

1910.213

WOODWORKING MACHINERY REQUIREMENTS



1910.213(a) – Machine Construction General

Machines shall be constructed to be free from vibration when largest tool is mounted and run at full speed



1910.213(a)

All belts, pulleys, gears, shafts, and moving parts shall be guarded in accordance with the specific requirements of 1910.219.



1910.213(a)

It is recommended that each power-driven woodworking machine be provided with a disconnect switch that can be locked in the off position.



1910.213(a)

All tools operating at more than 90v must have their metal parts grounded
◦Separate ground wire and polarized plug

Cutting heads must be machined to fit specific types of arbors



1910.213(a)

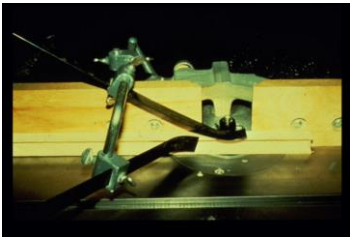
Combs (featherboards) shall be provided at the workplace for use when a standard guard cannot be used.



Woodworking Machines



Woodworking Machines



1910.213(b) – Machine Controls and Equipment

A mechanical or electrical power control shall be provided on each machine to make it possible for the operator to cut off the power from each machine without leaving his position at the point of operation.



1910.213(b)(3)

On applications where injury to the operator might result if motors were to restart after power failures, provision shall be made to prevent machines from automatically restarting upon restoration of power.



1910.213(b)

Operating controls must be placed so the operator has access to them without reaching over the cutting blade

- Must be placed within reach of their regular work station

Machines operated by electrical motors must have controls capable of being rendered inoperative

- For maintenance, repairs, adjustments, etc.

1910.213(b)

Operating treadles must be protected from unintended operation.

Feeder attachments must have feed rolls or other moving parts covered to protect operator from pinch points

Foot Pedal



1910.213(c) – Hand-Fed Ripsaws

Each circular hand-fed ripsaw shall be guarded by a hood which shall completely enclose that portion of the saw above the table and that portion of the saw above the material being cut. The hood and mounting shall be arranged so that the hood will automatically adjust itself to the thickness of and remain in contact with the material being cut without considerable resistance.



Table Saw

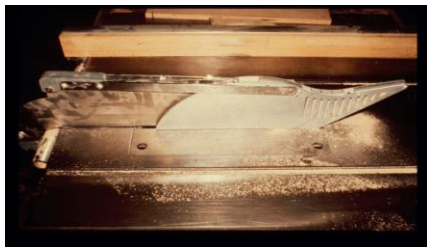


Table Saw



1910.213(c)

Each hand-fed circular rip saw shall be furnished with a spreader to prevent material from squeezing the saw or being thrown back on the operator.

1910.213(c)

Each hand-fed circular rip saw shall be provided with non-kickback fingers or dogs so located as to oppose the thrust or tendency of the saw to pick up the material or throw it back toward the operator.

Dogs



Anti-Kickback Fingers



1910.213(d) – Hand-Fed Crosscut Table Saws

Each circular crosscut table saw shall be guarded by a hood which shall meet all the requirements of 1910.213(c)(1) for hoods for circular re-saws.

1910.213(f) - Self-Feed Circular Saws

Self-feed circular saws

- Guarded by a hood or guard to prevent hands of operators from coming in contact with the in-running rolls.
- If self-fed saws are used for ripping they must be equipped with anti-kickback devices (dogs).

1910.213(g) – Swing Cut Off Saws

Swing Cut Off Saws

- Provided with a hood that completely covers the upper half of the blade and the arbor.
- Provided with a guard that will protect the point of operation.
- Must be provided with a means to return to it's resting position
- Limit chain to limit the travel beyond or behind the working table

Swinging Cut Off Saw

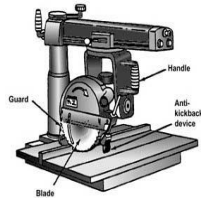


1910.213(h) – Radial Saws

The upper hood shall completely enclose the upper portion of the blade down to a point that will include the end of the saw arbor....The sides of the lower exposed portion of the blade shall be guarded to the full diameter of the blade by a device that will automatically adjust itself of the thickness of the stock and remain in contact with the stock.



1910.213(h) – Radial Saws



1910.213(h)

Each radial saw used for ripping shall be provided with non kickback fingers or dogs located on both sides of the saw.



1910.213(h)

An adjustable stop shall be provided to prevent the forward travel of the blade beyond the position necessary to complete the cut in repetitive operations.



1910.213(h)

Installation shall be in such a manner that the front end of the unit will be slightly higher than the rear, so as to cause the cutting head to return gently to the starting position when released by the operator.



Woodworking Machines



Woodworking Machinery



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1910.213(h) – Radial Saws



1910.213(h) – Radial Saws

Ripping and ploughing shall be against the direction in which the saw turns. The direction of the saw rotation shall be conspicuously marked on the hood.



1910.213(i) – Bandsaws and Band Resaws

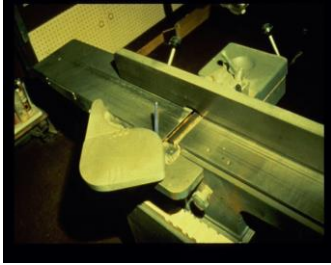
All portions of the saw blade (bandsaws) shall be enclosed or guarded, except for the working portion of the blade between the bottom of the guide rolls and the table.



1910.213(i) - Bandsaws



Woodworking Machinery



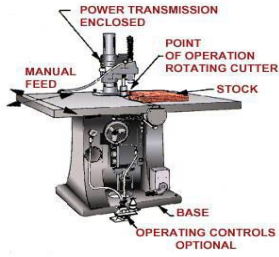
1910.213(j)



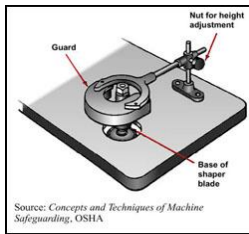
1910.213(m) – Wood Shapers and Similar Equipment

The cutting heads of each wood shaper, hand-fed panel raiser, or other similar machine not automatically fed, shall be enclosed with a cage or adjustable guard so designed as to keep the operator's hand away from the cutting edge.

Wood Shaper



Shaper With Adjustable Guard



1910.213(m)

Double-spindle shapers

- Starting and stopping device for each spindle

1910.213(n) – Planing

Planers

- Guard covering the cutting heads
- If exhaust hood used, must be integral to the guard
- Guard/hood must protect the feed rolls/in-running nip points

Woodworking Machinery



Woodworking Machinery



1910.213(o) – Wood-Turning Lathes

Cutting heads on wood-turning lathes, whether rotating or not, shall be covered as completely as possible by hoods or shields.



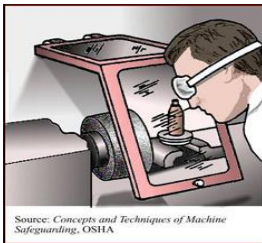
1910.213(o)

Wood stock held between two centers on a lathe must be protected (as much as possible) with a long curved guard extending over the top of the lathe to prevent the work from being thrown out.

If an exhaust system is used it must form an integral part of the guard.



Woodworking Machinery



1910.213(p) – Sanding Machines

Sanding Machines

- Where the sanding belt runs over rollers a guard must prevent the operator from coming into contact with the in-running nip points.
- Drum sanders must be protected above the table by a guard or exhaust hood except for that portion of the sander which is necessary for the stock.



1910.213(p)

Disk sanders must have a guard or exhaust hood enclosing the revolving disk. Allowing only enough exposure which is necessary for the application.



1910.213(p)

Belt sanding machines shall be provided with guards at each nip point where the sanding belt runs on to the pulley....The unused run of the sanding belt shall be guarded against accidental contact.



Woodworking Machinery



1910.213(r) – Miscellaneous Woodworking Machines

The mention of specific machines in paragraphs (a) thru (q) and this paragraph (r) of this section, inclusive, is not intended to exclude other woodworking machines from the requirements that suitable guards and exhaust hoods be provided to reduce to a minimum the hazard due to the point of operation of such machines.

1910.213(s) – Inspection Maintenance of Woodworking Machinery

All knives and cutting heads of woodworking machines shall be kept sharp, properly adjusted, and firmly secured. Where two or more knives are used, they shall be properly balanced.

1910.213(s)

Arbors of all circular saws shall be free from play

Sharpening or tension of saw blades or cutters shall be done by persons of demonstrated skill

Emphasis shall be placed on the importance of cleanliness of the woodworking area.



Horizontal lines for notes

1910.213(s)

All cracked saws shall be removed from service.

The practice of inserting wedges between the saw disk and the collar to form a "wobble saw" shall be prohibited.



Horizontal lines for notes

1910.213(s)



Push sticks and push blocks shall be provided for small pieces of wood and for pushing the stock past the blade.



Horizontal lines for notes

Woodworking Machinery