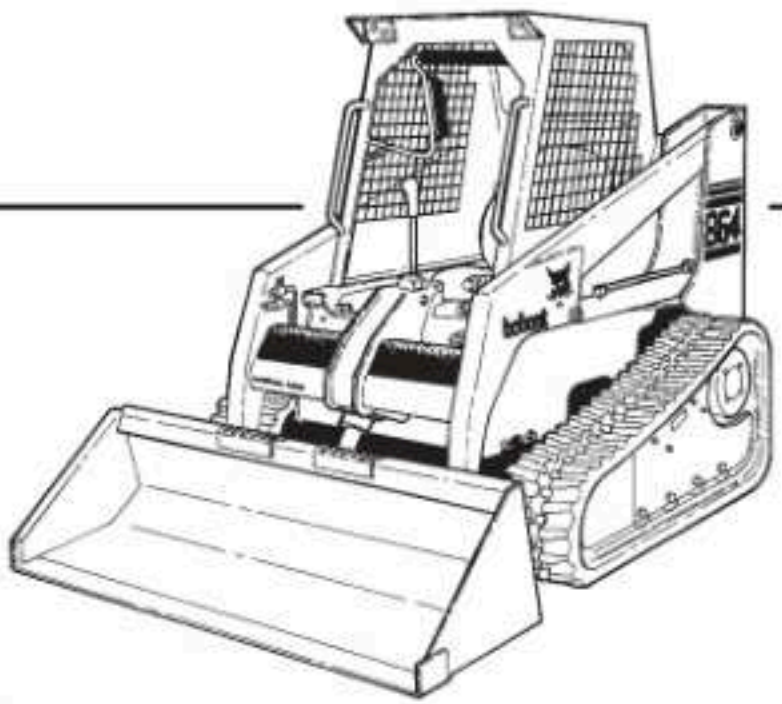
864

864

HIGH FLOW

Service Manual

S/N 516911001 & Above



EQUIPPED WITH BOBCAT INTERLOCK CONTROL SYSTEM (BICS™)

6900627 (7-10)

© Bobcat Company 2010
Printed in U.S.A.

MidWestTech | Bobcat 864, 864 High Flow Skid Steer Loader Service Manual | Publication... Order the manual at mid-west-tech.com >

ALPHABETICAL INDEX

ACTUATORS 10–1
ACTUATOR VOLTAGE TEST 10–1
A.H.C./PWM CONTROLLER 10–1
A.H.C. HANDLE 10–1
A.H.C. STEERING LEVER 10–1
AIR CLEANER HOUSING 7–1
AIR CLEANER SERVICE 7–1
ALTERNATOR 6–1
ALTERNATOR BELT 6–1

BATTERY 6–1
BICS™ 8–1
BICS™ VALVE 2–1, 10–1
BLOWER FAN 7–1
BLOWER HOUSING/FAN GEARBOX 7–1
BICS™ SYSTEM CONTROLLER 8–1, 10–1
BOB–TACH 5–1
BOSS® DIAGNOSTIC TOOL 8–1
BOSS® INSTRUMENT PANEL 8–1
BOSS® UNIT 8–1
BRAKE BLOCK 4–1
BUCKET POSITION VALVE 2–1

CAMSHAFT BEARINGS 7–1
CHARGE PRESSURE 3–1
CHARGE PUMP 3–1
CONNECTING ROD 7–1
CONTROL PEDALS 2–1
CONTROL PANEL 3–1
CONTROL ROD GUIDE BUSHING 7–1
CRANKSHAFT 7–1
CRANKSHAFT GEAR MOUNTING BOLT 7–1
CROSSBAR LINKAGE 2–1
CYLINDER HEAD 7–1
CYLINDER LINERS 7–1

DECIMAL & MILLIMETER EQUIVALENTS 9–1
DEUTZ ENGINE TOOLS 7–1
DRIVE BELT 3–1
DRIVE BELT SHIELD 3–1
DRIVE BELT TENSIONER PULLEY 3–1

ELEC./HYD. CONTROLS REFERENCE 8–1
ELECTRICAL SYSTEM INFORMATION 6–1
ENGINE 7–1
ENGINE COOLING SYSTEM 1–1
ENGINE LUBRICATION SYSTEM 1–1
ENGINE MOUNTS 7–1
ENGINE MUFFLER 7–1
ENGINE SPECIFICATIONS 9–1
ENGINE SPEED CONTROL 7–1
ENGINE TORQUE 9–1

FAN DRIVE TENSION PULLEY 7–1
FAN GEARBOX 7–1
FLYWHEEL 7–1
FLYWHEEL HOUSING 7–1
FRONT COVER 7–1
FRONT LIGHTS 6–1
FUEL INJECTOR 7–1
FUEL INJECTION PUMP 7–1
FUEL SYSTEM 1–1
FUEL TANK 5–1

GLOW PLUGS 7–1

HANDLE CONTROL UNIT 10–1
HANDLE CONTROL UNIT TEST 10–1
HYDRAULIC CONNECTION SPECIFICATIONS 9–1
HYDRAULIC CONTROL VALVE 2–1, 10–1
HYDRAULIC CYLINDER 2–1
HYDRAULIC FLUID RESERVOIR 2–1
HYDRAULIC PUMP 2–1
HYDRAULIC PUMP (Double Gear) 863H 2–1
HYDRAULIC SYSTEM INFORMATION 2–1
HYDRAULIC/HYDROSTATIC FILTER HOUSING 2–1
HYDRAULIC/HYDROSTATIC FLUID SPECS 9–1
HYDRAULIC/HYDROSTATIC SYSTEM 1–1
HYDROSTATIC MOTOR 3–1
HYDROSTATIC PUMP 3–1
HYDROSTATIC SYSTEM INFORMATION 3–1

LIFT ARM BY–PASS CONTROL VALVE 2–1
LIFT ARM BY–PASS CONTROL VALVE MOUNT BRACKET 2–1
LIFT ARMS 5–1
LIFT ARM SUPPORT DEVICE 1–1
LIFT CYLINDER(S) 2–1
LIFTING AND BLOCKING THE LOADER 1–1
LOADER SPECIFICATIONS 9–1
LUBRICATING THE LOADER 1–1

MAIN RELIEF VALVE 2–1
MONITOR SERVICE CODE 8–1

OIL COOLER 3–1, 7–1
OPERATOR CAB ..... 1–1 & 5–1
OPERATOR CAB GAS CYLINDER 5–1
OPERATOR SEAT 5–1

PARKING BRAKE PEDAL 4–1
PEDAL INTERLOCK LINKAGE 2–1
PISTON AND PISTON PIN 7–1
PWM CONTROL HANDLE 8–1
PWM ELECTRIC SOLENOID 8–1
PWM MODULE 8–1
PWM TROUBLESHOOTING 8–1

REAR AUXILIARY DEVERTER–864 STD. FLOW 2–1
REAR COVER SEAL 7–1
REAR DOOR 5–1
REAR GRILL 5–1
RECONDITIONING THE ENGINE 7–1
RELAY SWITCHES 6–1
REMOTE START SWITCH 1–1
ROCKER ARM AND BRACKET 7–1
RPM SENSOR 8–1

Continued On Next Page

MidWestTech | Bobcat 864, 864 High Flow Skid Steer Loader Service Manual | Publication... Order the manual at mid-west-tech.com >

ALPHABETICAL INDEX (Cont'd)

SEAT BAR 5–1
SEAT BAR RESTRAINT SYSTEM 1–1
SEAT BAR SENSOR 8–1
SELECT VALVE 864H 2–1
SENDER AND SENSOR 8–1
SERVICE SCHEDULE 1–1
STANDARD INSTRUMENT PANEL 6–1
STANDARD TORQUE SPECS. FOR BOLTS 9–1
STARTER 6–1
STEERING LEVERS 3–1
STEERING LINKAGE 3–1
SWITCH HANDLE 10–1

TILT CYLINDER 2–1
TIMING BELT 7–1
TRACTION LOCK 8–1
TOWING THE BOBCAT LOADER 1–1
TORQUE SPECIFICATIONS FOR LOADER 9–1
TRACK 4–1
TRACK DAMAGE IDENTIFICATION 4–1
TRACK HOUSING 4–1
TRACK IDLER (Front & Rear) 4–1
TRACK ROLLER 4–1
TRANSPORTING THE LOADER 1–1
TROUBLESHOOTING ..... 2–1, 3–1, 6–1, 7–1 & 10–1
TROUBLESHOOTING THE BOSS® & L.C.D. DISPLAY 8–1
TURBOCHARGER 7–1

U.S. TO METRIC CONVERSION 9–1

VALVE CLEARANCE 7–1
VALVE TIMING 7–1

WIRING SCHEMATICS 6–1, 10–1

MidWestTech | Bobcat 864, 864 High Flow Skid Steer Loader Service Manual | Publication... Order the manual at mid-west-tech.com >

CONTENTS

FOREWORD ii
SAFETY INSTRUCTIONS v
SERIAL NUMBER LOCATIONS vii
DELIVERY REPORT vii
BOBCAT LOADER IDENTIFICATION viii
PREVENTIVE MAINTENANCE 1–1
HYDRAULIC SYSTEM 2–1
HYDROSTATIC SYSTEM 3–1
DRIVE SYSTEM 4–1
MAIN FRAME 5–1
ELECTRICAL SYSTEM 6–1
ENGINE SERVICE 7–1
SYSTEMS ANALYSIS 8–1
SPECIFICATIONS 9–1
ADVANCED HAND CONTROL SYSTEM 10–1

CALIFORNIA
PROPOSITION 65 WARNING

Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects and other reproductive harm.

MidWestTech | Bobcat 864, 864 High Flow Skid Steer Loader Service Manual | Publication... Order the manual at mid-west-tech.com >

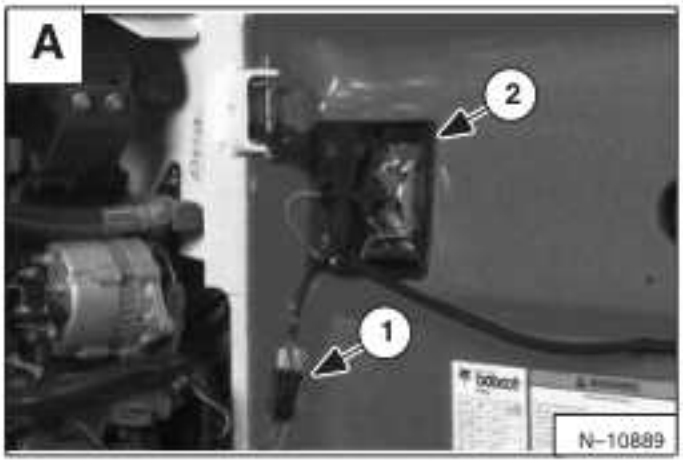
REAR DOOR

Removal And Installation

Open the rear door.

Disconnect the light harness connector (Item 1) **[A]** from the engine harness.

Remove the light bulbs from the light housing and remove the light housing (Item 2) **[A]** from the rear door (both sides).



Install a nylon sling (Item 1) **[B]** through the holes for the light housings.

Connect a chain hoist (Item 2) **[B]** to the nylon sling.



MidWestTech | Bobcat 864, 864 High Flow Skid Steer Loader Service Manual | Publication... Order the manual at mid-west-tech.com >

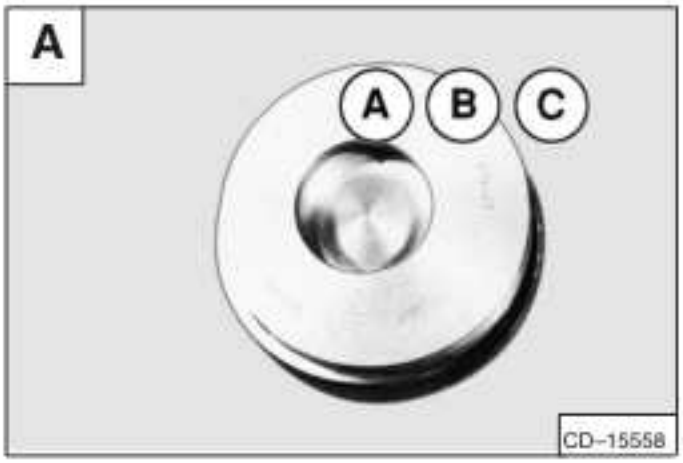
Assembly (Cont'd)

Compare actual dimension with the dimension listed **[A]**:

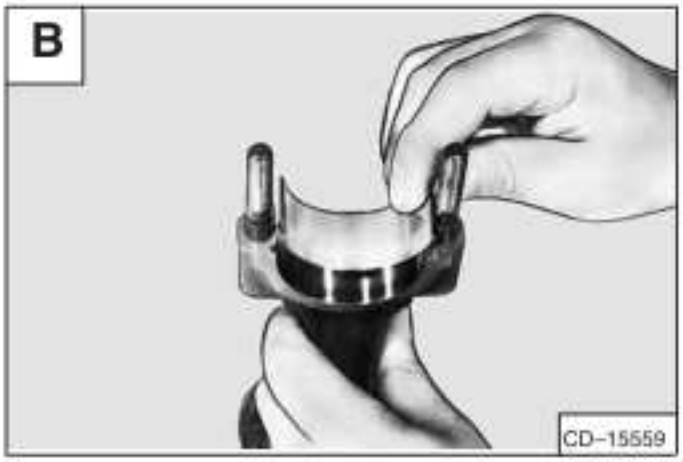
Specifications:

Piston Class A ..... 7.732–7.736 inch (196,39–196,49 mm)

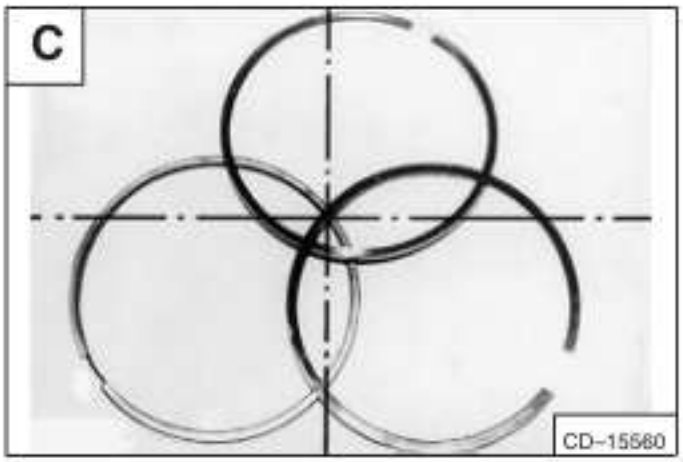
NOTE: If the crankshaft is undersize, 0.005 inch (0,125 mm) must be added to the dimension listed.



Install the connecting rod bearing halves into the connecting rod **[B]**.



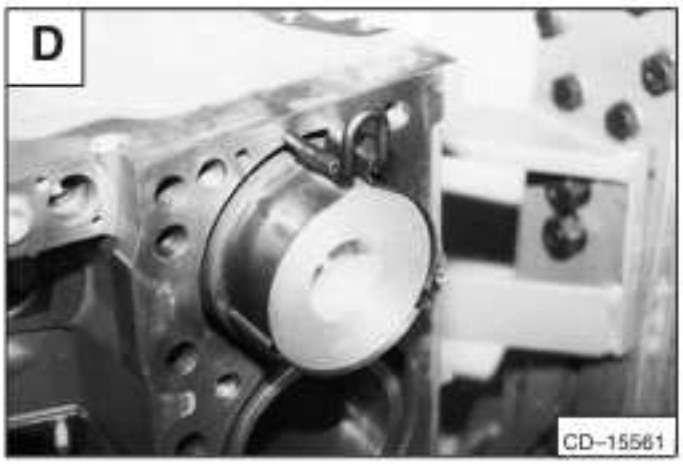
Before installing piston/connecting rod assembly, make sure the piston ring gaps are staggered as shown in Fig. **[C]**.



Install a piston ring compressor on the piston rings.

Install the piston/connecting rod assembly into the engine block **[D]**.

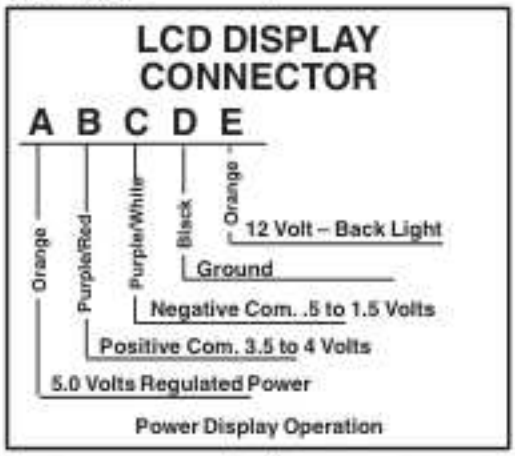
NOTE: The flywheel symbol on the piston must be toward the flywheel.



MidWestTech | Bobcat 864, 864 High Flow Skid Steer Loader Service Manual | Publication... Order the manual at mid-west-tech.com >

TROUBLESHOOTING THE BOSS® & LCD DISPLAY

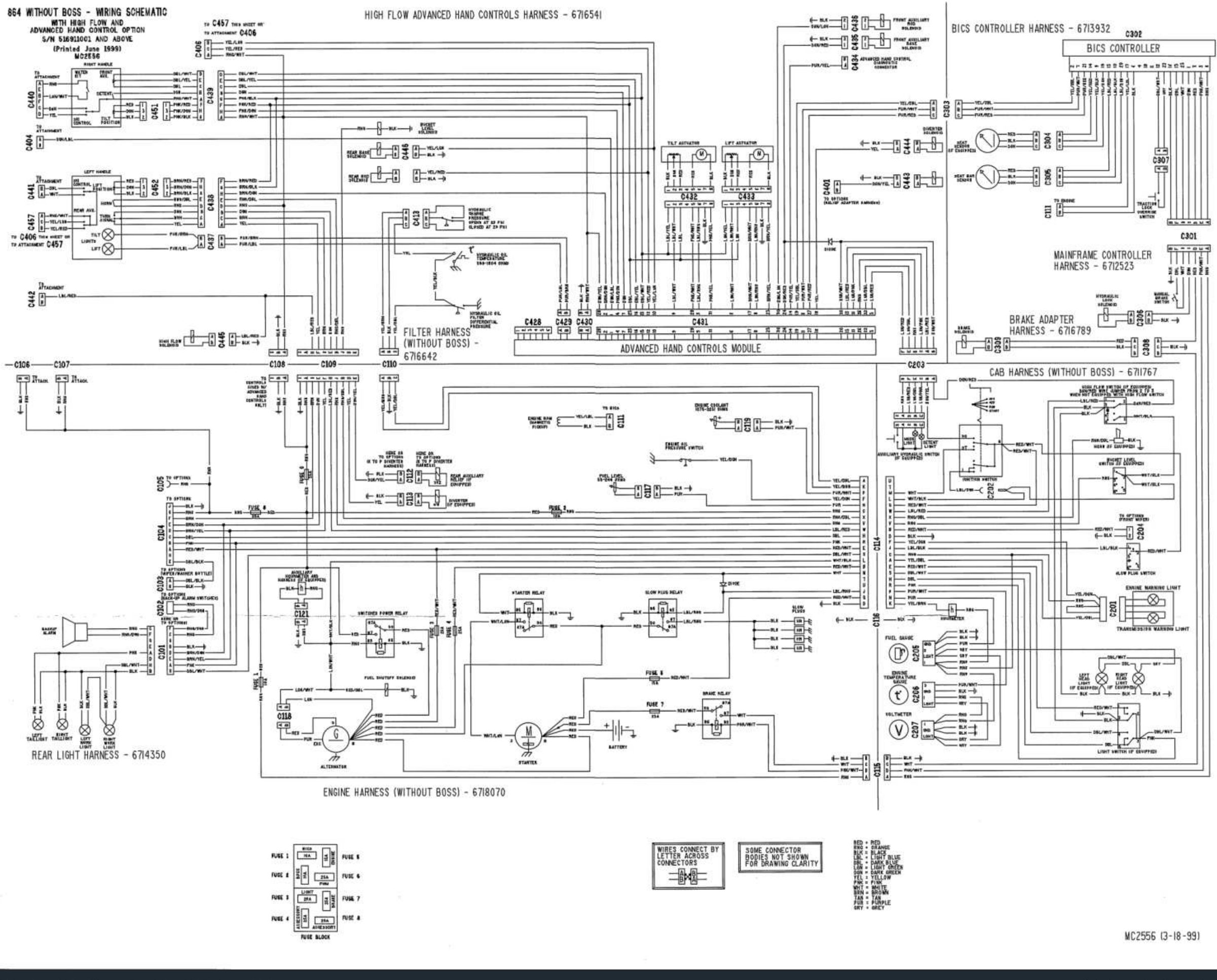
SUBJECT	SYMPTOM	INDICATES	TO CORRECT SYMPTOM
BOSS	Temperature related shutdown codes when no heating occurs.	12 volt supply and BOSS failure.	1. Check stored defects with the BOSS tool. *2. If defect list has EC1, HC1, EC2.1, HC2. EP3, EP7, HP7, B2.2. low fuel, Fuel 7 and last occurrence hr. readings are within a hundredth, the BOSS is defective and must be replaced. 3. Using a voltmeter, check the alternator output.
	*** NOTE: You may have some or all of the codes listed. You will have high temps, high press, low voltage and low fuel.**		
LCD Display	Intermittent code of ES6 while engine running.	Sensor No Signal or No RPM's.	1. ES6 will occur if the loader is stalled or shutdown during run cycle. The code is generated due to the lack of RPM and the existence of residual pressure in the system.
	Display is dead – No Icons, Bar Graphs, Hourmeter.	Lack of 5.0 volts regulated power.	1. Check pin A for 5.0 volts. If 5.0 volts is present replace the display. 2. If no power exists at pin A, install BOSS backup to confirm the BOSS system. 3. If the problem still exists, check the harness for continuity.
	During an active WARNING display, reset occurs and the hourmeter becomes all zero's.	Low voltage (5.0) triggered reset.	1. Turn the ignition switch OFF. Re–starting will return hourmeter reading. 2. If re–starting will not return hourmeter reading, check pins B & C as stated in Step 5 below.
	After glow sequence or after a WARNING goes away, the Icon remains ON.		1. Turn the key OFF and re–start.
	No Bar Graphs, no Hours.	Bad display or BOSS is not communicating.	1. Plug in the BOSS tool and start the engine. 2. If data is being received by the BOSS tool, the BOSS unit is not the cause of the problem. 3. If no data is received at the BOSS tool. disconnect the LCD display. *4. If messages are now received at the tool, the display is the problem. If problem still exists go to Step 5. 5. Check pins B & C for signal. 6. If there is no signal, install BOSS backup unit. 7. If the problem still exists, check the harness for continuity.
	*** NOTE: The display has caused the problem by locking the communication lines and stopping communications from the BOSS.**		



MidWestTech | Bobcat 864, 864 High Flow Skid Steer Loader Service Manual | Publication... Order the manual at mid-west-tech.com >

864 WITHOUT BOSS - WIRING SCHEMATIC

WITH HIGH FLOW AND ADVANCED HAND CONTROL OPTION
S/N 516911001 AND ABOVE
(Printed June 1999)
MC2556



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