Compressed Air & Pneumatics: Hidden Blast and Impact Hazards Stats and Facts



FACTS

- **Air Pressure Danger:** Standard factory air lines operate between 80 and 120 psi — enough pressure to rupture an eardrum, cause serious eye injury, or force air into the body through a minor skin abrasion.
- **Air Embolism Risk:** When compressed air enters the bloodstream through a break in the skin, air bubbles travel toward the heart. If one reaches the heart, it can be fatal — and this hazard exists even at pressures well below normal operating levels.
- **Pneumatic Nail Gun Impact:** Pneumatic nail guns can drive a fastener through a hand, into a bone, or into a critical area of the body, and can discharge unintentionally when a contact trigger is used.
- **Horseplay Kills:** Directing a compressed air hose at a coworker — even as a joke — can result in severe internal trauma, lung damage, or death. A direct blast to the mouth, ear, or an open wound is a recognized cause of fatal workplace injuries.
- **Hose Whip Hazard:** A pressurized air hose that disconnects or ruptures can whip violently, striking workers with enough force to cause fractures, lacerations, and fatal head injuries.
- **Hearing Damage:** Prolonged use of pneumatic tools such as jackhammers, impact wrenches, and grinders exposes workers to noise levels that can cause permanent, irreversible hearing loss.
- **Flying Debris:** Using compressed air to clean equipment or clothing dislodges particles at high velocity. Without chip guarding and proper PPE, these particles become projectiles capable of penetrating the eye and causing permanent vision damage.

STATS

- In 2023, a review of OSHA’s accident search database found that all of the more than 20 workplace incidents related to compressed air and pneumatic terms were fatalities. Proportion-Air
- Pneumatic nail guns are responsible for approximately 37,000 emergency room visits in the United States each year, of which 60 percent are work-related, according to NIOSH. CDC

- Nail gun injuries hospitalize more construction workers than any other tool-related injury in the U.S., according to OSHA, with one study finding 2 out of 5 residential carpenter apprentices injured over a four-year period. Occupational Safety and Health Administration
- The risk of injury is twice as high when using contact trigger nail guns compared to sequential trigger nail guns, according to NIOSH research. CDC
- OSHA standard 29 CFR 1910.242(b) prohibits the use of compressed air for cleaning at pressures exceeding 30 psi at the nozzle, and requires chip guarding and PPE at all times during such operations. Occupational Safety and Health Administration