

## Air Tools Syllabus

**Time:** 40 hours

**Maximum Class Size:** 12

**Prerequisites:** None

**Course Description:** Laborers and Apprentices often will use pneumatic tools for the many scopes of work they are required to perform. This course will introduce the participant to the different tools and their uses, the set-up of compressors, and the safety procedures for all operations.

### Goals/Objectives/Student Learning Outcomes:

- Explain the hazards of jobsite noise, how it affects the ear, the health effects of hearing loss and the correct application of ear plugs.
- Describe the health effects of silicosis.
- Set up compressors and hoses
- Safely use a 90-pound pavement breaker, chipping gun, rivet buster, rock drill, trench digger, and backfill tamper.
- Convert U.S. measurements to decimal and calculate the amount of material to be removed with air tools.
- Describe the process for locating utilities
- Describe the process of pot-holing to expose underground utilities.
- Identify the safe procedures for working in trenches.
- Identify the safe procedures for working safely around skip loaders.
- Facilitate compaction procedures focusing on moisture content, lifts, and soil types.

### 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                        |

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### 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

- *Hearing Safety*-LIUNA Training
- *Air Compressors*-LIUNA Training
- *Pneumatic Tools Operation*-LIUNA Training
- *Basic Construction Math*-LIUNA Training
- *Utility Locating Programs*-LIUNA Training
- *Working With Jackhammers*-LIUNA Training
- *Soil Compaction*-LIUNA Training
- *Roadway Construction*-LIUNA Training
- *Portable All Purpose Saw*-LIUNA Training-If needed
- *Trench and Excavations*-LIUNA Training-if needed
- "The 90 Pound Pavement Breaker"-LIUNA Training
- "Plain Talk About Silicosis" Video-Mine and Quarry Division
- "Pneumatic Tools"-DVD-LIUNA Training
- "Dig Alert"-DVD-DigAlert-Underground Service Alert
- "Working With Jackhammers"-Video-LIUNA Training
- "Soils and Compaction"-Video-LIUNA Training
- "How We Hear" photos of cochlea- Howard Leight/Bilsom
- "What Does Noise-Induced Hearing Loss Sound Like?" Brad Witt-Howard Leight/Bilsom
- "U.S. Standard to Decimal Conversion Table"
- "Pneumatic Chipping Hammer Tools"- Delsteel Inc.
- "Coverage for One Cubic Yard of Material Table
- "Air Tools Orientation" exercise
- Handout 1a/1b: Air Tools & Pneumatic Bits Identification Exercise (HO 1a/1b)
- "Safety Data Sheet"-WD40 Company
- OSHA Silica Standard Handout
- Air Tools Hands-On Assessment
- Air Tools written Exit Exam

## Air Tools Syllabus

### Tools/Equipment/Other Materials

- “APT Model 180 Paving Breaker”- American Pneumatic Tool
- “APT Model 155 Rock Drill”- American Pneumatic Tool
- “APT Model 119 Trench Digger”- American Pneumatic Tool
- “APT Model 131 Backfill Tamper”- American Pneumatic Tool
- “APT Model 1133 Rivet Buster”- American Pneumatic Tool
- “APT Model 650 Series Chipping Hammer”- American Pneumatic Tool
- Air compressors, hoses, whip checks, oil reservoirs and other tools.
- 90-pound breakers, backfill tampers, trench diggers, chipping guns, rivet busters, compactors, and rock drills.
- Bits, points, asphalt cutters, shovels, water hoses and other tools.

### Personal Protective Equipment

- 12 pairs of gloves
- 12 pairs of Safety Glasses
- 20 pairs of Ear plugs
- 12 hard hats

### Course Requirements

In order to receive credit for the course, participants must:

- Be present for full forty 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.

## **Air Tools Syllabus**

### **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.