NORTH AMERICAN INDUSTRIES, INC.

Electric Chain or Wire Rope Hoist?

TECHNICAL CRANE REPORT

Consider your application and requirements (such as speed, cost, and precise placement) before choosing a hoist type.

The technology for hoists is always improving. Chain hoists have become more durable, and new hoists are designed with lower headrooms. Currently, both electric chain and wire rope hoists are appropriate for typical factory applications in capacities to 7.5 tons.

Chain hoists...

- lift by the chain passing over a lift-wheel and depositing the chain into a chain container
- require less maintenance
- tolerate greater levels of abuse
- provide more allowance for “side pulling”
- are less expensive
- provide true vertical lift
- are more common for applications below 7.5 tons

Wire rope hoists...

- lift by wrapping cable around a grooved drum
- offer very fast lifting speeds
- offer a wide array of options
- can be rated H-5 (severe duty)
- dominate the market at 10 tons and above

Consider an electric chain hoist up to 7.5 ton capacity for the following:

- 8-10 hours per day use
- 10-20 lifts per hour
- Less than 30 minutes motor on time/hour
- High percentage of lifts at full capacity
- True vertical lift at no extra cost
- High durability at low cost

Both chain and wire rope hoists are rated H-4 (heavy duty) or H-3 (moderate duty). Duty ratings are a better indicator of hoist durability than hoist type (chain or wire rope). Both types of hoist use similar motors, brakes and controls. The main difference between electric chain hoists and wire rope hoists is in the design of the lifting mechanism. Be sure to request an H-4 rating on either hoist type to ensure long life and low maintenance.

What is True Vertical Lift?

“True Vertical Lift” refers to lack of any lateral hook drift as the hook moves vertically throughout the full range of motion. Many wire rope hoists are designed with a single part of cable coming off of the hoist drum, which then is reeved through upper and lower sheaves until it dead ends back on the hoist body. As the hook is raised, the cable spools across the drum causing slight lateral movement of the hook, generally in the range of ¼” lateral movement for every 12” of vertical movement. In most applications, this lateral drift is no problem, however, in a few applications; this lateral movement can result in damage to product, or worse, damage to valuable tools and fixtures. Wire rope hoists are available in both single reeved and double reeved (true vertical lift) configurations. In the lower capacities (below 30 tons) you will often pay a premium for true vertical lift so it is important to understand if you really need this feature. As an alternative to wire rope hoists, all chain hoists provide true vertical lift by the nature of their design, i.e. a chain passing over a lift wheel rather than spooling across a rope drum. Chain hoists are generally available in capacities up to 20 tons and may represent an economically attractive alternative to wire rope hoists. *Your sales engineer at North American Industries can advise on the best hoist for your application.*