Service Manual

600 Series Autodrive Tractor

NOTE: These materials are for use by trained technicians experienced in the service and repair of outdoor power equipment of the kind described in this publication, and are not intended for use by untrained or inexperienced individuals. These materials are intended to provide supplemental information to assist the trained technician. Untrained or inexperienced individuals should seek the assistance of an experienced and trained professional. Read, understand, and follow all instructions and use common sense when working on power equipment. This includes the contents of the product's Operators Manual, supplied with the equipment. No liability can be accepted for any inaccuracies or omission in this publication, although care has been taken to make it as complete and accurate as possible at the time of publication. However, due to the variety of outdoor power equipment and continuing product changes that occur over time, updates will be made to these instructions from time to time. Therefore, it may be necessary to obtain the latest materials before servicing or repairing a product. The company reserves the right to make changes at any time to this publication without prior notice and without incurring an obligation to make such changes to previously published versions. Instructions, photographs and illustrations used in this publication are for reference use only and may not depict actual model and component parts.

MTD Products LLC - Product Training and Education Department

FORM NUMBER 769-01138
2/2004

Step Through Rider Adjustments

Steering Adjustments

IMPORTANT: The front tires will have a "TOE-IN" between 1/16" and 5/16" to allow the unit to track properly.

1). Check the tire pressure in the front tires and make certain that they are at approximately 14 PSI.

2). Place the unit on level ground.

3). Place the steering wheel in the straight forward position.

4). Lower the deck lift lever to the lowest position.

5). Line up the centering hole in the steering gear with the centering hole in the support plate, and insert a 1/4" Phillips screw driver up through both. See figure 1.

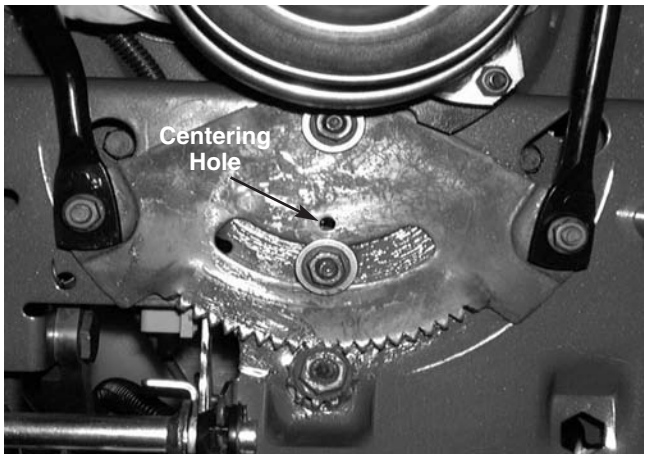

FIGURE 1.

6). In front of the axle, measure the distance horizontally from the inside of the left rim to the inside of the right rim. See figure 2.

FIGURE 2.

7). From behind the axle, measure the distance horizontally from the inside of the left rim to the inside of the right rim.

8). The measurement taken in front of the axle should be between 1/16" and 5/16" less than the measurement taken behind the axle. If not, perform the following steps:

9). Loosen the jam nut at the rear of the right ball joint that secures the ball joint to the drag link using a 1/2" wrench and an 11/16" wrench. See figure 3.

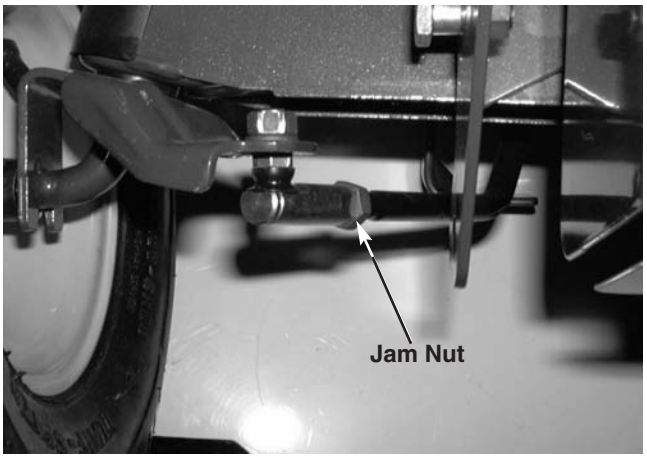

FIGURE 3.

10). Remove the hex nut and lock washer that secures the right ball joint to the right axle assembly using a 1/2" wrench and a 9/16 wrench.

11). Remove the right hand ball joint from the right hand drag link.

12). Remove the left hand ball joint performing steps 9, 10, and 11 above.

13). Place the left and right tire assemblies in the straight forward position.

14). Set the toe-in for the rim assemblies to the proper measurements as described in steps 6, 7, and 8 above.

15). Thread the right hand ball joint onto the right hand drag link until the mounting hole in the right hand axle assembly lines up with the ball joint.

NOTE: Count the number of turns the ball joint was rotated onto the drag link. This number should be equal for the left side as well.

Variable Speed Drive

16). Secure the right hand ball joint to the right hand axle assembly with the lock washer and nut removed earlier, using a 1/2" wrench and a 9/16 socket.

17). Secure the right hand ball joint jam nut to the right hand drag link using a 1/2" wrench and an 11/16 wrench.

18). Install the left hand ball joint using steps 15, 16, and 17.

NOTE: Make certain the same amount of rotations are used on the left ball joint as the right ball joint.

Autodrive Pedal Adjustment

IMPORTANT: The AutoDrive pedal is properly adjusted when the hole found in the double-idler bracket has approximately 1-3/8" of travel with ten pounds of pressure applied to the AutoDrive pedal. See figures 1 and 2.

FIGURE 1.

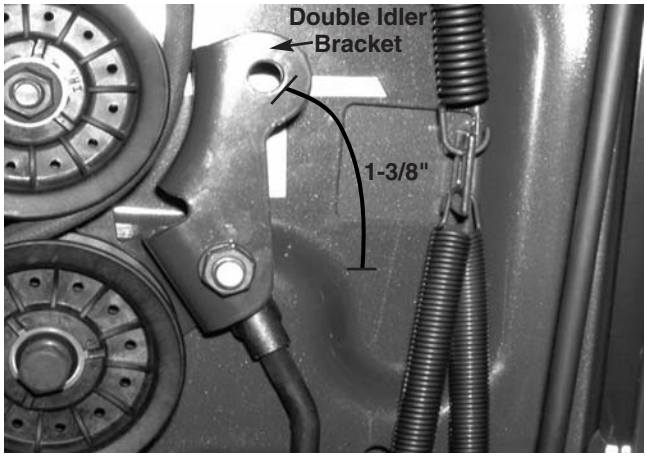

FIGURE 2.

1). Locate the speed control assembly on the underside of the steering support bracket.

2). Remove both hairpin clips from the main pin on the speed control assembly. See figure 3.

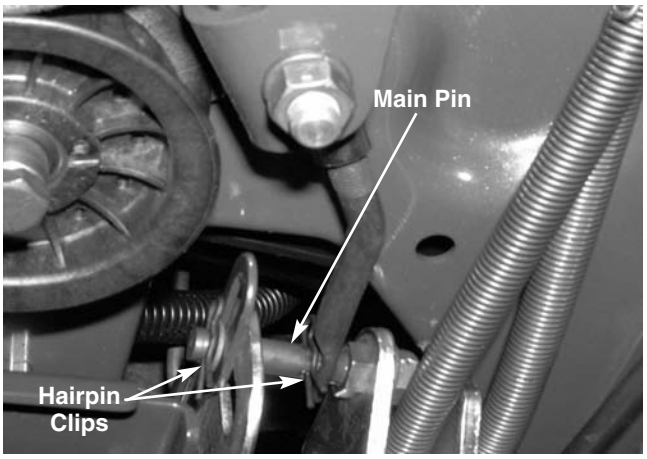

FIGURE 3.

NOTE: Be careful not to lose the small flat washers found on the main pin.

NOTE: Make certain both hairpins are put back in from the top of the main pin during reassembly.

3). Remove the AutoDrive pedal return spring.

4). Using two 9/16" wrenches, remove the main pin from the speed control assembly.

5). Thread the idler adjustment rod inward or outward until the proper adjustment has been achieved.

REASSEMBLE THE AUTODRIVE PEDAL IN THE REVERSE ORDER ABOVE.

Brake Adjustments

IMPORTANT: Make certain the tractor comes to a complete stop when the brake pedal is depressed. Also, make certain the rear wheels do not roll when the parking brake has been applied. If motion continues, perform the following steps:

1). Locate the hex nut that secures the brake assembly.

2). Loosen (DO NOT REMOVE) the hex nut using a 1/2" wrench.

3). Slide an .011" feeler gauge between the brake disc and the brake puck. See figure 1.

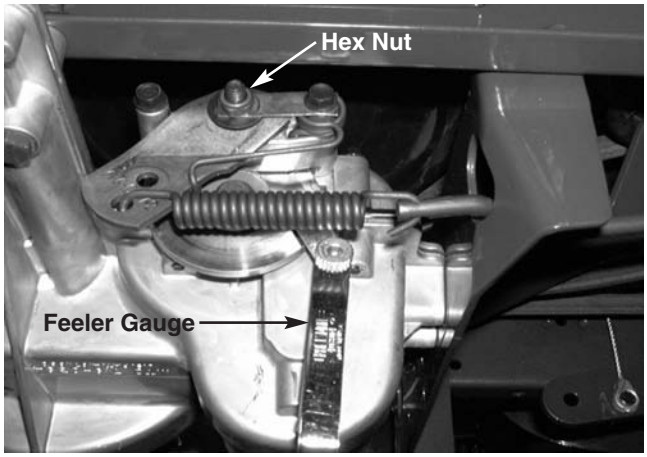

FIGURE 1.

4). Tighten the hex nut that secures the brake assembly.

5). Remove the .011" feeler gauge from the brake assembly.

6). Test for proper adjustments.

Leveling the Cutting Deck

NOTE: Prior to leveling the mowing deck, perform the following steps:

1). Check the tire pressure. The front tires will be approximately 14 PSI, and the rear tires will be approximately 10 PSI.

2). Place the tractor on a level surface.

3). Depress and lock the parking brake.

4). Place the cutting deck in cutting position 3 or 4.

FRONT TO REAR ADJUSTMENT:

IMPORTANT: The front of the deck will be between 1/4" to 3/8" lower in the front than the rear of the deck.

1). Using a work glove or rag, rotate the blades until they are parallel with the tractor frame. See figures 1 and 2.

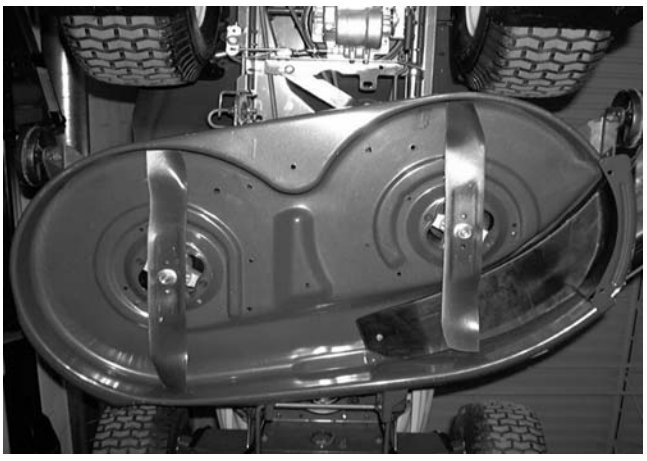

FIGURE 1.

2). Measure the front blade tips to ground.

3). Measure the rear blade tips to ground.

4). Make certain the front blade tips are 1/4" to 3/8" lower in the front than the rear blade tips.

FIGURE 2.

NOTE: If an adjustment is needed, perform the following steps:

5). Loosen both two jam nuts on the rear side of the deck stabilizer bracket using a 3/4" wrench. See figure 3.

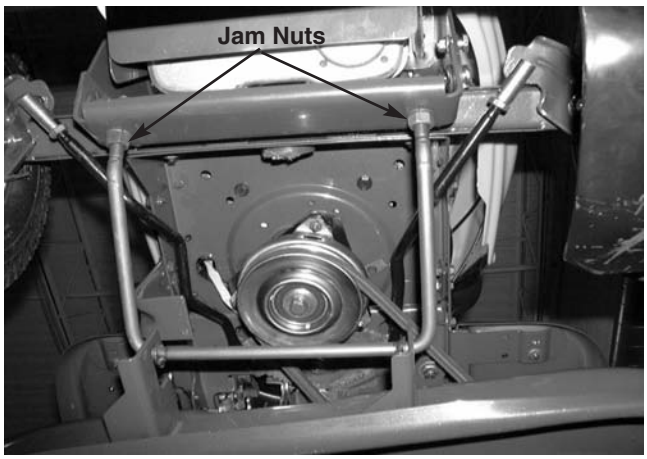

FIGURE 3.

6). Locate both lock hex nuts on the front side of the deck stabilizer bracket. See figure 4.

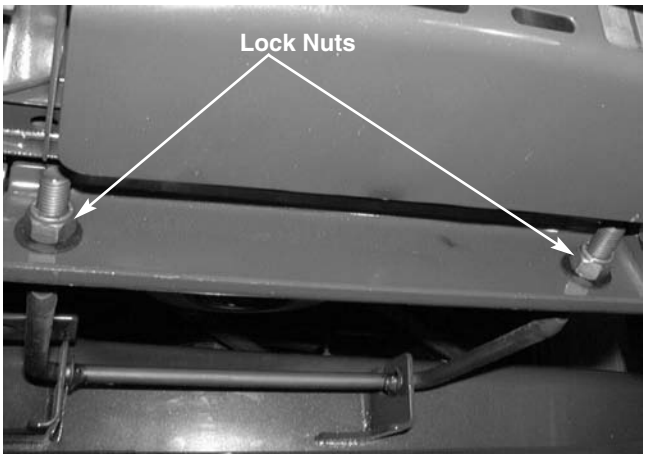

FIGURE 4.

7). Tighten both lock hex nuts to raise the front of the deck or loosen both lock hex nuts to lower the front of the deck using a 3/4" wrench.

8). Retighten both jam nuts on the rear side of the deck stabilizer when the proper adjustment has been achieved.

SIDE TO SIDE ADJUSTMENT:

IMPORTANT: The cutting deck must be even side to side.

1). Using a work glove or rag, rotate the blades until they are cutting edge tip to cutting edge tip (perpendicular) to the tractor. See figure 5.

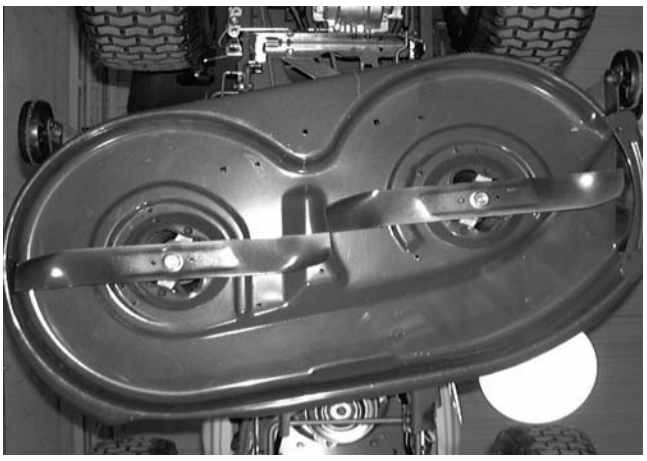

FIGURE 5.

2). Measure the outer blade tips to ground. Both measurements taken should be equal. See figure 6.

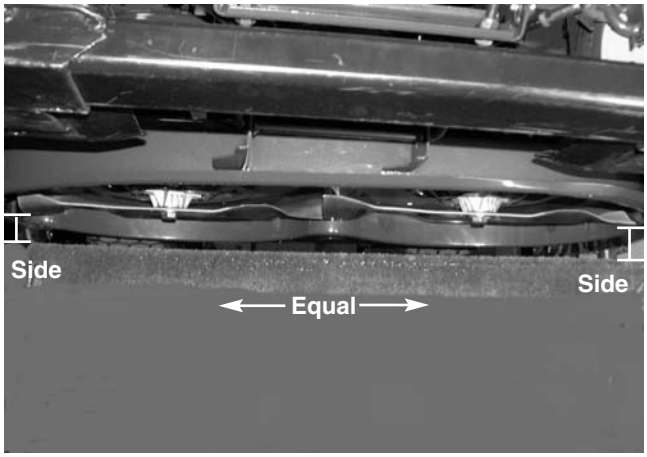

FIGURE 6.

NOTE: If an adjustment is needed, perform the following steps:

3). Loosen (DO NOT REMOVE) the hex cap screw on the left deck hanger bracket using a 1/2" and a 3/4" wrench. See figure 7.

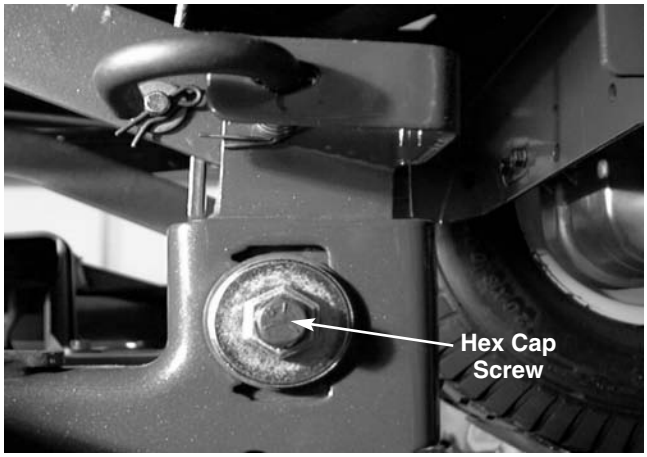

FIGURE 7.

4). Rotate the 3/4" deck adjustment gear right or left until the deck is level side to side and both blade tips to ground are equal in measurement.

5). Retighten the hex cap screw on the left deck hanger using a 1/2" and 3/4" wrench when the proper adjustment has been achieved.

NEW ADJUSTMENT DESIGN

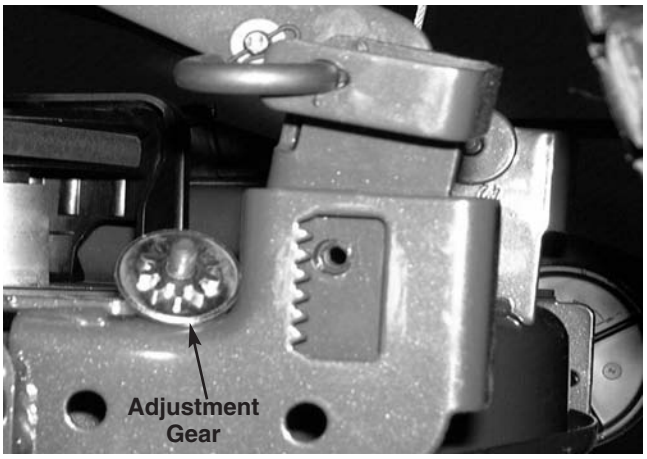

FIGURE 8.

Deck Belt Removal and Installation

42" CUTTING DECK:

1). Lower the deck to the lowest position.

2). Pull the PTO idler pulley and bracket towards the discharge chute, relieving belt tension. See figure 1.

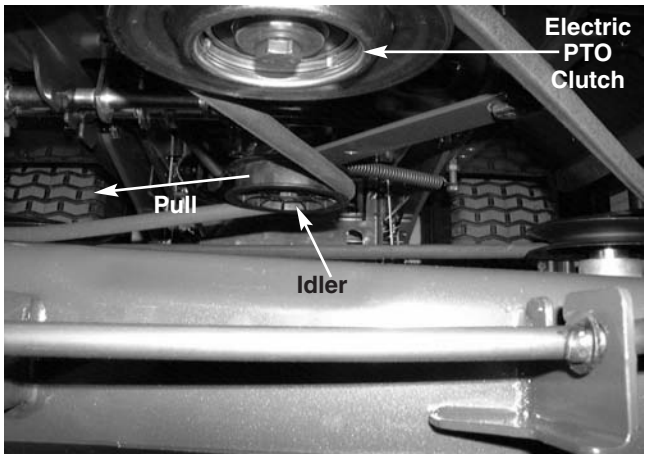

FIGURE 1.

3). Remove the deck belt from the electric PTO clutch on the engine.

4). Remove the self tapping screws securing the spindle belt covers. See figure 2.

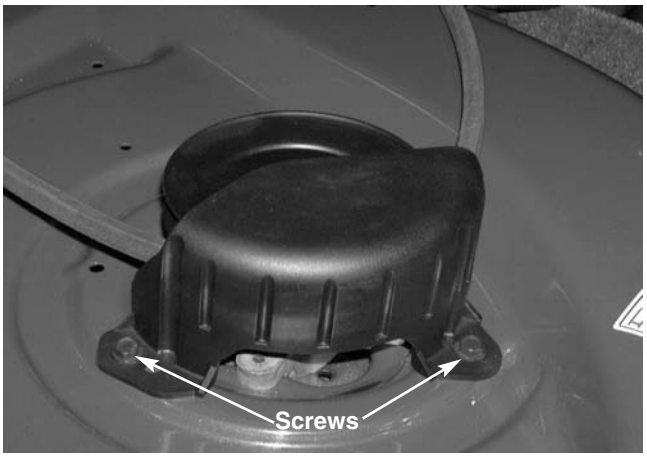

FIGURE 2.

5). Remove the spindle belt covers.

6). Remove the PTO deck belt.

REINSTALL THE NEW BELT IN THE REVERSE ORDER ABOVE.

46" CUTTING DECK:
LOWER BELT:

1). Pull the lower deck belt flat idler and idler bracket towards the left side of the tractor, relieving the belt tension. See figure 1.

2). Remove the lower deck belt.

REINSTALL THE NEW BELT IN THE REVERSE ORDER ABOVE.

Cutting Deck Removal

1). Lower the lift lever to the lowest setting.

2). Pull the PTO idler pulley and bracket towards the side discharge chute. See figure 1.

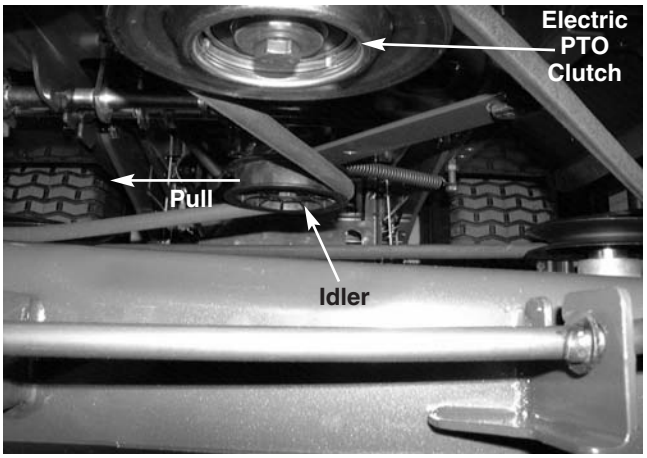

FIGURE 1.

3). Remove the deck belt from the lower pulley on the engine.

NOTE: The 46" decks have an upper and a lower belt. The upper belt is removed for cutting deck removal.

4). Pull the rear deck support pins outward from the deck lift arms. See figure 2.

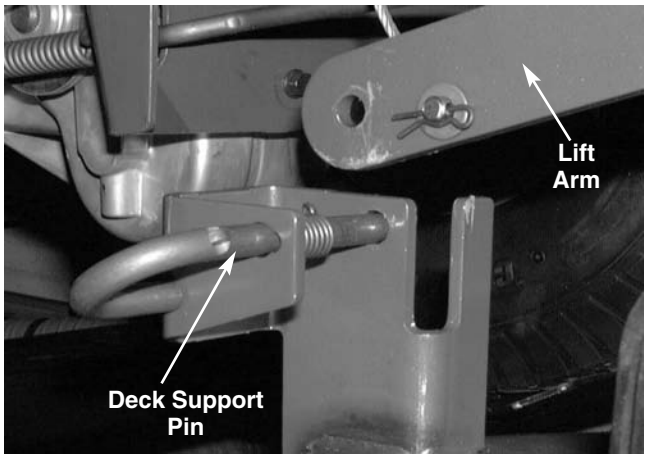

FIGURE 2.

5). Pivot the deck support pins to the rear.

6). Raise the lift lever to the highest setting. This will raise the lift arms up and out of the way of the deck assembly.

7). Slide the cutting deck forward and release the front deck hangers off of the front stabilizer rod. DO NOT DROP the deck to the ground. See figure 3.

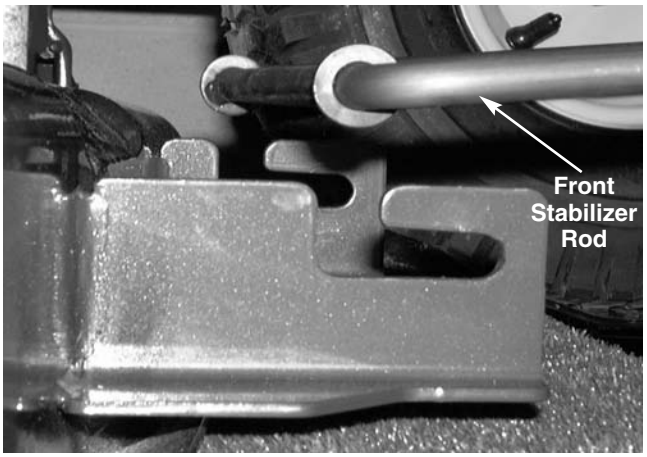

FIGURE 3.

8). Slide the deck towards the side discharge chute and remove it from the tractor.

CAUTION: Remove the deck stabilizer assembly from the tractor prior to moving the unit.

Drive Belt Removal and Reinstallation

TRANSMISSION BELT REMOVAL AND INSTALLATION:
UPPER BELT:

1). Raise the seat of the tractor and disconnect the battery cables from the battery. Remove the negative cable first. See figure 1.

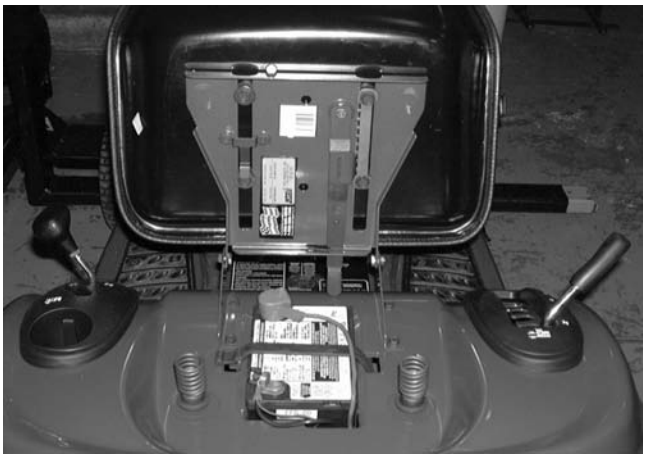

FIGURE 1.

2). Remove the battery strap, battery, and the battery tray from the tractor. See figure 2.

FIGURE 2.

3). Raise the deck lift lever to the highest position.

4). Pull the transmission idler pulley towards the transmission and release the upper drive belt. See figure 3.

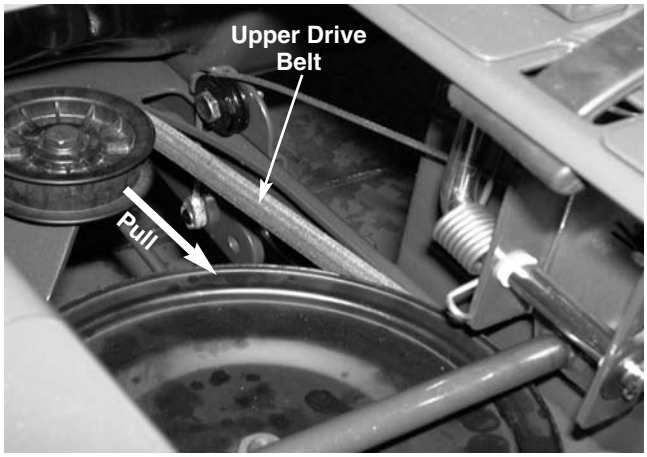

FIGURE 3.

5). Slowly release the idler pulley.

6). Remove the upper drive belt from the transmission pulley and the variable-speed pulley. See figure 4.

NOTE: Slowly roll the drive belt off of the variable-speed pulley.

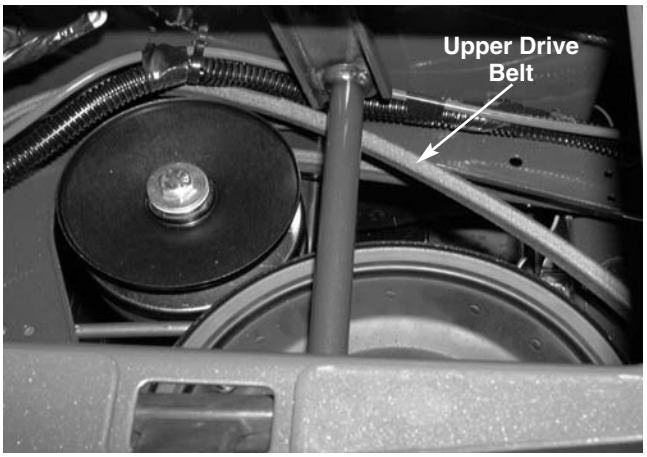

FIGURE 4.

VARIABLE-SPEED BELT REMOVAL AND REINSTALLATION:

LOWER BELT:

IMPORTANT: Prior to lower variable speed belt removal, perform cutting deck removal and upper drive belt removal.

1). Remove the hex bolt and lock nut securing the variable-speed pulley to the transmission using a 9/16 socket and a 9/16 wrench. See figure 5.

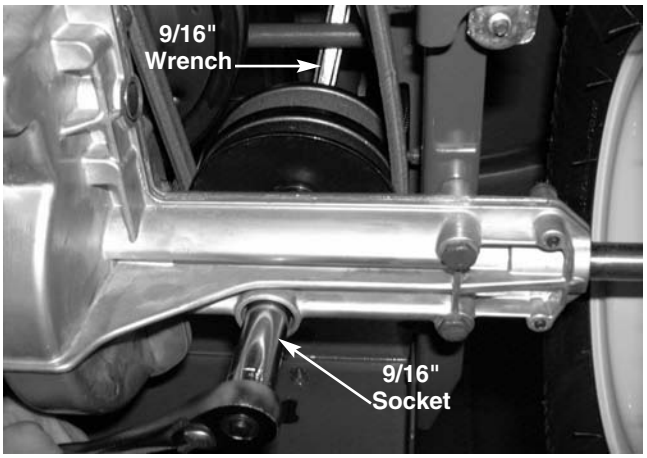

FIGURE 5.

2). Raise the variable speed pulley and roll the lower drive belt off.

3). Remove the variable-speed pulley from the tractor through the battery box opening.

4). Disconnect the wiring harness female connector from the reverse safety switch.

5). Loosen (DO NOT REMOVE) the flat moving idler on the double-idler bracket. See figure 6.

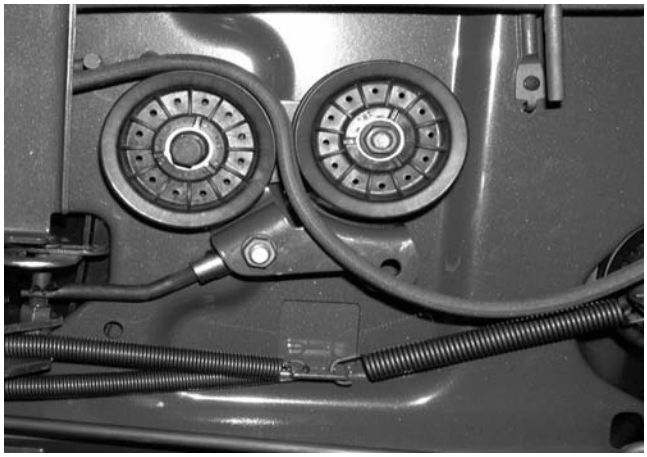

FIGURE 6.

6). Remove the variable-speed belt from the double idler pulley assembly.

7). Cut and remove the zip tie securing the PTO clutch wires to the wiring harness.

NOTE: Make certain a new zip tie is reinstalled during reassembly.

8). Carefully disconnect the wiring harness connector from the electric PTO clutch assembly. See figure 7.

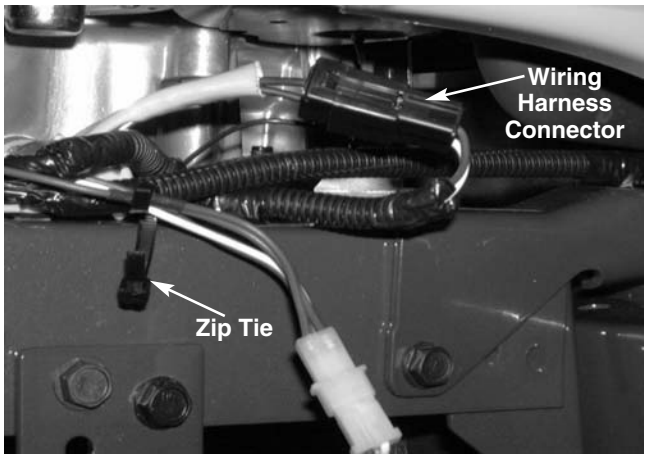

FIGURE 7.

NOTE: During reassembly, make certain the PTO clutch wires are routed inside the right hand drag link.

9). Remove the hex bolt that secures the electric PTO clutch to the engine crank shaft using a 5/8 socket.

NOTE 1: Some units have a washer that rests on top of the electric PTO clutch, make certain it is in place during reassembly.

NOTE 2: Torque the hex bolt to 38 to 50 foot-pounds during reassembly.

NOTE 3: Make certain that the clutch retaining pin is in the electric PTO clutch bracket during reassembly.

10). Slowly lower the engine drive pulley and remove the variable-speed belt. See figure 8.

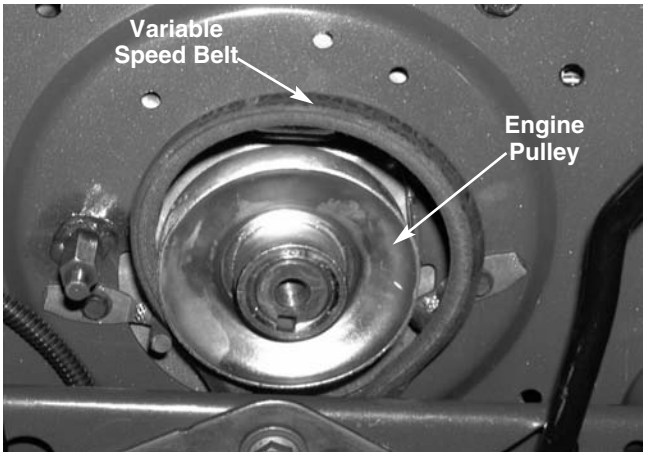

FIGURE 8.

NOTE: Carefully set the engine drive pulley aside, making certain the 1/4" squared key remains in place.

11). Remove the variable-speed belt from the tractor.

REINSTALL THE VARIABLE-SPEED BELT IN THE REVERSE ORDER ABOVE.

Transmission Removal and Installation

NOTE: Prior to performing transmission removal and installation, it is necessary to remove the upper drive belt.

1). Remove both rear hub caps from the rear wheel assemblies.

2). Loosen both hex cap screws securing the rear wheel assemblies to the axles.

3). Raise the rear of the tractor off the ground.

4). Remove both center hex cap screws and bell washers from the rear wheel assemblies.

5). Remove both rear wheel assemblies from the tractor.

6). Disconnect the reverse safety switch. See figure 1.

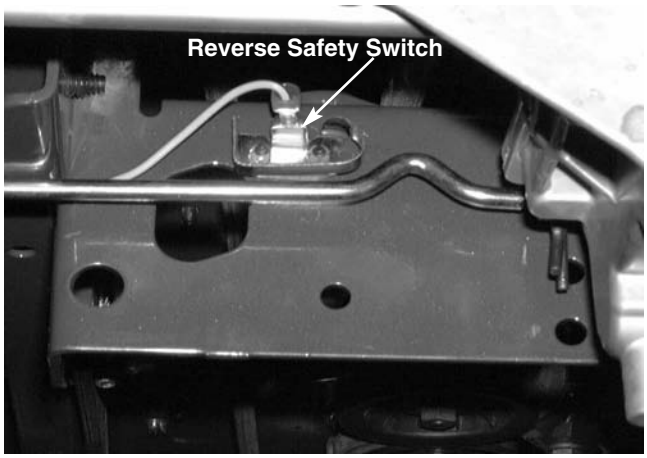

FIGURE 1.

7). Remove the hair pin that secures the shift linkage to the shift fork and set the shift linkage aside. See figure 2.

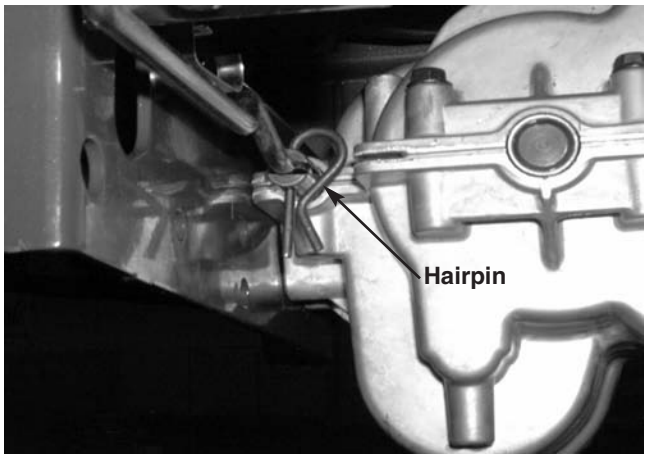

FIGURE 2.

8). Remove both of the self tapping screws that secure the transmission to the front torque bracket using a 3/8 socket. See figure 3.

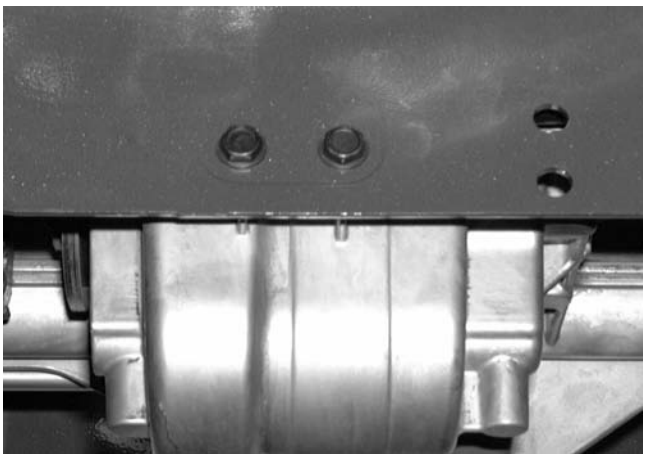

FIGURE 3.

9). Support the bottom of the transaxle.

10). Remove all four hex bolts and lock nuts securing the transmission to the frame using a 1/2" socket and a 1/2" wrench. See figure 4.

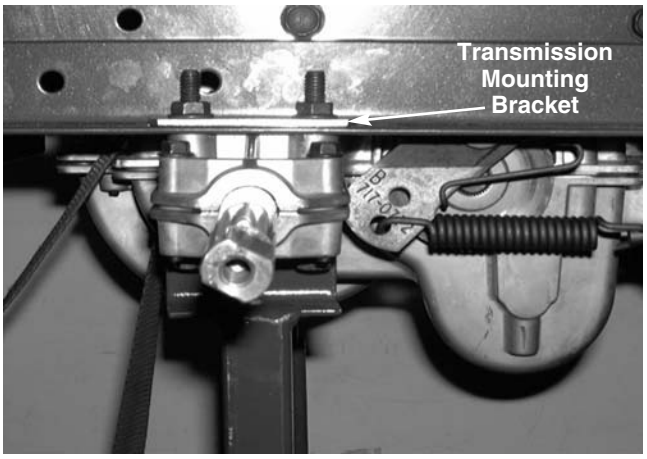

FIGURE 4.

11). Remove both transmission mounting brackets from the top of the frame.

12). Remove the hex bolt and lock nut securing the variable-speed pulley to the transmission using a 9/16 socket and a 9/16 wrench.

13). Remove the locking hex nut from the brake actuation arm on the transmission. See figure 5.

NOTE: During reassembly, perform the brake adjustment section.

14). Loosen (DO NOT REMOVE) the hex washer head self-tapping screw that secures the anti-rotation bracket to the brake assembly using 3/8 wrench. See figure 5.

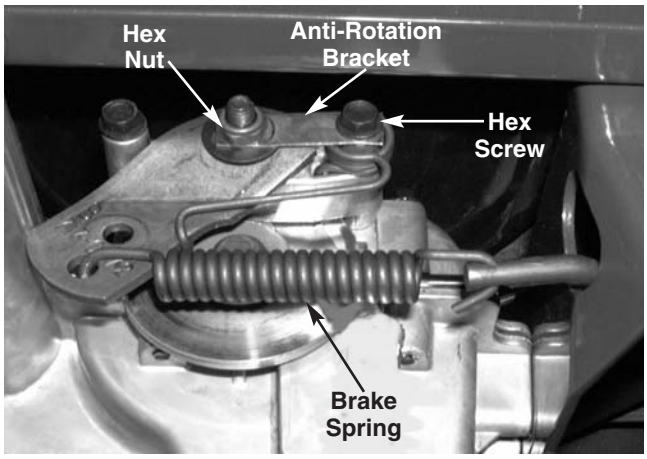

FIGURE 5.

15). Pivot the anti-rotation bracket down and relieve the spring tension on the brake actuation arm.

16). Remove the flat washer from the actuation arm stud of the brake assembly.

17). Remove the brake spring from the brake actuation arm. See figure 5.

18). Slowly lower the transmission from the tractor. See figure 6.

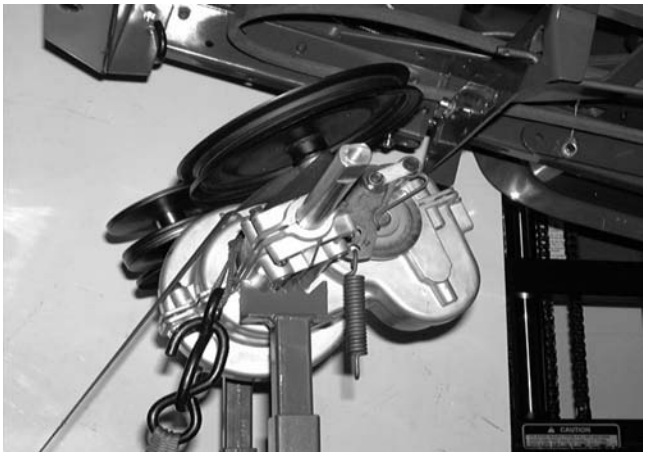

FIGURE 6.

NOTE: The variable-speed pulley will be hanging by the drive belt at this time. Set it aside after removal of the transmission.

INSTALL THE TRANSMISSION IN THE REVERSE ORDER ABOVE.