An Oshkosh Corporation Company

Service and Maintenance Manual

Models

330LRT
430LRT

PVC 1910

31215079

September 13, 2019 - Rev A

ANSI

CE

AS/NZS

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Drive Information

Model	330LRT	430LRT
High Drive, Forward, Range	9-10 (sec/50ft)	9-10 (sec/50ft)
High Drive, Reverse, Range	9-10 (sec/50ft)	9-10 (sec/50ft)
Elevation Switch Height	6-9 ft (1.8-2.7 m)	7-10 ft (2-3 m)
Elevated Drive, F/R, Range	34 (sec/25 ft)	34 (sec/25 ft)
Gradeability Requirement	45%	45%

Steering Information

Model	330LRT	430LRT
Toe In / Out, (+/-) Max	0.25 in (6.35 mm)	0.25 in (6.35 mm)
Steer Angle, Inside Tire	42-44 degrees	42-44 degrees
Steer Angle, Outside Tire	32-34 degrees	32-34 degrees

Tires

Size	Ply Rating	Foam Fill Tire Assembly Rating	Wheel Nut Torque
12 x 16.5 Foam Filled (Non-Marking)	10	90 PSI @ 8,000 lb. (3700 Kg) - Static Load	170 ft lb - DRY (230 Nm)
33/1550 x 16.5 Foam Filled	14	90 PSI @ 14,176 lb. (6430 Kg) - Static Load	170 ft lb - DRY (230 Nm)
33/16LL600 Foam Filled (Sand Tire)	10	38 PSI @ 10,300 lb. (4672 Kg) - Static Load	170 ft lb - DRY (230 Nm)
315/55/D20 Foam Filled	12	80 PSI @ 9,650 lb. (4377 Kg) - Static Load	170 ft lb - DRY (230 Nm)

Critical Stability Weights

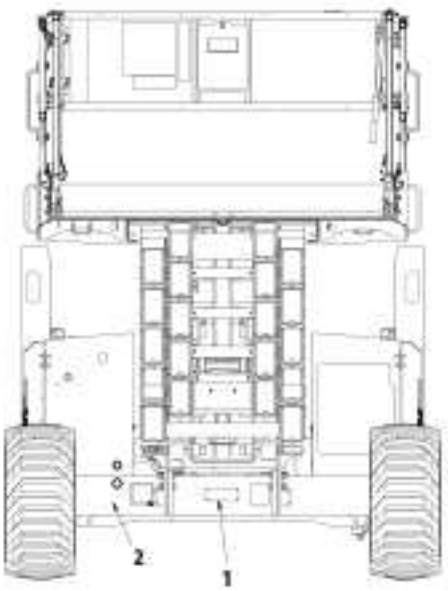
⚠ WARNING

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

Component	LRT
Wheel and Tire (each) - 12x16.5, Foam Filled	328 lb (149 kg)
Engine Only (Kubota - Diesel)	209 lb (95.1 kg)
Engine Only (Kubota - Gas/LP)	158 lb (71.4 kg)
Battery (with Generator)	171.3 lb (77.7 kg)

1.2 SERIAL NUMBER LOCATION

For machine identification, the serial number plate is located at the rear of the machine on the center of the axle. In addition, should the serial number plate be damaged or missing, the machine serial number is stamped on the lip of the rear axle.



1. Serial Number Plate
2. Stamped Serial Number

Figure 1-1. Serial Number Location

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Table 4-4. Main Valve Port Identification (CE Only)

Port	Functionality	To Port
L1	To Lift Cylinder	Lift Cylinder
L2	To Lift Cylinder	Lift Cylinder
T3	Main RT Valve (Left Side)	T - Outrigger Valve
P1	Main RT Valve (Left Side)	Outlet - Tandem Gear Pump
S1	Main RT Valve (Left Side)	Steer Cylinder
S2	Main RT Valve (Left Side)	Steer Cylinder
G	Main RT Valve (Left Side) (Tee at Port)	P - Axle Lockout Valve M3 - Axial Pump
2S2	Main RT Valve (Left Side)	Union Tee
T1	Main RT Valve (Left Side)	Return to Tank
T2	Main RT Valve (Right Side)	12 - Flow Divider
P2	Main RT Valve (Right Side)	LP - Leveling Jack Valve
PS	Main RT Valve (Right Side)	Outlet - Tandem Gear Pump
MS	Main RT Valve (Right Side)	Diagnostic Port
MP1	Main RT Valve (Right Side)	Diagnostic Port

Table 4-5. Main Valve Torque Specs (CE Only)

Component	Functionality	Torque
SV2	Steer Valve	24 - 26ft. lb.
SV3	Motors 2 Speed Control	19 - 21ft. lb.
SV4	Hydraulic Brakes	19 - 21ft. lb.
SV5		19 - 21ft. lb.
SV6		19 - 21ft. lb.
SV7		24 - 26ft. lb.
SV8		24 - 26ft. lb.
SV9		24 - 26ft. lb.
CV3	Lift Cylinders Tank Port Check Valve	24 - 26ft. lb.
LS1	Steer Cylinder Shuttle Valve	20ft. lb.
RV2	Manifold Relief Valve	26ft. lb.
RV3	Steer Cylinder Relief Valve	19 - 21ft. lb.
SV1	Lift Up Valve	24 - 26ft. lb.
S1 - S6	Coil 4304112 7.1 Ohm@20°C	8.5ft.lb.
S7 - S10	Coil 4304012 8.8 Ohm@20°C	4.5ft.lb.
PLG6		23ft.lb.
PLG4		13ft.lb.

Table 4-6. Main Valve Porting Specs (CE Only)

Port	Size
P1,L2,T1 & P5	SAE 10
L1	SAE 08
G, P2,P3,T2,T3 & T4	SAE 06
All Others	SAE 04

NOTE: *For internal hydraulic circuits Figure 4.32 on Page 4.42.*

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6.9 TROUBLESHOOTING

The following tables are furnished to provide possible resolutions for common difficulties. Difficulties are classified as General, Calibration, Measurement Performance, and Host System Functionality.
Also refer to Electrical Schematic in Section 7 for wiring circuit diagnostics.

Table 6-6. LSS Troubleshooting Chart - General

DIFFICULTY	POSSIBLE RESOLUTION
JLG Analyzer does not display "HELP: PRESS ENTER" when connected to LSS Module's connection, but the module's LED is lit or flashing.	The JLG Analyzer is failing to communicate with the LSS Module, but the LSS Module is powered (indicated by module's LED). Investigate JLG Analyzer serial communication and power supply connections. 1. If the Analyzer displays "CONNECTING…" or "CONNECTION ERROR" after a short interval, examine the Analyzer harness on J2. J2-2 should connect to Pin 3 on the Analyzer, and J2-11 should connect to Pin 2. 2. If the Analyzer does not display anything (and there is no backlighting), examine the Analyzer's power supply. Remove the harness connection from J2 and ensure that J2-1 has approximately 12V, and J2-12 is 0V. The harness should connect J2-1 to Pin 1 on the Analyzer, and J2-12 to Pin 4 on the Analyzer. 3. The JLG Analyzer is suspect. Substitute to determine cause of failure. 4. The LSS Module is suspect. Substitute to determine cause of failure.
LED on LSS Module does not light.	The LSS Module is un-powered, a short exists, or the device is damaged. 1. LSS Module's power supply is improper. Check for the presence of approximately 12V on J1-1, and 0V on J1-2. The module's power supply comes from the Platform Console Box. Use to the Wiring Diagram to trace the conductors to their source. 2. There is a short circuit on the reference voltage present on J5-J8. Unplug the connectors one at a time and observe if the module begins to function after a particular connection is removed. If so, carefully inspect the wiring between the module and that sensor. 3. There is a short circuit on the pre-regulated supply for the JLG Analyzer present on J2-1. Unplug J2's connector and observe whether the module begins to function. If so, examine the Analyzer harness for defect. 4. The LSS Module is suspect. Substitute to determine cause of failure.

Table 6-7. LSS Troubleshooting Chart - Calibration

Difficulty	Possible Resolution
JLG Analyzer displays "<MIN CAL" after attempt is made to Calibrate.	The LSS Module expected the empty platform to weight more for calibration. 1. The platform is being supported by something other than the four Shear Pin Load Cells. This includes binding between the slide block/spacer bushing/arm tube assembly (bushing should be free enough to rotate by hand). For proper operation, the platform's entire weight must be transferred through the Shear Pin Load Cells and into the arm support structure for an accurate calibration. 2. The wrong Model Selection was made under the LSS Module's MACHINE SETUP, MODEL. This should be set to the proper MODEL. Improper selection may lead the LSS Module to expect different empty platform weights. 3. The calibration difficulty may be a result of a Measurement Performance issue. Review the Possible Resolutions under that category.
JLG Analyzer displays ">MAX CAL" after attempt is made to Calibrate.	The LSS Module expects the empty platform to weigh less for calibration. 1. Tools, debris, or customer-installed accessories have not been removed before calibration. The LSS Module must tare an empty platform and its optional JLG Accessories. 2. The wrong Model Selection was made under the LSS Module's MACHINE SETUP, MODEL. This should be set to MODEL. Improper selection may lead the LSS Module to expect different empty platform weights. 3. The calibration difficulty may be a result of a Measurement Performance issue. Review the Possible Resolutions under that category.

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SAE Fastener Torque Chart (Continued)

Values for Zinc Yellow Chromate Fasteners (Ref 4150707)										
SAE GRADE 8 (HEX HD) BOLTS & GRADE 8 NUTS*										
Size	TPI	Bolt Dia	Tensile Stress Area	Clamp Load	Torque (Dry or Loctite® 263) K=0.20		Torque (Loctite® 242™ or 271™ or Vibra-TITE™ 111 or 140) K=0.18		Torque (Loctite® 262™ or Vibra-TITE™ 131) K=0.15	
		In	Sq In	LB	IN-LB	[N.m]	IN-LB	[N.m]	IN-LB	[N.m]
4	40	0.1120	0.00604							
	48	0.1120	0.00661							
6	32	0.1380	0.00909							
	40	0.1380	0.01015							
8	32	0.1640	0.01400							
	36	0.1640	0.01474	1320	43	5				
10	24	0.1900	0.01750	1580	60	7				
	32	0.1900	0.02000	1800	68	8				
1/4	20	0.2500	0.0318	2860	143	16	129	15		
	28	0.2500	0.0364	3280	164	19	148	17		
		In	Sq In	LB	FT-LB	[N.m]	FT-LB	[N.m]	FT-LB	[N.m]
5/16	18	0.3125	0.0524	4720	25	35	20	25	20	25
	24	0.3125	0.0580	5220	25	35	25	35	20	25
3/8	16	0.3750	0.0775	7000	45	60	40	55	35	50
	24	0.3750	0.0878	7900	50	70	45	60	35	50
7/16	14	0.4375	0.1063	9550	70	95	65	90	50	70
	20	0.4375	0.1187	10700	80	110	70	95	60	80
1/2	13	0.5000	0.1419	12750	105	145	95	130	80	110
	20	0.5000	0.1599	14400	120	165	110	150	90	120
9/16	12	0.5625	0.1820	16400	155	210	140	190	115	155
	18	0.5625	0.2030	18250	170	230	155	210	130	175
5/8	11	0.6250	0.2260	20350	210	285	190	260	160	220
	18	0.6250	0.2560	23000	240	325	215	290	180	245
3/4	10	0.7500	0.3340	30100	375	510	340	460	280	380
	16	0.7500	0.3730	33600	420	570	380	515	315	430
7/8	9	0.8750	0.4620	41600	605	825	545	740	455	620
	14	0.8750	0.5090	45800	670	910	600	815	500	680
1	8	1.0000	0.6060	51500	860	1170	770	1045	645	875
	12	1.0000	0.6630	59700	995	1355	895	1215	745	1015
1 1/8	7	1.1250	0.7630	68700	1290	1755	1160	1580	965	1310
	12	1.1250	0.8560	77000	1445	1965	1300	1770	1085	1475
1 1/4	7	1.2500	0.9690	87200	1815	2470	1635	2225	1365	1855
	12	1.2500	1.0730	96600	2015	2740	1810	2460	1510	2055
1 3/8	6	1.3750	1.1550	104000	2385	3245	2145	2915	1785	2430
	12	1.3750	1.3150	118100	2705	3680	2435	3310	2030	2760
1 1/2	6	1.5000	1.4050	126500	3165	4305	2845	3870	2370	3225
	12	1.5000	1.5800	142200	3555	4835	3200	4350	2665	3625

NOTES: 1. THESE TORQUE VALUES DO NOT APPLY TO CADMIUM PLATED FASTENERS

2. ALL TORQUE VALUES ARE STATIC TORQUE MEASURED PER STANDARD AUDIT METHODS TOLERANCE = ±10%

3. * ASSEMBLY USES HARDENED WASHER

500005PK

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7.4 DIELECTRIC GREASE APPLICATION

The following is general guidance for the installation of dielectric grease in a connector system.

1. Use dielectric grease in a tube for larger connection points or apply with a syringe for small connectors.
2. Apply dielectric grease to plug/male connector housing which typically contains sockets contact/female terminals.
3. Leave a layer of dielectric grease on the mating face of the connector, completely covering each connector terminal hole. Refer the pictures shown below.
4. Assemble the connector system immediately to prevent moisture ingress or dust contamination.

The following connector systems are specifically addressed because of their widespread use at JLG. However, this guidance may be applied to similar devices.

AMP Mate-N-Lok

This connector system is widely used inside enclosures for general-purpose interconnect. Follow the general guidance for installation.



Improper



Proper

AMP Faston

This connector system is typically used on operator switches at JLG. Follow the general guidance for installation.



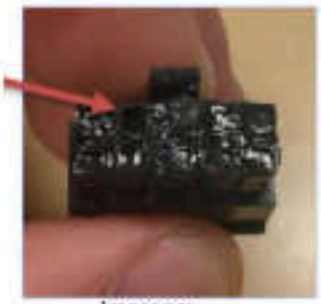
Improper



Proper

AMP Micro-Fit

This connector system is typically used on control modules at JLG. Follow the general guidance for installation.



Improper



Proper

AMP Mini Fit Jr

This connector system is typically used on control modules at JLG. Follow the general guidance for installation.



Improper



Proper

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