

U.S. Department of Labor
Mine Safety and Health Administration
Protecting Miners' Safety and Health Since 1978

CRANE TURRET BEARING FASTENER SAFETY

Mobile crane accidents have occurred in the mining industry when the turret or slew bearing suddenly detached from the base of the crane as a result of bolt fastener and bearing race failures. These mounting fasteners typically consist of high strength bolts, hardened flat-washers and/or high strength nuts when through-bolts are used. Proper torque on the fasteners must be maintained to prevent possible bolt fatigue and bearing deflections, which could cause the bolts or bearing to fail unexpectedly. Failure to maintain these fasteners can lead to catastrophic fastener or bearing failure resulting in loss of life, bodily injury and equipment destruction.



Follow these best practices when maintaining fasteners:

- Consult the equipment manuals to identify the specified mounting fasteners, fastener re-torque values, and fastener re-torque intervals.
- Periodically inspect the bearing and mounting fasteners for damage and re-torque the fasteners as specified by the equipment manufacturer. Maintain proper torque on the fasteners to prevent possible bolt fatigue and bearing deflections, which could cause the bolts or bearing to fail unexpectedly and catastrophically.
- Document fastener inspection and any maintenance performed.
- Replace any damaged fasteners with fasteners that meet the equipment manufacturer's specifications.
- If the equipment has been involved in an overloaded condition or damaged in an accident, before returning the equipment to service thoroughly examine the machine and fasteners. Check the fasteners for proper torque.

Turret bearings are also used on any equipment that has a rotating superstructure and stationary carrier, which includes excavators. Fastener and bearing failures can be minimized by properly inspecting and maintaining the bearing mounting fasteners.