

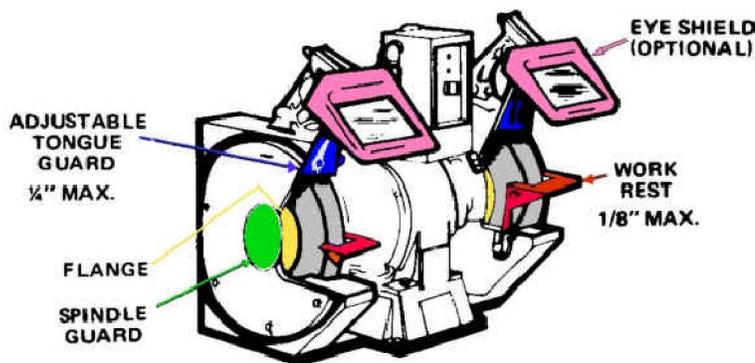
Environmental Health and Safety Department

Machine Guard Handout

Bench Grinder



- Adjust tongue to 1/4 inch from blade
- Adjust work rest to 1/8 inch from the blade



Because the safety guard is designed to restrain the pieces of a shattered grinding wheel, the distance between the safety guard and the top periphery of the wheel must not be more than 1/4-inch. If this distance is greater because of the decreased size of the abrasive wheel, then a “tongue guard” must be installed to protect workers from flying fragments in case of wheel breakage. This “tongue guard” should be adjustable to maintain the maximum 1/4-inch distance between it and the wheel.

An adjustable tool/work rest must also be installed and maintained at a maximum clearance of 1/8-inch between it and the face of the wheel. In addition to offering a stable working position, this small clearance must be maintained to prevent the operator’s hands or the work from being jammed between the wheel and the rest, which may cause serious injury or wheel breakage.

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Band Saw



- Adjust guard so it is covering entire portion of the blade that is not being used

Guard does not fully cover blade

Serious cuts or amputations can occur if the operator contacts the blade. Extreme caution is necessary because the operator's hands may come close to the saw blade — and a band saw cannot be fully guarded.

Guard the entire blade except at the point of operation (the working portion of the blade between the bottom of the sliding guide rolls and the table).

Use an adjustable guard for the portion of the blade above the sliding guide rolls so that it raises and lowers with the guide. Properly adjust the blade guide to fit the thickness of the stock and ensure the guard is as close as possible to the stock.

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Table Saw



- Make sure blade guard is in use

- Use push sticks for small pieces of wood

Severe cuts and amputations to the fingers or hands can occur if the operator contacts the saw blade.

The most common blade guard is a self-adjusting guard that encloses the portion of the saw above the table, and above the stock being cut. The guard automatically adjusts to the thickness of the material being cut and remains in contact with it during the cut.

Use a push stick for small pieces of wood and for pushing stock past the blade.

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Saws



- Make sure self-adjusting blade guard is in use

Severe cuts to or amputations of the fingers or hands can occur if they come in contact with the saw blade. If the rotating blade is not properly guarded, exposure can occur during operation or when the saw is idling.

These saws also must be equipped with a self-adjusting lower blade guard that automatically adjusts itself to the thickness of the material being cut and provides continuous protection from the blade. Most guards supplied by manufacturers are designed to move out of the way as the blade nears the cut.

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Radial Arm Saw



- Self-adjusting blade guard

Hazard

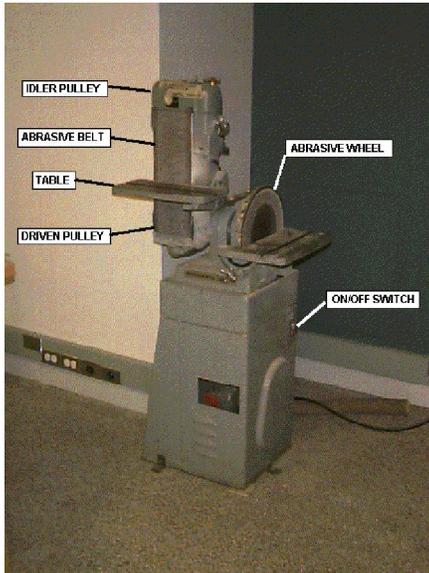
- Severe cuts and amputations can occur if the operator contacts the rotating blade.
- If the saw blade is able to go past the edge of the table, the blade can contact the operator's body.
- Stock can be thrown back at the operator if unsecured, caught in the blade, or fed in the wrong direction.

Solution

- Guard the sides of the bottom half of the blade with a self-adjusting guard that automatically adjusts to the thickness of the stock and remains in contact with the stock throughout the cut.
- Make sure the cutting head has a return device and an adjustable stop to prevent the leading edge of the saw from passing the front edge of the table, or extend the table edge.
- For ripping, install non-kickback fingers on both sides of the saw blade and use a spreader to prevent the cut in the wood from immediately closing and binding the blade.

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Sander



Hazard

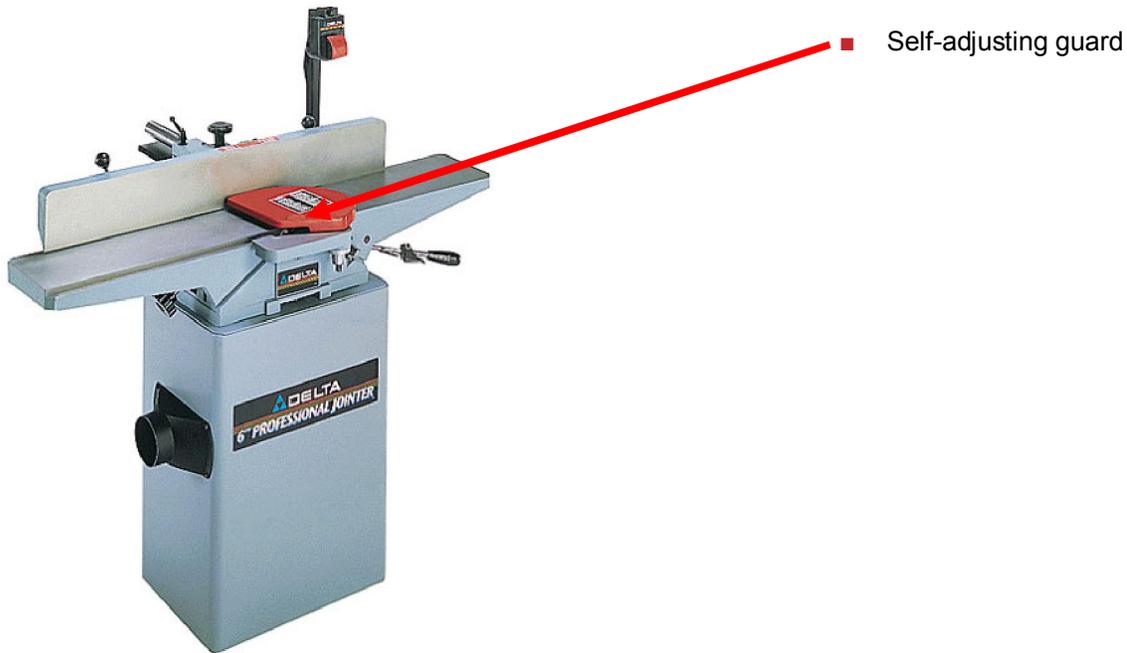
- Serious abrasion can occur from contacting the moving belt. Small work should not be abraded on the belt sander as the small piece can easily be dislodged from the operator's hands and allow contact with the belt.
- Nip points are close to the point of operation and, if not guarded, can allow fingers, clothing, or hair to become caught in the machine. Nip points are created when the belt meets the pulley on all types of belt sanders and also if the distance between the work table and the downward portion of a vertical sanding belt is such that the operator can be pulled into it.
- Stock can violently kick back if pressed against the portion of the sanding disk that is rotating away from the table

Solution

- Guard the unused runs of the sanding belt.
- Do not sand the face of pieces that are less than 3/4-inch thick unless you use a push shoe or some other means of supporting the stock.
- Guard all nip points. This can normally be accomplished by enclosing the edge of the sanding belt and the ends of the pulleys. Also, ensure the work table is as close as possible to the sanding belt.
- For disk sanders use only the downward side of the disk so that the wood is driven onto the table by the machine's rotation.

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Jointer



Hazard

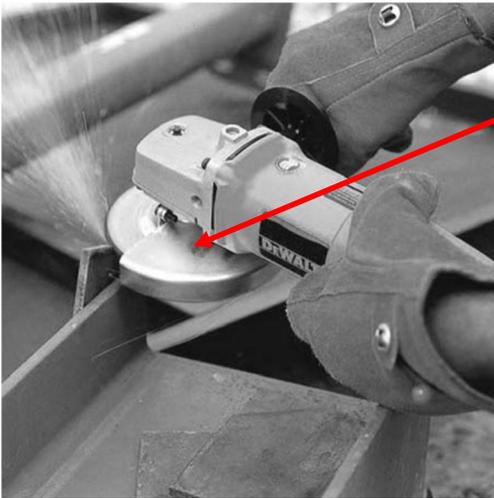
- Severe lacerations or amputations can occur if the operator's hands and fingers come in contact with the knives.

Solution

- A self-adjusting guard must be in use to enclose the horizontal cutting head when stock is not being fed.

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Portable Abrasive Grinder



■ Blade guard

Hazard

- Serious abrasion or cuts can occur from contacting the rotating abrasive stone.
- There is also the potential for the abrasive stone to shatter,
- Dangers of exposure to the rotating wheel, flange, and spindle end from kickback.
- other concerns such as flying fragments and sparks are present during portable grinding operations

Solution

- Abrasive grinder exposure must not exceed a maximum angle of 180 degrees and the top half of the wheel must be enclosed at all times

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Portable Circular Saw



Hazard

- Severe cuts and amputations can occur if the operator contacts the saw blade
- Kickbacks can also present a significant hazard. They occur when the saw blade binds in the cut and the saw kicks back toward the operator.

Solution

- When the tool is withdrawn from the work, the lower guard must automatically and instantly return to the covering position. Check that the retracting lower guard has returned to its starting position before laying the saw down.
- Kickbacks can be minimized by setting the proper blade depth so that the lowest tooth extends no more than 1/8-inch beyond the bottom of the material