

MODULE 2-01

GRINDERS

ALL EMPLOYEES ARE TO BE TRAINED PRIOR TO USING EQUIPMENT

I. Pre Operation

Read Operators Manual Prior to Use.



Inspection/Service

- **Tool Rest** - Check for proper adjustment and condition of the tool rest (distance from wheel, angle to wheel and whether the edge has been worn away by the grinding wheel).
- **Grinder** - Check grinder for safe operation, ie: power cord in good condition, well lit area.

Replace - wheel when speed rating on side of the wheel is no longer visible.

- **Conduct a "Ring Test"** – Wheels should be tapped gently with a light nonmetallic implement, such as the handle of a screwdriver for light wheels, or a wooden mallet for heavier wheels. If they sound cracked (dead), they shall not be used.

Note: Per page 40, http://www.osha.org/pdf/rules/division_2/div2_O.

- Wheels must be dry and free from sawdust when applying the ring test, otherwise the sound will be deadened. It should also be noted that organic bonded wheels do not emit the same clear metallic ring as do vitrified and silicate wheels.
- "Tap" wheels about 45° each side of the vertical centerline and about 1 or 2 inches from the periphery. Then rotate the wheel 45° and repeat the test. A sound and undamaged wheel will give a clear metallic tone. If cracked, there will be a dead sound and not a clear "ring."
- Check wheel mounting bolts – for secure wheel attachment
Check – that the eye protection guard is clean and serviceable and that the bench grinder is attached to the work bench. It is OK to grind when the eye protection guard is up if you are wearing a face shield and safety glasses.

Lockout/Tag (LO/TO) the equipment if repairs are needed. Unplug the grinder, place a plug cover on the plug and tag it out. Tell your supervisor.

II. Site Assessment

- **Advise**- employees in the immediate area of flying debris and noise.
- **Check** – area for flammable items. Remove from area if present.
- **GFCI** - If using in a wet area, use **Ground Fault Circuit Interrupter**.

III. Personal Protective Equipment (PPE)

- **Face shield or safety glasses**
- **Hearing protection**
- **Proper fitting leather gloves.**
- **Optional Equipment**- wheel-cleaning tool, water.
- **Vise grips** - to hold small objects.



IV. Bench Grinder

Adjust tool rest to no more than (1/8") (so work doesn't get jammed and damage the wheel or throw things at you. You must not adjust the rest while the wheel is in motion.

Adjust the tongue guard (1/4").

Quench Tray - Fill quench tray if applicable.

Check Wheel - for squareness and de-burr if necessary with appropriate de-burr tool.

Balance - Listen and watch for balance of wheel.

Grinding - Move object your are grinding back and forth across the wheel, quenching it often in water to maintain the temper of the metal.

Do NOT grind on the sides of the wheels.

V. Right Angle Grinder

Use both hands when grinding.

Direct grindings away from people & objects. Do not use trigger locks.

You must keep the 180 degree guard on and in position.

Always secure the work to a solid surface before beginning the work task.



VI. Post Operation - Clean and inspect for damage or additional maintenance prior to checking in.

Tools – Put away tools and unplug the grinder if required.

Replace Wheel - When adjustment guides are no longer functional or speed rating on side of wheel is no longer visible.

VII. Demonstration and Proficiency – All persons trained on grinders are required to demonstrate their proficiency prior to signing the training ledger.

MODULE 2-01 PROFICIENCY TEST GRINDERS

I. Multiple Choice:

1. Proper starting procedures for grinders include:
 - a) Plugging in the grinder
 - b) Turning on the grinder
 - c) Check wheel for square-ness
 - d) Listening for balance of wheel
 - e) All of the above

2. The proper adjustment of the tool rest on a bench grinder is:
 - a) 1"
 - b) 1/2"
 - c) 1/8"
 - d) 1/4"

3. PPE needed for grinding would be:
 - a) Hard hat and gloves
 - b) Face shield or safety glasses, hearing protection, and gloves
 - c) Hearing protection
 - d) Steel toed shoes
 - e) None of the above

4. When locking and tagging out the grinder, you should:
 - a) Unplug the grinder and put it on the counter and tell someone
 - b) Leave the grinder where it is and tell someone
 - c) Unplug the grinder and place a plug cover on the plug and tag it out
 - d) None of the above

II. True/False

5. _____ You should replace the wheel when adjustment guides no longer function.
6. _____ The grinder does not need to be attached to the work bench.
7. _____ Grinding on the sides of the wheel is OK.
8. _____ Vise grips should be used when grinding small objects.
9. _____ Lockout/tag out if repairs are needed to the grinder.
10. _____ Proper adjustment of the tool rest is 1/8".
11. _____ It is OK to grind when the eye protection guard is up if you are wearing a face shield and safety glasses.
12. _____ You should advise employees in the area of possible hazards due to flying debris and noise.
13. _____ 3/4" is the correct adjustment for the tongue guard.

III. Discussion Questions

1. What kind of objects to be ground should be used with vise grips?
2. What procedure would you use to lock and tag out a bench grinder?

Employee Name: _____ Pass _____ No Pass _____ Date: _____

Take this test to your supervisor or trainer for sign off.