

October 1, 2014

Safety Notice

On July 13, 2014 we had an accident on a jobsite involving a Columbus McKinnon (CM) half ton chain hoist. One of the two bolts that secures the swivel hook suspension to the hoist body failed. Next the suspension itself failed, dropping the load. Fortunately no one was injured.

In response to the accident, we engaged Exponent, Inc., a highly respected national engineering firm to investigate the cause of the accident, and concurrently had extensive communication with CM's engineering staff. Exponent provided us with a detailed report of their failure analysis, which we in turn shared with CM.

The summary paragraph from the Exponent's report follows in quotes:

"The most probable failure scenario is that the cast aluminum suspension had bolt holes which were smaller in diameter than the installed bolts. This required the manufacturer to "tap" the bolt holes of the casting during the first installation of the bolts into the electric chain hoist housing. This caused the bolt to be subjected to a combined loading due to the increased angle of the bolt head seating on the suspension bolt hole. In addition the low alloy steel was degraded due to hydrogen embrittlement by the zinc plating. Taken together these events led to the failure of the low alloy steel bolt over time due to the degrading of the locking patch in the captured nut with repeated usage and the subsequent increase in tensile preload on the bolt".

CM has received a full copy of Exponent's report regarding this accident and has responded to us saying that hydrogen embrittlement is not a contributing factor to this failure.

In response to this failure, CM has made the following recommendations, which we are following:

- All half ton hoist suspensions will be inspected, and any that have undersized bolt holes, evidence of threads cut in bolt holes, or cracks will be replaced.
- All half ton suspension bolts will be replaced. Going forward, all suspension bolts will only be used once. Bolts will not be re-torqued. Anytime we change a hoist suspension, we will replace the bolts.
- All suspension bolts will be torqued per CM recommendations.
- Anytime we do a "split case" service on a hoist, we will replace the internal Nylok nuts.

Per the above, we are inspecting and replacing parts as necessary on all our half ton hoists. We will then do the same on all our one and two ton hoists. FYI, there have been no reports of bolt or suspension problems on one and two ton hoists.

CM issued a technical bulletin, which we received electronically on September 23, 2014. We have attached it for your reference. Please contact CM for additional technical information.

Please share this information with others that need to know.

Thank you,

Ed Kish

Kish Rigging, Inc.