

Tower Crane Erection & Section Climbing Inspection Checklist

Site / Project	_____	Address	_____
Inspector name	_____	Company	_____
Date	_____	Time	_____

Documentation aid only. Adapt this resource to the site, manufacturer instructions, and applicable local requirements. It does not replace a competent person, professional judgment, legal advice, or a required statutory form.

Inspection checklist

Pre-Erection Inspection

☐ Verify all mast sections are free from damage (dents, bends, corrosion) prior to assembly. Document findings with photos.	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐ Confirm that all bolts are of the correct grade and length as specified by the crane manufacturer's manual. Check against parts list.	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐ Inspect the slewing ring for any signs of wear, cracks, or damage. Check lubrication points and grease levels.	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐ Examine all hydraulic hoses for cuts, abrasions, kinks, or leaks. Ensure hoses are properly rated for the system pressure.	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐ Assess the climbing frame for structural integrity, proper alignment, and secure locking mechanisms. Verify all pins and locking devices are in place.	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐ Verify the counter-jib is properly secured and that all counterweights are correctly installed and locked in place. Check locking pins.	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐ Inspect all wire ropes for wear, broken strands, corrosion, and proper lubrication. Document findings and replace if necessary.	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐ Check all electrical connections for tightness, proper insulation, and grounding. Verify wiring diagrams are available and accurate.	☐ Pass	☐ Fail	☐ N/A	Notes: _____

☐	Confirm all lubrication points are accessible and properly greased according to the manufacturer's specifications. Document lubrication schedule.	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐	Test all safety devices, including limit switches, overload protection, and anti-collision systems. Document test results.	☐ Pass	☐ Fail	☐ N/A	Notes: _____

Bolt Torque Verification

☐	Verify the torque wrench is calibrated and within its calibration period. Check calibration certificate.	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐	Confirm the correct bolt tightening sequence is followed as per the manufacturer's instructions. Use a documented procedure.	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐	Verify each bolt is torqued to the specified value using a calibrated torque wrench. Record torque values for each bolt.	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐	Inspect bolt threads for damage or contamination before tightening. Clean and lubricate threads as necessary.	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐	Ensure washers are correctly placed under bolt heads and nuts to distribute load evenly. Verify correct washer type.	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐	Implement a re-torque procedure after the initial tightening to account for settling. Document re-torque values.	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐	Visually inspect all bolts after torquing to ensure proper seating and no signs of thread stripping. Document observations.	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐	Verify that locking mechanisms (e.g., lock washers, cotter pins) are properly installed to prevent loosening. Check security.	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐	Maintain a detailed record of all torque values for each bolt, including date, time, and personnel performing the task.	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐	Check that the bolt protrusion length after tightening meets the manufacturer's specifications. Too little or too much protrusion can indicate issues.	☐ Pass	☐ Fail	☐ N/A	Notes: _____

Hydraulic System Inspection During Climbing

☐	Monitor hydraulic pressure during the climbing process to ensure it remains within the manufacturer's specified range. Record pressure readings.	☐ Pass	☐ Fail	☐ N/A	Notes: _____
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☐	Verify the cylinder stroke length is consistent and within the specified limits during each climbing cycle. Measure stroke length.	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐	Check the hydraulic fluid level in the reservoir before and after each climbing operation. Top off as needed with correct fluid type.	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐	Inspect all hydraulic connections, hoses, and cylinders for leaks during and after the climbing process. Repair leaks immediately.	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐	Listen for unusual noises from the hydraulic pump during operation. Unusual noises can indicate cavitation or other problems.	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐	Verify that all hydraulic valves are operating smoothly and correctly. Check for sticking or binding.	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐	Test the emergency stop function of the hydraulic system before each climbing operation. Ensure it immediately halts the process.	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐	Monitor for cylinder drift during pauses in the climbing process. Excessive drift indicates internal leakage.	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐	Check the condition of the hydraulic filters and replace them according to the manufacturer's recommendations. Document filter changes.	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐	Monitor the temperature of the hydraulic fluid during operation. Overheating can damage components.	☐ Pass	☐ Fail	☐ N/A	Notes: _____

Wind Speed Monitoring and Weather Conditions

☐	Verify the anemometer is calibrated and functioning correctly. Check calibration date.	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐	Continuously monitor wind speed at the crane's operating height using a calibrated anemometer. Record wind speed readings.	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐	Establish and follow a clear shutdown procedure when wind speeds exceed the crane manufacturer's specified limits. Document procedure.	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐	Monitor weather forecasts for impending storms or high winds. Plan work accordingly.	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐	Ensure the crane is free to weathervane (rotate freely) when out of service to minimize wind resistance. Check slewing ring brake release.	☐ Pass	☐ Fail	☐ N/A	Notes: _____

☐	Implement a tie-down procedure for the crane during periods of high winds or when the crane is out of service for extended periods. Document procedure.	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐	Assess visibility conditions before starting work. Ensure adequate visibility for safe crane operation. Stop work if visibility is impaired.	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐	Verify the crane is properly grounded to protect against lightning strikes. Check grounding connections.	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐	Consider the effects of extreme temperatures (hot or cold) on crane components and hydraulic systems. Adjust procedures accordingly.	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐	Establish a clear communication protocol for notifying personnel of changing weather conditions and implementing shutdown procedures.	☐ Pass	☐ Fail	☐ N/A	Notes: _____

Personnel and PPE

☐	Verify that all personnel involved in the erection and climbing process are properly trained and certified. Check training records.	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐	Inspect all fall protection harnesses for damage, wear, and proper fit before each use. Remove damaged harnesses from service.	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐	Inspect all lanyards and self-retracting lifelines (SRLs) for damage, wear, and proper functionality. Remove damaged equipment from service.	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐	Ensure all personnel are wearing properly fitted hard hats that meet ANSI Z89.1 standards. Check for damage.	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐	Ensure all personnel are wearing safety glasses or face shields to protect against flying debris. Verify compliance.	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐	Ensure all personnel are wearing high-visibility clothing (e.g., vests, jackets) that meet ANSI 107 standards. Check for cleanliness.	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐	Verify that all personnel have reliable communication equipment (e.g., radios) and that communication protocols are established and understood.	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐	Ensure all tools and equipment used at height are properly tethered to prevent dropped objects. Inspect tethers for damage.	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐	Verify that personnel are wearing appropriate gloves for the task being performed. Check glove condition.	☐ Pass	☐ Fail	☐ N/A	Notes: _____

☐ Ensure all personnel are wearing appropriate safety footwear that meets ASTM F2413 standards. Check for damage. ☐ Pass ☐ Fail ☐ N/A Notes: _____

Findings

#	Item	Location	Severity	Action required
1				
2				
3				
4				
5				
6				
7				
8				

Signature

Inspector signature _____

Name _____

Date _____