

Crawler Cranes

Definition: A crawler crane consists of an upper carriage mounted on a crawler type undercarriage. The upper deck and attachments rotate 360°. A crawler crane features either a box or a lattice type straight boom and it may be equipped with an optional jib (boom extension).

At the end of the boom and/or jib is a wire rope suspended implement such as a grapple, clamshell, crane hook, or electric magnet.

Crawler cranes are implemented for many applications and are therefore exposed to a wide range of external hazards during normal operation, not only to the operator but also to the maintenance personnel and others nearby.

Primary Hazards

Falling and ejected objects

Slipping and falling

Cutting

Pinching and crushing

Burning and explosions

Safety Solutions

Wearing personal protective equipment

Pre-startup inspections

Scheduled inspections and maintenance

Safe operating and working procedures

Employee safety training

Operator and maintenance training

Pre-Start Up Procedures and Inspections

Ensure that the operator is properly trained and certified to operate the equipment

Only authorized personnel may operate the crawler crane

The crane operator must be mentally and physically fit, have good vision, spatial perception, adequate hearing and quick reaction times (response)

The operator must always adhere to the guidelines for the appropriate use of the crane. The crane can pose a hazard if these safety practices and the instructions in the instruction and safety manual operating are not adhered to at all times

The operator must be completely familiar with the layout and operation of all controls

The operator must know precisely the crawler crane's capabilities and limitations

The operator must be familiar and trained on all electronic overload and warning features of the crawler crane

Identify the clear and safe approach to the crane

Perform a daily walk around inspection of the equipment and jobsite surroundings

Check for secured pin and bolt connections, wear and tear items, hydraulic and fuel leaks, any structural damage and the presence of all safety devices

Pay attention to obvious maintenance deficiencies including but not limited to clogged radiator and cooler cores, combustion air intake system, frayed or otherwise damaged hoses, hose assemblies, or leaking hydraulic lines

Never attempt to operate a defective or damaged crawler crane

Access the crane using a three-point stance on ladders and steps

Perform inspections and checks prior to every shift change and as outlined in the manufacturer's instruction manual

Verify that all maintenance has been completed and documented

Ensure that all doors are unlocked but closed and secured

Ensure that all windows and mirrors are clean and not obstructed. Mirrors must be properly positioned for best visibility

Adjust the seat and armrests to the most comfortable operating position

Ensure that the area of operation is clear of personnel and obstructions

Ensure that other personnel is aware that the crane has started and the operation commences

Operate crane only outdoors or in a well-ventilated interior space

Starting and Operating the Crawler Crane

Maintain good communications and visibility at all times

Use one of the following signals to alert all personnel in the area of the impending crane operation

Sound the horn twice

Energize the beacon or flasher light (if applicable)

Never allow any other person on or near the crawler crane during operation

A signal-person should be provided if the crane operates in a confined area with limited visibility. The signal-person should remain out of reach of the crane at all times

Test and verify radio contact to the crane operator

Keep the cab and control levers and pedals clean and do not place drinking cups or magazines on controls and/or control panels

Do not store tools or equipment in the cab

Start the engine as specified by the manufacturer and allow the systems such as coolant and hydraulic fluid to warm up to operating temperatures

Test all crane functions including, but not limited to, boom hoist, winch and brake systems

Check and adjust the overload warning devices of the crane as outlined in the manufacturer's instruction manual

During operation always proceed carefully with sufficient clearance to power lines and other obstructions

Know the weight, dimensions and center of gravity of the load to be lifted

Ensure the loading slings chains or wire ropes are in good working condition and have the required lifting capacity

Place the crane in the proper working position and assure that you work within the crane's capabilities at all times

Use slow and progressive joystick movements when operating under load conditions

Allow plenty of time and space for stopping the movement of a load

Be aware at all times of the strength and shifting wind forces. Lower the load and shut the crane down if the maximum permitted wind velocity has been reached

Shut-Down Procedure

Park the crane on firm and level ground

Lower the suspended load to the ground. Never leave a load suspended from the boom/ jib over an extended period of time or while the crane is parked

Lower the attachment as outlined in the manufacturer's instruction manual

Gradually reduce the engine speed and idle it for three minutes prior to shut-off

Shut and secure windows and covers and lock doors

Climb down facing the crane using a three-point stance

Remove the battery disconnect switch (if applicable)

Maintenance Procedure

Always follow the manufacturer's scheduled and preventive maintenance, and inspection procedures and instructions

Prior to any maintenance and/or repair service follow the proper lock-out / tag-out procedure

Only properly trained and qualified mechanics/technicians should attempt repairs

When servicing the crane or attachments, never use hands and/or fingers to align bolts or pins

Always use the appropriate tools to service the equipment and always wear personal protective equipment (PPE) as required by OSHA and local jobsite regulations

Visitor/Vendor/Supplier Alert

Post safety signs that inform of all jobsite hazards

Inform visitors, vendors and suppliers to maintain the proper and safe distance from operational equipment, especially in the loading and unloading area

Instruct truck drivers to leave their cab and to proceed to a designated safe area

General Safety Instructions

Make the crane operator aware of the dangers and risks involved with the operation of his crane

Train every employee what each warning signal or audible alarm represents

Identify potential areas where flying debris may occur

Frequently check the placement of safety signs, make certain they are legible and complete. Replace missing or illegible safety signs at once

Adhere fully to the instructions on the safety signs

Identify and cordon off or mark specific areas that are prohibited to enter during operation

Ensure that trip and fall hazards are kept out of drive and walk ways

Always follow good housekeeping procedures

No one is permitted to stay underneath the crane or attachment when being serviced