Compressed Air & Pneumatics: Hidden Blast and Impact Hazards Meeting Kit

WHAT'S AT STAKE

Compressed air is one of those tools' workers use every day without thinking much about it. That familiarity is exactly what makes it dangerous. The pressure in a standard shop airline is high enough to penetrate skin, rupture an eardrum, or send a fitting across the room like a projectile. You do not have to misuse it badly to get seriously hurt. A moment of carelessness with a pressurized line is enough.

WHAT'S THE DANGER

Most compressed air incidents happen not because of equipment failure but because workers underestimate what they are working with. The pressure is far higher than it looks or feels.

The most serious risk is air injection. Pointing compressed air directly at skin, even briefly and through clothing, can force air into the bloodstream. This is called an air embolism, and it can be fatal even at pressures that seem low. There is no safe pressure threshold for aiming a pressurized hose at a person. This applies to yourself, to coworkers, and to using it as a cleaning shortcut on your clothing.

Hose and fitting failures are another major hazard that workers tend to underestimate. A hose that separates from its fitting under pressure whips violently, with enough force to fracture bones or cause serious eye injuries to anyone nearby. Fittings that are worn, over-pressurized, or improperly installed can eject suddenly and travel at high speed. This is exactly why inspecting every connection before pressurizing the line is not optional.

Noise and flying debris create risks beyond the person using the tool. Pneumatic tools cause permanent hearing loss without consistent ear protection over time, and blowing compressed air across surfaces sends grit, metal particles, and other debris into the air at high speed. Anyone working in the nearby area, not just the person holding the hose, is at risk from airborne material hitting their eyes or skin.

HOW TO PROTECT YOURSELF

The rules around compressed air exist because the injuries it causes are serious, often permanent, and almost entirely preventable. Follow them every time, not just when a supervisor is watching.

Never Aim Air at a Person

This rule has no exceptions. Not at yourself, not at a coworker as a joke, and not through clothing to knock off dust. Even a brief burst at low pressure can inject air into the bloodstream and cause a fatal embolism with no visible warning beforehand. If you see a coworker doing this, say something immediately. It is not harmless and it is not funny.

Inspect Before You Connect

Check every hose for cracks, cuts, abrasions, kinks, or loose connections before you pressurize the line. A hose that looks fine on the outside may be weakened or compromised internally and still hold long enough to give you a false sense of security. If anything looks worn or damaged, tag it out and replace it before connecting to air. Do not assume someone on the previous shift already checked it.

Before Starting Work

- Match the air pressure to the tool’s rated operating pressure and never exceed it
- Use safety clips or whip checks on all quick-connect fittings before pressurizing

- Inspect every connection point at the start of each shift, not just when something looks wrong
- Bleed and depressurize the line completely before swapping attachments or disconnecting a hose
- Keep the work area clear of people who do not need to be there while air tools are running

Wear the Right PPE

Safety glasses are required any time compressed air is in use nearby, not just when you are the one holding the hose. Particles from blowdown nearby can reach your eyes in a fraction of a second. For extended work with pneumatic tools, ear protection is also required. Make sure your safety glasses are impact-rated for flying debris, not just designed for dust or chemical splash.

FINAL WORD

Compressed air is a powerful tool that deserves the same respect as any other piece of equipment on the job site. Treat it that way every single time, and the injuries associated with it become almost entirely preventable.