

MIOSHA Fact Sheet

Dangers of Pneumatic Nail Guns with Contact Triggers



In February 2013, MIOSHA investigated a fatality that occurred at a residential jobsite where a carpenter was framing a wall and ended up shooting himself in the face with a 3-inch nail from a pneumatic nail gun. The carpenter was in an awkward position and using their non-dominant hand to operate the nail gun. The gun appeared to have “double-fired” which allegedly knocked the carpenter off balance. The tip of the nail gun appeared to have contacted their face near the eye area and another nail fired into their head which lodged in their brain. The victim was not wearing eye protection or head protection which may have prevented the nail from entering the victim’s face.

Pneumatic nail gun injuries are very common in the residential construction industry; responsible for nearly 37,000 visits to emergency rooms each year. Most nail gun injuries occur when the gun is equipped with a **contact trigger**. Contact triggers may also be referred to as bump triggers, multi-shot triggers, touch tips, contacts, or bottom fire triggers. Contact triggers allow the gun to discharge a nail anytime the gun’s nose piece and the trigger are pressed. The user can hold the trigger down and **bump fire** the gun repeatedly by simply pushing down on the nose piece. Carpenters prefer using contact triggers because they are faster. However, these types of triggers also make it much easier for the operator to accidentally shoot themselves or anyone standing close by if the nose piece bumps up against someone or something when the trigger is depressed. Injuries often occur when climbing up and down ladders while having your finger on the trigger.

Nail guns with contact triggers are also susceptible to **double firing** which is the firing of a second unwanted nail that can ricochet off the first nail which can strike and injure anyone working in the proximity.

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Full sequential triggers are safer! They force the operator to make two positive actions to fire the nail gun each time a nail is fired. The full sequential trigger will only fire a nail when the controls are activated in a certain order. First, the safety contact tip must be pushed into the work piece and then the operator squeezes the trigger to discharge a nail. Both the safety contact tip and the trigger must be released and activated again to fire a second nail. The operator cannot hold the trigger down and bump fire the nail gun. This greatly reduces the amount of unwanted “double fires” of nails.

Most new pneumatic nail guns come equipped with the full sequential trigger. A contact trigger is a separate attachment that can replace the full sequential trigger. Employees must know and follow the safety guidelines provided by the manufacturers of nail guns and wear the appropriate personal protective equipment to prevent injuries as outlined in the MIOSHA Construction Standard [Part 19, Tools](#) (Part 19). Part 19 pertains to the manufacture, care, and use of tools for construction operations.

General Safety Guidelines for Pneumatic Nail Guns

- Review the owner’s manual carefully with all operators.
- Observe each employee demonstrating safe operating procedures.
- **Always wear safety glasses and a hard hat!**
- Do not touch the trigger unless firing the tool against a work piece.
- Use extreme caution when using an air tool around other workers.
- **Never** point the tool at anyone. Treat the tool like a firearm and assume it is loaded.
- Disconnect the air hose before clearing a jam or making adjustments.
- Use manufacturer’s specified pressures for the tool.
- Keep your free hand safely out of the way of the tool.
- Secure the hose when working on scaffolding to prevent the tool from falling.
- Maintain firm footing and good body position when nailing.
- Encourage reporting and discussion of injuries and close calls.
- Be prepared to provide first aid and medical treatment in case an injury occurs.

For Additional Information

The National Institute for Occupational Safety and Health (NIOSH) and the Occupational Safety and Health Administration (OSHA) issued a publication titled, “**Nail Gun Safety: A Guide for Construction Contractors**” to help alert and provide training to avoid hazards when using nail guns. Go to http://www.osha.gov/Publications/NailgunFinal_508_02_optimized.pdf.

For additional assistance, please contact the Construction Safety and Health Division at 517-284-7680 or the Consultation Education and Training Division at 517- 284-7720. Construction Safety and Health Standards can be viewed on the MIOSHA website at www.michigan.gov/mioshastandards.