

39 POWER TOOLS - AIR



Types

Many different types of tools are powered by compressed air. They are fast, powerful, and ideal for repetitive tasks such as nailing large areas of roof decking or chipping and breaking concrete. A compressor, powered by a combustion or electric motor, supplies the air for the tools.

Air-powered tools include the following.

- Jackhammers
- Chipping hammers
- Drills
- Grinders
- Sanders
- Staplers
- Framing nailers
- Wrenches
- Brad nailers
- Winches
- Air nozzles
- Saws
- Buffers
- Impact tools
- Sprayers.

Hazards

Compressed air can be dangerous. Hazards include

Air embolism

This is the most serious hazard, since it can lead to death. If compressed air from a hose or nozzle enters even a tiny cut on the skin, it can form a bubble in the bloodstream—with possibly fatal results.

Physical damage

Compressed air directed at the body can easily cause injuries—including damage to eyes and ear drums.

Flying particles

Compressed air at only 40 pounds per square inch can accelerate debris to well over 70 miles per hour when it is used to blow off dust, metal shavings, or wood chips. These particles then carry enough force to penetrate the skin.

Controls

- Workers must be trained on the air-powered tool they intend to use.
- Run combustion engines outside or in a well-ventilated area to prevent the buildup of carbon monoxide (CO) gas. If running engines in an enclosed area, monitor the levels of CO to prevent overexposure. Always keep a fire extinguisher near flammable liquids.
- When moving compressors to another location, ask for help or use mechanical devices to prevent back injuries.
- Workers may suffer eye injuries when compressed air is used to blow out formwork. Wear safety goggles and respiratory protection.
- Always secure hose connections with wire or safety clips to prevent the hose from whipping—except when automatic cut-off couplers are used.
- Make sure hoses are clear of traffic and pose no tripping hazards. If they must be placed in traffic areas, cover them with plywood to prevent tripping injuries and damage to the hose.
- Replace worn-out absorption pads and springs. Too much vibration of the tool can damage nerves in the fingers, hands, and other body parts. This is called “white finger disease” or Raynaud’s Syndrome.
- Some tools have a high decibel rating—for instance, jackhammers and impact drills. Employers must assess the noise level at the workplace and put appropriate controls in place to prevent hearing loss when workers are exposed to hazardous noise levels. These controls can include the use of hearing protection devices if the noise levels cannot be controlled any other way.

- Never modify safety features, such as tying or wiring the nose contact in the activated position. This action is both dangerous and illegal.
- Keep hands away from discharge area—on nailers in particular.
- Match the speed rating of saw blades, grinding wheels, cut-off wheels, etc. to tool speed. Too fast or too slow a rotation can damage the wheels, release fragments, and injure workers.
- Turn off the pressure to hoses and release any pressure remaining in the system when it is not in use.
- Turn off the air pressure and safety release any pressure remaining in the system before changing pneumatic tools or attachments.
- Never “kink” a hose to stop air flow.

WARNING: Never use air to blow dust or dirt out of work clothes. Compressed air can enter the skin and bloodstream with deadly results.

Most air-powered tools need very little maintenance. At the end of the shift, put a drop of oil in the air inlet and run the tool for a second or two to protect against rust.

Dust, moist air, and corrosive fumes can damage the equipment. An inline regulator filter and lubricator will extend tool life.

Before start-up, check the couplings and fittings, blow out the hose to remove moisture and dirt, and clean the nipple before connecting the tool. Set the air pressure according to the manufacturer's specifications and open gradually.

WARNING: Make sure that air pressure is set at a suitable level for the tool or equipment being used. Before changing or adjusting pneumatic tools, turn off air pressure.