753

Bobcat®

Service Manual

INCLUDES HIGH FLOW OPTION

S/N 508630001 & Above
S/N 511476001 & Above
S/N 512716001 & Above
S/N 513911001–513911148
S/N 515811001–515829999
S/N 516211001–516219999



EQUIPPED WITH
BOBCAT INTERLOCK
CONTROL SYSTEM (BICS™)

IR Bobcat

6900090 (6–97)

Printed in U.S.A.

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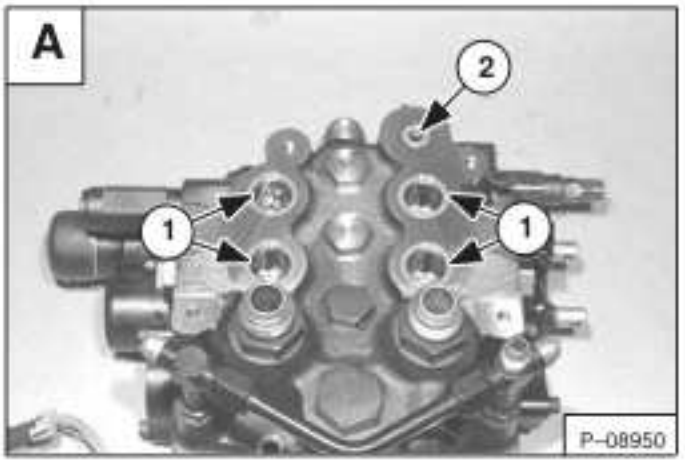
CALIFORNIA
PROPOSITION 65 WARNING
Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects and other reproductive harm.

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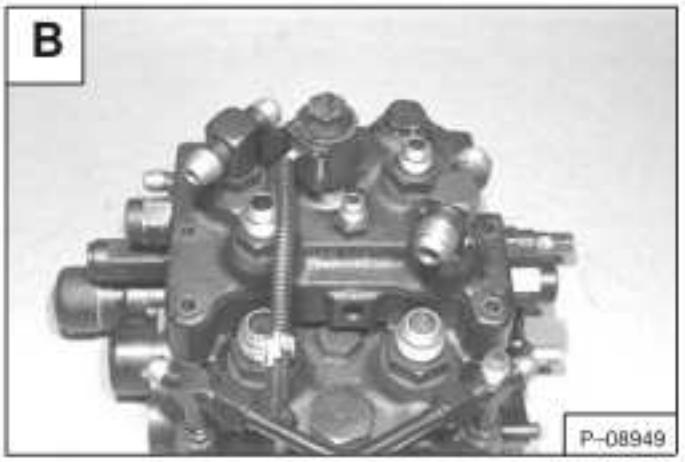
BICS™ VALVE (S/N 508694509 & Above, S/N 512727421 & Above, S/N 515811001 & Above & S/N 516211001 & Above) (Cont'd)

Installation

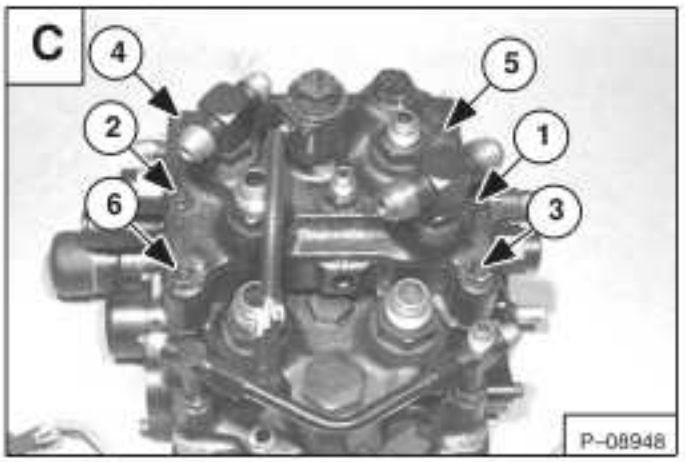
Install the four large O–rings (Item 1) **[A]** and the small O–ring (Item 2) **[A]** on the top of the control valve.



Install the BICS™ valve on the control valve **[B]**.



Install the six mounting bolts **[C]**.



The chart below lists the correct torque specifications and tightening sequence when reinstalling the BICS™ valve assembly to the control valve. Thoroughly clean and dry bolts and threads in valve. Use liquid adhesive LOCTITE #242 or equivalent.

Step	Torque	Sequence
1	110–130 in.–lbs. (12,4–14,7 Nm)	1, 2, 3, 4, 5 & 6
2	190–210 in.–lbs. 21,5–23,7 Nm)	
3*	190–210 in.–lbs. (21,5–23,7 Nm)	

*Torque must be 190–210 in.–lbs. (21,5–23,7 Nm) for every bolt or repeat step 3.

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TROUBLESHOOTING

Chart

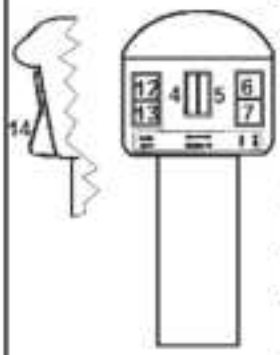
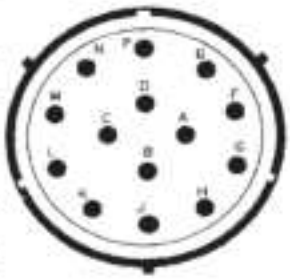
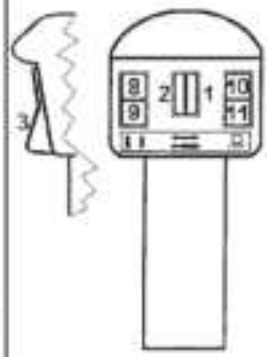
The following troubleshooting chart is provided for assistance in locating and correcting problems which are most common. Many of the recommended procedures must be done by authorized Bobcat Service Personnel only.

PROBLEM	CAUSE
Slow cranking speed.	1, 2, 3
Engine will not start.	2, 5, 6, 7, 8, 9, 11, 12, 13, 14, 15, 16, 19, 27, 28, 29
Difficult to start.	1, 2, 5, 7, 8, 9, 10, 11, 12, 13, 15, 16, 17, 18, 19, 20, 25, 27, 28, 29
No power for engine.	8, 9, 10, 11, 12, 13, 15, 16, 17, 18, 20, 21, 22, 23, 27, 28, 29
Engine is mis–firing.	8, 9, 11, 12, 13, 15, 16, 17, 21, 22, 24, 25, 26, 28
Too much fuel consumption.	10, 12, 13, 15, 16, 17, 19, 20, 21, 23, 24, 25, 27, 28, 29
Black exhaust.	10, 12, 13, 15, 16, 17, 19, 20, 21, 23, 24, 25, 27, 28, 29
Blue/white exhaust.	4, 10, 15, 16, 17, 21, 23, 27, 29, 30, 50
Low oil pressure.	4, 31, 32, 33, 34, 35, 37, 38, 39, 52
Engine knocking.	13, 15, 16, 19, 22, 24, 25, 27, 29, 31, 40, 41, 53
Engine running rough.	7, 8, 9, 10, 11, 12, 13, 17, 18, 22, 24, 25, 26, 29, 40, 53
Vibration.	12, 13, 17, 21, 22, 25, 26, 29, 40, 42, 43
High oil pressure warning.	4, 33, 36
Overheating.	10, 12, 13, 15, 16, 20, 21, 40, 44, 45, 46, 47, 48, 51
Too much crankcase pressure.	22, 27, 29, 30, 40, 49
Poor compression.	10, 16, 21, 24, 25, 27, 28, 29, 30, 41, 53
Start and stop.	9, 10, 11

KEY TO CORRECT THE CAUSE

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

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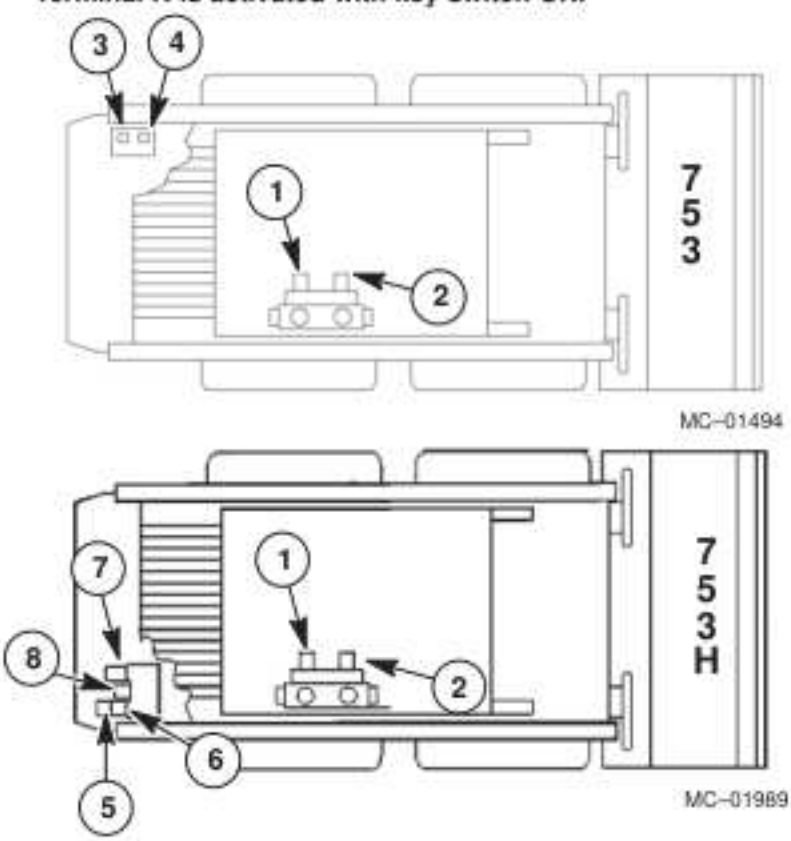
Left Side Control Handle Switches	Switch Number	Solenoid Number Activated			Attachment Harness Terminal Activated	Attachment Harness Connector	Right Side Control Handle Switches
			RH	HFH			
	1	1	1	1,8	K	 Viewed from front (pin side of connector) of loader.	
	2	2	2	2	K		
	* 3	1	1	1,8	K		
	4	2	2,3	6,7	K, A, D		
	5	1	1,3	5,7	K, A, C		
	6	1	1,3	5,7	K, E		
	7	1	1,3	5,7	K, F		
	8	1	1,3	5,7	K, G		
	9	1	1,3	5,7	K, H		
	10, 11, 12, 13, 14	–	—	—	K		

RH – Loaders with Rear Hydraulics Option.

HFH – Loaders with High Flow Hydraulics Option.

* If harness terminals K & L are jumped together, switches 4 thru 9 will provide flow on demand to female coupler. (Detent is NOT needed.)

* Terminal K is activated with key switch ON.



Solenoid Number	Hydraulic Coupler	Wiring Color
1	Front Female	Dk. Green/ Red
2	Front Male	Dk. Green/ Lt. Green
3	Diverter (Rear Couplers)	Yellow
4	Bleed – Rear Male & Female	Dk. Green/ Yellow
5	Rear Female	Yellow/ Lt. Green
6	Rear Male	Yellow/ White
7	Diverter	Brown
8	High Flow	Lt. Blue/ Red
9	Bleed – Rear Male & Female	Dk. Green/ Yellow

NOTE: The Key Switch fully left position activates solenoids number 1 and 4. The high flow rocker switch in the left side instrument panel must be ON to activate solenoid number 8.

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753 WITHOUT BOSS - WIRING SCHEMATIC

WITH HIGH FLOW OPTION
S/N 512716001-24122
(PRINTED OCTOBER 2000)
MC2609

DIODE HARNESS - 6703898

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CONTROLS MODULE

HIGH FLOW CONTROLS HARNESS - 6707681

B1CS CONTROLLER HARNESS - 6706828 OR 6710312

BICS CONTROLLER

MAINFRAME CONTROLLER HARNESS - 6706876 OR 6710313

CAB HARNESS (WITHOUT BOSS) - 6707665

REAR LIGHT HARNESS - 6714350

ENGINE HARNESS (WITHOUT BOSS) - 6707666

WIRES CONNECT BY LETTER ACROSS CONNECTORS

SOME CONNECTOR BODIES NOT SHOWN FOR DRAWING CLARITY

RED = RED
PNK = ORANGE
BLK = BLACK
LBL = LIGHT BLUE
DBL = DARK BLUE
LGN = LIGHT GREEN
DGN = DARK GREEN
YEL = YELLOW
PDE = PINK
WHT = WHITE
BRN = BROWN
TAN = TAN
PUR = PURPLE
GRY = GREY

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