S250 TURBO

S300 TURBO

INCLUDES HIGH FLOW

Bobcat®

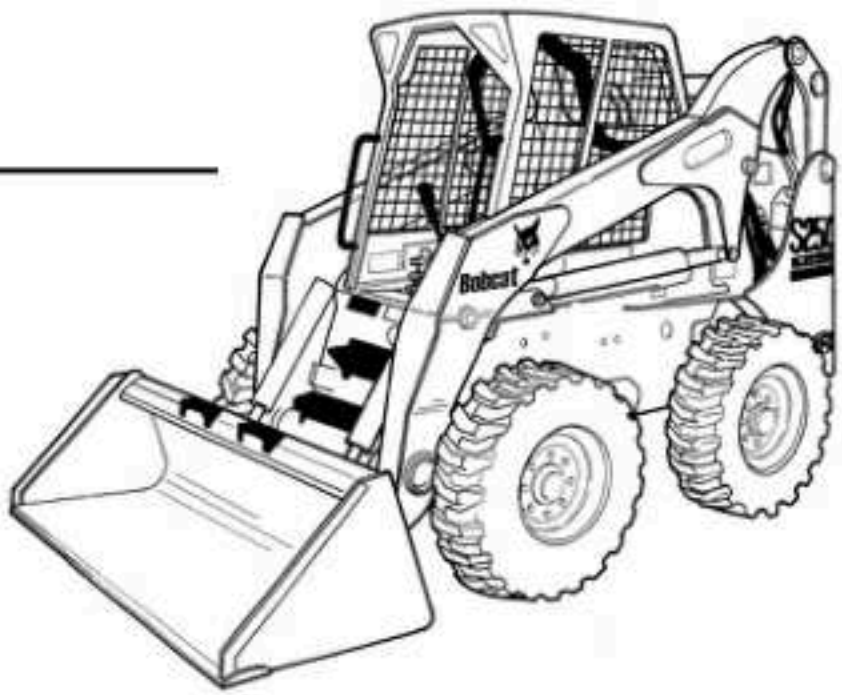
Service Manual

S250

S/N 521311001 & Above
S/N 521411001 & Above

S300

S/N 521511001 & Above
S/N 521611001 & Above



EQUIPPED WITH
BOBCAT INTERLOCK
CONTROL SYSTEM (BICS™)

6901926 (3-06)

Ingersoll Rand
Compact Vehicle Technologies
Printed in U.S.A.

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HYDRAULIC/HYDROSTATIC SCHEMATIC
WITH TWO SPEED VALVE OPTION
S250 (S/N 521312053 - 521313912)
(S/N 521411029 - 521411180)
S300 (S/N 521511291 - 521512099)
(S/N 521611001 - 521611029)

(PRINTED AUGUST 2003)
V-0348legend

LEGEND

1. RESERVOIR: Capacity . . . . . 21 Qts. (19.9 L)
2. FILTER - CASE DRAIN (90 Micron)
3. FILTER - HYDRAULIC (CANISTER)
4. SPRING LOADED FILTER BYPASS VALVE: 45-55 PSI (3,1-3,8 Bar)
5. PILOT ACTIVATED DIRECTIONAL CONTROL VALVE - HYDRAULIC POWERED BOB-TACH
6. DIFFERENTIAL PRESSURE SWITCH: 36-44 PSI (2,5-3,0 Bar)
7. FLOW DIVIDER ADJUSTMENT VALVE
8. CHECK VALVE - BUCKET POSITION VALVE
9. FIXED CAPACITY DISPLACEMENT BIDIRECTIONAL HYDROSTATIC MOTOR
10. PILOTED ACTIVATED DIRECTIONAL CONTROL VALVE - FLOW CONTROL SPOOL
11. PILOTED ACTIVATED DIRECTIONAL CONTROL VALVE - UNLOADING SPOOL
12. PILOTED ACTIVATED DIRECTIONAL CONTROL VALVE - TILT CONTROL
13. PILOTED ACTIVATED DIRECTIONAL CONTROL VALVE - LIFT CONTROL
14. SOLENOID ACTIVATED DIRECTIONAL CONTROL VALVE - BICS CONTROL
15. PULL BUTTON ACTIVATED DIRECTIONAL CONTROL VALVE - LIFT ARM BY PASS
16. FILTER - BICS CONTROL VALVE (SCREEN)
17. ONE WAY RESTRICTOR
18. LOAD CHECK VALVE
19. RELIEF VALVE - MAIN: 3250-3350 PSI (224,1-231,0 Bar) at Front Quick Couplers
20. RELIEF VALVE - PORT: 4000 PSI (275,9 Bar)
21. ANTICAVITATION VALVE
22. RELIEF/ANTICAVITATION VALVE - PORT (TILT BASE END) 3500 PSI (241,4 Bar)
23. ONE WAY RESTRICTOR VALVE
24. SOLENOID ACTIVATED DIRECTIONAL CONTROL VALVE - AUXILIARY
25. RELIEF VALVE - PORT: . . . . . (Optional) 3500 PSI (241,4 Bar)
26. RELIEF/REPLENISHING VALVE - HIGH PRESSURE: 5000 PSI (344,8 Bar)
27. PRESSURE SWITCH
28. RELIEF VALVE - CHARGE: 120 degrees F. (53 degrees C.)Fluid at 1775 Pump RPM 390 - 430 PSI (26,9 - 29,6 Bar)
29. CHARGE PUMP 14.0 GPM (53.0 L/min.) at 2750 Engine RPM
30. HYDRAULIC PUMP . . . . . Gear Type 20.7 GPM (78.35 L/min.) at 2750 Engine RPM
31. DRIVE MOTOR SHUTTLE VALVE
32. SHUTTLE RELIEF VALVE: 200 PSI (13,8 Bar)
33. SOLENOID ACTIVATED DIRECTIONAL CONTROL VALVE - BLEED OFF REAR AUXILIARY ("SV2")
34. LOAD SHUTTLE VALVE - BLEED OFF
35. PILOT ACTIVATED DIRECTIONAL CONTROL VALVE - FOR REAR AUXILIARY - NORMALLY CLOSED ("P2" and "F2")
36. PILOT ACTIVATED DIRECTIONAL CONTROL VALVE - FOR REAR AUXILIARY - NORMALLY OPEN ("D1" and "P1")
37. PILOT ACTIVATED DIRECTIONAL CONTROL VALVE - FOR REAR AUXILIARY - NORMALLY OPEN ("D2" and "P2")
38. FILTER - DIVERTER VALVE (SCREEN) INTEGRATED IN SOLENOID
39. SOLENOID ACTIVATED DIRECTIONAL CONTROL VALVE - TO ACTIVATE REAR AUXILIARY ("SV1")
40. PILOT ACTIVATED DIRECTIONAL CONTROL VALVE - FOR REAR AUXILIARY - NORMALLY CLOSED ("P1" and "F1")
41. CHECK VALVE - BICS CONTROL VALVE
42. RESTRICTION
43. FILTER (BRAKE)
44. PILOT ACTIVATED DIRECTIONAL CONTROL VALVE - TWO SPEED DRIVE MOTOR
45. VARIABLE CAPACITY DISPLACEMENT BIDIRECTIONAL HYDROSTATIC PUMP
46. TWO STAGE RELIEF 1000 PSI/2000 PSI (69/138 Bar)
47. SOLENOID ACTIVATED DIRECTIONAL CONTROL VALVE (TWO COIL)
48. RELIEF VALVE - 1200 PSI (82,8 Bar)
49. PRESSURE COMPENSATED FLOW CONTROL
50. CHECK VALVE WITH 0.015 RESTRICTION
51. RELIEF VALVE - PORT: 4000 PSI (275,9 Bar)
52. SOLENOID ACTIVATED DIRECTIONAL CONTROL VALVE - BUCKET POSITION VALVE (ON/OFF)
53. FIXED CAPACITY DISPLACEMENT BIDIRECTIONAL HYDROSTATIC MOTOR
54. HYDRAULIC BRAKE - SPRING APPLIED - PRESSURE TO RELEASE
55. SOLENOID ACTIVATED DIRECTIONAL CONTROL VALVE - BRAKE
56. SOLENOID ACTIVATED DIRECTIONAL CONTROL VALVE - MAKE-UP
57. SOLENOID ACTIVATED DIRECTIONAL CONTROL VALVE - TWO SPEED
58. FRONT AUXILIARY MANUAL PRESSURE BLEED-OFF VALVE
59. FILTER - CASE DRAIN (ATTACHMENT)

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

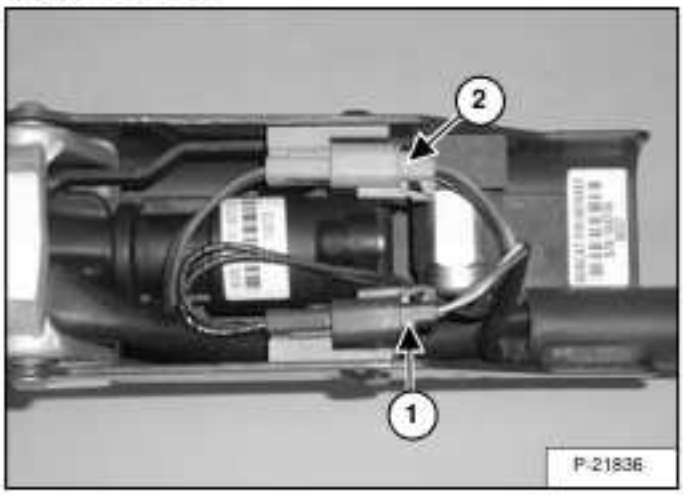
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Handle Lock Solenoid Removal And Installation

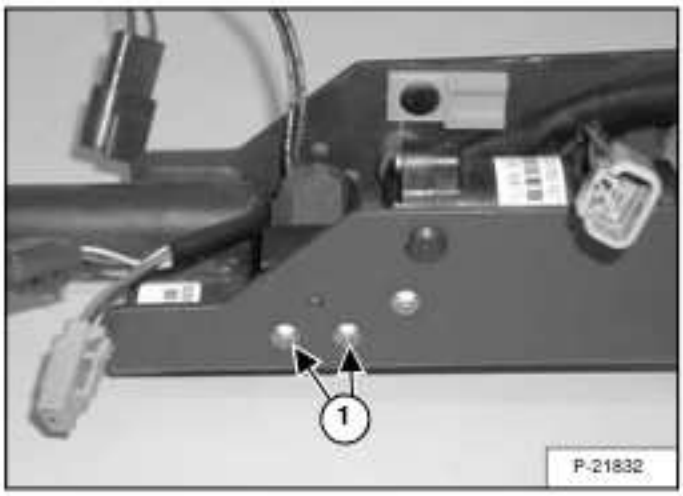
Figure 60-130-33



Disconnect the harness connector (Item 1) **[Figure 60-130-33]** from the handle sensor connector.

Disconnect the harness connector (Item 2) **[Figure 60-130-33]** from the handle lock solenoid connector.

Figure 60-130-34



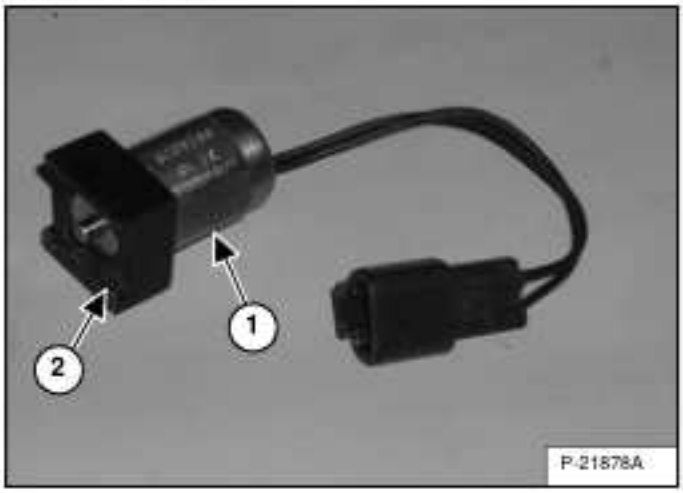
Remove the two screws (Item 1) **[Figure 60-130-34]** holding the handle lock solenoid to the handle.

Installation: Tighten the screws to 32-38 in.-lb. (3.6-4.3 N•m) torque.

Remove handle lock solenoid assembly from handle.

Handle Lock Solenoid Disassembly And Assembly

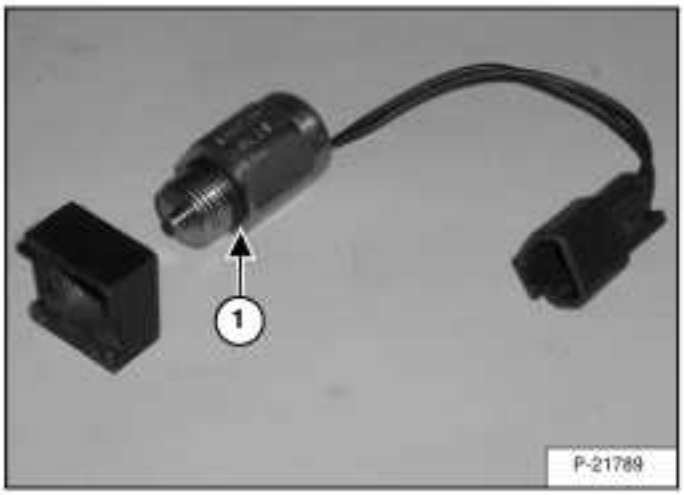
Figure 60-130-35



Remove solenoid (Item 1) **[Figure 60-130-35]** from the solenoid mount (Item 2) **[Figure 60-130-35]**.

Installation: Apply a drop of oil to the solenoid threads and tighten solenoid to 35-40 ft.-lb. (47-54 N•m) lubed torque.

Figure 60-130-36

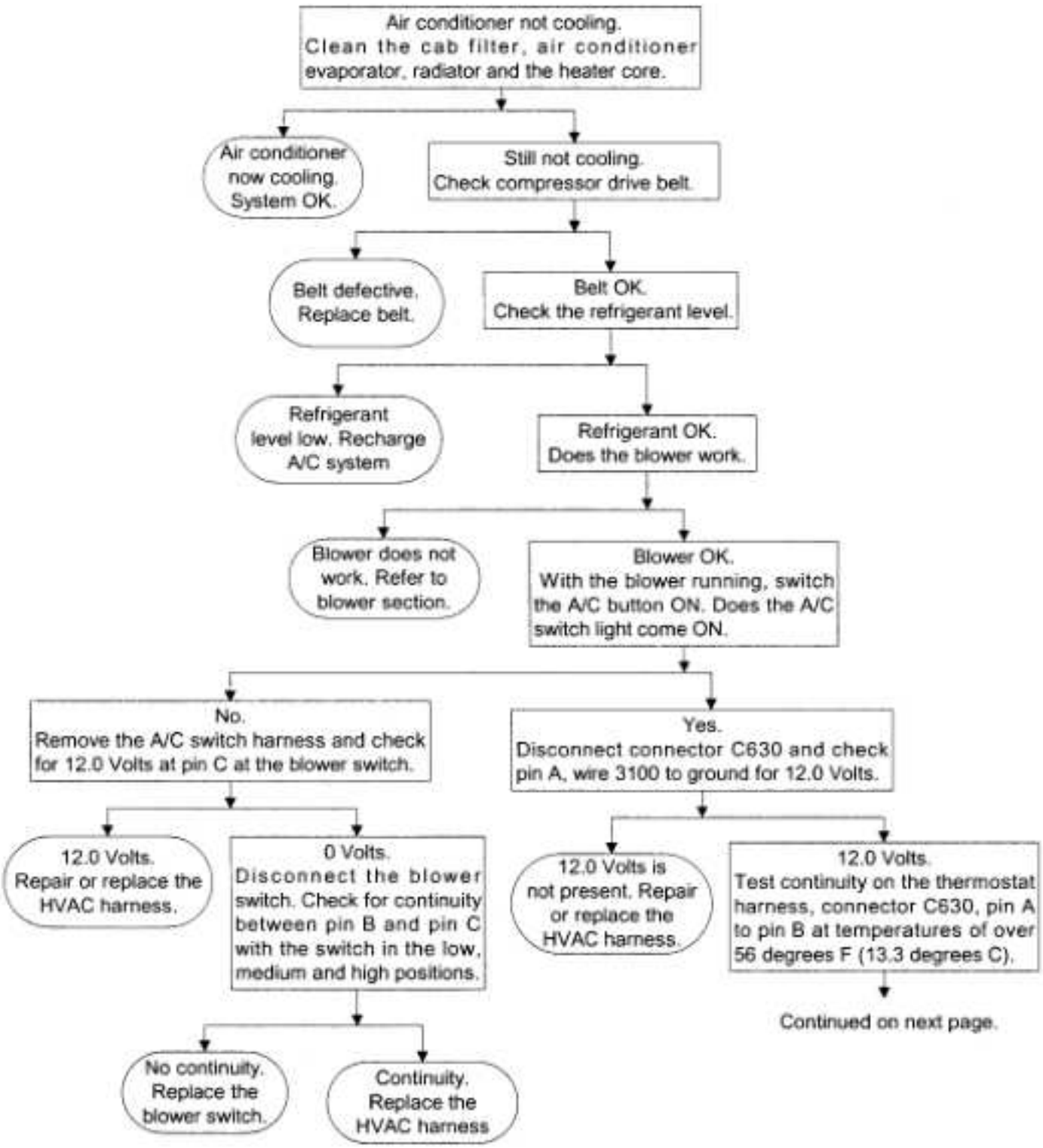


Check the O-ring (Item 1) **[Figure 60-130-36]** for damage. Replace as necessary.

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Troubleshooting Tree

Air Conditioning



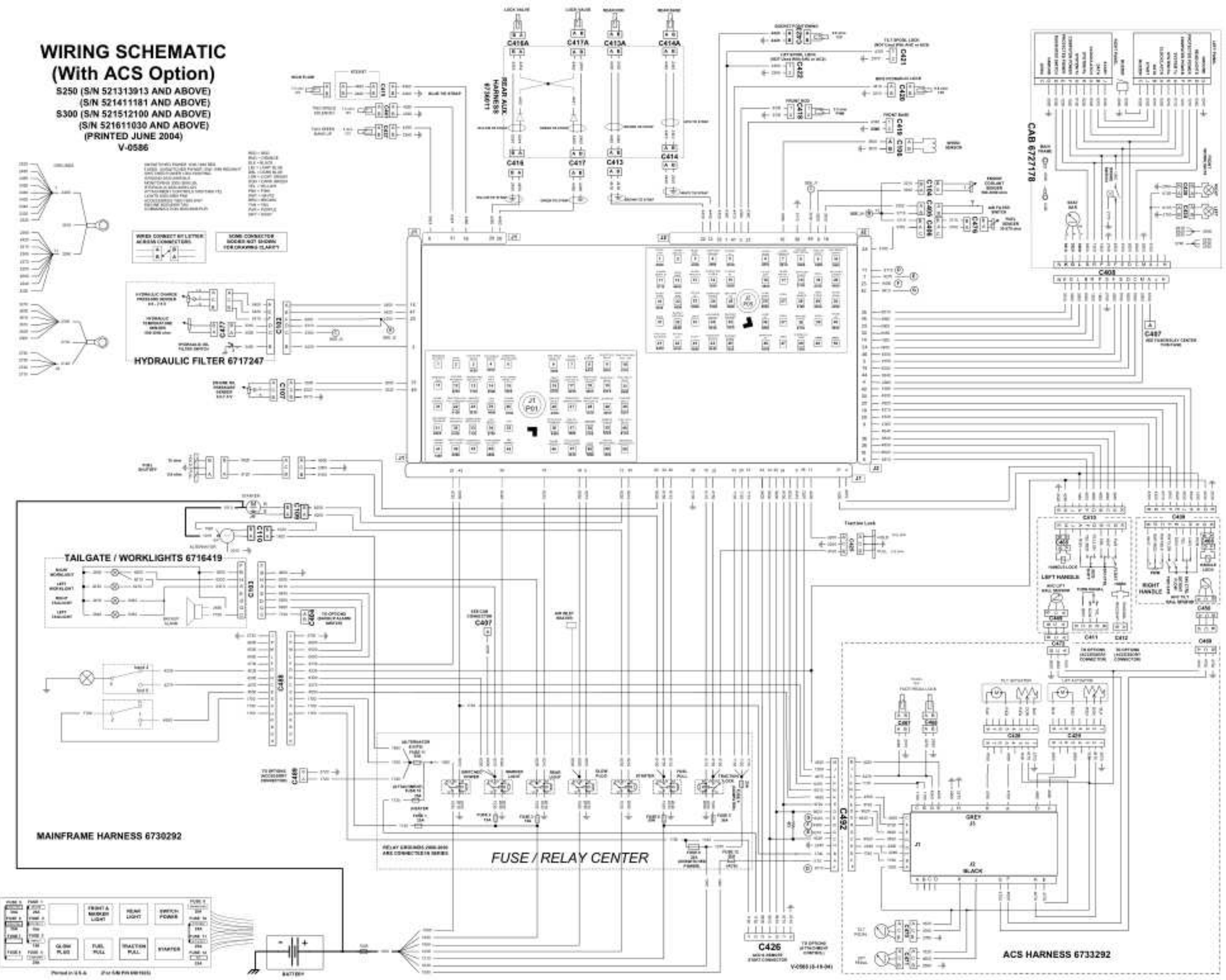
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WIRING SCHEMATIC
(With ACS Option)

S250 (S/N 521313913 AND ABOVE)
(S/N 521411181 AND ABOVE)
S300 (S/N 521512100 AND ABOVE)
(S/N 521611030 AND ABOVE)
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