



Southwest Center

FOR AGRICULTURAL HEALTH, INJURY PREVENTION, AND EDUCATION

Shop Safety
Mini Series

Air Compressor Safety

Compressed air is an extremely valuable resource to have in a shop, home, or business environment. Pneumatic power can be used for driving nails, sanding wood, turning bolts, vacuuming cars, blowing dust, and many other tasks.

Oil vs. Oilless Compressors

When purchasing a compressor, one quickly discovers that not all compressors need oil. Some are sealed units that never need oil, which makes them the cheaper of the two. But these units are shorter lived and louder than their counterparts. When using an oiled compressor, always make sure to maintain clean, full oil in the unit.

Gas vs. Electric Compressors

When in a shop environment, an electric compressor is most often used due to its rapid startup, relative quietness, and durability. But when mounted on a skid or truck, generally gasoline driven compressors are employed. When using a gas compressor, always make sure to keep gasoline and oil in approved containers and maintain clean, full oil and gas in the engine and never use them indoors. Some electric motors can be lubricated, and if so, put a few drops of oil in before each use.



Figure 1: Oilless Air Compressor

Photo Source: <https://www.harborfreight.com/1-3-hp-3-gallon-100-psi-oilless-air-compressor-97080.html>

Sound

All compressors, whether gas or electric, oiled or oilless (see figure 1), make a considerable amount of noise. Pneumatic tools are also notoriously loud. Ear protection should always be worn when running any compressor or pneumatic tool.

Moisture

Humidity in the air, when pumped into the compressor's tank, condenses at the bottom. This can rust the inside of the tank, weakening the metal. If water is allowed to sit at the bottom of tanks for long enough, they can rupture violently when pressurized. Drain the compressor at the end of each work day to remove this water. A water separator is recommended to keep water vapor out of the air hoses. Due to its incompressible nature, water in compressed air lines can ruin pneumatic tools and motors.

Air Hoses

Air hoses are usually made of rubber or plastic. When an air hose ruptures, it can whip around, damaging equipment and injuring workers. Because of this, damaged, cracked, worn, or leaking air hoses should not be used. A hose guard valve can also be installed, which shuts off airflow when the hose breaks. Hoses should be rolled up to prevent tripping, and vehicles should not drive over them. Clamps, tape, and other temporary leak fixes should not be employed either.

Pneumatic Tools

Pneumatic tools (a variety shown in figure 2) generate more power than similarly sized electric tools, so be sure to have a good grip on drills and sanders to prevent them from twisting arms. Also, pneumatic tools generally have higher RPMs than electric tools, so keep that in mind when using wire wheels, abrasive discs, or other attachments that have fly apart risks. Always make sure that the bit or wheel has the same or higher rated RPMs as the tool. Pneumatic tools are also very loud, so be sure the muffler packing is in place and in good condition, and hearing protection is used. Never use air pressure over 30 psi for cleaning skin or clothes and never blow compressed air in a person's eyes, mouth, nose, etc.



Figure 2: Air/Pneumatic Power Tools

Photo Source: <https://airtoolresource.com/invaluable-pneumatic-tools/>

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Air Compressor Quiz

1. Hearing protection should be used:
 - a. When using an oilless air compressor
 - b. When using an oiled air compressor
 - c. When using air tools
 - d. All of the above
2. Air compressor tanks should be drained:
 - a. Every month
 - b. Every week
 - c. At the end of each work day
3. An air hose can be used if:
 - a. In good overall condition
 - b. Cracked or weathered
 - c. Cracked or weathered, but repaired
 - d. Both a and c
4. True or false: a gasoline-driven compressor can be used in a building.
 - a. True
 - b. False
5. When using air tools, _____ remove the muffler packing.
 - a. Always
 - b. Never
 - c. Only when more power is needed
 - d. Sometimes

Air Compressor Quiz Key

1. D, All of the above
2. C, At the end of each work day
3. A, In good overall condition
4. B, False
5. B, Never