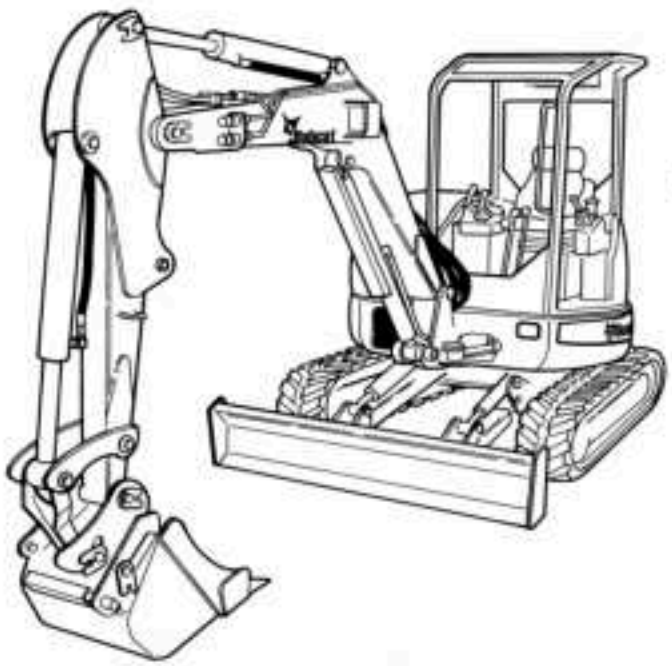
430

Bobcat®

Service Manual

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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.

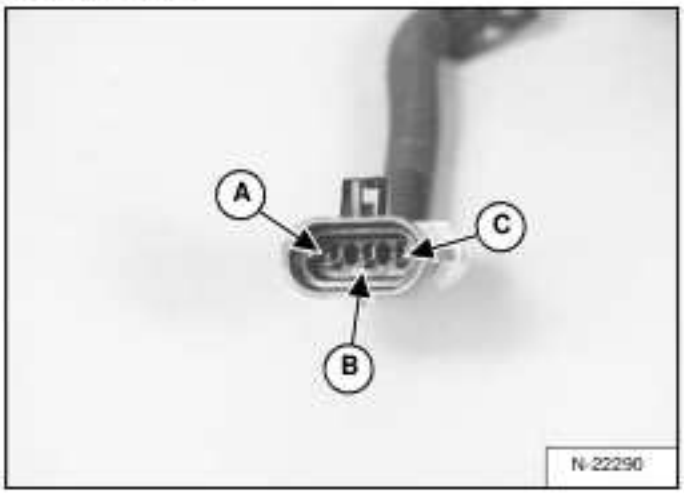
PROBLEM	CAUSE
Slow cranking speed	1, 2, 3, 4
Engine will not start	2, 5, 6, 7, 8, 9, 11, 12, 13, 14, 15, 16, 17, 19, 27, 28, 29
Difficult to start	5, 7, 8, 9, 10, 11, 12, 13, 15, 16, 17, 18, 19, 20, 25, 27, 28, 29
No power from engine	8, 9, 10, 11, 12, 13, 15, 16, 17, 21, 22, 24, 25, 26, 28, 29
Engine 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	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. Battery capacity low	28. Worn valves and seat
2. Bad electrical connections	29. Broken or worn piston rings
3. Faulty starter motor	30. Worn valve stems or guides
4. Incorrect grade of oil	31. Worn or damaged bearings
5. Low cranking speed	32. Not enough oil in the oil pan
6. Fuel tank empty	33. Switch is defective
7. Faulty stop control operation	34. Oil pump worn
8. Plugged fuel line	35. Relief valve is stuck open
9. Plugged fuel filter	36. Relief valve is stuck closed
10. Restriction in the air cleaner	37. Broken relief valve spring
11. Air in the fuel system	38. Faulty suction pipe
12. Faulty fuel injection pump	39. Plugged oil filter
13. Faulty fuel injectors	40. Piston seizure
14. Broken injection pump drive	41. Incorrect piston height
15. Incorrect injection pump timing	42. Faulty engine mounting
16. Incorrect valve timing	43. Incorrect alignment of flywheel
17. Poor compression	44. Faulty thermostat
18. Plugged fuel tank vent	45. Restriction in water jacket
19. Incorrect grade of fuel	46. Loose alternator belt
20. Exhaust pipe restriction	47. Plugged radiator
21. Cylinder head gasket leaking	48. Plugged breather pipe
22. Over heating	49. Plugged breather pipe
23. Cold running	50. Damaged valve stem oil deflectors
24. Incorrect tappet adjustment	51. Coolant level too low
25. Sticking valves	52. Plugged oil pump pipe strainer
26. Incorrect high pressure fuel lines	53. Broken valve spring
27. Worn cylinder bores	

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Checking The Electrical System (Cont'd)

Figure 80-81-36

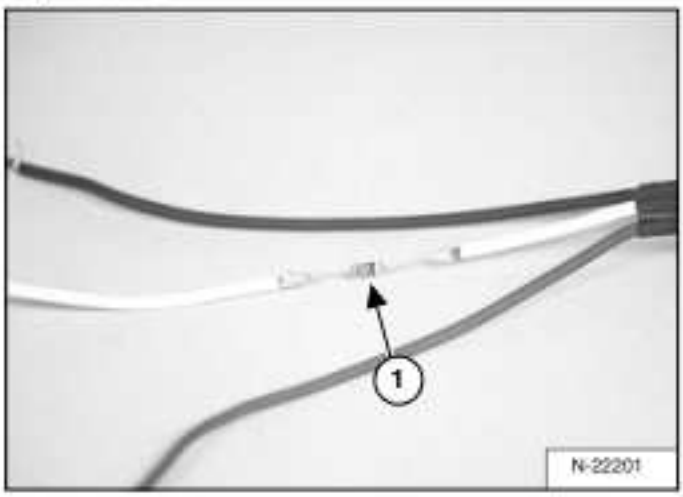


If there is voltage at the wiring harness, check the potentiometer **[Figure 80-81-36]** for resistance.

The resistance should be 10K Ohm's between wire terminal **A** and wire terminal **C** frame **[Figure 80-81-36]**.

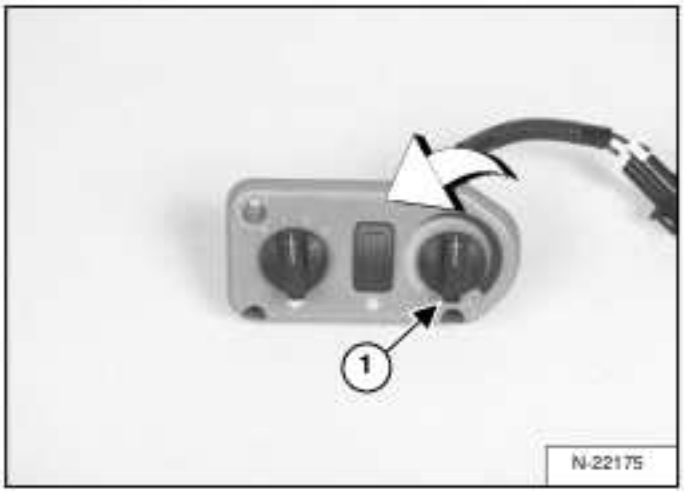
If no resistance is found replace the potentiometer.

Figure 80-81-37



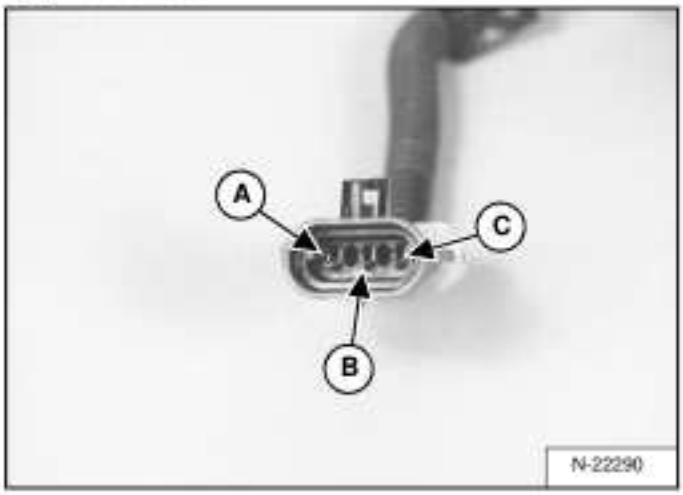
The white wire **B**, (Item 1) **[Figure 80-81-37]**, on the potentiometer, is a resister wire.

Figure 80-81-38



To check the resistance of the white wire, turn the potentiometer control (Item 1) **[Figure 80-81-38]** to the full A/C position.

Figure 80-81-39



The resistance between the wire terminal **A** and wire terminal **B** frame **[Figure 80-81-39]** should be approximately 49K Ohm's.

Check the resistance between the wire terminal **C** and wire terminal **B** frame **[Figure 80-81-39]** should be approximately 39k Ohm's.

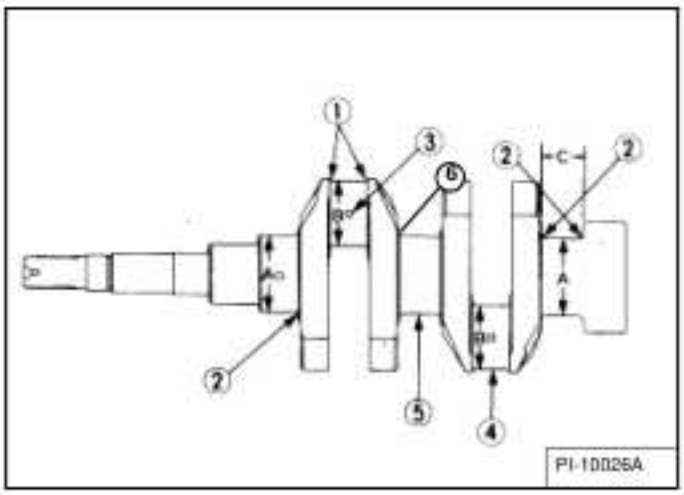
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Crankshaft Re-Grind Data

If the standard size bearing cannot be used due to excessive wear of the crankpin and crank journal use undersize or oversize bearings.

For undersize or oversize bearing use, follow the precautions noted below.

Figure SPEC-20-4



Grind the crankpin and journal with a wheel which has specified round corner and width without shoulder **[Figure SPEC-20-4]**.

1. 0.1299 - 0.1457 in. (3,3 - 3,7 mm) radius.
2. 0.1102 - 0.1260 in. (2,8 - 3,2 mm) radius.
3. Chamfer the oil hole circumference to 0.04 - 0.06 in. (1,0 - 1,5 mm) radius with and oil stone.
4. The crankpin must be fine finished to higher than (0,8S).
5. The crank journal must be fine-finished to higher than (0,8S).
6. The crank journal side surface must be fine-finished to higher than (0,8S).

SIZE	CODE NO.	NAME OF BEARING	BEARING MARK	CRANKSHAFT PROCESSING DIM.	
-0.008 in. (0,2 mm)	17311-23910	Crankshaft Bearing 1 0.008 in. minus (0,2 minus)	020 US	A	2.0363 - 2.037 in. (51,721 - 51,74 mm)
-0.008 in. (0,2 mm)	17311-23930	Crankshaft Bearing 2 0.008 in. minus (0,2 minus)	020 US		
-0.016 in. (0,4 mm)	17311-23920	Crankshaft Bearing 1 0.016 in. minus (0,4 minus)	040 US	A	2.0284 - 2.0291 in. (51,521 - 51.54 mm)
-0.016 in. (0,4 mm)	17311-23940	Crankshaft Bearing 2 0.016 in. minus (0,4 minus)	040 US		
-0.008 in. (0,2 mm)	17331-22970	Crank Pin Bearing 0.008 in. minus (0,2 minus)	020 US	B	1.8409 - 1.8415 in. (46,759 - 46,775 mm)
-0.016 in. (0,4 mm)	17331-22980	Crank Pin Bearing 0.016 in. minus (0,4 minus)	040 US	B	1.8330 - 1.8337 in. (46,559 - 46,575 mm)
+0.008 in. (+0,2 mm)	15521-23950	Thrust Bearing 1 - 0.008 in. plus (0,2 mm plus)	020 US	C	1.0315 - 1.0335 in. (26,20 - 26,25 mm)
	19202-23970	Thrust Bearing 2 - 0.008 in. plus (0,2 mm plus)			
+0.016 in. (+0,4 mm)	15221-23960	Thrust Bearing 1 - 0.016 in. plus (0,4 mm plus)	040 US	C	1.0394 - 1.0413 in. (26,4 - 26,45 mm)
	19202-23980	Thrust Bearing 2 - 0.016 in. plus (0,4 mm plus)			

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WIRING SCHEMATIC

430 (S/N 562711711 AND ABOVE)
(S/N 562911001 AND ABOVE)
(S/N 563011001 AND ABOVE)

(PRINTED JULY 2007)
V-0628

CONTROL MODULE
CONNECTORS J1-J6

LH CONSOLE
HARNESS 7101609

RIGHT HAND CONSOLE
HARNESS 7105175

ENGINE HARNESS
6814829

V-0628 (6-28-07)

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