

TAKE 5 Powder-Actuated Tools

A 5-Minute Safety Training Aid

HS99-139F (08-24)

Powder-actuated tools, also known as explosive-actuated tools or direct fasteners, are gun-like devices that drive nails, studs, or other specialized fasteners to join materials. These tools use a small chemical propellant charge to create a controlled explosion similar to a firearm. Due to their power and potential hazards, operators should treat powder-actuated tools with the same caution they would a loaded gun.



Safety Precautions

The Occupational Safety and Health Administration (OSHA) outlines the following guidelines for using powder-actuated tools:

- Inspect the tool before each use. Test it daily before loading, following the manufacturer's recommended procedure, to ensure safety devices are functioning properly.
- Ensure tools comply with the American National Standards Institute standard A10.3-1970, Safety Requirements for Explosive-Actuated Fastening Tools.
- Only operate the tool after receiving proper training.
- Avoid using the tool in explosive or flammable environments
- Load the tool only when ready for immediate use.
- Never leave a loaded tool unattended.
- Keep hands clear of the tool's barrel end.
- Never point the tool at anyone.
- Wear proper personal protective equipment (PPE), including safety goggles, ear and face protection, and gloves.
- Ensure the tool's powder level (high- or low-velocity) is appropriate for the task and will not require excessive force.
- Verify that the muzzle end has a protective shield or guard to contain any projected fragments or particles. High-velocity tools must be designed not to fire unless this guard is in place.



In Case of a Misfire

If a misfire occurs, the operator must:

1. Hold the tool in the operating position for at least 15 seconds.
2. Continue to hold the muzzle against the work surface during disassembly or when opening the tool.
3. Carefully remove the powder load.



Applying Fasteners

When applying fasteners, follow these additional safety precautions:

- Avoid fastening into materials that allow pass-through to the other side.
- Do not fasten into hard or brittle materials that may chip or splinter, risking ricochet. Such materials include cast iron, glazed tile, surface-hardened steel, glass block, live rock, face brick, and hollow tile.
- Always use an alignment tool when driving fasteners into existing holes.
- When using a high-velocity tool, maintain a minimum distance of 3 inches from unsupported edges or corners of materials like brick or concrete.



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1-800-252-7031, Option 2

*The Texas Department of Insurance,
Division of Workers' Compensation (DWC)-Workplace Safety*

P.O. Box 12050
Austin, TX 78711-2050

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