A300 TURBO

A300 TURBO HIGH FLOW

Bobcat®

Service Manual

S/N 523411001 & Above
S/N 523511001 & Above

BOBCAT SKID-STEER LOADER
With ALL WHEEL STEER (AWS)



EQUIPPED WITH BOBCAT INTERLOCK CONTROL SYSTEM (BICS™)

6901932 (3-06)

Ingersoll Rand
Compact Vehicle Technologies
Printed in U.S.A.

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Revised June 04

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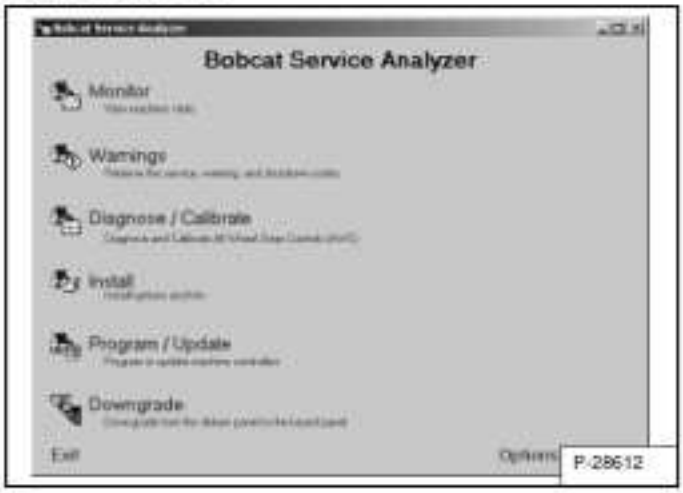
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WHEEL POSITION SENSORS (CONT'D)

Wheel Alignment (Field Adjustment)

Figure 60-140-18



The tools listed will be needed to do the following procedure:

MEL1563 - Remote Start Tool
MEL1565 - Service Tool Harness Control
MEL1566 - Service Tool Harness Communicator
(Computer Interface with latest software)
Straight Edge 6 ft. long

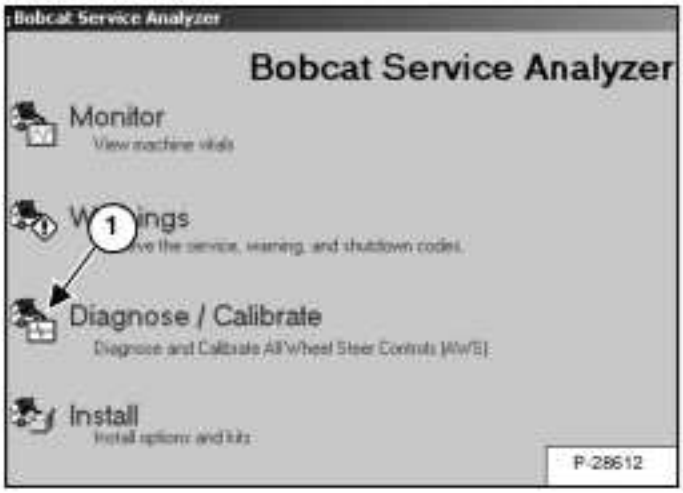
NOTE: This procedure must be performed with two people.

Connect the Remote Start Tool to the loader. (See REMOTE START on Page 10-60-1.)

Connect the Service PC to the Remote Start Tool. (See Connecting The Service PC To Remote Start Tool on Page 60-150-1.)

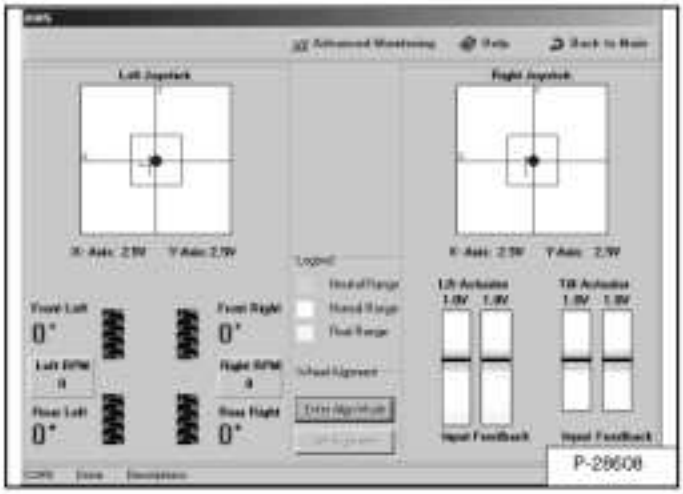
Enter the Bobcat Service Analyzer screen **[Figure 60-140-18]**.

Figure 60-140-19



Press the Diagnose/Calibrate button (Item 1) **[Figure 60-140-19]**.

Figure 60-140-20



The Diagnostics Screen **[Figure 60-140-20]** will be displayed.

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Oil Clearance Between Idler Gear Shaft And Idler Gearing Bushing (Cont'd)

Figure 70-90-130

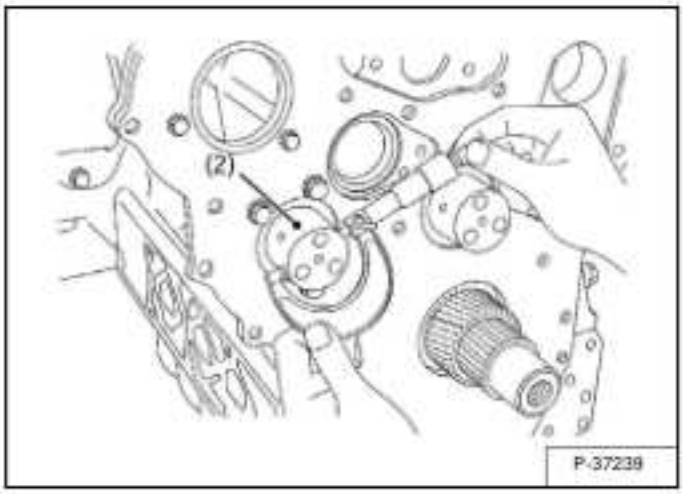
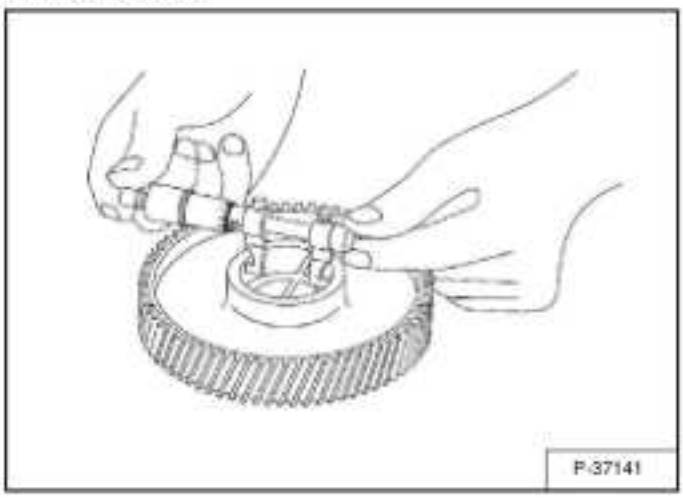


Figure 70-90-131



Measure the idle gear bushings I.D. **[Figure 70-90-130]** with an inside micrometer, and calculate the oil clearance **[Figure 70-90-131]**.

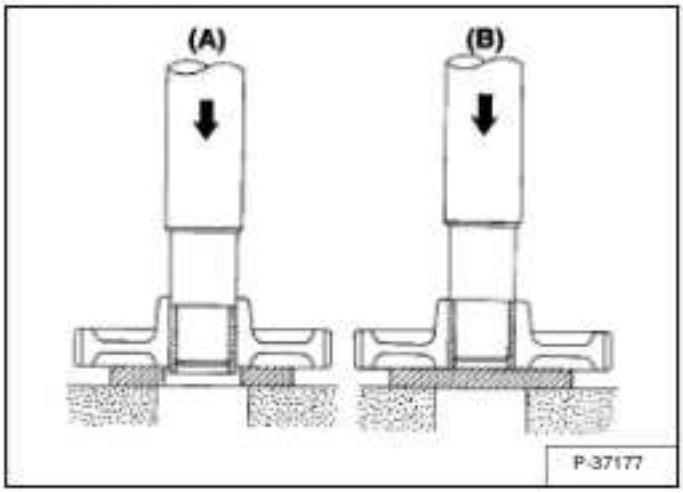
If the oil clearance exceeds the allowable limit, replace the bushing.

Clearance between idle gear shaft and idle gear bushing	Factory spec.	0.050 to 0.091 mm 0.0020 to 0.0035 in.
	Allowable limit	0.10 mm 0.0039 in.

Idle gear bushing I.D.	Factory spec.	45.025 to 45.050 mm 1.7726 to 1.7736 in.
Idle gear shaft O.D.	Factory spec.	44.959 to 44.945 mm 1.7700 to 1.7707 in.

Replacing Idler Gear Bushing

Figure 70-90-132



Using an idle gear bushing replacing tool, press out the used bushing. (See Engine Tools Identification Chart on Page 70-90-1.)

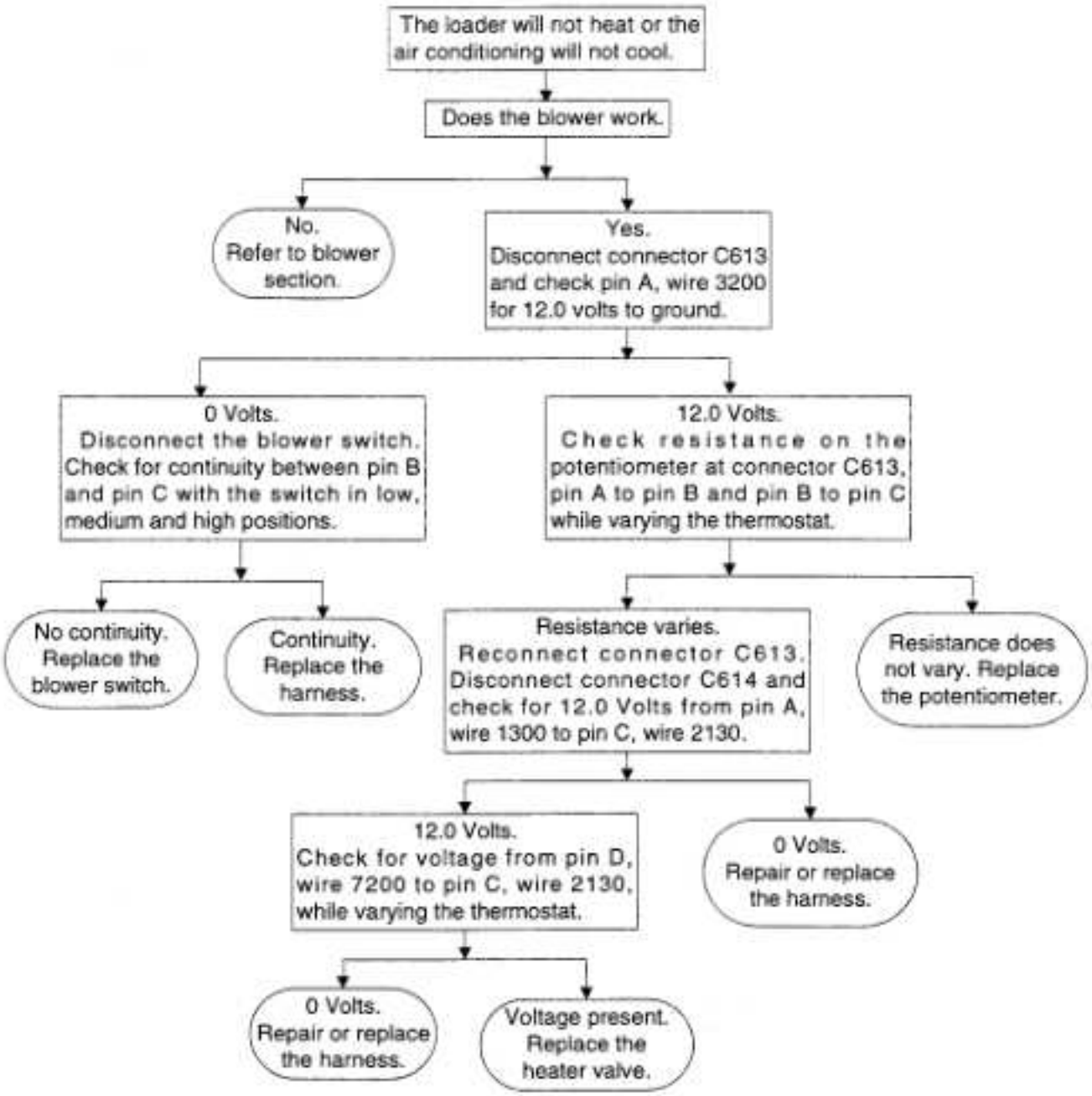
Clean a new idle gear bushing and idle gear bore, and apply engine oil to them.

Using an idle gear bushing replacing tool, press in a new bushing (service parts) to the specified dimension **[Figure 70-90-132]**.

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Troubleshooting Tree (Cont'd)

Heater Valve



B-21493

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HYDRAULIC/HYDROSTATIC SCHEMATIC
WITH TWO SPEED VALVE
AND HIGH FLOW OPTION
A300 (S/N 523411001 - 523411003)
(S/N 523511001 AND ABOVE)

(PRINTED JUNE 2004)
V-0305

LEGEND

1. RESERVOIR:
   Capacity . . . . . 18.8 Qts. (17.8 L)
2. FILTER - CASE DRAIN (90 Micron)
3. FILTER - HYDRAULIC (CANISTER)
4. SPRING LOADED FILTER BY-PASS VALVE: 45-55 PSI (3,1-3,8 Bar)
5. PILOT ACTIVATED DIRECTIONAL CONTROL VALVE - HYDRAULIC POWERED BOB-TACH
6. DIFFERENTIAL PRESSURE SWITCH: 36-44 PSI (2,5-3,0 Bar)
7. FLOW DIVIDER ADJUSTMENT VALVE
8. CHECK VALVE - BUCKET POSITION VALVE
9. FIXED CAPACITY DISPLACEMENT BIDIRECTIONAL HYDROSTATIC MOTOR
10. PILOT ACTIVATED DIRECTIONAL CONTROL VALVE - FLOW CONTROL SPOOL
11. PILOT ACTIVATED DIRECTIONAL CONTROL VALVE - UNLOADING SPOOL
12. PILOT ACTIVATED DIRECTIONAL CONTROL VALVE - TILT CONTROL
13. PILOT ACTIVATED DIRECTIONAL CONTROL VALVE - LIFT CONTROL
14. SOLENOID ACTIVATED DIRECTIONAL CONTROL VALVE - BICS CONTROL
15. PULL BUTTON ACTIVATED DIRECTIONAL CONTROL VALVE - LIFT ARM BY-PASS
16. FILTER - BICS CONTROL VALVE (SCREEN)
17. ONE WAY RESTRICTOR - BOOM DOWN
18. LOAD CHECK VALVE - LIFT AND TILT
19. RELIEF VALVE - MAIN:
    3250-3350 PSI (224-231 Bar)
    at Front Quick Couplers

(For S/M P/N 6901932)

20. RELIEF VALVE - PORT:
    4000 PSI (276 Bar)
21. ANTICAVITATION VALVE
22. RELIEF/ANTICAVITATION VALVE - PORT (TILT BASE END)
    3500 PSI (241 Bar)
23. ONE WAY RESTRICTOR VALVE
24. SOLENOID ACTIVATED DIRECTIONAL CONTROL VALVE - AUXILIARY
25. RELIEF VALVE - PORT: . . . . . (Optional)
    3500 PSI (241 Bar)
26. RELIEF/REPLENISHING VALVE - HIGH PRESSURE: 5221 PSI (360 Bar)
27. CHARGE PRESSURE SWITCH
28. RELIEF VALVE - CHARGE:
    120 degrees F. (53 degrees C.)Fluid
    350 PSI (24,1 Bar) at High Engine Idle
29. CHARGE PUMP
    11.1 GPM (42,0 Lpm) @ High Engine Idle
30. HYDRAULIC PUMP . . . . . Gear Type
    20.7 GPM (78,4 Lpm) @ High Engine Idle
31. DRIVE MOTOR SHUTTLE VALVE
32. SHUTTLE RELIEF VALVE: 200 PSI (13,8 Bar)
33. SOLENOID ACTIVATED DIRECTIONAL CONTROL VALVE - BASE
34. SOLENOID ACTIVATED DIRECTIONAL CONTROL VALVE - ROD
35. LOAD SHUTTLE VALVE - BLEED OFF
36. SOLENOID ACTIVATED DIRECTIONAL CONTROL VALVE (TWO COIL)
37. PILOT ACTIVATED DIRECTIONAL CONTROL VALVE - FOR REAR AUXILIARY
38. ORIFICE WITH 0.140 (3,6 mm) RESTRICTION
39. RELIEF VALVE - 3300 PSI (228 Bar)
40. ORIFICE WITH 0.031 (0,79 mm) RESTRICTION
41. CHECK VALVE - BICS CONTROL VALVE
42. LIFT ARM BY-PASS RESTRICTOR
43. FRONT AUXILIARY MANUAL PRESSURE BLEED-OFF VALVE
44. FILTER - CASE DRAIN (Attachment)
45. VARIABLE CAPACITY DISPLACEMENT BIDIRECTIONAL HYDROSTATIC PUMP
46. RELIEF VALVE - 2000 PSI (138 Bar)
47. SOLENOID ACTIVATED DIRECTIONAL CONTROL VALVE (TWO COIL)
48. RELIEF VALVE - 1200 PSI (83 Bar)
49. CHECK VALVE WITH 80 PSI (5,5 Bar) SPRING
50. CHECK VALVE - WITH 300 PSI Spring and with:
    0.030 inch (0,76 mm) ORIFICE
    (S/N 523411001 - 523411153)
    (S/N 523511001 & Above)
    0.016 inch (0,40 mm) ORIFICE
    (S/N 523411154 & Above)
51. RELIEF VALVE - PORT:
    4000 PSI (276 Bar)
52. SOLENOID ACTIVATED DIRECTIONAL CONTROL VALVE - BUCKET POSITION VALVE (ON/OFF)
53. FIXED CAPACITY DISPLACEMENT BIDIRECTIONAL HYDROSTATIC MOTOR
54. HYDRAULIC BRAKE - SPRING APPLIED - PRESSURE TO RELEASE
55. PUSH BUTTON SOLENOID ACTIVATED DIRECTIONAL CONTROL VALVE - BRAKE
56. SOLENOID ACTIVATED DIRECTIONAL CONTROL VALVE - MAKE-UP
57. SOLENOID ACTIVATED DIRECTIONAL CONTROL VALVE - TWO SPEED
58. FILTER (BRAKE)
59. PILOT ACTIVATED DIRECTIONAL CONTROL VALVE - TWO SPEED DRIVE MOTOR
60. PUMP SERVO
61. HYDRAULIC STEERING PUMP - Gear Type
    13.6 GPM (51,5 Lpm)@ High Engine Idle
62. FILTER - STEERING (10 MICRON)
63. SOLENOID ACTIVATED PROPORTIONAL FLOW CONTROL VALVE - STEERING
64. SOLENOID ACTIVATED PRESSURE CONTROL VALVE
65. STEERING CYLINDER
66. CHECK VALVE - 270 PSI (18,6 Bar)
67. PRESSURE CONTROL PILOT VALVE - 2 COILS, 0 - 0.085 Ampere
68. DISPLACEMENT CONTROL SPOOL
69. RESTRICTION:
    0.120 inch (3,05 mm)
    (S/N 523411001 - 523411153)
    (S/N 523511001 & Above)
    0.089 inch (2,26 mm)
    (S/N 523411154 & Above)
70. ORIFICE WITH 0.025 (0,64 mm) RESTRICTION
71. HIGH FLOW PUMP - Gear Type
    10.2 GPM (38,6 Lpm) @ High Engine Idle
72. RELIEF VALVE - 3300 PSI (228 Bar)
73. SOLENOID DUMP VALVE - ON/OFF
74. CHECK VALVE - HIGH FLOW

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