

Job Safety Analysis

Use These Forms Before You Begin Any Job to Alert You of Any Hazards That May Exist

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11000 Crawler Crane Assembly

Customer Name:	Job Location:	Unit #:	Job#:
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REQUIRED PERSONAL PROTECTION EQUIPMENT:	MSDS(s) ASSOCIATED WITH THE JOB:
Hard hat, safety glasses, gloves, steel-toed boots, fall protection, JLG & all other required site-specific personal protective equipment.	Chemicals are usually used on the crane or stored on Service trucks on the MSDS Online database on all company-issued cell phones.

To improve the readability and comprehension of this field document, we have detailed all common hazards and the recommendations for safe work at the beginning of this JSA. It is understood and assumed that any or all of these hazards may become relevant at any time during the assembly of this crane. This JSA is to be used in conjunction with the operator's manual. If there is ever a discrepancy between the two the operator's manual takes precedence.

Common Hazards	Safe Job Practices
<ul style="list-style-type: none"> Slips, Trips, and Falls Lack of stability 	<ul style="list-style-type: none"> Use of a personal fall protection system is mandated when working where employees are exposed to falls greater than 6 feet. JLG shall be utilized when working on the crane where tie-off is unavailable or feasible, especially when setting counterweights and baskets. Keep ladders, walking surfaces, stairs, and stepping surfaces free of objects and obstacles. Only step on ladders, stairs, walking, and stepping surfaces with sufficiently clear height. Only step on ladders, stairs, walking, and stepping surfaces with clean shoes. Keep ladders, stairs, walking, and stepping surfaces free of heavy dirt, snow, ice, and mud. Stepping on ladders, stairs, walking surfaces, and stepping surfaces by persons, including tools and equipment, weighing more than 330lbs, is prohibited. Do not step on damaged ladders, stairs, walking surfaces, and stepping surfaces, and replace them immediately. Do not trip over attachment parts. Personnel must wear an approved fall arrest system and protective equipment before performing any work on the crane structure Personnel must hook themselves to the hook points and safety ropes with an approved fall arrest system to prevent falling.

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Safe Job Practices

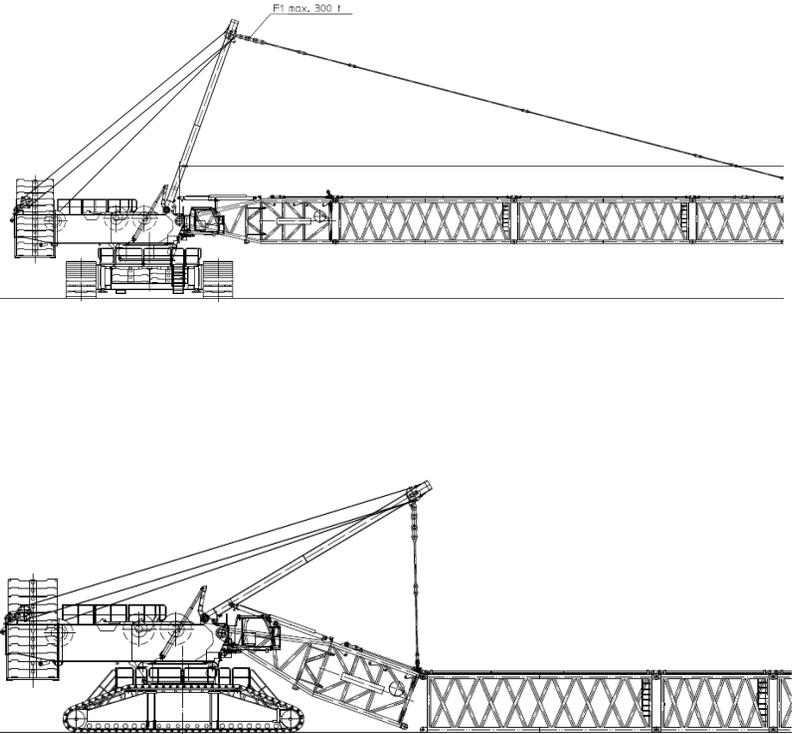
Common Hazards	Safe Job Practices
<ul style="list-style-type: none">• Crushing Injury Hazard	<ul style="list-style-type: none">• Barricade all accessible areas to the crane so personnel cannot be struck or crushed when upper works are swung.• Do not climb on or off the crane while the upper works are swung, or the crane is being traveled.• Signal operator that you need to climb on or off the crane.• Operator: do not swing or travel while personnel climbs on or off the crane. Stop swing and travel motions. Apply the swing brake and turn on the Travel Brake.• Use of dedicated spotters and signal persons when flying objects with cranes.• Use of tag lines when a rotating load may become a hazard.
<ul style="list-style-type: none">• Struck By/ Caught Between/Pinch Point Hazards	<ul style="list-style-type: none">• Hard Hats and Safety Glasses shall be worn at all times during the assembly/disassembly of this crane.• Never handle wire rope with bare hands. Always wear heavy-duty gloves to prevent being cut by broken wires.• Use extreme care when handling coiled pendants. The stored energy can cause coiled pendants to uncoil quickly with considerable force.• Do not attempt to maintain or repair any part of the crane while the engine is running unless necessary.• If the engine must be run, keep your clothing and all parts of your body away from moving parts. <i>Maintain constant verbal communication between the person in control and the person performing maintenance or repair procedures.</i>• Do not use your hands to check for air and hydraulic oil leaks• Relieve pressure before disconnecting air, coolant, and hydraulic lines and fittings.• Do not attempt to lift heavy components by hand. Use a hoist, jacks, or blocking to raise components.• Store tools, oil cans, spare parts, and other necessary equipment in toolboxes. Do not allow these items to lie loose in the operator's cab or on walkways and stairs.• Use of dedicated spotters to direct and signal all vehicle traffic.

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Common Hazards	Safe Job Practices	
<ul style="list-style-type: none">• Collapsing Boom Hazard	<ul style="list-style-type: none">• Select a suitable location for boom disassembly. It must be firm, level, and free of obstructions.• It should have enough open space to accommodate the crane, the boom length, and - if required - the movement of an assist crane or other equipment.• If possible, secure the area to keep unauthorized personnel and vehicles away.• Do not remove the bottom connecting pins from any boom section when straps support the boom• Do not remove bottom connecting pins from any boom section when the boom point is resting on the ground and handling pendants are slack• Do not remove strap connecting pins until straps are fully lowered into supports <p>Never work or stand inside the boom unless it is lowered and securely blocked, as shown.</p>	

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Common Hazards	Safe Job Practices
<ul style="list-style-type: none"> • Designate Assembly Area 	<ul style="list-style-type: none"> • Select a good location to assemble the crane • Ensure ground conditions are firm, level and uniformly supportive in compliance with engineer's soil data. • Select an area large enough and free of any underground or overhead obstructions or hazards to accommodate the crane, assist the crane, select boom and jib length, and the movement of trailers. • Erection area should not interfere with or pose a hazard to other onsite personnel. Erection area to be marked and barricaded. • There should be at least 2 feet of clearance between the counterweights and the nearest obstacle. • Ensure there is enough timber blocking to support the boom when it is being assembled. • Ground support, as specified in the erection drawings, is complete and in compliance with the stated requirements. • When lifting, lowering, and swinging crane parts in and out, no persons may remain in the danger zone.
<ul style="list-style-type: none"> • Assist Crane Overload 	<p>Site restrictions and manufacturer specifications shall size the assist crane. Site conditions and matting must be suitable for maximum loading of the assist crane. The assist crane will assembled by the manufacturer's instructions.</p>
<ul style="list-style-type: none"> • Rigging Failure 	<p>Rigging shall be inspected per applicable OSHA/ASME standards, at least daily and before use. Examples of unserviceable rigging include bird caging, kinks, and broken wires.</p>
<ul style="list-style-type: none"> • Electrical Shock Hazard 	<p>Ensure adequate clearance from power lines is maintained per ASME B30.5 and the manufacturer's recommendations in the Operation's manual.</p>

Note: At no time will a trainee, apprentice, or an oiler operate any crane during the assembly, reconfiguration, and disassembly process or while the crane is in bypass.

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Crane Assembly

BASIC JOB STEPS	POTENTIAL HAZARDS	SAFE JOB PRACTICES
<ul style="list-style-type: none"> Assist Crane assembly and Set-up (If needed) 	<p>See Common Hazards Above</p>	<ul style="list-style-type: none"> See Safe Job Practices Above <p>Refer to the operator's manual for detailed procedures.</p> <ul style="list-style-type: none"> Monitor levels. Ensure the cribbing and base area is level. Use of designated spotters to direct truck drivers. An Assist crane with suitable Load-bearing capacity must be available, and the location level
<ul style="list-style-type: none"> Set up Mat pad (dance Floor). 	<p>See Common Hazards Above</p> <p>Slips trips and Falls</p>	<ul style="list-style-type: none"> See Safe Job Practices Above <p>Refer to the operator's manual for detailed procedures. Use of designated spotter to direct truck drivers</p> <p>Monitor levels. Ensure the cribbing and base area is level.</p> <ul style="list-style-type: none"> Make sure the grating covers are correctly closed immediately after removing the rigging. Make sure the lashing lugs on the tracks are folded down after removing the rigging.
<ul style="list-style-type: none"> Unload and set carbody on mats deploying carbody jacks. 	<p>See Common Hazards Above</p>	<ul style="list-style-type: none"> See Safe Job Practices Above <p>Refer to the operator's manual for detailed procedures. Use of designated spotter to direct truck drivers</p> <p>Monitor levels. Ensure the cribbing and base area is level.</p>

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BASIC JOB STEPS	POTENTIAL HAZARDS	SAFE JOB PRACTICES
<ul style="list-style-type: none"> ● Using correct length rigging as per manufacturer. Unload house touch on the ground. ● Install walkways handrails. ● Prep carbody and house turntable and swivel locking pins and hoses. ● Install the house, lock the pins, and connect all hydraulic and electric connections. <p>HOLD POINT _____ Check pins.</p>	<p>See Common Hazards Above</p>	<ul style="list-style-type: none"> ● See Safe Job Practices Above <p><i>Refer to the operator's manual for detailed procedures. Use of designated spotter to direct truck drivers</i></p> <p><i>Monitor levels. Ensure the cribbing and base area is level.</i></p>
<ul style="list-style-type: none"> ● With correct rigging, install tracks and make all connections. ● Then lower the house, car, body, and tracks to the ground. 	<p>See Common Hazards Above</p> <ul style="list-style-type: none"> *Slips Trips and Falls *Dropped Loads *Strains and Sprains 	<ul style="list-style-type: none"> ● See Safe Job Practices Above <p><i>Refer to the operator's manual for detailed procedures. Use of designated spotter to direct truck drivers</i></p> <ul style="list-style-type: none"> ● <i>Monitor levels. Ensure the cribbing and base area is level.</i>
<ul style="list-style-type: none"> ● Unload and assemble car body counterweight trays/ jacks. ● Load cwts as per manufacturer. 	<p>See Common Hazards Above</p> <ul style="list-style-type: none"> *Slips Trips and Falls *Dropped Loads *Strains and Sprains 	<ul style="list-style-type: none"> ● See Safe Job Practices Above <p><i>Refer to the operator's manual for detailed procedures. Use of designated spotter to direct truck drivers</i></p> <p><i>Monitor levels. Ensure the cribbing and base area is level.</i></p>

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<ul style="list-style-type: none"> Install SA frame and hoists to make pins and connections. Roll SA frame forward to ready for connection for butt section. install butt section, make pins, hydraulic connections, and pennant hookups. <p>HOLD POINT _____ Check pins.</p>	<p>See Common Hazards Above</p> <p>Falling Mast Hazard!</p> <p>Mast Damage!</p> <p>Swinging Straps Hazard!</p> <p>Falling Mast Hazard!</p>	<p><i>See Safe Job Practices Above</i> <i>Refer to the operator's manual for detailed procedures.</i> <i>Read and thoroughly understand mast-raising instructions.</i></p>
<ul style="list-style-type: none"> Unload and install counterweight trays and counterweights. Install counterweight holding chains. <p>HOLD POINT _____ Check Chains.</p> <ul style="list-style-type: none"> The frog legs are on down and fully supported per manufacturer recommendations. 	<p>See Common Hazards Above</p> <p>Falling Mast Hazard!</p> <p>Mast Damage!</p> <p>Swinging Straps Hazard!</p> <p>Falling Mast Hazard!</p>	<p><i>See Safe Job Practices Above</i> <i>Refer to the operator's manual for detailed procedures.</i> <i>Read and thoroughly understand mast-raising instructions.</i></p>
<ul style="list-style-type: none"> Unload prep and install boom sections according to the build sheet. Always following recommendations on counter levering length and F1 pressure max kips. <p>HOLD POINT _____ Check Build Sheet.</p>	<p>See Common Hazards Above</p> <p>Tipping Hazard!</p> <p>Falling Mast Hazard!</p> <p>Strains and Sprains</p>	<p><i>See Safe Job Practices Above</i> <i>Refer to the operator's manual for detailed procedures.</i></p>

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<ul style="list-style-type: none"> • Unload and install jib if needed. • As per manufacturer recommendations, stand Queens, post, and connect backstay pendants. <p>HOLD POINT _____ Check Backstays.</p>	<p>See Common Hazards Above</p> <p>Tipping Hazard!</p> <p>Falls from Heights!</p>	<p><i>See Safe Job Practices Above</i> <i>Refer to the operator's manual for detailed procedures.</i></p>
<ul style="list-style-type: none"> • Run and secure electrical and load wire. 	<p>See Common Hazards Above</p> <p>*Slips Trips and Falls *Dropped Loads *Strains and Sprains</p>	<p><i>See Safe Job Practices Above</i> <i>Refer to the operator's manual for detailed procedures.</i></p>
<ul style="list-style-type: none"> • Boom up and rev Block as per the revving diagram. • Install two block and disconnect the fallback support winch (boat winch) 	<p>See Common Hazards Above</p> <p>*Slips Trips and Falls *Dropped Loads *Strains and Sprains</p>	<p><i>See Safe Job Practices Above</i> <i>Refer to the operator's manual for detailed procedures.</i></p>
<ul style="list-style-type: none"> • Boom up the block as per takedown procedures. • Install or remove cheek and counterweights as needed 	<p>See Common Hazards Above</p> <p>Tipping Hazard!</p> <p>Falls from Heights!</p>	<p><i>See Safe Job Practices Above</i> <i>Refer to the operator's manual for detailed procedures.</i></p>
<ul style="list-style-type: none"> • Check all controls functions kick outs, remove frog legs, and turn over for operation 	<p>See Common Hazards Above</p> <p>*Slips Trips and Falls *Dropped Loads *Strains and Sprains</p>	<p><i>See Safe Job Practices Above</i> <i>Refer to the operator's manual for detailed procedures.</i></p>

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Additional Comments (include any other observations or comments on this job task below)

All personnel shall review the job safety analysis before work activity and sign below. The perimeter of the work area shall have yellow caution or red warning tape installed to prevent any unnecessary jobsite personnel from being exposed to these hazards.

PRINT

SIGNATURE

PRINT	SIGNATURE

Assembly/Disassembly Director: _____ Date: _____