An Oshkosh Corporation Company

Service and Maintenance Manual

Models
600S HC3
660SJ HC3

PVC 2001

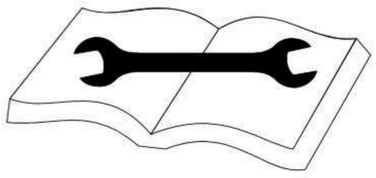
PN - 31215908

March 25, 2020 - Rev A

ANSI

CE

AS/NZS



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

SECTION NO.	TITLE	PAGE NO.
SECTION A - INTRODUCTION - MAINTENANCE SAFETY PRECAUTIONS		
A	General	A-1
B	Hydraulic System Safety	A-1
C	Maintenance	A-1
SECTION 1 - SPECIFICATIONS		
1.1	Operating Specifications	1-1
1.2	Dimensional Data	1-1
1.3	Capacities	1-2
1.4	Engine Data	1-2
1.5	Tires	1-3
1.6	Critical Stability Weights	1-3
1.7	Hydraulic Oil	1-4
1.8	Torque Requirements	1-5
1.9	Maintenance and Lubrication	1-9
1.10	Threadlocking Compound	1-15
1.11	Torque Charts	1-16
	SAE Fastener Torque Chart	1-16
	SAE Fastener Torque Chart (Continued)	1-17
	SAE Fastener Torque Chart (Continued)	1-18
	SAE Fastener Torque Chart (Continued)	1-19
	SAE Fastener Torque Chart (Continued)	1-20
	SAE Fastener Torque Chart (Continued)	1-21
	Metric Fastener Torque Chart	1-22
	Metric Fastener Torque Chart (Continued)	1-23
	Metric Fastener Torque Chart (Continued)	1-24
	Metric Fastener Torque Chart (Continued)	1-25
SECTION 2 - GENERAL		
2.1	Machine Preparation, Inspection, and Maintenance	2-1
	General	2-1
	Preparation, Inspection, and Maintenance	2-1
	Pre-Start Inspection	2-1
	Pre-Delivery Inspection and Frequent Inspection	2-1
	Annual Machine Inspection	2-1
	Preventive Maintenance	2-1
2.2	Service and Guidelines	2-2
	General	2-2
	Safety and Workmanship	2-2
	Cleanliness	2-2
	Components Removal and Installation	2-2
	Component Disassembly and Reassembly	2-3
	Pressure-Fit Parts	2-3
	Bearings	2-3
	Gaskets	2-3
	Bolt Usage and Torque Application	2-3
	Hydraulic Lines and Electrical Wiring	2-3
	Hydraulic System	2-3
	Lubrication	2-3
	Battery	2-3
	Lubrication and Servicing	2-3
2.3	Lubrication and Information	2-4
	Hydraulic System	2-4
	Hydraulic Oil	2-4
	Changing Hydraulic Oil	2-4
	Lubrication Specifications	2-4

MidWestTech | JLG 600S HC3, 660SJ HC3 Boom Lift Service Manual | Publication 312159... Order the manual at mid-west-tech.com >

SECTION NO.	TITLE	PAGE NO.
2.4	Cylinder Drift	2-4
	Theory	2-4
	Cylinder Leakage Test	2-4
	Cylinder Thermal Drift	2-5
2.5	Pins and Composite Bearing Repair Guidelines	2-5
2.6	Welding on JLG Equipment	2-5
	Do the Following When Welding on JLG Equipment:	2-5
	Do Not Do The Following When Welding On Jlg Equipment:	2-5
SECTION 3 - CHASSIS & TURNTABLE		
3.1	Tires & Wheels	3-1
	Tire Damage	3-1
	Tire Replacement	3-1
	Wheel Replacement	3-1
	Wheel Installation	3-1
3.2	Oscillating Axle Bleeding Procedure and Lockout Test	3-2
	Lockout Cylinder Bleeding	3-2
	Oscillating Axle Lockout Test	3-2
3.3	Chassis Tilt Indicator System	3-3
3.4	Cold Start System (Diesel)	3-3
3.5	Auxiliary Power System	3-3
3.6	Drive Orientation System	3-3
3.7	Oscillating Axle System	3-4
3.8	Drive System	3-4
3.9	Drive Hub	3-10
	Removal	3-10
	Assembly/Disassembly	3-10
	Installation	3-10
3.10	Drive Motor	3-11
	Removal	3-11
	Assembly/Disassembly	3-11
	Installation	3-11
3.11	Steer Cylinder	3-16
	Removal	3-16
	Installation	3-16
3.12	Swing Drive Hub	3-17
	Removal	3-17
	Assembly/Disassembly	3-17
	Installation	3-17
	Procedure For Setting Swing Gear Backlash	3-18
	Swing Drive Lubrication	3-18
3.13	Swing Bearing	3-19
	Turntable Bearing Mounting Bolt Condition Check	3-19
	Wear Tolerance	3-19
	Swing Bearing Replacement	3-21
	Swing Bearing Torque Values	3-22
3.14	Rotary Coupling	3-25
3.15	Deutz TD2.9 L4 Engine (67 hp)	3-30
	Check Oil Level	3-34
	Change Engine Oil	3-34
	Change Oil Filter	3-34
	Change Fuel Filters	3-35
	Glow Plugs	3-35
3.16	Deutz D2011L04 Engine	3-57
	Checking Oil Level	3-61
	Changing Engine Oil	3-61
	Changing Oil Filter	3-62
	Replace Fuel Filter	3-62

MidWestTech | JLG 600S HC3, 660SJ HC3 Boom Lift Service Manual | Publication 312159... Order the manual at mid-west-tech.com >

SECTION NO.	TITLE	PAGE NO.
	Clean Fuel Strainer	3-63
	Spark Arrester Cleaning Instructions	3-63
	Glow Plugs	3-63
3.17	Ford Engine	3-68
3.18	Counterweight	3-79
3.19	Generator Pulley	3-80
3.20	Generator	3-87
	Every 250 hours	3-87
	Every 500 hours	3-87
	Overload Protection	3-87
	Inspecting Brushes, Replacing Brushes, and Cleaning Slip Rings	3-88
SECTION 4 - BOOM & PLATFORM		
4.1	Beyond Transport - Drive Speed Cutback System	4-1
4.2	Transport Position Interlock System (CE only)	4-1
4.3	Platform Load Sensing System (LSS)	4-1
4.4	Electronic Platform Leveling	4-1
4.5	Fuel level Cutout System	4-1
4.6	Platform Control Enable System	4-2
4.7	Transport Position Sensing System	4-2
4.8	Triple Capacity System	4-2
4.9	Platform	4-7
	Support Removal	4-7
	Support Installation	4-8
4.10	Rotator and Platform Level Cylinder	4-10
	Removal	4-10
	Assembly/Disassembly	4-10
	Installation	4-10
4.11	Main Boom Assembly	4-12
	Removal	4-12
	Boom Disassembly	4-14
	Assembly	4-17
	Installation	4-20
4.12	Main Boom Lift Cylinder	4-21
	Removal	4-21
	Installation	4-21
4.13	Main Boom Powertrack	4-22
	Installation	4-22
4.14	Wire Rope	4-24
	Inspection	4-24
	Three Month Inspection	4-25
	Additional Inspection Required If:	4-25
	12 Year or 7000 Hour Replacement	4-25
	Additional Replacement Criteria	4-25
4.15	Wire Rope Tensioning Adjustment	4-25
	Wire Rope Tensioning Procedure	4-25
4.16	Wire rope Service Indicator	4-26
4.17	Jib (660SJ HC3 only)	4-26
4.18	Boom Cleanliness Guidelines	4-28
4.19	Foot Switch Adjustment	4-28
4.20	Powertrack Maintenance	4-29
	Remove Link	4-29
	Install New Link	4-32
	Replace Fixed End Brackets	4-35
	Replace Moving End Brackets	4-36

MidWestTech | JLG 600S HC3, 660SJ HC3 Boom Lift Service Manual | Publication 312159... Order the manual at mid-west-tech.com >

9. Loosen and remove the setscrew (19) which is attached to the piston assembly.
10. Screw the piston (12) counterclockwise and remove the piston from cylinder rod (2).
11. Remove and discard o-ring (15) and backup ring (16) from inside of piston (12).
12. Remove and discard o-ring (17) and backup ring (18) from inside of piston (12).
13. Remove and discard piston seal (13) and wear ring (14) from outside grooves of piston (12).

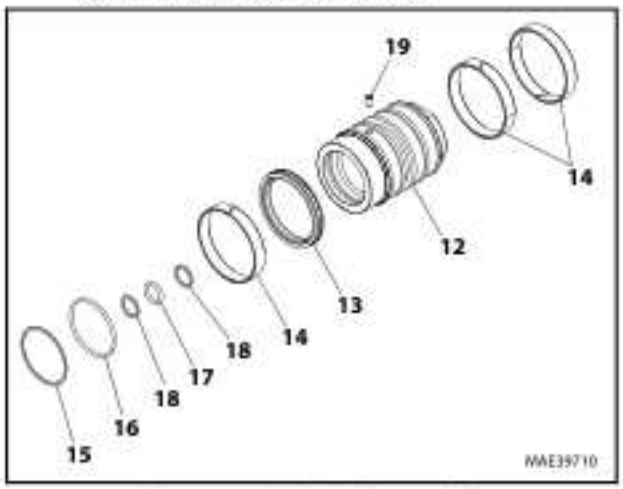


Figure 5-31. Piston Disassembly

14. Remove spacer (20) from rod (2).
15. Remove rod from holding fixture. Remove cylinder head gland.
16. Remove and discard wear ring (9) and wiper (4) from inside of cylinder head (3).
17. Remove and discard retaining ring (5), rod seal (6), backup ring (7) and buffer ring (8) from inside of cylinder head (3).
18. Remove and discard o-ring (10) and backup ring (11) from outside of cylinder head (3).

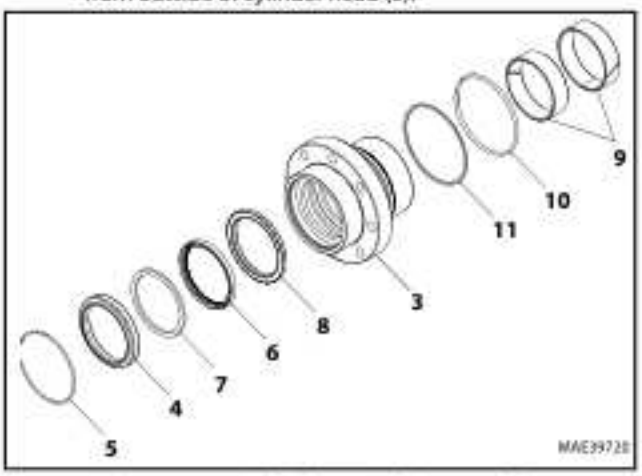


Figure 5-32. Cylinder Head Disassembly

CLEANING AND INSPECTION

1. Clean parts thoroughly with approved cleaning solvent.
2. Inspect cylinder rod for scoring, tapering, ovality, or other damage. If necessary, dress rod with Scotch Brite or equivalent. Replace rod if necessary.
3. Inspect threaded portion of rod for excessive damage. Dress threads as necessary.
4. Inspect inner surface of cylinder barrel tube for scoring or other damage. Check inside diameter for tapering or ovality. Replace if necessary.
5. Inspect threaded portion of barrel for damage. Dress threads as necessary.
6. Inspect piston surface for damage, scoring, or distortion. Dress piston surface or replace piston as necessary.
7. Inspect threaded portion of piston for damage. Dress threads as necessary.
8. Inspect seal and O-ring grooves in piston for burrs and sharp edges. Dress surfaces as necessary.
9. Inspect cylinder head inside diameter for scoring or other damage, and for ovality and tapering. Replace as necessary.
10. Inspect threaded portion of head for damage. Dress threads as necessary.
11. Inspect seal and O-ring grooves in head for burrs and sharp edges. Dress applicable surfaces as necessary.
12. Inspect cylinder head outside diameter for scoring, damage, ovality, and tapering. Replace as necessary.

MidWestTech | JLG 600S HC3, 660SJ HC3 Boom Lift Service Manual | Publication 312159... Order the manual at mid-west-tech.com >

Table 6-2. Machine Configuration Programming Information - Software Version P2.14

Configuration Digit	Number	Description	Default Number
PLAT LVL OVR CUT: 24	1 2	NO: Platform Level functions above elevation YES: Platform Level does not function above elevation	1
CAPACITY: 25*	1 2 3	SINGLE: Single Capacity system installed. DUAL: Dual Capacity system installed. TRIPLE: Triple Capacity system installed.	2
* Certain model selections will limit visibility. * Certain model selections will limit capacity options. * Certain market selections will limit capacity options.			
ALARM / HORN: 26	1 2	SEPARATE: Ambient alarm installed. COMBINED: Single Horn / Alarm installed.	2
WATER IN FUEL SENSOR: 27*	1 2	NO: Water in Fuel Sensor not installed. YES: Water in Fuel Sensor installed.	2
* Only visible if engine selection is Deutz EMR4.			
LIFT CYL WITH: 28*	1 2	AUX VALVE: Lift Down Aux Valve is installed. ENABLE VALVE: Lift Down Enable Valve is installed.	1
* Certain model selections will limit visibility.			

MidWestTech | JLG 600S HC3, 660SJ HC3 Boom Lift Service Manual | Publication 312159... Order the manual at mid-west-tech.com >

7.10 ELECTRICAL SCHEMATICS

SHEET 2: PLATFORM
Platform Box Harness

SHEET 3: PLATFORM AND BOOM COMPONENTS
Boom Control Cable - No Jib,
With Jib, TT
Tele in Prox Switches
Cable, Boom Sensor Cable Harness,
Boom Sensor Harness,
Boom Sensor Cable,
Boom Angle Sensor Cable

SHEET 4: CHASSIS, TURNTABLE
Turntable Harness
UGM Main Ground

SHEET 5: GROUND USER INTERFACE
2WS Main Valve Harness
Ground Control Panel Harness
Platform Valve With Jib
Lift Cylinder Harness

SHEET 6: ENGINE SCHEMATIC DEUTZ - T4I
Deutz T4i Engine Harness
T4i Eng Pos, T4i Eng Neg
Pos Battery, Aux To Aux

SHEET 7: ENGINE SCHEMATIC DEUTZ - T4F
Deutz T4F Engine Harness
T4F Eng Pos, T4F Eng Neg

SHEET 8: ENGINE SCHEMATIC FORD
Ford Engine Harness
Ford Eng Pos

SHEET 9: OPTIONS
Chassis Head And Tail Lights
Chassis Work Lights, Clear Sky
Skyguard, GEN 2 Platform Interface

SHEET 10: PLATFORM VALVE HARNESS WITH OUT JIB

SHEET 11: NOT APPLICABLE

SHEET 12: GENERATOR

SHEET 13: NOT APPLICABLE

SHEET 14: NOT APPLICABLE

SHEET 15: NOT APPLICABLE

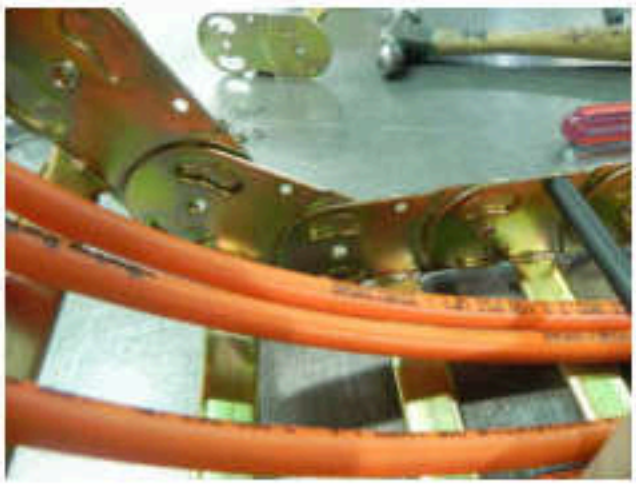
SHEET 1

1061238404_B

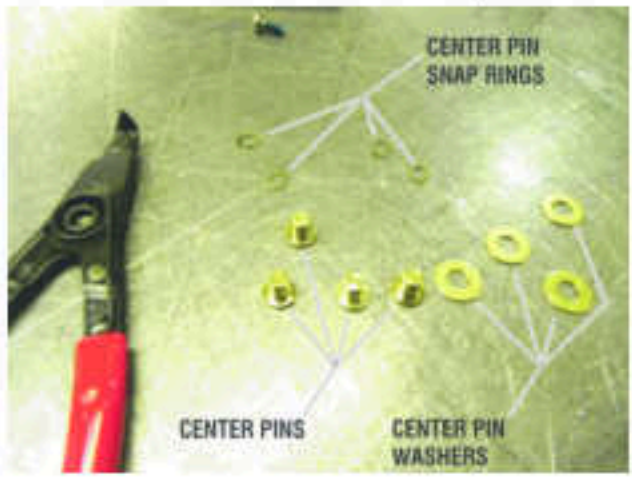
MidWestTech | JLG 600S HC3, 660SJ HC3 Boom Lift Service Manual | Publication 312159... Order the manual at mid-west-tech.com >

4. Pull moving end over track so new connection is positioned in curve of powertrack. Round half-shears will rotate into cut-outs.





5. Parts shown below connect new link to powertrack.



6. Push pin through center hole. Slide washer on pin.



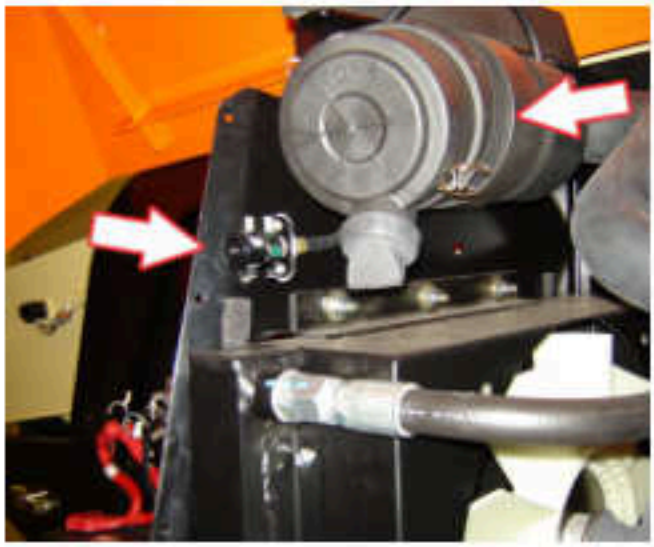


7. Install snap ring in groove on pin. Repeat pin installation steps for all center holes with rivets removed.

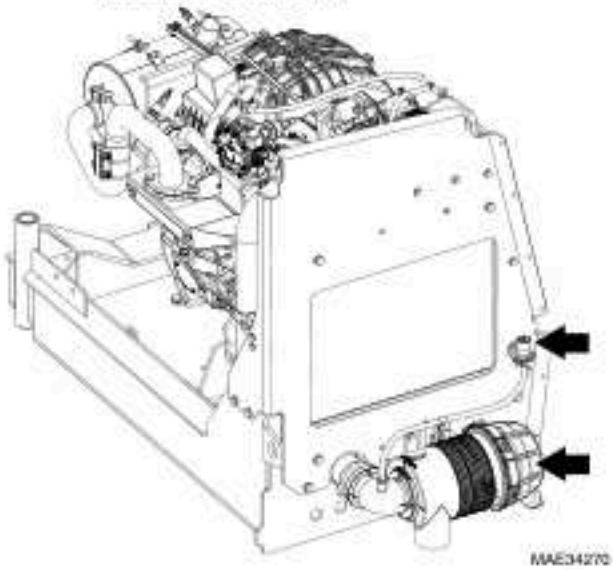


MidWestTech | JLG 600S HC3, 660SJ HC3 Boom Lift Service Manual | Publication 312159... Order the manual at mid-west-tech.com >

B. Deutz D2011L04



C. Air Filter - Ford M5G425

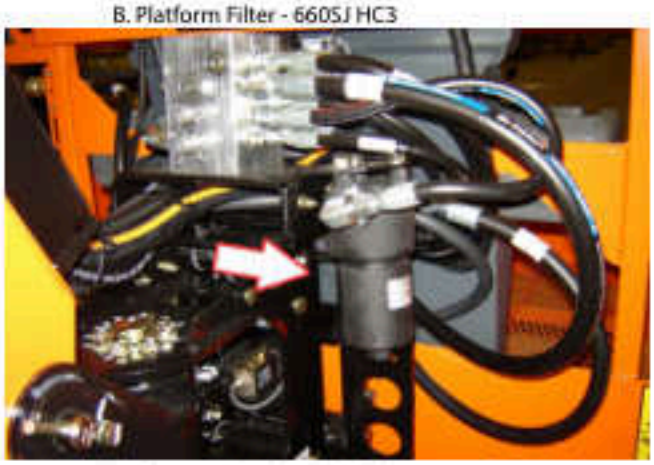


Lube Point(s) - Replaceable Element
Interval - Every 6 months or 300 hours of operation or as indicated by the condition indicator.

17. A. Platform Filter - 600S HC3



B. Platform Filter - 660SJ HC3



Lube Point - Replaceable Element
Interval - Change after first 50 hours and then every year or 600 hours of operation, whichever comes first.

MidWestTech | JLG 600S HC3, 660SJ HC3 Boom Lift Service Manual | Publication 312159... Order the manual at mid-west-tech.com >