



Service Kit

753-04864

Date: 9/8/2004

Subject: Joystick Control Housing Replacement

Models Affected: 2004-2005 and later 2 Stage Snow Thrower models with Discharge Chute Control Joystick (2-Way and 4-Way)

PURPOSE: Use this service kit when repairing the joystick control housing. The individual components of this assembly are not available separately and are only serviced with this 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*	----	1	JOYSTICK RIGHT HOUSING HALF
2*	----	1	JOYSTICK LEFT HOUSING HALF
3	710-04353	4	SCREW: #8 x 1.0" PLASTITE
4*	769-01369	1	THIS INSTRUCTION SHEET

* - Items so designated 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. If so equipped (4-Way Control), use the joystick to 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.

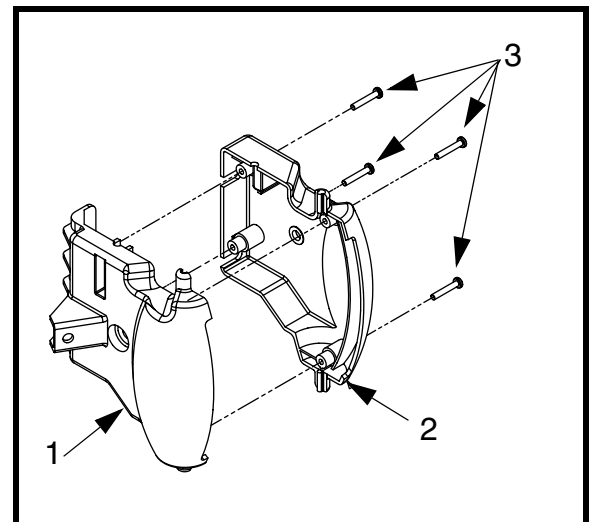


FIGURE 1

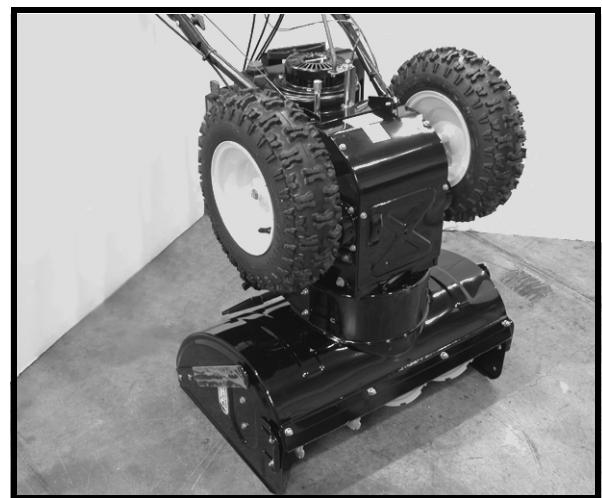


FIGURE 2

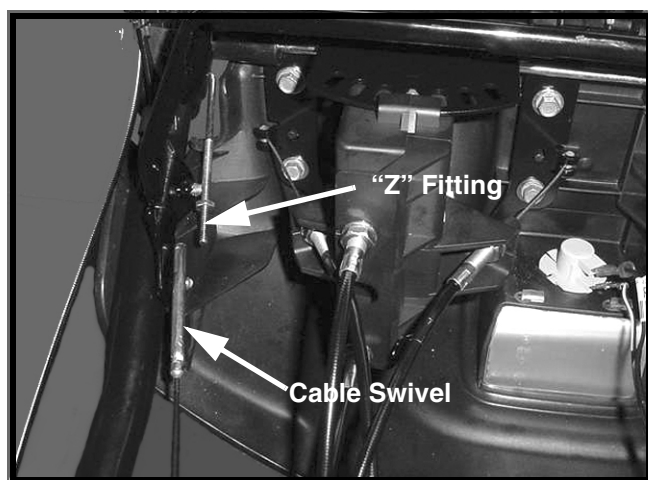


FIGURE 3

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.

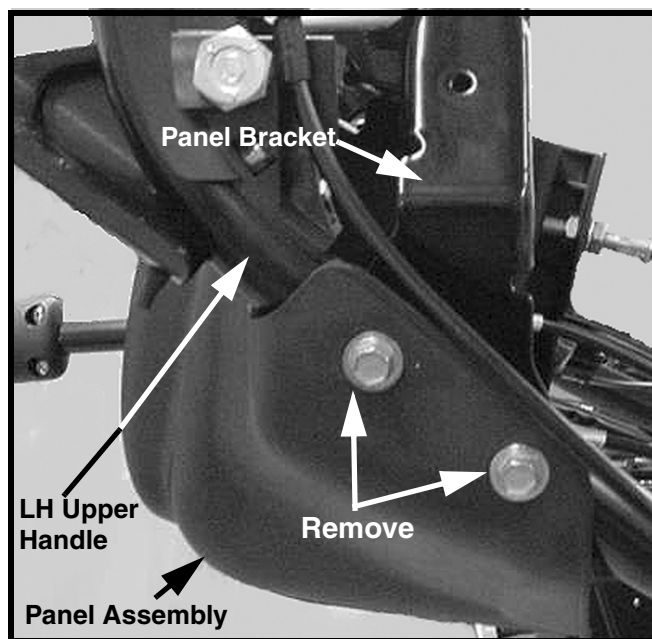


FIGURE 4

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.

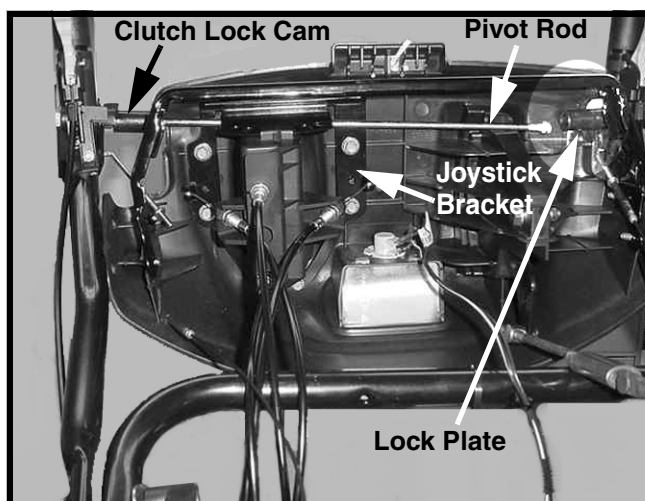


FIGURE 5

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.

Proceed for the 4-Way Chute Control Joystick. (For 2-Way Chute Control Joystick Skip to Step 15.)

14. For units equipped with the 4-Way joystick -depress the joystick trigger to retract the detent lock pin from the joystick bracket slot, rotate the joystick detent bracket to clear the joystick housing guide slot and maneuver the bracket off of the joystick housing.

15. For units equipped with the 2-Way joystick, remove the screw securing the joystick detent bracket to the joystick housing, rotate the joystick detent bracket to clear the joystick housing guide slot and maneuver the bracket off of the joystick housing.

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

Joystick Control Housing Disassembly:

Proceed for the 4-Way Chute Control Joystick. (For 2-Way Chute Control Joystick Skip to Step 17.)

16. Remove both chute rotation cables as follows. Refer to Figure 6. Slide the rubber seal cap off from the threaded cable end. Using a 1/2" open end wrench

and pair of pliers, loosen and remove the hex jam nut nearest the end of the threaded ferrule. To retain current cable adjustment, DO NOT move the lower hex nut. See Figure 6.

17. Slide the threaded cable end out of the housing's cable bracket hole and slip the cable out through the slot in the cable bracket. See Figure 6.

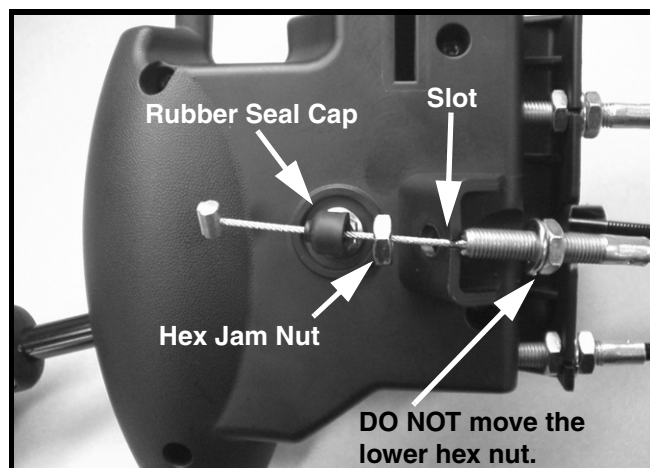


FIGURE 6

18. Remove the four (4) screws from on the left side of the joystick control housing. See Figure 7.

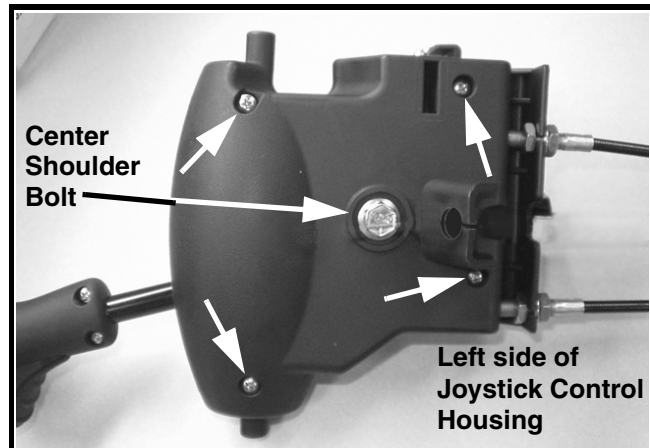


FIGURE 7

19. 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.**

20. With the joystick control assembly positioned as shown in Figure 7, 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.

Proceed for the 4-Way Chute Control Joystick. (For 2-Way Chute Control Joystick Skip to Step 23.)

NOTE: The 4-Way Chute Control joystick lever will remain attached to the right half because the detent lock pin/spring assembly is snapped into the right half of the housing. See Figure 8.

21. 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 8 inset.

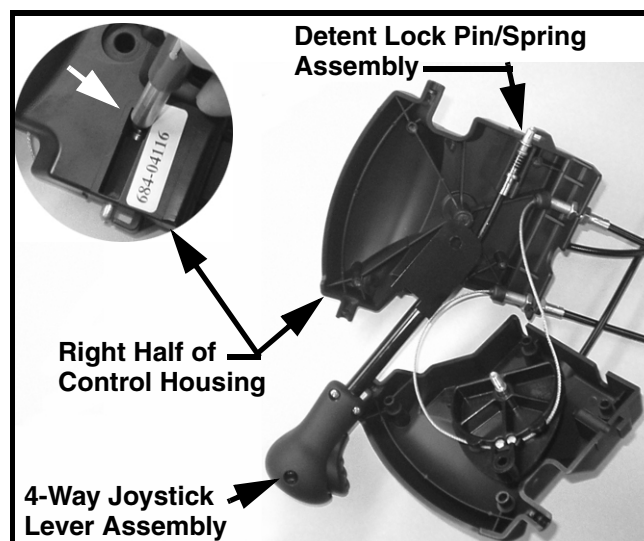


FIGURE 8

22. Remove the 4-Way joystick lever assembly.

23. Remove the center shoulder bolt from the left housing half.

NOTE: Mark the each chute deflector cable as to its proper mounting location in the right housing half.

24. Remove both chute deflector cables from the right housing half in the same manner as outlined in Steps 16 and 17. Discard the old joystick control housing halves.

Proceed for the 4-Way Chute Control Joystick. (For 2-Way Chute Control Joystick Skip to Step 28.)

25. Refer to Figure 9. Position the 4-Way Joystick Lever Assembly with its notched plate up as shown on the inside of the new right housing half.

26. Position the cable end ferrule of the detent lock pin/spring assembly end into the new right housing half of the housing's retaining slot and press in until it snaps firmly into the retaining slot. See Figure 9.

27. Ensure that the detent lock pin is set properly into the retaining slot as shown in Figure 10.

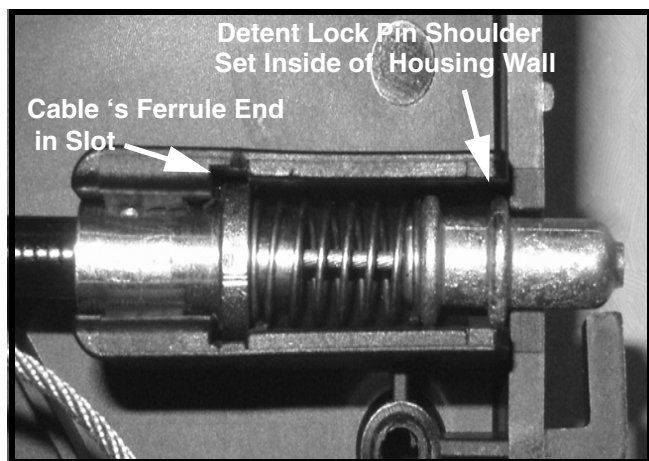


FIGURE 10

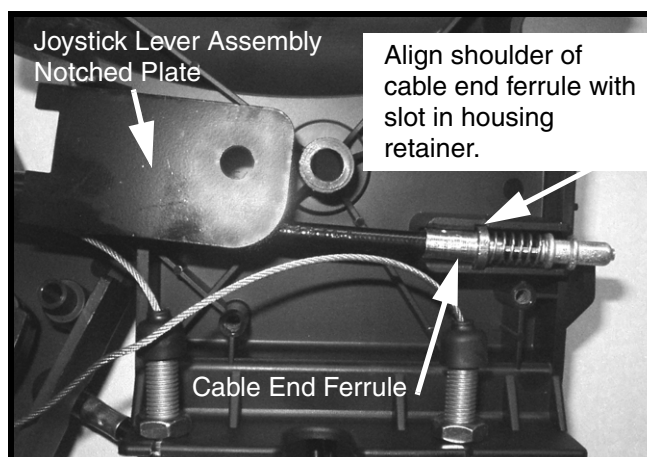


FIGURE 9

28. Using the new right housing half, re-install the two chute deflector cables, removed in Step 24, in their correct positions.

29. Insert the center shoulder bolt into the right housing half. Place the joystick lever assembly onto the center shoulder bolt as shown in Figure 11.

30. Re-install joystick lever assembly with its notched plate up as shown on the inside of the right housing half. See Figure 11. (4-Way Chute Control joystick lever assembly shown.)

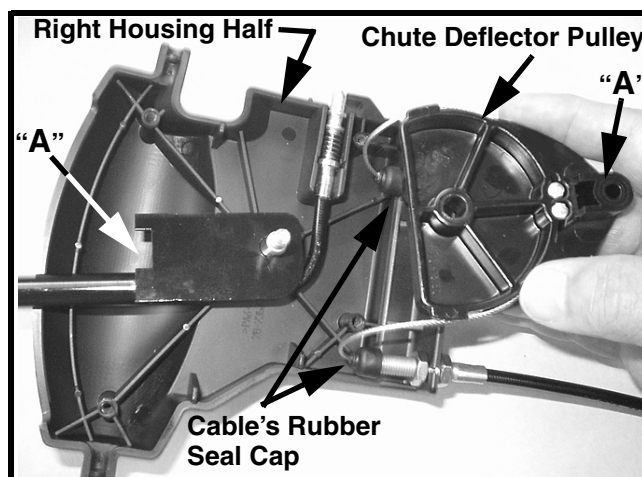


FIGURE 11

31. Make sure that the cable's rubber seal caps are set completely down on the threaded cable ends as shown in Figure 11. Ensure that the chute deflector control cables are positioned within their guides as shown in Figure 12.

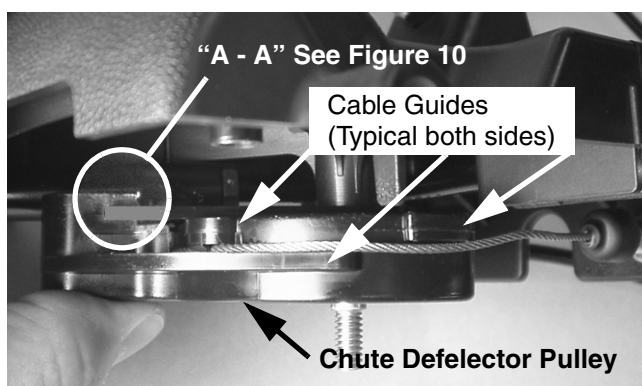


FIGURE 12

32. 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 12.

NOTE: Ensure that both chute deflector cables are properly routed between the pulley guides as shown in Figure 12. If you had removed the discharge chute's deflector mechanism or just its cables at the discharge chute, it may be necessary to pull any excess cable from the joystick control housing to ensure proper cable routing.

33. 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.

34. Re-install the hex lock nut removed in Step 19 and gently tighten.

35. Re-install the four (4) housing screws removed in Step 18.

Proceed for the 4-Way Chute Control Joystick. (For 2-Way Chute Control Joystick Skip to Step 37.)

36. 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.

37. This completes the Joystick Control Housing replacement.

Re-Installation of the Joystick Control Assembly:

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

39. If the chute deflector or chute rotation cables were not removed at the chute deflector or at the chute rotation pulley assembly, cable re-adjustment may not be necessary. If after re-installation of the joystick control assembly the chute rotation (if so equipped) and/or chute deflector is found not to have full travel, cable adjustment is required.

Joystick Control Cable Adjustment:

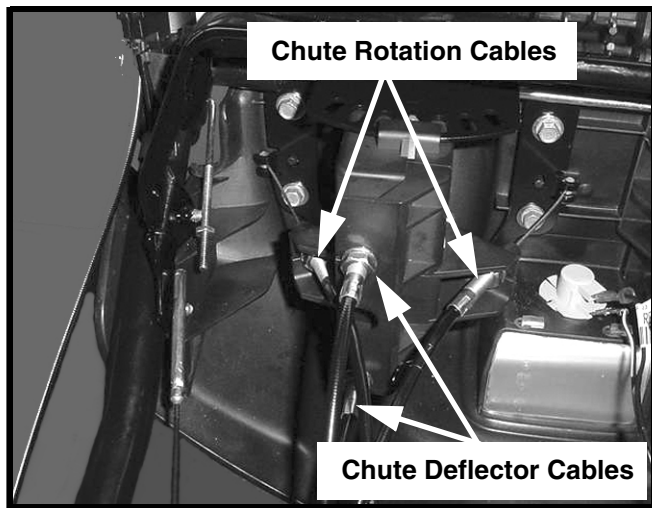


FIGURE 13

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

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

42. 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.

43. Repeat for the other corresponding cable.

44. Repeat Steps 41 through 43 until the chute rotation and/or deflector motion is obtained.

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

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

NOTES