

## Safe Working Procedures and Instruction

### Buffing Wheel Machine

*The risk of injury when using this machine is SUBSTANTIAL - Level 3 Risk*



This buffing wheel is used in schools as a pedestal machine. It usually has a double-ended spindle with a cloth wheel at each end.

Buffing and polishing using cloth wheels and 'compounds' is somewhat like using wet and dry sanding paper, only much faster.

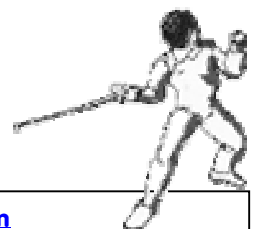
Varying types of wheels are available, and the different grades of compound are scaled similar to sandpaper. The compounds are made from a wax substance which has the different abrasive powders added to it. When this hard block is applied to the edge of a spinning buffing wheel, the heat from the friction melts the wax, and both wax and abrasive are applied in a thin slick to the face of the wheel.

For safety purposes the wheel is almost completely enclosed by a metal guard and above each wheel should be mounted a see through eye shield. Use of the Buffing Wheel will impart a luster to metal, plastics or other materials. It is generally used in the polishing of art metal and jewellery work.

#### Identified Risks and Hazards

Hazards that may arise when operating fixed machinery include:

- moving and rotating parts (blades and bits, tool disintegration)
- movement of the workpiece
- inhalation of fumes and dust particles
- electrocution from power faults, faulty equipment or incorrect use
- ejection of waste materials from cutting blades
- burns from hot materials or friction
- hand and finger injuries from rotating blades, spindles or pulleys
- squash, pinch and crush injuries
- swarf being ejected from machines
- noise from high speed cutters



Specific hazards that may arise when operating the Buffing Wheel include:

- The speed of rotation poses a hazard to hair, hands, clothing or jewellery, which may get caught.
- Wax and abrasive may hit the operator.
- Never buff or sand by placing the workpiece on top of the wheel. The wheel may kick the workpiece toward the operator. Always buff on the downward part of the wheel.

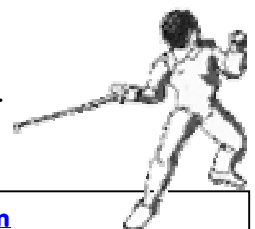
## Pre-Operational Safety

The following safety checks and precautions should be carried out when preparing to set up, operate or maintain a buffing wheel machine:

- The isolating switch should be in the OFF position. The machine must be isolated from the main electricity supply when not in use.
- Check that the wheel is suitable for the workpiece to be buffed.
- Check the condition of the buffing wheel. It should be kept in good condition at all times.
- All guards and shields must be correctly fitted and secured.
- Before operating the machine, remove tie, rings, watches, other jewellery, and roll up sleeves above the elbows. Remove all loose clothing and confine long hair. Do **not** wear gloves.
- The buffing machine and work area should be clean and free of scrap and other obstacles.

## Operating Safety Precautions

- Never buff with the workpiece on top of the wheel. The workpiece may be caught by the wheel and be thrown at the operator. Always process the workpiece near the bottom of the wheel.
- Select the appropriate stick of polishing compound for your application and apply to the rotating face of the wheel.
- Start the buffer and with both hands firmly grasping the item to be polished. Lightly and evenly move the workpiece back and forth on the buffing wheel.
- Avoid overheating the work piece by not exerting too much pressure and prolonged contact with the wheel.
- Do not put pressure on the side of the wheel, as it can cause the wheel to become damaged.
- Do not hold onto the workpiece with gloves, apron, material or clothing.



## Daily Maintenance

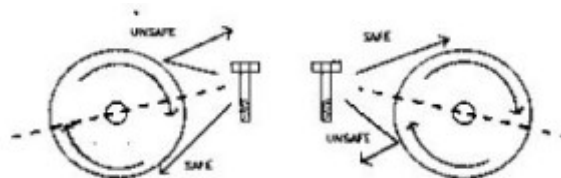
Daily maintenance on a buffing machine would include checking the condition of the wheel and checking the position of the eye guard.

## Raking the Buffing Wheel

Wheel rakes work really effectively to fluff up and remove debris from buffing wheels. Offer the jagged blade to the edge of the spinning wheel, and work it across the face until the wheel looks bright and fluffy once more. This action, done periodically, will remove entrapped metal particles, which could scratch a more delicate part.

## Additional Operating Procedures and Precautions

- The operator must ensure they have had instruction and training in the use of the grinding machine and satisfactorily completed the OHS test.
- Always seek and gain teacher approval to carry on with the buffing procedure.
- Make sure all other students keep outside the safety zone at all times.
- Wear Personal Protective Equipment to protect the eyes such as safety spectacles.
- Wear PPE such as a dust mask if there is danger of flying particles.
- Do not wear loose clothing, especially long sleeves and neck ties.
- There are two distinct areas on a buffing wheel - THE UNSAFE AREA which is rotating towards the workpiece, THE SAFE AREA which is rotating away from the work piece.



The division of these two areas is marked with the dotted line on the above drawing.

- The work piece must only be applied to the area of the buff that is rotating AWAY from the workpiece.
- There are two basic buffing motions you should use. 1. CUT MOTION gives you:- SMOOTH SURFACE, SEMI-BRIGHT & UNIFORM. The work piece should be moved AGAINST the direction of the wheel, using a MEDIUM to HARD pressure. 2. COLOUR MOTION gives you:- BRIGHT, SHINY & CLEAN SURFACE. The work piece should be moved TOWARD the direction of the wheel, using a MEDIUM to LIGHT pressure.
- The correct pressure must be applied to the work piece to provide the best finish economically and safely. Inadequate pressure will give NO buffing action
- Excessive pressure will cause the buffing wheel to slow down or actually collapse. This can also result in burn marks on the workpiece.

