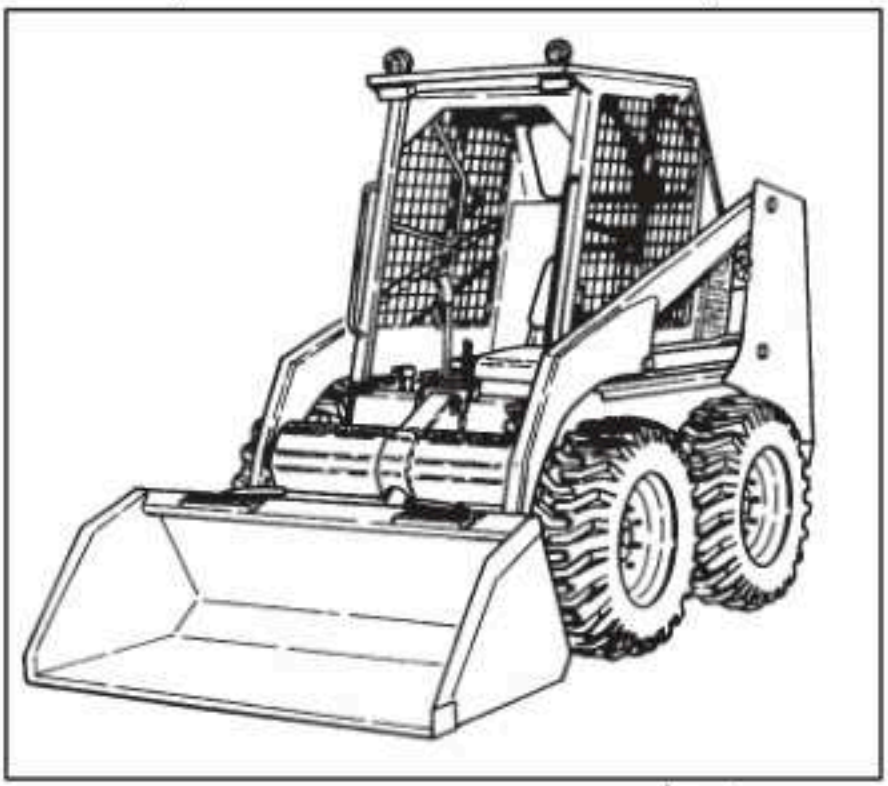
751

Service Manual

(S/N 514711001 & Above)
(S/N 514911001 & Above)



EQUIPPED WITH
BOBCAT INTERLOCK
CONTROL SYSTEM (BICS™)

MELROE
INGERSOLL-RAND
6724925 (5–97)
Printed in U.S.A.

bobcat

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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.

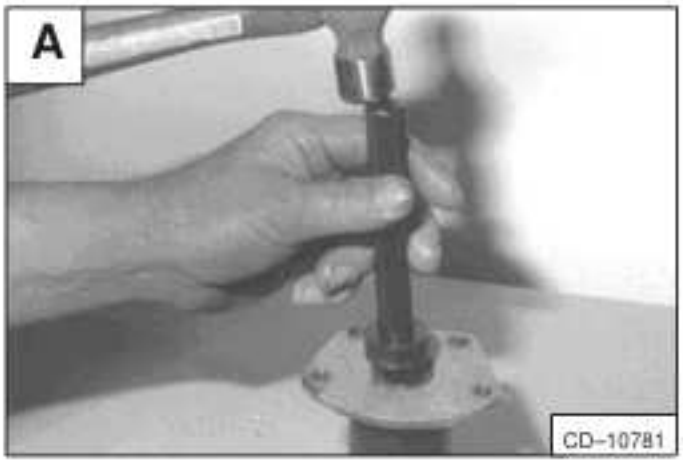
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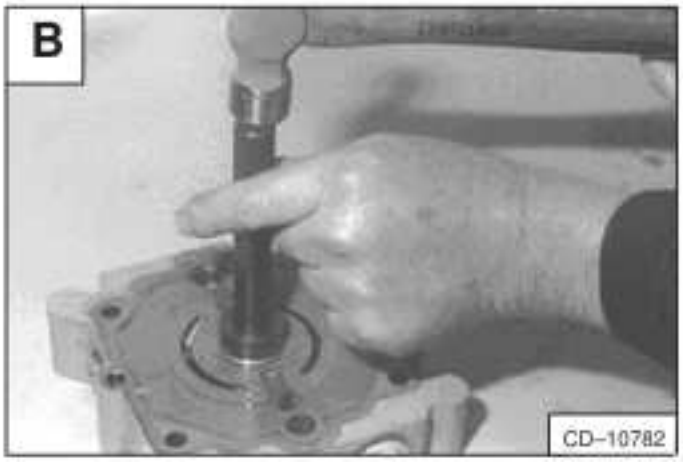
HYDROSTATIC PUMP (Cont'd)

Inspection (Cont'd)

Support the trunnion cover, use the correct size driver tool to remove and install the lip seal **[A]**.



Check the bearing in the pump housing end cap. If the bearing is worn, use the correct size driver tool to remove and install the bearing **[B]**.



Swashplate Pre–Load

Install the bearing spacer and cup into the housing with no shims (both sides).

Install the trunnion covers. Install the bolts and tighten to 18–22 ft.–lbs. (24–30 Nm) torque.

Install the magnetic base dial indicator as shown **[C]**.

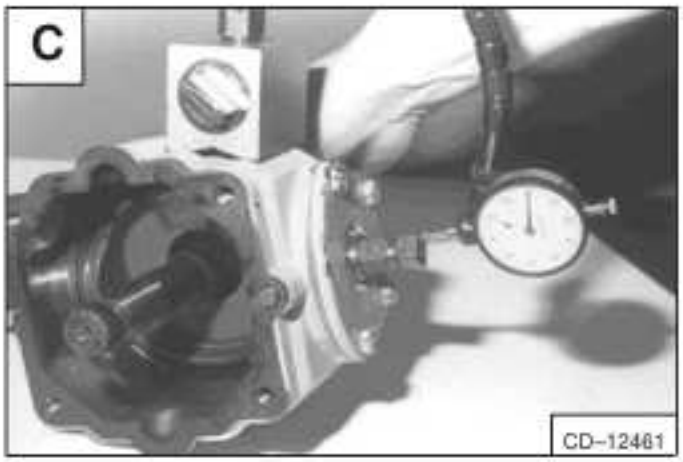
Move the swashplate back and forth by hand.

Add shims, under the bearing spacers, to provide 0.002–0.004 inch (0,05–0,10 mm) pre–load on the bearings.

EXAMPLE: If the dial indicator reads 0.040 inch (10,2 mm) end play. Shim thickness of 0.042–0.044 inch (10,7–11,2 mm) should be installed between the bearing spacers and cups. See Parts Microfiche for correct shim thickness.

Remove the trunnion cover. Remove the bearing spacers.

Install the correct amount of shims. Locate the shims so that there is no more than 0.008 inch (0,20 mm) difference in shim thickness from one side to the other. Install the bearing spacers and trunnion covers.



NOTE: When the correct amount of shims are installed, apply a torque of 5–20 in.–lbs. (0,6–2,3 Nm) to the swashplate shaft to move the swashplate.

Color or Shim & Value

Green – 0.003 inch (0,076 mm)
Blue – 0.005 inch (0,127 mm)
Brown – 0.010 inch (0,25 mm)
Yellow – 0.020 inch (0,51 mm)

NOTE: Later models shims are not used, the swash plate pre–load test procedure and bearing clearance is the same.

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STARTER (228000–5210) (Cont'd)

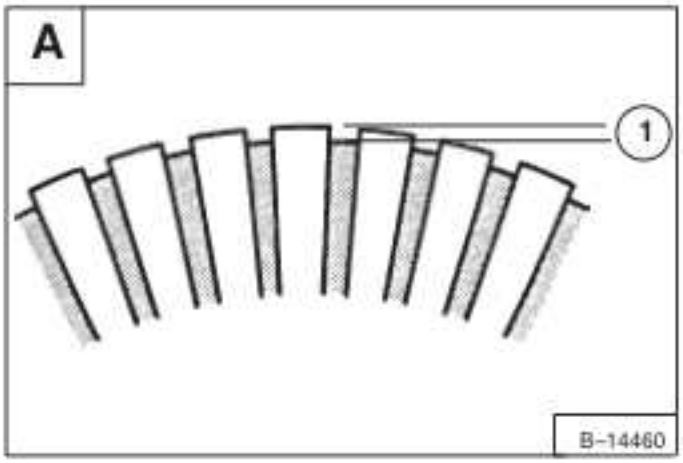
Inspection And Repair (Cont'd)

Measure the segment mica depth (Item 1) **[A]**.

Service Limit – 0.008 inch (0,2 mm)

If it is worn, replace the armature.

Check the commutator surface for burned spots which usually indicates an open–circuit, and correct it using #400 sand paper.



Check the field windings for wear and damage.

Check all the connections for clean and tight solder joints.

Field Winding Ground Test: Use a circuit tester, touch one probe to the field winding end of the brush and the other probe to the surface of the frame **[B]**. There should be no continuity. If there is continuity, the field windings are grounded.

Replace the field windings.



Field Windings Continuity Test: Use a circuit tester, touch one probe to the wire and the other probe to the brush **[C]**. There should be continuity. If there is no continuity, the field windings are open–circuited.

Replace the field windings.



Inspect the brushes for wear and damage.

Replace the brush holder and yoke if the brushes need replacement.

Check brush springs, for damage or rust. Replace as needed.

Brush Holder Insulation Test: Use a circuit tester, touch one probe to the positive brush holder plate and the other probe to the holder plate **[D]**. There should be no continuity. If there is continuity, replace or repair.



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Troubleshoot Guide

The following troubleshooting guide is provided for assistance in locating and correcting BICS system problems. It is recommended that these procedures be done by authorized Bobcat Service Personnel only.

⚠ WARNING

Check for correct function after adjustments, repairs or service. Failure to make correct repairs or adjustments can cause injury or death.

W–2004–1285

BICS CONTROLLER

PROBLEM	SOLUTION #
Power indicator light does not come ON.	1, 2, 3, 6
All indicator lights flashing.	4
One of the indicator lights flashing.	5
Intermittent indicator lights.	6, 7, 8, 9

SOLUTION SUGGESTIONS

1. Check that ignition switch ON.
2. Check BICS 10 amp. fuse.
3. Check wiring and connections. Make sure the connector is securely connected to the controller. Remove controller and pull on connector to check.
4. Look at indicator light windows, if they are milky white in appearance it is most likely caused by moisture in the controller. Allow to dry or replace the controller.
5. Refer to BICS controller troubleshooting chart. (See Page 8–1.)
6. Check wire connections to make sure connectors are locked into place.
7. Check pins in connectors for pins pushed back or bent.
8. Move the system wiring back & forth to try to find area that may be causing the intermittent connection.
9. Use sensor tester MEL1428 to isolate problem between sensor and controller and wiring.

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WIRE LEGEND

NO.'s	COLOR	GAUGE
1A	Red	12
1AA	Red	12
1AB	Red	12
1B	Red	10
1D	Red	16
1E	Red	14
1H	Red	14
1L	Red	12
1S	Red	12
1SA	Red	12
1SB	Red	16
1SC	Red	16
1SD	Red	12
1SP	Red	16
1W	Red	14
10	Black	14
10A	Black	12
10A	Black (Heater Harness)	14
10K	Black	14
10L	Black	14
10S	Black	16
12	Orange	16
12B	Orange	16
12C	Orange	14
12CA	Orange	14
12CB	Orange	12
12CC	Orange	16
12CD	Orange	14
12F	Orange	16
12G	Orange	16
12H	Orange	16
12H	Orange (Heater Harness)	14
12S	Orange	16
12W	Orange	16
14F	Lt. Green	16
14R	Lt. Green/White	16
19A	White	14
19E	Red/White	14
19H	Red/White	14
19L	Red/White	12
19LA	Red/White	12
19LB	Red/White	16
19S	Red/White	14
19W	Red/White	14
19WR	Red/White	16
19WRA	Red/White	16
20	Red	14
20B	Black	16
20S	Black	16
21	Yellow	14
21R	White	16
21RA	White	16
21S	White/Lt. Green	12
22	Orange	14
23F	White/Black	16
23FA	Red/Blue	16
28B	Lt. Blue/Orange	12
28L	Lt. Blue/Orange	16
30F	Black	16
30H	Black	16
30P	Black	16
31P	Yellow/Green	16
31PA	Yellow/Green	16
31PB	Yellow/Green	16
32F	Yellow/Dk. Blue	16
32P	Yellow	16
32T	Yellow/Black	16
35H	Yellow/Brown	16
36F	Purple	16

WIRE LEGEND (Cont'd)

NO.'s	COLOR	GAUGE
36T	Purple/White	16
40	Black	16
40A	Black	16
40L	Black	16
40LA	Black	16
40R	Black	16
40RA	Black	16
41	Pink	16
41A	Pink	16
41B	Pink	16
41C	Pink	16
41L	Pink	16
41R	Pink	16
42F	Dk. Blue	16
42R	Dk. Blue/White	16
42RR	Dk. Blue/White	16
46B	Brown/Red	16
46L	Yellow	16
46LA	Yellow	16
46LR	Brown/Yellow	16
46LRA	Brown/Yellow	16
46R	Dk. Green	16
46RA	Green	16
46RR	Brown/Green	16
46RRA	Brown/Green	16
46T	Brown	16
50A	Black	16
50B	Black	16
50V	Black	16
56RB	Dk. Green/Yellow	16
57DA	Yellow	16
57F	Lt. Blue/Red	16
59F	Orange	16
60B	Black	16
60BA	Black	16
60W	Black	16
60WA	Black	16
60WB	Black	16
63W	Orange/Black	16
63WR	Blue/Black	16
64	Orange/Blue	16
66	Orange/Green	16
70	Black	14
70C	Black	16
72B	Pink/White	16
78	White	14

PARTS LEGEND

1. Engine Harness 6710500 Rev. A
2. Hydraulic Oil Filter Differential Charge Pressure Switch (Opt.)
3. Hydraulic Charge Pressure/Trans. Charge Pressure Sensor
4. Hydraulic Oil Temperature Switch
5. Engine Coolant Temperature Sensor
6. Engine Coolant Temperature Switch
7. Engine Oil Pressure Switch
8. Fuel Sensor
9. Rear Auxiliary (Diverter) Valve (Opt.)
10. Rear Auxiliary Bleed Down Solenoid (Opt.)
11. Rear Auxiliary Valve Solenoid (Opt.)
12. Hourmeter Harness (Opt.) 6700228
13. Hourmeter (Opt.)
14. Fuel Shut-Off Solenoid Connector
15. Alternator
16. Glow Plug
17. Starter
18. Battery
19. Switched Power Relay
20. Starter Relay
21. Glow Plug Timer/Relay (6-7 Second Delay)
22. Brake Relay
23. Fused 10 Amp - BICS
24. Fused 15 Amp - Engine
25. Fused 15 Amp - PWM (Attachment)
26. Fused 25 Amp - Brake
27. Fused 25 Amp - Accessories
28. Fused 25 Amp - Accessories
29. Fused 25 Amp - Lights
30. Fused 10 Amp - BOSS
31. Accessory Fused and Switch Power
32. Auxiliary Hydraulic Connector
33. Cab Accessory Connector
34. Rear Wiper Harness (Opt.) 6712260
35. Rear Wiper Switch (Opt.)
36. Diode
37. Rear Wiper Motor (Opt.)

PARTS LEGEND (Cont'd)

38. Back-Up Alarm Harness (Opt.) 6704358
39. Back-Up Alarm Switch (Opt.)
40. Heater Harness (Heater Section) (Opt.) 6660892
41. Heater Relay Switch (Opt.)
42. Heater and Heater Motor (Opt.)
43. Heater Fan Switch (Opt.)
44. Heater Harness (Eng. Section) (Opt.) 6660894
45. Fuse and Fuse Cap (Opt.)
46. Beacon or Strobe Switch (Opt)
47. Strobe Harness (Opt.) 6712258
48. Rotating Beacon Harness (Opt.) 6708318
49. Strobe Light or Rotating Beacon (Opt.)
50. Rear Light Harness (751 Opt.) 6707669 Rev. B
51. Left Rear Taillight (Opt.)
52. Left Rear Work Light (751 Opt. - 751E Standard)
53. Back-Up Alarm (751 Opt.-751E Standard)
54. Right Rear Work Light (751 Opt. - 751E Standard)
55. Right Rear Taillight (Opt.)
56. Rear Light Harness (751E Standard) 6709048 Rev. A
57. Left Rear Taillight (751E Standard)
58. License Plate Light (751E Opt.)
59. Right Rear Taillight (751E Standard)
60. Rear Windshield Washer Pump and Reservoir Tank (Opt.)

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