Compressed Air Safety Awareness

Compressed air is released at high pressures and speeds to power tools, clean, cool and perform other tasks. It creates hazards like noise, flying objects and static electricity. Having a proactive attitude and taking precautions can help keep people safe.

Personal Protective Equipment
The type of personal protective equipment workers need varies depending on what they are doing and what their employer requires. At a minimum, wear safety glasses or goggles to protect the eyes from flying debris and hearing protection from the noise. Ask your supervisor if you have any questions about what to wear or how to make sure it fits properly.

Work Areas
If workers are using compressed air to clean surfaces, cracks and crevices, materials might be blown into their faces. Airborne particles can be breathed in or become lodged in skin and eyes when they move at high speeds.

Suspended dust and debris can also create combustible clouds. Choose processes that produce less dust, use local capture exhausts and clean frequently to avoid combustible dust clouds. Vacuum dust and debris rather than blowing it around.

Tools
Know and respect pressure limits! Choose the right tool for the job. Check the pressure limits and load ratings stamped directly on tools and components. Do NOT use tools that lack ratings or that are shop-made or modified. Choose tools designed for pneumatic systems at the maximum system pressure.

Choosing the wrong socket could shoot off the wrench or shatter, creating dangerous projectiles! For example, bright chrome sockets are not generally recommended for impact wrench use. these types of sockets are typically designed for hardness and wear resistance. Hardened materials can be brittle and can shatter under the stress of an impact wrench. a special socket rated for pneumatic impact is a better choice.

Using Compressed Air
Working safely with compressed air requires you to be mindful of the hazards it poses. High-pressure air can cut skin or be injected into skin, eyes, ears and nostrils. Tires, hoses and containers may burst when overinflated. Remember:

- NEVER point compressed air tools at people
- Choose air guns with PRESSURE-LIMITING features
- LIMITING pressure through the nozzle protects against air injection and damage to system components
- NEVER use compressed air to clean people

Regulators may allow workers to use compressed air to clean equipment and work areas only in specific industries and under specific conditions. For example, in the United States regulators require:

- Operators to set the pressure below a threshold, such as 30 psi or 207 kilopascals
- Operators to ensure controls, such as chip guarding, are in place

The hazard or risk assessment would require everyone in the area to wear appropriate personal protective equipment.

Using manuals and procedures can help workers prevent pressure-related injuries and damage. Isolate people during system pressurization in case something goes wrong. Isolate and bleed systems before beginning maintenance or servicing work on them to avoid a sudden release of pressure.

Be aware of:

- **Airborne particles**. Compressed air can launch airborne particles into the air that you may breathe in, so respiratory protection may be required.
- **Combustible Dust**. Compressed air can create or disturb combustible dust, which can ignite and start a fire or cause an explosion.
- **Skin**. Sharp edges on hose fasteners can cause cuts or scrapes, so choose hose fasteners without sharp edges. High-pressure air can cut, abrade and be injected through the skin. Also, oil mist that is exhausted from pneumatic tools can irritate your skin. Cover your skin with clothing and personal protective equipment for protection from oil
- **Noise**. Compressors and pneumatic tools generate noise that can damage hearing. Wear the hearing protection recommended by your employer and the tool manufacturer. System leaks can cause compressors to run continuously, increasing noise, decreasing compressor lifespan and wasting energy. If you discover a leak, report it to your supervisor
- **Static electricity**. Static electricity is a concern in areas that have the potential for flammable concentrations of gases and vapors. That is why you should not use compressed air to pressurize containers that dispense flammable liquids

After Using Compressed Air

After tasks are complete, workers should tidy their work areas. Some **pneumatic hoses** have quick-disconnect fittings that automatically stop air from flowing. But if they don't, you must turn off the air supply at the **control valve**. This is important because the pressure may be contained within a system even after equipment is off.

Once you’re done using the hose, put it away properly. Hoses can become a tripping or machine entanglement hazard. Hoses on the floor can also be damaged by trucks, doors and dropped tools. Your employer may install air fittings near points of use and overhead hose reels or racks to keep hoses off floors.

Condensate forms when air is pressurized during compressor use. So, use drain valves to drain air tanks regularly. Doing so will prevent system problems such as oil and condensation buildup, freezing water and corrosion.

Tanks also have a **relief valve** to prevent over-pressurization. Follow manufacturer directions when inspecting system components.

Compressed Air Safety Awareness – Supervisor Audit

Use this guide to support your workers after they complete the *Compressed Air Safety* course.

Inspections
Periodically, walk through the areas in which workers use compressed air. Ask yourself:

- Are workers wearing appropriate personal protective equipment? (minimum: safety glasses/goggles and ear protection)
- Is there any dust or potential shrapnel in the area?
- Are hoses stored and are hose ends secured?
- Are hoses, clamps, and connectors in good working order and properly rated?

Follow-up Questions to Ask Workers
After workers complete the training, take time to verify that they understand how what they learned applies to their tasks.

You may ask them:

- Do you have any questions about how to safely work with compressed air?
- Do you understand what protective equipment you need to wear when you work with compressed air?
- Do you know where to find information about pressure limits on components and tools?
- Do you know the pressure limits of the tools and systems with which you work?
- Have you noticed any safety issues with this work area or the tools and systems in it?
- What precautions do you use when cleaning with compressed air? Compressed air should never be used for cleaning people.

Remind workers to tell you if they see any problems. Emphasize that they should remove damaged components or tools and lock and tag them so others can't use them. When using compressed air for area or equipment cleaning, all employees must wear personal protective equipment.

Worker Observation
After workers take the course, observe them to make sure they are working safely. Remember to praise workers for doing a good job, not just point out when there is something wrong.

When you give feedback:

DO:

- Explain your purpose (safety)
- Assume people don't know the risks
- Lead with the positive
- Be timely and specific
- Express concern
- Be personable
- Restate what they say to you
- Thank the person

DON’T:

- Distract workers
- Assume you know what is wrong and how to fix it
- Make it personal
- Be vague/general
- Write while observing