Lesson #6: Air Compressor Identification and Safety

Objectives

Students will be able to…

- Demonstrate basic compressor operations and safety.

Common Core Standards

LS 11-12.6
RSIT 11-12.2
RLST 11-12.2
Health and Safety 6.0, 6.1, 6.2, 6.3, 6.4, 6.5, 6.6
Responsibility and Flexibility 7.7
Technical Knowledge and Skills 10.0, 10.2
Demonstration and Application 11.1
Cabinetmaking and Wood Products Pathway A 4.1
Residential and Commercial Construction Pathway D2.1, D3.1

Materials

Air Compressor Identification and Safety Worksheet

Lesson Sequence

- Pass out the ***Air Compressor Identification and Safety Worksheet*** to students.
- Complete the Air Compressor components I.D. portion with students gathered around the air Compressor. (20-25 minutes)
- Have students complete the safety questions and then discuss these questions/answers with students (25 minutes)

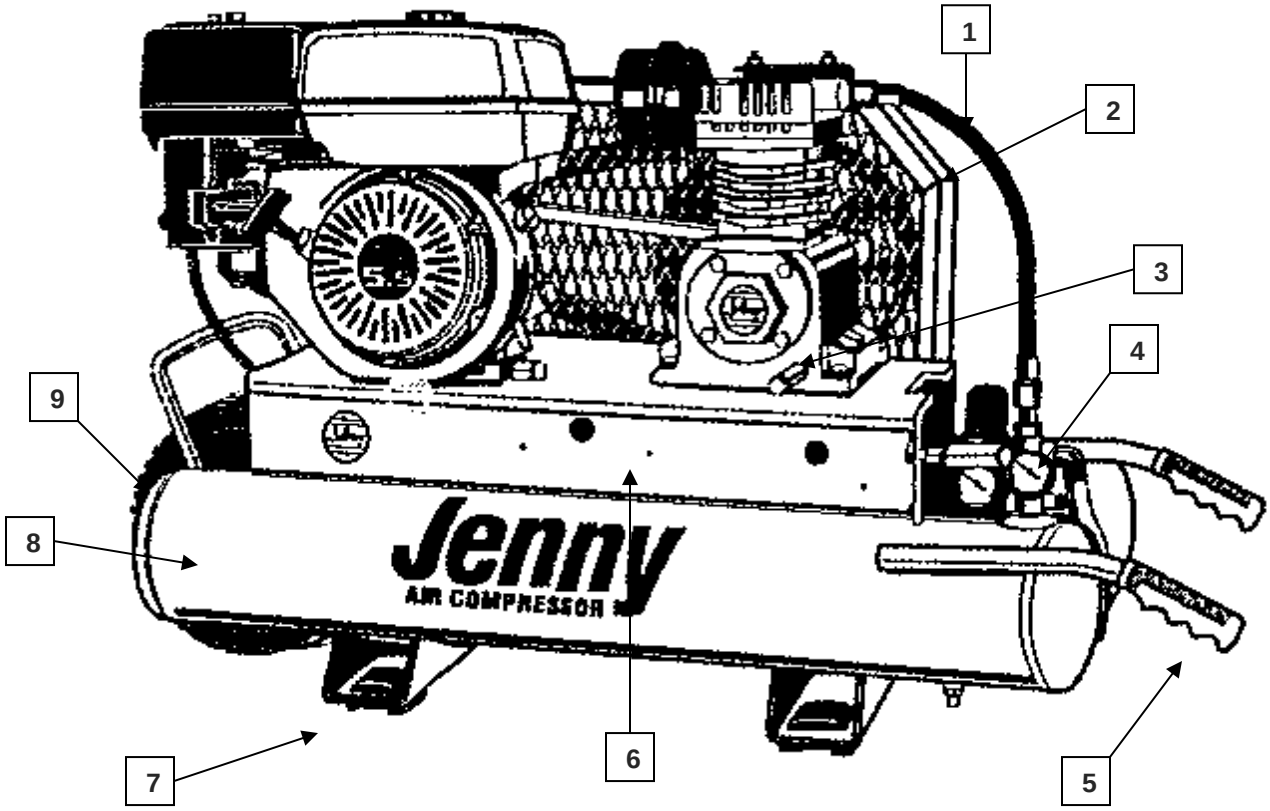
Assessment

Monitor student understanding through questioning. Roam around the classroom questioning students while they are working on the safety questions. Clarify any misconceptions and answer any questions students may have.

Accommodations/Modifications
One on One Support Check for Understanding Partner Students Up as Needed

Air Compressor Identification and Safety Worksheet

Part 1: Identify the numbered parts on the compressor illustrated below.



1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____

Part 2: Safe Operational Procedures

1. **Pre-start check list**
    1. Make sure switch is in the off position.
    2. Check to see that the air tank has been drained. Tank pressure should read -0-.
    3. Check to see that the safety valve is working properly by pulling valve in and out.
    4. Tighten drain valve.
    5. Check oil.
    6. Make sure guards and fittings are in place and secure.

2. **Do's and Don'ts**
    1. Do read the operators manual before you use any power tool.
    2. Make sure that you use the right type of oil, and that the oil is changed every 200 hours.
    3. Don't use the air compressor without a regulator and NEVER exceed the recommended air pressure for the tank.
    4. Don't use the air compressor for inflating small objects, such as toys, footballs, basketballs, or blow-up swimming pools.

3. **Maintenance -** turn off compressor, drain tanks, and let compressor cool off.
    1. Everyday
        - ✓ Check oil
        - ✓ Check for air and oil leaks
        - ✓ Check drain condition
    2. Weekly
        - ✓ Check air filter
        - ✓ Wipe down and clean compressor
    3. Monthly
        - ✓ Check safety relief valve
        - ✓ Change oil
        - ✓ Change air filter

Part 3: General Safety Practices

1. Do not operate air compressor without permission from the instructor.
2. Double check all safe operating procedures before you start.
3. When using an electric compressor, make sure the power source does not meet any water (rain or standing water).
4. When using a gas compressor, make sure the gas container is at least 15 feet away from the compressor.
5. Make sure you use only OSHA approved gas containers and keep them away from any heat source and out of the sun.
6. If you are using a "noisy" air compressor, make sure you are using adequate ear protection.
7. Always disconnect your power tool from the hose when you stop for break, lunch, or any prolonged period that you are not using the air compressor.
7. Check the air hoses and connectors for cuts and damage.

Part 4: Completion Questions

1. The air compressor comes in 2 different kinds of power sources. You can use either a _____ or _____ compressor.

2. You should never use a _____ compressor indoors to avoid_____.

3. The best way to clean up your area after work is with an _____ air nozzle.

4. The _____ is used to adjust the air pressure.

5. Electric air compressors come in either _____ or _____ volt for preference of the owner.

6. Gas containers for the compressor should be _____ or _____, according to OSHA rules.

7. If the compressor keeps running, and won't fill up, the _____ may be open.

8. You can find the appropriate air pressure for a tool in its _____.

Air Compressor Identification and Safety Worksheet - *Answer Key*

Part 1:

1. Air hose
2. Belt guard
3. Pump
4. Gauge
5. Handle assembly
6. Mounting plate
7. Foot
8. Tank
9. Wheel

Part 4:

1. Gas or electric
2. Gas; carbon dioxide poisoning
3. OSHA approved
4. Regulator adjustment knob
5. 110 or 220
6. Metal or plastic
7. Drain valve
8. Operators manual