**This picture serves as a reminder of why no one should ever stand under a hanging load!**

We can prevent accidents like the one pictured above by performing frequent and periodic inspections on cranes and below-the-hook lifting equipment. Frequent and periodic inspections are defined in ASME B30.20 Below the Hook Lifting Devices, while crane inspections are defined by other industry standards such as CMAA Spec #78. Lifting beams come in many different configurations, but inspections are very similar.

The Frequent Inspection starts with a global review of the beam which looks for obvious material deformation, bent hooks, missing retaining pins, keeper bars, safety signs and manufacturer's labels. Then inspect the hooks or attachment points of the load to the beam:

- Are the hooks bent? If so, they need to be replaced.

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- Are the pins that connect the "J" hooks or other lifting points to the beam in good condition? If there are more than 2-5% obvious indentations, consult the manufacturer about replacements.
- For beams with adjustable lifting points or bails, we must carefully inspect the mechanism that holds the assembly in position.
    - Is there sufficient wear or degradation that would allow the assembly to inadvertently slip out of position during a pick?
    - Are the pins or clips that hold the position in good condition?
- Are the shackles/links/hooks/slings in good condition?
- Are the pins or other retaining devices in place to prevent the load from being released?

During Periodic Inspections, the same inspections as above are performed and recorded for trending data. In addition, the following items are inspected:

- Visually inspect the beam for obvious weld cracks or other signs of deformation. Cracks in structural members would warrant the beam being tagged out of service until repairs can be made. Cracks in spacers or other non-load bearing members need to be evaluated to determine if they would be detrimental to the operation of the beam.
- The bail or bail pin between the crane and the beam should be inspected for obvious wear and excessive indentations. If the beam is made of channel, I-beam or other structural members, checking the straightness of the beam can determine if the beam has been subjected to excessive forces or loads. A simple piece of string pulled taught along the edge of the structural member will quickly determine the difference in the camber and sweep of the lifter. Anything in excess of 3° out of alignment should be investigated.
- Dye-penetrant checks should be performed at the critical loading areas on all hooks or other members that connect the load to the beam. After removing paint, oil, and other debris, this non-destructive test should indicate no cracks in the base metal.

- Dye-penetrant checks should be performed at all structural welds in the bail assembly and the beam. After removing paint, oil, and other debris, this non-destructive test should indicate no cracks in the welds (or in the base metal of the pin.)

The mill duty equipment found in industry is usually designed for severe duty cycles. The inspection criteria and maintenance procedures mentioned are what we at Bushman Equipment have found to be useful in maximizing the longevity of lifting equipment. While required by ASME standards, inspection of all lifting equipment is also a prudent maintenance procedure because it improves the overall productivity and safety of the manufacturing line. Maintaining a regular inspection and maintenance program on lifters will help ensure a long useful life of the lifter and a better return on your investment.

For more information refer to ASME B30.20 standards.

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Milwaukee-based Bushman Equipment, Inc designs and manufactures material handling equipment in three product segments: Below-the-Hook lifting attachments for cranes, including C-Hooks, coil grabs, spreader beams, sheet & plate lifters, lifting tongs and more; Floor-based equipment such as scissors lift tables, upenders, inverters, and transfer cars; *ReNEW* inspection and repair services for our products as well as other brands. The company has its manufacturing plant in Menomonee Falls, WI.

FOR MORE INFORMATION: Contact Bushman at 800-338-7810 or Custinfo@bushman.com.



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