

Materials Handling

Materials Handling - Crane Maintenance

On this page

[What should you do when performing maintenance on a crane?](#)

[What should be checked?](#)

[What are some things to remember when performing maintenance on a crane?](#)

What should you do when performing maintenance on a crane?

In general, it is recommended that you follow the crane manufacturer's maintenance guidance. Due to the differences in cranes, specific maintenance recommendations may apply to your make and model. This tip sheet provides general guidance that may be useful.

- Use and follow maintenance checklists that include critical safety components as specified by the manufacturer, professional engineer and/or your company's requirements.
- Inspect the crane as often as required – pre-operation, daily, weekly, monthly, annually and periodically as specified by the manufacturer.
- Document all findings clearly in the maintenance logbook, including all tests, repairs, modifications, and maintenance.
- Keep the logbook with the crane.
- Have the crane certified by a professional engineer as required, including the structural, mechanical and control systems.
- Perform the inspection while the engine is off and then again when the engine is on. Engine off checks help to find any obvious problems and correct them before starting the engine and possibly harming others.

What should be checked?

Refer to the manufacturer's guidance about what parts of the crane need to be maintained and how often. The OSH Answers fact sheet [Materials Handling - Crane Pre-operation Inspection](#) provides guidance on inspecting the crane before use. Some things to check for are:

- Brakes
- Limit switches
- Wire rope
- Bumpers
- Load hook
- Electrical systems and wiring

Wire rope

- Check all sides of the wire for reduction in diameter, broken wires, kinking, cutting, crushing, or other damage.
- Lower the hoist to unload the rope sheaves.
- Unwind all wire rope from the hoist drum to expose all parts of the rope, making sure that the rope does not rewind in the reverse direction.
- Inspect sheaves, sockets, dead-ends, thimble joints, and all wire rope hardware.
- Check that the sheaves rotate freely and smoothly. Look for worn bearings, broken flanges, proper groove size, smoothness, and contour.
- Inspect all parts of the cable, cleaning wire rope only as required to complete an inspection. Excessive removal of lubrication will lead to damage. If cleaning, use appropriate tools intended for use with wire ropes.
- Re-lubricate rope to prevent corrosion, wear, friction, and drying out of the core.
- Check for ropes that may have been operated dry (unlubricated). Replace dry ropes. There may be hidden damage that is not detected by visual inspection.
- Compare the rope length and diameter with the original dimensions. Lengthening accompanied by diameter reduction is often an indication of interior core defects.
- Rope conditions that may call for replacement, based on discretion, include corrosion, multiple broken wires in a strand, kinking, discolouration (possible heat damage), and broken wire that protrudes from the core.
- Check the hook for wear, bending, twisting, or cracks. Safety catches should be in place, operate properly, and the hook nuts should be tight. Replace when there is more than 10% wear on the hook.

Establish a schedule of rope replacement to change wire rope before it breaks and according to the manufacturer's specifications. Periodic replacements do not take the place of inspections. If the rope breaks or inspections reveal abnormal wire breakage or defects, reduce the time between replacements. Do not make wire rope slings from used wire rope.

Crane structure and accessories

- Visually, ultrasonically, or by other methods, examine the crane structure for deformed, cracked, or corroded members in the structure and boom.
- Check that the capacity markings are present.
- Check for loose bolts or rivets.
- Check for excessive wear on brake and clutch system parts.
- Check for deformed wedges.
- Check for defective cotter keys, pins and guardrails.
- Ensure all mechanical components of the crane are in good working order (such as the gearbox, hydraulics, etc.).

Hydraulic systems

- Check for deterioration or leaks in air or hydraulic systems.
- Check for safe and effective operation of hoses, pumps, and motors.
- Check levels of fluid.
- Check air cleaners for replacement or cleaning.

Control mechanisms and monitoring devices

- Check all control mechanisms such as cables, brakes and levers for poor adjustment or excessive wear.
- Check the accuracy of marking on the load/radius indicator over the full range.
- Check for proper operation of the load moment indicator, boom angle indicator, boom length indicator and anti-two-block system according to the manufacturer's manual.

If any checks reveal defects, the crane should be taken out of service until repairs are made. An engineer may need to recertify the equipment as being safe for use. The actual inspections and maintenance that should be performed may be different from those mentioned above - always refer to guidance from the crane manufacturer.

What are some things to remember when performing maintenance on a crane?

- Enter all service inspections and repairs in a crane logbook.
- Ensure that all controls are placed in the "off" position. Use [lockout/tag out](#) procedures as appropriate, including putting a standard warning tag stating "DO NOT START." on the switch. The tag must be filled out and signed. Other measures may include placing rail stops or making other safety provisions.
- Use [fall protection](#) equipment if working at heights.
- Do not carry anything in your hands when going up and down ladders. Items that are too large to go into pockets or belts should be lifted or lowered separately.
- Prevent loose parts or tools from falling to the floor or on other workers.
- The area below the crane must be cleared, and a barrier erected to prevent injury from a falling object.
- Replace all guards and other safety devices before placing the crane back in service.
- Remove all stops, tools, loose parts and other materials as you complete the repair job.
- Keep your equipment clean, including batteries, cab and windows, wheels and tracks, deck, and car body.
- Take appropriate measures when working with chemicals such as lubricants and fluids (for example, wear suitable gloves and eye protection).
- Use proper techniques and other good [general practices](#) when lifting loads to prevent [back](#) and other injuries.
- Use [appropriate equipment](#) when it is necessary to lift or move heavy loads.
- Use gloves that provide protection from abrasion and cuts when needed.

Fact sheet last revised: 2025-06-23

Disclaimer

Although every effort is made to ensure the accuracy, currency and completeness of the information, CCOHS does not guarantee, warrant, represent or undertake that the information provided is correct, accurate or current. CCOHS is not liable for any loss, claim, or demand arising directly or indirectly from any use or reliance upon the information.