

# POWER TRAIN - HYDROSTATIC TESTS AND ADJUSTMENTS

## Tests and Adjustments

### Symptom: Park Brake Does Not Hold Machine

Problem	Cause - Solution
1. Brake pedal and linkage are damaged, worn, or binding?	a. Yes - Eliminate binding and/or replace damaged components. b. No - Go to next step.
2. Park brake lever and linkage are damaged, worn, or binding?	a. Yes - Eliminate binding and/or replace damaged components. b. No - Go to next step.

### Transaxle Whines When Brake Is Used

#### Test Conditions:

- Machine on level surface.
- Key switch in run position.
- Park brake unlocked.

### Symptom: Transaxle Whines When Brake Is Used

Problem	Cause - Solution
1. Transaxle whines when brake is used, or park brake is locked?	a. Yes - Adjust neutral return arm bearing.

### Traction Drive System Test

#### Reason:

To ensure forward drive, neutral return, brake linkages and belt drive system maintain traction up a 17° slope.

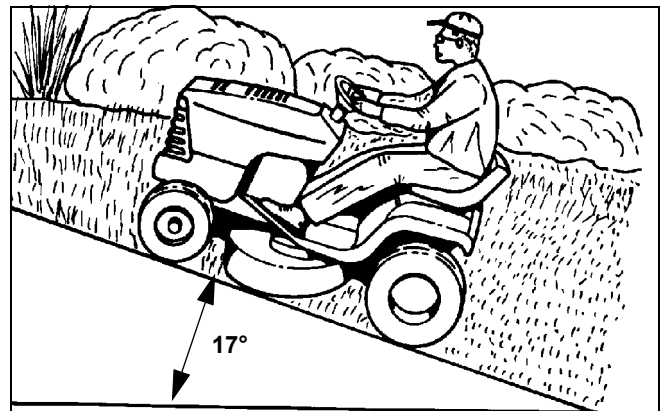
To ensure that transport (freewheeling) valve assembly and linkage allow machine to be pushed when engaged (rod pulled rearward) and to drive machine when disengaged. Also to ensure machine returns to NEUTRAL, engages the brake, stops machine within specification, and holds machine stationary in PARK position on a 17° slope or less.

#### Test Drive:



**Caution: Avoid Injury! DO NOT engage FORWARD foot pedal too aggressively during the 17° slope test drive. Machine may tip over backwards. Install the mower deck before performing the 17° slope test.**

1. Attach mower deck to machine.
2. Carefully test drive machine to see if traction drive system pulls machine steadily up a 17° slope.
3. If machine fails traction test, the drive belt may be worn, stretched, glazed or unraveling. Replace belt or other worn parts if above conditions exist.



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4. Drive or push machine onto a 17° slope, depress the brake pedal and lock it in the PARK position.
5. FORWARD and REVERSE pedals must return to NEUTRAL. Park brake must hold machine in a stationary position on slope and machine must not creep downward once park brake is locked into position.
6. Drive machine on dry pavement in a safe, open and level area at fast idle in the forward direction. Apply "panic stop" force - machine must stop within 1.5 M (5 ft) and both wheels should "lock-up", leaving skid marks on pavement.

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7. If any test fails, the brake linkage or the motion control rod (if adjustable) must be adjusted or components replaced.

## Neutral Creep Adjustment

### Reason:

If the machine creeps forward or backward with the forward/reverse pedals in NEUTRAL, parking brake released, and the engine running, the neutral eccentric must be adjusted.

### Procedure:

1. Park machine on level surface.
2. Turn key switch to STOP.
3. Move forward/reverse pedals to NEUTRAL position. Release parking brake.



**Caution: Avoid Injury! Keep hands away from transaxle cooling fan and wheels during procedure to avoid injury.**

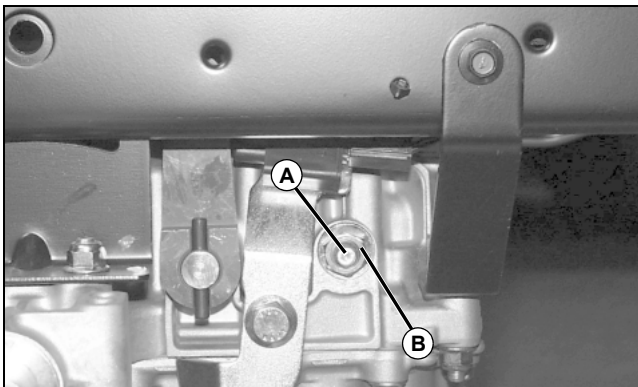
4. Lift rear of machine until wheels are off the ground. Support on suitable stands.

**Note: The eccentric shaft is located on the right side of the transaxle above and in front of the axle.**

5. Place blocks in front of and behind front wheels.

**Note: Engine will not start with seat switch disconnected. Use a jumper wire to bypass switch.**

6. Start and run engine at FAST idle.



7. Loosen lock nut (B) on eccentric (A). Rotate eccentric to eliminate neutral creep.

8. Hold eccentric in position with a wrench. Tighten lock nut.

9. Remove seat switch jumper wire and reconnect seat switch.

## Transport (Freewheel) Test

### Reason:

To ensure that machine can be moved manually without damage to transaxle when freewheel rod is pulled.

### Procedure:

**Important: Avoid Damage! DO NOT operate freewheel valve with engine running or damage to hydrostatic transmission can occur.**

1. Release park brake.



2. With engine OFF and forward/reverse pedals disengaged, pull freewheel rod (A) to the freewheel position (away from back of machine).
3. Push machine forward at least 3.05 m (10 ft). Machine should push easily the entire distance.
4. Push machine backwards the same distance - machine should push easily the entire distance.
5. If machine pushes hard in either direction, internal components could be damaged or worn. Inspect freewheeling linkage or replace transaxle.

**Important: Avoid Damage! After using transport (freewheel), be sure to push engagement rod completely back into machine. If not completely engaged, the transaxle will not operate properly, will be excessively noisy, and could be damaged.**

# POWER TRAIN - HYDROSTATIC TESTS AND ADJUSTMENTS

## Transaxle Bleeding

### Reason:

This procedure is performed to eliminate air from the hydrostatic transaxle after repair or leakage of the transaxle.

### Checking and Filling Transaxle Level Procedure:

**Important: Avoid Damage! Use ONLY the following oils for service. DO NOT use automatic transmission fluid.**

**Note: The transmission is filled with 10W30 engine oil at the factory.**

**For transmissions used in extreme or high-hour applications, J20C Hygard Hydraulic oil or 5W-50 Synthetic Engine Oil is approved as an optional fill. Use only after a complete drain of the factory oil.**

1. Park machine safely on a level surface with park brake locked.
2. Remove battery.
3. Remove steering shaft and pedestal. See "Steering Shaft and Pedestal Removal and Installation" on page 250 in the Steering section.
4. Remove fenderdeck. See "Fenderdeck Removal and Installation" on page 310 in the Miscellaneous section.
5. Remove fuel tank. See "Fuel Tank Removal and Installation" on page 312 in the Miscellaneous section.
6. Check transaxle oil level. If necessary, fill transaxle approximately 13 mm (0.5 in.) from the top of the transmission case. This is roughly halfway up the round cavity.
7. Replace cap and install all removed components.

### Bleeding Procedure:

1. Raise rear wheels off the ground. Support rear axle housing with jack stands.
2. Place blocks in front of and behind front wheels.
3. Start and run engine at slow idle.



**Caution: Avoid Injury! Moving parts. Keep loose articles of clothing, hands and feet away from wheels during procedure to reduce the risk of personal injury.**

4. While alternately depressing the forward and reverse pedals, engage and disengage the freewheel valve lever. Continue this procedure until the rear wheels start to rotate. This step may take 5 to 10 minutes to perform.

5. Turn off engine.
6. Raise rear of machine, remove stands, and lower the machine to the ground.
7. Remove blocks in front of and behind front wheels.
8. With engine off and control pedals in neutral, push the machine forward and then rearward to turn the motor rotating group.
9. Start and run the engine at fast idle.
10. Quickly depress and release the forward and reverse pedals until the machine moves without hesitation.
11. Park machine safely. See Parking Safely in the Safety Section.

### Results:

- Machine moves without hesitation when forward or reverse pedals are depressed.

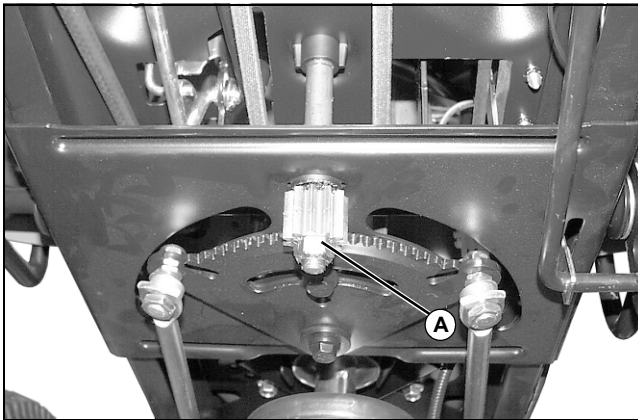
# POWER TRAIN - HYDROSTATIC REPAIR

## Repair

### Traction Drive Belt Removal and Installation - LA110 and LA120

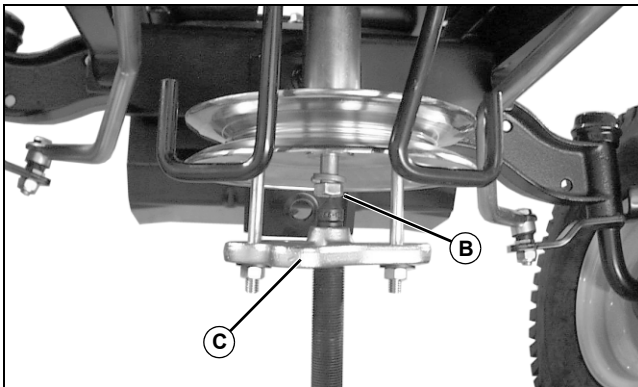
#### Removal:

1. Park machine on a level surface. Turn engine OFF and remove ignition key.
2. Remove mower deck. See "Removing Mower Deck" on page 298 in the Attachments section.
3. Engage park brake to relieve tension on traction drive belt.
4. Raise rear of machine. Support on jack stands.



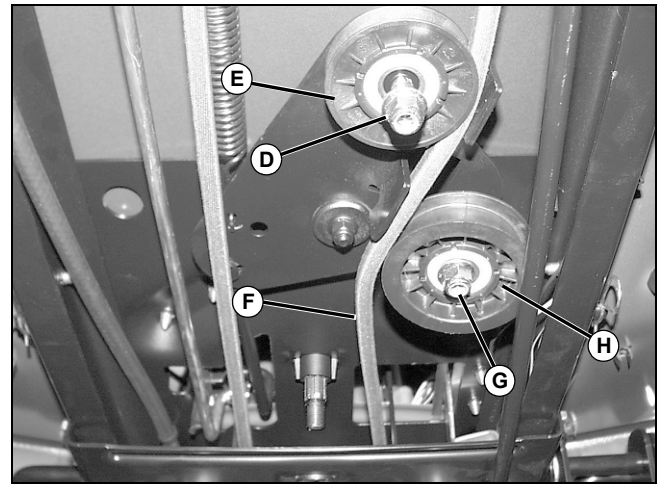
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5. Remove nut and steering gear (A).



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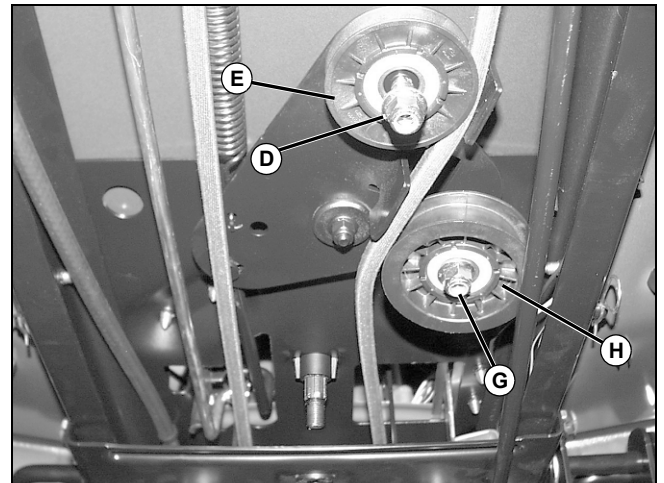
6. Loosen sheave cap screw (B) until threads no longer engage in engine output shaft, Remove sheave assembly with a suitable puller, (C) while simultaneously removing drive belt from around engine sheave.
7. Raise steering shaft only enough to clear belt.



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8. Loosen nut (D) on V-Idler (E), and remove belt (F) from around V-Idler.
9. Loosen nut (G) on flat idler (H). Remove belt from around flat idler.
10. Remove belt from transaxle sheave and machine.
11. Inspect belt for wear or damage. Replace as necessary.

#### Installation:



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1. Guide belt toward front of machine and around flat idler (H). Tighten nut (G) securing idler to tensioning bracket.
2. Guide the belt around V-Idler (E). Tighten nut (D) securing idler to tensioning bracket.



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