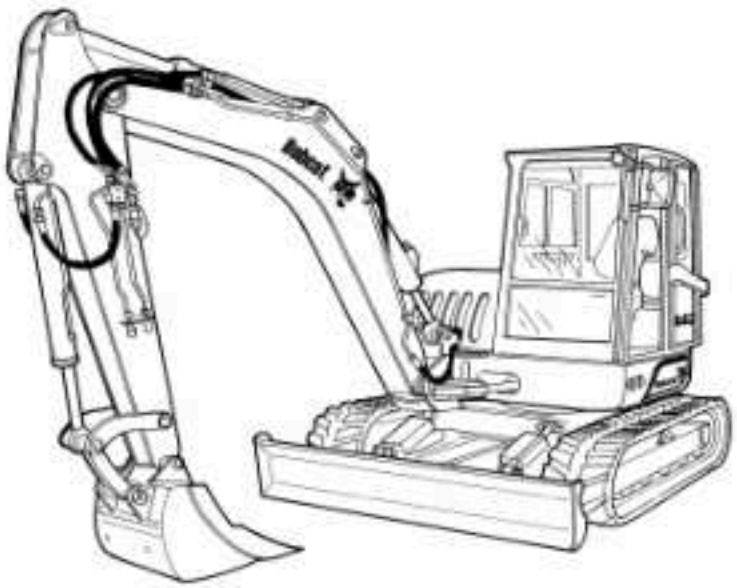
442

Bobcat®

Service Manual

S/N 522311001 & Above
S/N 528911001 & Above
S/N 528611001 & Above



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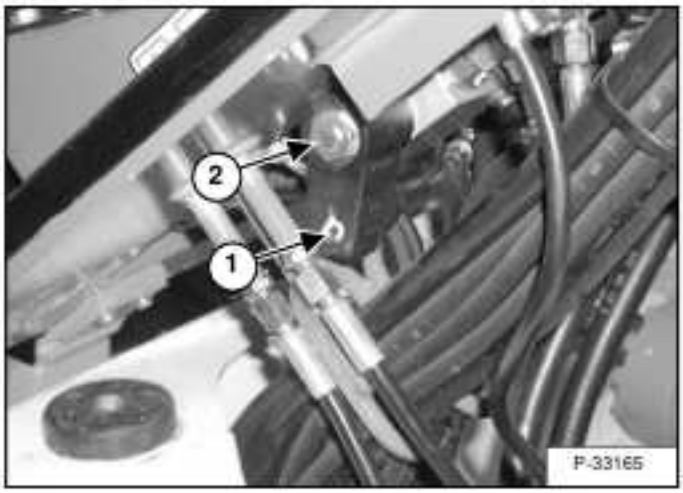
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HYDRAULIC BREAKER APPLICATION VALVE (S/N 522311001 & ABOVE)

Removal And Installation

Tilt the cab. (See Tilting The Cab on Page 10-160-2.)

Figure 20-160-1



Remove the wire harness (Item 1) **[Figure 20-160-1]** from the solenoid.

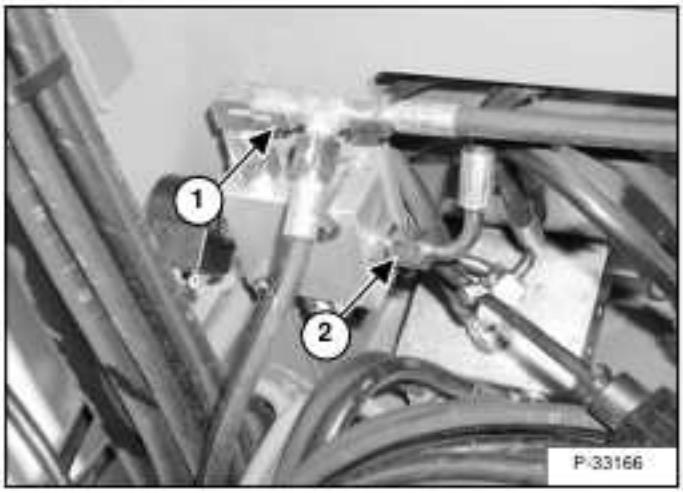
NOTE: The solenoid nut (Item 2) [Figure 20-160-1] may have to be loosened and the solenoid turned to access the screw to remove the wire harness.

IMPORTANT

When repairing hydrostatic and hydraulic systems, clean the work area before disassembly and keep all parts clean. Always use caps and plugs on hoses, tubelines and ports to keep dirt out. Dirt can quickly damage the system.

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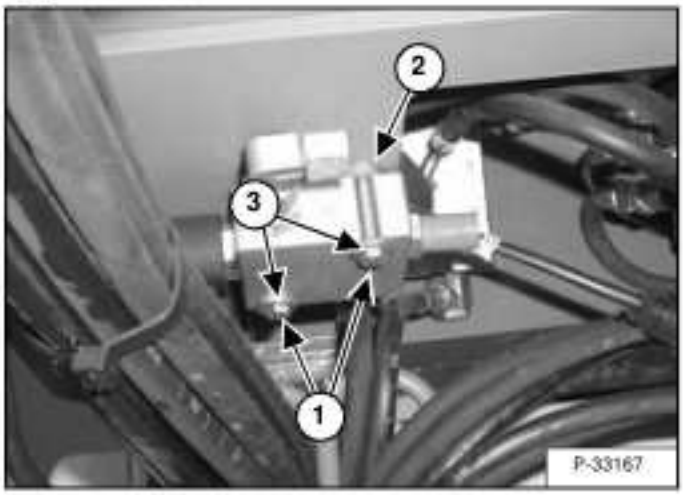
Figure 20-160-2



Remove the tee fitting (Item 1) **[Figure 20-160-2]**.

Remove the hose (Item 2) **[Figure 20-160-2]**.

Figure 20-160-3



Remove the bolts (Item 1) **[Figure 20-160-3]** and washers.

Installation: Install 2 washers (Item 2) between the cab and valve. Install 1 washer (Item 3) **[Figure 20-160-3]** on the bolts. Tighten the bolts to 6-7 ft.-lb. (8-10 N•m) torque.

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Chart (Cont'd)

KEY TO CORRECT THE CAUSE	
1. Battery capacity low.	26. Incorrect high pressure fuel lines.
2. Bad electrical connections.	27. Worn cylinder bores.
3. Faulty starter motor.	28. Worn valves and seat.
4. Incorrect grade of oil.	29. Broken, worn or sticking piston rings.
5. Low cranking speed.	30. Worn valve stems or guides.
6. Fuel tank empty.	31. Worn or damaged bearings.
7. Faulty stop control operation.	32. Not enough oil in the oil pan.
8. Plugged fuel line.	33. Switch/sensor is defective.
9. Plugged fuel filter.	34. Oil pump worn.
10. Restriction in the air cleaner.	35. Pressure relief valve is sticking open.
11. Air in the fuel system.	36. Pressure relief valve is sticking closed.
12. Faulty fuel injection pump.	37. Broken relief valve spring.
13. Faulty fuel injectors.	38. Faulty suction pipe.
14. Broken injection pump drive.	39. Plugged oil filter.
15. Incorrect injection pump timing.	40. Piston seizure.
16. Incorrect valve timing.	41. Incorrect piston height.
17. Poor compression.	42. Faulty engine mounting.
18. Plugged fuel tank vent.	43. Incorrect alignment of flywheel.
19. Incorrect grade of fuel.	44. Faulty thermostat.
20. Exhaust pipe restriction.	45. Plugged oil cooler
21. Cylinder head gasket leaking.	46. Plugged PCV system
22. Overheating.	47. Damaged valve stem oil deflectors.
23. Cold running.	48. Plugged oil pump pipe strainer.
24. Incorrect tappet adjustment.	49. Broken valve spring.
25. Sticking valves.	

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ENGINE SPECIFICATIONS (S/N 522311001 & ABOVE)

- All dimensions are shown in inches. Respective metric dimensions are given in millimeters enclosed by parentheses.

General

Displacement	195 cu. in. (3192 cu.cm.)
Bore	3.70 (94)
Stroke	4.53 (115)
Crankshaft Rotation (Facing Flywheel)	Counterclockwise
Ignition	4 Stroke Diesel-Compression
Combustion System	Direct Injection
Compression Ratio	17.5-1
Compression	406-479 PSI (28-33 Bar)
Firing Order	1-3-4-2
Weight	728 lbs. (330 Kg)

Fuel System

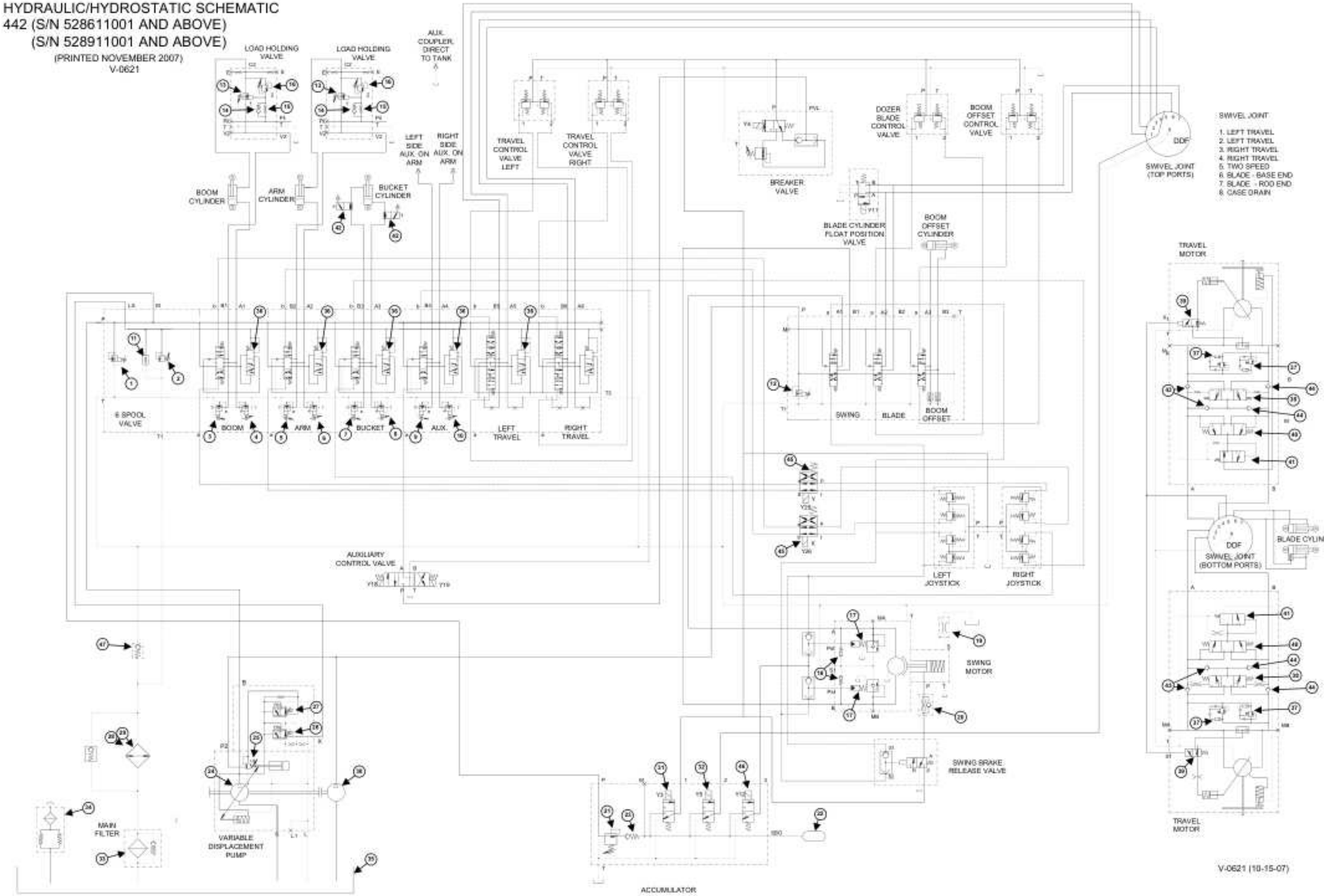
Fuel Injection Pump Pressure (5 Revolutions)	NA
Injection Pump Testing Tightness (10 Seconds)	3335-3451 PSI (230-238 bar)
Injection Nozzle Opening Pressure	3625-3741 PSI (250-258 bar)

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HYDRAULIC/HYDROSTATIC SCHEMATIC
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