

# Use and Maintenance of Air Hoists

Most of us are very familiar with the ins and outs of electric hoists. When it comes to air hoists we have a tendency to think of them as very different.

Air hoists are essentially the same as electric hoists, at least mechanically. The major difference is that all power to operate these units typically comes from large air compressors.

Air hoist customers typically work in different job locations than do electric hoist customers. Electric hoist customers work on the outsides of high-rise buildings. Air hoist customers work inside of oil tanks, grain silos, and under bridges.

Many times air hoists are chosen for the job for one of two reasons. The number one reason why an air hoist would be selected for a particular jobsite is something called "explosive atmospheres".

Jobsites that have been characterized as having a potentially explosive atmosphere need equipment that will not produce a spark. Since all power for these hoists is derived from air and not electricity, there is no spark. Sparks inside of a petrochemical refinery or a grain silo could be disastrous.

The number two reason for selecting air hoists for the work is that there is no other readily available power source. Consider the large bridges in many cities today. Bridges were equipped with electricity for airplane warning light systems and yet they do not have a sufficient number of power outlets for suspended scaffolding.

Sometimes air hoists are chosen because of the trade that is using the equipment. Painters/sandblasters use large air compressors to do the work they were hired for. Since they already bring a compressor to the job for their sandblasters, air is convenient.

## Dirty Environments

Air hoists in the field typically appear very dirty. One reason for the dirt that accumulates on the outside of a hoist, is the environment that it is being used in.

Oil refineries, silos, incinerators and smokestacks are not the cleanest of environments to start with. Many times the customer is going in to these environments to clean and refurbish the surfaces of these locations.

Parts of this refurbishment process involve sandblasting or pressure washing. Then to finish this process some aerosol coating is applied. All parts of the process involve airborne debris of varying sizes. This airborne debris ends up coating everything in the area, including the hoist.

To understand the second reason why air hoists are dirty when viewed out in field, consider that an air hoist breathes. The air hoist breathes in a mixture of air and oil. It also exhales (exhausts) the same air and oil that it breathes in. As the air/oil mixture is exhausted out of the mufflers of the hoist it also lands on just about everything.

## Maintain, Minimize and Maximize

The three M's of operating air hoists are "Maintain, Minimize, and Maximize."

Maintain the proper CFM, PSI and lubrication rate being supplied to the hoist. A Cubic foot per minute (CFM) is the measurement of air volume being supplied.

Power Climber air hoists require between 40 and 70 CFM to perform normally. This requirement is easily achieved on most jobs, due to the capacity of air compressors used on these jobs. This is a minimal amount of volume when compared to the amount required to sandblast.

A pound per square inch (PSI) is the measurement of air pressure that must be maintained for optimal hoist performance. The range for Power Climber air hoists is between 90-120 psi. This is also easily accomplished with the air compressors commonly used on site.

Maintaining the proper oil lubrication rate is important to the optimal performance of an air hoist. Power Climber air hoists have an oil rate of 6 drops per minute. Viewing the rate in the site dome of the filter/lubricator assembly verifies the rate. It can be adjusted easily with a screwdriver while the hoist is running.

Minimize dirt and debris to make clean ups and repairs easier. By using hoist covers on your air hoists you can minimize the amount of airborne debris that lands on the hoist. You also minimize the amount of debris that you the mechanic will have to remove from the hoist when it comes back to you. By using hoist covers you also minimize the number of labels that will have to be replaced.

Workers in these environments are required to wear respirators. By using hoist covers on air hoists, you are also providing the hoist with a respirator. Since the hoist breathes, it also breathes in some of the airborne debris in the environment. The hoist cover will minimize some of this debris from entering the inner parts of the hoist. This will also minimize the wear on inner parts to the motor.

Minimize the amount of water that is common in compressed air from reaching the hoist. Power Climber air hoists are supplied with a filter/lubricator assembly. The filter portion of this assembly traps and removes water from the airline before the air is mixed with the lubricating oil. It is important to drain the filter at the end of the work shift to minimize the amount of water inside of the air motor.

Maximizing the performance level of an air hoist depends on the completing the first two "M's" of operating air hoists. By maintaining CFM, PSI and oil rate; and minimizing dirt, debris and water you will maximize the performance of your air hoist for many years.



Topic of Interest

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## Did You Know?

- Power Climber makes and sells covers for all the hoists they currently build.
- Air hoists have a special procedure to be store them for months that will help to minimize check out time prior to the busy season.
- Air hoists are very easy to repair, but they have different procedures than electric hoists and some special tools are helpful.

## Tips and Tricks

- Using Power Climber P/N 8-0240 Air Tool will help make anyone rebuilding an air motor very efficient.
- When you order this tool ask for the air motor rebuild instructions.

For questions or comments, contact Customer Service at 1-800-560-CLIMB (2546) or [customerservice@safeworks.com](mailto:customerservice@safeworks.com).

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