

## **Air Tools Awareness Syllabus**

**Time:** 8 hours

**Maximum Class Size:** 12

**Prerequisites:** None

### **Course Description:**

Air compressors are used to provide power to a wide variety of tools and equipment. The air is delivered from an air compressor through an air hose to the tool. Operating and maintaining an air compressor can be safe and simple if the correct procedures are followed. Transporting, set-up, pre-start check, proper use, and safe shut down procedures are addressed in this course. Pneumatic tools are powered by compressed air. The tools covered in this course are commonly used for chipping, breaking, and/or drilling concrete, asphalt and rock.

### **Goals/Objectives/Student Learning Outcomes:**

- Identify the following: Air compressor, Hoses & Fittings (Chicago and Dixon), Whip Checks, Oilers, 90# Breakers with chisel,moil point and spade, Rock Drill with bit, Chipping gun with chisel, point and brushing tool, Rivet-buster with point.
- Give examples of at least three tools that are powered by air compressors.
- Identify components of airlines and fittings and demonstrate methods for connecting and securing them to tools and other fittings according to the guidelines of this section.
- List at least three precautions to take when working with a compressor in extreme temperatures.
- Given a set of typical compressor related problems, identify troubleshooting checks with each problem.
- Identify two types of compressors and describe how they are classified.
- List, describe, and demonstrate the four steps to follow when inspecting an air compressor.
- Describe and demonstrate the six steps to follow when starting up an air compressor.
- Describe and demonstrate the four steps to follow when shutting down an air compressor at the end of the shift.
- Describe and demonstrate five safe work practices when using the 90-lb. pavement breaker.
- Give at least two reasons for using an oiler when operating a pavement breaker and describe the consequences of not using the oiler.
- Describe at least one situation where each of the following tools can be used: Chipping gun, Pavement Breaker and Jackhammer.

## Air Tools Awareness Syllabus

- Demonstrate the proper use of an air compressor, a pneumatically operated pavement breaker, and a chipping gun on a concrete structure.
- Complete an exit exam with a score of 80% or above.
- Complete a hands-on "Performance Checklist" for compressor with a score of 80% or above.

### Standards Addressed

- |                               |                               |
|-------------------------------|-------------------------------|
| • CAL/OSHA Standard 1707 (b)  | Power Operated Hand Tools     |
| • OSHA 29 CFR 1926.302 (b):   | Pneumatic Tools               |
| • OSHA 29 CFR 1910.95:        | Occupational Noise Exposure   |
| • OSHA 29 CFR 1926-Subpart E: | Personal Protective Equipment |
| • OSHA 29 CFR 1926-Subpart I: | Tools-Hand and Power          |
| • OSHA 29 CFR 1926.1153:      | Silica                        |

### Classroom Rules and Procedures

- All classes begin at 6:30 am and end at 3:00 pm
- Upon entering classroom, all participants must sign in and be seated by 6:30 am
- Class will consist of a combination of lecture, video, demonstration, coached group exercises, individual exercises and assessment.
- Students are required to report to class ready to work and maintain the provided PPE

### Textbooks/Readings/Materials

- *Pneumatic Tools Operation*- LIUNA Training
- *Air Compressors*-LIUNA Training
- *Hearing Safety*-LIUNA Training
- *Back Injury Prevention*-LIUNA Training
- Tool Identification worksheet
- *Pneumatic Tools Operation* Performance Checklists-2
- *Pneumatic Tools Operation* Exam A or B
- Pneumatic Tools DVD-LIUNA
- 90 lb. Pavement Breaker DVD-LIUNA
- The Jackhammer DVD-LIUNA
- Performance Checklist for *Air Compressor*
- Handout 1a/1b (HO 1a/1b) Air Tools/Pneumatic Bits Identification
- LIUNA Pneumatic Tools Exit Exam & Answer Sheet
- LIUNA Air Compressors Exit Exam & Answer Sheet

## **Air Tools Awareness Syllabus**

### **Tools/Equipment/Other Materials**

- Air compressor, hoses, fittings, whip checks, oilers, 90 lb. breaker, rock drill bit, chipping gun with chisel, rivet-buster with point, Air King, and Bandit.

### **Personal Protective Equipment**

- 12 pairs of gloves
- 12 pairs of safety glasses
- 20 pairs of ear plugs
- 12 hard hats

### **Course Requirements**

To receive credit for the course, participants must:

- Be present for full eight hours
- Participate in all classroom exercises
- Pass a written exam
- Pass a hands-on exam

### **Course Policies**

- Participants must be on-time and ready to work.
- Participants must return from breaks on-time.
- Participants must participate in each exercise and assignment
- Participants who are on “light duty” are not allowed to take this course due to the physically demanding requirements.

### **Assessment and Grading**

Participants will be assessed on the following:

- All written exams must be passed with a score of 80% or above.
- All hands-on exercises are graded on performance and participation. They are pass/fail and must be passed with a score of 80% or above.

### **Safety**

Failure to maintain and use PPE may result in dismissal from the course.