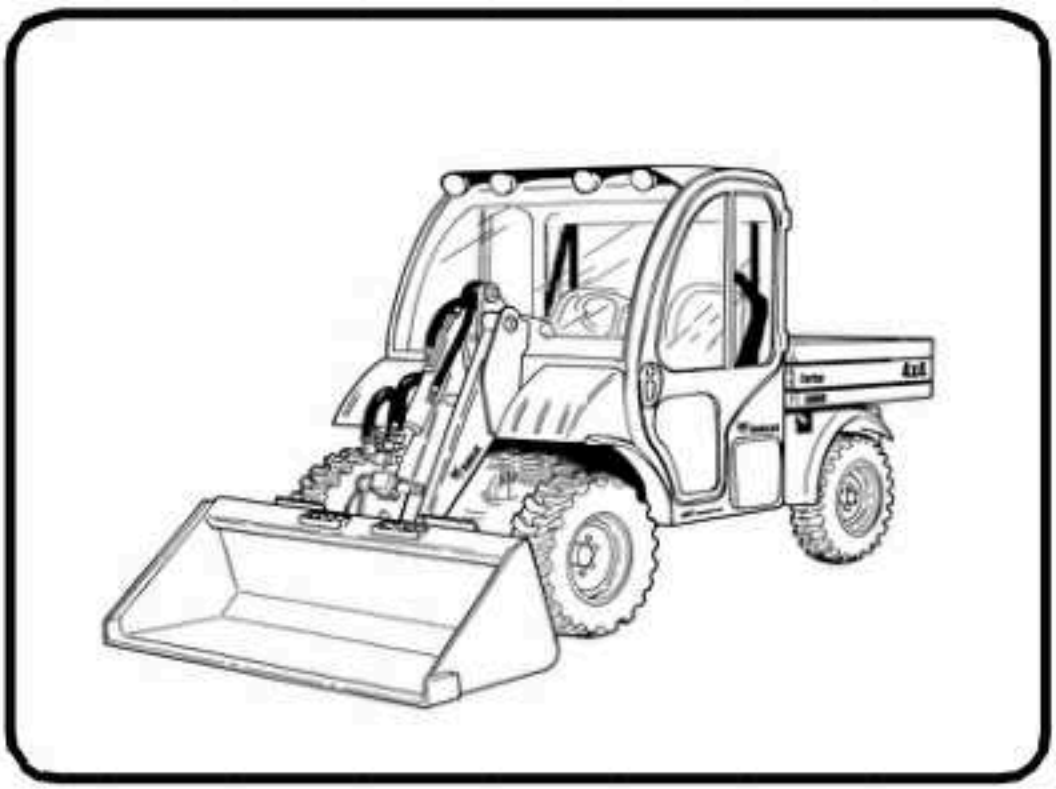
Bobcat®

Service Manual

Toolcat™ 5600 Utility Work Machine

S/N A00211001 & Above
S/N A00311001 & Above



EQUIPPED WITH TOOLCAT INTERLOCK CONTROL SYSTEM (TICS)

6904209 (2-10)

Printed in U.S.A.

© Bobcat Company 2010

MidWestTech | Bobcat Toolcat 5600 Utility Work Machine Service Manual | Publication 690... Order the manual at mid-west-tech.com >

CONTENTS

SAFETY & 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

HEATING, VENTILATION, AIR CONDITIONING 80-01

SPECIFICATIONS SPEC-01

ALPHABETICAL INDEX INDEX-01

MidWestTech | Bobcat Toolcat 5600 Utility Work Machine Service Manual | Publication 690... Order the manual at mid-west-tech.com >

FOREWORD 1-7

SAFETY INSTRUCTIONS 1-10

FIRE PREVENTION 1-12
- Maintenance 1-12
- Operation 1-12
- Electrical 1-12
- Hydraulic System 1-12
- Fueling 1-12
- Starting 1-12
- Spark Arrestor Exhaust System 1-12
- Welding And Grinding 1-13
- Fire Extinguishers 1-13

SERIAL NUMBER LOCATIONS 1-14
- Utility Work Machine Serial Number 1-14
- Engine Serial Number 1-14

DELIVERY REPORT 1-15

TOOLCAT UTILITY WORK MACHINE IDENTIFICATION 1-16

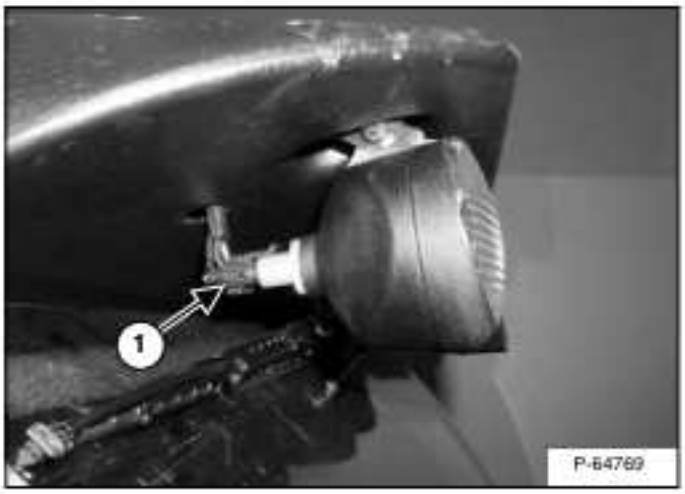
MidWestTech | Bobcat Toolcat 5600 Utility Work Machine Service Manual | Publication 690... Order the manual at mid-west-tech.com >

LIGHTS

Front Removal And Installation

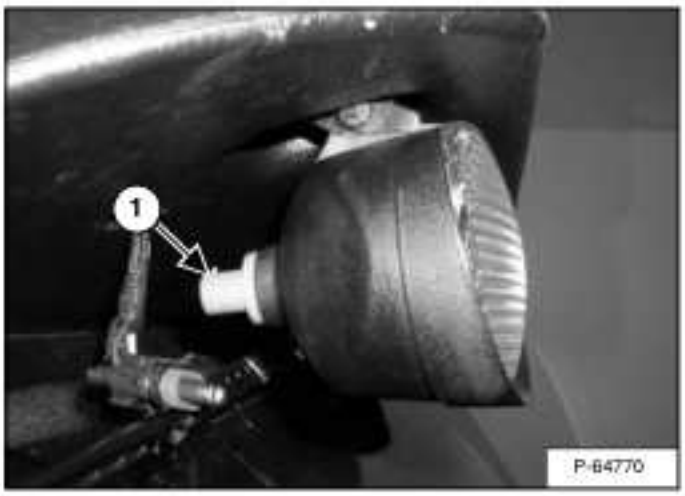
Disconnect the battery. (See Removal And Installation on Page 60-20-1.)

Figure 60-60-10



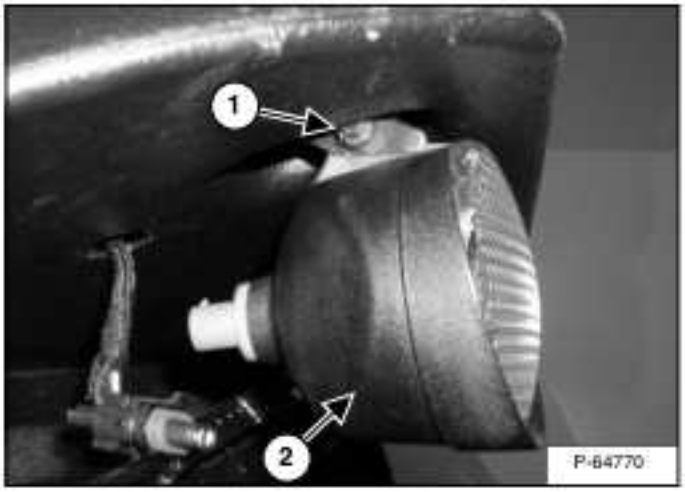
Disconnect the wiring harness (Item 1) **[Figure 60-60-10]**.

Figure 60-60-11



Rotate the bulb (Item 1) **[Figure 60-60-11]** counter clockwise and remove from the light housing.

Figure 60-60-12



Remove the bolt (Item 1) and remove light housing (Item 2) **[Figure 60-60-12]**.

MidWestTech | Bobcat Toolcat 5600 Utility Work Machine Service Manual | Publication 690... Order the manual at mid-west-tech.com >

Engine Specifications-Kubota V2003-M-DI-T (Turbo)

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

Fuel Injection Nozzles

Opening Pressure	2702 - 2916 PSI (186 - 201 bar)
Fuel Tightness Nozzle Seat	Dry Nozzle at 2418 PSI (167 bar)

Fuel Injection Pump

Injection Timing	8.5 - 10 degrees B.T.D.C.
High Idle	2860 - 3000 RPM
Low Idle	1195 - 1245 RPM
Cylinder Bore	
I.D. of Bore	3.2677 - 3.2686 (83,0 - 83,022)
Allowable Limit	+0.0059 (+0,15)

Cylinder Head

Cylinder Head Surface Distortion	0.002 (0,05) Max.
Top Clearance (Piston to Head)	0.0236 - 0.0276 (0,60 - 0,70)
Compression	427 - 469 PSI (29,4 - 32,3 bar)
Allowable Limit	341 PSI (23,5 bar)
Difference Between Cylinders	10% or less

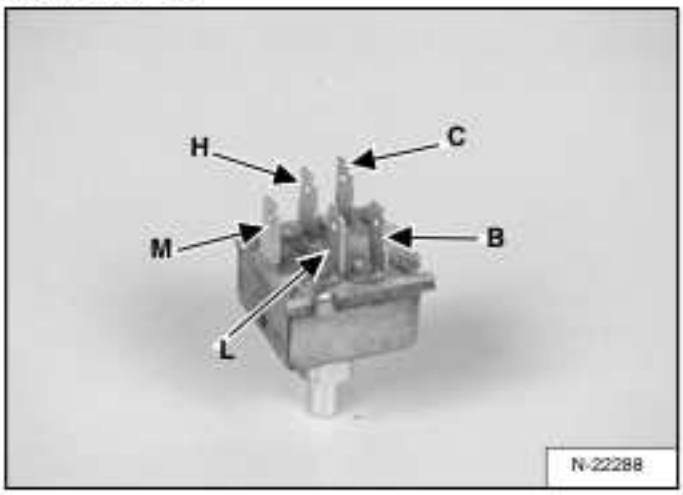
Valves

Valve Seat Width (Intake & Exhaust)	0.0835 (2,12)
Valve Seat Angle	Intake 45 degrees, exhaust 45 degrees
O.D. of Valve Stems	0.3134 - 0.3140 (7,96 - 7,98)
I.D. of Valve Guides	0.3156 - 0.3161 (8,015 - 8,03)
Clearance Between Valve Stem & Guide	0.0016 - 0.0028 (0,04 - 0,07)
Allowable Limit	0.0039 (0,1)
Valve Clearance (Cold)	0.0071 - 0.0087 (0,18 - 0,22)
Valve Recessing (Protrusion)	0.002 (0,05)
(Recess)	0.0059 (0,15)

MidWestTech | Bobcat Toolcat 5600 Utility Work Machine Service Manual | Publication 690... Order the manual at mid-west-tech.com >

Electrical System (Cont'd)

Figure 80-30-19



If there is voltage at the wiring harness, check the blower switch **[Figure 80-30-19]** for resistance.

With the switch in the OFF position, there should be zero resistance between all terminals.

With the switch in the 1 position, there should be resistance between C terminal and the B terminal. And also between the C terminal and the L terminal frame **[Figure 80-30-19]**.

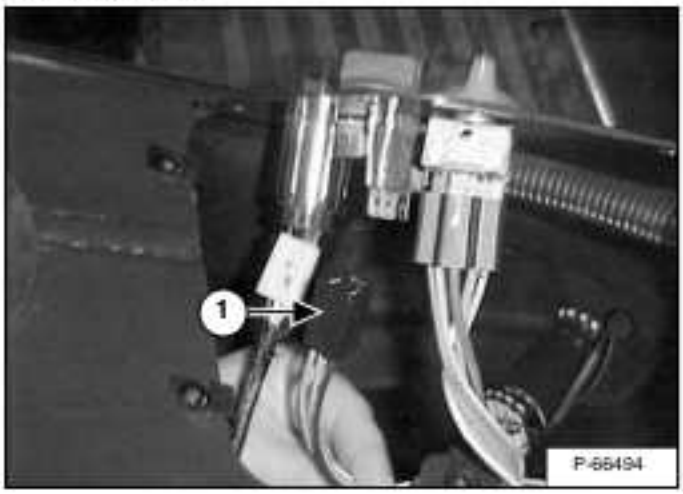
With the switch in the 2 position, there should be resistance between C terminal and the B terminal. And also between the C terminal and the M terminal frame **[Figure 80-30-19]**.

With the switch in the 3 position, there should be resistance between C terminal and the B terminal. And also between the C terminal and the H terminal frame **[Figure 80-30-19]**.

If any of the above resistance tests fail, replace the blower switch.

If the above resistance tests are good, check the A/C switch.

Figure 80-30-20



Disconnect the utility work machine harness (Item 1) **[Figure 80-30-20]** from the A/C switch.

Check the harness for voltage. The voltage should be 12 volts.

If there is no voltage at the wiring harness, check the harness for broken wires.

MidWestTech | Bobcat Toolcat 5600 Utility Work Machine Service Manual | Publication 690... Order the manual at mid-west-tech.com >

HYDRAULIC/HYDROSTATIC SCHEMATIC
5600 UTILITY WORK MACHINE
WITH HIGH FLOW OPTION
S/N A00211001 AND ABOVE
S/N A00311001 AND ABOVE
(PRINTED FEBRUARY 2010)
V-0729legend

LEGEND

(1) HYDRAULIC RESERVOIR:
Reservoir Capacity . . . .14.8 Qt. (14.0 L)
System Capacity. . . . . 42.0 Qt. (39.7 L)

(2) FILTER - CASE DRAIN (25 Micron)

(3) SPRING LOADED FILTER BYPASS VALVE: 20 PSI (1,5 bar)

(4) FILTER - HYDRAULIC (CANISTER)

(5) SPRING LOADED FILTER BYPASS VALVE: 45-55 PSI (3,1-3,8 bar)

(6) DIFFERENTIAL PRESSURE SWITCH: NA PSI (NA bar)

(7) SWITCH

(8) HYDRAULIC PUMP . . . . . Gear Type
5.2 GPM (19,7 L/min.) at High Engine Idle

(9) HYDRAULIC PUMP . . . . . Gear Type
8.88 GPM (33,6 L/min.) at High Engine Idle

(10) HYDRAULIC PUMP . . . . . Gear Type
18.42 GPM (69,7 L/min.) at High Engine Idle

(11) CHARGE PUMP
4.45 GPM (16,9 L/min.) at High Engine Idle

(12) RELIEF VALVE - CHARGE:
350 PSI (24 bar)
at High Engine Idle
140 degrees F. (60 degrees C.)Fluid

(13) RELIEF/REPLENISHING VALVE - HIGH PRESSURE: 4650 PSI (321 bar)

(14) SOLENOID VALVE - TRAVEL LOCKOUT

(15) VARIABLE CAPACITY DISPLACEMENT BIDIRECTIONAL HYDROSTATIC PUMP

(16) SOLENOID VALVE - FORWARD/REVERSE

(17) SERVO PISTON - Swash Plate

(18) SHUTTLE VALVE - Motor Flushing

(19) RELIEF VALVE - Motor Flushing
21 PSI (1,5 bar) max @ 1.5 GPM (5,7 L/min)

(20) VALVE - 2 Speed

(21) SERVO PISTON - Swash Plate - 2 Speed

(22) BIDIRECTIONAL HYDROSTATIC MOTOR - 2 Speed

(23) DIFFERENTIAL LOCK VALVE
218 - 363 PSI (15 - 25 bar)

(24) BRAKE VALVE.....319 PSI (22 bar)

(25) FIXED DISPLACEMENT FAN MOTOR

(26) RELIEF VALVE/ANTI-CAVITATION VALVE
2030 PSI (210 bar)

(27) DIAGNOSTIC COUPLER

(28) RELIEF VALVE - MAIN
3117 - 3044 PSI (215 - 205 bar)

(29) RELIEF VALVE - MAIN
3117 - 3044 PSI (215 - 205 bar)

(30) RELIEF VALVE - Port - With Anti-Cavitation (Lift Base)
3480 - 3263 PSI (240 - 225 bar)

(31) RELIEF VALVE - Port - With Anti-Cavitation (Tilt Rod)
4205 - 3988 PSI (290 - 275 bar)

(32) RELIEF VALVE - Port - With Anti-Cavitation (Tilt Base)
3480 - 3263 PSI (240 - 225 bar)

(33) CHECK VALVE ..... 100 PSI (6,9 bar)

(34) CHECK VALVE ..... 135 PSI (9,3 bar)

(35) SOLENOID ACTIVATED DIRECTIONAL CONTROL VALVE - Solenoid A (See Note 2)

(36) SOLENOID ACTIVATED DIRECTIONAL CONTROL VALVE - Solenoid C (See Note 2)

(37) SOLENOID ACTIVATED DIRECTIONAL CONTROL VALVE - Solenoid B - (See Note 2)

(38) RELIEF VALVE - Load Sense
1450 PSI (100 bar)

(39) FLOW DIVIDER

(40) ORIFICE ..... 0.030 in. (0,75 mm)

(41) ORIFICE ..... 0.023 in. (0,6 mm)

(42) ORIFICE ..... 0.051 in. (1,3 mm)

(43) ORIFICE ..... 0.040 in. (1,0 mm)

(44) PULL BUTTON ACTIVATED DIRECTIONAL CONTROL VALVE - LIFT ARM BY-PASS

(45) LOAD CHECK VALVE

(46) FRONT AUXILIARY MANUAL PRESSURE BLEED-OFF VALVE

(47) RELIEF VALVE - Port - With Anti-Cavitation (Lift - Rod)
3480 - 3263 PSI (240 - 225 bar)

(48) SOLENOID ACTIVATED DIRECTIONAL CONTROL VALVE - High Flow

(49) DIVERTER VALVE - SOLENOID ACTIVATED PILOT PRESSURE

(50) FILTER

(51) ORIFICE ..... 0.065 in. (1,65 mm)

(52) RELIEF VALVE (Optional) - Port - With Anti-Cavitation (Auxiliary)
3263 - 3480 PSI (225 - 240 bar)

NOTE 1: Unless otherwise specified, springs have NO significant pressure value.

NOTE 2: In Front Steer Mode, Solenoids A & B are closed and Solenoid C is open. In 4 Wheel Steer Mode, Solenoids A & B are open and Solenoid C is closed.

Printed in U.S.A.

MidWestTech | Bobcat Toolcat 5600 Utility Work Machine Service Manual | Publication 6904209_2_10

Order the manual at mid-west-tech.com >