An Oshkosh Corporation Company

Service and Maintenance Manual

Model

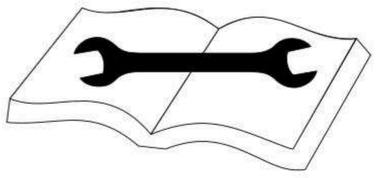
E300AJ
E300AJP

S/N 0300138358
to Present

P/N - 3121253

October 24, 2013

ANSI



MidWestTech | JLG E300AJ, E300AJP Boom Lift Service Manual | Publication 3121253

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	Tires	1-2
1.5	Hydraulic Oil	1-2
1.6	Major Component Weights	1-2
1.7	Function Speeds	1-4
	Test Notes	1-4
	Machine Orientation When Doing Speed Tests	1-4
1.8	Operator Maintenance	1-6
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
	Preventative 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	2-3
	Hydraulic System	2-3
	Hydraulic Oil	2-4
	Changing Hydraulic Oil	2-4
	Lubrication Specifications	2-4
2.4	Cylinder Drift Test	2-4
	Platform Drift	2-4
	Cylinder 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

MidWestTech | JLG E300AJ, E300AJP Boom Lift Service Manual | Publication 3121253 Order the manual at mid-west-tech.com >

SECTION NO. TITLE PAGE NO.

SECTION 3 - CHASSIS & TURNTABLE

3.1 Tires and Wheels . . . 3-1
Tire Wear and Damage . . . 3-1
Wheel and Tire Replacement . . . 3-1
Wheel Installation . . . 3-1
3.2 Spindle . . . 3-4
Setting Wheel Bearing End Play . . . 3-4
Specifications . . . 3-4
Checking . . . 3-4
Greasing Requirements . . . 3-4
3.3 Drive Hub . . . 3-6
Roll and Leak Testing . . . 3-6
Main Disassembly . . . 3-6
Output Carrier Disassembly . . . 3-9
Input Carrier Disassembly . . . 3-11
Hub-Spindle Disassembly . . . 3-12
Cover Disassembly . . . 3-13
Input Carrier Assembly . . . 3-14
Output Planet Gear Assembly . . . 3-14
Output Carrier Assembly . . . 3-15
Hub-Spindle Assembly . . . 3-15
Cover Subassembly . . . 3-18
Main Assembly . . . 3-18
3.4 Drive Brake - Mico . . . 3-20
Disassembly . . . 3-20
Assembly . . . 3-20
Bleeding . . . 3-20
3.5 Speed Sensor Adjustment . . . 3-23
Adjustment Procedure . . . 3-23
Speed Sensor Installation Verification . . . 3-23
Verification w/ Analyzer Procedure . . . 3-24
3.6 Positrac/Tilt module . . . 3-25
3.7 Swing Motor . . . 3-29
Preparation Before Disassembly . . . 3-32
Disassembly and Inspection . . . 3-32
Assembly . . . 3-38
One Piece Stator Construction . . . 3-44
Two Piece Stator Construction . . . 3-45
Final Checks . . . 3-46
Installation Torque . . . 3-46
3.8 Swing Drive . . . 3-46
Disassembly . . . 3-46
Assembly . . . 3-48
3.9 Swing Bearing . . . 3-49
Turntable Bearing Mounting Bolt Condition Check . . . 3-49
Wear Tolerance . . . 3-50
Replacement of Swing Bearing . . . 3-53
Swing Bearing Torque Value . . . 3-54
3.10 Battery Maintenance And Charging . . . 3-55
Battery Maintenance, Quarterly . . . 3-55
Battery Charging, Daily . . . 3-55

MidWestTech | JLG E300AJ, E300AJP Boom Lift Service Manual | Publication 3121253 Order the manual at mid-west-tech.com >

SECTION NO.	TITLE	PAGE NO.
3.11	Battery Charger	3-56
	Operating Instructions	3-56
	Maintenance Instructions	3-56
	Battery Charger Fault Codes	3-56
	Excessive Battery Watering Requirements or Strong Sulphur (Rotten Egg) Smell	3-59
	Checking/Changing the Battery Charger Algorithm	3-60
3.13	Drive Orientation System	3-61
3.14	Hoods	3-61
SECTION 4 - BOOM & PLATFORM		
4.1	Boom Maintenance	4-1
	Removal of the Main Boom	4-1
	Disassembly of the Main Boom	4-1
	Inspection	4-3
	Assembly of the Main Boom	4-3
	Installation of the Main Boom	4-4
4.2	Powertrack Maintenance	4-15
	Removing a Link	4-15
	Installing a New Link	4-18
	Replacing Fixed End Brackets	4-23
	Replacing Moving End Brackets	4-24
4.3	Boom Cleanliness Guidelines	4-27
4.4	Tilt Sensor Check	4-27
4.5	Footswitch Adjustment	4-27
4.6	Boom Limit Switches	4-27
4.7	Rotary Actuator	4-28
	Theory of Operation	4-28
	Required Tools	4-28
	Disassembly	4-31
	Inspection	4-35
	Assembly	4-35
	Installing Counterbalance Valve	4-40
	Testing the Actuator	4-40
	Installation and Bleeding	4-42
	Troubleshooting	4-43
SECTION 5 - HYDRAULICS		
5.1	Lubricating O-Rings in the Hydraulic System	5-1
	Cup and Brush	5-1
	Dip Method	5-2
	Spray Method	5-2
	Brush-on Method	5-2
5.2	Hydraulic Cylinders	5-3
	Disassembly	5-3
	Cleaning and Inspection	5-12
	Assembly	5-12
	Phase Check Cartridge	5-13
5.3	Pressure Setting Procedure	5-14
	Adjustments made at the Main Valve Bank	5-14
	Adjustments made at the Boom Function Valve Bank	5-16
5.4	Initial Hydraulic Pump Start-Up Procedure	5-25
	Procedure	5-25

MidWestTech | JLG E300AJ, E300AJP Boom Lift Service Manual | Publication 3121253 Order the manual at mid-west-tech.com >

1.3 CAPACITIES

Table 1-5. Capacities

Hydraulic Oil Tank	2.9 Gal. (11 L) 2.1 Gal. (8 L) to Full Mark
Drive Hub *	25.5 oz. (0.75 L)(1/2 Full)
* Drive hubs should be one half full of lubricant.	

1.4 TIRES

Table 1-6. Tires

Size	25x7x12
Maximum Tire Load	8200 lbs. (3719 kg)
Type	Solid Non-Marking

1.5 HYDRAULIC OIL

NOTE: *Refer to Figure 1-1., Hydraulic Oil Specifications.*

Table 1-7. Hydraulic Oil

Hydraulic System Operating Temperature Range	S.A.E. Viscosity Grade
+0° to + 180° F (-18° to +83° C)	10W
+0° to + 210° F (-18° to +99° C)	10W-20, 10W30
+50° to + 210° F (+10° to +99° C	20W-20

NOTE: *Hydraulic oils require anti-wear qualities at least API Service Classification GL-3, and sufficient chemical stability for mobile hydraulic system service.*

NOTE: *Machines may be equipped with Mobil EAL224H biodegradable and non-toxic hydraulic oil. This is vegetable oil based and possesses the same anti-wear and rust protection characteristics as mineral oils, but will not adversely affect the ground water or the environment when spilled or leaked in small amounts.*

NOTE: *Aside from JLG recommendations, it is not advisable to mix oils of different brands or types, as they may not contain the same required additives or be of comparable viscosities. If use of hydraulic oil other than Mobil DTE 11M is desired, contact JLG Industries for proper recommendations.*

1.6 MAJOR COMPONENT WEIGHTS

⚠ WARNING

DO NOT REPLACE ITEMS CRITICAL TO STABILITY WITH ITEMS OF DIFFERENT WEIGHT OR SPECIFICATION (FOR EXAMPLE: BATTERIES, FILLED TIRES, PLATFORM) DO NOT MODIFY UNIT IN ANY WAY TO AFFECT STABILITY.

Table 1-8. Critical Stability Weights

Components	LBS.	KG.
Counterweight (AJ)	6188	2807
Counterweight (AJP)	6348	2880
Tire and Wheel	120	54.4
Platform (including console)	169	78
Battery (minimum each) - 305AH	87	39.5
Battery (minimum each) - 375AH & UL	110	50

MidWestTech | JLG E300AJ, E300AJP Boom Lift Service Manual | Publication 3121253 Order the manual at mid-west-tech.com >

The JLG Control System controller has a built in LED to indicate any faults. The system stores recent faults which may be accessed for troubleshooting. Optional equipment includes an hour meter, beacon light, function cut-out, and ground alarm. These options may be added later but must be programmed into the motor controller when installed.

The Control System may be accessed by using a custom designed, hand held analyzer (Analyzer Kit, JLG P/N 2901443 or separately, Analyzer, JLG P/N 1600244 & Cable, JLG P/N 1600633) which will display two lines of information at a time, by scrolling through the program.

NOTE: *Each module has a label with the JLG part number and a serial number which contains a date code.*

The following instructions are for using the hand held analyzer.

To Connect the JLG Control System Analyzer

1. Connect the four pin end of the cable supplied with the analyzer, to the motor controller module located in the platform box or at the power module and connect the remaining end of the cable to the analyzer.

NOTE: *The cable has a four pin connector at each end of the cable; the cable cannot be connected backwards.*

2. Power up the Control System by turning the lower key to the platform or ground position and pulling both emergency stop buttons on.

Using the Analyzer

With the machine power on and the analyzer connected properly, the analyzer will display the following:



HELP:
PRESS ENTER

At this point, using the **RIGHT** and **LEFT** arrow keys, you can move between the top level menu items. To select a displayed menu item, press **ENTER**. To cancel a selected menu item, press ESC.; then you will be able to scroll using the right and left arrow keys to select a different menu item.

MidWestTech | JLG E300AJ, E300AJP Boom Lift Service Manual | Publication 3121253 Order the manual at mid-west-tech.com >

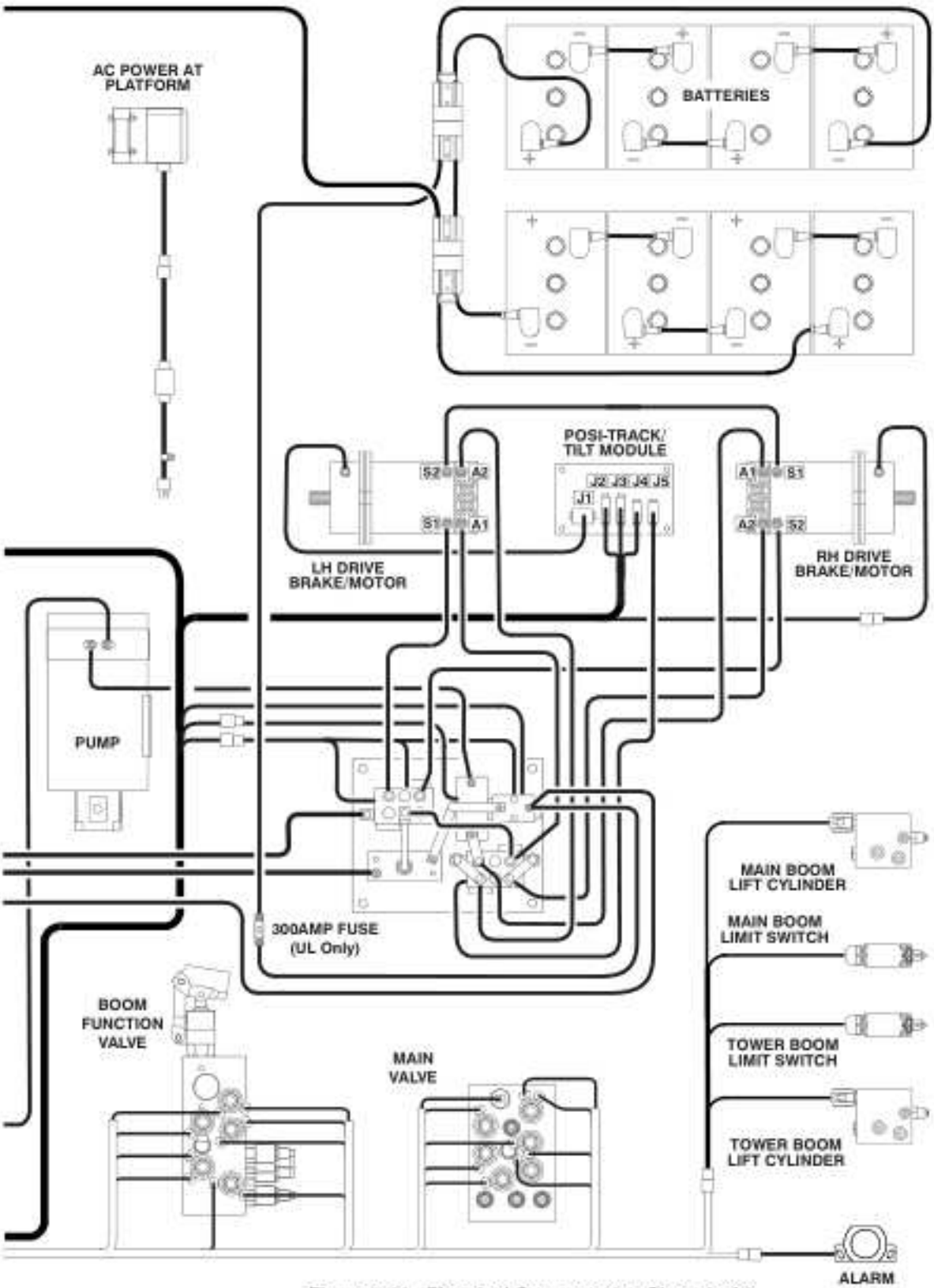
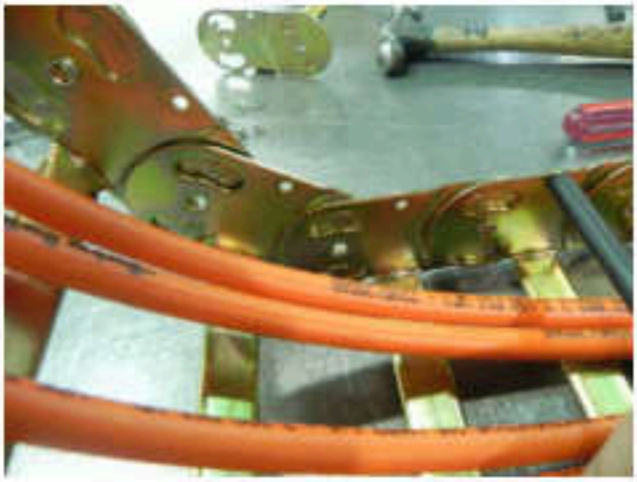


Figure 7-21. Electrical Components - Sheet 2 of 2

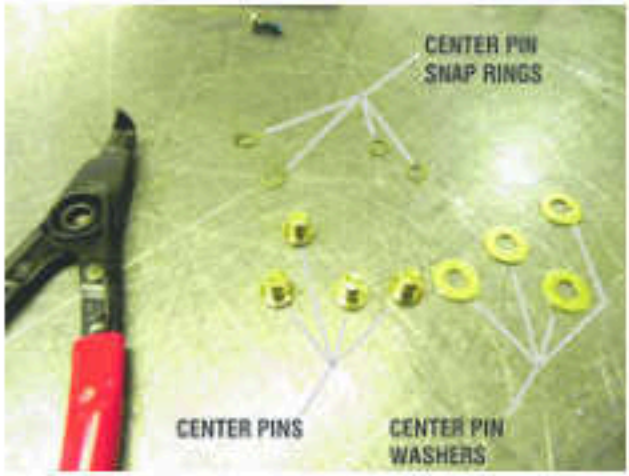
MidWestTech | JLG E300AJ, E300AJP Boom Lift Service Manual | Publication 3121253 Order the manual at mid-west-tech.com >

4. Pull the moving end out over the track so that the new connection is positioned in the curve of the powertrack. In this position the round half-shears will rotate into the peanut cut outs.





5. The parts shown below will be used to connect the new link to the powertrack.



6. Push pin thru center hole then slide washer on pin.





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



MidWestTech | JLG E300AJ, E300AJP Boom Lift Service Manual | Publication 3121253 Order the manual at mid-west-tech.com >

BRAD HARRISON / PHOENIX CONTACT M12

The connector uses gold contact material to resist corrosion and an o-ring seal for moisture integrity. If dielectric grease is mistakenly applied to this connector system, the low-force contacts cannot displace the grease to achieve electrical contact. Once contaminated, there is no practical way to remove the dielectric grease (replacement of female contacts required). The JLG Load Sensing System and 1250AJP Rotary Angle Sensors are examples of components with the M12 connector system.





AMP JUNIOR TIMER

This type of connector uses back-seals for moisture integrity. However, the low-force contacts cannot displace dielectric grease and create electrical contact. It is possible to use solvents (i.e. contact cleaner or mineral spirits) for the removal of improperly applied dielectric grease. The EMR2 engine control module from Deutz employs this connector system (for example).



MidWestTech | JLG E300AJ, E300AJP Boom Lift Service Manual | Publication 3121253 Order the manual at mid-west-tech.com >