



# Service Kit

## 753-04866

Date: 9/7/2004

Subject: 4-Way Joystick Lever Replacement (Chute Rotation and Discharge Deflector Control)

Models Affected: 2004-2005 and later 2 Stage Snow Thrower models with Discharge Chute Control Joystick

**PURPOSE:** Use this service kit when repairing the 4-Way joystick control if the chute rotation detent will not lock/unlock due to detent cable damage, joystick trigger or knob failure, or lever tube damage affecting chute deflector operation. The individual components of this assembly are not available separately and are only serviced with this complete pre-assembled service kit. **Read through and understand instructions completely before proceeding with repair.**

**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*	753-04866	1	4-WAY JOYSTICK LEVER ASSEMBLY
2	769-01369	1	THIS INSTRUCTION SHEET

\* - 4-Way Control Lever is factory pre-assembled.  
Components are not available separately.

#### Pre-Service Preparation:

**NOTE:** Reference to left, right, forward and rear are from the operator's position facing the handles.

1. Place the snow thrower on a flat surface.
2. Disconnect spark plug wire from spark plug and ground to loop end of cable guide on top of engine.
3. Ensure oil dipstick/plug is tight.
4. Drain fuel tank (Preferred). Optional: Remove fuel cap from fuel tank. Place a piece of thin plastic sheet over the fuel tank mouth. Replace fuel cap and tighten securely.
5. Using the joystick, rotate the discharge chute to the middle position (chute pointing straight forward).
6. Using the handles, tip the snow thrower forward so that the unit is resting on the front of the auger housing. See Figure 2. Check for oil or fuel leaks.

#### Joystick Control Removal Instructions:

7. At the auger clutch engagement handle (LH side), loosen the jam nut on the clutch engagement cable swivel and unscrew the swivel from the "Z" fitting. See Figure 3.

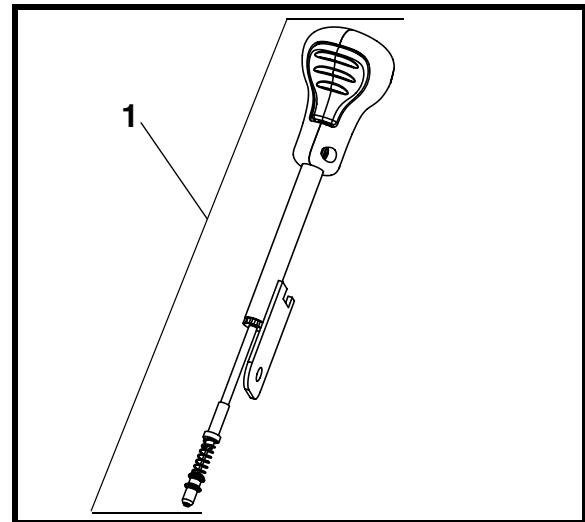


FIGURE 1

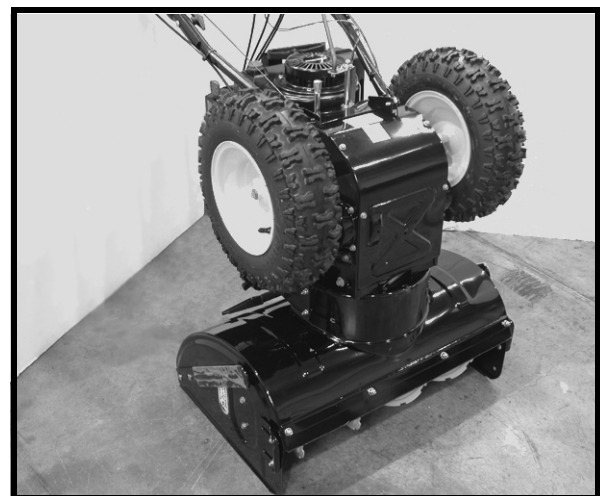
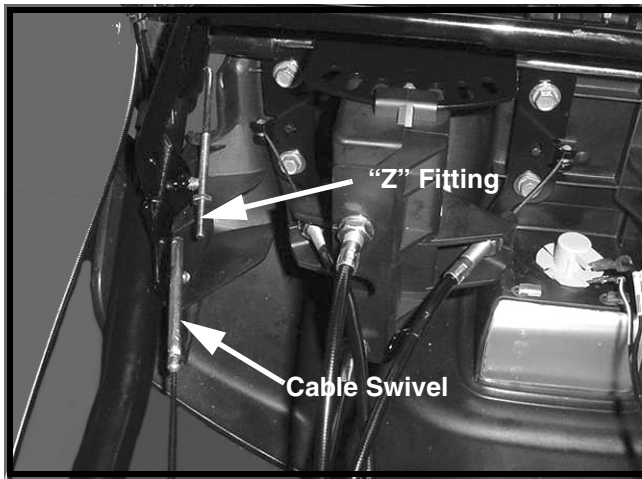
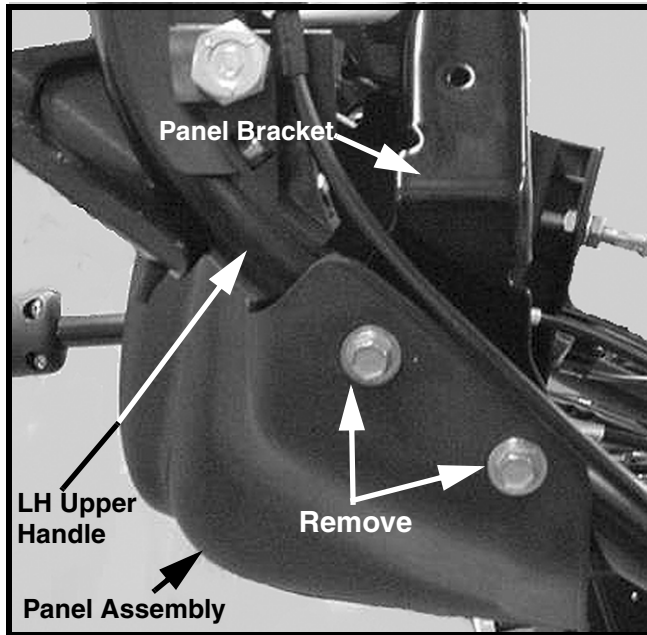


FIGURE 2



**FIGURE 3**

8. Remove and save the two self tapping bolts that attach the panel assembly and LH upper handle to the panel bracket. . See Figure 4.

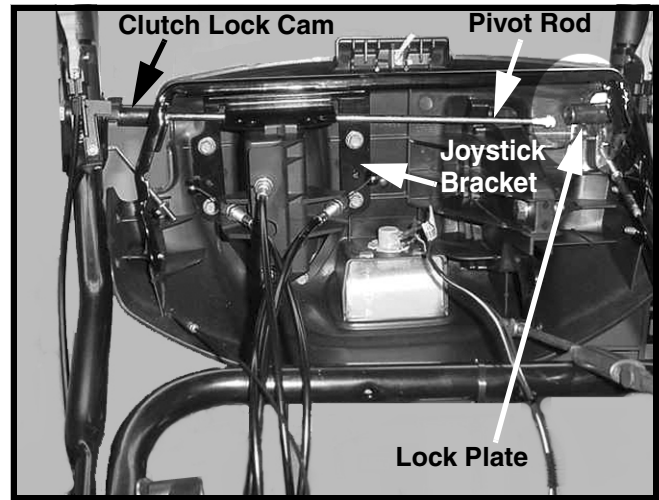


**FIGURE 4**

9. Loosen the "T" handle wing knob (approximately 5 full turns) that secures the LH upper handle to the lower handle. It is not necessary to remove the "T" handle wing nut from the carriage bolt.

10. Carefully lift the LH upper handle up while pushing down on the LH side of the panel assembly so that the LH upper handle can be moved to the outside (left) of the panel assembly. See Figure 5.

11. Moving the LH upper handle out from the panel assembly, see Figure 5, will provide the needed clearance to be able to remove the pivot rod from the lock plate on the RH upper handle.



**FIGURE 5**

12. Carefully remove the pivot rod from the clutch lock cam on the LH upper handle by sliding it to the right and out from between the joystick bracket and chute control housing. Note, for reassembly later, that the ends of the pivot rod are "D" shaped and only go into the mating lock plate and clutch lock cam in one way.

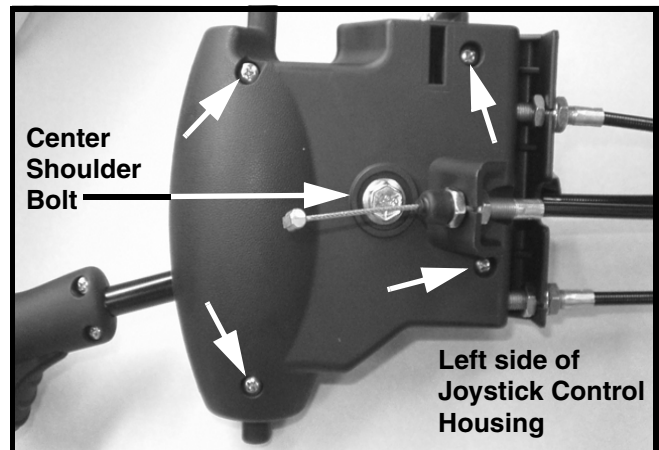
13. Remove the six (6) screws securing the joystick bracket to the panel. Remove the joystick control assembly with joystick bracket.

14. Depress the joystick trigger to retract the detent lock pin from the joystick bracket slot, rotate the joystick bracket to clear the joystick housing guide slot and maneuver the bracket off of the joystick housing.

15. It is not necessary to disconnect the pulley/cables assembly at the discharge chute deflector nor the chute rotation pulley/cable assembly from the unit. However, an assistant would facilitate repair. Disconnecting the control assemblies would provide workbench support.

#### **Joystick Control Housing Disassembly:**

15. Remove the four (4) screws from on the left side of the joystick control housing. See Figure 6.



**FIGURE 6**

16. To separate the right and left control housing halves, hold the center shoulder bolt head (left housing half) using a 1/2" wrench or socket and remove the hex lock nut (right housing half) with a 7/16" wrench or socket. **DO NOT remove the bolt from the control housing assembly at this time.**

17. With the joystick control assembly positioned as shown in Figure 6, carefully separate the left half of the control housing from the right half making sure that the bolt and the chute deflector pulley stay with the left housing half. The joystick lever will come off the center shoulder bolt and remain attached to the right half because the detent lock pin/spring assembly is snapped into the right half of the housing. See Figure 7.

18. With the halves separated, use a flat blade screwdriver through the opening on the outside of the right half to push out the cable end ferrule of the detent lock pin/spring assembly from the right half of the control housing, see Figure 7 inset.

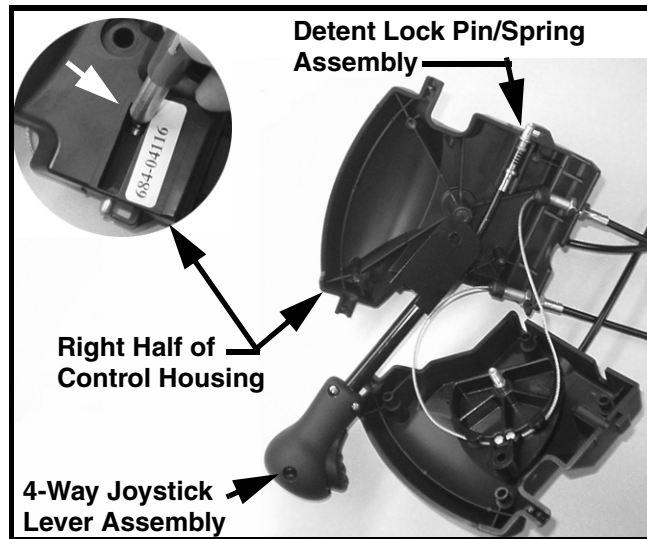


FIGURE 7

19. Remove the defective 4-Way joystick lever assembly and discard. This concludes the disassembly.

#### 4-Way Joystick Lever Assembly Replacement:

20. Refer to Figure 8. Position the new 4-Way Joystick Lever Assembly with its notched plate up as shown on the inside of the right housing half.

21. Position the cable end ferrule of the detent lock pin/spring assembly into the right half of the control housing's retaining slot and press in until it snaps firmly into the retaining slot. See Figure 8.

22. Ensure that the detent lock pin is set properly into the retaining slot as shown in Figure 9.

23. Before placing the two joystick housing halves together remove the shoulder bolt from the left housing half and insert it into the right housing half. Place the Joystick Lever Assembly (Item 1) onto the center shoulder bolt as shown in Figure 10.

24. Make sure that the cable's rubber seal caps are set completely down on the threaded cable ends as shown in Figure 10. Ensure that the chute deflector control cables are positioned within their guides as shown in Figure 11.

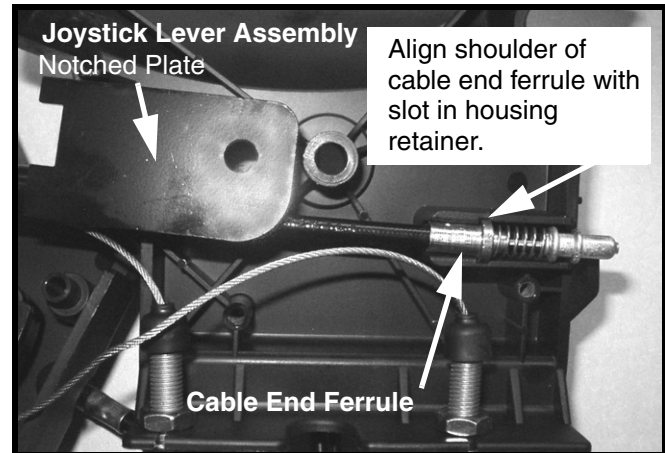


FIGURE 8

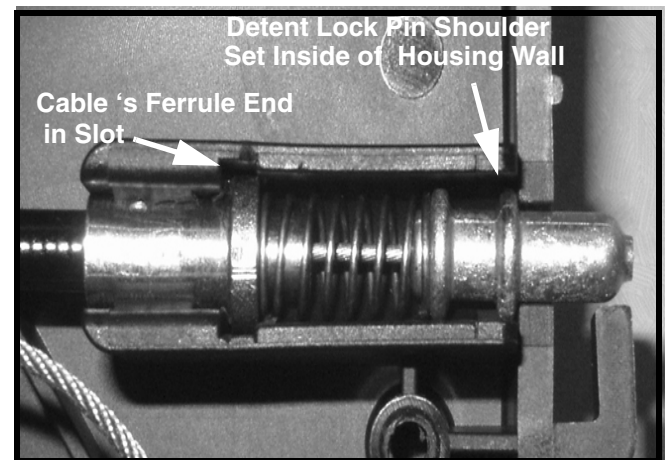


FIGURE 9

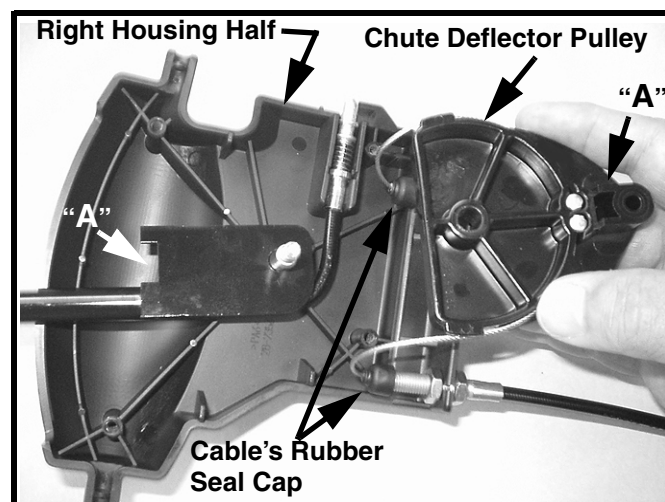


FIGURE 10

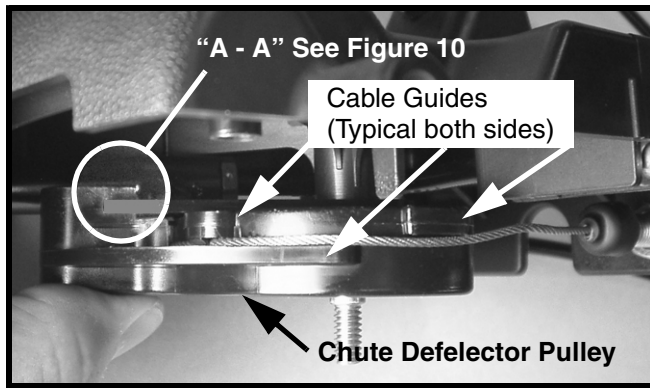


FIGURE 11

25. Holding the right housing half with the joystick lever assembly installed in your right hand place the chute deflector cable's/pulley sub-assembly onto the center shoulder bolt as shown in Figure 11.

**NOTE:** Ensure that both chute deflector cables are properly routed between the pulley guides as shown in Figure 11. If you had removed the discharge chute's deflector mechanism or just it's cables at the discharge chute, it may be necessary to pull any excess cable from the joystick control housing to ensure proper cable routing.

26. Carefully place the left housing half onto the right housing half over the center shoulder bolt. If all cables and fittings are in the proper position the housing halves will seat snugly without the housing screws. If the housing halves do not seat evenly open housing and correct condition.

27. Re-install the hex lock nut removed in Step 16 and gently tighten.

28. Re-install the four (4) housing screws removed in Step 15.

29. Test joystick trigger operation. Depress and release the joystick trigger. The silver detent lock pin should easily retract into the joystick housing and then fully extend on release. There should be no binding or excessive force required to operate the detent lock pin trigger.

This completes the 4-Way Joystick Lever Assembly replacement.

#### Re-Installation of the Joystick Control Assembly:

30. Re-install the assembled joystick control into the snow thrower in reverse order of the **“Joystick Control Removal Instructions”**.

31. If the chute deflector or chute rotation cables where not removed or loosened at their threaded ends re-adjustment should not be necessary. If after re-installation of the joystick control assembly the chute rotation

or chute deflector is found not to have full travel, cable adjustment is required.

#### Joystick Control Cable Adjustment:

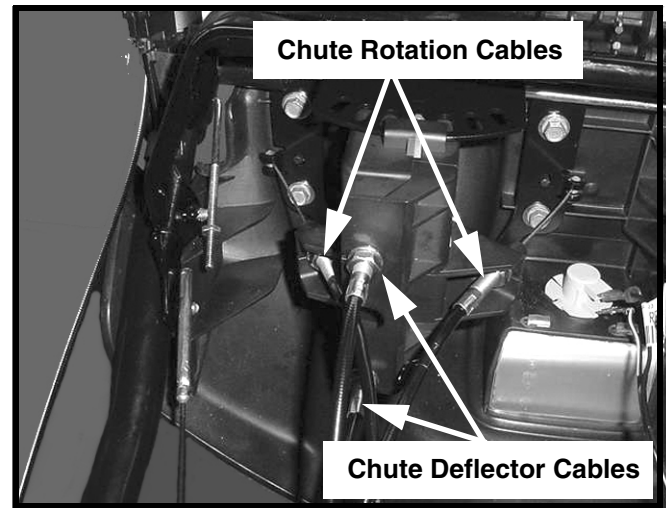


FIGURE 12

32. Select the corresponding two cables of the chute motion requiring adjustment. See Figure 12.

33. Using a 1/2" wrench, loosen the upper and lower hex nuts found on one of the cable adjusters.

34. Grasp the threaded metal cable housing and gently push upward to take up slack (usually no more than 1/4 inch) in the cable before retightening both hex nuts.

35. Repeat for the other corresponding cable.

36. Repeat Steps 33 through 35 until the chute rotation or deflector motion is obtained.

37. When properly set the amount of threaded end showing below the bottom hex nut on corresponding control cables should be approximately equal.

38. Refer to the Operator's Manual for proper auger clutch and wheel drive clutch cable adjustments.