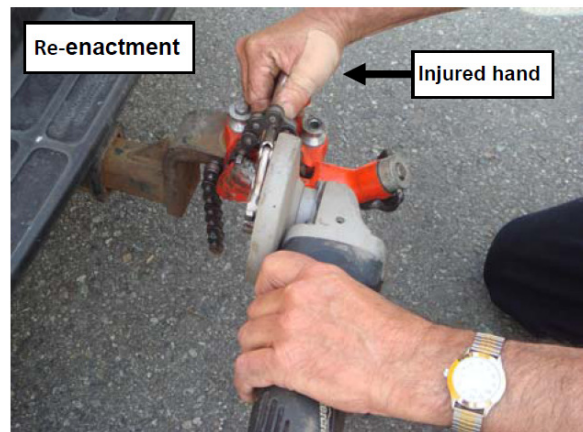
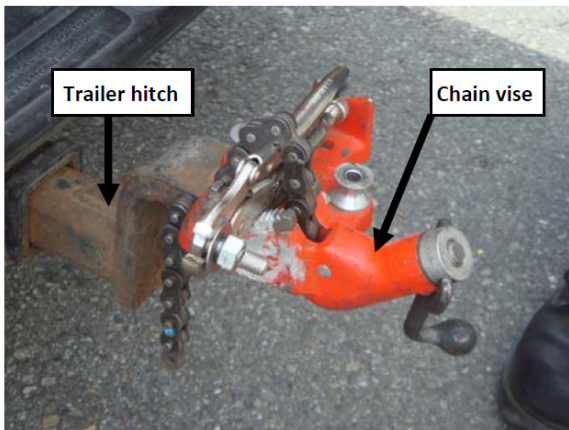


SAFETY ALERT

Mini Grinder - hand cut

DESCRIPTION:

A worker was using a hand held grinder to cut off the end of a stainless steel (SS) bolt, being held in a chain vise, mounted on the rear trailer hitch of a service vehicle. The worker was holding the grinder with his left hand, his other hand was used to steady the vise/hitch assembly. The grinder wheel began to bind, kicking forward, striking the worker's right hand. Five stitches were required to close the wound.



Lessons Learned:

- the JSA had not adequately addressed the risks of cutting the bolts with a hand held grinder.
- use of a trailer hitch/vise assembly is not a suitable practice - excessive play or wobble of the vise and poor body position for the worker creates unacceptable risks.
- while the grinder was equipped with a properly rated cutting disk and guard, the handle had been removed; this freed up the other hand, which was used to steady the wobbly vise assembly, placing the hand directly in the line of fire of the grinder!
- had the bolt been secured in a proper vise and the grinder properly equipped with its handle and operated with both hands, it would be impossible to have a hand in the line of fire.
- all power tools introduce an element of risk; when not operated according to manufacturer's directions these risks increase significantly. Handles and guards must be in place on all grinders!
- there was another very important option available in this case - rather than cut the 18-20 SS bolts for this job; obtain the proper length bolts and eliminate the risks associated with cutting altogether!

REMEMBER – we have experienced a number of injuries with grinders in recent years, all of them avoidable, this one is no exception. Power tools operated safely still pose some risk, when operated unsafely, they can be lethal!

NEVER forget to **Stop & Think**

SAFETY BULLETIN

ExxonMobil

Side Angle Grinders - Risks & Safe Work Practices

NOVEMBER 2009

Typical uses for a Side Angle Grinder

- Smoothing and shaping penetrations on fiberglass (FRP) sumps
- Cutting and shaping interior countertop surfaces
- Cutting concrete and rebar
- Smoothing canopy structure and column steel

Did you know...?

- Angle Grinders are a very dangerous workplace tool
- The more common injury is from metal particles lodging in the Operator's eye
- The more serious injuries are from "kick-backs" - the disc thrusts back to the Operator
- Discs can shatter or explode, sending pieces flying in the air

Grinding vs. Cutting

- Cutting wheels/discs should not be used for grinding
- Grinding wheels/discs should not be used for cutting
- Appropriate cutting tools and saws should be used over angle grinders for cutting
- Is cutting/grinding necessary; Is there a better work process?



Safety Incidents have recently occurred involving Side Angle Grinders:

Technician was grinding a piece of FRP. The grinder slipped, hit the concrete, and jumped toward technician causing a cut on the right knee.

Technician was cutting a piece of Corian. The grinder hit the wood beneath the Corian, and kicked back towards his face. Technician raised hand to protect face, and cut his right hand.

Technician was cutting the top of a FRP tank sump. The grinder was turned off, but the wheel of the grinder was still rotating, and the Technician lowered the grinder and cut his knee.



Tool Fundamentals

- Safety Guard must **ALWAYS** be used and secured while operating.
- Automatic shut-off switches should be available and functional.
- Handles are secure and adjusted.
- Tool checked for damage/defects.
- Proper training completed.

Standard Safety Procedures

These procedures should be a standard part of all JSA's, and on-site self assessments:

Check of the Grinder prior to use. Is the appropriate wheel/disc installed for the task; Does the wheel/disc show any damage, or excessive wear; Is the grinder the correct size for the task -- not too small or too big

Review additional PPE. Wide vision goggles, safety spectacles, or a face shield; Use dust mask to prevent inhaling dust particles; Hood for extra protection in confined spaces; Knee pads when working at floor level; Assess the reasonableness of gloves

Ensure good body and work positioning. Keep the grinder at waist height during work; Use a work bench and vise; Adopt a comfortable stance, with feet apart and well balanced; Ensure a clear view of the work; Never use grinder between legs while sitting on the floor; Always use two hands on the grinder at all times.

Follow operating guidelines. Allow the grinder to "run up" to operating speed before applying; Hold grinder against work with balanced pressure - not too much to penetrate beyond work and cause a "kick back"; Never bump the grinder on the work; Avoid hitting other objects while grinding; Maintain 15 to 30 degree angle to work; Take short breaks

Work is completed. Take extra care when placing grinder down; Never put grinder down until wheel/disc stops rotating; Remove plug from power when all work is complete, or before changing wheels/discs.

MANUFACTURER INSTRUCTIONS/PROCEDURES SHOULD ALWAYS BE FOLLOWED.

Additional Resources

- concreteconstruction.net
- wolfstone.halloweenhost.com/Tools/tolang_AngleGrinder.html
- www.diydata.com/tool/grinders/angle_grinders.php
- www.osha.gov/doc/outreachtraining/htmlfiles/tools.html
- www.iuoieitc.org/Old_files/HFA/AirAngle_Report.pdf
- www.tru.ca/hsafety/workinglearningsafely/work/grinder.html

Questions regarding this Safety Bulletin?

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