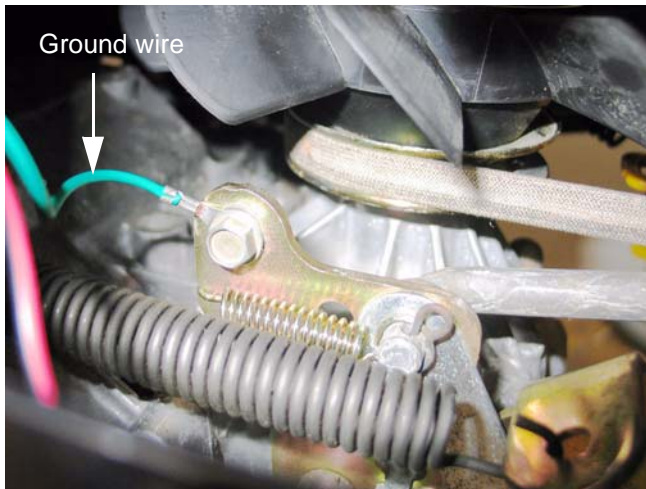


Figure 34.11

- 34.12. Disconnect the control rod from the arm on the hydro.:

- Remove the hairpin clip that secures the rod to the arm, just in front of the connection point for the ground wire.
- Carefully withdraw the rod from the spring and the reverse safety switch lost-motion arm.

- 34.13. Remove the fan from the input pulley on the transaxle using 5/16" wrench. See Figure 34.13.



Figure 34.13

- 34.14. Draw the traction drive belt off of the fixed idler pulley to create slack, then work the belt off of the double idler pulleys, similar to the method described in the "TRACTION DRIVE BELT: HYDROSTATIC GT" section of this manual.
- 34.15. Slip the belt off of the input pulley. See Figure 34.15.



Figure 34.15



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34.16. Disconnect the hydro relief rod from the relief valve by removing the hairpin clip. Lift the rod off of the arm that controls the valve, and remove the rod from the tractor. See Figure 34.16.

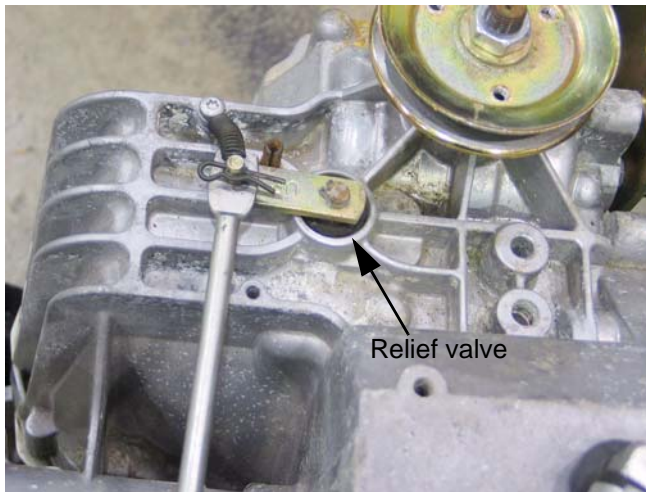


Figure 34.16

34.17. Detach the transaxle vent tube from the left frame channel of the tractor.

34.18. Support the transaxle with a hydraulic jack.

34.19. Remove the two screws that connect the transaxle to the stabilizer bracket using a 9/16" wrench. See Figure 34.19.

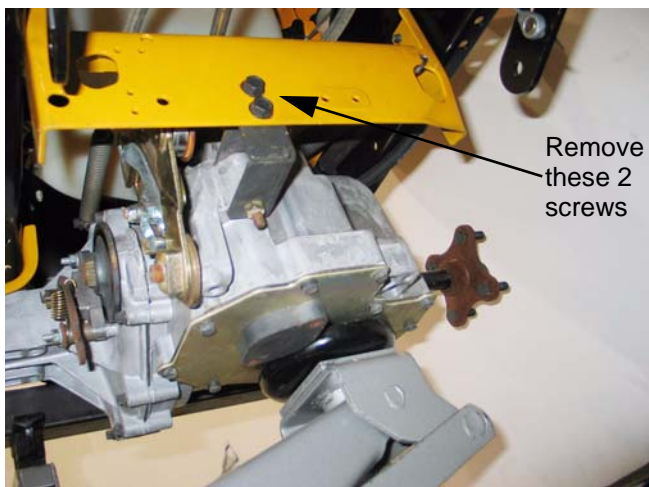


Figure 34.19

34.20. Remove the pair of nuts and bolts that fasten each axle housing of the transaxle to the brackets on the tractor frame. Use a pair of 1/2" wrenches. See Figure 34.20.

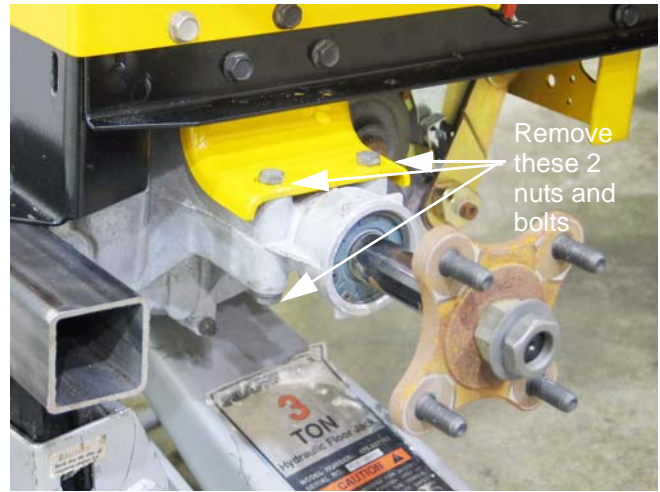


Figure 34.20

34.21. Carefully lower the transaxle to the ground.

34.22. Installation notes are as follows:

34.23. Fill the transaxle with fluid before installing it in the tractor. Some dealers have devised ways to manually drive the input shaft and purge the air from the drive system on the bench, prior to installation.

34.24. If bench purging is not available, follow the purging instructions described in the "TRANSAXLE SERVICE AND MAINTENANCE: HYDRO-STATIC GT" section of this manual after the transaxle is installed.

34.25. Reverse the removal process to install the transaxle.

- Tighten the screws to the torque bracket to a torque of: 35 ft.-lbs.
- Tighten the bolts holding the axle housings to the brackets to a torque of: 250 in.-lbs.
- Tighten the screws holding the fan to the pulley to a torque of: 30-35 in.-lbs.
- Tighten the lug nuts to a torque of:

34.26. Test run the tractor in a safe area that is free of hazards, obstacles, and bystanders to confirm correct operation and adjustment before installing the cutting deck. Make any necessary adjustments.

34.27. Test run the tractor in a safe area that is free of obstacles, hazards, and bystanders after the cutting deck is installed. Check all safety features before returning the tractor to service.

### 35. STEERING GEAR AND STEERING PINION GEAR REPLACEMENT

**NOTE:** If you are replacing the steering gear or steering pinion gear, check the condition of both gears for any wear or damage. It may be wise to replace both as a set.

- 35.1. Remove the cutting deck. See cutting deck removal section.
- 35.2. If you are just replacing the steering pinion gear, use a 11/16" socket to remove the flange lock nut securing the steering pinion gear to the steering shaft. See Figure 35.2.

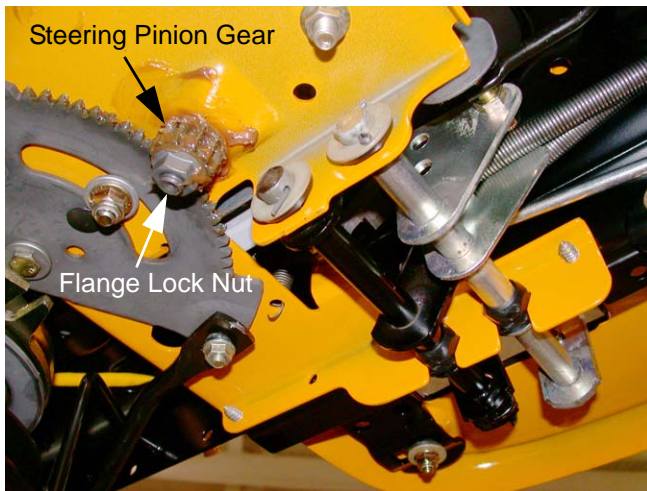


Figure 35.2

**NOTE:** If you are replacing the steering gear at this time, continue with the following steps, otherwise install a new steering pinion gear and reassemble in the reverse order of disassembly.

- 35.3. If you did not remove the PTO belt guard before you removed the cutting deck, do so now.
- 35.4. Remove the drag links from the steering gear.
- 35.5. Disconnect the PTO electrical connector from the wiring harness.
- 35.6. Using a 5/8" socket and impact wrench, remove the bolt securing the PTO to the engine crankshaft. Remove the PTO from the shaft.
- 35.7. Remove the drive belt from around the twin idler pulleys. This will ease removal of the drive belt from around the engine pulley.

- 35.8. Lower the engine pulley on the crankshaft as you remove the drive belt from around the pulley. Remove the pulley from the crankshaft. Note the orientation of the pulley for later installation.
- 35.9. Place a 9/16" wrench on the lock nut that secures the steering gear to the subframe. Using a 14mm socket, remove the hex cap screw and shoulder spacer. See Figure 35.9.



Figure 35.9

**NOTE:** You may need to use an impact wrench on this cap screw.

- 35.10. Using a 9/16" wrench and socket, remove the hex cap screw, shoulder spacer and hex nut in the middle of the steering gear. Remove the steering gear. See Figure 35.10.

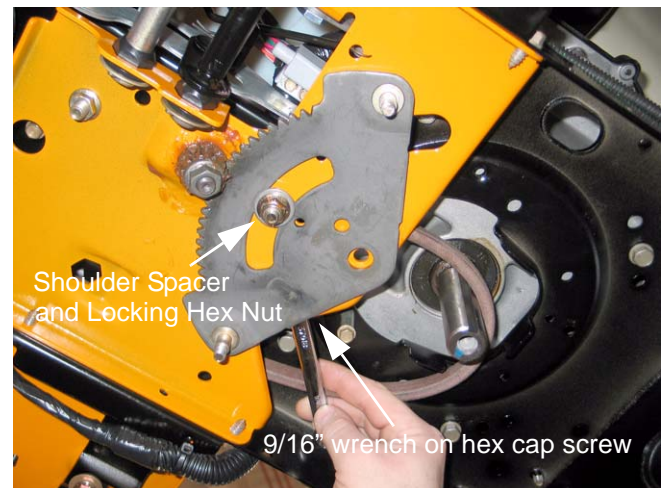


Figure 35.10

- 35.11. Install in the reverse order of disassembly.