

 FACT SHEET

Using compressed air for cleaning

OAR 437 • Division 2/M



Using compressed air for cleaning isn't difficult, but there is more to the task than aiming and shooting. What's surprising is that many employers and their employees still do not know how to clean safely with compressed air.

Compressed air used for cleaning [1910.242(b)] continues to be one of Oregon OSHA's most frequently violated general industry rules in manufacturing workplaces. And it has been for years. The rule states: "Compressed air shall not be used for cleaning purposes, except where reduced to less than 30 psi and then only with effective chip guarding and personal protection equipment."

Employers and employees need to remember the rule's three key points:

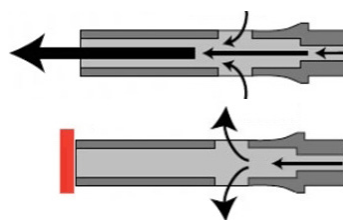
1. The compressed air must be reduced to less than 30 psi at the discharge end of the nozzle.
2. "Effective chip guarding" must prevent chips or other debris from being blown back on the worker.
3. Personal protective equipment appropriate for the cleaning task is required.

The compressed air must be reduced to less than 30 psi at the discharge end of the nozzle.

Let's assume you are blowing filings off a bench grinder with an air gun and the pressure at the nozzle is 90 psi. Some employers think that the only way to reduce the pressure to less than 30 psi is to lower the compressed air line pressure below 30 psi

before it reaches the gun. That's an acceptable practice, but it's not effective for most cleaning tasks.

Today, most safety air gun nozzles have side ports that allow you to clean at higher pressures, such as 90 psi, but do not exceed 30 psi if the nozzle's discharge end is blocked (also called "dead ended"). The side ports prevent the full velocity and force of the compressed air from causing an injury.



If the nozzle tip becomes blocked, all of the main air flow exits through the side ports and the nozzle pressure does not exceed 30 psi.

(Image: Guardair Corporation)

Never clean yourself or your clothes (while you are wearing them) with compressed air and never point an air nozzle at any part of your body or at anyone else — even when you're sure the pressure does not exceed 30 psi.



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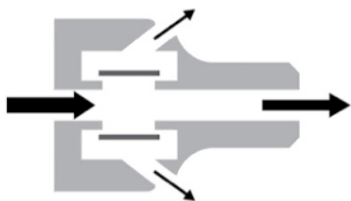
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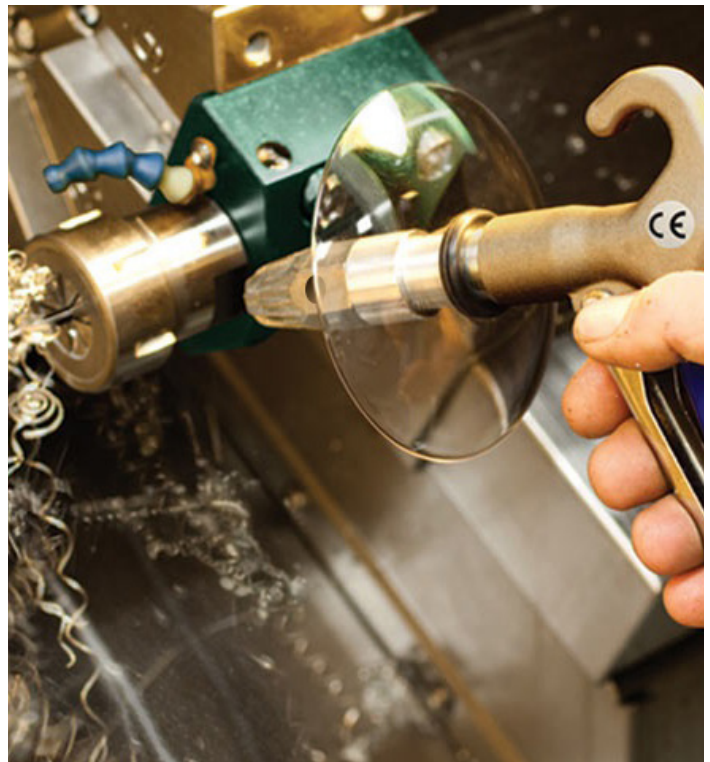
“Effective chip guarding” must prevent chips or other debris from being blown back on the worker.

The pressure necessary to remove the particles from machines and other surfaces is strong enough to blow them into your eyes, ears, or cause abrasions in your skin. Effective chip guarding prevents this from happening.

The chip guard — such as a screen or other barrier — can be part of the air nozzle or a separate item. Some air guns are designed with nozzles that divert a small portion of air to form a protective air cone around the nozzle, reducing or eliminating the chance that particles could fly back toward you.



Nozzle designed with a built-in protective air cone.
(Image: Guardair Corporation)



Personal protective equipment appropriate for the cleaning task is required.

Safety goggles, gloves, and hearing protection are appropriate for most compressed-air cleaning tasks. Safety goggles prevent any stray particles from flying back into the user’s eyes. A good pair of gloves makes any cleaning task easier, and hearing protection is important because cleaning with compressed air can exceed Oregon OSHA’s noise limits. Low-noise safety air guns can also be effective in lowering noise levels.

Depending on the task, other PPE may also be necessary. It’s a good idea to do a PPE hazard assessment to determine what other PPE you might need. A PPE hazard assessment is an evaluation of your workplace that helps you determine what hazards employees are exposed to and what PPE they need to protect themselves. PPE hazard assessments are required for most workplaces.

Why are these requirements important?

Cleaning carelessly with compressed air can cause serious injuries, in addition to eye damage and hearing loss. Compressed air can enter the body through a scratch or small puncture wound and cause swelling and severe pain. If the air gets into the bloodstream, it can cause an air embolism, which can cause symptoms similar to a heart attack or a stroke. Because compressed air usually contains small amounts of oil or dirt, severe infections can also occur when compressed air enters the body. If this happens, seek medical attention.

The Technical Section of Oregon OSHA produced this fact sheet to highlight health and safety programs and rules. The information is intended to supplement the rules and provide best practices to employers.