



# Service Kit 753-05865

Date: 3/19/2008

Subject: Service Replacement for 687-02199 and 687-02199A, Rear Pivot Bracket Assembly

Models Affected: 2006 and 2007 Model Year 21" - 800 Series Self Propelled Walk Behind Mower with Single Lever Height Adjuster

**Read through and understand these instructions completely before proceeding with repair.**

**PURPOSE:** This service kit provides the components and hardware necessary when replacing the 687-02199A Rear Pivot Bracket Assembly which is no longer available. This replacement pivot bracket requires a new transmission, new transmission support bearings, new bearing support spacers and required hardware due to the extended length of the new Rear Pivot Bracket Assembly.

**NOTE:** These materials are prepared for use by trained technicians who are experienced in the service and repair of equipment of the kind described in this publication, and are not intended for use by untrained or inexperienced individuals. Such individuals should seek the assistance of an authorized service technician or dealer.

**NOTE:** Save this Instruction Sheet. Refer to it when ordering replacement parts.

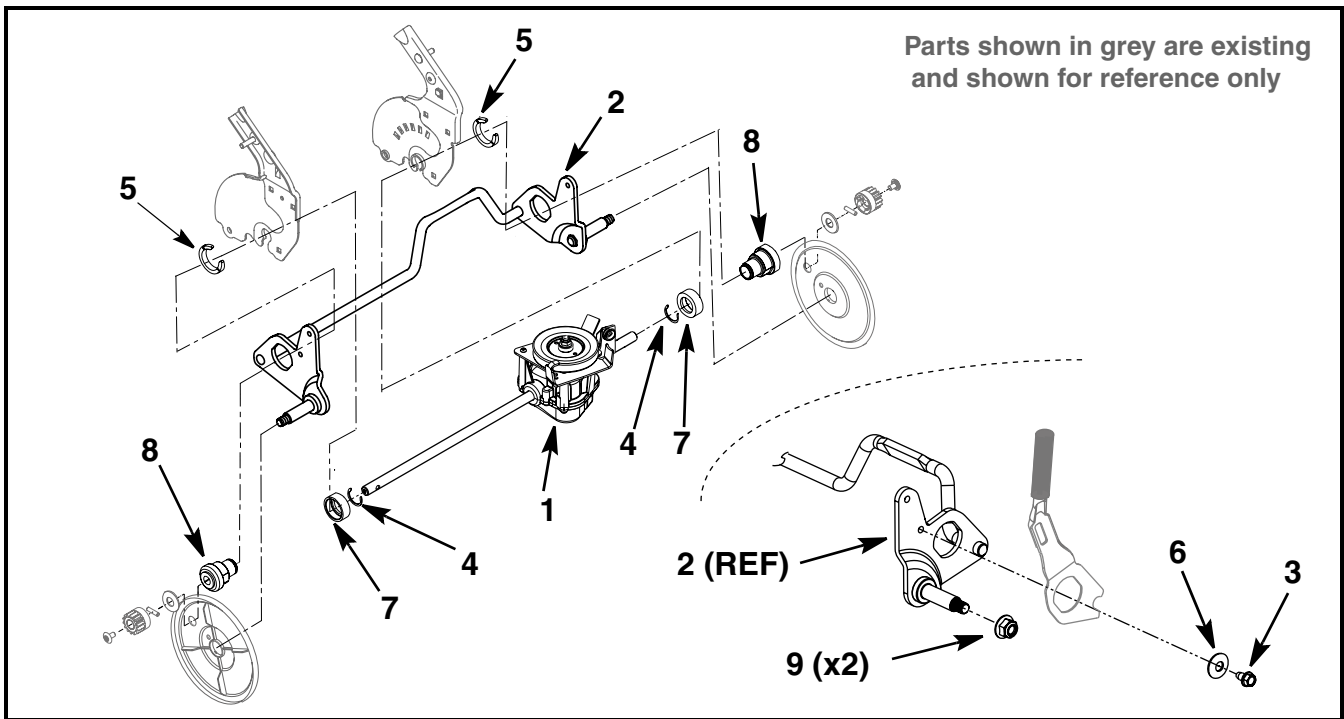


FIGURE 1

## Service Kit Contents (See Figure 1)

\* - Not Available Separately

ITEM NO.	PART NUMBER	QTY	DESCRIPTION
1	618-04492	1	TRANSMISSION
2	687-02314A-0637	1	BRACKET ASSEMBLY: PIVOT: REAR
3	710-0599	1	SCREW: TAPTIGHT: 1/4"-20 x .50
4	716-0198	2	RING: RETAINER:
5	731-05872	2	CLIP: SPACER
6	736-0242	1	WASHER: BELL: .340 x .872 x .060
7	748-0390	2	SPACER: SUPPORT: BEARING
8	748-04159	2	BEARINGS: SUPPORT: TRANSMISSION
9	712-04065	2	NUT: FLANGE LOCK: 3/8"-16: GRF: NYLON
10	*	1	THIS INSTRUCTION SHEET

**Pre-Service Preparation:**

1. Place the mower on a flat and level surface.
2. Turn off the engine and allow the engine and muffler to cool before proceeding.
3. Remove the spark plug wire from the spark plug and ground the wire to the engine block.
4. Drain the fuel tank. Optional: Remove the fuel tank cap and place a thin sheet of plastic over the open fuel fill port. Replace the fuel tank cap tightly. Ensure the oil fill port cap/dipstick are tight.
5. Set the height adjuster to the highest cutting position.

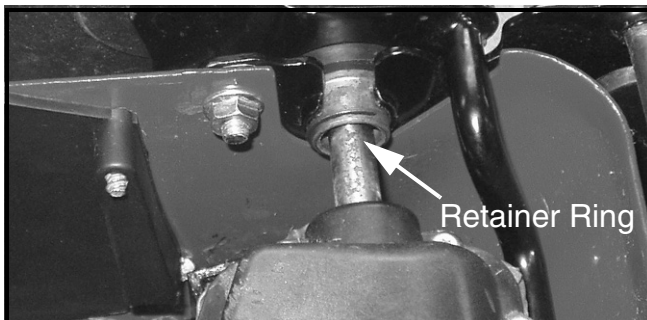
**Drive System Disassembly:**

**NOTE:** Left (LH) and right (RH) are determined from the operator's position at the rear of the mower facing forward.

**NOTE:** Refer to the Operator's Manual - Illustrated Parts List for part nomenclature and location.

**NOTE:** Retain all parts and hardware unless instructed otherwise.

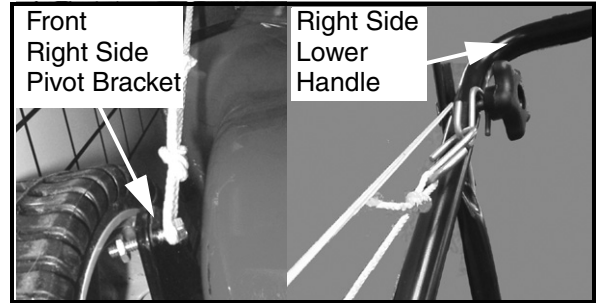
6. Place the mower on it's side so that the air filter/carburetor are up towards the sky. Check for oil or fuel leaks, correct if necessary.
7. From under the mower's deck, locate the retainer rings securing the transmission support bearings to the RH and LH handle brackets. Using a flat blade screw drive, remove and discard the retaining rings from the grooves of the support bearings. See Figure 2.



**FIGURE 2**

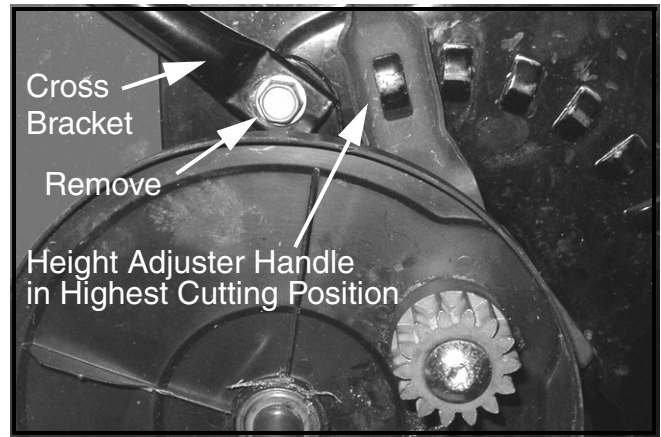
8. Using a pair of long nose pliers, remove the extension spring from between the transmission's metal bracket and the plastic baffle.
9. Return the mower to it's normal upright position.
10. Place wood blocking (about 5-6" high) under the mower deck just in front of the right and left rear wheels to raise the wheels off the ground.
11. Using a 9/16" socket and ratchet, remove and discard the hex flange lock nuts retaining the wheels to the pivot bracket assembly's axle studs. Remove both wheels.

**NOTE:** Use caution in the next step. The front pivot axle is spring loaded. This spring load is carried to the rear pivot axle through the cross bracket (front to rear height adjuster rod). Therefore, the cross rod must be held tightly or the front axle's pivot rod secured from rotating in some similar manner as shown in Figure 3.



**FIGURE 3**

12. Using a 3/8" socket and ratchet, remove the self-tapping screw, spacer and wave washer securing the cross bracket (front to rear height adjusted rod) to the pivot bracket assembly. See Figure 4.



**FIGURE 4**

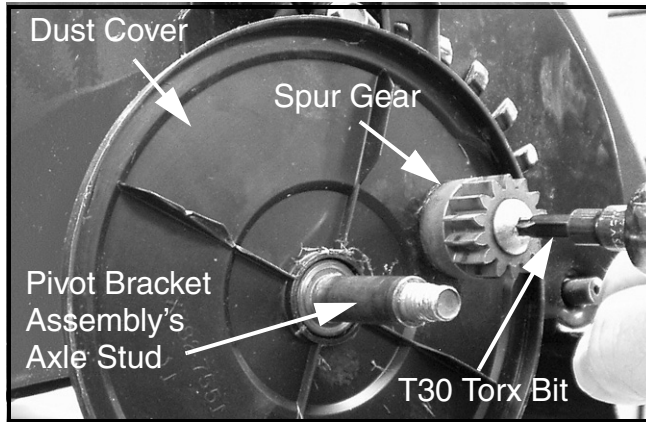
13. Using a pair of vise grip pliers, securely clamp onto the transmission's drive axle as shown in Figure 5.



**FIGURE 5**

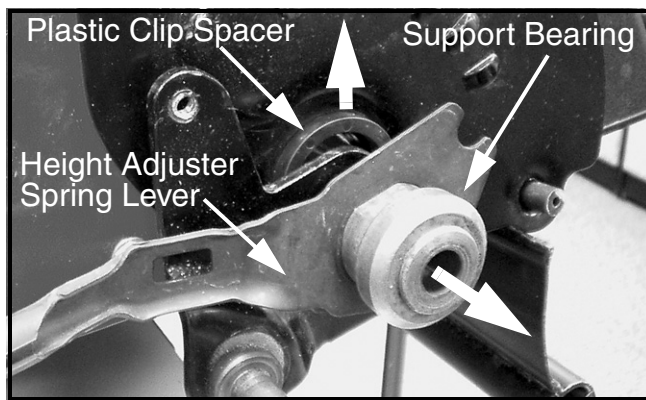
14. Using a T30 Torx bit and ratchet **and holding the vise grip pliers to keep the transmission axle from rotating**, remove the Torx head screw retaining the spur gear at both ends of the transmission's output shaft. Note the assembly sequence as you remove the spur gear, dowel pin, flat washer and wheel dust cover. See Figure 6.

**NOTE: The spur gears are right and left side specific. Mark or tag each spur gear as to the side it was removed from.**



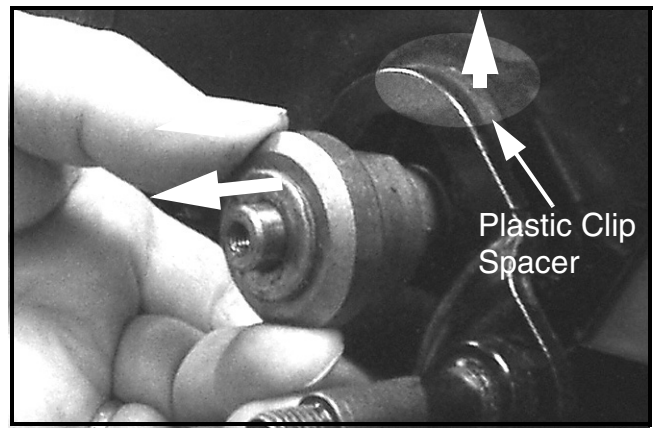
**FIGURE 6**

15. On the left side, remove and discard the transmission support bearing from the transmission's output shaft. Remove the height adjuster spring lever. Remove and discard the plastic spacer clip. See Figure 7.



**FIGURE 7**

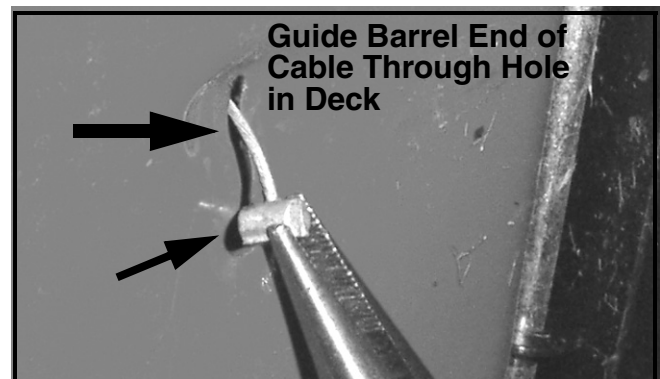
16. On the right side, remove and discard the transmission support bearing from the transmission's output shaft and plastic spacer clip. See Figure 8.



**FIGURE 8**

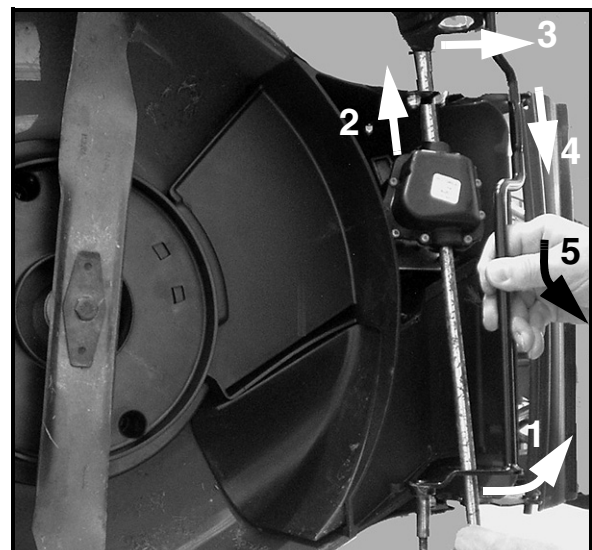
17. Place the mower on it's side so that the air filter/carburetor are up towards the sky.

18. Unhook the end of the drive cable from the rear of the mower deck. See Figure 9.



**FIGURE 9**

19. Pull the transmission out partially from the deck and slide each end of the pivot bracket assembly off of each end of the transmissions' output shaft. Discard the pivot bracket assembly. See Figure 10.



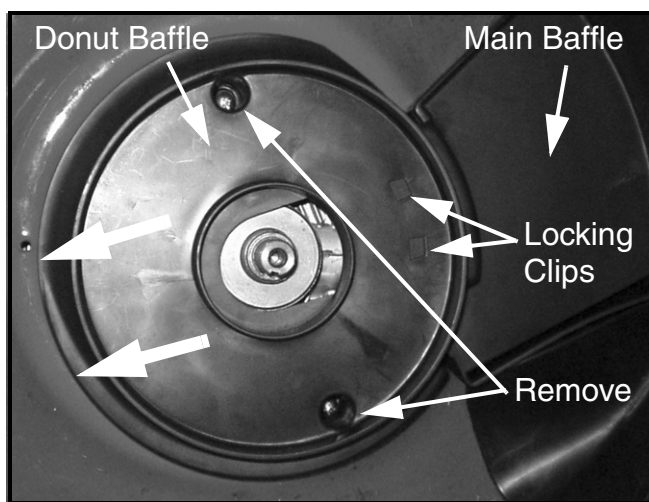
**FIGURE 10**

20. Using a 3/4" socket and breaker bar, remove the bolt and blade bell support securing the blade to the crankshaft.

21. Remove the blade adapter, wave washer(s), flat washer(s) and spacer (if so equipped).

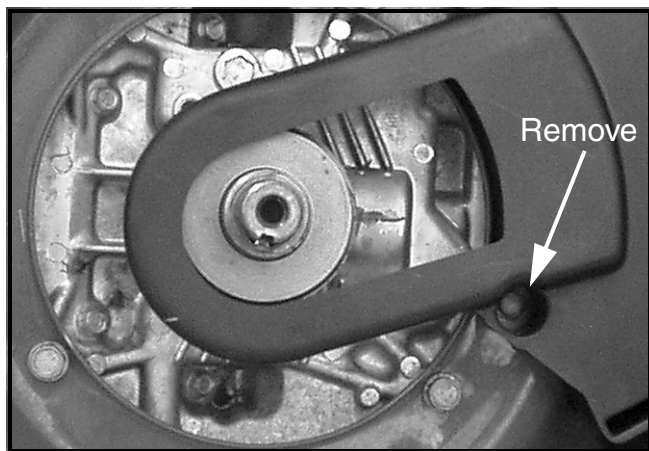
**NOTE: IMPORTANT** - Note the sequence and orientation of the wave washer(s), flat washer(s) and spacer (if so equipped) so that they will be re-installed in the correct order later.

22. If so equipped, remove the two screws securing the donut baffle to the deck. Then lift the donut baffle up and slide forward away from the main baffle to unhook the two donut baffle locking clips from the main baffle. See Figure 11. Mounting hardware varies dependent on model and year.



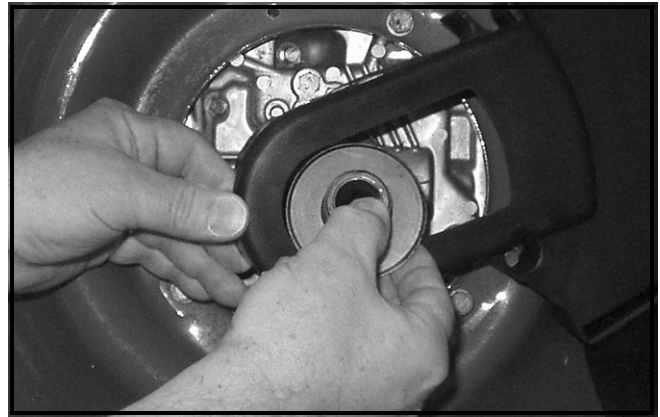
**FIGURE 11**

23. Using a 3/8" socket with extension (or a deep socket) and ratchet, remove the screw retaining the front portion of the main baffle. See Figure 12.



**FIGURE 12**

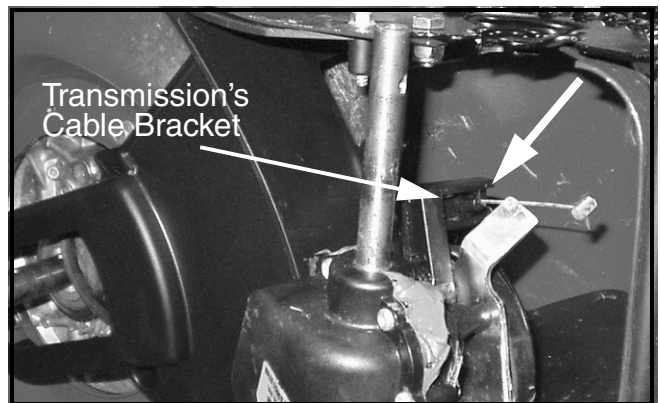
24. Carefully lift the front portion of the main baffle sufficiently to remove the lower half of the engine pulley. See Figure 13.



**FIGURE 13**

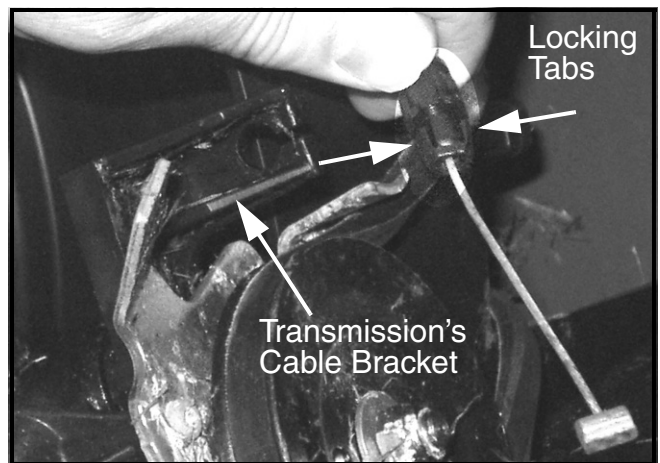
25. Slip the belt off of the crankshaft.

26. At the rear of the unit, carefully pull the transmission out from the deck and position it so that there is access to the drive cable clip-in fitting on the transmission's cable bracket. See Figure 14.



**FIGURE 14**

27. With a pair of long nose pliers, carefully compress the two locking tabs on the cable's end fitting and slide the cable fitting back through the transmission bracket's hole. See Figure 15.



**FIGURE 15**



28. Remove the transmission and belt from the deck. Remove the belt and vise grips from the from the transmission. Discard the transmission.

**NOTE:** Check the condition of the belt. Replace if worn or damaged. This is an opportune time to replace the belt even if it is still usable.

**Drive System Reassembly:**

With the mower still on its' side...

29. Install the belt onto the new Transmission (Item 1) pulley. Ensure the belt is inside of the transmission's belt guides. Place a small rubber band around the belt to hold the belt onto the pulley and within the guides. See Figure 16.

30. Route the loose looped end of the belt up through the main baffle's passageway to the crankshaft. Allow sufficient access to the transmission's cable bracket and install the drive cable housing end fitting into the transmission's cable bracket. Reference Figures 14 and 15.

31. Slide a Bearing Support Spacer, Item 7, onto each end of the transmission's output shafts. The smaller diameter bore of the spacer must be next to the transmission body. See Figure 16.

**NOTE:** Use a rubber band or masking tape to hold the spacers to the transmission body during the next assembly steps.

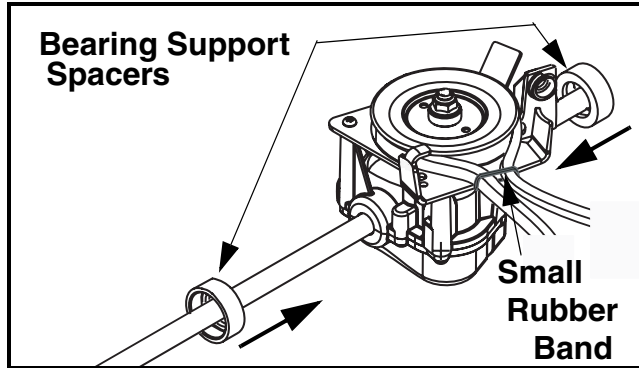


FIGURE 16

32. Install the new Pivot Bracket Assembly, Item 2, onto the transmission. Refer to Step 19 and Figure 10. Ensure that the offset in the pivot bracket rod is positioned at the transmission's body.

33. Reconnect the barrel end of the drive cable to its' rear deck attach point. Refer to Figure 9.

34. Insert the transmission/pivot bracket/belt/support spacers subassembly into position within the RH and LH handle bracket keyhole slots. Ensure that both pivot bracket assembly's pivot arms are to the outside of the deck.

35. Re-install the belt onto the crankshaft.

36. Re-install the lower pulley half onto the crankshaft. Ensure the belt is not trapped against the crankshaft. Refer to Step 24 and Figure 13.

37. Reinstall the screw securing the front portion of the main baffle to the deck using the screw removed in Step 23. See Figure 12.

38. Re-install the donut baffle using the hardware removed in Step 22. See Figure 11.

39. Lubricate the crankshaft and inner surface of the blade adapter with a light oil.

40. Re-install, on the crankshaft, the spacer (if so equipped), flat washer(s), wave washer(s), and blade adapter. Refer to Step 21.

41. Re-install the blade, blade bell support and blade retainer bolt. **Torque the bolt to 450-600 In-Lbs.**

42. Apply the vise grip pliers to the new transmission's output shaft as in Step 13, Figure 5.

43. Return the mower to its' normal position with the deck setting on the wood blocks.

44. Using a light weight lithium or silicone base grease, lubricate the both ends of the transmission's output shaft where the transmission support bearings will set.

45. Refer to Figure 1 and the **Drive System Disassembly** steps above to install the new Transmission Support Bearings (Item 8), the existing height adjuster lever (on the left side), new Bearing Support Spacers (Item 7), new Retainer Rings (Item 4) and the new Clip Spacers (Item 5).

46. Using a 3/8" socket and ratchet, secure the new Bell Washer, Item 6, with the TapTite Screw, Item 3, to the left pivot bracket assembly pivot arm as shown in Figure 17. Tighten securely.

**NOTE:** The bell washer will overlap the edge of the height adjuster lever providing required adjuster spring force.

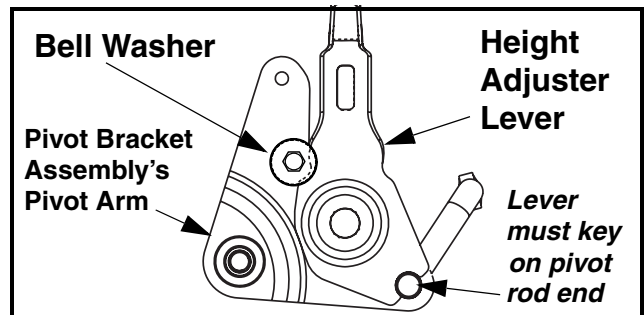


FIGURE 17

47. On the LH side, re-install the cross bracket using the wave washer, spacer and taptite screw removed in Step 12. Refer to Figure 4.

48. Re-install the LH wheel cover.
49. Using a light lithium or silicone base grease, lubricate the dowel pin and install it in the cross hole of the LH transmission output shaft.
50. Reassemble the LH spur gear onto the end of the LH output shaft.
51. Clean off the threads of old locking compound from each spur gear retaining Torx screw. Apply Loctite 242 (Blue) or 246 (Red) or equivalent to the clean Torx screw.
52. Secure the spur gear to the transmission's output shaft with the prepared Torx screw. Tighten securely.
53. Re-install the flat washer onto the pivot bracket assembly arm axle stud.
54. Reinstall the wheel using a new 3/8"-16 Flange Lock Nut, Item 9.
55. Repeat Steps 45 through 54 for the RH side.
56. Carefully remove the front pivot axle restrainer setup installed earlier and the vise grip pliers. See Figure 3.
57. Remove the wood blocks, reconnect the spark plug wire to the spark plug and remove the plastic sheet from under the fuel cap (if applicable).
58. Start the mower and engage the self-propelled drive...that will break the rubber band from around the belt.

This completes the installation of this service kit.