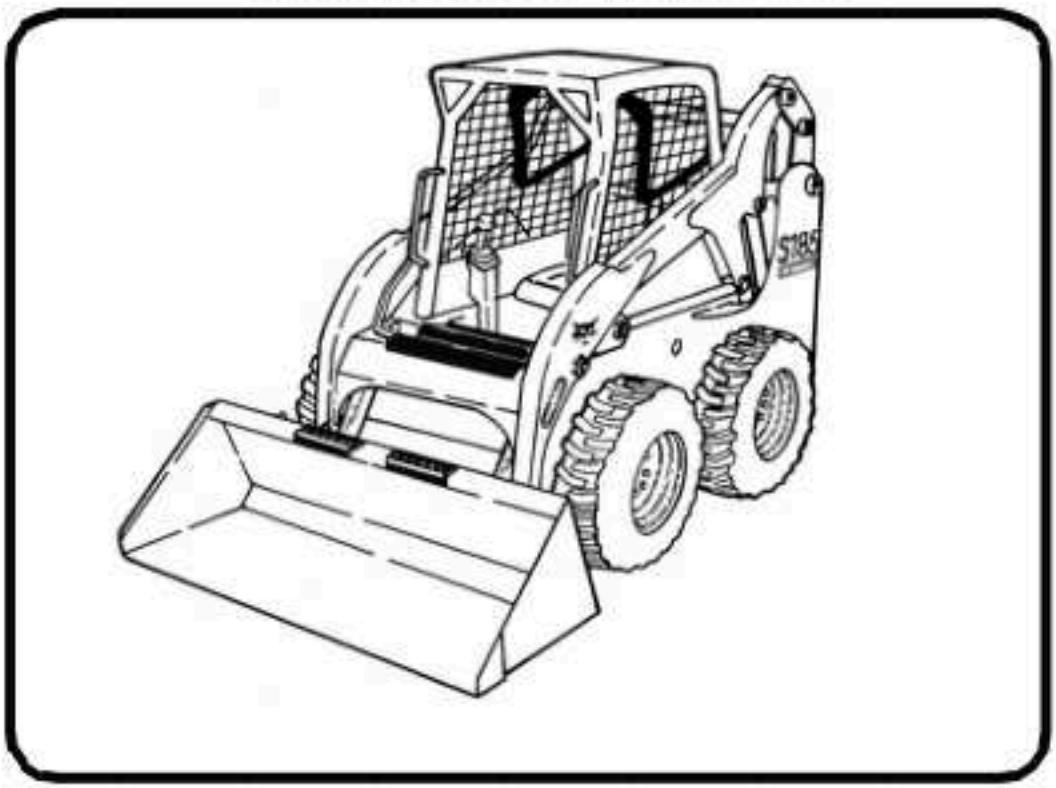
Bobcat®

Service Manual

S175/S185 Skid-Steer Loader

S/N 530111001 & Above
S/N 530211001 & Above
S/N A8NZ11001 - A8NZ59999
S/N A8M411001 - A8M459999
S/N A8NY11001 - A8NY59999
S/N 530311001 - 530359999
S/N 530411001 - 530459999
S/N ABRT11001 - ABRT59999



EQUIPPED WITH BOBCAT INTERLOCK CONTROL SYSTEM (BICS™)

6904132 (7-09)

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HYDRAULIC/HYDROSTATIC SCHEMATIC
WITH SJC OPTION

S175 (S/N 530111001 AND ABOVE)
(S/N 530211001 AND ABOVE)
(S/N A8M411001 - A8M459999)
(S/N A8NY11001 - A8NY59999)
(S/N A8NZ11001 - A8NZ59999)
S185 (S/N 530311001 - 530359999)
(S/N 530411001 - 530459999)
(S/N ABRT11001 - ABRT59999)

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LEGEND

1. RESERVOIR:
   Capacity . . . . . 19.2 qt. (18,2 L)
2. SPRING LOADED FILTER BY-PASS VALVE: 45-55 PSI (3,1-3,8 bar)
3. DIFFERENTIAL PRESSURE SWITCH:
   36-44 PSI (2,5-3,0 bar)
   Normally Closed
4. DRIVE MOTOR SHUTTLE VALVE
5. RELIEF/REPLENISHING VALVE - HIGH PRESSURE: 5075 PSI (350 bar)
6. RELIEF VALVE - CHARGE INLET:
   360 PSI (24,8 bar)
   at High Engine Idle
   With 140 degrees F. (60 degrees C.) Fluid
7. FRONT AUXILIARY MANUAL PRESSURE BLEED-OFF VALVE
8. HYDRAULIC PUMP . . . . . Gear Type
   16.9 GPM (64 L/min.) at High Engine Idle
9. RELIEF VALVE - MAIN:
   3250-3350 PSI (224-231 bar)
   at Front Quick Couplers
10. PORT RELIEF/ANTICAVITATION VALVE
    3500 PSI (241,3 bar)
11. ANTICAVITATION VALVE
12. SOLENOID ACTIVATED DIRECTIONAL CONTROL VALVE - AUXILIARY
13. PORT RELIEF/ANTICAVITATION VALVE:
    . . . . . (Optional)
    3500 PSI (241,3 bar)
14. LOAD CHECK VALVE
15. LIFT CYLINDER SPOOL - MADE TO RESTRICT FLOW DURING BOOM DOWN BUT NOT DURING BOOM UP
16. SOLENOID ACTIVATED DIRECTIONAL CONTROL VALVE - BICS CONTROL
17. PILOTED ACTIVATED DIRECTIONAL CONTROL VALVE - TILT CONTROL
18. PILOTED ACTIVATED DIRECTIONAL CONTROL VALVE - LIFT CONTROL
19. PULL BUTTON ACTIVATED DIRECTIONAL CONTROL VALVE - LIFT ARM BY-PASS
20. PILOTED ACTIVATED DIRECTIONAL CONTROL VALVE - UNLOADING SPOOL
21. PILOTED ACTIVATED DIRECTIONAL CONTROL VALVE - FLOW CONTROL SPOOL
22. FLOW DIVIDER ADJUSTMENT VALVE
23. SOLENOID ACTIVATED DIRECTIONAL CONTROL VALVE - BASE
24. SOLENOID ACTIVATED DIRECTIONAL CONTROL VALVE - ROD
25. LOAD SHUTTLE VALVE - BLEED OFF
26. SOLENOID ACTIVATED DIRECTIONAL CONTROL VALVE - TWO COIL
27. PILOT ACTIVATED DIRECTIONAL CONTROL VALVE - REAR AUXILIARY
28. RESTRICTOR - 0.140 inch (3,6 mm)
29. RESTRICTOR - 0.031 inch (0,8 mm)
30. RELIEF VALVE: 3300 PSI (228 bar)
31. FILTER - HYDRAULIC (CANISTER)
32. FILTER - CASE DRAIN (SINTERED BRONZE)
33. FILTER - BICS CONTROL VALVE (SCREEN)
34. CHECK VALVE - BUCKET POSITION VALVE
35. RESTRICTION
36. VARIABLE CAPACITY DISPLACEMENT BI-DIRECTIONAL HYDROSTATIC PUMP
37. SHUTTLE RELIEF VALVE
    (Not Adjustable - Factory Set)
    65 PSI (4,5 bar)
38. FIXED CAPACITY DISPLACEMENT BI-DIRECTIONAL HYDROSTATIC MOTOR
39. CHECK VALVE - With 80 PSI (5,5 bar) Spring
40. SOLENOID ACTIVATED DIRECTIONAL CONTROL VALVE - BUCKET POSITION VALVE (ON/OFF)
41. CHECK VALVE - BICS CONTROL VALVE
42. RESTRICTION - 0.343 inch (8,7 mm)
43. FILTER - Bob-Tach Valve
44. PILOT ACTIVATED DIRECTIONAL CONTROL VALVE - HYDRAULIC POWERED BOB-TACH
45. RESTRICTION - 0.089 inch (2,26 mm)
46. RESTRICTION - 0.025 inch (0,6 mm)
47. RELIEF VALVE - 2000 PSI (137 bar)
48. RELIEF VALVE - 1200 PSI (83 bar)
49. SOLENOID ACTIVATED DIRECTIONAL CONTROL VALVE (TWO COIL)
50. FIXED CAPACITY DISPLACEMENT HYDRAULIC MOTOR
51. ANTICAVITATION VALVE
52. PROPORTIONAL RELIEF VALVE – (Fan Speed Regulator):
    1566 - 1784 PSI (108 - 123 bar)
53. CHARGE PUMP -
    12.8 GPM (48,5 L/min) at High Engine Idle
54. CHECK VALVE - With 300 PSI (20,7 bar) Spring with 0.016 inch (0,40 mm) orifice
55. SOLENOID ACTIVATED CONTROL VALVE - FORWARD/REVERSE
56. SERVO PISTON -Swash Plate
57. POSITION SENSOR -Swash Plate
58. CHARGE PRESSURE SENSOR
59. SENSOR – CHARGE PRESSURE – Fan Filter
60. SENSOR – HYD. TEMP. – Hyd. Filter

NOTE: Unless otherwise specified, springs have NO significant pressure value.

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Troubleshooting (Standard and ACS)

The following troubleshooting chart is provided for assistance in locating and correcting problems which are most common. Many of the recommended procedures must be done by authorized Bobcat Service Personnel only.

⚠ WARNING

AVOID INJURY OR DEATH

Instructions are necessary before operating or servicing machine. Read and understand the Operation & Maintenance Manual, Operator's Handbook and signs (decals) on machine. Follow warnings and instructions in the manuals when making repairs, adjustments or servicing. Check for correct function after adjustments, repairs or service. Untrained operators and failure to follow instructions can cause injury or death.

W-2003-0807

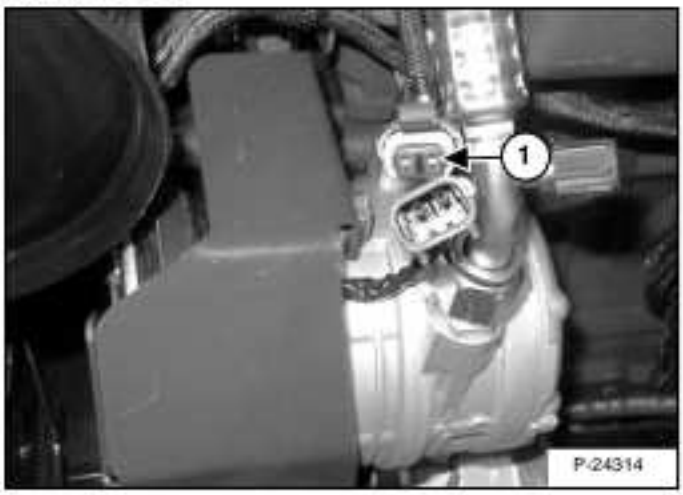
PROBLEM	CAUSE
Back-up alarm will not sound when the operator moves both steering levers in the reverse position.	1, 2, 3, 4, 5, 6, 7
Back-up alarm sounds when steering levers in neutral / forward position.	2, 6, 7

KEY TO CORRECT THE CAUSE
1. The ground connection is not making a good contact.
2. The back-up alarm switches are damaged.
3. The alarm is damaged.
4. The alarm or back-up switch wires are disconnected.
5. Check the fuses.
6. The wiring is damaged.
7. The back-up alarm switches need adjusting.

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Electrical System (Cont'd)

Figure 80-30-8



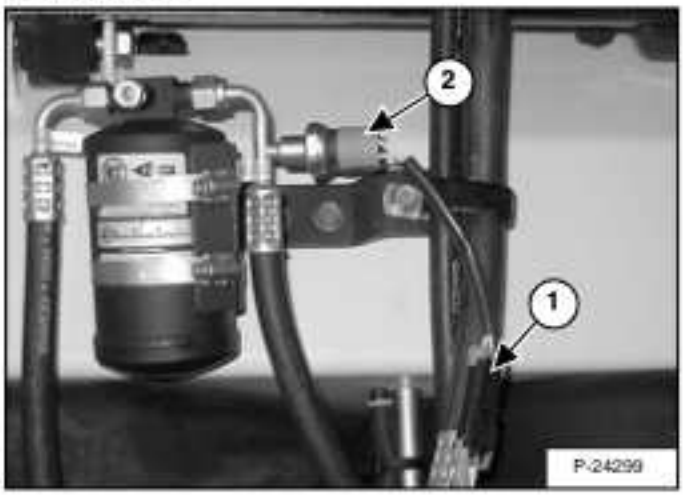
With a multi meter, check the voltage to the compressor clutch at the loader harness (Item 1) **[Figure 80-30-8]**

The voltage reading should be around 12 volts.

If there is no power at the clutch, check the wiring harness for broken wires.

If there is power at the clutch, reconnect the wiring harness to the compressor clutch.

Figure 80-30-9



Disconnect the loader harness (Item 1) from the pressure switch (Item 2) **[Figure 80-30-9]**.

Figure 80-30-10



Using a multi meter check the loader wiring harness (Item 1) **[Figure 80-30-10]** for voltage.

The voltage should be around 12 volts.

If there is no voltage at the wiring harness, check the harness for broken wires.

Figure 80-30-11



If there is voltage at the harness, check the resistance at the pressure switch (Item 1) **[Figure 80-30-11]**.

If there is no resistance value, check for low refrigerant level. (See Refrigerant Identification on Page 80-40-1.)

If a resistance value is observed, the pressure switch is good.

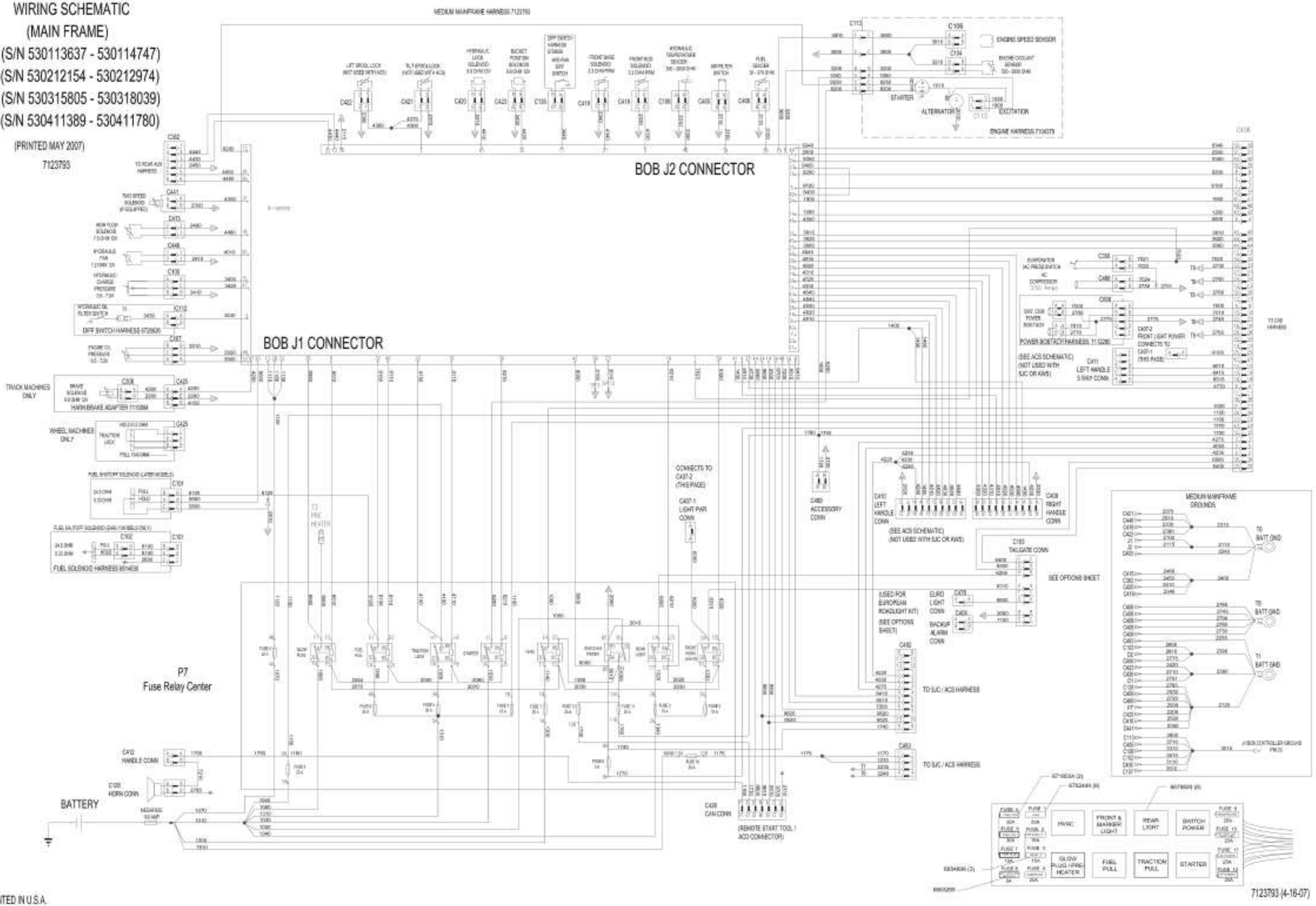
Reconnect the loader harness to the pressure switch.

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WIRING SCHEMATIC
(MAIN FRAME)
S175 (S/N 530113637 - 530114747)
(S/N 530212154 - 530212974)
S185 (S/N 530315805 - 530318039)
(S/N 530411389 - 530411780)

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