

Powder-actuated tools

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Powder-actuated tools, also called direct fasteners and explosive actuated fastening tools, use a small, controlled explosion to drive a nail, stud, or other specialized fastener into a solid base material such as steel, concrete, or masonry. Direct fastening *systems* – which include the powder-actuated tool, a magazine, fasteners, and cartridges – are designed for specific applications. Always use a powder-actuated tool with the system components recommended by the tool manufacturer.

Are powder-actuated tools the same as gas-actuated tools?

No. Gas-actuated tools, also called fuel-powered tools, are powered by a combustible gas propellant stored in a replaceable canister. Powder-actuated tools rely on a powder propellant charge, similar to one that discharges a blank firearm cartridge.

What Oregon OSHA rules apply to powder-actuated tools?

The following Oregon OSHA rules apply to powder-actuated tools:

Construction

- 1926.302(e) – Powder-actuated tools
- 437-003-0925 – Powder-actuated tools

General industry

- 1910.243(d) – Explosive actuated fastening tools

Agriculture

- 437-004-2230(5) – Explosive actuated fastening tools

Requirements for using powder-actuated tools

Training

- Workers must be trained to operate the tool they intend to use.

Testing

- Tools must be tested each day before loading to ensure they are in proper working condition. Use the testing method recommended by the manufacturer.



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Loading and driving fasteners

- Follow the tool manufacturer's operating instructions.
- Use only fasteners, power loads, and accessories recommended by the manufacturer.
- Do not point the tool – loaded or unloaded – at anyone.
- Load the tool just before firing it.
- Do not leave loaded tools unattended.
- Use the lowest velocity tool that will set the fastener.
- Hold the tool perpendicular to the work surface when fastening.
- If the tool misfires, hold it firmly against the work surface for 30 seconds, then follow the manufacturer's instructions for misfires.
- Do not place the tool where unauthorized people could use it.
- When driving fasteners through existing holes, use a guide that ensures the fastener is properly aligned and that is recommended by the manufacturer.
- Do not drive fasteners closer than:
 - One-half inch from the edge of steel unless the manufacturer approves it.
 - Three inches from the unsupported edge of masonry materials unless the manufacturer approves it.
- Do not drive fasteners into:
 - Very hard or brittle material such as cast iron, glazed tile, surface-hardened steel, glass block, live rock, face brick, or hollow tile.
 - Easily penetrated material unless it is backed by another material that will prevent the fasteners from passing completely through the other side.
 - Concrete, unless it is at least three times the penetration depth of the fastener shank.
 - Flaking or brittle material.

Shields and guards

- Use tools only with shields, guards, and attachments recommended by the manufacturer.
- Keep hands clear of the open barrel end.

Personal protective equipment

- Use eye protection when driving fasteners.
- Use hearing protection when driving fasteners in enclosed areas that can intensify noise levels.
- Ensure that personal protective equipment used with powder-actuated tools meets the requirements in 437-003-0134, *Personal Protective Equipment* (for construction) or 437-002-0134, *Personal Protective Equipment* (for general industry).

Explosive and flammable atmospheres

- Do not use powder-actuated tools in explosive or flammable atmospheres.

Defective tools

- Tools that are not working properly must be immediately removed from service and not used until they are repaired.

Inspection

- Inspect the tool daily and before returning it to service to ensure that it is working properly.



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