

## Plasma Arc & Oxy Gasoline Cutting Syllabus

**Time:** 16 hours

**Maximum Class Size:** 8

**Prerequisites:** None

**Course Description:** Laborers may be called upon to cut metal using Plasma Arc and Oxy-Gasoline cutting equipment. In this course, participants will learn to don proper PPE and to identify and describe proper use of tools and materials for these scopes of work. The participants will learn how to prevent possible hazardous situations that may arise when using both Plasma Arc and Oxy-Gasoline Cutting equipment. In addition, they will practice setting up, dismantling, cleaning and proper storage of all components of the Plasma Arc and Oxy-Gasoline equipment. Ample time will be given to practice cutting metal using both systems.

### Goals/Objectives/Student Learning Outcomes:

- List 4-6 PPE items needed during plasma arc cutting operations.
- Describe the safety precautions for the plasma arc cutting work area.
- Identify at least 1 hazardous situation that may occur in areas where electrical power is used.
- Describe proper fire protection, precautions and procedures.
- Demonstrate correct set-up, inspection, and ignition of plasma arc torch.
- Demonstrate the safe use of the plasma arc torch by making cuts on scrap metal.
- List 4-6 PPE items, needed during oxy-gasoline cutting operations.
- List 4-6 tools needed during oxy-gasoline cutting operations.
- Describe the safety precautions for the oxy-gasoline torch cutting work area.
- List at least 1 hazardous situation in which oxygen should never be used.
- Describe proper fire protection, precautions and procedures.
- Demonstrate correct set-up, inspection, and ignition of an oxy-gasoline torch.
- Demonstrate the safe use of the oxy-gasoline torch by making cuts on scrap metal.

### Standards

- |                   |                               |
|-------------------|-------------------------------|
| • 29 CFR 1926.21  | Safety Training and Education |
| • 29 CFR 1926.28  | Personal Protective Equipment |
| • 29 CFR 1926.52  | Occupational Noise Exposure   |
| • 29 CFR 1926.150 | Fire Protection               |

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- 29 CFR 1926.151 Fire Prevention
- 29 CFR 1926.152 Flammable and Combustible Liquids
- 29 CFR 1926.350 Oxy-Gasoline Cutting

### 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

- LIUNA Plasma Arc Cutting PG/IG
- LIUNA Personal Protective Equipment PG/IG
- LIUNA Fire Watch PG/IG
- LIUNA Hearing Protection PG/IG
- LIUNA Heat Stress IG/PG
- Hypertherm PowerMax 380 Operator Manual 803980-Revision 1
- Simply Smarter Petrogen Oxy-Gasoline Cutting System Operator Manual
- Miller Spectrum 875 Auto-Line and XT60 Torch Owner's Manual
- Petrogen Oxy-Gasoline Cutting System Getting Started Handout 1
- 29 CFR 1926.102 (A) (5) OSHA Standard for eye and face protection for filter lens shade numbers (See Table E-2 in LIUNA PPE module)
- 20-question Plasma Arc & Oxy-Gasoline Cutting Exit Exam
- Plasma Arc & Oxy Gasoline Cutting Hands-on Evaluation

### Tools/Equipment/Other Materials

- Portable Plasma Arc Cutting unit
- Air-lines
- Torch handles (for both systems)
- Cutting tips (for both systems)
- Petrogen Cutting Torch System
- Oxygen tank
- Gasoline tank
- Regulators
- Striker
- 1" carbon steel plate

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### Personal Protective Equipment

- 10 pairs of leather cutting gloves
- 10 pairs of safety glasses
- 20 pairs of ear plugs
- 10 hard hats
- 10 leather jacket
- 10 leather chaps
- 10 number 5 face shield shade

### Course Requirements

To receive credit for the course, participants must:

- Be present for full sixteen 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.