

Job Safety Analysis

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

Page 1 of 12

LTR1220 Tele-Crawler Disassembly

| | | | |
|---------------------------------|----------------------|----------------|--------------|
| Customer Name: Mortenson | Job Location: | Unit #: | Job#: |
|---------------------------------|----------------------|----------------|--------------|

| | |
|--|--|
| REQUIRED PERSONAL PROTECTION EQUIPMENT: | MSDS(s) ASSOCIATED WITH THE JOB: |
| Hard hat, ear plugs (as needed), safety glasses with side shields, gloves, Safety boots (lace-up), fall protection & all other required site-specific personal protective equipment. | Chemicals are usually used on the crane or stored on service trucks, and the mobile app is used on the technician and A/D mobile device. |

*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 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 | <ul style="list-style-type: none"> • A personal fall protection system is mandated when employees are exposed to falls greater than 6 feet. • Fall protection is to be assessed per task if working in or around rotating equipment or the draw works. • Walkways and platforms can be slippery when wet and oil or grease spilled on them. Keep walkways and platforms clean and dry to prevent slipping on them. When non-skid material wears out, reapply it. • Clean any mud or debris from shoes before entering the crane cab or climbing onto the crane. • Please do not use the top of the mast, boom, or jib as walkways (unless they have optional catwalks). • Use both hands and handrails, steps, and ladders provided to climb onto and off the crane. • Lift tools and other equipment that cannot be carried in pockets or tool belts onto and off cranes with hand lines or hoists. • Boom and gantry are not intended as ladders. DO NOT attempt to climb the latticework of the boom or gantry to get to maintenance points. |
| <ul style="list-style-type: none"> • Crushing Injury Hazard | <ul style="list-style-type: none"> • Post Signage on all accessible areas to crane so personnel cannot be struck or crushed when upperworks is swung. • Do not access the crane while upperworks is being swung or the crane is being traveled. • Signal operator that you need to access the crane. Confirm acknowledgment from the operator. • Operator: do not swing or travel while personnel are on crane. Stop swing and travel motions. Apply the swing brake and turn on the Travel Brake. • Use dedicated spotters (To be identified during the JHA) and signal persons when flying objects with cranes. • Use of tag lines for all crane picks. |
| <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 always be worn during the assembly/disassembly of this crane. • Always wear gloves to prevent being cut by broken wires. • 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. Maintain constant verbal communication between the person in control and the person performing maintenance or repair procedures. • 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 anything heavier than 50 lbs, which is difficult in configuration or placement. Use a hoist, jacks, team lifts, or blocking to lift components. |

Job Safety Analysis

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

Page 2 of 12

LTR1220 Tele-Crawler Disassembly

| | |
|--|---|
| | <ul style="list-style-type: none">• All pin connections are pinch points.• A&D director to 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.• Before a crew member goes to a location that is out of view of the operator and is either in, on, or under the equipment or near the equipment (or load) where the crew member could be injured by the movement of the equipment (or load), another crew member will be designated as a "watch" to inform the operator that they are going to that location. Where the operator knows that a crew member went to an area covered by the above sentence, the operator must not move any part of the equipment (or load) until the operator is informed by the "watch" that the crew member is in a safe position. |
| <ul style="list-style-type: none">• Tip over hazard | <ul style="list-style-type: none">• The A&D director will select a suitable location for disassembly. It must be firm, level, and free of obstructions. It should have enough open space to accommodate the crane.• After deploying outrigger jacks, ensure the safety pins are installed correctly, securing the jack to the frame.• When booming up, do not exceed 60 degrees. This could cause an imbalance and cause the crane to tip.• Do not exceed the manufacturer's radius when picking the counterweights or tracks during assembly• Always refer to the manual during the assembly procedure. |

Job Safety Analysis

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

Page 3 of 12

LTR1220 Tele-Crawler Disassembly

| | |
|--|--|
| <ul style="list-style-type: none">• Designate Assembly Area | <ul style="list-style-type: none">• Ensure ground conditions are firm, level, and uniformly supportive.• 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.• The 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.• A&D to confirm the quantities of solid timber blocking to support the boom when assembled.• Ground support, as specified in the erection drawings, is complete and in compliance with the stated requirements. |
| <ul style="list-style-type: none">• Assist Crane Requirements (if required) | <ul style="list-style-type: none">• Applicable lift plans shall size the assist crane. _WHEN NEEDED• Site conditions and matting must be suitable for maximum loading of the assist crane.• The manufacturer's instructions will be used to assemble the assist crane. |
| <ul style="list-style-type: none">• Rigging Failure | <ul style="list-style-type: none">• Rigging shall be inspected per applicable OSHA/ASME standards, at a minimum, daily, and before use. Examples of unserviceable rigging include bird caging, kinks, and broken wires. |
| <ul style="list-style-type: none">• Electrical Shock Hazard | <ul style="list-style-type: none">• Ensure adequate clearance from power lines is continuously maintained per OSHA 1926.1408 |
| <ul style="list-style-type: none">• Operational Test Loads (if required) | <ul style="list-style-type: none">• Test loads shall not exceed 100% of the manufacturer's load rating.• Test loads must be freely suspended using an approved load.• All rigging must be inspected and approved before load testing.• The weight and radius of the load test shall be determined by:<ul style="list-style-type: none">-Manufacturers' load chart.-Site Conditions.-Winch line pull (i.e., the test load must be lifted while staying within the line pull capacity of the drum being utilized). |

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

Job Safety Analysis

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

Page 4 of 12

LTR1220 Tele-Crawler Disassembly

| BASIC JOB STEPS | POTENTIAL HAZARDS | SAFE JOB PRACTICES |
|---|--|---|
| <p>Remove Counterweights Place crane in rigging mode</p> <ul style="list-style-type: none"> Remove keepers in hammer pins. Remove hammer safety pins. Lower the counterweight tray onto the Carbody weight. Unpin lift cylinders from the tray, raise cylinders, and swing the crane. <p>HOLD POINT – Tray Pins._____</p> <ul style="list-style-type: none"> Remove the counterweight from the Carbody deck. | <p>See Common Hazards Above</p> <p>Crushing Injury Hazard!</p> <p>Falling Load Hazard!</p> <p>Pinch points!</p> <p>Crushing Injury Hazard!</p> | <p>See Safe Job Practices Above</p> <p><i>Refer to the operator's manual for detailed procedures.</i></p> <p><i>Make sure counterweights are rigged properly using lifting points.</i></p> <p><i>Prior to raising counterweights, warn personnel.</i></p> |
| <p>Remove Hydraulic Lines from the Tracks</p> <p>*Depending on the model, you may have hard hydraulic lines that screw in or a hydraulic pack</p> | <p>See Common Hazards Above</p> <p>Crushing Injury Hazard!</p> | <p>See Safe Job Practices Above</p> <p><i>Refer to the operator's manual for detailed procedures.</i></p> <p><i>Note: The Crane is not to be operated or moved during the connection of the hydraulic lines.</i></p> <p><i>Hard lines are numbers for installation.</i></p> <p><i>Proper tools for the Hydraulic pack</i></p> |
| <p>Raise Crane on Outriggers.</p> <ul style="list-style-type: none"> Remove pins securing outrigger jacks to Carbody. Unfold outrigger jacks. Install pins in jacks to secure the outrigger for track removal. Repeat the other side. <p>HOLD POINT – Outrigger Jack Pins_____</p> <ul style="list-style-type: none"> Raise crane off tracks | <p>See Common Hazards Above</p> <p>Tipping Hazard!</p> | <p>See Safe Job Practices Above</p> <p><i>Refer to the operator's manual for detailed procedures.</i></p> |

Job Safety Analysis

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

Page 5 of 12

LTR1220 Tele-Crawler Disassembly

| BASIC JOB STEPS | POTENTIAL HAZARDS | SAFE JOB PRACTICES |
|--|---|---|
| <p>Remove Crawlers</p> <ul style="list-style-type: none"> Remove the electrical cable. Remove hammer pins from the track. Repeat the other side. | <p>See Common Hazards Above</p> <p>Tipping Hazard!</p> <p>Pinch Points!</p> | <p><i>See Safe Job Practices Above</i></p> <p><i>Refer to the operator's manual for detailed procedures.</i></p> <p><i>Use a designated spotter.</i></p> <p>*Tracks are side specific. Please refer to the manual for proper removal.</p> |
| <p>Remove Carbody Weights</p> <ul style="list-style-type: none"> Remove hammer pins securing Carbody weights to the body. <p>HOLD POINT – Carbody Weights_____</p> <ul style="list-style-type: none"> Remove Carbody weights | <p>See Common Hazards Above</p> <p>Carbody Damage!</p> <p>Outrigger damage!</p> <p>Cab Damage!</p> | <p><i>See Safe Job Practices Above</i></p> <p><i>Refer to the operator's manual for detailed procedures.</i></p> <p><i>Designate a spotter so counterweights do not strike the side of the crane or the outriggers.</i></p> <p>*Weights are side specific. Please refer to the manual for proper removal.</p> |
| <p>Loading Crane onto Trailer</p> <ul style="list-style-type: none"> Boom crane to 55 degrees over the front Raise the crane to clear the trailer. Ensure level raising of the crane. Once cleared, move the trailer under the crane Once centered, begin lowering the crane onto the trailer. | | <p>**Set crane on trailer, still keeping most of the load on the jacks</p> |

Job Safety Analysis

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

Page 6 of 12

LTR1220 Tele-Crawler Disassembly

| BASIC JOB STEPS | POTENTIAL HAZARDS | SAFE JOB PRACTICES |
|---|--------------------------|---------------------------|
| <p>Loading Crane onto Trailer</p> <ul style="list-style-type: none">• Secure the crane to the trailer.• Boom the crane down and secure for travel.• Raise the outriggers.• Remove Safety pins on outrigger jacks.• Fold the outrigger to Carbody and secure it with safety pins for travel <p>HOLD POINT – Outrigger Jack Pins _____</p> <ul style="list-style-type: none">• Retract outrigger beams. | | |
| <p>Prepare for travel.</p> <ul style="list-style-type: none">• Check rigging is stored.• Check for safety pins and keepers are accounted for and in place.• Police area/Housekeeping• Ready for transport. | | |

Job Safety Analysis

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

Page 7 of 12

LTR1220 Tele-Crawler Disassembly

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.

SAMPLE

PRINT

SIGNATURE

| PRINT | SIGNATURE |
|-------|-----------|
| | |
| | |
| | |
| | |
| | |
| | |
| | |

Assembly/Disassembly Director: _____ Date: _____