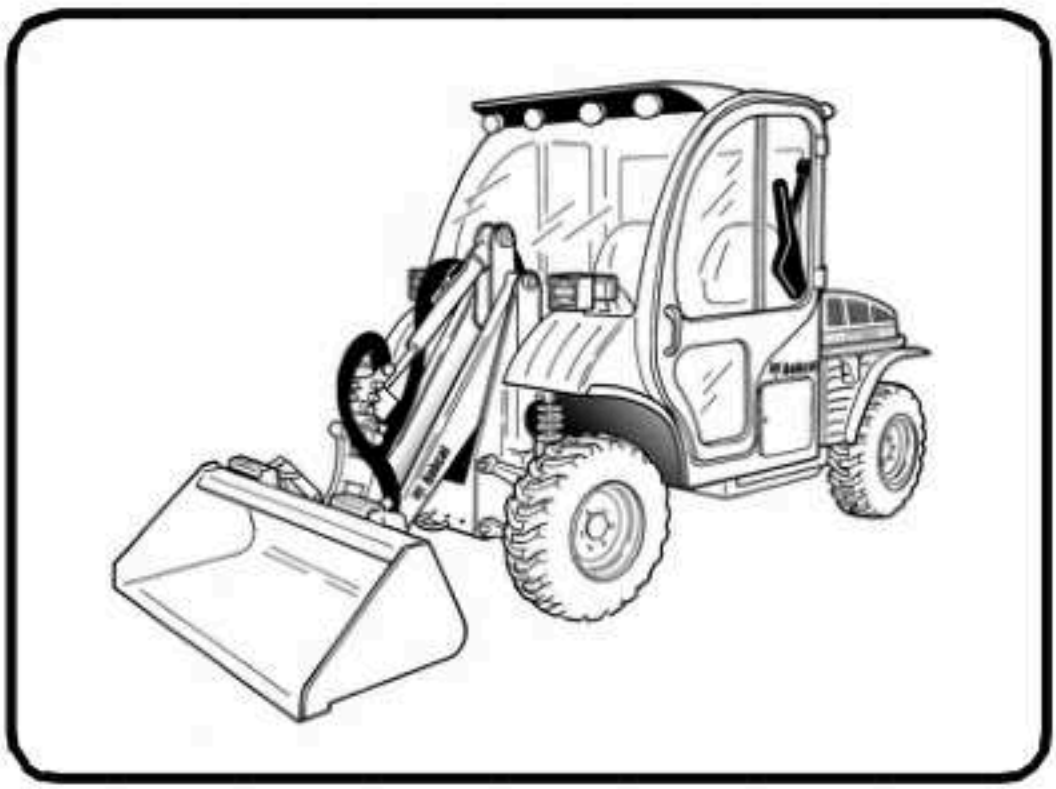
Bobcat®

Service Manual

Toolcat™ 5610 Utility Work Machine

S/N APFB11001 & Above



EQUIPPED WITH TOOLCAT INTERLOCK CONTROL SYSTEM (TICS)

6990054 (3-11)

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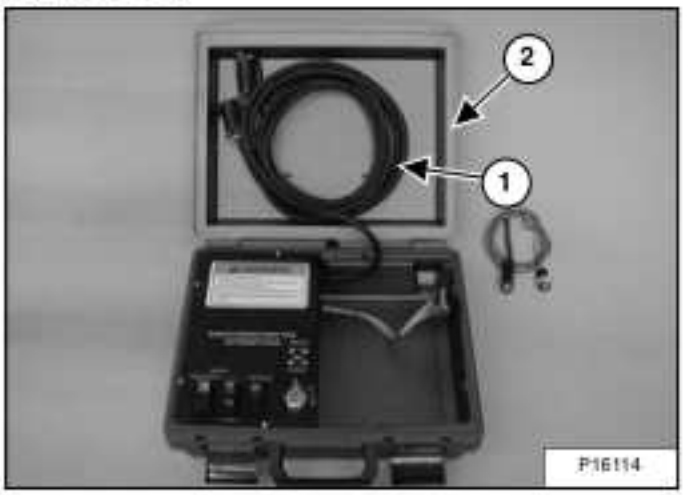
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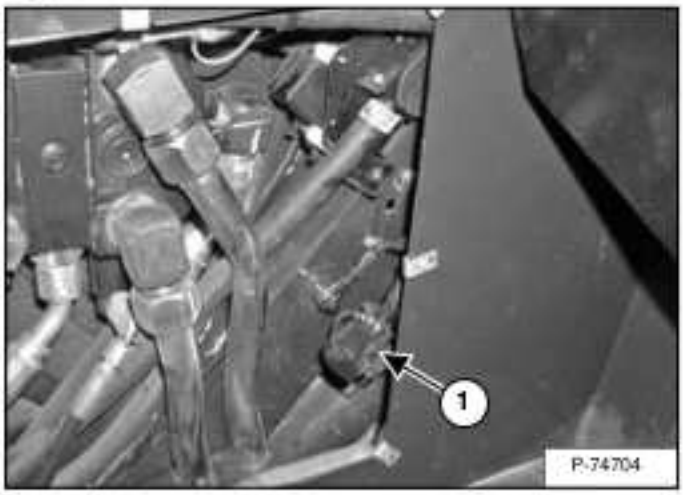
Service Tool Harness Control - MEL1565

Figure 10-60-3



The service tool harness control (Item 1) is used to connect the remote start tool (Item 2) **[Figure 10-60-3]** to the electrical system on the utility work machine.

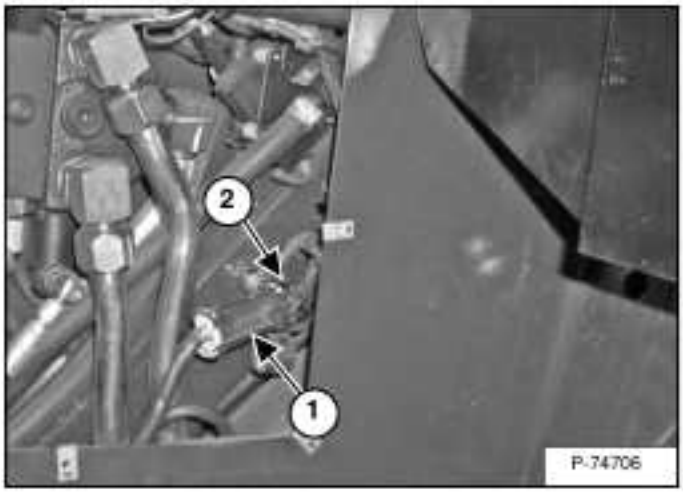
Figure 10-60-4



Remove the plug (Item 1) **[Figure 10-60-4]** from the utility work machine harness connector.

Connect the service tool harness control to the utility work machine harness connector.

Figure 10-60-5



Utility work machines equipped with an attachment harness (Item 1) must disconnect the attachment harness from the utility work machine harness (Item 2) **[Figure 10-60-5]**.

Connect the service tool harness to the ACD connector and the utility work machine harness connector.

NOTE: To monitor, diagnose or load new software the Service PC must be connected to the Remote Start Tool Switch.

When the remote start procedure is completed, replace the connector cap (Item 1) **[Figure 10-60-4]** or reconnect the attachment control harness to the utility work machine harness **[Figure 10-60-5]**.

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FLYWHEEL AND HOUSING

Flywheel Removal And Installation

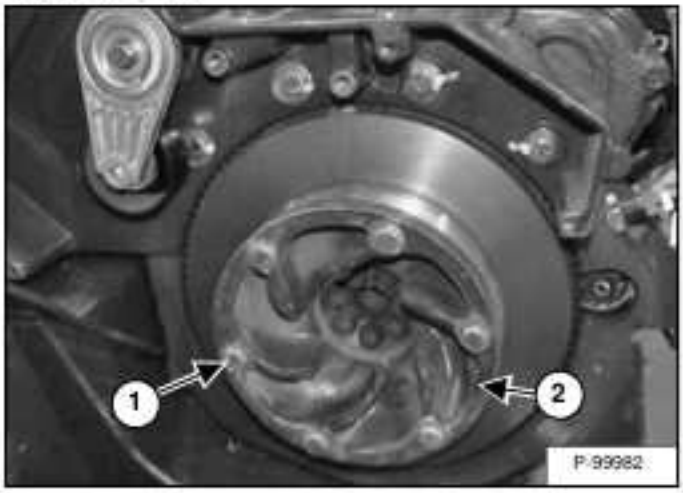
Raise the rear cover. (See Opening And Closing on Page 50-50-1.)

Remove the drive belt shield. (See Shield Removal And Installation on Page 30-50-1.)

Remove the drive belt tension pulley. (See Tensioner Pulley Removal And Installation on Page 30-50-5.)

Remove the drive belt. (See Belt Replacement on Page 30-50-3.)

Figure 70-120-1

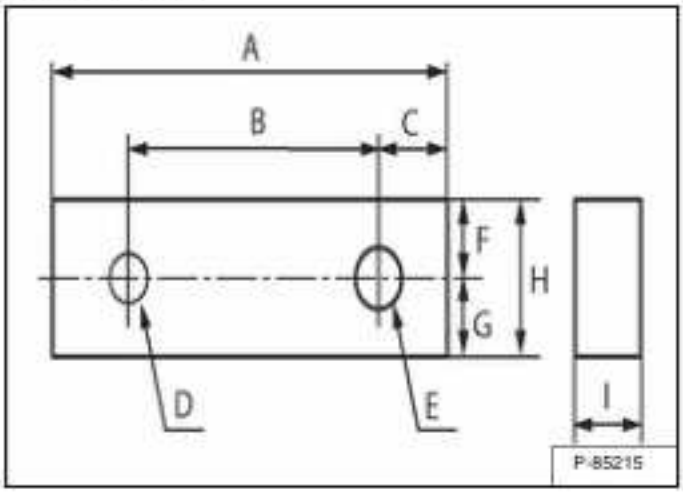


Remove the six mounting bolts (Item 1) from the pulley (Item 2) **[Figure 70-120-1]**.

Remove the pulley (Item 2) **[Figure 70-120-1]**.

Installation: Tighten to 43 - 47 N•m (32 - 35 ft-lb) torque.

Figure 70-120-2



Make flywheel stop tool as shown above in **[Figure 70-120-2]**.

A	144 mm (5.67 in)
B	104 mm (4.09 in)
C	20,0 mm (0.787 in)
D	10,0 mm dia. (0.394 in dia.)
E	12,0 mm dia. (0.472 in dia.)
F	16,0 mm dia. (0.630 in dia.)
G	16,0 mm dia. (0.630 in dia.)
H	32,0 mm (1.26 in)
I	16,0 mm (0.630 in)

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Electrical System (Cont'd)

Remove the floor console top access cover. (See Access Cover Removal And Installation (Top) on Page 50-130-1.)

Figure 80-30-18

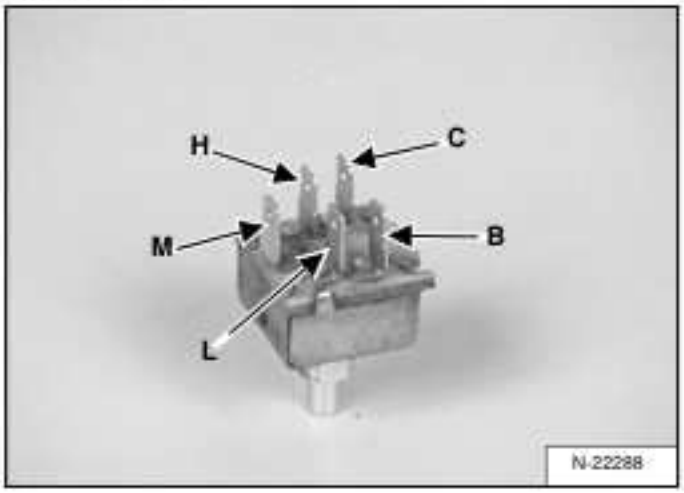


Disconnect the utility work machine wiring harness (Item 1) **[Figure 80-30-18]** from the blower switch.

Check the utility work machine harness for voltage. The voltage should be 12 volts.

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

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.

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HYDRAULIC/HYDROSTATIC SCHEMATIC
5610 UTILITY WORK MACHINE
WITH HIGH FLOW OPTION
S/N APFB11001 AND ABOVE

(PRINTED DECEMBER 2010)
V-1416legend

LEGEND

(1) HYDRAULIC RESERVOIR:
Reservoir Capacity . . . .14.0 L (14.8 qt)
@ center of sight glass
System Capacity. . . . . 42.0 Qt. (39.7 L)

(2) FILTER - CASE DRAIN (25 Micron)

(3) SPRING LOADED FILTER BYPASS VALVE: 150 kPa (1,5 bar) (20 psi)

(4) FILTER - HYDRAULIC (CANISTER)

(5) SPRING LOADED FILTER BYPASS VALVE: 310-380 kPa (3,1-3,8 bar) (45-55 psi)

(6) DIFFERENTIAL PRESSURE SWITCH:

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

(8) HYDRAULIC PUMP . . . . . Gear Type
22,9 L/min (6.05 U.S. gpm) at High Engine Idle

(9) HYDRAULIC PUMP . . . . . Gear Type
34,4 L/min (9.08 U.S. gpm) at High Engine Idle

(10) HYDRAULIC PUMP . . . . . Gear Type
71,5 L/min (18.9 U.S. gpm) at High Engine Idle

(11) CHARGE PUMP
48,1 L/min (12.7 U.S. gpm) at High Engine Idle

(12) RELIEF VALVE - CHARGE:
2500 kPa (25 bar) (365 psi) at High Engine Idle
60 degrees C (140 degrees F) Fluid

(13) RELIEF/REPLENISHING VALVE - HIGH PRESSURE: 32100 kPa (321 bar) (4650 psi)

(14) VARIABLE CAPACITY DISPLACEMENT BIDIRECTIONAL HYDROSTATIC PUMP

(15) SOLENOID VALVE - FORWARD/REVERSE

(16) SERVO PISTON - Swash Plate

(17) SHUTTLE VALVE - Motor Flushing

(18) RELIEF VALVE - Motor Flushing

(19) VALVE - 2 Speed

(20) SERVO PISTON - Swash Plate - 2 Speed

(21) FLOATING ORIFICE

(22) RESTRICTOR ..... 0,25 mm (0.009 in)

(23) SHUTTLE VALVE - 2 Speed

(24) BIDIRECTIONAL HYDROSTATIC MOTOR - 2 Speed

(25) BRAKE VALVE: 2200 kPa (22 bar) (319 psi)

(26) FIXED DISPLACEMENT FAN MOTOR

(27) RELIEF VALVE/ANTI-CAVITATION VALVE 14000 kPa (140 bar) (2030 psi)

(28) RELIEF VALVE – MAIN: 21500 – 20500 kPa (215 - 205 bar) (3117 - 2973 psi)

(29) RELIEF VALVE - MAIN: 21500 – 20500 kPa (215 - 205 bar) (3117 - 2973 psi)

(30) RELIEF VALVE - Port - With Anti-Cavitation (Lift Base): 24000 – 22500 kPa (240 - 225 bar) (3480 - 3263 psi)

(31) RELIEF VALVE - Port - With Anti-Cavitation (Lift Rod): 24000 – 22500 kPa (240 - 225 bar) (3480 - 3263 psi)

(32) RELIEF VALVE - Port - With Anti-Cavitation (Tilt Base): 24000 – 22500 kPa (240 - 225 bar) (3480 - 3263 psi)

(33) RELIEF VALVE - Port - With Anti-Cavitation (Tilt Rod): 29000 – 27500 kPa (290 - 275 bar) (4205 - 3988 psi)

(34) LOAD CHECK VALVE

(35) DIAGNOSTIC COUPLER

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

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

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

(39) RELIEF VALVE - Load Sense: 10000 kPa (100 bar) (1450 psi)

(40) FLOW DIVIDER

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

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

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

(44) FILTER

(45) CHECK VALVE

(46) FRONT AUXILIARY MANUAL PRESSURE BLEED-OFF VALVE

(47) CHECK VALVE

(48) FILTER.....(400 Micron)

(49) FILTER.....(125 Micron)

(50) RELIEF VALVE - Port - With Anti-Cavitation (Aux. Coupler – OPTIONAL – Use with Combo Buckets and Grapples) 24000 – 22500 kPa (240 - 225 bar) (3480 - 3263 psi)

(51) LOAD CHECK VALVE: 790 kPa (7,9 bar) (115 psi)

(52) FILTER - BOB-TACH

(53) ORIFICE . . . . . 2,26 mm (0.089 in)

(54) ORIFICE . . . . . 0,64 mm (0.025 in)

(55) PILOT ACTIVATED DIRECTIONAL CONTROL VALVE – HYDRAULIC POWERED BOB-TACH

(56) RELIEF VALVE: 12400 kPa (124 bar) (1800 psi)

(57) RELIEF VALVE: 6900 kPa (69 bar) (1000 psi)

(58) CHECK VALVE - With 550 kPa (5,5 bar) (80 psi) Spring

(59) CHECK VALVE - With 2070 kPa (20,7 bar) (300 psi) Spring and 0,40 mm (0.016 in) orifice

(60) SOLENOID ACTIVATED DIRECTIONAL CONTROL VALVE (TWO COIL)

(61) SOLENOID / PILOT ACTIVATED DIRECTIONAL CONTROL VALVE WITH PRESSURE SWITCH – Rear Auxiliary (OPTION)

(62) FILTER - BOB-TACH

(63) FILTER - BOB-TACH

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

(65) SOLENOID ACTIVATED DIRECTIONAL CONTROL VALVE - High Flow

(66) CHECK VALVE

(67) SOLENOID ACTIVATED DIRECTIONAL CONTROL VALVE - Remote Hydraulics (Optional)

(68) CHECK VALVE

(69) RELIEF VALVE: 22000 kPa (220 bar) (3190 psi)

(70) CHECK VALVE

(71) FIXED DISPLACEMENT PTO MOTOR (Optional)

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.

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