A300 TURBO

Bobcat®

Service Manual

S/N 521111001 & Above
S/N 521211001 & Above

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



EQUIPPED WITH BOBCAT INTERLOCK CONTROL SYSTEM (BICS™)

6901756 (7-10)

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ALPHABETICAL INDEX

AWS CONTROLLER 60-01
AIR CLEANER 70-01
AIR CLEANER SERVICE 10-01
AIR CONDITIONING SERVICE 80-01
AIR CONDITIONING SYSTEM FLOW 80-01
ALTERNATOR 60-01

BASIC TROUBLESHOOTING 80-01
BATTERY 60-01
BICS™ SYSTEM 60-01
BOBCAT 2001 CONTROLLER 60-01
BOBCAT INTERLOCK
CONTROL SYSTEM (BICS™) 60-01
BOB-TACH 10-01, 50-01
BRAKE 40-01
BUCKET POSITION VALVE 20-01

CHAINCASE 40-01
CHARGE PRESSURE 30-01
CONTROL 50-01
CONTROL PANEL 50-01
CONVERSIONS SPEC-01
COOLING FAN 70-01
COMPONENTS 80-01
COMPRESSOR 80-01
CONDENSER 80-01
CYLINDER (LIFT) 20-01
CYLINDER (POWER BOB-TACH) 20-01
CYLINDER (STEERING) 20-01
CYLINDER (TILT) 20-01

DIAGNOSTICS SERVICE CODES 60-01
DRIVE BELT 30-01
DRIVE COMPONENTS 40-01

ELECTRICAL / HYDRAULIC CONTROLS
REFERENCE 60-01
ELECTRICAL SYSTEM INFORMATION 60-01
ENGINE 70-01
ENGINE COMPONENTS AND TESTS 70-01
ENGINE COOLING SYSTEM 10-01
ENGINE LUBRICATION SYSTEM 10-01
ENGINE SPECIFICATIONS SPEC-01
ENGINE SPEED CONTROL 70-01
EVAPORATOR 80-01
EVAPORATOR / HEATER UNIT 80-01
EXPANSION VALVE 80-01

FAN GEARBOX 10-01
FINAL DRIVE TRANSMISSION (CHAINCASE) 10-01
FLYWHEEL AND HOUSING 70-01
FUEL SYSTEM 10-01
FUEL TANK 50-01

GENERAL AIR CONDITIONING
SERVICE GUIDELINES 80-01

HEATER COIL 80-01
HEATER / AC FAN 80-01
HEATER VALVE 80-01
HUB 40-01
HYDRAULIC CONNECTION SPECS SPEC-01
HYDRAULIC FLUID RESERVOIR 20-01
HYDRAULIC FLUID SPECIFICATIONS SPEC-01
HYDRAULIC / HYDROSTATIC FILTER 20-01
HYDRAULIC / HYDROSTATIC SYSTEM 10-01
HYDRAULIC PUMP 20-01
HYDRAULIC SYSTEM INFORMATION 20-01
HYDROSTATIC MOTOR 30-01
HYDROSTATIC MOTOR CARRIER 30-01
HYDROSTATIC PUMP 30-01
HYDROSTATIC SYSTEM INFORMATION 30-01
INSIDE ACESS PANEL 50-01
INSTRUMENT PANEL 60-01

LIFT ARMS 50-01
LIFT ARM BYPASS CONTROL VALVE 20-01
LIFT ARM SUPPORT DEVICE 10-01
LIFT AND TILT ACTUATOR CALIBRATION 60-01
LIFTING AND BLOCKING THE LOADER 10-01
LIGHTS 60-01
LOADER SPECIFICATIONS (A300) SPEC-01
LOADER TORQUES SPEC-01
LUBRICATING THE LOADER 10-01

MAIN RELIEF VALVE 20-01
MUFFLER 70-01

OIL COOLER (SEAL TO CONNECT) (STC) 30-01
OPERATOR CAB 10-01, 50-01
OPERATOR SEAT 50-01
OPERATOR SEAT (SUSPENSION) 50-01

POWER BOB-TACH 10-01, 50-01
POWER BOB-TACH BLOCK 20-01
PRESSURE RELIEF VALVE 80-01
PRESSURE SWITCH 80-01

RADIATOR 70-01
REAR AUXILIARY DIVERTER 20-01
REAR DOOR 50-01
REAR GRILL 50-01
RECEIVER / DRIER 80-01
RECONDITIONING THE ENGINE 70-01
REGULAR MAINTENANCE 80-01
REMOTE START 10-01

SAFETY 80-01
SEAT BAR 50-01
SEAT BAR SENSOR 60-01
SELECT VALVE 20-01
SERVICE PC (LAPTOP COMPUTER) 60-01
SERVICE SCHEDULE 10-01

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SPARK ARRESTOR MUFFLER 10-01
SPEED SENSOR 60-01
STARTER 60-01
STEERING BLOCK 40-01
STEERING SOLENOID 60-01
SYSTEM CHARGING AND RECLAMATION 80-01
SYSTEM TROUBLESHOOTING CHART 80-01

TEMPERATURE / PRESSURE 80-01
THERMOSTAT 80-01
TIRE MAINTENANCE 10-01
TORQUE SPECIFICATIONS FOR BOLTS SPEC-01
TOWING THE LOADER 10-01
TRACTION LOCK 60-01
TRANSPORTING THE BOBCAT LOADER 10-01
TROUBLESHOOTING 70-01

WHEEL POSITION SENSORS 60-01

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CONTENTS

FOREWORD II

SAFETY INSTRUCTIONS V

FIRE PREVENTION VII

SERIAL NUMBER LOCATION IX

DELIVERY REPORT X

BOBCAT LOADER INDENTIFICATION XI

SAFETY AND MAINTENANCE 10-01

HYDRAULIC SYSTEM 20-01

HYDROSTATIC SYSTEM 30-01

DRIVE SYSTEM 40-01

MAINFRAME 50-01

ELECTRICAL SYSTEM & ANALYSIS 60-01

ENGINE SERVICE 70-01

SPECIFICATIONS SPEC-01

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Procedure For Loader W/O Attachments Control Harness (Cont'd)

⚠ WARNING

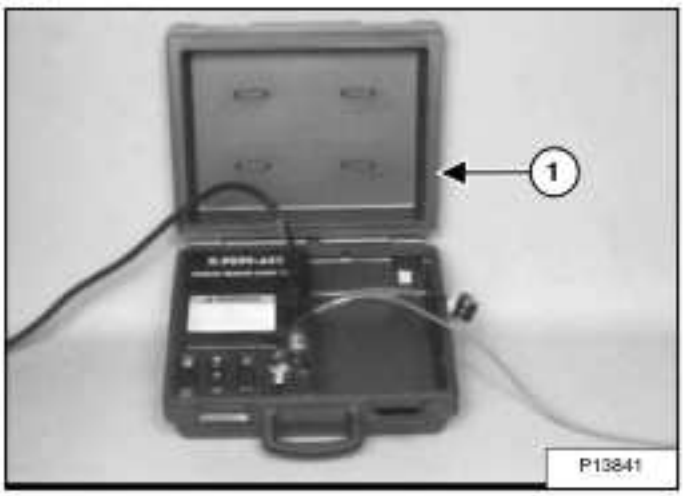
AVOID INJURY OR DEATH

With the 7-pin connector plugged into the loader and Remote Start Key Switch in the OFF position, the loader can still be started from the operator panel inside the cab. Placing the key switch of the remote start tool in the run position disconnects the operator panel key switch from the start circuit. If the service technician will be working the engine area it is important to remove the operator panel keys.

W-2357-0899

Procedure For Loader With Attachments Control Harness

Figure 10-60-4



The tool listed will be need to do the following procedure:

MEL1563 - Remote Start Tool Kit

The remote start (Item 1) **[Figure 10-60-4]** is required when the operator cab is in the raised position for service and the service technician needs to turn the key switch on or start the engine. Example: adjusting the steering linkage.

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

Raise the lift arms (if required by the procedure) and install an approved lift arm support device. (See Installing The Lift Arm Support Device on Page 10-20-1.)

Raise the operator cab (if required by the procedure). (See Raising The Operator Cab on Page 10-30-1.)

Open the rear door of the loader.

Figure 10-60-5

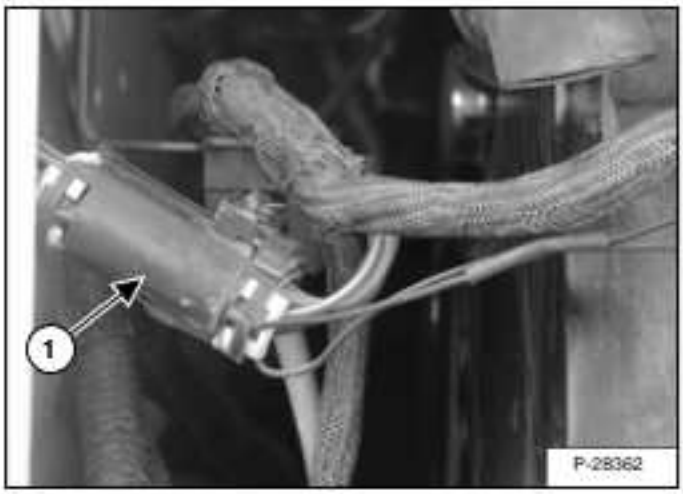
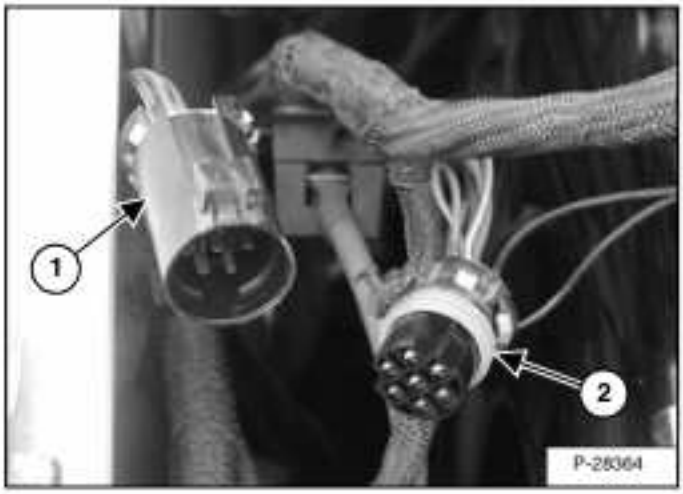


Figure 10-60-6



Disconnect the attachment control harness (Item 1) **[Figure 10-60-5]** & **[Figure 10-60-6]** from the loader harness (Item 2) **[Figure 10-60-6]**.

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Troubleshooting Chart

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

PROBLEM	SOLUTION#
All indicator lights flashing	5
One of the indicator lights flashing	1
Intermittent indicator lights	2, 3, 4

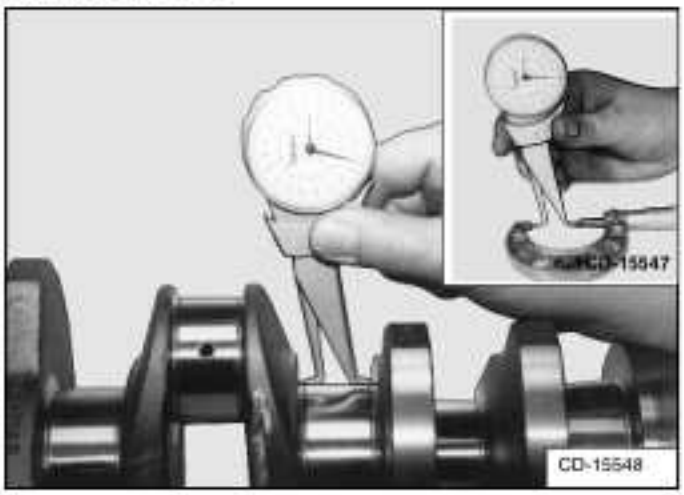
SOLUTION SUGGESTIONS

1. Refer to BICS™ troubleshooting guide. (See Troubleshooting Guide. on Page 60-110-3.)
2. Check wire connections on Bobcat controller to make sure connectors are locked into place.
3. Check pins in connectors for pins pushed back or bent.
4. Use seatbar sensor tester MEL1428 to isolate problem between sensor and controller and wiring.
5. Possible low or high voltage.

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Assembly (Cont'd)

Figure 70-100-32



Measure the bearing journal width at the crankshaft (inset) **[Figure 70-100-32]**.

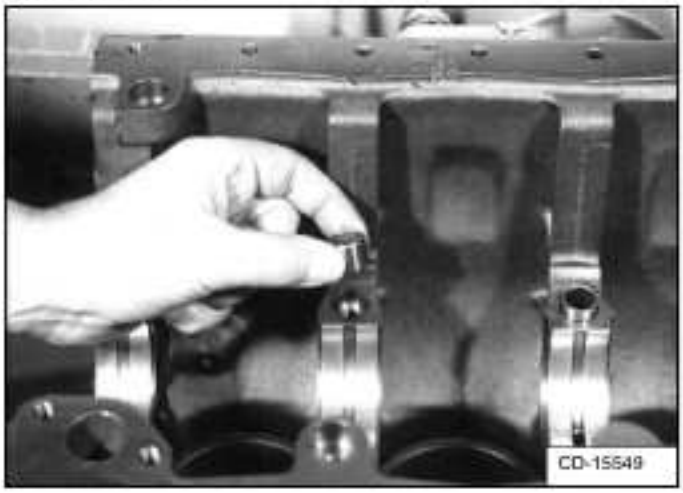
Specifications:
Journal Width Std.....1.378 - 1.379 in.
(35,0 - 35,04 mm)
Limit for O/S.....1.395 in. (35,44 mm)

Determine the end play for the crankshaft **[Figure 70-100-32]**.

Specifications:
Std. End Play..... 0.004 - 0.010 in.
(0,1 - 0,273 mm)
Wear Limit.....0.016 in. (0,4 mm)

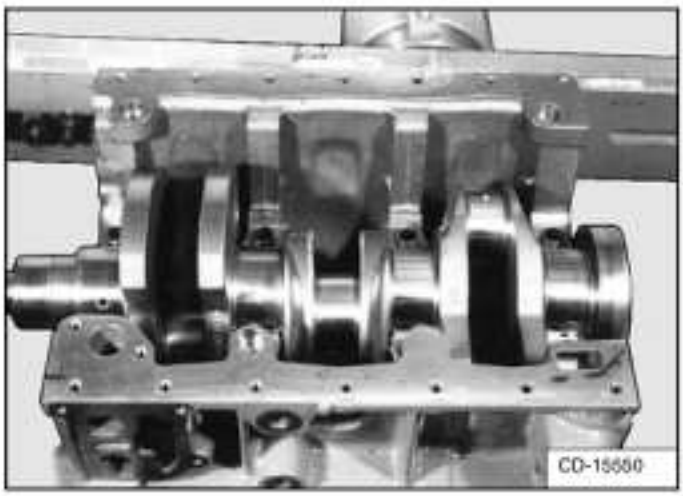
Use new thrust washer as needed to get the correct end play.

Figure 70-100-33



Install the main bearing locating sleeves **[Figure 70-100-33]**.

Figure 70-100-34



Install the crankshaft into the engine block **[Figure 70-100-34]**.

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HYDRAULIC/HYDROSTATIC SCHEMATIC

A300 (S/N 521111293 - 521111550)

(PRINTED MAY 2004)
V-0575legend

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
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: 5000 PSI (345 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
    12.0 GPM (45,4 L/min.) at High Engine Idle
30. HYDRAULIC PUMP . . . . . Gear Type
    20.7 GPM (78,35 L/min.) at High Engine Idle
31. DRIVE MOTOR SHUTTLE VALVE
32. SHUTTLE RELIEF VALVE:
    200 PSI (13,8 Bar)
33. SOLENOID ACTIVATED DIRECTIONAL CONTROL VALVE - BLEED OFF REAR AUXILIARY ("SV2")
34. LOAD SHUTTLE VALVE - BLEED OFF
35. PILOT ACTIVATED DIRECTIONAL CONTROL VALVE - FOR REAR AUXILIARY - NORMALLY CLOSED. ("P2" and "F2")
36. PILOT ACTIVATED DIRECTIONAL CONTROL VALVE - FOR REAR AUXILIARY - NORMALLY OPEN ("D1" and "P1")
37. PILOT ACTIVATED DIRECTIONAL CONTROL VALVE - FOR REAR AUXILIARY - NORMALLY OPEN ("D2" and "P2")
38. FILTER - DIVERTER VALVE (SCREEN) INTEGRATED IN SOLENOID
39. SOLENOID ACTIVATED DIRECTIONAL CONTROL VALVE - TO ACTIVATE REAR AUXILIARY ("SV1")
40. PILOT ACTIVATED DIRECTIONAL CONTROL VALVE - FOR REAR AUXILIARY - NORMALLY CLOSED ("P1" and "F1")
41. CHECK VALVE - BICS CONTROL VALVE
42. LIFT ARM BY-PASS RESTRICTOR
43. CHECK VALVE - AUXILIARY (Removed at S/N 521111295 And Above)
44. FILTER - CASE DRAIN (Attachment)
45. VARIABLE CAPACITY DISPLACEMENT BIDIRECTIONAL HYDROSTATIC PUMP
46. TWO-STAGE RELIEF
    1000/2000 PSI (69 / 138 Bar)
47. SOLENOID ACTIVATED DIRECTIONAL CONTROL VALVE (TWO COIL)
48. RELIEF VALVE - 1200 PSI (83 Bar)
49. RESTRICTOR - 0.015 inch (0,381 mm)
50. PRESSURE COMPENSATED FLOW CONTROL
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
    13.0 GPM (49,2 L/min.) at High Engine Idle
62. FILTER - STEERING (10 MICRON)
63. SOLENOID ACTIVATED PROPORTIONAL FLOW CONTROL VALVE - STEERING
64. SOLENOID ACTIVATED PRESSURE CONTROL VALVE
    0-2000 PSI (0-138 Bar)
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. FRONT AUXILIARY MANUAL PRESSURE BLEED-OFF VALVE

NOTE: Unless otherwise specified springs have NO significant pressure value.

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