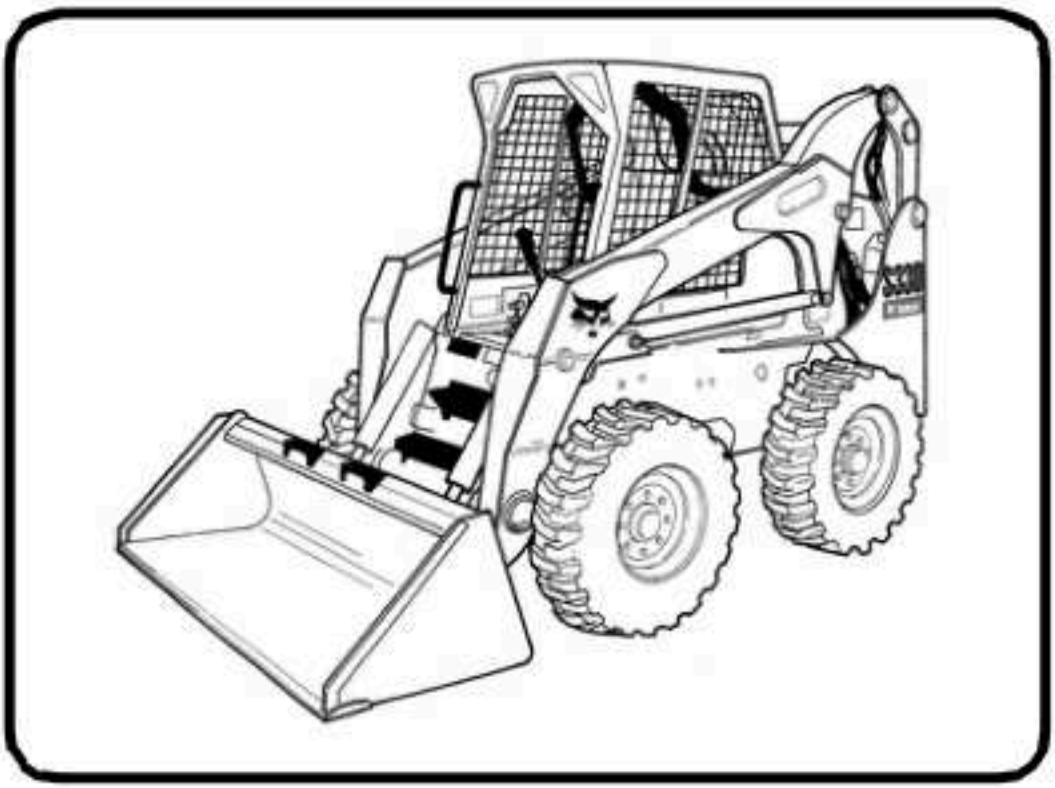
Bobcat®

Service Manual
S330 Skid-Steer Loader

S/N A02060001 & Above
S/N A02160001 & Above



EQUIPPED WITH BOBCAT INTERLOCK CONTROL SYSTEM (BICS)

6986681 (5-08)

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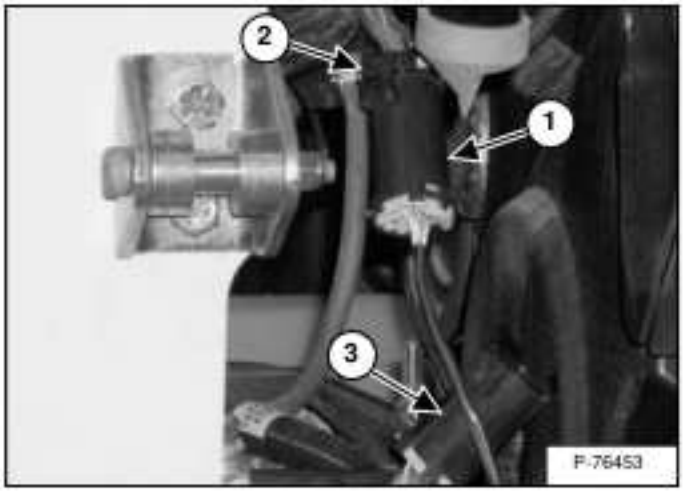
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Loader Service Tool Harness - 6689747 (Cont'd)

Figure 10-61-21



NOTE: The Remote Start Tool (Service Tool) connection harness has two connectors (Item 1) and (Item 3). The main connector (Item 1) [Figure 10-61-21] is always used for connection to the loader harness.

The second connector (Item 3) [Figure 10-61-21] 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 10-61-21]**.

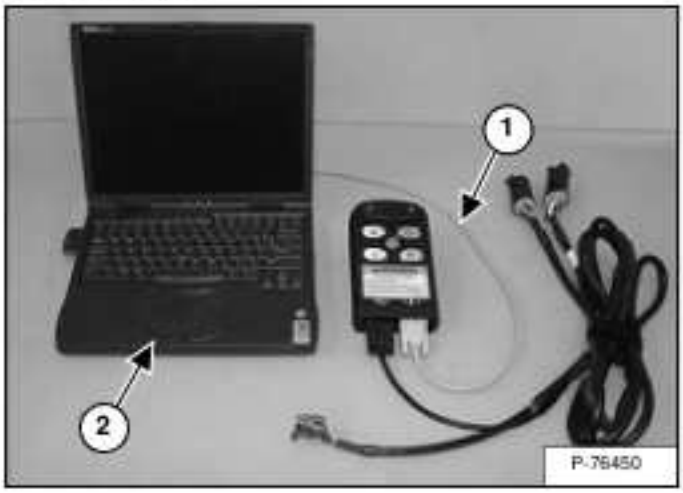
NOTE: The right instrument panel (Standard Key Panel or Deluxe Instrumentation Panel) must be in the off position or the Remote Start Tool (Service Tool) will not operate.



P-76454

Computer Service Tool Harness - 6689746

Figure 10-61-22



The computer service tool harness (Item 1) **[Figure 10-61-22]** is required to connect remote start tool (service tool) to the Service PC (Item 2) **[Figure 10-61-22]**.

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Specifications

All dimensions are given in inches. Respective metric dimensions are given in millimeters enclosed by parentheses.

Fuel System

Injection Timing	10.5 - 12.5 degrees before T.D.C.
Fuel Injection Pressure - 1st Stage	2702 - 2845 PSI (186,3 - 196,2 bar)
Fuel Injection Pressure - 2nd Stage	3414 - 3556 PSI (235,4 - 245,2 bar)
Fuel Tightness of Nozzle Valve Seat	When the pressure is 2418 PSI (166,7 bar), the valve seat must be fuel tightness

Valves

Valve Seat Width (Intake)	0.0630 - 0.0790 in. (1,6 - 2,0 mm)
Valve Seat Width (Exhaust)	0.0906 - 0.1024 in. (2,3 - 2,6 mm)
Valve Seat and Face Angle (Intake)	60 degrees
Valve Seat and Face Angle (Exhaust)	45 degrees
Valve Stem O.D.	0.2740 - 0.2764 in. (6,960 - 6,975 mm)
Valve Guide I.D.	0.2768 - 0.2774 in. (7,030 - 7,045 mm)
Clearance Between Valve Stem And Valve Guide (Intake and Exhaust)	0.0022 - 0.0033 in. (0,055 - 0,085 mm)
Allowable Limit	0.0039 in. (0,1 mm)
Valve Clearance (Cold)	0.0091 - 0.0106 in. (0,23 - 0,27 mm)
Valve Recessing (Intake)	0.0236 - 0.0315 in. (0,6 - 0,8 mm)
Allowable Limit	0.0472 in. (1,2 mm)
Valve Recessing (Exhaust)	0.0335 - 0.0413 in. (0,85 - 1,05 mm)
Allowable Limit	0.0472 in. (1,2 mm)

Valve Springs

Valve Spring (Intake)	1.3819 - 1.4016 in. (35,1 - 35,6 mm)
Allowable Limit	1.3622 in. (34,6 mm)
Valve Spring (Exhaust)	1.3819 - 1.4016 in. (35,1 - 35,6 mm)
Allowable Limit	1.3622 in. (34,6 mm)
Setting Load/Setting Length (Intake)	14.256 lbs / 1.2401 in. (63,547 N / 31,5 mm)
Allowable Limit	10.296 lbs /1.2401 in. (45,864 N / 31,5 mm)
Setting Load/Setting Length (Exhaust)	14.256 lbs / 1.2401 in. (63,547 N / 31,5 mm)
Allowable Limit	10.296 lbs /1.2401 in. (45,864 N / 31,5 mm)
Tilt - Allowable Limit	0.039 in. (1,0 mm)

Valve Tappets

Clearance Between Tappet And Guide	0.0008 - 0.0024 in. (0,020 - 0,062 mm)
Allowable Limit	0.0028 in. (0,07 mm)
Tappet Guide I.D.	0.9449 - 0.9457 in. (24,000 - 24,021 mm)
Tappet O.D.	0.9433 - 0.9441 in. (23,959 - 23,980 mm)

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Gauge Pressure Related Troubleshooting

Normal compressor suction (low side) and discharge (high side) pressure at ambient temperatures of 86-96 degrees F (30-38 degrees C) and compressor speed of approximately 2000 RPM are:

High pressure side pressure: 210-265 PSI

Low pressure side pressure: 15-33 PSI

As a rule of thumb the high side pressure will be around eight times greater then the low side pressure.

Possible Cause	Inspection	Solution
Low pressure side Too high.	The low pressure side pressure normally becomes too high when the high pressure side pressure is too high. As this is explained below, the following inspection is only used when the low pressure side is too high.	
1. Expansion valve opens too far.	Frost is present on the suction hose.	Replace expansion valve.
2. Defective compressor.	The high and low pressure side gauge pressures equalize when the magnetic clutch is engaged.	Replace compressor.
Low pressure side Too low.		
1. Low refrigerant charge.	The high side pressure will be low and bubbles may be present in sight glass on receiver drier.	Repair any leaks and recharge the refrigerant to the correct level.
2. Clogged or closed expansion valve.	The expansion valve's inlet side is frosted. Moisture or other Contaminants can be the cause.	Clean or replace the expansion Valve.
3. Restriction between drier and expansion valve.	Frost on the line between drier and expansion valve. A Negative low pressure reading may be shown.	Flush system or replace hose.
4. Thermostat malfunction.	The evaporator is frozen.	Adjust thermostat's temperature setting or probe placement or replace thermostat.
5. Restriction in receiver drier.	Excessive frost on receiver drier.	Replace receiver drier.
High pressure side Too high.		
1. Poor condenser performance.	Dirty or clogged condenser fins. Condenser fans not Operating.	Clean fins, and/or repair the fan.
2. Excessive refrigerant.	The high pressure side pressure will be high.	Use refrigerant recovery equipment to capture excess refrigerant. Charge to the correct refrigerant level.
3. Excessive oil charge.	The high pressure side will be high.	Evacuate system. Remove oil from condenser and compressor. Measure oil from compressor and add correct oil charge back into compressor. Flush system with nitrogen. Replace drier.
4. Air in system.	Pressure is high on both high and low sides.	Evacuate and recharge with Refrigerant.
5. Restriction in drier, condenser or high pressure line.	High pressure side will be high, and low pressure side will be low.	Evacuate and flush system replacing defective parts.

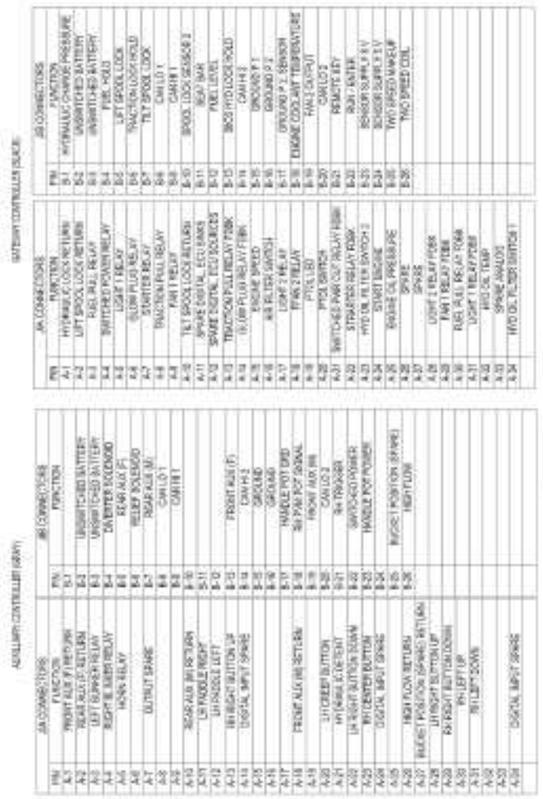
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