753

Bobcat®

Service Manual

G Series

(S/N 515830001 & Above)
(S/N 516220001 & Above)



EQUIPPED WITH BOBCAT INTERLOCK CONTROL SYSTEM (BICS™)

6900976 (2-06)

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

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ALPHABETICAL INDEX

ADVANCED CONTROL SYSTEM (ACS) ADVANCE HAND CONTROL 60-01
ADVANCED CONTROL SYSTEM (ACS) SELECTRABLE HAND/FOOT CONTROL..... 60-01
ADVANCED HAND CONTROL (AHC) SYSTEM.... 60-01
ADVANCED HAND CONTROL (AHC) SYSTEM (W/PUSH BUTTON FLOAT) 60-01
AIR CLEANER SERVICE 10-01, 70-01
ALTERNATOR (55 AMP) 60-01
ALTERNATOR (90 AMP) 60-01

BASIC TROUBLESHOOTING 80-01
BATTERY 60-01
BICS™ SYSTEM 60-01
BOBCAT 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
COMPONENTS 80-01
CONTROL HANDLE 50-01
CONTROL HANDLE (ADVANCE HAND CONTROL) (AHC)..... 50-01
CONTROL HANDLE (ADVANCED HAND CONTROL) (AHC) W/PUSH BUTTON FLOAT..... 50-01
CONTROL HANDLE (ADVANCED CONTROL SYSTEM) (ACS) ADVANCED HAND CONTROL..... 50-01
CONTROL HANDLE (ADVANCED CONTROL SYSTEM) (ACS) SELECTABLE HAND/FOOT CONTROL... 50-01
CONTROL PANEL 50-01
CONTROL PEDALS 50-01
CONTROL PEDALS (ACS) 50-01
CONVERSIONS SPEC-01
COOLING FAN 70-01
CYLINDER (LIFT) 20-01
CYLINDER (POWER BOB-TACH)..... 20-01
CYLINDER (TILT) 20-01

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

ELECTRICAL/HYD. CONTROLS REFERENCE 60-01
ELECTRICAL SYSTEM INFORMATION 60-01
ENGINE 70-01
ENGINE COMPONENTS AND TESTING 70-01
ENGINE COOLING SYSTEM..... 10-01
ENGINE LUBRICATION SYSTEM 10-01
ENGINE SPECIFICATIONS..... SPEC-01
ENGINE SPEED CONTROL 70-01

FAN GEARBOX..... 10-01
FINAL DRIVE TRANSMISSION (CHAINCASE)..... 10-01
FLYWHEEL AND HOUSING 70-01
FRONT AUXILIARY HYDRAULIC COUPLER BLOCK 20-01
FRONT AUXILIARY PRESSURE RELIEF BLOCK..... 20-01
FUEL SYSTEM..... 10-01
FUEL TANK 50-01

HEATER UNIT 80-01
HEATER COIL 80-01
HEATER FAN 80-01
HEATER VALVE 80-01
HYDRAULIC CONNECTION SPECS SPEC-01
HYDRAULIC CONTROL VALVE (ADVANCED CONTROL SYSTEM) (ACS) 20-01
HYDRAULIC CONTROL VALVE (FOOT CONTROL)..... 20-01
HYDRAULIC FLUID RESERVOIR 20-01
HYDRAULIC/HYDROSTATIC FILTER 20-01
HYDRAULIC FLUID SPECIFICATIONS..... SPEC-01
HYDRAULIC/HYDROSTATIC SYSTEM..... 10-01
HYDRAULIC PUMP (ALUMINUM) 20-01
HYDRAULIC SYSTEM INFORMATION 20-01
HYDRAULIC PUMP (ALUMINUM) 20-01
HYDRAULIC PUMP (CAST IRON) 20-01
HYDROSTATIC MOTOR 30-01
HYDROSTATIC PUMP 30-01
HYDROSTATIC SYSTEM INFORMATION..... 30-01

INSTRUMENT PANEL 60-01

LIFT ARM 50-01
LIFT ARM BY-PASS CONTROL VALVE..... 20-01
LIFT ARM SUPPORT DEVICE..... 10-01
LIFTING AND BLOCKING THE LOADER..... 10-01
LIGHTS..... 60-01
LOADER SPECIFICATIONS SPEC-01
LUBRICATION OF THE BOBCAT LOADER 10-01

MAIN RELIEF VALVE 20-01
MUFFLER..... 70-01

OIL COOLER..... 30-01
OPERATOR CAB 10-01, 50-01
OPERATOR SEAT..... 50-01
OPERATOR SEAT (SUSPENSION)..... 50-01

POWER BOB-TACH..... 50-01
POWER BOB-TACH BLOCK..... 50-01

Continued On Next Page

MidWestTech | Bobcat 753 G Series Skid Steer Loader Service Manual | Publication 69009... Order the manual at mid-west-tech.com >

RADIATOR....70-01
REAR AUXILIARY DIVERTER VALVE (DUAL SHUTTLE)....50-01
REAR AUXILIARY DIVERTER VALVE (SINGLE SHUTTLE)....50-01
REAR DOOR....50-01
REAR GRILL....50-01
RECONDITIONING THE ENGINE....70-01
REGULAR MAINTENANCE....80-01
REMOTE START....10-01
RPM SENSOR....70-01

SEAT BAR....50-01
SEAT BAR SENSOR....60-01
SELECT VALVE....20-01
SERVICE SCHEDULE....10-01
SPARK ARRESTOR MUFFLER....10-01
STARTER (NIPPONDENSO)....60-01
STARTER (VALEO)....60-01
SYSTEM TROUBLESHOOTING CHART....80-01

TIRE MAINTENANCE....10-01
TORQUE SPECIFICATIONS FOR BOLTS....SPEC-01
TOWING THE LOADER....10-01
TRACTION LOCK....60-01
TRANSPORTING THE LOADER....10-01
TROUBLESHOOTING....70-01

MidWestTech | Bobcat 753 G Series Skid Steer Loader Service Manual | Publication 69009... Order the manual at mid-west-tech.com >

CONTENTS

FOREWORD II

SAFETY INSTRUCTIONS V

SERIAL NUMBER LOCATIONS IX

DELIVERY REPORT IX

LOADER IDENTIFICATION X

SAFETY AND MAINTENANCE 10-01

HYDRAULIC SYSTEM 20-01

HYDROSTATIC SYSTEM 30-01

DRIVE SYSTEM 40-01

MAIN FRAME 50-01

ELECTRICAL SYSTEM & ANALYSIS 60-01

ENGINE SERVICE 70-01

HEATER 80-01

SPECIFICATIONS SPEC-01

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HYDRAULIC/HYDROSTATIC SCHEMATIC
753 (S/N 515830001 - 515845424)
(S/N 516220001 - 516226372)

(PRINTED APRIL 2003)
V-0264legend

LEGEND

1. RESERVOIR:
   Capacity . . . . . 14 Qts. (13,2 L)
2. SPRING LOADED FILTER BY-PASS VALVE: 45-55 PSI (311-379 kPa)
3. DIFFERENTIAL PRESSURE SWITCH: 36-44 PSI (250-300 kPa) Normally Closed
4. DRIVE MOTOR SHUTTLE VALVE
5. RELIEF/REPLENISHING VALVE - HIGH PRESSURE: 5000 PSI (34475 kPa)
6. RELIEF VALVE - CHARGE INLET: 155-165 PSI (1069-1138 kPa) at 14.3 GPM (54 L/min.) at 2800 RPM With 140 degrees F. (60 degrees C.) Fluid
7. RELIEF/REPLENISHING VALVE - HIGH PRESSURE: 5000 PSI (34475 kPa)
8. HYDRAULIC PUMP . . . . . Gear Type 14.3 GPM (54 L/min.) at 2800 RPM at 1150 PSI (7929 kPa)
9. RELIEF VALVE - MAIN: 2500-2600 PSI (17236-17926 kPa) at Front Quick Couplers
10. RELIEF VALVE - PORT: . . . . . (Optional) 3500 PSI (24132 kPa)
11. ANTICAVITATION VALVE
12. SOLENOID ACTIVATED DIRECTIONAL CONTROL VALVE - AUXILIARY
13. RELIEF VALVE - PORT: . . . . . (Optional) 3500 PSI (24132 kPa)
14. LOAD CHECK VALVE
15. ONE WAY RESTRICTOR VALVE (Optional - ADVANCED HAND CONTROLS ONLY)
16. SOLENOID ACTIVATED DIRECTIONAL CONTROL VALVE - BICS CONTROL
17. PILOTED ACTIVATED DIRECTIONAL CONTROL VALVE - TILT CONTROL
18. PILOTED ACTIVATED DIRECTIONAL CONTROL VALVE - LIFT CONTROL
19. PULL BUTTON ACTIVATED DIRECTIONAL CONTROL VALVE - LIFT ARM BY-PASS
20. PILOTED ACTIVATED DIRECTIONAL CONTROL VALVE - UNLOADING SPOOL
21. PILOTED ACTIVATED DIRECTIONAL CONTROL VALVE - FLOW CONTROL SPOOL
22. FLOW DIVIDER ADJUSTMENT VALVE
23. SOLENOID ACTIVATED DIRECTIONAL CONTROL VALVE - BLEED OFF REAR AUXILIARY ("SV2")
24. LOAD SHUTTLE VALVE - BLEED OFF
25. PILOT ACTIVATED DIRECTIONAL CONTROL VALVE - FOR REAR AUXILIARY - NORMALLY CLOSED ("P2" and "F2")
26. PILOT ACTIVATED DIRECTIONAL CONTROL VALVE - FOR REAR AUXILIARY - NORMALLY OPEN ("D1" and "P1")
27. PILOT ACTIVATED DIRECTIONAL CONTROL VALVE - FOR REAR AUXILIARY - NORMALLY OPEN ("D2" and "P2")
28. FILTER - DIVERTER VALVE (SINTERED BRONZE)
29. SOLENOID ACTIVATED DIRECTIONAL CONTROL VALVE - TO ACTIVATE REAR AUXILIARY ("SV1")
30. PILOT ACTIVATED DIRECTIONAL CONTROL VALVE - FOR REAR AUXILIARY - NORMALLY CLOSED ("P1" and "F1")
31. FILTER - HYDRAULIC (CANISTER)
32. FILTER - CASE DRAIN (SINTERED BRONZE)
33. FILTER - BICS CONTROL VALVE (SCREEN)
34. CHECK VALVE - BUCKET POSITION VALVE
35. RESTRICTION
36. VARIABLE CAPACITY DISPLACEMENT BIDIRECTIONAL HYDROSTATIC PUMP
37. SHUTTLE RELIEF VALVE (Not Adjustable - Factory Set) 65 PSI (448 kPa)
38. FIXED CAPACITY DISPLACEMENT BIDIRECTIONAL HYDROSTATIC MOTOR
39. ONE WAY RESTRICTOR VALVE
40. SOLENOID ACTIVATED DIRECTIONAL CONTROL VALVE - BUCKET POSITION VALVE (ON/OFF)
41. CHECK VALVE - BICS CONTROL VALVE
42. MUFFLER (If equipped)
43. LOAD SHUTTLE VALVE - AUXILIARY BLEED VALVE (USED ON MACHINES WITHOUT REAR AUXILIARY)
44. ANTICAVITATION VALVE (TILT BASE END)
45. SOLENOID ACTIVATED DIRECTIONAL CONTROL VALVE - AUXILIARY BLEED VALVE (USED ON MACHINES WITHOUT REAR AUXILIARY)

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

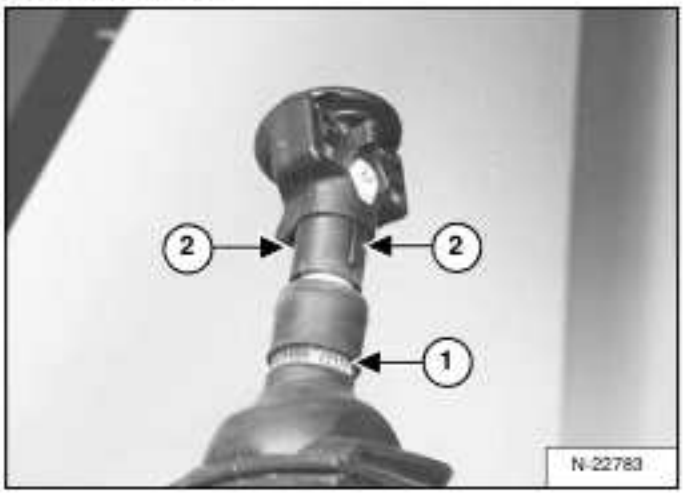
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Switch Handle Removal (Cont'd)

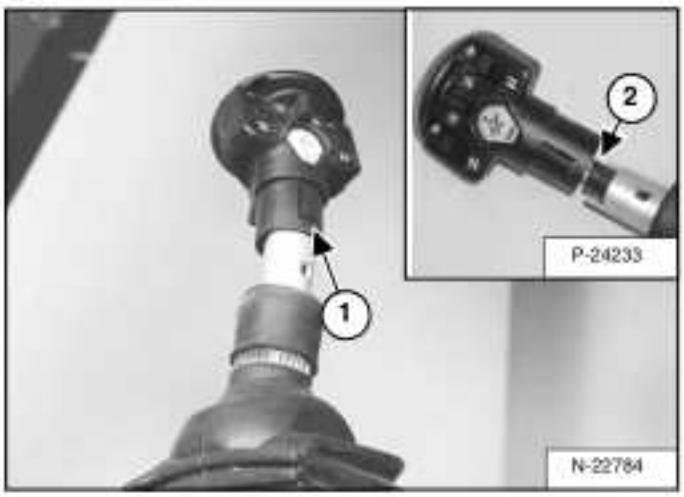
Figure 60-123-18



Roll the pistol grip handle cover (Item 1) **[Figure 60-123-18]** down.

Using a small screwdriver, lift the handle tabs (Item 2) **[Figure 60-123-18]** and slightly rotate the switch handle.

Figure 60-123-19

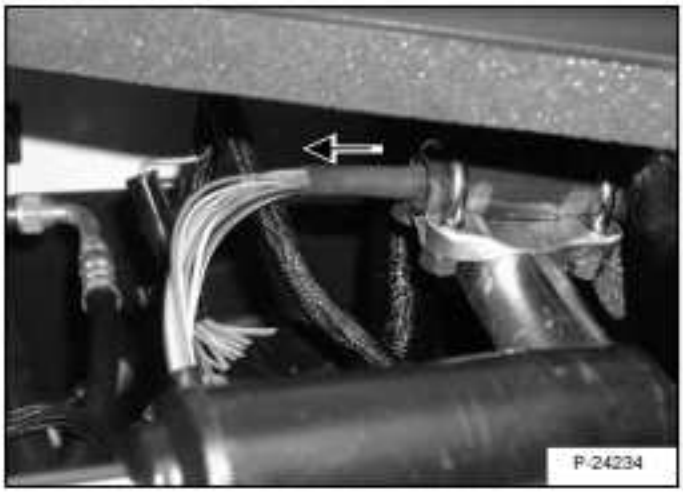


Pull the switch handle and wiring harness assembly (Item 1) **[Figure 60-123-19]** from the control lever.

Cut the wires (Item 2) **[Figure 60-123-19]** below the switch handle and remove switch handle.

NOTE: Only cut the wires if the switch handle is bad and needs replacement. If the switch handle is good and just needs to be removed for control handle or lever replacement, then remove the connectors on the end of the harness and pull switch handle up out of lever tube.

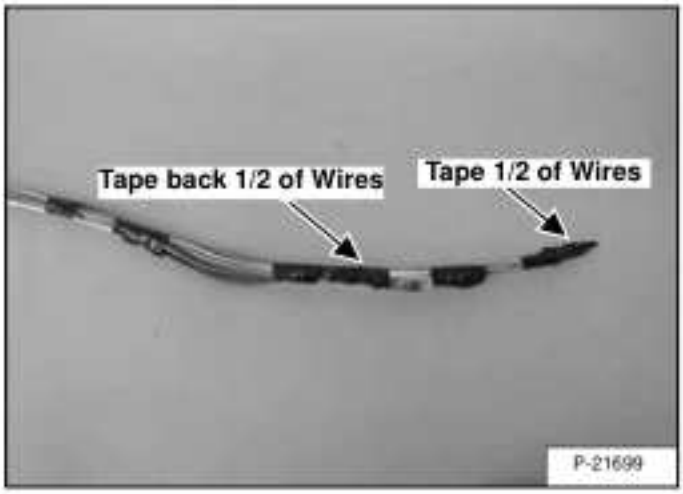
Figure 60-123-20



Pull harness (Item 1) **[Figure 60-123-20]** out the bottom of the control lever tube.

Switch Handle Installation

Figure 60-123-21



When installing the new switch handle, tape the wire terminals together.

The switch handle comes with a 6 inch piece of heat shrink tube side on the end of the wires. Remove the heat shrink tube from the end of the wires before routing through handle and control lever tube.

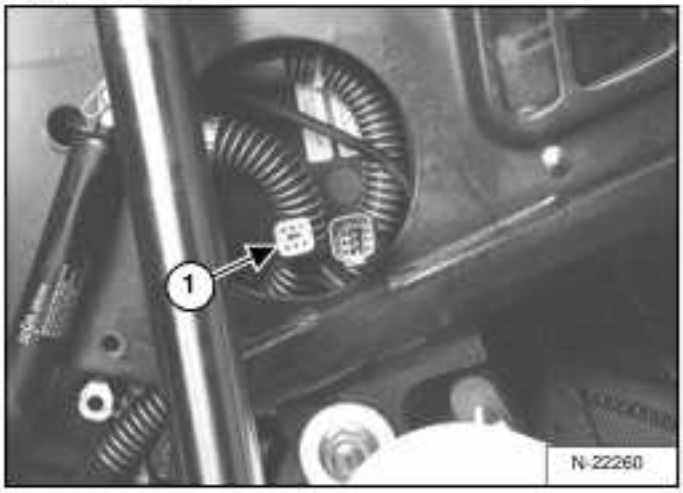
NOTE: Leave all the other heat shrink tube on the wires for protection.

Tape half of the wires back and half forward **[Figure 60-123-21]** to keep the harness small enough to route through the control lever tube.

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Checking The Electrical System (Cont'd)

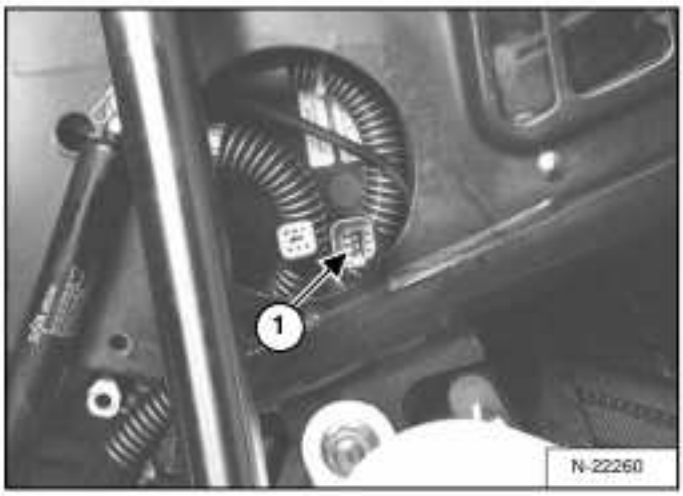
Figure 80-30-12



Check the loader harness (Item 1) **[Figure 80-30-12]** for voltage. The voltage should be 12 volts.

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

Figure 80-30-13

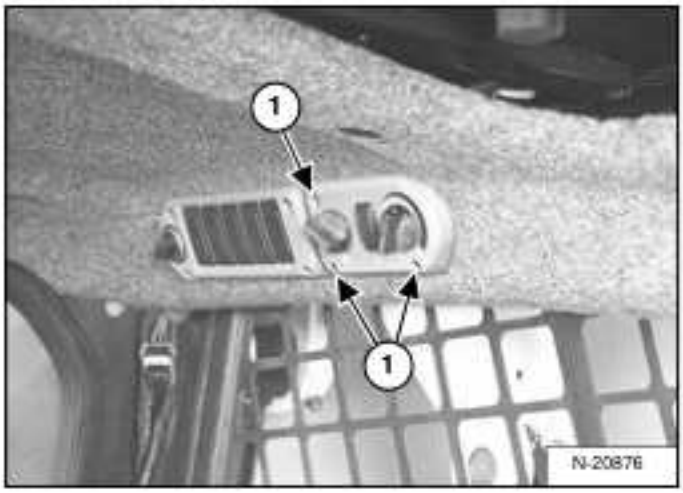


If there is voltage at the wiring harness, check the resistance to the blower fan at the blower fan wiring connector (Item 1) **[Figure 80-30-13]**.

If there is no resistance value replace the blower fan. (See Removal And Installation on Page 80-70-1.)

If there is a resistance value check the climate controls at the control panel inside the loader cab.

Figure 80-30-14



Remove the three mount screws (Item 1) **[Figure 80-30-14]** from the cab control panel.

Figure 80-30-15



Remove the control panel and wiring harness from the cab **[Figure 80-30-15]**.

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SAFETY INSTRUCTIONS

Safety Alert Symbol

This symbol with a warning statement means: "Warning, be alert! Your safety is involved!" Carefully read the message that follows.

WARNING

Instructions are necessary before operating or servicing machine. Read and understand the Operation & Maintenance Manual, Operator's Handbook and signs (decals) on machine. Follow warnings and instructions in the manuals when making repairs, adjustments or servicing. Check for correct function after adjustments, repairs or service. Untrained operators and failure to follow instructions can cause injury or death.

W-2003-0903

WARNING

Warnings on the machine and in the manuals are for your safety. Failure to obey warnings can cause injury or death.

W-2044-1285

IMPORTANT

This notice identifies procedures which must be followed to avoid damage to the machine.

I-2019-0284

The following publications provide information on the safe use and maintenance of the Bobcat machine and attachments:

- The Delivery Report is used to assure that complete instructions have been given to the new owner and that the machine is in safe operating condition.
- The Operation & Maintenance Manual delivered with the machine or attachment contains operating information as well as routine maintenance and service procedures. It is a part of the machine and can be stored in a container provided on the machine. Replacement Operation & Maintenance Manuals can be ordered from your Bobcat dealer.
- Machine signs (decals) instruct on the safe operation and care of your Bobcat machine or attachment. The signs and their locations are shown in the Operation & Maintenance Manual. Replacement signs are available from your Bobcat dealer.
- An Operator's Handbook fastened to the operator cab. It's brief instructions are convenient to the operator. The handbook is available from your dealer in an English edition or one of many other languages. See your Bobcat dealer for more information on translated versions.
- The AEM Safety Manual delivered with the machine gives general safety information.
- The Service Manual and Parts Manual are available from your dealer for use by mechanics to do shop-type service and repair work.
- The Skid-Steer Loader Operator Training Course is available through your local dealer or at **www.training.bobcat.com** or **www.bobcat.com**. This course is intended to provide rules and practices of correct operation of the Skid-Steer Loader. The course is available in English and Spanish versions.
- Service Safety Training Courses are available from your Bobcat dealer or at **www.training.bobcat.com** or **www.bobcat.com**. They provide information for safe and correct service procedures.
- The Skid-Steer Loader Safety Video is available from your Bobcat dealer or at **www.training.bobcat.com** or **www.bobcat.com**.

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753 WIRING SCHEMATIC

WITH ADVANCED HAND CONTROL OPTION

S/N 515830001-34999
S/N 516220001-21999
(PRINTED APRIL 2003)
V-0010

WIRES CONNECT BY LETTER ACROSS CONNECTORS

SOME CONNECTOR BODIES NOT SHOWN FOR DRAWING CLARITY

* NOTE: THESE ARE NOT FOUND ON ALL MACHINES.

TAILGATE/ WORK LIGHTS
HARNESS 6716419

C103

ENGINE
HARNESS 6716871

C102

C101

MAIN FRAME
HARNESS 6719883 or 6727129

C484 C485 C486

C403

C407

C408

C427

C426

C401 C402

CAB
HARNESS 6716870

C435 C434

C428 C429

ADVANCED HAND CONTROL MODULE

C430 C431

C432 C433

C409 C410 C411 C412 C413

700 SERIES

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