

Subject: Electrical Contact Incident Involving a Grove Crane Model (), Serial Number ()
D/I: (Date of Incident)
Owner: (Owner)

Be advised that when the crane came into contact with an overhead energized electrical power line, electricity entering the crane at the point(s) of contact would have energized every conductive part of the crane and flowed through the crane to points wherever it could escape the crane and enter the earth (ground). High voltage and current flowing through components could have damaged the crane. Therefore, below are some items that we recommend be inspected and check. It is imperative for you to ensure that all damages are repaired and that the crane is functioning properly before it is returned to lifting service.

Begin by inspecting the outer surfaces of the crane's boom and hoisting cable in the area(s) where the contact with the electrical current likely occurred. Look for evidence of arcing, melting, heat damage and/or discoloration as tell-tale signs of contact to determine where the electricity entered into the crane. Then, from the point of contact, work your way down towards the point(s) where the electricity exited the crane. It is along and throughout this "pathway" that any damage to the crane and its appurtenances is likely. Follow the steps below.

1. Inspect the boom, including its extension/retraction mechanisms and wear pads, for any signs or arcing, melting or heat or other damage such as oil leaks which may indicate that internal parts of hydraulic cylinders have sustained damage. Repair or replace components, as necessary. If there is evidence of arcing or discoloration of the boom or other structural members, contact Manitowoc Crane CARE for advice relative to repair or replacement before proceeding.
2. Inspect the crane's wire rope (i.e., hoisting cable). Should inspection of the wire rope reveal evidence of contact with an electrical power source, the wire rope shall be replaced.
3. Inspect the wiring leading to the crane's engine and electrical components. Also, check all lights, indicators, buzzers, horns, relays and other electrically operated or controlled components (e.g., electric solenoid operated hydraulic valves, etc.)
4. Inspect and check all electronic equipment (e.g., load moment indicator system, anti-two block system, etc.). Verify that all equipment operates properly and accurately.
5. Check the; crane's swing system while in operation watching for unusual movements and listening for any abnormal sounds emanating from the swing-drive gearbox, swing brake and/or the swing (turntable) bearing. If any abnormal movements or noise is evident, consult Manitowoc Crane CARE for advice relative to repair or replacement before proceeding.
6. Check the crane's hoist(s) while in operation watching for unusual drum movements and listening for any abnormal sounds emanating from the drive and brake mechanisms. If any abnormal movements or noise is evident, consult Manitowoc Crane CARE for advice relative to repair or replacement before proceeding.
7. Inspect all hydraulic cylinders for evidence or arcing, discoloration or leaking caused by high temperatures; cycle-test all cylinders to ensure they function properly.
8. Inspect all braided hoses for melting, discoloration or other damages. If damage is observed, the damaged hose(s) must be removed and replaced.

9. Perform complete hydraulic pressure testing to ensure pressures are within ranges as outlined in the Service Manual for the crane.
10. Inspect all tires and wheels for evidence of electrical arcing, cracking, melting, heat damage or discoloration. Replace tires showing evidence of melting, puncture or other electrical "tracking" damage.
11. Thoroughly evaluate the functionality of the axle assemblies, the braking system shall be tested to ensure proper performance.

Should your inspection reveal any abnormality or evidence of damage not covered in steps 1 through 11, above, please provide photographs of the damages and consult with Manitowoc Crane CARE about the nature and extent of such damages and the need for repairs or replacement of components as may be necessary to repair the crane.

We wish to remind you, and your customer, of the importance of keeping Grove cranes at least 20 feet away from electrical power lines carrying up to 50,000 volts and greater distances for higher voltages. Also, we wish to remind you and your customer, of the importance of ensuring that the load capacity charts and Operator's and Safety manuals are maintained within the operator's cabs where they are readily accessible to operators.

Additionally, following authorized repairs to major structures of the crane as may be found necessary, Manitowoc Crane Group recommends that the crane be thoroughly inspected and tested by a third party crane inspection and certification agency recognized by the U.S. Department of Labor prior to it being returned to lifting service.

Manitowoc Crane Group is committed to providing its customers, crane owners, and operators safe and reliable products. In furtherance of this commitment and to assist our customers in complying with OSHA regulations concerning crane ownership and operation, specifically section 29CFR1926.550(a)(1) & (16), Manitowoc Crane Group must take the position that all modifications and additions to Grove cranes must be authorized by the Manitowoc Crane Group. Additionally, all parts and materials used on Grove cranes must meet the Manitowoc Crane Group tolerances and specifications. Any modifications, additions or parts which violate this policy will be unauthorized and will jeopardize the crane's safety and reliability rendering the load capacity charts supplied by the Manitowoc Crane Group to be ineffective.

If we may be of any further assistance, please feel free to contact us at your convenience.