



# Service Kit 753-06152

Date: October 26, 2009

Subject: Service Replacement 2-Way and 4-Way Chute Control Gear Set - Gear Drive Chute Rotation System

Models Affected: 2009 Model Year and later 2-Stage Snow Throwers with Handle Panel Remote Chute Rotation Control.

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

**PURPOSE:** This kit provides the 2-Way and 4-way chute control assembly's bevel gear, input shaft and installation instructions for 2009 Model Year and later 2-Stage Snow Throwers with the Deluxe Handle Panel Remote Chute Rotation Control.

**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.

## Service Kit Contents

(See Figure 1)

ITEM NO.	PART NUMBER	QTY	DESCRIPTION
1	*	1	SHAFT: INPUT
2	*	1	GEAR: BEVEL: 89 TOOTH
3	937-04085	1	GREASE: LITHIUM: WHITE (Low Temp)
4	*	1	THIS INSTRUCTION SHEET

\* - Not Available Separately

**NOTE:** Right (RH) and left (LH) sides are determined from the operator's position at the handle bars facing the auger housing.

### Pre-Service Preparation:

1. Place the snow thrower on a flat and level surface, turn off the engine and allow the muffler and engine to cool before proceeding.

2. Remove spark plug wire from the spark plug and ground to the engine block.

### Removal of the Chute Control Assembly:

3. At the chute control assembly joystick, depress the red trigger and position the chute as shown in Figure 3.

4. Check the chute control assembly input shaft to ensure that the arrow on the input shaft is at the top as shown in Figure 2A. Adjust chute position as necessary.

5. At the chute rotation gear box, the coupler holes should be at the top as shown in Figure 2B. Mark the coupler, as shown, to assist reassembly later.

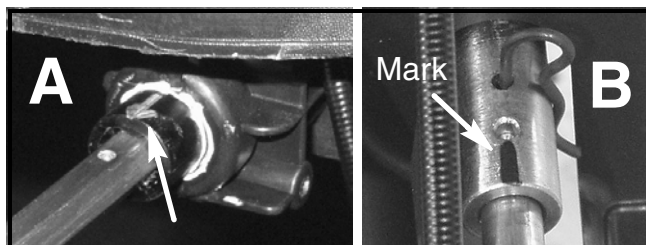


FIGURE 2

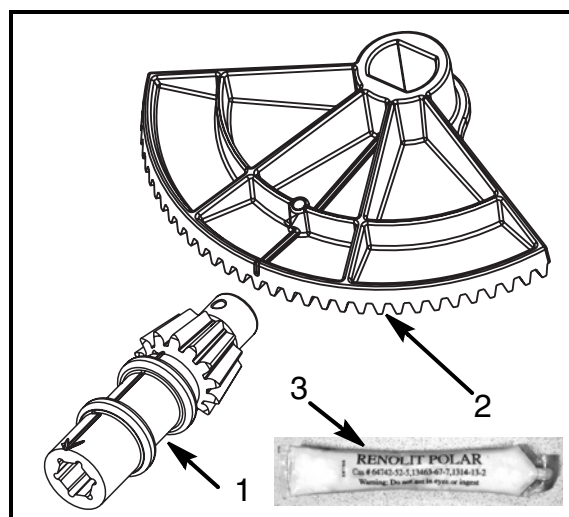


FIGURE 1

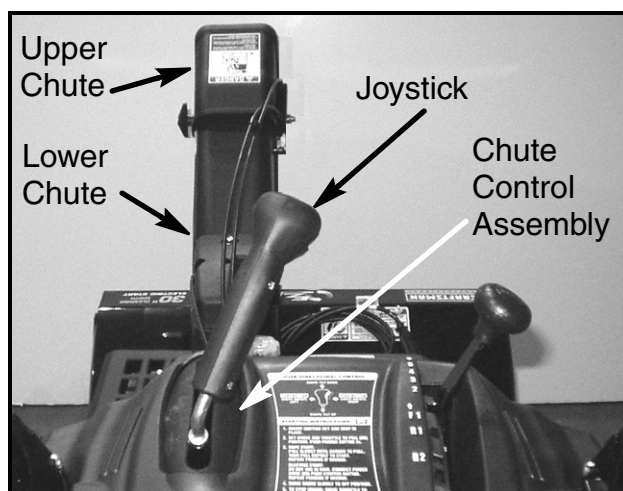
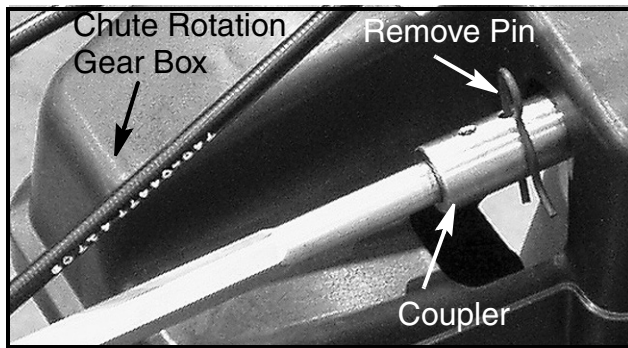


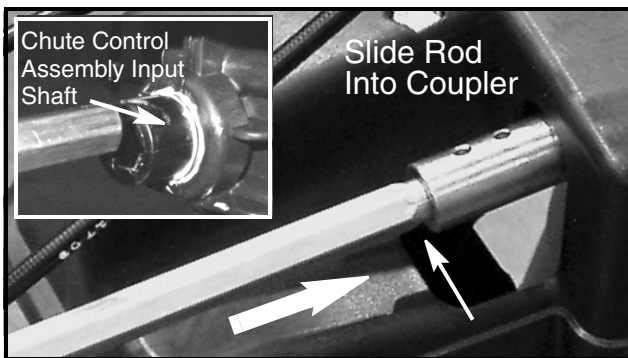
FIGURE 3

6. At the chute rotation gear box assembly, remove the hairpin clip. See Figure 4.



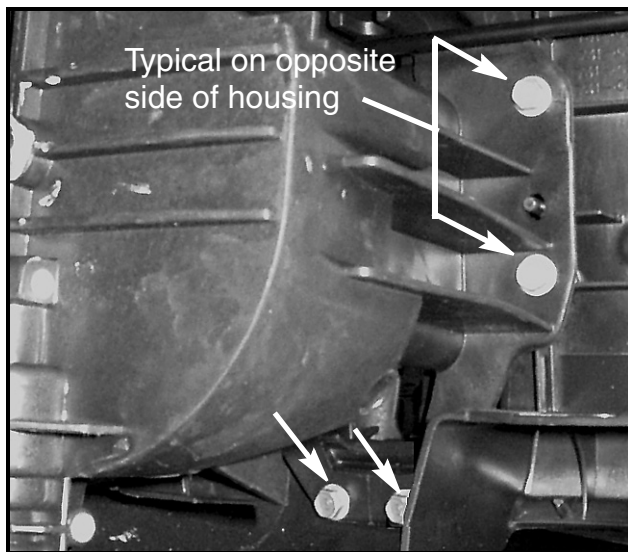
**FIGURE 4**

7. Carefully slide the 3/8" hex rod into the metal coupler of the chute rotation gear box to free the rod from the chute control assembly input shaft. See Figure 5.



**FIGURE 5**

8. Using a 3/8" socket, long extension and ratchet, remove the six (6) Hi-Lo screws, from the underside of the handle panel, securing the chute control assembly to the handle panel. See Figure 6.



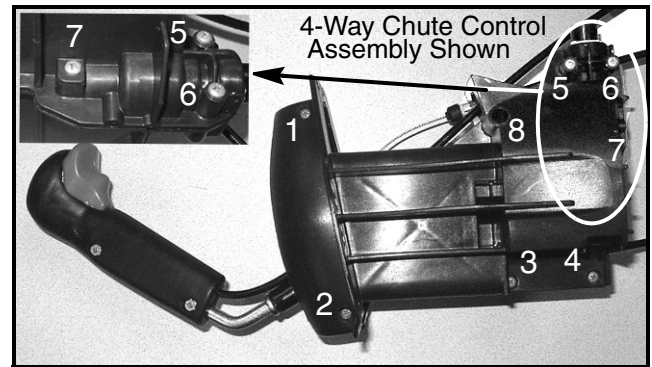
**FIGURE 6**

9. Carefully, remove the chute control assembly from under the handle panel and set the control on a convenient work surface as shown, screw heads facing up. See Figure 7.

**NOTE:** *There is no need to disconnect any cables at the chute rotation gear box assembly and/or upper chute (if so equipped w/ upper chute remote tilt control).*

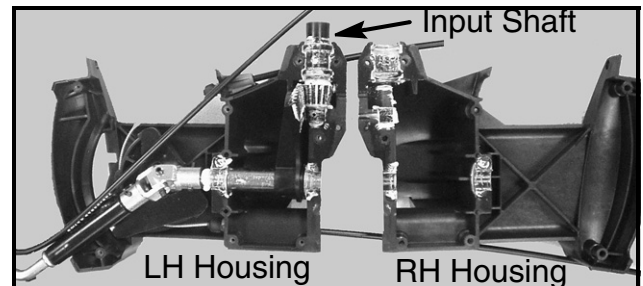
#### **Disassembly of the Chute Control Assembly:**

10. Using a No. 2 Phillips screwdriver remove the eight (8) hi-lo screws securing the two housing halves of the chute control assembly. See Figure 4.



**FIGURE 7**

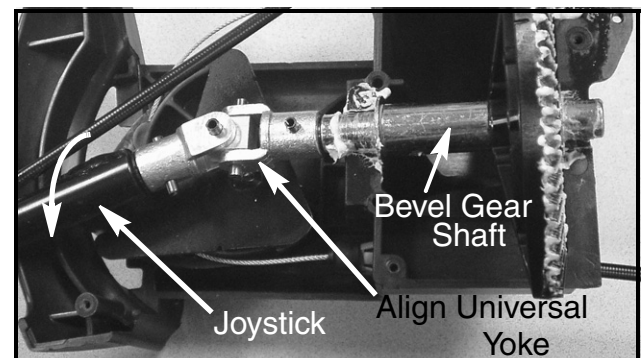
11. Holding the lower housing half (LH side) firmly, remove the RH housing half. See Figure 8.



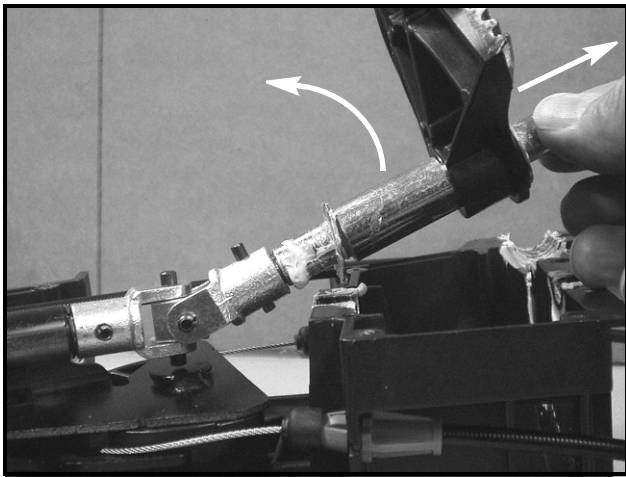
**FIGURE 8**

12. Remove and discard the input shaft from the LH housing half.

13. Rotate the joystick so that the universal yoke attached to the bevel gear shaft is as shown in Figure 9.



**FIGURE 9**



**FIGURE 10**

14. Rotate the bevel gear shaft up out of the LH housing as shown in Figure 10 and slide the flat washer and bevel gear off of the shaft. Retain the flat washer and discard the bevel gear.

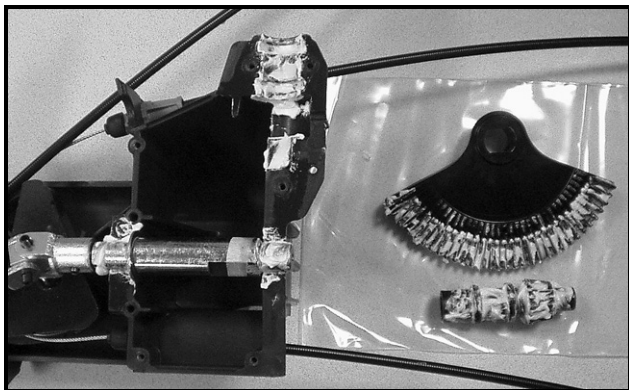
15. Clean both housings of old grease and debris. Inspect both housings to ensure that there is no damage to the bearing surfaces where the plastic input shaft and bevel gear shaft rest.

If either housing half is damaged order a new housing  
 2-Way Housing Kit = 753-06154  
 4-Way Housing Kit = 753-06153

#### **Bevel Gear Set Installation:**

16. Apply a liberal amount of white lithium grease to both LH and RH housing at the areas shown. See Figure 11.

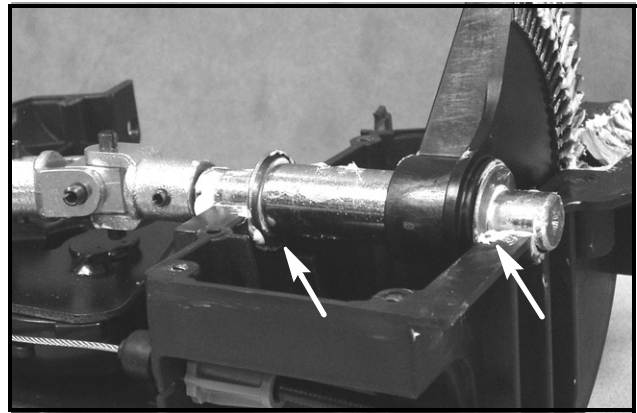
17. Apply a liberal amount of white lithium grease to the new Input Shaft, Item 1, and to the new 89 Tooth Bevel Gear, Item 2. See Figure 11.



**FIGURE 11**

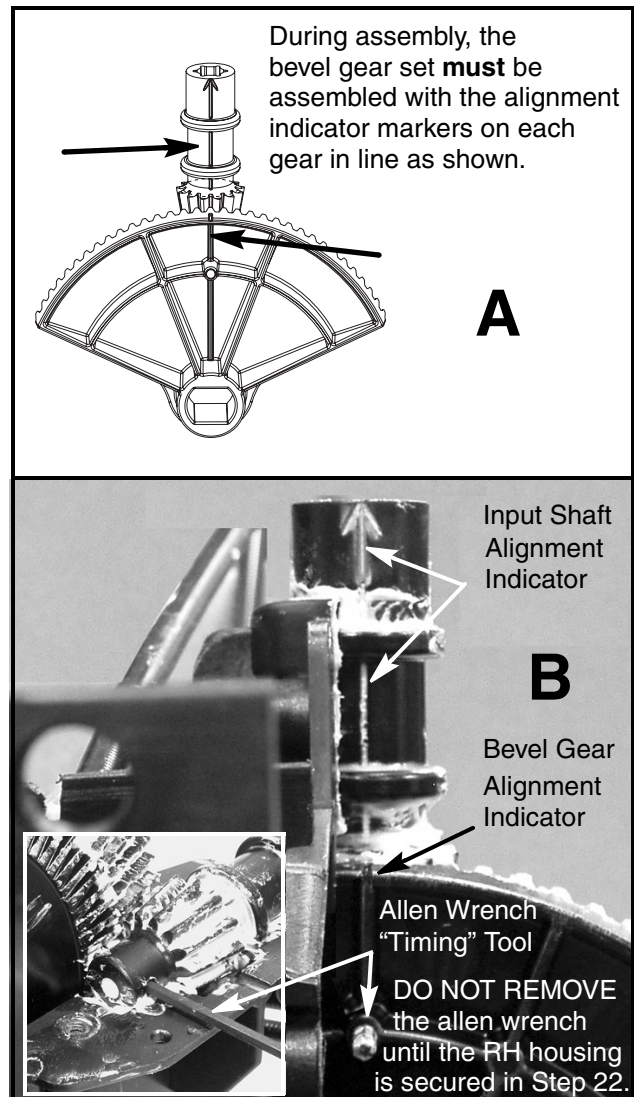
18. Refer to Figures 9 and 10 and install the new Bevel Gear and flat washer (removed in Step 14) onto the double D section of the bevel gear shaft on the chute control joystick. Ensure that both flat washers are positioned as shown in Figure 12.

**NOTE:** The bevel gear shaft with flat washers may be a snug fit into the housing. Slight pressure to spread the housing walls will facilitate assembly.



**FIGURE 12**

19. While installing the pinion gear, align the timing marks on the pinion gear with that on the bevel gear as shown in Figure 13A. Once aligned and set in the LH housing, insert a 1/8" allen wrench or similar tool through the pinion gear hole and through the bevel gear hole locking them together in the correct timing position. See Figure 13B.



**FIGURE 13**



### Re-Assembly of the Chute Control Assembly:

20. Before replacing the RH housing onto the LH housing ensure that the trigger cable is set in the half slot as shown in Figure 14.

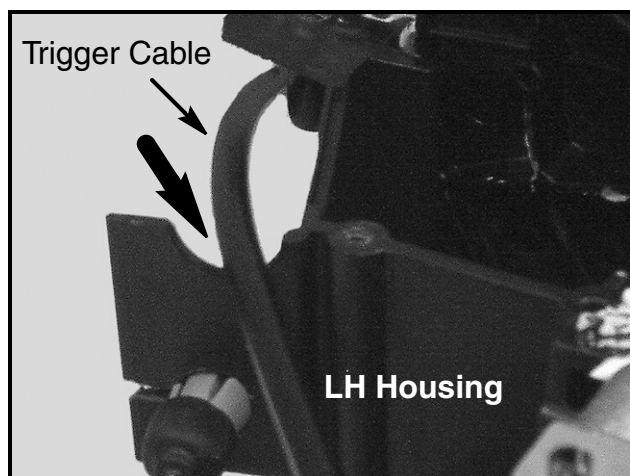


FIGURE 14

21. Carefully place the RH housing onto the LH housing subassembly.

22. Secure the two housings together with the 8 hi-lo screws removed in Step 10.

23. Remove the allen wrench “timing” tool from the assembled housing’s hole.

### Chute Control Assembly Installation:

24. Re-install the chute control assembly onto the handle panel with the 6 screws removed in Step 8.

25. Squeeze the trigger on the joystick and rotate the chute by hand to face forward. The holes in the chute rotation gearbox coupler will be facing up. See Figure 15.

**NOTE:** The chute will not rotate without squeezing the trigger on the joystick.

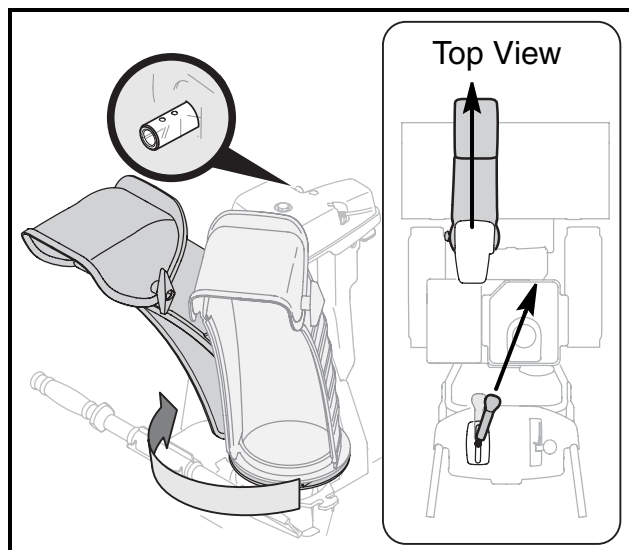


FIGURE 15

26. Rotate the joystick until the silver indicator arrow on the chute control assembly input shaft, below the control panel, faces upward. See Figure 16.

**NOTE:** The joystick will be angled slightly to the right, about the 1 o'clock position. See Figures 3 and 15.

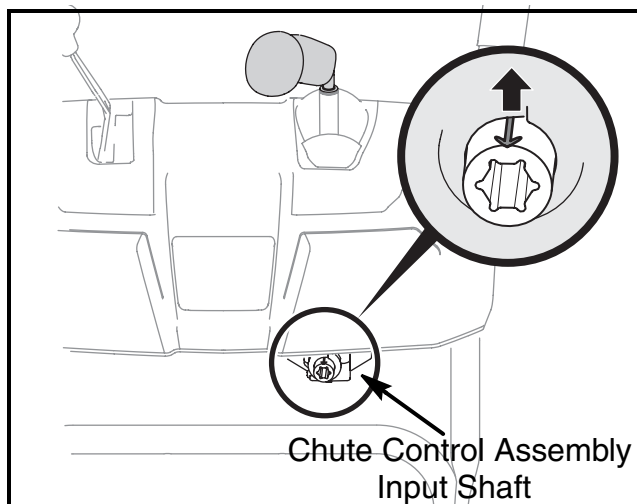


FIGURE 16

27. Insert hex rod into chute rotation gear box coupler. Push hex rod as far into the chute rotation gear box coupler as possible, keeping the hole in the hex rod pointing upward. See Figure 17.

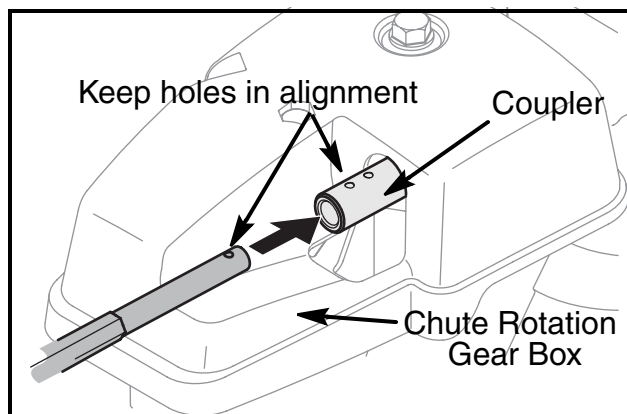
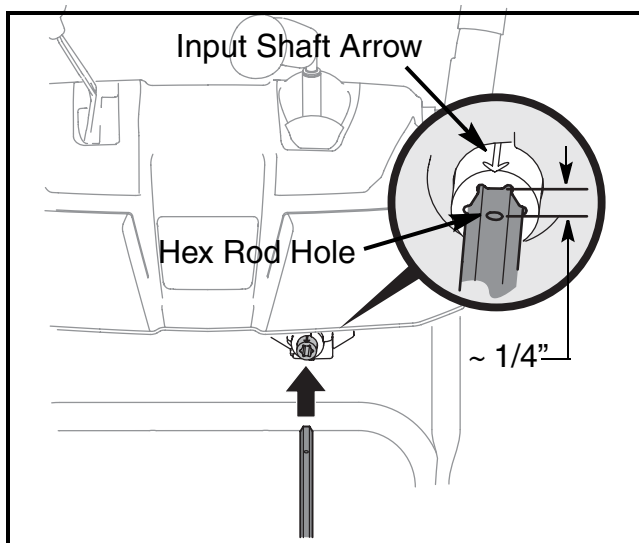


FIGURE 17

28. Insert the hex rod into the chute control assembly input shaft below the joystick. Make sure to line up the hole in the hex rod with the arrow on the input shaft. See Figure 18.

**NOTE:** The hex rod will fit snugly into the chute control assembly input shaft. Support the rear of the chute control assembly with one hand while inserting the hex rod with your other hand to ensure the hex rod is inserted **all the way** into the chute control assembly input shaft.

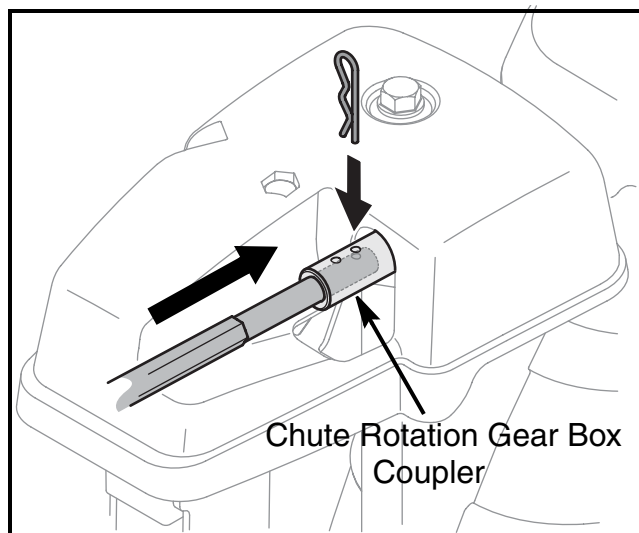
**NOTE:** The hole is a reference for aligning the rod with the indicator arrow on the chute control assembly input shaft. When the rod is properly inserted into the input shaft, the hole will be approximately a 1/4" from the end of the input shaft. See Figure 18.



**FIGURE 18**

29. Push the hex rod toward the control panel until the hole in the hex rod lines up with the hole in the chute rotation gear box coupler closest to the chute rotation gear box and insert the cotter pin. See Figure 19.

**NOTE:** *The second hole is used to achieve further engagement of the hex rod into the chute control assembly input shaft if required.*



**FIGURE 19**

30. Test the operation of the chute control assembly to ensure full left to right chute direction. The chute should not come any closer to the muffler shield than approximately 1-1/4" when in the full left position.

This completes the installation of the bevel gear set.

## NOTES