

University of Illinois at Urbana-Champaign Crane and Hoist Safety Program

Functional Inspection

Functional inspections shall be conducted at the beginning of each shift, or before the crane is first used during each shift.

Items that shall be inspected include

- Operational controls, hoisting and lowering, trolley travel, bridge travel, limit switches.
- Operational verification of the upper limit device under no-load conditions. The load shall be inched into the limit or run in at a slow speed.
- Deterioration or leakage in lines, tanks, valves, drain pumps, and other parts of air or hydraulic systems.
- Ropes, looking for the following removal criteria:
 - Distortion of the rope, such as kinking, crushing, unstranding, bird-caging, main strand displacement, or core protrusion.
 - Reduction of rope diameter below nominal diameter due to loss of core support, internal or external corrosion, or wear of outside wires.
 - General corrosion
 - Broken or cut strands
 - Apparent heat damage from any heat source
 - Number, distribution, and type of visible broken wires:
 - In running ropes, twelve randomly distributed broken wires in one lay or four broken wires in one strand in one lay.
 - One outer wire broken at the contact point with the core of the rope, which has worked its way out of the rope structure and protrudes or loops from the rope structure.
- Hoist chains, including end connections, for excessive wear, twist, distorted links interfering with proper functions, or stretch beyond manufacturer's recommendations.
- Hooks and latches, looking for the following removal criteria:
 - Excessive throat opening
 - Damages or missing safety latch
 - Wear, deformation, corrosion
- Record the inspection using an inspection tag affixed to the crane/hoist or made closely available to the crane/hoist.



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HOIST AND CRANE INSPECTION

Are you qualified to use this hoist or crane? Have you completed the Hoist and Crane training?

- 1. Check annual inspection tag. If tag is missing, expired or illegible, DO NOT USE.
- 2. Check pendant controls for any damage (move up/down/laterally (if applicable).
- 3. Check wire rope or chain for damage (worn, cut, kinked, crushed, spooling or birdcaged).
- 4. Check hook (bent, spread, cracked, safety latch operations).
- 5. Check upper limit switch (run to upper limit and very block stops).
- 6. Check brakes if applicable
- 7. Check trolley travel.
- 8. Review weight limits. Verify load weight is less than rated capacity of hoist/crane and slings.
- 9. Inspect rigging equipment. Fill out inspection

If any malfunctions are observed STOP USE. Place a lock on the electrical disconnect and notify supervision.



DATE	BY	DATE	BY