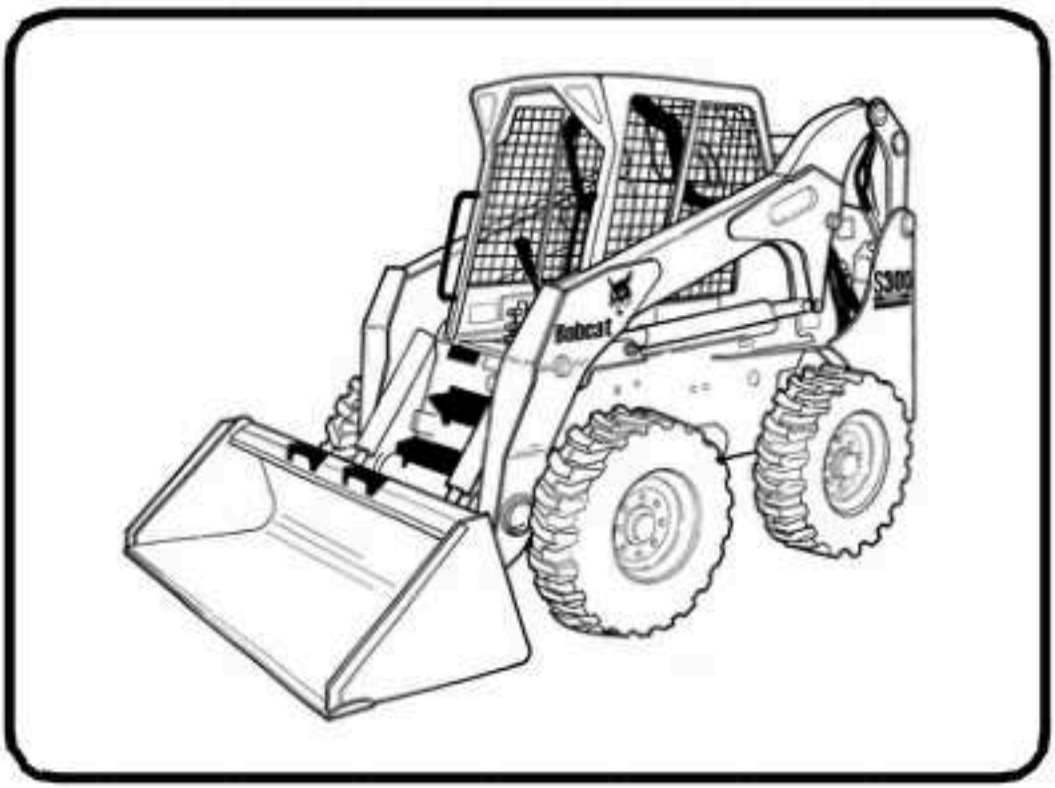
Bobcat®

Service Manual

S250, S300 Skid-Steer Loader

S/N A5GM11001 - A5GM19999
S/N A5GN11001 - A5GN19999
S/N A5GP11001 - A5GP19999
S/N A5GR11001 - A5GR19999



EQUIPPED WITH BOBCAT INTERLOCK CONTROL SYSTEM (BICS™)

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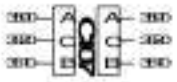
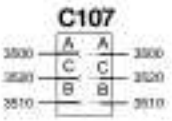
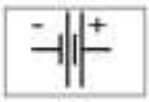
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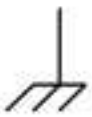
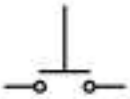
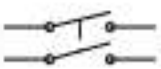
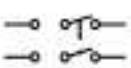
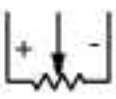
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Glossary Of Electrical Symbols

SYMBOL	DESCRIPTION
	CONNECTIONS
	CONNECTOR - Harness - Used for connecting 2 harnesses together or a harness to a component. The connector can vary from a single pin to any number of pins (Example: 3 pin connectors shown). The connector pins can be numbered alphabetical (shown) or numerical (1, 2, 3 etc.). The harness wires numbers are called out next to the connector (Example: 3500).
	The connector number is called out next to the connector (Example: C107). These connector numbers are used for schematic identification only and do not appear on the harness or connector.
	COMPONENTS
	BATTERY - Used for supplying and storing electrical power for the machine.
+	POSITIVE ELECTRICAL CIRCUIT - Indicates positive battery circuit.
-	NEGATIVE ELECTRICAL CIRCUIT - Indicates battery ground circuit.
G	ALTERNATOR - Used to create the electrical current to supply voltage to the battery and components.
	STARTER - Uses battery current to start the machine engine.
	GROUND - Used to represent an external ground connection.

SYMBOL	DESCRIPTION
	COMPONENTS
	GROUND - Frame - Used to represent an component that is internally grounded.
	LIGHT -
	SWITCH - Single Pole - Single Throw (ON-OFF) Normally Open
	
	SWITCH - Single Pole - Single Throw (ON-OFF) Normally Closed.
	
	SWITCH - Single Pole - Double Throw (ON-OFF-ON) - This switch can be in any of three positions. (Some switches are spring activated to return them to a certain position when released.)
	SWITCH - Double Pole - Single Throw (ON-OFF) Open and Closed positions will be specified depending on switch application.)
	SWITCH - Double Pole - Double Throw (ON-OFF) Open and Closed positions will be specified depending on switch application.
	POTENTIOMETER - Variable resistance - Provides variable resistance.

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Troubleshooting (Standard And ACS)

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.

⚠ WARNING

AVOID INJURY OR DEATH

Instructions are necessary before operating or servicing machine. Read and understand the Operation & Maintenance Manual, Operator's Handbook and signs (decals) on machine. Follow warnings and instructions in the manuals when making repairs, adjustments or servicing. Check for correct function after adjustments, repairs or service. Untrained operators and failure to follow instructions can cause injury or death.

W-2003-0807

PROBLEM	CAUSE
Back-up alarm will not sound when the operator moves both steering levers in the reverse position.	1, 2, 3, 4, 5, 6, 7
Back-up alarm sounds when steering levers in neutral / forward position.	2, 6, 7

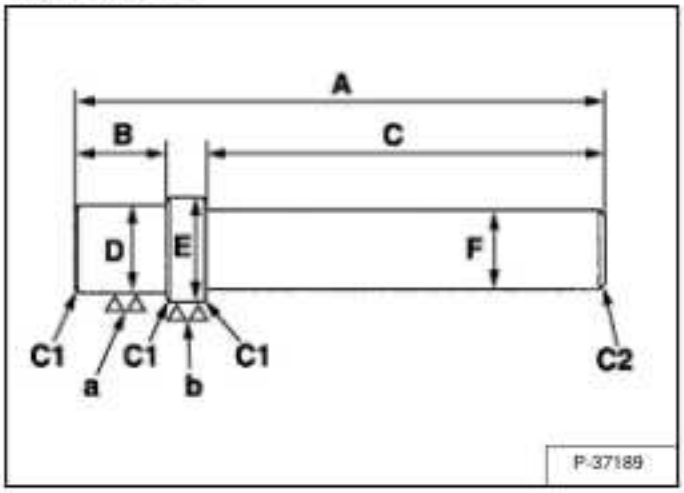
KEY TO CORRECT THE CAUSE
1. The ground connection is not making a good contact. 2. The back-up alarm switches are damaged. 3. The alarm is damaged. 4. The alarm or back-up switch wires are disconnected. 5. Check the fuses. 6. The wiring is damaged. 7. The back-up alarm switches need adjusting.

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Piston And Connecting Rod - Servicing

The Small End Bushing Replacing Tool can be made using the dimensions below. One set of dimensions is for the press out tool and one for press fit.

Figure 70-90-6



Small End Bushing Replacing Tool

Application: Use to press out and to press fit the small end bushing in the connection rod.

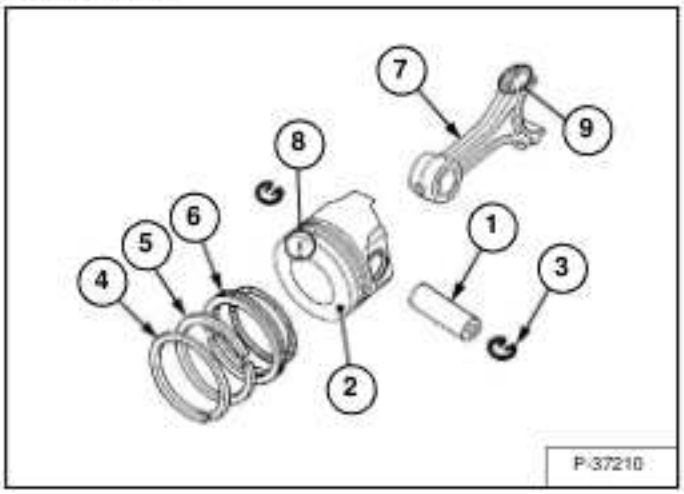
(Press out)

A	6.181 in. (157 mm dia.)
B	0.571 in. (14,5 mm)
C	4.7244 in. (120 mm)
D	1.1811 in. dia. (30 mm dia.)
E	1.2972 in. dia. (32,95 mm dia.)
F	0.7874 in. (20 mm)
a	0.00025 in. (0,0000063 mm)
b	0.00025 in. (0,0000063 mm)
C1	Chamfer 0.039 in. (1,0 mm)
C2	Chamfer 0.079 in. (2,0 mm)

(Press fit)

A	6.181 in. (157 mm dia.)
B	0.571 in. (14,5 mm)
C	4.7244 in. (120 mm)
D	1.1811 in. dia. (30 mm dia.)
E	1.6535 in. dia. (42,000 mm dia.)
F	0.7874 in. (20 mm)
a	0.00025 in. (0,0000063 mm)
b	0.00025 in. (0,0000063 mm)
C1	Chamfer 0.039 in. (1,0 mm)
C2	Chamfer 0.079 in. (2,0 mm)

Figure 70-90-7



1. Piston Pin
2. Piston
3. Piston Pin Snap Ring
4. Compression Ring 1
5. Compression Ring 2
6. Oil Ring
7. Connecting Rod
8. Mark (↑)
9. Numbering Mark

Remove the piston rings using a piston ring tool **[Figure 70-90-7]**.

Remove the piston pin (Item 1), and separate the connecting rod (Item 7) from the piston (Item 2) **[Figure 70-90-7]**.

Installation: When installing the piston pin, immerse the piston in 80°C (176°F) oil for 10 to 15 minutes and insert the piston pin to the piston.

Assemble the piston to the connecting rod with the ↑ mark (Item 8) and the connecting rod numbering mark (Item 9) **[Figure 70-90-7]** facing same side.

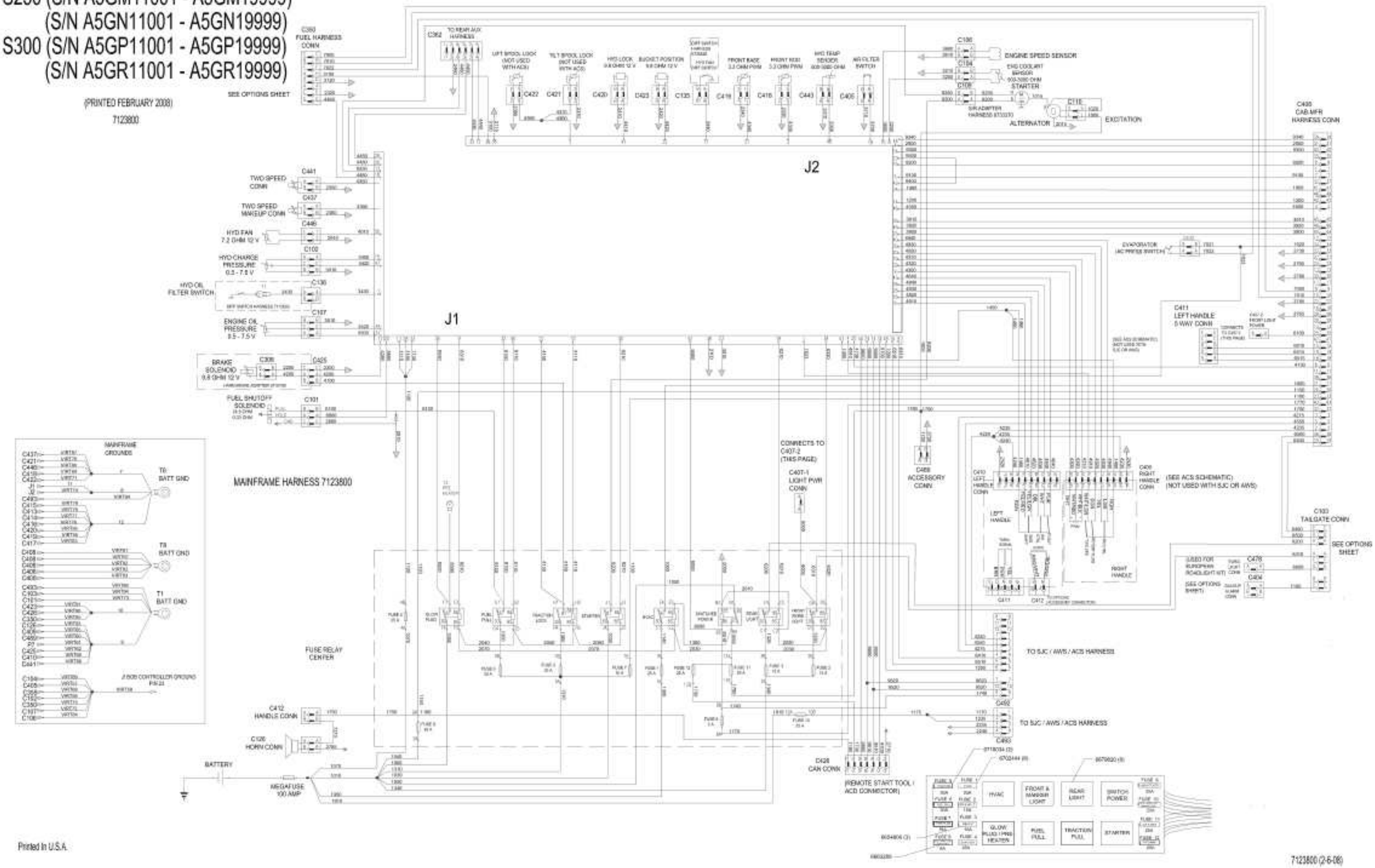
NOTE: Mark the same number on the connecting rod and the piston so as not to change the combination.

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WIRING SCHEMATIC
(MAINFRAME)
S250 (S/N A5GM11001 - A5GM19999)
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