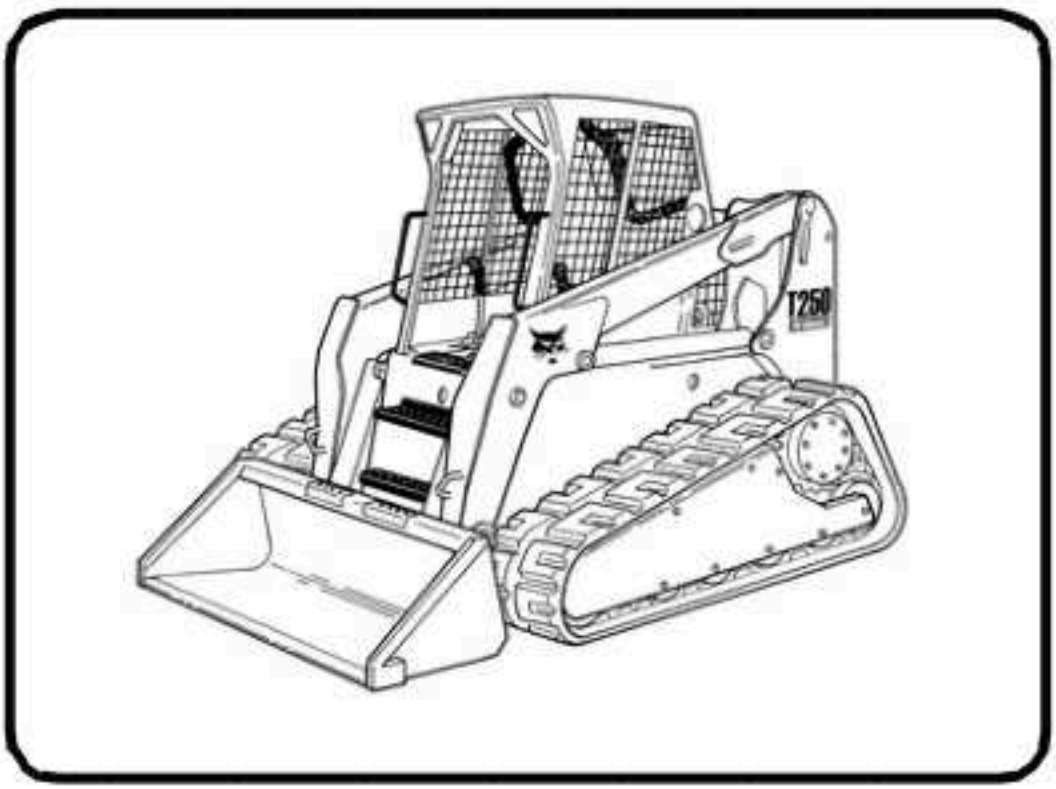
# Bobcat

# Service Manual
# T250 Compact Track Loader

## S/N A5GS20001 & Above
## S/N A5GT20001 & Above




**EQUIPPED WITH**
**BOBCAT INTERLOCK**
**CONTROL SYSTEM (BICS™)**

6987044 (6-10)

Printed in U.S.A.

© Bobcat Company 2010

MidWestTech | Bobcat T250 Compact Track Skid Loader Service Manual | Publication 698... Order the manual at mid-west-tech.com >

## ALPHABETICAL INDEX


ACCESS PANEL (INSIDE) ..... 50-01
ACCESS PANEL (INSIDE) (SJC) ..... 50-01
AIR CLEANER ..... 70-01
AIR CLEANER SERVICE ..... 10-01
AIR CONDITIONING SYSTEM FLOW ..... 80-01
ALTERNATOR ..... 60-01

BACK-UP ALARM SYSTEM ..... 60-01
BATTERY ..... 60-01
BOBCAT CONTROLLER (ACS) ..... 60-01
BOBCAT CONTROLLERS (GATEWAY AND AUXILIARY) ..... 60-01
BOBCAT CONTROLLER (SJC) (DRIVE) ..... 60-01
BOBCAT INTERLOCK CONTROL SYSTEM (BICS) ..... 60-01
BLOWER FAN ..... 80-01
BOB-TACH (HAND LEVER) ..... 10-01, 50-01
BOB-TACH (POWER) ..... 10-01, 50-01
BOB-TACH (POWER) BLOCK ..... 20-01
BRAKE ..... 40-01
BUCKET POSITION VALVE ..... 20-01

CAB DOOR ..... 50-01
CALIBRATION ..... 60-01
CAMSHAFT AND TIMING GEARS ..... 70-01
CASE DRAIN FILTER ..... 30-01
CHARGE PRESSURE ..... 30-01
COMPRESSOR ..... 80-01
CONDENSER ..... 80-01
CONTROL HANDLE / LEVER ..... 50-01
CONTROL HANDLE / LEVER (ACS) ..... 50-01
CONTROL HANDLE / LEVER (SJC) ..... 50-01
CONTROL PANEL ..... 50-01
CONTROL PANEL (SJC) ..... 50-01
CONTROL PANEL SETUP ..... 60-01
CONTROL PEDALS (ACS) ..... 50-01
CONTROL PEDALS AND LINKAGES ..... 50-01
CONTROL SYSTEM (ACS) ..... 60-01
CONVERSIONS ..... SPEC-01
CRANKSHAFT AND PISTONS ..... 70-01
CYLINDER HEAD ..... 70-01
CYLINDER (BOB-TACH) ..... 20-01
CYLINDER (LIFT) ..... 20-01
CYLINDER (TILT) ..... 20-01

DIAGNOSTICS SERVICE CODES ..... 60-01
DRIVE BELT ..... 30-01

ELECTRICAL / HYDRAULIC CONTROLS ..... 60-01
ELECTRICAL / HYDRAULIC CONTROLS (ACS) ..... 60-01
ELECTRICAL / HYDRAULIC CONTROLS (SJC) ..... 60-01
ELECTRICAL SYSTEM INFORMATION ..... 60-01
EMERGENCY EXIT ..... 10-01
ENGINE COOLING SYSTEM ..... 10-01, 70-01
ENGINE INFORMATION ..... 70-01
ENGINE LUBRICATION SYSTEM ..... 10-01
ENGINE SPEED CONTROL ..... 70-01
ENGINE SPEED CONTROL (SJC) ..... 70-01
EVAPORATOR COIL ..... 80-01
EVAPORATOR / HEATER UNIT ..... 80-01
EXHAUST GAS RECIRCULATION (EGR) SYSTEM ..... 70-01
EXPANSION VALVE ..... 80-01

FLYWHEEL AND HOUSING ..... 70-01
FLYWHEEL RPM SENSOR ..... 60-01
FRONT AUXILIARY HYDRAULIC COUPLER BLOCK ..... 20-01
FUEL SYSTEM ..... 10-01, 70-01
FUEL TANK ..... 50-01

HEATER COIL ..... 80-01
HEATER VALVE ..... 80-01
HYDRAULIC CONNECTION SPECIFICATIONS ..... SPEC-01
HYDRAULIC CONTROL VALVE (ACS) OR (SJC) ..... 20-01
HYDRAULIC CONTROL VALVE (STANDARD) ..... 20-01
HYDRAULIC FLUID RESERVOIR ..... 20-01
HYDRAULIC / HYDROSTATIC FILTERS ..... 20-01
HYDRAULIC / HYDROSTATIC FLUID SPECIFICATIONS ..... SPEC-01
HYDRAULIC / HYDROSTATIC SYSTEM ..... 10-01
HYDRAULIC PUMP (SJC) ..... 20-01
HYDRAULIC PUMP (SJC) (HI FLOW) ..... 20-01
HYDRAULIC PUMP (STANDARD) ..... 20-01
HYDRAULIC PUMP (STANDARD) (HIGH FLOW) ..... 20-01
HYDRAULIC SYSTEM INFORMATION ..... 20-01
HYDROSTATIC DRIVE MOTOR ..... 30-01
HYDROSTATIC PUMP ..... 30-01
HYDROSTATIC PUMP (SJC) ..... 30-01
HYDROSTATIC SYSTEM INFORMATION ..... 30-01

INSTRUMENT PANELS ..... 60-01

LIFT ARMS ..... 50-01
LIFT ARM BYPASS CONTROL VALVE ..... 20-01
LIFT ARM SUPPORT DEVICE ..... 10-01
LIFTING AND BLOCKING THE LOADER ..... 10-01
LIGHTS ..... 60-01
(T250) LOADER SPECIFICATIONS ..... SPEC-01
LOADER STORAGE AND RETURN TO SERVICE ..... 10-01
LUBRICATION SYSTEM ..... 70-01
LUBRICATING THE LOADER ..... 10-01

MAIN RELIEF VALVE ..... 20-01
MAINTENANCE CLOCK ..... 60-01
MUFFLER ..... 70-01




MidWestTech | Bobcat T250 Compact Track Skid Loader Service Manual | Publication 698... Order the manual at mid-west-tech.com >

OIL COOLER ..... 20-01
OPERATOR CAB ..... 10-01, 50-01
OPERATOR SEAT (SUSPENSION) ..... 50-01

PASSWORD SETUP (DELUXE INSTRUMENTATION PANEL) ..... 60-01
PASSWORD SETUP (KEYLESS START PANEL) ..... 60-01
PIVOT PINS ..... 10-01

REAR AUXILIARY DIVERTER VALVE ..... 20-01
REAR DOOR (TAILGATE) ..... 50-01
REAR GRILL ..... 50-01
RECEIVER / DRIER ..... 80-01
REGULAR MAINTENANCE ..... 80-01
REMOTE START TOOL KIT-MEL1563 ..... 10-01
REMOTE START TOOL (SERVICE TOOL) KIT-6689779 ..... 10-01

SEAT BAR ..... 50-01
SEAT BAR SENSOR ..... 60-01
SERVICE PC (LAPTOP COMPUTER) ..... 60-01
SERVICE SCHEDULE ..... 10-01
SPARK ARRESTOR MUFFLER ..... 10-01
SPEED SENSORS (SJC) ..... 60-01
STARTER ..... 60-01
STEERING DRIFT COMPENSATION ..... 60-01
STOPPING THE ENGINE AND LEAVING THE LOADER ..... 10-01
SYSTEM CHARGING AND RECLAMATION ..... 80-01

THERMOSTAT ..... 80-01
TORQUE SPECIFICATIONS FOR BOLTS ..... SPEC-01
TOWING THE LOADER ..... 10-01
TRACK MAINTENANCE (RUBBER TRACK) ..... 40-01
TRACK UNDERCARRIAGE COMPONENTS (ROLLER SUSPENSION) (RUBBER TRACK) ..... 40-01
TRACK UNDERCARRIAGE COMPONENTS (SOLID-MOUNTED) (RUBBER TRACK) ..... 40-01
TRACK UNDERCARRIAGE (STEEL TRACK) ..... 40-01
TRACTION LOCK ..... 60-01
TRANSPORTING LOADER ON A TRAILER ..... 10-01
TROUBLESHOOTING ..... 80-01
TURBOCHARGER ..... 70-01

WINDOW (CAB DOOR) ..... 50-01
WINDOW (REAR) ..... 50-01
WINDOW (SIDE) ..... 50-01
WINDOW (TOP) ..... 50-01

ACS- ADVANCED CONTROL SYSTEM
AHC- ADVANCED HAND CONTROL SYSTEM
BICS™-BOBCAT INTERLOCK CONTROL SYSTEM



MidWestTech | Bobcat T250 Compact Track Skid Loader Service Manual | Publication 698... Order the manual at mid-west-tech.com >

## CONTENTS


FOREWORD . . . . . II

SAFETY INSTRUCTIONS . . . . . V

FIRE PREVENTION . . . . . VII

SERIAL NUMBER LOCATIONS . . . . . IX

DELIVERY REPORT . . . . . X

LOADER IDENTIFICATION . . . . . XI

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



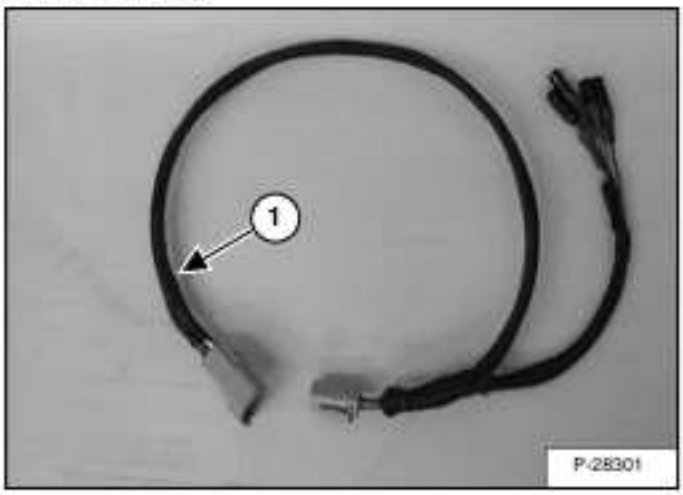




MidWestTech | Bobcat T250 Compact Track Skid Loader Service Manual | Publication 698... Order the manual at mid-west-tech.com >

## Joystick Testing

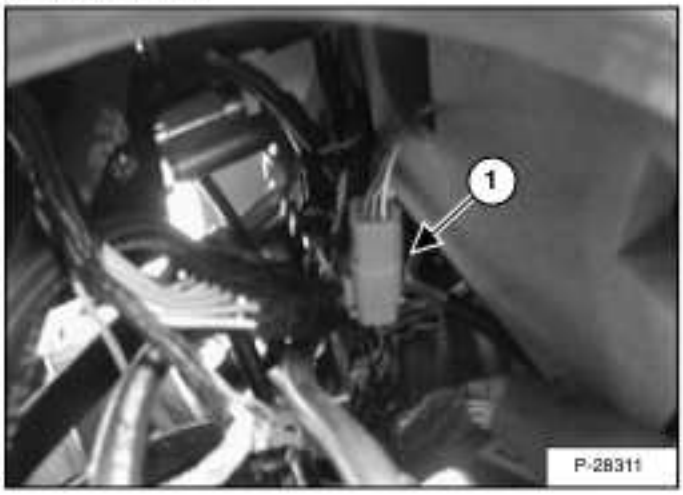
**Figure 50-112-1**




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

MEL1608-Joystick Test Harness **[Figure 50-112-1]**
MEL1563 or 6689779-Remote Start Tool
Multimeter

**Figure 50-112-2**



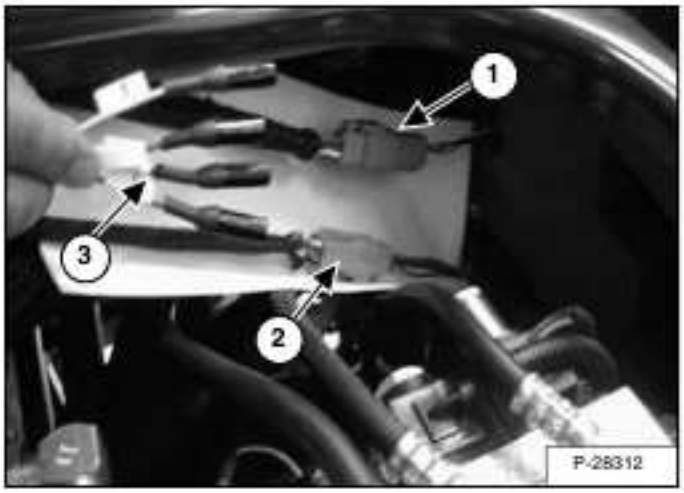

Raise the lift arms and install an approved lift arm support device. (See Installing on Page 10-20-1.)

Raise the operator cab. (See Raising on Page 10-30-2.)

Connect the remote start tool to the loader. (See REMOTE START TOOL KIT-MEL1563 on Page 10-60-1.)

At the back side of the control panel, locate the left joystick wire connector (Item 1) **[Figure 50-112-2]**.

**Figure 50-112-3**




Disconnect the joystick harness connector (Item 1) from the loader wiring harness (Item 2) **[Figure 50-112-3]**.

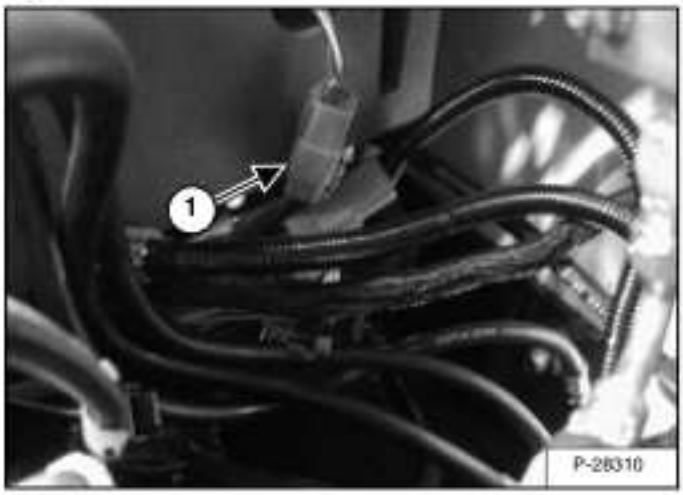
Install the test harness (Item 3) **[Figure 50-112-3]** between the two connectors.

Turn the remote start key to ON position without starting the loader.

Check the voltage between pin 3 and pin 5 on the joystick test harness (Item 3) **[Figure 50-112-3]**.

The voltage should be between 2.45 and 2.55 volts.

**Figure 50-112-4**



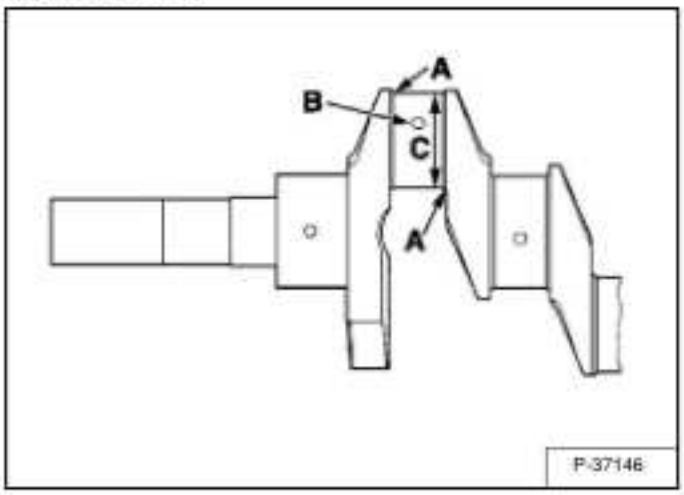

Repeat the procedure at the right joystick wiring harness connector (Item 1) **[Figure 50-112-4]**. (If needed.)



MidWestTech | Bobcat T250 Compact Track Skid Loader Service Manual | Publication 698... Order the manual at mid-west-tech.com >

## Crankshaft And Bearings - Servicing (Cont'd)

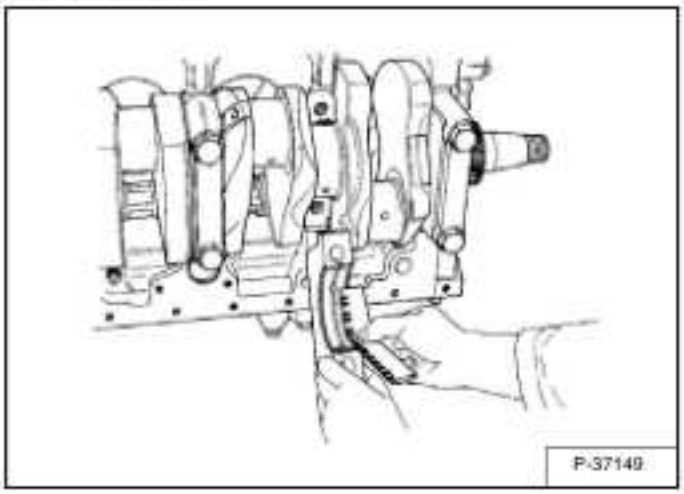
Figure 70-90-44




Undersize dimensions of crankpin.

| | | |
|---|---|---|
| Undersize | 0.008 in. (0,2 mm) | 0.016 in. (0,4 mm) |
| Dimension A | 0.11 - 0.12 in. radius (2,8 - 3,2 mm radius) | 0.11 - 0.12 in. radius (2,8 - 3,2 mm radius) |
| Dimension B | 0.040 - 0.059 in. radius (1,0 - 1,5 mm radius) | 0.040 - 0.059 in. radius (1,0 - 1,5 mm radius) |
| Dimension C | 2.0779 - 2.0783 in. (52,777 - 52,790 mm) | 2.0700 - 2.0704 in. (52,577 - 52,590 mm) |
| The crank pin must be fine-finished to higher than —— (0.8-S) —— Holes to be de-burred and edges rounded with 0.040 - 0.059 in. (1,0 -1,5 mm) relief. | | |

Figure 70-90-45




Clean the crankshaft journal and crankshaft bearing.

Put a strip of plastigage on the center of the journal **[Figure 70-90-45]**.

**NOTE: Never insert the plastigage into the oil hole of the journal.**

Install the main bearing case and tighten the screws to the specified torque, and remove the cases again.

Measure the amount of the flattening with the scale and get the oil clearance.

If the clearance exceeds the allowable limit, replace the crankshaft bearing.

| | | |
|---|---|---|
| Crankshaft Journal O.D. | Factory spec. | 2.9519 - 2.9523 in. (74,977 - 74,990 mm) |

| | | |
|---|---|---|
| Oil clearance between crankshaft journal and crankshaft bearing | Factory spec. | 0.00071 - 0.0024 in. (0,018 - 0,062 mm) |
| | Allowable limit | 0.0079 in. (0,20 mm) |



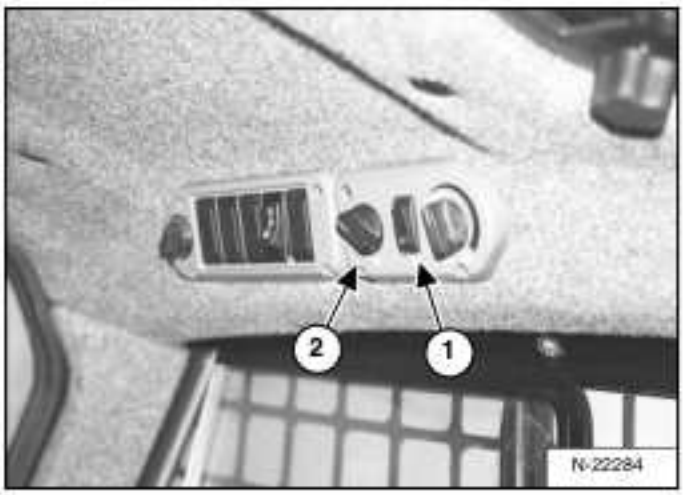
MidWestTech | Bobcat T250 Compact Track Skid Loader Service Manual | Publication 698... Order the manual at mid-west-tech.com >

### Electrical System

Check to see if the compressor clutch is engaging.

With an operator in the loader seat and the cab door open, turn the loader key switch to RUN (Standard Panel) OR press the RUN/ENTER Button (Deluxe Panel), without starting the loader.

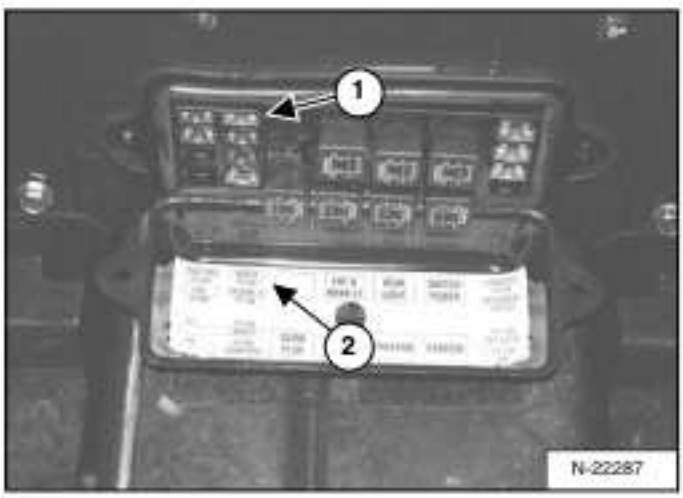
**Figure 80-30-4**




Push the A/C switch (Item 1) to the ON position. Turn the blower switch (Item 2) **[Figure 80-30-4]** to the first ON position.

The compressor clutch should make a click sound, which indicates the clutch is engaging.

**Figure 80-30-5**




If the compressor clutch does not engage, check the loader fuse (Item 1) **[Figure 80-30-5]** located on the control panel in the loader cab.

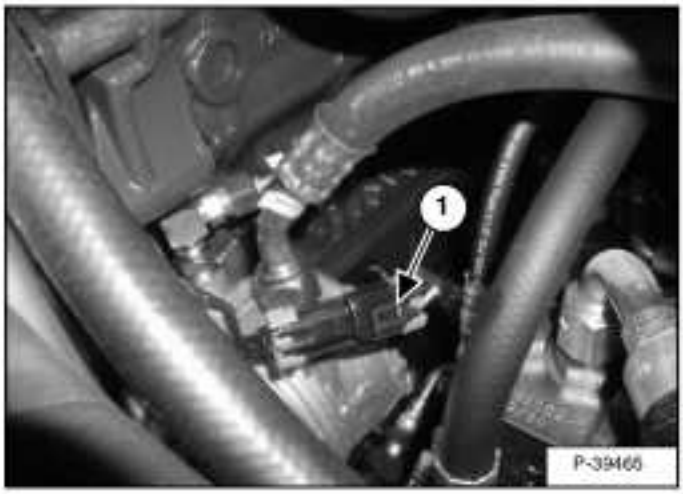
Replace the fuse if burned out.

**Figure 80-30-6**




Remove the right side access cover (Item 1) **[Figure 80-30-6]**.

**Figure 80-30-7**




Disconnect the loader harness (Item 1) **[Figure 80-30-7]** from the compressor clutch wire.



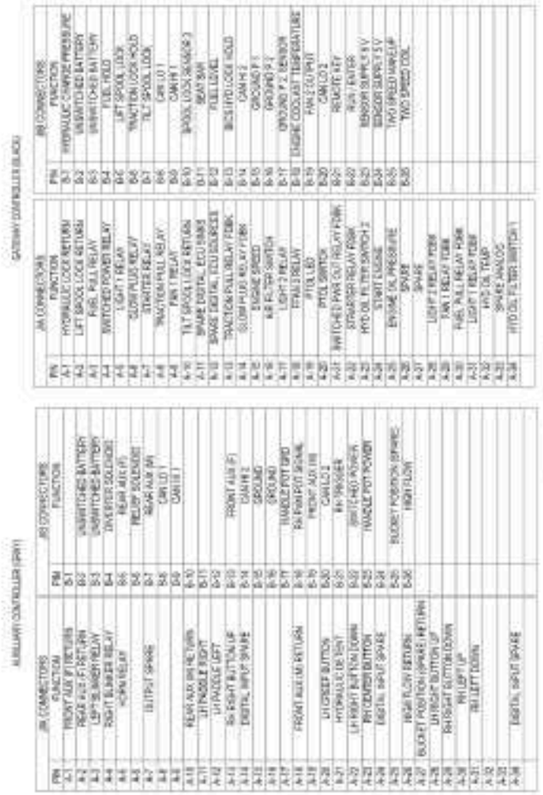
MidWestTech | Bobcat T250 Compact Track Skid Loader Service Manual | Publication 698... Order the manual at mid-west-tech.com >

# WIRING SCHEMATIC
# (MAINFRAME)
# T250 (S/N A5G520001 AND ABOVE)
# (S/N A5GT20001 AND ABOVE)

(PRINTED OCTOBER 2008)

7159444 or 7169388

LARGE FRAME
MAINFRAME
HARNESS
7159444 or
7169388




Printed In U.S.A.

7159444 (10-9-08)



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