



**SECTION 4**    **CHAPTER 6**

**PERFORMING GRINDING OPERATIONS**

**Purpose**                      This chapter outlines the guidelines for safe operation of all stationary and portable power-driven abrasive grinding equipment used by the Company. Improper use of this equipment can result in serious injury, so the following instructions and precautions are mandatory.

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**Scope**                        This program applies to all company locations and personnel who are involved in performing grinding operations.

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## Safety Precautions for All Equipment

### Purpose

This document describes the safety guidelines for:

- personal protective equipment
- wheel guards
- wheel inspections
- wire bristle wheel inspections
- power source safety
- grinding equipment alterations
- portable equipment



### **Personal protective equipment**

Always use the following personal protective equipment:

- eye protection (safety glasses and full face shield)
- gloves
- long sleeves on coveralls or shirt
- sleeves fastened at the wrist
- shirt tail tucked in pants

**IF** operating or working within 12 feet of air-powered portable grinding equipment, **THEN** wear ear protection.

Refer to the chapter on *Personal Protective Equipment* in this manual for more information.

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### **Wheel guards**

Always use the manufacturer-recommended wheel guard and tool rest safety glass for grinding equipment. **IF** the guard is adjustable, **THEN** make sure that the guard is tight and positioned properly. Do **not** use a wheel guard that has been subject to wheel failure or that is obviously damaged in any way.

Exception: Portable grinding equipment with wheel diameters of 2" or less does not require wheel guards.

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## Inspection

Inspect all equipment and grinding wheels before use. Any tool which is not in compliance shall be identified as unsafe by tagging or locking the controls to render them inoperable.

Do **not** use a wheel that:

- is chipped, cracked, or otherwise damaged
- has been soaked in any liquid

Do **not** use stationary grinders that:

- are not permanently mounted
  - have damaged or taped electrical cords
  - have a missing or removed grounding prong
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## Power source

Before removing or mounting a grinding wheel, disconnect or lock out the power source. See the chapter on *Performing a Lockout/Tagout* in this manual for more information.

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## Alterations

Do **not** alter grinding equipment unless you have the manufacturer's written approval.

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**Portable  
equipment  
precautions**

In addition to the precautions outlined above, the following apply to the use of portable grinding equipment:

- Use oilers with all air-powered grinders.
- Do **not** drop or drag portable tools.
- **IF** the wheel is greater than 2", **THEN** use guards. On new grinders where guards are included, **ALWAYS** install guards and **NEVER** remove them.

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**Wire bristle  
wheels**

Wire bristle wheels must be inspected and maintained regularly. **IF** any distortion or excessive loss of bristles occurs, **THEN** replace the wire bristle wheel or take out of service.

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**Posting safety  
signs**

Post signs specifying required personal protective equipment in grinding areas. At minimum, signage will be posted requiring the use of safety glasses and a full face shield.



## Operating Grinding Equipment

**Purpose** This document details guidelines to be followed when operating stationary and portable grinding equipment.

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**Before beginning work** The following table describes the procedure to be followed before beginning grinding work using stationary equipment.

Step	Action
1	Make sure the wheel is at rest and the power source is disconnected or locked out.
2	Dress unevenly worn wheels.
3	Readjust shatterguard and toolrest after dressing.
4	Adjust toolrest to a maximum opening of 1/8" from the wheel.
5	Adjust the tool rest safety glass to proper safe position.

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**Safe use of stationary equipment**

When performing work on stationary grinding equipment, do **not** force work into the wheel. Excessive pressure results in:

- heat buildup
- uneven wheel wear
- abusive mechanical shock
- wheel failure

**Never** apply work to the side of a straight wheel on a bench grinder.

Do **not** operate a bench grinder without a tool-rest and a shatter-guard.

**IF** a bench grinder runs at an unusually high vibration, **THEN** contact your Supervisor for corrective action. Lock and tag out the grinder. Do **not** use it.

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**Safe use of portable equipment**

When starting work with a cold portable grinder, apply the wheel to the work slowly until the wheel warms up. Make smooth contact with the work and avoid any bumping action or excessive pressure.

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## Maintaining Grinding Equipment

**Purpose** This document describes guidelines for properly maintaining stationary and portable grinding equipment. Whether furnished by the company or the employee, the equipment shall be maintained in a safe condition.

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**Changing the wheel** Follow this procedure for changing the wheel.

1. Disconnect the power source.
2. Fit the grinding wheel to the shaft, making sure that it fits correctly. With the exception of threaded mounted wheels, wheels should have a snug fit. **Never** force a wheel on a shaft.
3. Once the wheel is fitted, readjust the tool rest to 1/8" from the wheel.

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**Performing a ring test** To perform a ring test on wheels, gently tap a dry clean wheel with a light tool, such as a screwdriver, about two inches from the edge.

**IF** you hear a clear "ping," **THEN** the wheel is suitable for use.

**IF** you hear a dull thud, **THEN** the wheel probably has a crack in it and can not be used.

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### **Testing new wheels**

Follow this procedure for testing a new wheel.

- Give the wheel a "ring" test to check for cracks or other faults.
  - Operate the machine in a protected area, or with personnel restricted from the plane of rotation, for 60 seconds. **IF** the wheel is defective, **THEN** it will usually fail within this time.
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### **Flanges and washers**

Do not deviate from the manufacturer's recommended arrangement of flanges and washers. Flanges should be at least 1/3 the diameter of the wheel. Wheel washers should always be used between the flange and wheel and should be at least the diameter of the flange.

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### **Storing wheels**

Transport grinding wheels with care. Store them in a warm, dry environment. Refer to manufacturer's instructions for more information.

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