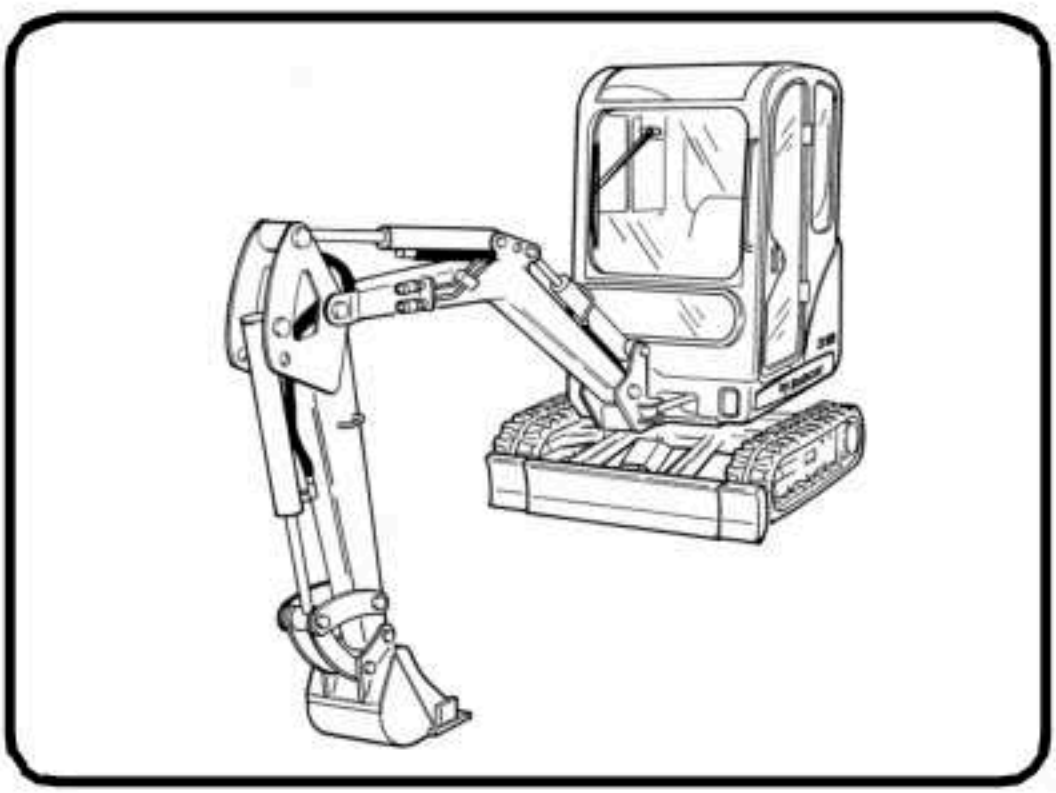
Bobcat®

Service Manual
319 Compact Excavator

S/N 563311001 & Above



6904188 (2-06)

Printed in U.S.A.

© Bobcat Company 2006

MidWestTech | Bobcat 319 Compact Excavator Service Manual | Publication 6904188_2_06 Order the manual at mid-west-tech.com >

ALPHABETICAL INDEX

AIR CLEANER 60-01
AIRCLEANER SERVICE 10-01
ALTERNATOR 50-01
ALTERNATOR BELT 10-01
ARM 40-01
ARM CYLINDER 20-01

BATTERY 50-01
BLADE 30-01
BLADE CONTROL 40-01
BLADE CYLINDER 20-01
BLADE/TRACK EXPANSION SOLENOID BLOCK. 20-01
BOOM 40-01
BOOM CYLINDER 20-01
BOOM SWING CYLINDER 20-01
BUCKET 40-01
BUCKET CYLINDER 20-01

CAB 40-01
CAMSHAFT AND TIMING GEARS 60-01
CANOPY 40-01
CONTROL LINKAGE ASSEMBLY 40-01
CONVERSIONS SPEC-01
CRANKSHAFT AND PISTONS 60-01
CROSSPORT RELIEF VALVES 20-01
CYLINDER HEAD 60-01

ELECTRICAL SYSTEM 50-01
ENGINE COOLING SYSTEM 10-01 60-01
ENGINE INFORMATION 60-01
ENGINE LUBRICATION SYSTEM 10-01
ENGINE SPEED CONTROL 60-01
319 EXCAVATOR SPECIFICATIONS SPEC-01
EXCAVATOR STORAGE AND RETURN TO TO SERVICE 10-01

FLOOR MAT AND FLOOR PANELS 40-01
FLYWHEEL AND HOUSING 60-01
FUEL LEVEL SENDER 50-01
FUEL SYSTEM 10-01, 60-01
FUEL TANK 40-01

HEATER COIL 70-01
HEATER FAN 70-01
HEATER SYSTEM 70-01
HEATER UNIT 70-01
HEATER VALVE 70-01
HORN 40-01
HYDRAULIC CONNECTION SPECIFICATIONS SPEC-01
HYDRAULIC CONTROL VALVE 20-01
HYDRAULIC FILTER 20-01
HYDRAULIC FLUID SPECIFICATIONS SPEC-01
HYDRAULIC PUMP 20-01
HYDRAULIC RESERVOIR 20-01
HYDRAULIC SYSTEM 10-01
HYDRAULIC SYSTEM INFORMATION 20-01

LEFT CONSOLE 40-01
LEFT CONTROL LEVER (JOYSTICK) 20-01
LIFTING AND BLOCKING THE EXCAVATOR 10-01
LIFTING THE EXCAVATOR 10-01
LIGHTS 50-01
LUBRICATING THE EXCAVATOR 10-01
LUBRICATION SYSTEM 60-01

MAIN RELIEF VALVE 20-01
MANIFOLD ASSEMBLY/ACCUMULATOR 20-01
MICROSWITCH 50-01

OIL COOLER 20-01
OPERATOR CAB ROPS/TOPS 10-01

PORT RELIEF VALVES 20-01
PRESSURE REDUCING VALVE 20-01
PIVOT PINS 10-01

REGULATOR MAINTENANCE 70-01
RIGHT CONSOLE 40-01
RIGHT CONTROL LEVER (JOYSTICK) 20-01

SEAT AND SEAT MOUNT 40-01
SEAT BELT 10-01
SERVICE SCHEDULE 10-01
SPARK ARRESTOR MUFFLER ..... 10-01 & 60-01
STARTER 50-01
STOPPING THE ENGINE AND LEAVING THE EXCAVATOR 10-01
SWING CIRCLE GEAR 30-01
SWING FRAME 40-01
SWING MOTOR 20-01
SWIVEL JOINT 20-01

TAILGATE 10-01, 40-01
TORQUE SPECIFICATIONS SPEC-01
TRACK FRAME COMPONENTS 30-01
TRACK FRAME EXPANSION CYLINDER 20-01
TRANSPORTING THE EXCAVATOR ON A TRAILER 10-01
TRAVEL MOTOR ..... 10-01 & 20-01

UPPERSTRUCTURE 40-01
UPPERSTRUCTURE SLEW LOCK 10-01, 40-01

MidWestTech | Bobcat 319 Compact Excavator Service Manual | Publication 6904188_2_06 Order the manual at mid-west-tech.com >

CONTENTS

FOREWORD III

SAFETY INSTRUCTIONS V

SERIAL NUMBER LOCATIONS IX

DELIVERY REPORT X

EXCAVATOR IDENTIFICATION XI

SAFETY AND MAINTENANCE 10-01

HYDRAULIC SYSTEM 20-01

UNDERCARRIAGE 30-01

UPPERSTRUCTURE & SWING SECTION 40-01

ELECTRICAL SYSTEM AND ANALYSIS 50-01

ENGINE SERVICE 60-01

HEATER 70-01

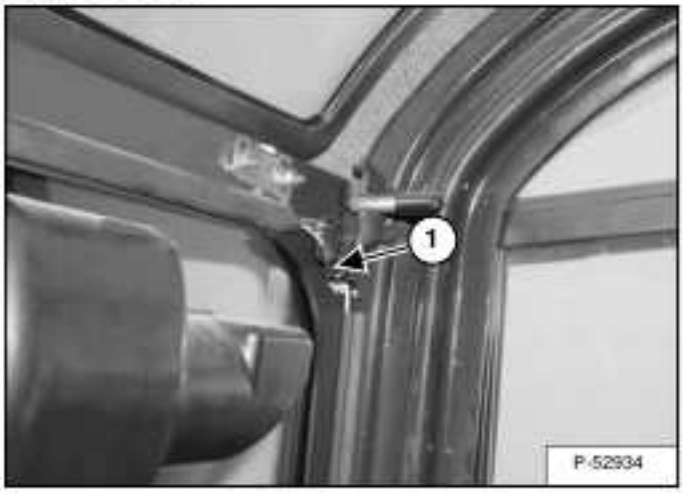
SPECIFICATIONS SPEC-01

MidWestTech | Bobcat 319 Compact Excavator Service Manual | Publication 6904188_2_06

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

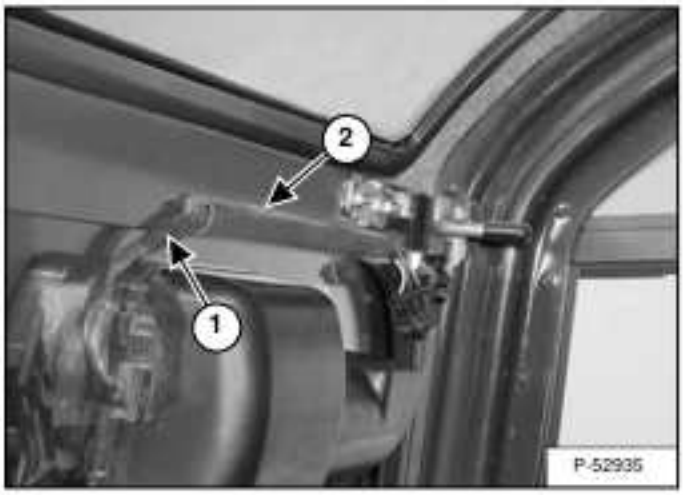
Front Window Removal And Installation

Figure 40-30-13



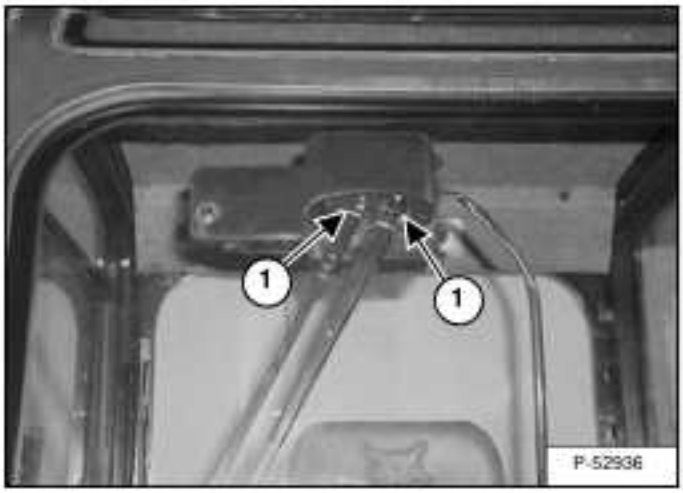
Disconnect the wire harness (Item 1) **[Figure 40-30-13]**.

Figure 40-30-14



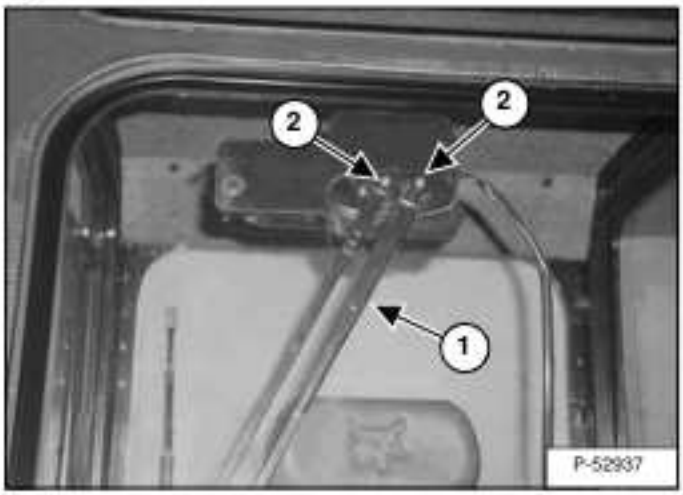
Remove the wire harness (Item 1) from the channel (Item 2) **[Figure 40-30-14]**.

Figure 40-30-15



Remove the nuts (Item 1) **[Figure 40-30-15]**.

Figure 40-30-16



Remove the wiper assembly (Item 1) from the pivot mounts (Item 2) **[Figure 40-30-16]**.

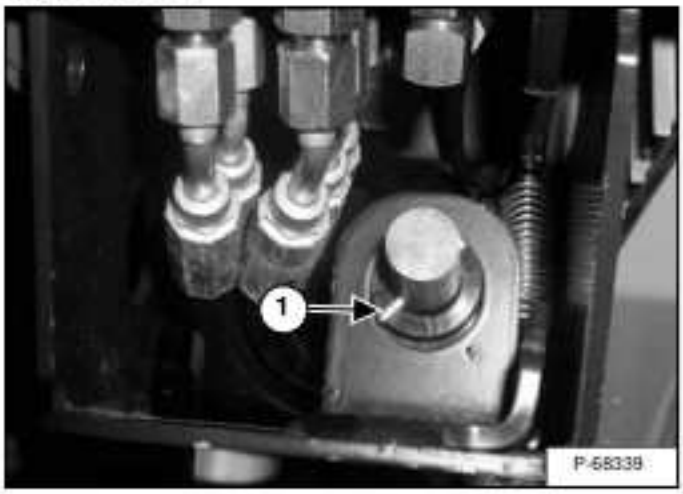
MidWestTech | Bobcat 319 Compact Excavator Service Manual | Publication 6904188_2_06 Order the manual at mid-west-tech.com >

Compression Spring Removal And Installation

Remove the lower console cover. (See Joystick Console Cover (Bottom) Removal And Installation on Page 40-60-1)

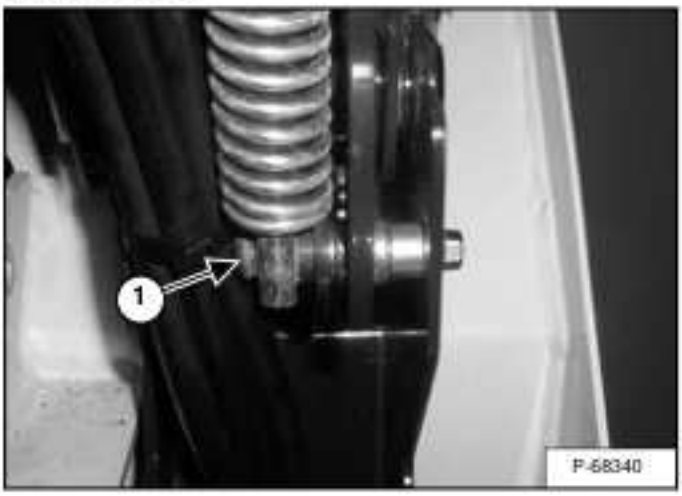
Lower the console.

Figure 40-60-49



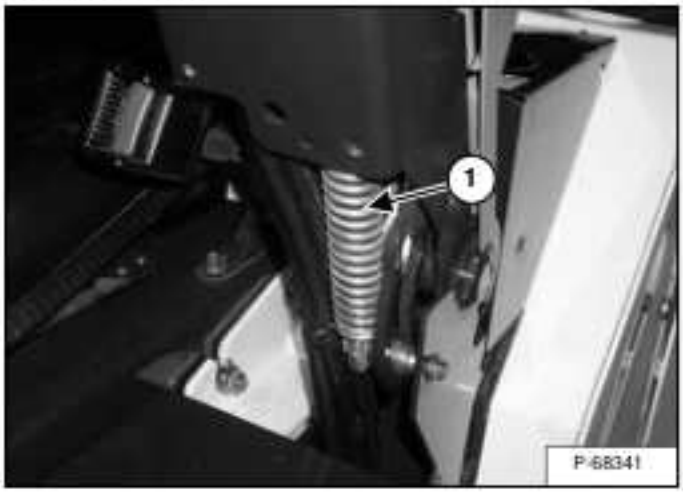
Install a pin (Item 1) **[Figure 40-60-49]** in the top of the compression spring rod.

Figure 40-60-50



Support the console in the raised position. Remove the bolt (Item 1) **[Figure 40-60-50]**.

Figure 40-60-51



Remove the spring assembly (Item 1) **[Figure 40-60-51]** from the bottom of the console.

MidWestTech | Bobcat 319 Compact Excavator Service Manual | Publication 6904188_2_06 Order the manual at mid-west-tech.com >

Specifications

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

Engine

Compression (At Operating Temperature)	412 to 469 PSI (28 to 32 bar)
Limit Permitted	327 PSI (23 bar)

Fuel Injector Nozzles

Opening Pressure	1991 to 2134 PSI (137 to 147 bar)
Fuel Tightness Nozzle Seat	1849 PSI (127 bar)

Fuel Injection Pump

Fuel Tightness of Pump Element	1991 PSI (137 bar)
Fuel Tightness of Delivery Valve (factory spec)	10 Sec. Initial Pressure Drop From 1991 to 1849 PSI (137 to 127 bar)
Fuel Tightness of Delivery Valve Limit Permitted	5 Sec. Initial Pressure Drop From 2134 to 1991 PSI (137 to 127 bar)
Injection Timing @ 3600 rpm	19-21 degrees B.T.D.C.

Cylinder Head

Cylinder Head Distortion Limit	0.002 (0,05)
Thickness of Gasket Free	0.0415 to 0.0512 (1,15 to 1,30)
Thickness of Gasket Tightened	0.0413 to 0.0453 (1,05 to 1,15)
Top Clearance	0.0197 to 0.0276 (0,50 to 0,70)

Valves

Valve Seat Angle	45 degrees
Valve Seat Width	0.084 (2,12)
O.D. of Valve Stem	0.2350 to 0.2354 (5,968 to 5,980)
I.D. of Valve Guide	0.2366 to 0.2372 (6,01 to 6,025)
Clearance between Valve Stem & Guide	0.0012 to 0.0022 (0,03 to 0,057)
Limit Permitted	0.004 (0,1)
Depth of Valve	-0.004 to 0.004 (-0,10 to 0,10)
Limit Permitted	0.0118 (0,30)
Valve Clearance (Cold) (Intake & Exhaust)	0.006 to 0.007 (0,145 to 0,185)

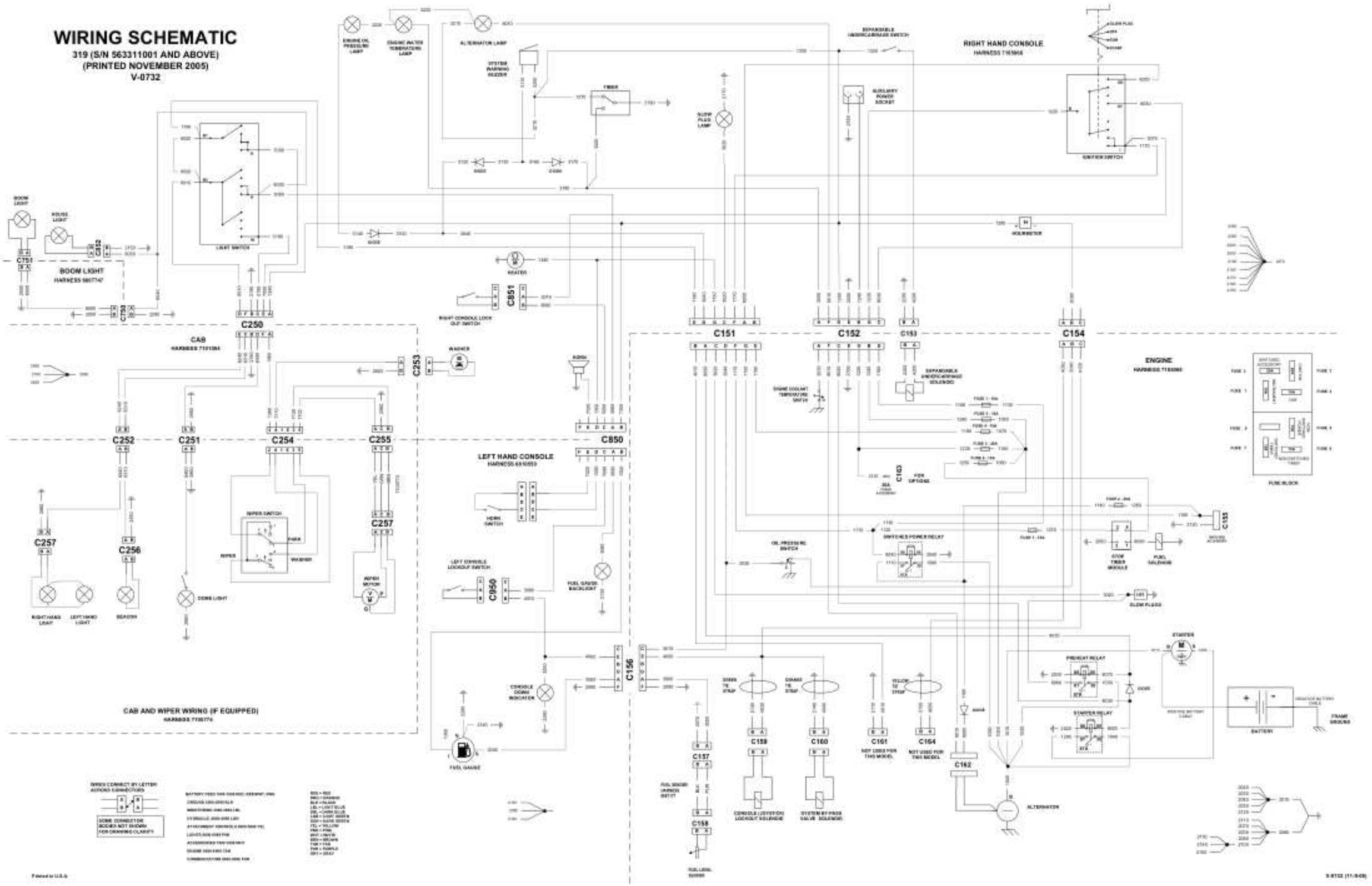
Valve Springs

Free Length	1.232 to 1.252 (31,3 to 31,8)
Limit Permitted	1.118 (28,4)
Fitted Length	1.063 (27)
Load to Compress to Fitted Length	14.6 lb. (6,6 kg)
Limited Permitted	12.3 lb. (5,6 kg)
Limited Permitted for Spring Tilt	0.047 (1,2)

MidWestTech | Bobcat 319 Compact Excavator Service Manual | Publication 6904188_2_06 Order the manual at mid-west-tech.com >

WIRING SCHEMATIC

319 (S/N 563311001 AND ABOVE)
(PRINTED NOVEMBER 2005)
V-0732



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