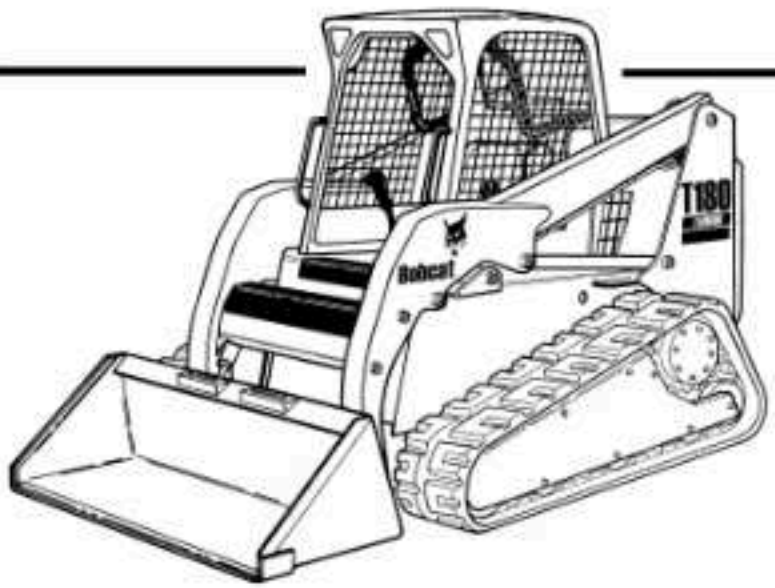
T180 TURBO

T180 TURBO HIGH FLOW

Bobcat®

Service Manual

(S/N 524211001 & Above)
(S/N 524311001 & Above)
(S/N 527511001 & Above)
(S/N 527611001 & Above)



EQUIPPED WITH BOBCAT INTERLOCK CONTROL SYSTEM (BICS™)

6902502 (3-06)

Ingersoll Rand
Compact Vehicle Technologies

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HYDRAULIC/HYDROSTATIC SCHEMATIC
WITH SJC AND HIGH FLOW OPTION
T180 (S/N 527513000 AND ABOVE)
(S/N 527613000 AND ABOVE)

(PRINTED MAY 2005)
V-0698legend

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: 5250 PSI (362 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 16.3 GPM (61,7 L/min.) at High Engine Idle
9. RELIEF VALVE - MAIN:
   3250-3350 PSI (224-231 bar)
   at Front Quick Couplers
10. RELIEF VALVE - PORT: . . . . . (Optional)
    3500 PSI (241,3 bar)
11. ANTICAVITATION VALVE
12. SOLENOID ACTIVATED DIRECTIONAL CONTROL VALVE - AUXILIARY
13. RELIEF VALVE - PORT: . . . . . (Optional)
    3100 PSI (213,8 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. SOLENOID ACTIVATED DIRECTIONAL CONTROL VALVE
43. PORT RELIEF/ANTICAVITATION VALVE
    3500 PSI (241,3 bar)
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. RELIEF VALVE - 3300 PSI (228 bar)
51. DUMP VALVE - (ON/OFF)
52. CHECK VALVE
53. AUXILIARY HYDRAULIC PUMP - 9.5 GPM (36 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. HYDRAULIC BRAKE - SPRING APPLIED - PRESSURE RELEASE
56. CHECK VALVE
57. RELIEF VALVE - BRAKE PRESSURE
    500 PSI (34,5 bar)
58. FILTER - Bob-Tach Valve
59. CHARGE PUMP - 12.8 GPM (48,5 L/min) at High Engine Idle
60. SOLENOID ACTIVATED CONTROL VALVE - FORWARD/REVERSE
61. SERVO PISTON -Swash Plate
62. POSITION SENSOR -Swash Plate
63. CHARGE PRESSURE SWITCH

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

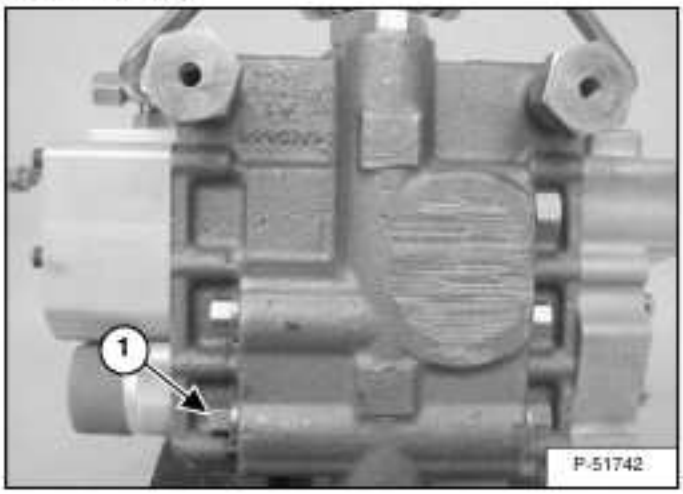
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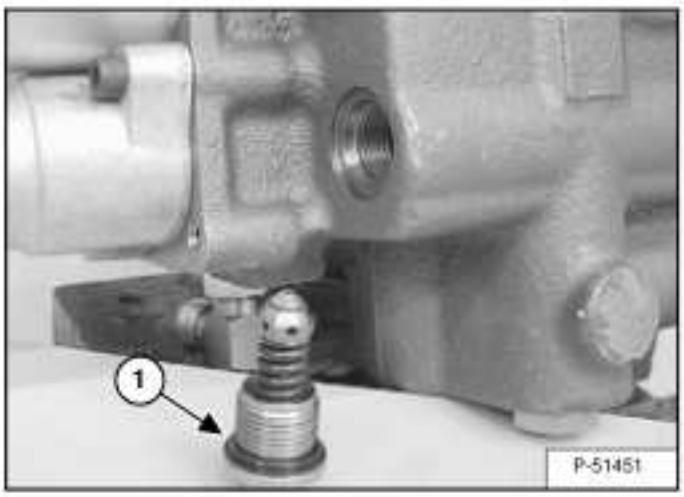
Port Relief/Anti-Cavitation Valve (Lift, Base End)

Figure 20-43-38



Loosen the lift circuit port relief/anti cavitation valve (Item 1) **[Figure 20-43-38]**.

Figure 20-43-39

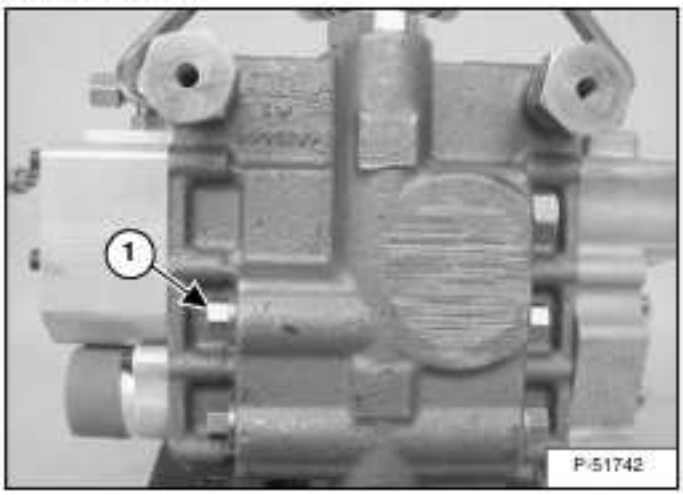


Replace the O-ring (Item 1) **[Figure 20-43-39]** before installation.

Installation: Lightly lubricate with oil and tighten to 38-45 ft.-lbs. (52-61 Nm) torque.

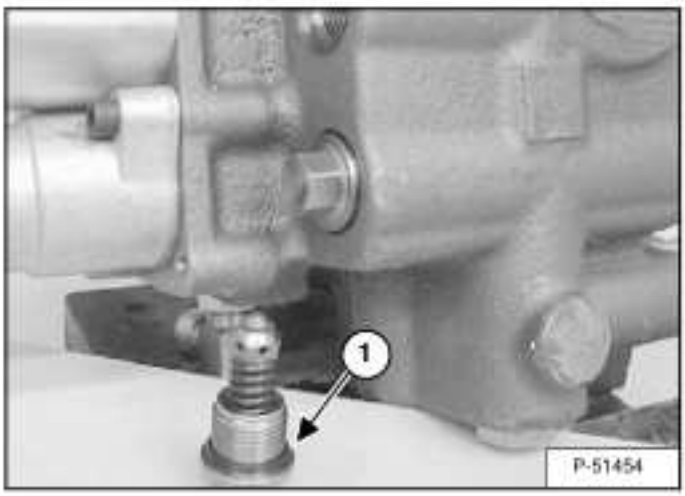
Port Relief/Anti-Cavitation Valve (Tilt, Base End)

Figure 20-43-40



Remove the tilt port relief/anti cavitation valve (Item 1) **[Figure 20-43-40]** from the base end of the tilt section.

Figure 20-43-41



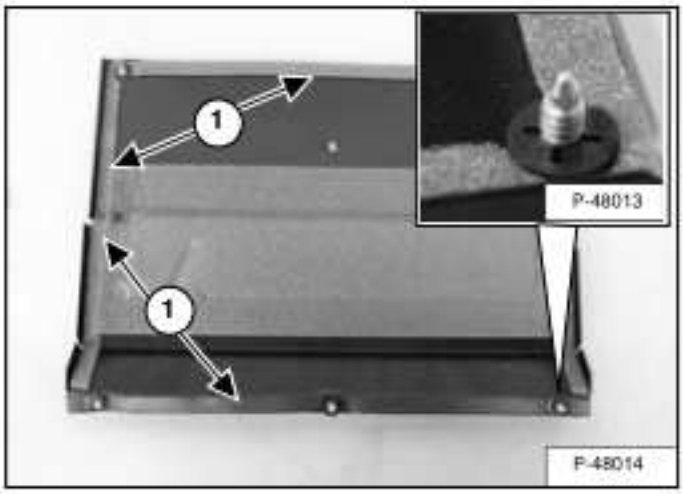
Replace the O-ring (Item 1) **[Figure 20-43-41]** before installation.

Installation: Lightly lubricate with oil and tighten to 38-45 ft.-lbs. (52-61 Nm) torque.

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Cleaning The A/C Evaporator Coil & Heater Coil (Cont'd)

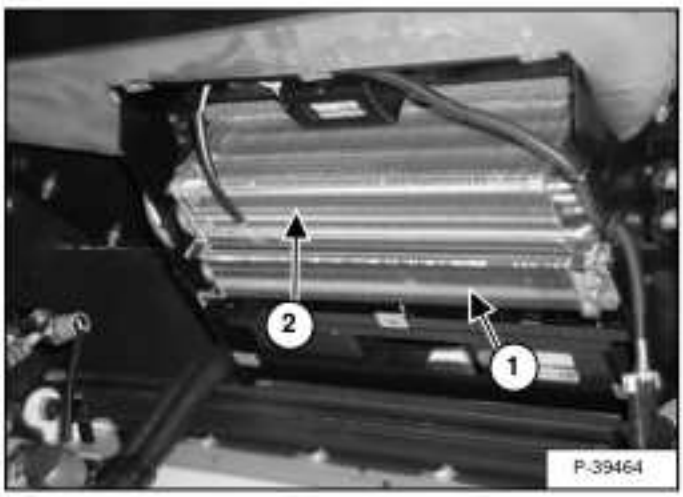
Figure 80-50-4



The access cover is sealed to the heater unit with a foam gasket (Item 1) **[Figure 80-50-4]** that keeps out dirt and debris. Check the gasket for rips and tears. Replace as needed.

The cover is held in place with screws that are held to the cover with plastic retainers (Inset) **[Figure 80-50-4]**. These help hold the screws when installing the cover.

Figure 80-50-5



With water or air, clean the heater coil (Item 1) and the evaporator coil (Item 2) **[Figure 80-50-5]**.

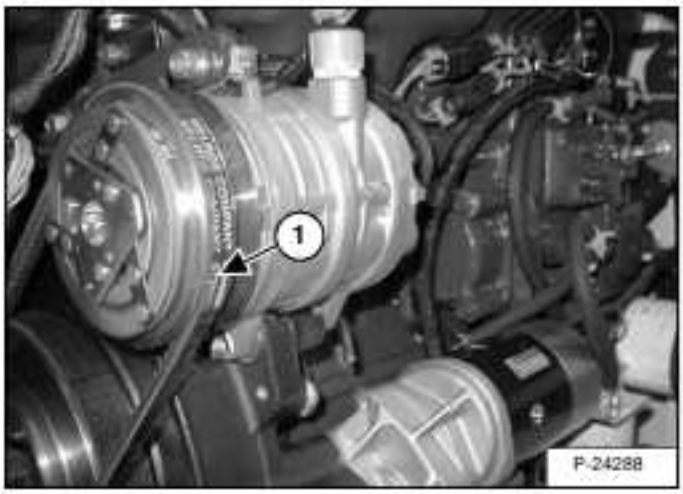
With air or water, clean the heater coil (Item 1) and evaporator coil (Item 2) **[Figure 80-50-5]**.

Replace the cover.

Lower the operator cab. (See Lowering The Operator Cab on Page 10-30-2.)

Compressor Drive Belt Inspection

Figure 80-50-6



Regularly inspect (weekly) the compressor drive belt for wear.

Open the rear door.

Remove the drive belt cover.

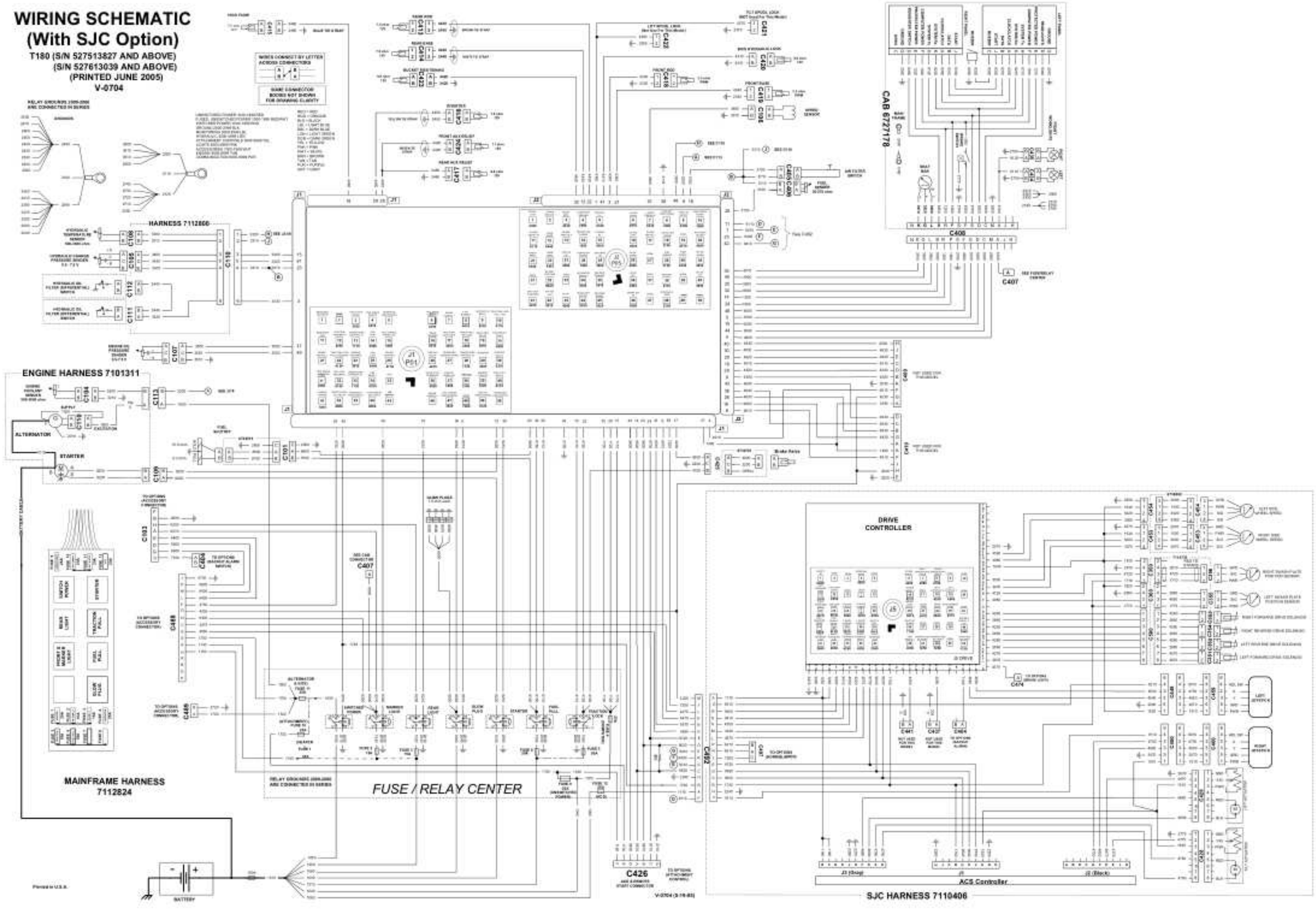
Remove the compressor belt cover.

Check the tension on the compressor belt (Item 1) **[Figure 80-50-6]**.

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WIRING SCHEMATIC
(With SJC Option)

T180 (S/N 527513827 AND ABOVE)
(S/N 527613039 AND ABOVE)
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