INSTRUCTION BULLETIN

No. 340792
Machine: Sentinel
Published: 04-2011
Rev. 01

NOTE: DO NOT DISCARD the Parts List from the Instruction Bulletin. Place the Parts List in the appropriate place in the machine manual for future reference. Retaining the Parts List will make it easier to reorder individual parts and will save the cost of ordering an entire kit.

NOTE:Numbers in parenthesis ( ) are reference numbers for parts listed in Bill of Materials.

Installation instructions for **kit number 9001686**

SYNOPSIS:

This kit contains the parts needed to install a severe duty conveyor kit on Sentinel sweepers. Please follow step-by-step instructions.

SPECIAL TOOLS / CONSIDERATIONS: NONE

(Estimated time to complete: 6 hours)

When assembling/disassembling/installing/removing hydraulic components:

1. Thoroughly clean outside of hydraulic components **before** disconnecting hydraulic hoses or fittings to prevent contaminants from entering the system.
2. Cap disconnected hoses and open ports to prevent contaminants from entering the system.
3. Flush hoses and fittings with air or hydraulic fluid to prevent contaminants from entering system.
4. Mark hydraulic hoses with location of where they are attached. Markings make it easier to reconnect hoses to proper locations during reassembly.
5. Discard all hydraulic fluid drained from the system. Use only new approved hydraulic fluid to replenish hydraulic reservoir.

PREPARATION:

1. Park the machine on a clean level surface and engage the parking brake.
2. Raise the hopper and engage the hopper support pin.

WARNING: Lift arm pinch point. Stay clear of hopper lift arms.

WARNING: Raised hopper may fall. Engage hopper support pin.

3. Turn off the machine and remove the key.

FOR SAFETY: Before leaving or servicing machine, stop on level surface, turn off machine, set parking brake, and remove key.

INSTALLATION:

1. Use a cable tie to tie down the hopper down switch located underneath the left corner of the hopper. This allows the sweep mode to be operated while the hopper is tilted. Refer to Fig. 1.

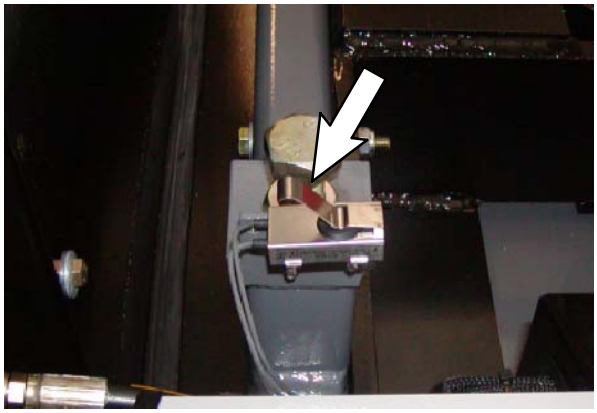

FIG. 1

2. Place a 5–6” block (both blocks must be the same height so the conveyor does not tip to one side) underneath each side of the conveyor, start the machine, lower the conveyor onto the blocks, turn off the machine, and remove the key from the ignition. Refer to Fig. 2.

FIG. 2

FOR SAFETY: Before leaving or servicing machine, stop on level surface, turn off machine, set parking brake, and remove key.

3. Disconnect the battery cables from the batteries.

WARNING: Always disconnect battery cables from machine before working on electrical components.

4. Remove the upper rear panel and the lower rear panel from the conveyor. Set aside both panels and all hardware.

5. If the roll pins (A) in the bar retainers (B) have been damaged or sheared, place supports between the upper cross brace in the conveyor and the upper conveyor drive shaft. Refer to Fig. 3 and Fig. 4.

FIG. 3

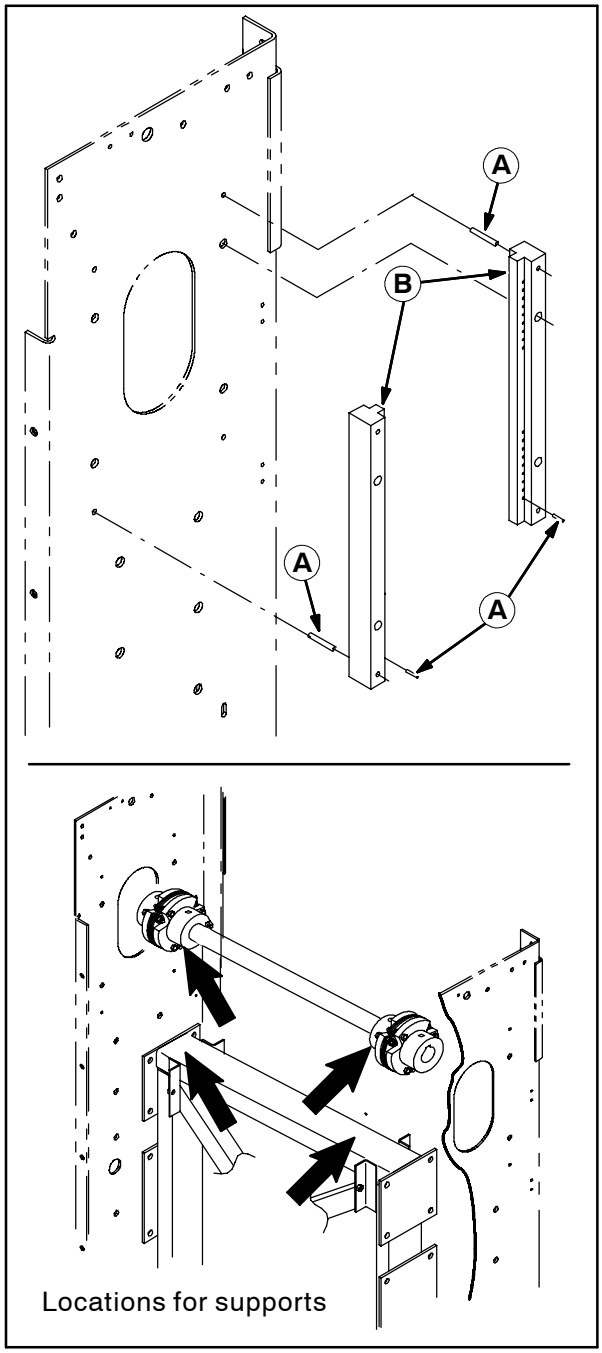

FIG. 4

NOTE: Refer to Fig. 5 for locations of hoses and components disassembled in Steps 6 through 12.

6. Disconnect the 32” hose (771076) from the right tension cylinder and tie up the hose so it is higher than the reservoir.

7. Cut the cable ties securing the 148” hose (771074), 59.5” hose (767241), and 68” hose (771036) together.

8. Remove the 68” hose (771036) from the right hydraulic cylinder and the conveyor/main brush valve and cap the open port with a hydraulic cap fitting (13).

9. Disconnect the 59.5” hose (767241) from the left hydraulic cylinder and the conveyor/main brush valve and cap Port C22 with a hydraulic cap fitting (13).

10. Disconnect the 148” hose (771074) from the left hydraulic cylinder, pull the hose through the cross tunnel, and remove the hose from the right hydraulic cylinder.

11. Use cable ties (14) to secure the remaining hoses together.

12. Remove the 32” hose (771076) and 90° fitting from the reservoir and plug the open port with plug fitting (12).

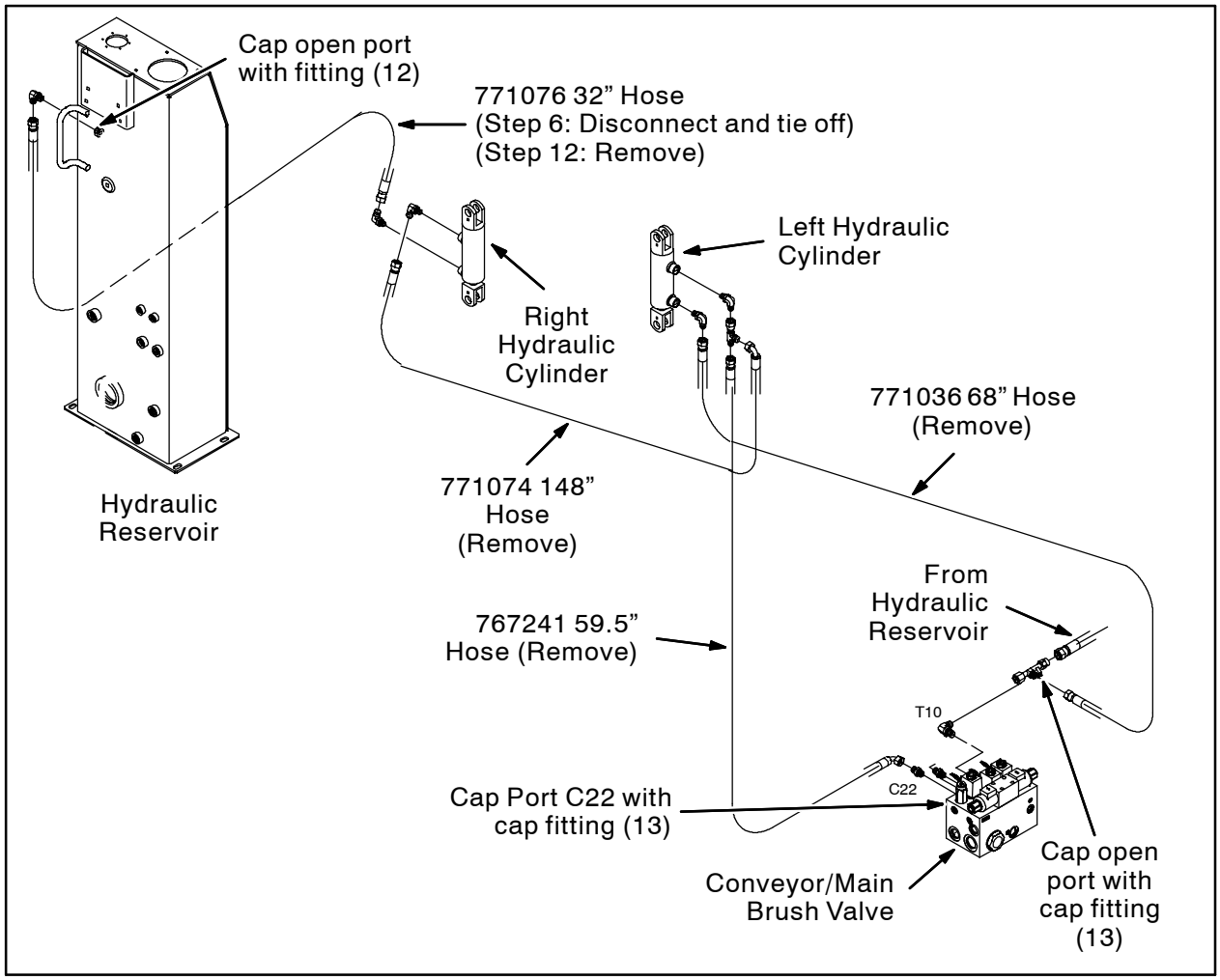

FIG. 5

13. Loosen the spring cups to remove tension from the cylinders. Do not loosen the spring cups enough to block access to the upper cylinder clevis pins. Refer to Fig. 6.

NOTE: A 21mm 12 point socket works best for loosening/removing the spring cups.

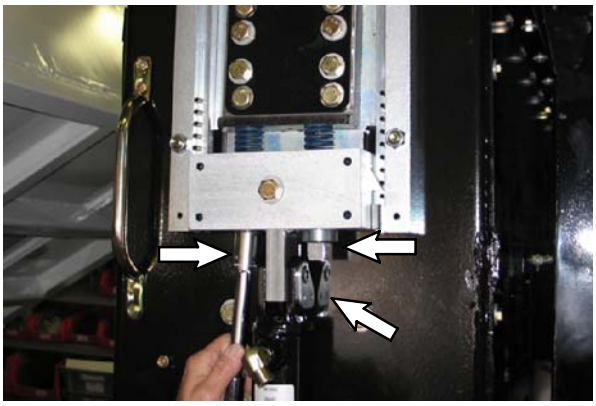

FIG. 6

14. Remove the clevis pins from the left and right hydraulic cylinders and remove the cylinders from the conveyor. Set the clevis pins and mounting hardware aside. Discard both hydraulic cylinders. Refer to Fig. 7 and Fig. 8.

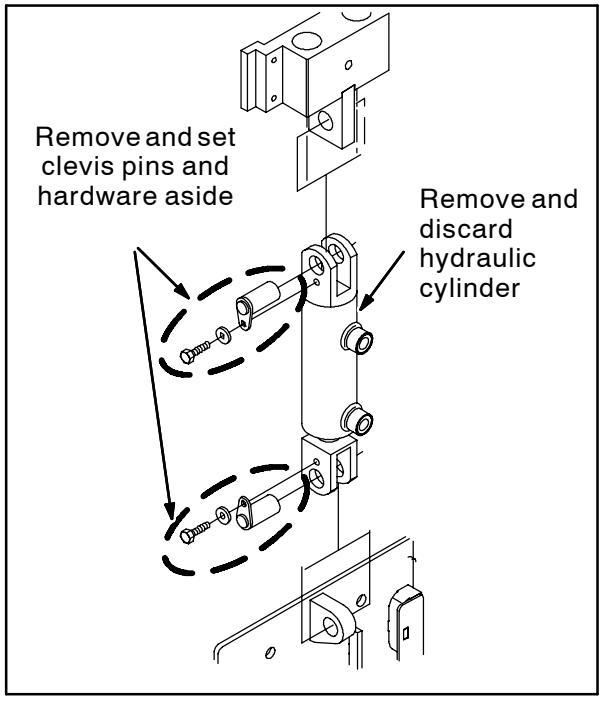

FIG. 7

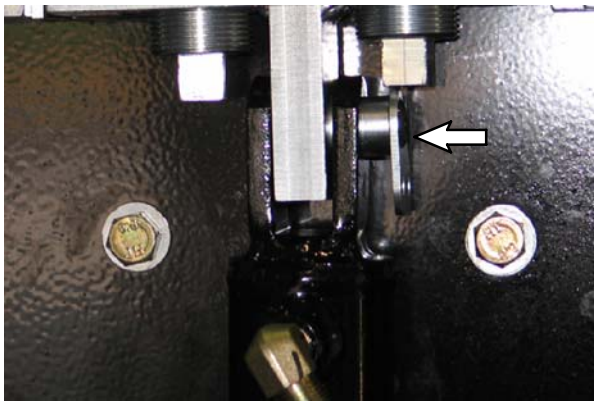

FIG. 8

15. Remove the spring cups and springs from the conveyor. Discard the springs and washers (if the conveyor is equipped with washers). Set the spring cups aside. Refer to Fig. 9.

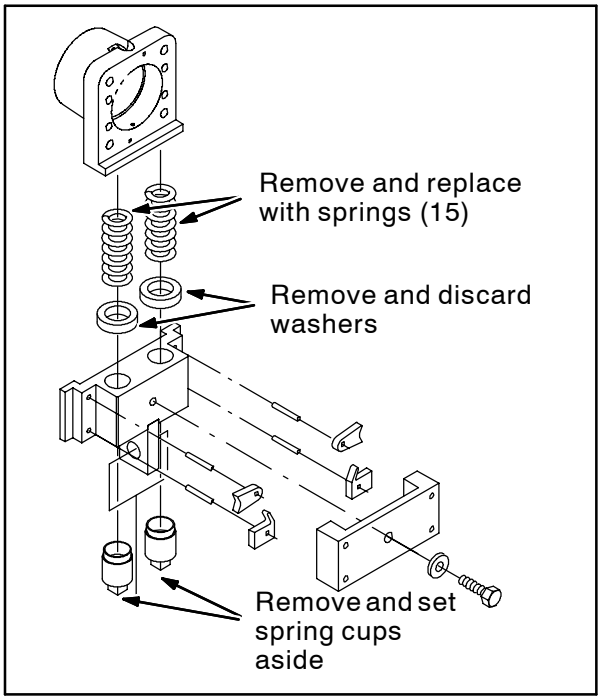

FIG. 9

16. Use the four spring cups to install the new springs (15) onto the conveyor. If necessary, apply a light coat of oil to the cup threads to make installation easier. Refer to Fig. 9.

NOTE: Machines below serial number 6684, Complete Steps 17-28. Machines above serial number 6684, proceed to Step 22.

17. Wash all dirt and debris from around the areas where the right conveyor lift plate and the left conveyor lift plate are mounted and the areas of both the left and the right conveyor lift groups.

18. Mark the front and rear locations of were both the left and the right conveyor lift groups are mounted to the frame of the machine.

19. Remove the hardware holding the left and the right conveyor lift groups from the respective conveyor lift plates and the frame of the machine. Let the conveyor lift group assemblies hang down by the hydraulic hoses. Set all mounting hardware aside. Refer to Fig. 10 and Fig. 11.

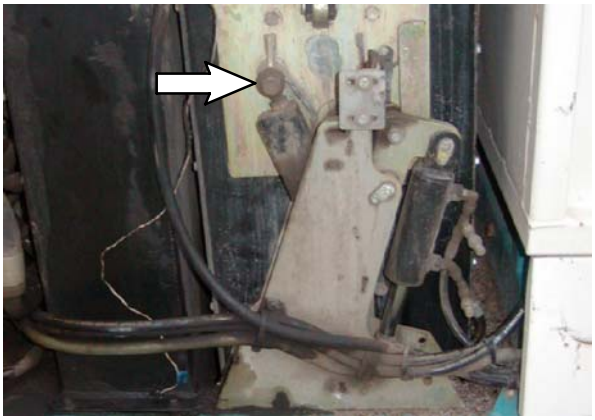

FIG. 10

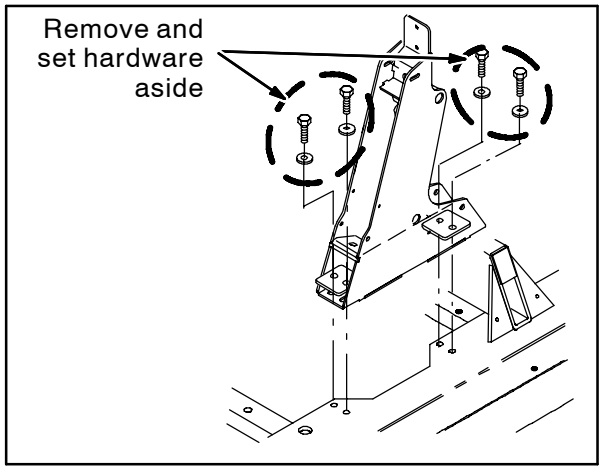

FIG. 11

NOTE: It may be necessary to clean dirt and debris from the areas where the lift plates are mounted to the conveyor to access hardware holding the conveyor lift plates onto the conveyor.

20. Remove the right conveyor lift plate (1007023) and the left conveyor lift plate (1007039) from the conveyor. Discard the lift plates and hardware. Refer to Fig. 12.

NOTE: It may be necessary to cut or torch the hardware holding the right conveyor lift plate and left conveyor lift plate onto the conveyor.

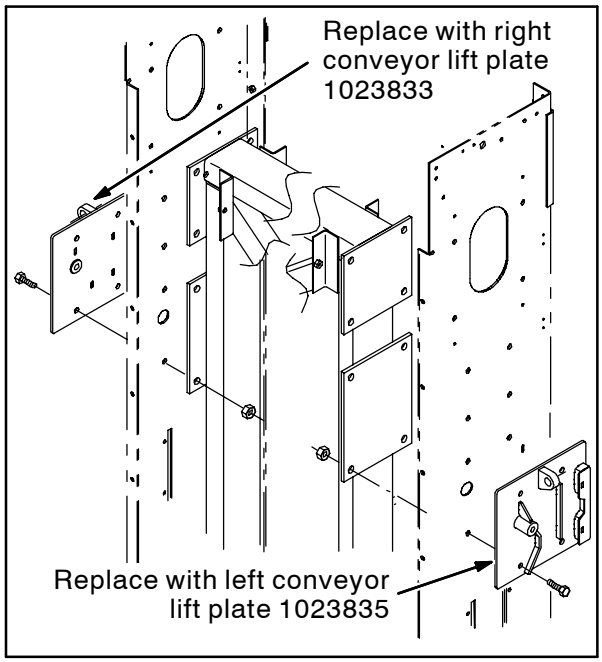

FIG. 12

21. Use six M12 bolts to loosely install each new conveyor lift plate onto the conveyor. Do not tighten the fasteners.

*NOTE: The conveyor lift plates **are** **not** interchangeable. The right lift plate must be mounted to the right side of the conveyor and the left lift plate must be mounted to the left side of the conveyor.*

22. Use saved clevis pins to attach the threaded clevis weldments (1) to the lift plates. Refer to Fig. 13.

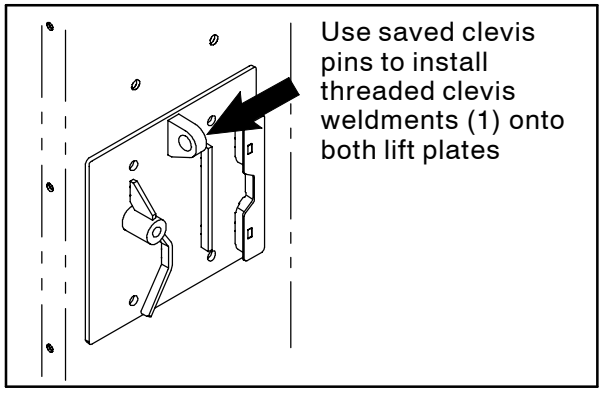

FIG. 13

23. Thread the jam nut (4), hex nut (3), and washer (5) completely down onto the threaded clevis weldment (1). Refer to Fig. 14.

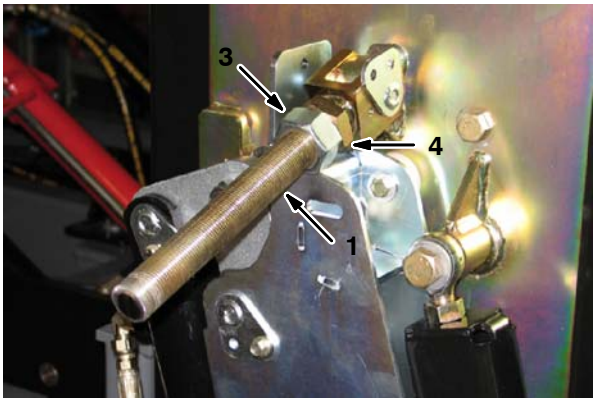

FIG. 14

24. Slide the tube clevis weldments (2) onto the threaded clevis weldments (1) and use the clevis pins removed from the hydraulic cylinder to install the threaded clevis weldments onto the spring blocks on the right and left side of the conveyor assembly. Refer to Fig. 15 and Fig. 16.

NOTE: Machines above serial number 6684, proceed to Step 29.

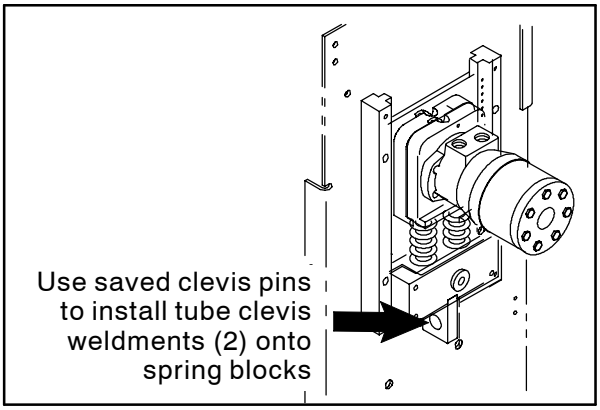

FIG. 15

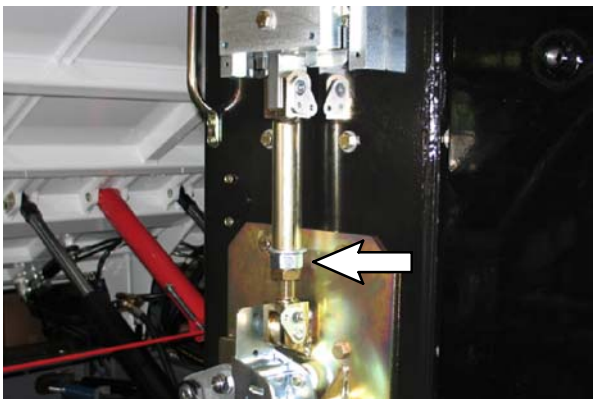

FIG. 16

25. Tighten the M12 bolts holding the right and left conveyor lift plates onto the conveyor assembly. Torque to 64-83 Nm (47-61 ft. lbs.). Refer to Fig. 12.

26. Reinstall the left and the right conveyor lift groups onto the conveyor assembly at the previously marked locations on the frame. If there is doubt about positioning, push the towers forward in the slots. Be sure both roller guides are in the conveyor lift plate tracks. Refer to Fig. 17.

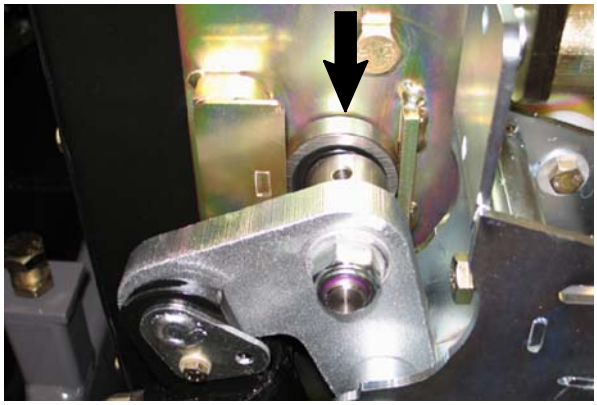

FIG. 17

27. Adjust the left and the right conveyor lift groups so the rear cam roller pin is lightly rubbing against the conveyor lift plates.

28. Rotate the rear roller cam so the roller is as far back as possible and the front plastic roller is as far forward as possible.

29. Tighten the hex nuts (3) until the tops of the spring blocks are within 1/8” from the bottom of each bearing housing. Refer to Fig. 18 and Fig. 19.

FIG. 18

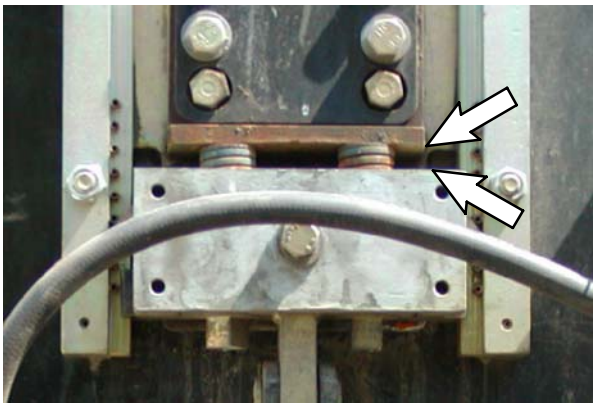

FIG. 19

NOTE: This 1/8” distance must be maintained for the entire life of the chain.

30. Tighten the jam nuts (4) against the hex nuts (3) tightened in the previous step. Refer to Fig. 19.

31. Remove the supports from under the upper shaft.

32. Check distance between the tops of the spring blocks and the bottoms of the bearing housings. The distance should still be 1/8”. Make necessary adjustments. Refer to Fig. 19.

33. Remove and discard the block retainers and hardware. Refer to Fig. 20.

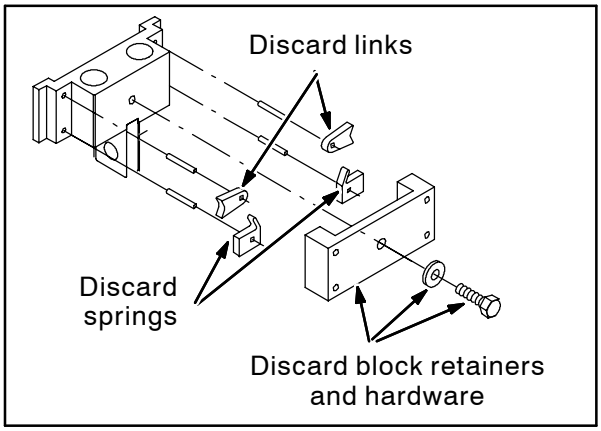

FIG. 20

34. Remove and discard the springs and links. Refer to Fig. 20.

35. If leaf mode stops are not being used, remove them from the conveyor assembly. Refer to Fig. 21.

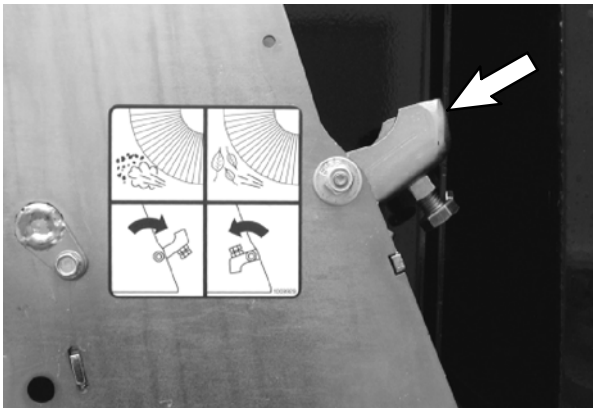

FIG. 21

36. Install the pressure gauge (test kit 771052) onto port G2 on the hydraulic solenoid valve. Refer to Fig. 22.

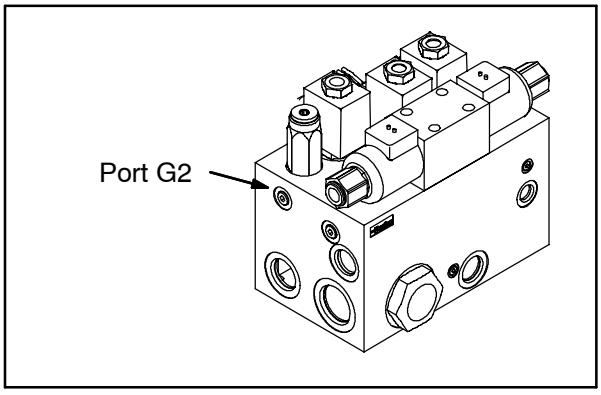

FIG. 22

37. Slide wire seal (11) onto each wire of the pressure switch (6). Position wires seals so the narrow ends point out away from the body of the pressure switch. Refer to Fig. 23.

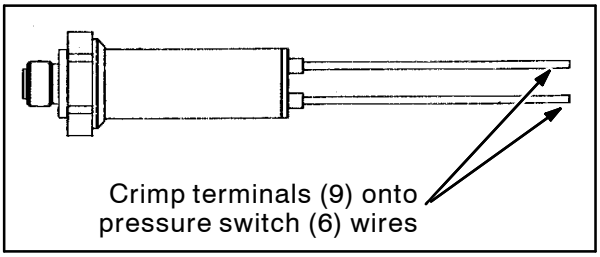

FIG. 23

38. Crimp a terminal (9) onto each wire from the pressure switch (6). Crimp the terminals so the long fingers crimp onto the narrow ends of the wire seals (11). Carefully tug each terminal to ensure it is firmly crimped onto the wires. Refer to Fig. 23.

39. Insert the terminals (11) crimped onto the wires from the pressure switch (6) into the connector (8). **Do Not** force the terminals into the connector. There is only one way they fit into the connector. Refer to Fig. 24.

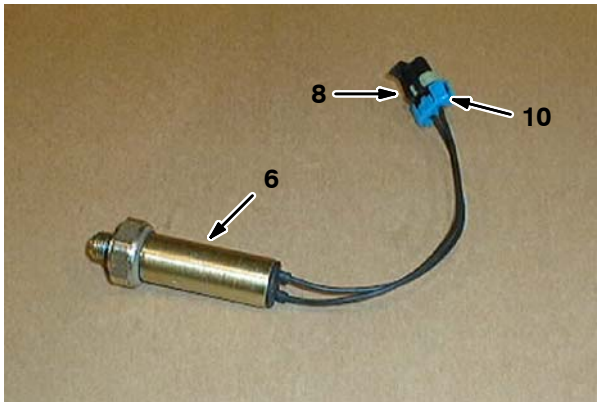

FIG. 24

40. Snap the blue secondary lock (10) onto the back of the connector (8). Refer to Fig. 24.

41. Carefully roll the o-ring (7) onto the threaded end of the pressure switch (6).

42. Apply a thin coat of oil onto the o-ring (7) and the threaded end of the pressure switch (6).

43. Remove the pressure switch from port SW of the hydraulic solenoid valve and install the newly assembled pressure switch (6) into port SW. Refer to Fig. 25.

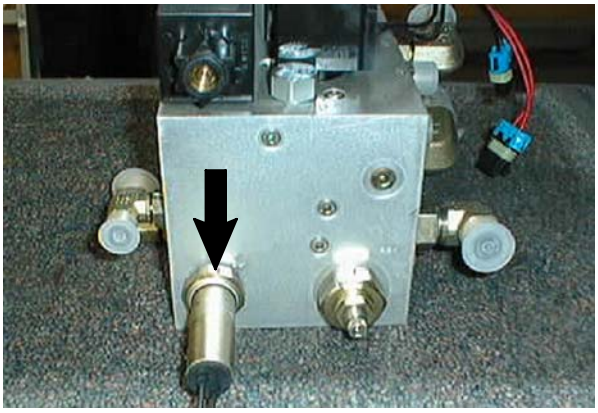

FIG. 25

44. Connect the connector (8) on the new pressure switch (6) to the wire harness.

45. Remove the relief valve located in port RV3 of the hydraulic solenoid valve. Refer to Fig. 26.

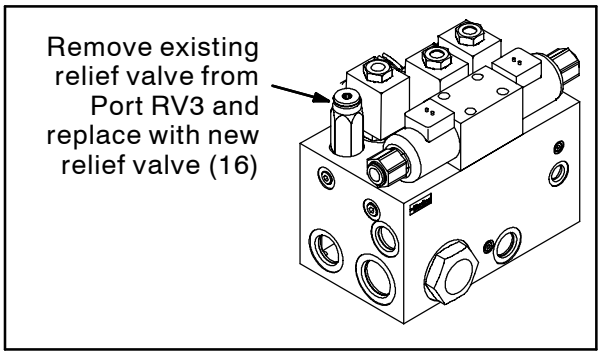

FIG. 26

46. Install relief valve (16) into port RV3 of the hydraulic solenoid valve. Refer to Fig. 26.

47. Use cable ties (14) to neatly secure loose hoses together and out of the way of any moving components.

48. Reconnect the battery cable to the batteries.

49. If necessary, add hydraulic fluid to the hydraulic system.

50. Start the machine and observe hydraulic system for leaks.

51. Raise the conveyor and remove the blocks from underneath the conveyor.

NOTE: Two persons are required to complete the following step.

52. While one person raises the conveyor the other should observe the pressure gauge at port G2 on the hydraulic solenoid valve. When the conveyor is raised, the hydraulic solenoid valve will need to be set to (2400 psi) for the RV3 relief valve. Refer to Fig. 27.

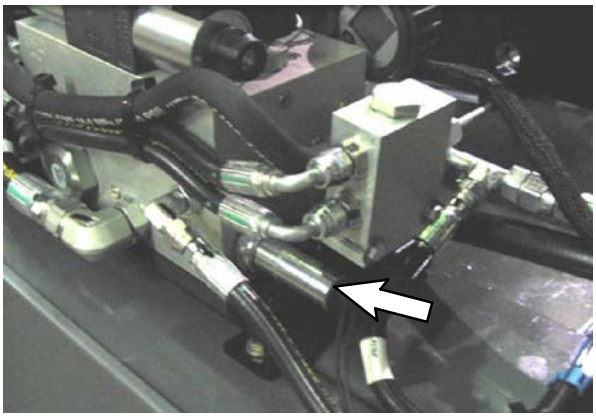

FIG. 27

53. Turn off the machine.

54. Remove the tie wrap from the hopper down switch.

55. Reinstall the back panel onto the conveyor.

Bill of Materials for Conveyor, Kit, CI, Severe Duty-(9001686)

	Ref.	Tennant Part No.	Description	Qty.
▽		9001686	Conveyor, Kit, CI, Severe Duty	1
▲	1	1023824	Clevis Wldt, Thd	2
▲	2	1023832	Clevis Wldt, Tube	2
▲	3	1026231	Nut, Hex, Std, 1.00-28 UN-2B	2
▲	4	1026239	Nut, Hex, Jam, 1.00-28 UN-2B	2
▲	5	32969	Washer, Flat, 1.00 SAE	2
▲	6	762034	Switch, Press, 12VDC 02A SPST NO 2100PSI	1
▲	7	77005	Seal, Org, .078 X 00.47ID 06	1
▲	8	78950	Connector, Fem, 2CAV [MP280 Sealed]	1
▲	9	78951	Terminal, Fem, MP280, Sealed, 18-16GA	2
▲	10	78952	Lock, Secondary, M/F 2CAV [MP280 Sealed]	1
▲	11	10917	Seal, Wire, 14/16GA [WP/MP280 Sealed]	2
▲	12	46482	Fitting, Hyd, Plug, OM06	1
▲	13	762440	Fitting, Hyd, Cap, FF06	2
▲	14	763116	Tie, Cable, Nyl, 15.3L W4.5 Max D	24
▲	15	1026193	Spring, Cmpr, 30MM D X 76MM L	4
▲	16	22616	VR, Cart, PSI CN CP	1

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