



Training Solutions, Delivered!

HIGH-IMPACT METAL WORKING

**Leader's Guide, Fact Sheet
& Quiz**

Item Number: 3036

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This easy-to-use Leader's Guide is provided to assist in conducting a successful presentation.

PREPARING FOR THE MEETING

Here are a few suggestions for using this program:

- a) Review the contents of the Fact Sheet that immediately follows this page to familiarize yourself with the program topic and the training points discussed in the program. The Fact Sheet also includes a list of Program Objectives that details the information that participants should learn from watching the program.
- b) If required by your organization, make an attendance record to be signed by each participant to document the training to be conducted.
- c) Prepare the area and equipment to be used for the training. Make sure the watching environment is comfortable and free from outside distractions. Also, ensure that participants can see and hear the TV screen or computer monitor without obstructions.
- d) Make copies of the Review Quiz included at the end of this Leader's Guide to be completed by participants at the conclusion of the presentation. Be aware that the page containing the answers to the quiz comes before the quiz itself, which is on the final page.

CONDUCTING THE PRESENTATION

- a) Begin the meeting by welcoming the participants. Introduce yourself and give each person an opportunity to become acquainted if there are new people joining the training session.
- b) Introduce the program by its title and explain to participants what they are expected to learn as stated in the Program Objectives of the Fact Sheet.
- c) Play the program without interruption. Upon completion, lead discussions about your organization's specific policies regarding the subject matter. Make sure to note any unique hazards associated with the program's topic that participants may encounter while performing their job duties at your facility.
- d) Hand out copies of the review quiz to all of the participants and make sure each one completes it before concluding the training session.

3036 HIGH-IMPACT METAL WORKING FACT SHEET

LENGTH: 19 MINUTES

PROGRAM SYNOPSIS:

Ever since the Industrial Revolution, machines have steadily become more important to modern industry. With this reliance on machines has come the need for better methods to operate them safely. Over the years, safety devices have been added to machines and work procedures designed so that we can work safely. While these safeguards continue to improve, the importance of each machine operator's good attitude toward safety has always stayed the same.

This program re-creates ten industrial accidents involving heavy machinery and metal work to illustrate the necessity of following proper safety procedures and maintaining a good safety sense. The program participant will learn how to safely operate brake presses, grinders, metal cutting shears and other machines.

PROGRAM OBJECTIVES:

After watching the video, the viewer will be able to identify the following:

- The essential safety rules for operating all machines;
- How to safely use grinders, press brakes, the universal iron worker, metal cutting shears, cranes and other machinery;
- The correct work procedures for sanding and welding operations.

INSTRUCTIONAL CONTENT:

The following four points are stressed to the viewer throughout the program:

- 1) Understand the machine's operations and the potential hazards involved;
- 2) Acquire proper training and authorization before operating any tool or machine;
- 3) Always wear the correct personal protective equipment and clothing for the job;
- 4) Follow safe operating procedures at all times and protect yourself from the machine's actions.

USING SAWS SAFELY

- Don't work too closely to a saw blade's cutting action; an accident will occur eventually.
- Never operate a saw (or any machine) that has had the guard removed.
- Make sure that the guard is operating properly.
- Keep the blade from binding against the side of the work to avoid injury.

PRESS BRAKES

- Sometimes called a brake press or bending brake, the press brake is a powerful machine that has the ability to mangle or amputate fingers and hands.
- It is important to concentrate completely on the work when using the press brake.
- Consult the operator's manual for safe operating procedures for each type of press brake.
- While removing a long sheet of metal that must be held during forming, withdraw it whenever possible from the front of the die.
- Use your hands to support the sheet only if it is necessary and keep them out of the path of the piece being formed.
- Use suction cups, tongs or other devices to keep your hands away from the action during the insertion and removal of stock.
- Use the back gauge stops to hold the parts aligned correctly; never adjust the back gauge by reaching through the dies or tooling.
- Make sure the foot control is properly placed and cannot be accidentally activated.

THE UNIVERSAL IRON WORKER

- The universal iron worker is a combination tool that is useful in performing cutting, shearing and punching operations.

- Always wear safety glasses, a hard-hat and other required PPE when operating one of these machines.
- Make sure that the die set is properly sized and in good condition before installing it on the worker.
- Before punching holes with the worker, make sure the dies are seated properly and matched correctly.
- Have an assistant help you or use material supports to handle long pieces while shearing with the worker.

METAL CUTTING SHEARS

- There are four main areas of concern when using metal cutting shears: body contact with blades or hold-downs, pinch points, cuts and abrasions from handling material, and body strains.
- Understand the functions of the machine and make sure all guards are in place and adequate for the job.
- Make sure the blades are sharp and that proper clearance is maintained.
- Keep work area clean and the shear table free of material and loose machinery.
- Wear clothing that fits your body closely and use all required PPE.
- When the work is complete, make sure the power is off and that the controls are inoperative.

USING GRINDERS SAFELY

- Before using any grinder, make sure it's safe to operate and that you are wearing your personal protective gear.
- Perform a ring test before mounting any grinding wheel.
- Make sure the glass shield is clean, there is ample light to see the work, and the speed is correct for the mounted wheel.
- The wheel should be evenly dressed with a star dresser to insure the wheel is true.

SANDING

- A ripped, torn or damaged belt is the most common cause of sanding accidents.
- Make sure the belt is in good condition as well as running in the right direction and at the rated speed.
- Make sure the guards are in good condition and in place.
- When off-sanding, always use a firm grip and be aware of sharp corners that can snag and pull the part from your hand or throw it into a co-worker.

HOISTS AND CRANES

- You must be trained and authorized to operate any crane or hoist.
- Make sure the area is clear of people and obstructions before attempting the job.
- Inspect all equipment for safe operating condition.
- To avoid side pulls, be sure the crane and hook are centered over the load and then balance it.
- Sound any alarms to warn others that you're about to begin moving the load.
- Control the swing to prevent damage to property and injury to co-workers.

WELDING AND CUTTING

- You must be trained and authorized before welding; you must also obtain the proper permit for the job.
- The type of welding to be done, the area in which you intend to weld, and what kind of safety equipment is required determines the appropriate permit.
- Good housekeeping can prevent sparks caused by the welding from igniting debris in the area.
- Follow all company policies and safety procedures during the welding process.

GENERAL SAFETY TIPS

- Be aware that loose clothing, jewelry, long hair and even gloves can be pulled into the action of many machines.
- When we are angry or upset, we must control our emotions so that we can control the hazards of the machinery we operate.
- Coated abrasives used in sanding, grinding and polishing operations pose these hazards: dust/vapors, breaking belts/disks, fire/explosion, personal contact and flying particles.

HIGH-IMPACT METAL WORKING

ANSWERS TO THE REVIEW QUIZ

1. c

2. b

3. e

4. b

5. b

6. a

7. d

HIGH-IMPACT METAL WORKING
REVIEW QUIZ

The following questions are provided to determine how well you understand the information presented in this program.

Name _____ Date _____

1. Which of the following is NOT one to the four safety points stressed throughout the program?
 - a. Understand the machine's operations and the potential hazards involved.
 - b. Always wear the correct personal protective equipment and clothing for the job.
 - c. Lockout the power to all machines when not in use.
 - d. Acquire proper training and authorization before operating any tool or machine.
2. What causes most sanding accidents?
 - a. The sander belt running in the wrong direction
 - b. A damaged belt
 - c. Not putting the guards in place
 - d. The belt running at an incorrect speed
3. Which of the following must you have before a welding operation begins?
 - a. The appropriate training and authorization
 - b. A welding (hot work) permit
 - c. A pair of safety goggles
 - d. A permission from the fire department
 - e. Both answers a and b
4. What should the maintenance worker who was struck in the face while grinding done to prevent the accident?
 - a. Taken off his safety glasses so he could see the work better
 - b. Performed a ring test before mounting the grinding wheel
 - c. Used a sander to smooth the brace he was working on
5. The worker who killed his fellow employee with the load of a crane _____.
 - a. Wasn't wearing the proper head protection
 - b. Didn't check to see if the work area was clear of people or obstructions
 - d. Lifted the load too high
6. Which of the following is not a main cause of the accidents in the program?
 - a. Using faulty power cords
 - b. Failure to use the machine's guard
 - c. Working too closely to the machine's action
 - d. Failure to wear the proper personal protective equipment
7. The universal iron worker is useful in performing which of the following jobs?
 - a. Cutting
 - b. Shearing
 - c. Punching
 - d. All of the above