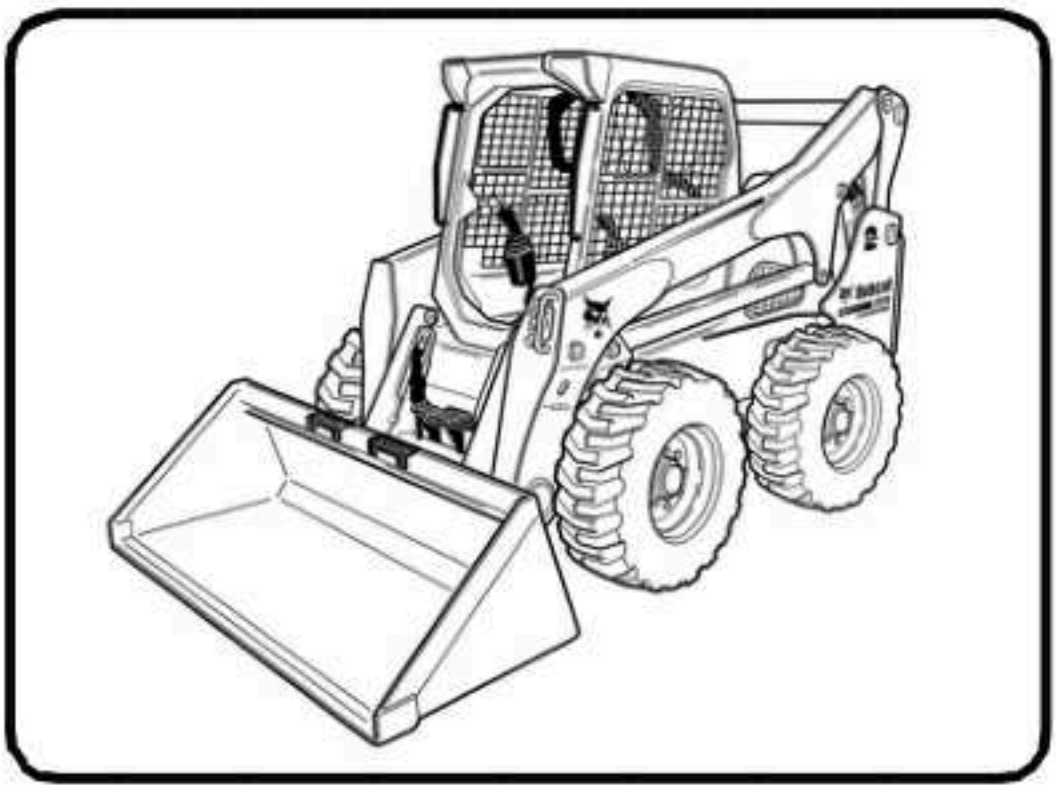
Bobcat®

Service Manual
A770 All-Wheel Steer Loader

S/N A3P611001 & Above
S/N A3P711001 & Above



EQUIPPED WITH BOBCAT INTERLOCK CONTROL SYSTEM (BICS™)

6989480 (1-11)

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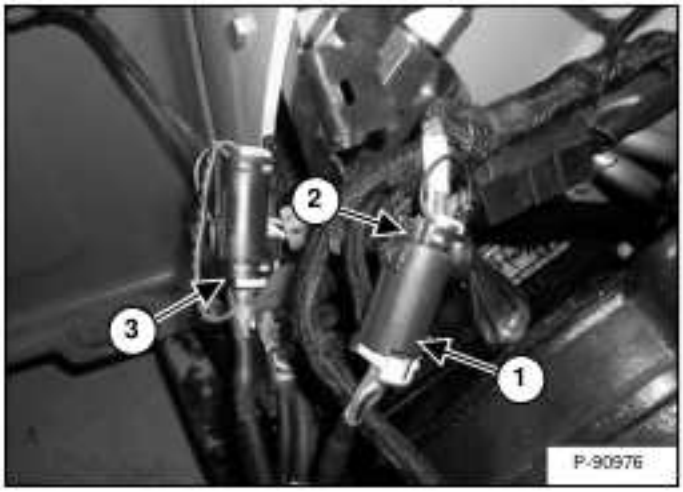
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REMOTE START TOOL (SERVICE TOOL) KIT - 7003031 (CONT'D)

Loader Service Tool Harness - 6689747 (Cont'd)

Figure 10-61-6



NOTE: The Remote Start Tool (Service Tool) connection harness has two connectors (Item 1) and (Item 3). The main connector (Item 1) [Figure 10-61-6] is always used for connection to the loader harness.

The second connector (Item 3) [Figure 10-61-6] is used for attachment ACD upgrades or attachment operational diagnostics only. This connector has a cap attached to it to prevent damage or corrosion when not in use.

Connect the Remote Start Tool (Service Tool) connector (Item 1) to the loader harness connector (Item 2) and the other Remote Start Tool (Service Tool) connector to the ACD harness connector (Item 3) **[Figure 10-61-6]**.

NOTE: The key switch must be in the off position or the Remote Start Tool (Service Tool) will not operate.

⚠ WARNING

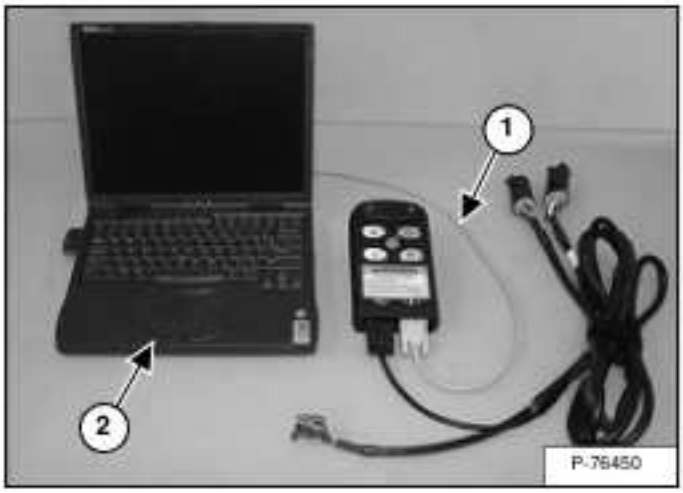
AVOID INJURY OR DEATH

- **Lift and block the machine.**
- **Check that wheels or tracks are clear.**
- **Cab ignition must be in the "STOP" position to start the engine with the Service Tool (if applicable).**
- **See machine Service Manual for more instructions.**

W-2792-0409

Computer Service Tool Harness - 6689746

Figure 10-61-7



The computer service tool harness (Item 1) **[Figure 10-61-7]** is required to connect remote start tool (service tool) to the Service PC (Item 2) **[Figure 10-61-7]**.

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Troubleshooting

The following troubleshooting chart is provided for assistance in locating and correcting problems which are most common.

⚠ 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
Front horn will not sound when the operator presses the front horn button	1, 2, 3, 4, 5, 6

KEY TO CORRECT THE CAUSE
1. The ground connection is not making a good contact.
2. The front horn is damaged.
3. The front horn wires are disconnected.
4. Check the fuses.
5. The wiring is damaged.
6. The joystick controller is not working correctly.

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Testing

There are two tests for checking the EGR system. Both tests will need to be performed and the coolant must be monitored through the Service Analyzer.

The Cold Engine Coolant Temperature Test will need to be performed with the engine coolant below 55°C (131°F). The Hot Engine Coolant Temperature Test will need to be performed with the engine coolant above 70°C (158°F).

⚠ WARNING

AVOID INJURY OR DEATH

When the engine is running during service, the steering levers or joysticks must be in neutral and the parking brake engaged.

W-2717-0208

⚠ WARNING

MACHINE FALLING OR MOVING CAN CAUSE SERIOUS INJURY OR DEATH

Put jackstands under the front and rear of the machine before running engine for service.

W-2718-0208

Lift and block the loader. See Procedure on Page 10-10-1.)

Open the rear door.

Connect the Service PC (See SERVICE PC (LAPTOP COMPUTER) on Page 60-150-1.)

⚠ WARNING

AVOID INJURY OR DEATH

When an engine is running in an enclosed area, fresh air must be added to avoid concentration of exhaust fumes. If the engine is stationary, vent the exhaust outside. Exhaust fumes contain odorless, invisible gases which can kill without warning.

W-2050-0807

Cold Engine Coolant Temperature Test

Start the engine and run at low idle.

Start Service Analyzer and select [Monitor].

Select [Engine Temperature].

⚠ WARNING

AVOID BURNS

Some surfaces of the Exhaust Gas Recirculation system can be hot. Use caution when conducting diagnostic tests.

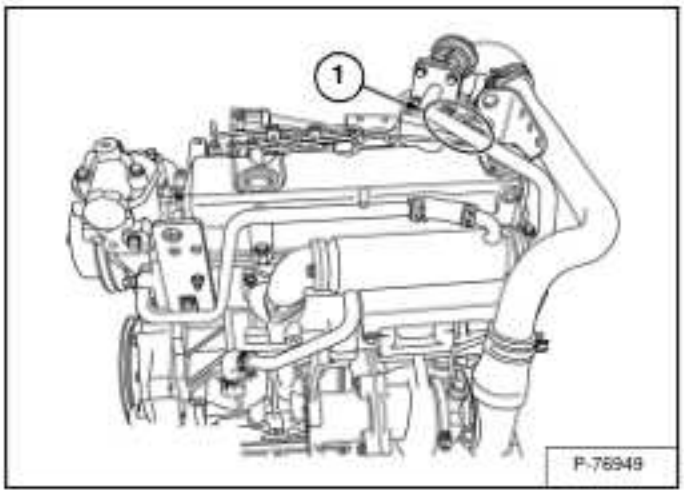
Allow the engine to cool before servicing.

W-2716-0208

NOTE: Verify the engine temperature is below 55°C (131°F). If the engine temperature is above 55°C (131°F), let the engine cool down and restart the Cold Engine Coolant temperature Test.

NOTE: Monitor the engine coolant temperature using the Service Analyzer.

Figure 70-130-2



Measure the surface temperature of the EGR pipe (Item 1) **[Figure 70-130-2]** with an Infrared Thermometer.

If the engine coolant temperature is below 55°C (131°F) and the surface temperature of the EGR pipe is 50°C (122°F) or below, the EGR system is OK. Continue with the Hot Engine Coolant temperature Test

If the surface temperature of the EGR pipe reads 100°C (212°F) or above continue this Cold Engine Coolant Temperature Test.

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CONNECTOR ASSIGNMENTS

CONN	DESCRIPTION	NUM OF PINS	SHEET	CONN	DESCRIPTION	NUM OF PINS	SHEET	CONN	DESCRIPTION	NUM OF PINS	SHEET
C101	FUEL SHUTOFF SOLENOID	3	6	C448	PRESSURE CONTROL	2	14	FC1	FUSE CENTER 1	8	3
C103	TAILGATE	8	4,10,11,13	C449	LEFT JOYSTICK (CAB HARN)	4	5	FC2	FUSE CENTER 2	8	3
C104	ENGINE COOLANT SENSOR	2	6	C450	RIGHT JOYSTICK (CAB HARN)	4	5	FRC1	FUSE RELAY CENTER	64	3,6,7,11,12
C105	HYD CHARGE PRESSURE	3	7								
C106	ENGINE SPEED SENSOR	2	6	c452	LR BASE	2	14	J1A	GATEWAY CONTROLLER	34	3,6-8,10-13
C107	ENGINE OIL PRESSURE	3	6	C453	RIGHT QUAD A DRIVE	4	14	J1B	GATEWAY CONTOLLER	26	3-10,13
C108	HYD TEMPERATURE SENDER	2	7	C454	LEFT QUAD DRIVE	4	14	J2A	AUX CONTROLLER	34	7,10,13
C109	S/R ADAPTER HARNESS	2	6	C455	R F WHEEL POS SENSOR	3	14	J2B	AUX CONTROLLER	26	3-5,7,10,13
C110	ALTERNATOR	2	6	C456	R R WHEEL POS SENSOR	3	14				
C112	HYD OIL FILTER SWITCH	2	7	C457	L F WHEEL POS SENSOR	3	14	J1-ACS	ACS CONTROLLER	8	14
C126	HORN	2	13	C458	L R WHEEL POSITION SENSOR	3	14	J2-ACS	ACS CONTROLLER	10	14
C129	CAB ACCESSORY	3	9					J3-ACS	ACS CONTROLLER	10	14
C209	DOME LIGHT	3	9	C461	RF ROD	2	14	J5	DRIVE PLUS CONTROLLER	50	14
C212	POWER SOCKET	2	9	C467	LIFT PEDAL LOCK	3	14	J6	DRIVE PLUS CONTROLLER	50	14
C252	WASHER	2	9	C468	TILT PEDAL LOCK	3	14	SW1	BRAKE SWITCH	6	8
C277	AIR RIDE SEAT	6	13	C469	TILT HANDLE	3	14	SW2	BEACON SWITCH	6	13
C278	RIGHT SPEAKER	2	13	C470	TILT PEDAL	3	14	SW3	HAZARD SWITCH	6	13
C279	LEFT SPEAKER	2	13	C471	LIFT PEDAL	3	14	SW4	HAND/FOOT, H/ISO SWITCH	6	9
C308	BRAKE SOLENOID	2	7	C472	LIFT HANDLE	3	14	SW5	POWER BOBTACH SWITCH	6	13
C350	AC EVAPORATOR SWITCH	2	12	C474	BRAKE LIGHT	1	14	SW6	BUCKET POSITION SWITCH	6	13
C355	DLX or STD FUEL HARNESS	6	6,12,13	C479	LEFT PANEL(BLACK)	12	5,8	SW9	TRAVEL CONTROL SWITCH	6	8
C404	BU ALARM-MFR HARN	2	3,10	C480	LEFT PANEL(GRAY)	12	8	SW10	BLOWER SWITCH	5	12
C405	AIR FILTER SWITCH	2	6	C482	SEATBAR SENSOR	3	9	SW11	AC SWITCH	3	12
C406	FUEL SENDER	2	6	C483	TEMP CONTROL SWITCH	3	12				
C408	CAB - MFR HARN CONNECTOR	48	3-5,8-9,11-13	C486	AC COMPRESSOR	2	12	T1	BATT GROUND	1	4
C409	RIGHT HANDLE	10	10	C489	MFR ACCESSORY	2	3,4	T2	BUZZER GROUND	1	8
C410	LEFT HANDLE	10	10	C492	ACS/SJC/AWS-MFR HARN	8	3,5,9	T3	FLASHER	2	13
C411	LEFT HANDLE 5 WAY (FLSHR)	5	13	C493	ACS/SJC/AWS-MFR HARN	4, 15	3,4	T6	BATT GROUND	1	4
C412	LEFT HANDLE 2 WAY (HORN)	2	13	C497	SJC HORN/BLINKER	3	13	T8	BATT GROUND	1	4
C415	HIGH FLOW SOLENOID	2	13	C499	PTOL	4	8	T13	BUZZER POWER	1	8
C418	FRONT ROD	2	7	C500	RH KEY SWITCH	6	8	T14	PRE HEATER	1	6
C419	FRONT BASE	2	7	C501	A22 PUMP HARNESS	8	14	T15	RIGHT REAR WORK LIGHT(+)	1	11
C420	HYD LOCK	2	7	C503	RH DLX PANEL	6	5,8	T16	RIGHT REAR WORK LIGHT(-)	1	11
C421	TILT SPOOL LOCK	3	10	C542	LEFT SWASHPLATE	3	14	T17	LEFT REAR WORK LIGHT (+)	1	11
C422	TILT SPOOL LOCK	3	10	C543	RIGHT SWASHPLATE	3	14	T18	LEFT REAR WORK LIGHT (-)	1	11
C423	BUCKET POSITION	2	13	C544	LEFT FORWARD DRIVE	2	14	T19	BACKUP ALARM	1	10
C425	BRAKE SOLENOID	3	7	C545	LEFT REVERSE DRIVE	2	14	T20	BACKUP ALARM (GND)	1	10
C426	CAN (Remote Start Tool, ACD)	7	5	C546	RIGHT FORWARD DRIVE	2	14				
C428	TILT ACTUATOR	8	14	C547	RIGHT REVERSE DRIVE	2	14				
C429	LIFT ACTUATOR	8	14								
C434-1	LEFT WORKLIGHT 1	2	11	C602	LEFT REAR TAIL LIGHT	2	11				
C434-2	LEFT WORKLIGHT 2	2	11	C603	RIGHT REAR TAIL LIGHT	2	11				
C435-1	RIGHT WORKLIGHT 1	2	11	C606	POWER BOBTACH OPEN	2	13				
C435-2	FRONT BASE (FEMALE)	2	11	C607	POWER BOBTACH CLOSE	2	13				
C437	TWO SPEED MAKEUP	2	13	C610	HVAC DUCT FAN	2	12				
C440	RF BASE	2	14	C611	BLOWER MOTOR	4	12				
C441	TWO SPEED	2	13	C630	THERMOSTAT	3	12				
C442	LF BASE	2	14	C635	HEATER VALVE	6	12				
C443	LF ROD	2	14	C667	DOOR	6	9				
C444	RF BASE	2	14	C670	EXTERIOR BEACON	6	13				
C445	RR ROD	2	14	C676	RADIO	6	13				
C446	HYDRAULIC FAN	2	7	C707	OBW STOP BRAKE LIGHT	3	14				
C447	LR ROD	2	14								

WIRE CATEGORIES FOR COLORS AND NUMBER RANGE			
GROUP DESCRIPTION	GROUP NUMBER RANGE	WIRE COLOR	COLOR CODE
BATT FEED, GENERAL	1000 THROUGH 1499	RED	RED
BATT FEED, FUSED	1000 THROUGH 1499	RED/WHITE	RED/WHT
BATT FEED, SWITCHED	1500 THROUGH 1999	ORANGE/WHITE	RNG/WHT
BATTERY GROUND	2000 THROUGH 2999	BLACK	BLK
move	2000 THROUGH 2999	BROWN	BRN
MONITORING	3000 THROUGH 3999	LIGHT BLUE	LBL
HYDRAULIC	4000 THROUGH 4999	LIGHT GREEN	LGN
CONTROLLER SUPPLY	5000 THROUGH 5999	YELLOW	YEL
LIGHTS	6000 THROUGH 6999	PINK	PNK
OTHER FUNCTIONS	7000 THROUGH 7999	WHITE	WHT
ENGINE	8000 THROUGH 8999	TAN	TAN
COMMUNICATION	9000 THROUGH 9999	PURPLE	PUR
COMMUNICATION	9000 THROUGH 9999	PURPLE/WHITE	PUR/WHT

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WIRING SCHEMATIC
(AWS MACHINE)
A770 (S/N A3P611001 AND ABOVE)
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