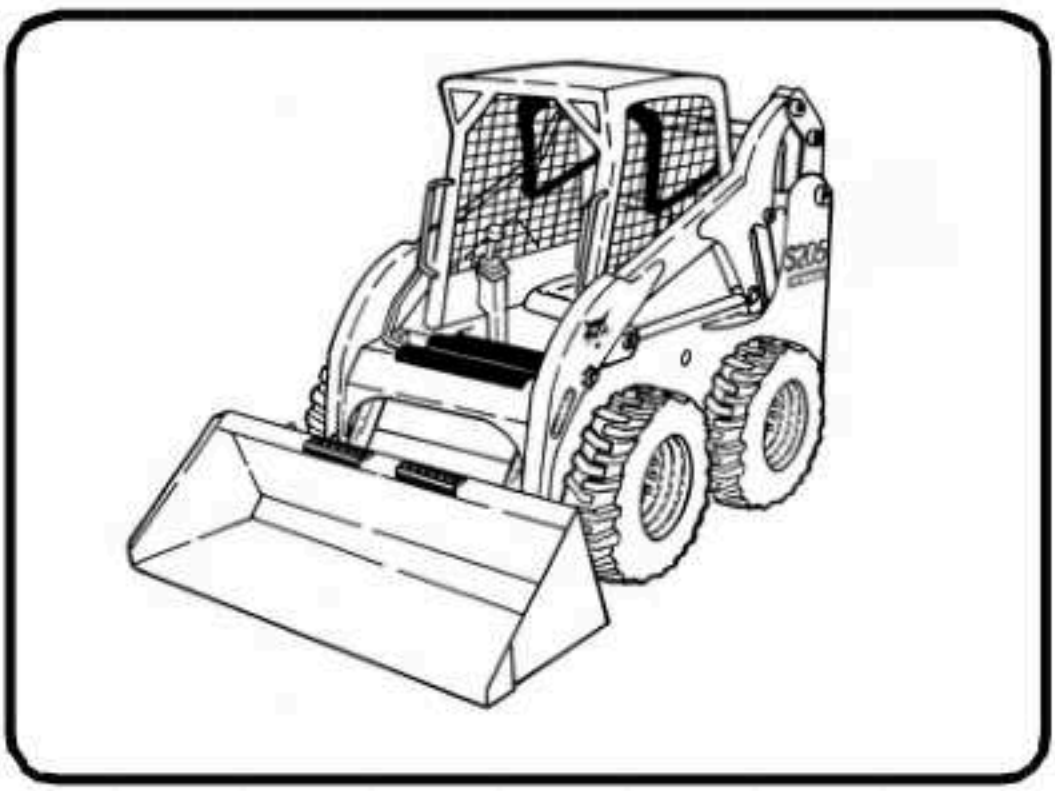
Bobcat®

Service Manual
S205 Skid-Steer Loader

S/N 530511001 - 530559999
S/N 530611001 - 530659999



EQUIPPED WITH
BOBCAT INTERLOCK
CONTROL SYSTEM (BICS™)

6904138 (7-09)

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HYDRAULIC/HYDROSTATIC SCHEMATIC
WITH HIGH FLOW OPTION
S205 (S/N 530511001 - 530559999)
(S/N 530611001 - 530659999)

(PRINTED FEBRUARY 2008)
V-0772legend

LEGEND

1. RESERVOIR:
   Capacity . . . . . 19.2 Qts. (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: 5000 PSI (345 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. RELIEF/ANTICAVITATION VALVE - PORT 3500 PSI (241 bar)
11. ANTICAVITATION VALVE
12. SOLENOID ACTIVATED DIRECTIONAL CONTROL VALVE - AUXILIARY
13. RELIEF/ANTICAVITATION VALVE - PORT (OPTIONAL) 3500 PSI (241 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 in. (3,6 mm)
29. RESTRICTOR - 0.031 in. (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 BIDIRECTIONAL HYDROSTATIC PUMP
37. SHUTTLE RELIEF VALVE
    (Not Adjustable - Factory Set)
    65 PSI (4,5 bar)
38. FIXED CAPACITY DISPLACEMENT BIDIRECTIONAL 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. CHARGE PUMP -
    12.8 GPM (48,5 L/min) at High Engine Idle
43. CHECK VALVE - With 300 PSI (20,7 bar) Spring And With 0.016 in. (0,40 mm) Orifice
44. PILOT ACTIVATED DIRECTIONAL CONTROL VALVE - HYDRAULIC POWERED BOB-TACH
45. RESTRICTION - 0.089 in. (2,26 mm)
46. RESTRICTION - 0.025 in. (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. RELIEF VALVE - 3300 PSI (228 bar)
51. DUMP VALVE - (ON/OFF)
52. CHECK VALVE
53. FILTER - BOB-TACH VALVE
54. AUXILIARY HYDRAULIC PUMP -
    9.5 GPM (36 L/min) at High Engine Idle
55. FIXED CAPACITY DISPLACEMENT HYDRAULIC MOTOR
56. ANTICAVITATION VALVE
57. PROPORTIONAL RELIEF VALVE –
    (Fan Speed Regulator):
    1566 - 1784 PSI (108 - 123 bar)
58. RESTRICTION - 0.343 in. (8,73 mm)
59. SENSOR – CHARGE PRESSURE – Fan Filter
60. SENSOR – HYD. TEMP. – Hyd. Filter

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

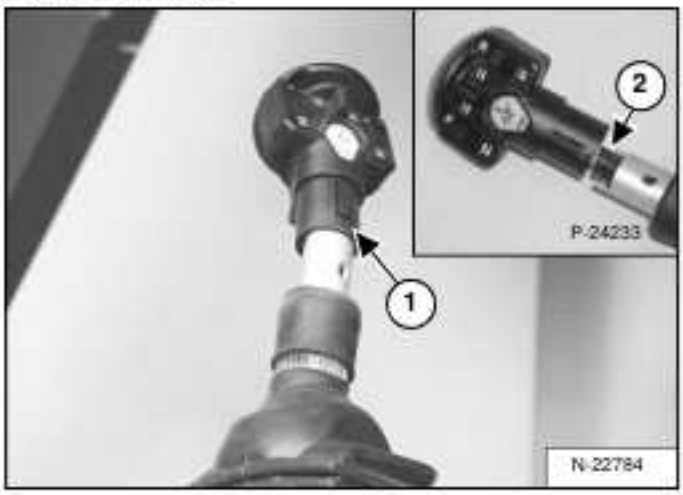
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Switch Handle Removal (Cont'd)

Figure 60-130-12

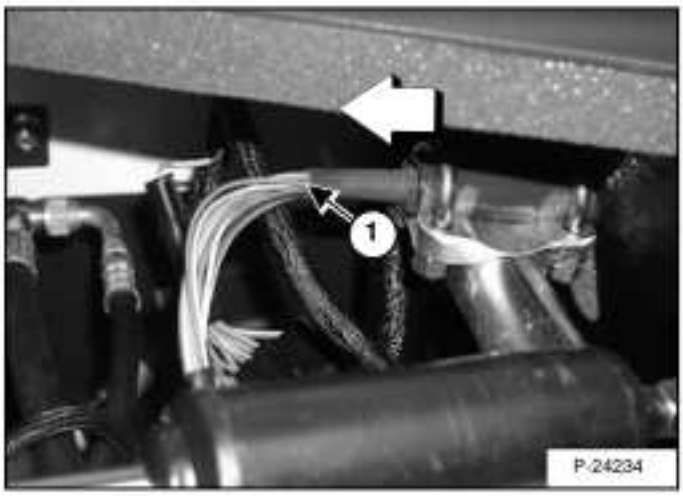


Pull the switch handle and wiring harness assembly (Item 1) **[Figure 60-130-12]** from the control lever.

Cut the wires (Item 2) **[Figure 60-130-12]** below the switch handle and remove switch handle.

NOTE: Only cut the wires if the switch handle is bad and needs replacement. If the switch handle is good and just needs to be removed for control handle or lever replacement, then remove the connectors on the end of the harness and pull switch handle and harness up through the top of the lever tube.

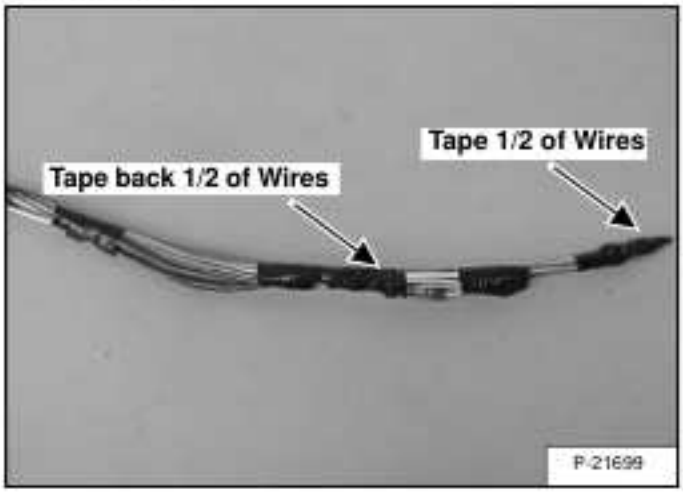
Figure 60-130-13



If the harness has been cut: pull the harness (Item 1) **[Figure 60-130-13]** out through the bottom of the control lever tube.

Switch Handle Installation

Figure 60-130-14



When installing the new switch handle, tape the wire terminals together.

The switch handle comes with a 6 inch piece of heat shrink tubing placed over the end of the wires. Remove the heat shrink tube from the end of the wires before routing the harness through handle and control lever tube.

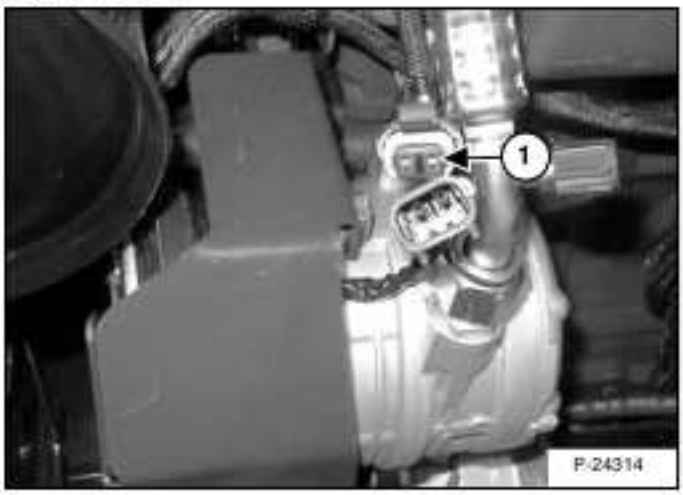
NOTE: Leave all the other heat shrink tube on the wires for protection.

Tape half of the wires back and half forward **[Figure 60-130-14]** to keep the harness small enough to route through the control lever tube.

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Electrical System (Cont'd)

Figure 80-30-8



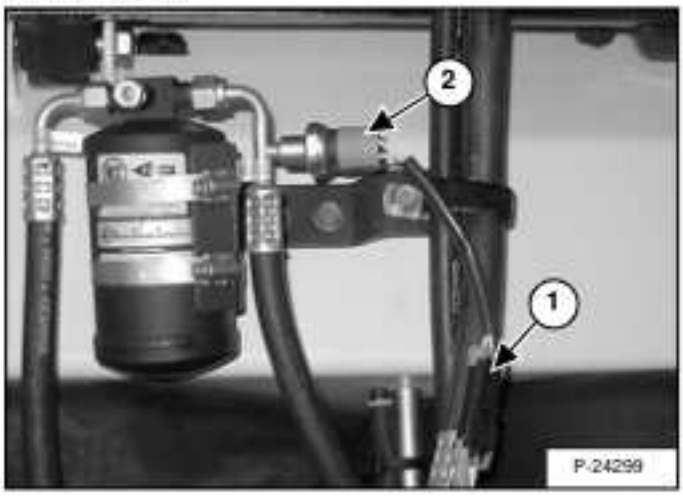
With a multi meter, check the voltage to the compressor clutch at the loader harness (Item 1) **[Figure 80-30-8]**

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.

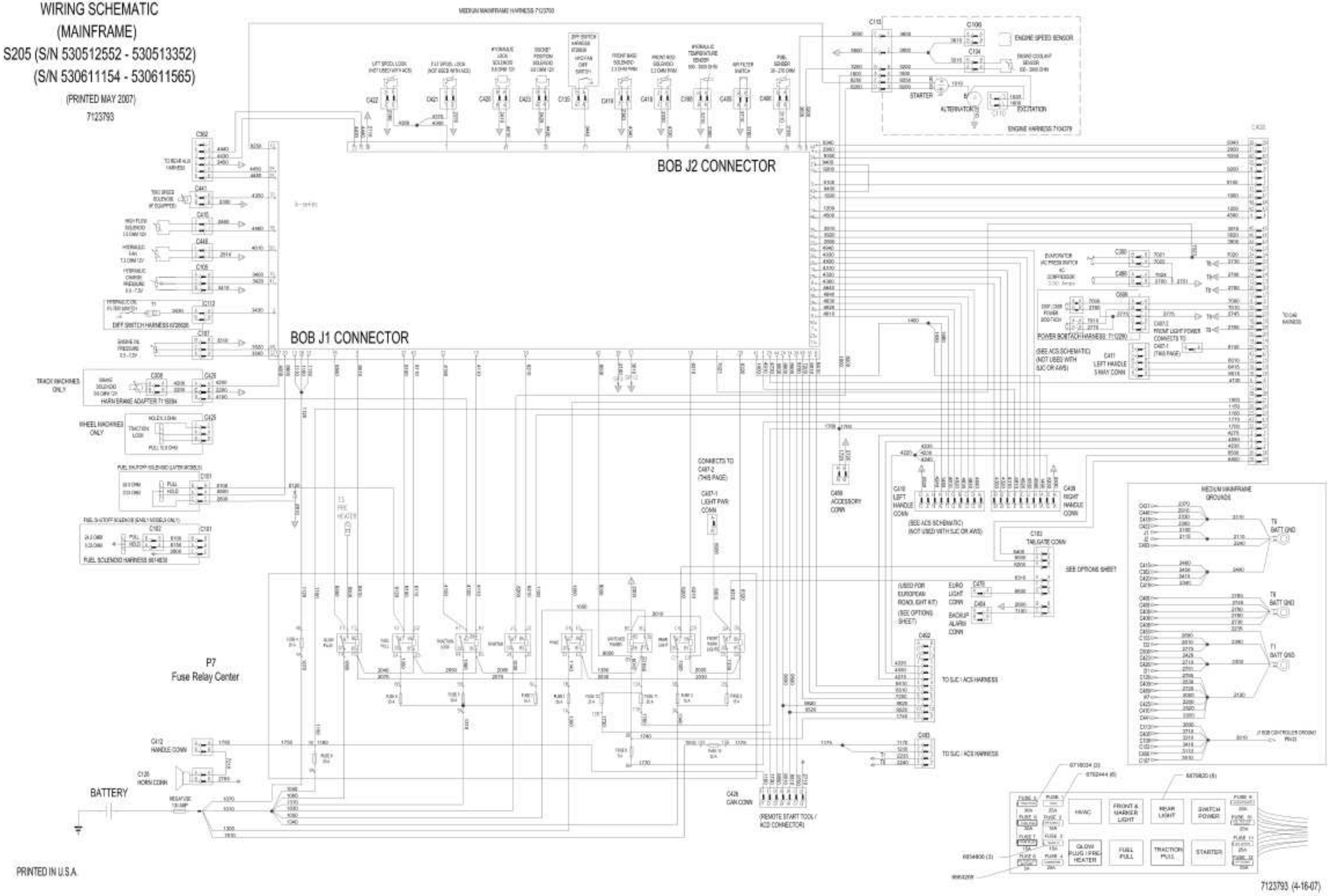
Reconnect the loader harness to the pressure switch.

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WIRING SCHEMATIC
(MAINFRAME)
S205 (S/N 530512552 - 530513352)
(S/N 530611154 - 530611565)

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