

HSEQ Work Instruction

Safe Use of Angle Grinders/Cutters

08-HSEQ-I-G	
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Objective and Scope of Application

The objective of this Work Instruction is to bring together, in a single reference document, all the safety requirements associated with the use of hand-held angle grinders/cutters.

The various requirements associated with the use of hand-held angle grinders/cutters mainly concern:

- The need for employees and contractors to fully understand the risks associated with this dangerous tool;
- The safety features of the tool so that all hand-held grinders/cutters used at our sites meet a predefined minimum standard;
- The knowledge and skills of the users and of those who supervise them so that the best use practices are applied;
- Maintenance management so that the tools are maintained in a condition that guarantees their safe use.

This Work Instruction applies to all individuals who use angle grinders/cutters and to those who supervise them (including employees and contractors) throughout RTM sites.

Requirements

Features of hand-held angle grinders/cutters

- All hand-held angle grinders/cutters are CalOSHA and MSHA approved and are equipped with a safety switch (switch that must be kept pressed in order to operate the tool – dead man's switch).
- The stabilizing handle must never be removed to ensure two-handed use.
- Guards are in place, are in front of the handle, and meet CalOSHA and MSHA requirements.
- Hand-held angle grinders/cutters have a name plate RPM. Ensure discs used are rated for the RPM of the tool.
- Two additional safety features required for angle grinders
 - Mechanical brakes;
 - Safety recoil clutch (kick-back)

User Skills

Site authorities and contractors must make sure that all individuals likely to use angle grinders are recognized as competent.

- All users must have completed competency training (web-based and observed hands-on operation).
- Verification and confirmation of the skills will be performed every three years
- All users must have the knowledge and ability to complete a pre task risk assessment prior to using this tool
- Compliance with the safe use of angle grinders must be measure periodically through observations and interactions by site authorities

Personal Protective Equipment



Safe Work Practices

- Site authorities and contractors must make sure that safe work practices have been developed for grinding and cutting tasks and take into account the following considerations:
 - Is it necessary to use a hand-held grinder/cutter or could an alternative tool be used to make the task safer. Could the part be sent to a third party who is better equipped for the project?
 - is the size of the angle grinder/cutter suitable for the task at hands? Is there a risk of losing control of a heavier and more powerful tool?
 - Is the part to be worked on fixed in place or held firm in a work bench vise and can the work area be arranged in a manner that keeps body parts out of the line-of-fire? Should it be removed and brought to a maintenance shop?
 - Is the disc used suitable for the job, in view of the type of material to be cut and of the size of the disc that must be used? Is the disk rated for the RPM of the tool?
 - Does the guard cover half of the disc in the space between the user and the disc and are both handles in place so the tool will be used with two hands?
- Do safe work practices cover the following elements:
 - Allow the angle grinder to reach its operating speed before using it?
 - Holding the angle grinder against the object with minimum pressure to keep it from “digging in” and prevent kick-back?
 - Holding the disc at an angle of 15 to 30 degrees from the surface being worked on?
 - Assuming a comfortable position, with feet sufficiently spaced and balanced, and with a good view of the one’s work at an appropriate height? Remembering to never use a hand-held angle grinder/cutter between one’s legs while sitting on the floor?
 - Wearing kneepads when working near the ground?
 - Stopping the grinder at regular intervals to gives one’s arms and hands a rest?
 - Unplugging the power cord and putting the hand-held angle grinder/cutter down on a workbench with the disc facing up when not in use?
 - Never putting a hand-held angle grinder/cutter down before the disc has stopped turning?
 - Unplugging the cord from the power outlet before changing discs?

Pre-Operational Verification

Before each use, the employee must be able to demonstrate that they have performed the following verifications: (Also reference Figure 1 *Hand-Held Angle Grinder/Cutter Safety Awareness Guide*)

- The disc is held in place with the proper flange (ring used to clamp the disc onto its support) and the proper securing nut for the type of disc is used (otherwise the disc may break up at high speeds) and the disc is free of defects and is rated for the RPM of the tool.
- The guard and handles are properly secured.
- Any disc that has been dropped or exposed to moisture has been thrown away (cracked or weakened discs may disintegrate during use).
- There are no flammable materials nearby. (Hot Work Permit required?)
- The object to be cut is held firmly in a workbench vise and the object to be cut is held at waist height during grinding.
- All personnel stand at a safe distance when an angle grinder is used and/or welding screens are installed to prevent particles and sparks from flying onto other workers.

Maintenance and Storage of Angle Grinders/Cutters and Discs

- Clean angle grinders/cutters after each use and maintain them in accordance with manufacturers recommendations
- Store angle grinders in toolboxes or on adequate hooks
- Handle the discs carefully. Avoid dropping or bumping them, and store them separately so they are not damaged and never store the discs near a source of heat or in extreme cold, expose them to oil or moisture.

Responsibilities

Area Managers

- Ensure compliance with the requirements of this working procedure.

Supervision


- Ensure that all hand-held grinders/cutters used in their area comply with the requirements of this Work Instruction.
- Ensure compliance and use of pre task risk assessments
- Ensure that employees and contractors using this tool have been recognized as competent and clearly understand they will be held accountable for the improper use of this tool
- Ensure that proper working methods, equipment, and work environments have been developed and made available for safe operation
- Ensure that frequent observations are conducted to verify compliance with this Work Instruction.

Employees and Contractors

- Inspect all hand-held grinders/cutters before and after each use.
- Enforce proper working methods and wear the required PPE
- Complete a pre task risk assessment prior to using the tool


- Undertake only those tasks for which they have been trained and have the skills'
- Ensure that damaged equipment is "red-tagged", and repaired or taken out-of-service, if necessary
- Understand they will be held accountable for the improper use of a hand-held angle grinder.

Figure 1

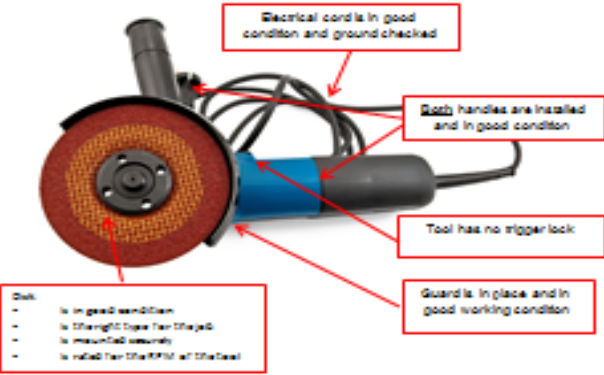


**Hand Held Grinder/Cutting Tool
Safety Awareness Guide**

Is it the right tool for the job? Is there another way?



Pre-Use Inspection Guide



Electrical cord is in good condition and ground checked

Both handles are installed and in good condition

Tool has no trigger lock

Guards are in place and in good working condition

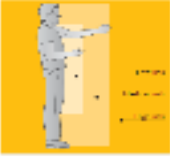
Disk:


- Is in good condition
- Is straight type for the job
- Is mounted securely
- Is rated for the RPM of the tool

Could you still do your job if you lose your fingers?

Safe Use:

- The most common causes of injury to operators and nearby workers are lacerations from attachments that break and become projectiles and lacerations from angle grinder kickbacks
- Use two hands when using the tool
- Always secure the work piece in a vice or work bench and not your or another person's hand
- Allow the tool to reach full speed before contacting work piece
- Allow the disk to come to a stop before setting the tool down
- Position the guard between your hand and the cutting area
- The tool should be used at the right height, at the appropriate angle and at a safe distance from your body. The lowest risk region for use is the area between your shoulders and knees. Be aware of the line of fire.
- Unplug unit while not in use
- Hot Work Permit Required?
- Sarcoidosis and/or screen required?
- Work area kept clean and free of trip hazards?
- Cleaned, inspected and stored properly post-use.
- Use the proper PPE





Revision History

Prepared By:	Description of Change:	Date:
Ryan Ispisua	Initial	04-15-2014