

Safe use of manually operated cross-cut sawing machines

HSE information sheet

Information Sheet No 36 (Revision 1)

Scope

This sheet gives information on cross-cut saws, where the blade is moved through the workpiece by human effort to cut material to length.

The saws covered are horizontal stroking machines (travelling head, radial arm and pendulum) and down-stroking machines (chop saw).

Accident record

Saws are the main cause of accidents in the woodworking industry. In the majority of cases, accidents could have been prevented by providing appropriate training and supervision. Equally important is guarding to prevent access to the blade during normal operation and also during the rundown period.

Safeguarding the machines

Manufacturers must ensure that new machines are constructed to all relevant harmonised standards in accordance with the Supply of Machinery (Safety) Regulations 2008.

The supplier is responsible for ensuring that secondhand machinery is safe to use. This is a requirement of section 6 of the Health and Safety at Work etc Act 1974.

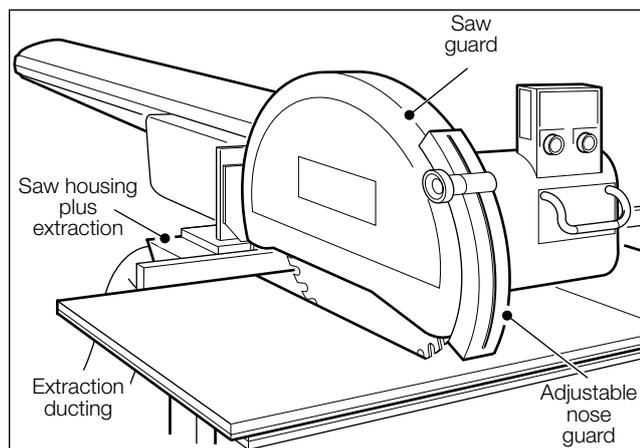


Figure 1 Travelling head machine

Horizontal stroking machines (travelling head, radial arm and pendulum cross-cut saws)

Although different in design, the guarding principles are the same for the travelling head, radial arm and pendulum cross-cutting machines (see Figures 1, 2 and 3). This is to enclose the saw blade as much as possible for as long as possible.

All machines should be fitted with a fixed (hood) guard to enclose the upper part of the saw blade. This guard will extend down at least as far as the saw spindle.

Returns device

There should be no access to the saw blade when it is in the rest (behind the fence) position. On older machines, this can be achieved by providing a saw housing into which the saw returns automatically. This can be by either a spring-assisted return or counter balance device. This return device will also prevent the risk of the saw unit travelling forward from its rest position. Where a return device is used, to prevent the risk of 'bounce back' towards the operator some form of impact absorption material may be required.

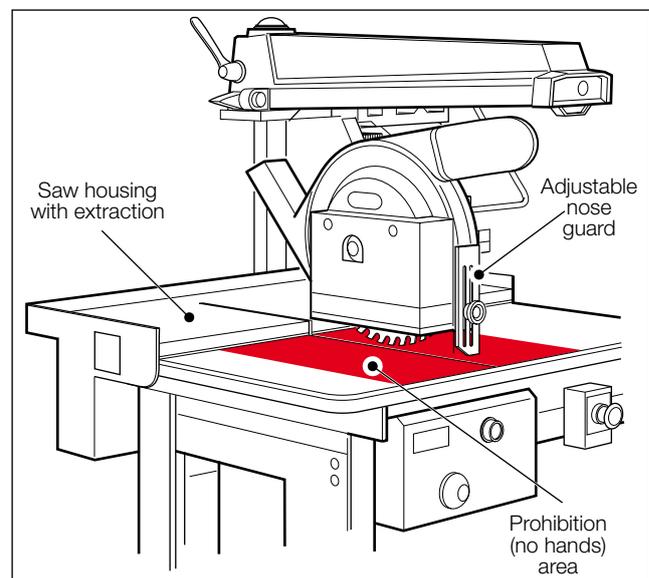


Figure 2 Radial arm machine

Braking

Where the saw does not return to a safe rest position, an efficient brake, DC injection or manual, that stops the saw within 10 seconds must be fitted. Serious consideration should be given to fitting DC braking, even with a safe rest position, if there is regular or continuous use of the saw.

Machines built to modern standards will in most cases have self-closing side guards which cover at least the outside edge of the saw teeth and will rise and fall during operation.

However, these guards do not provide protection against contact with the saw blade from the front of the machine. A nose guard should therefore be fitted and adjusted as close as possible to the material being cut; best practice is to within 12 mm of the workpiece. The saw blade stroke should be set so that the nose guard does not extend beyond the front edge of the work table.

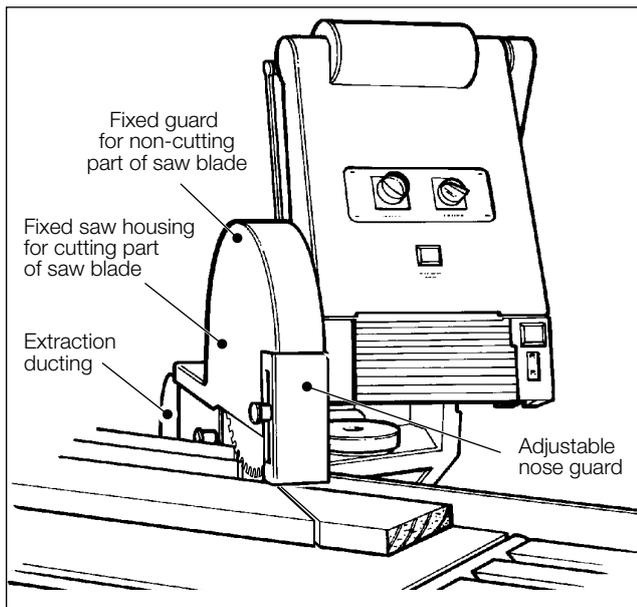


Figure 3 Typical pendulum machine

Fence and table

A fence should be fitted which is high enough to support the material being cut on either side of the cutting line. In most cases, the fence will need to be modified to allow the nose guard to be lowered when cutting thin materials (see Figure 4).

Adequate workpiece support is required for all operations carried out. Long workpieces should be supported using extension tables or roller supports either side of the saw unit.

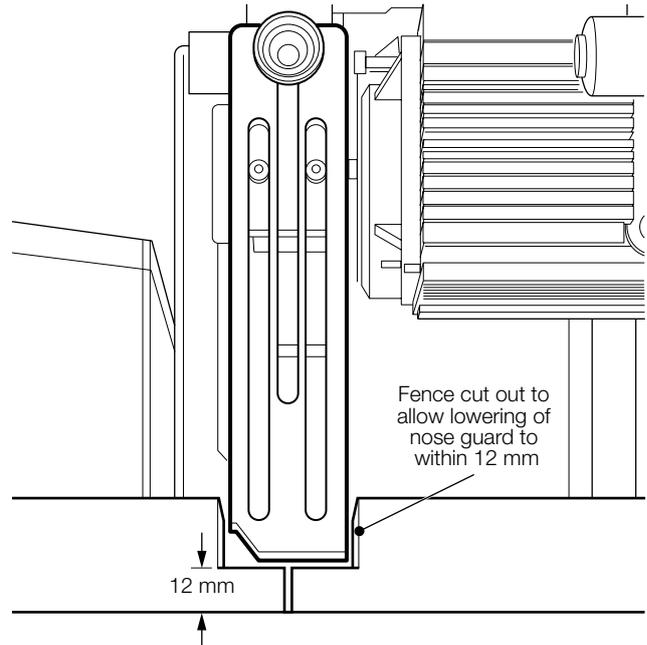


Figure 4 Fence cut out

Down-stroking machines (chop saws)

These are also known as sniper saws or mitre saws (see Figure 5). These machines move in a downward motion, through an arc, during their cutting action. Some machines may combine a horizontal movement and this should only be possible when the saw blade is lowered to the maximum depth of cut.

The upper part of the blade, like the horizontal stroking machines, should have a fixed guard which extends to at least the saw spindle. There is no access to the cutting part of the blade due to a self-closing guard. When the unit is lowered, this guard will retract to allow the cut. This guard will be locked in the closed position, with a release control on the operator's handle.

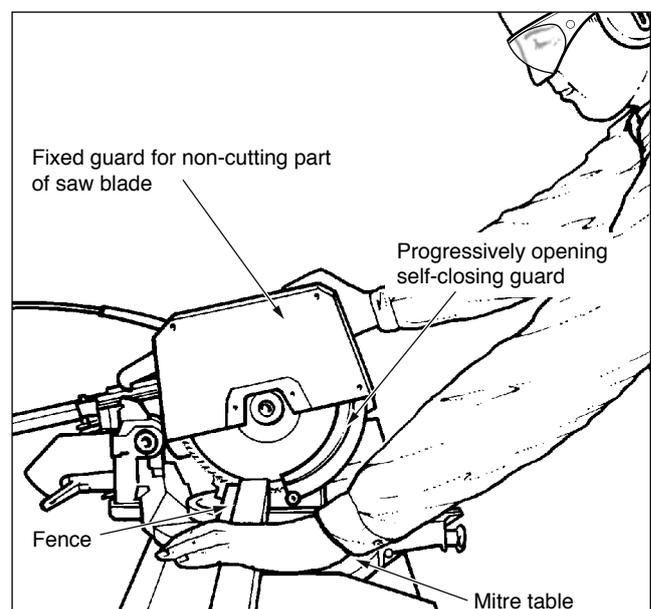


Figure 5 Down-stroking machine

Safe working practices

The immediate cutting area must extend the full width of the saw movement. Where the table does not meet this, an extension table should be fitted (see Figure 6).

It is good practice to mark the immediate cutting area of the table with a coloured prohibition area. This should ideally be 300 mm either side of the saw cut (Figure 6). The operator's hands should not enter this area. Small components and/or off-cuts should be removed using a push-stick. Also, reaching across the saw line should be avoided.

On chop saws, it is impracticable to apply the 300 mm either side. It is, therefore, acceptable to use the semi-circular area as the guide.

Timber positioning

Some timber will be naturally bowed. Figures 6 and 7 demonstrate how to position bowed timber.

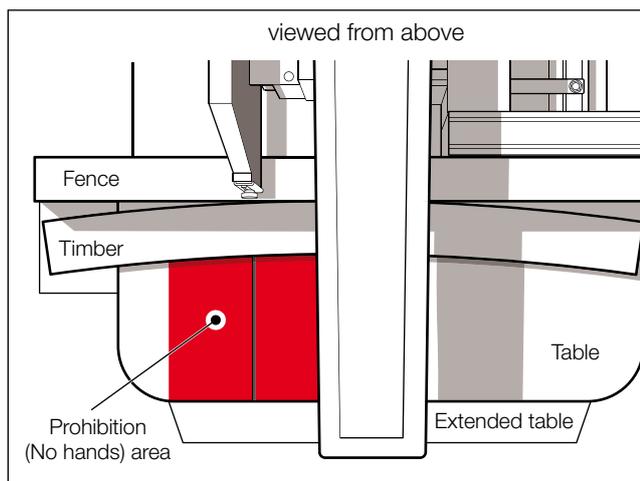


Figure 6 Bowed timber – rounded edge to the fence to prevent snatching

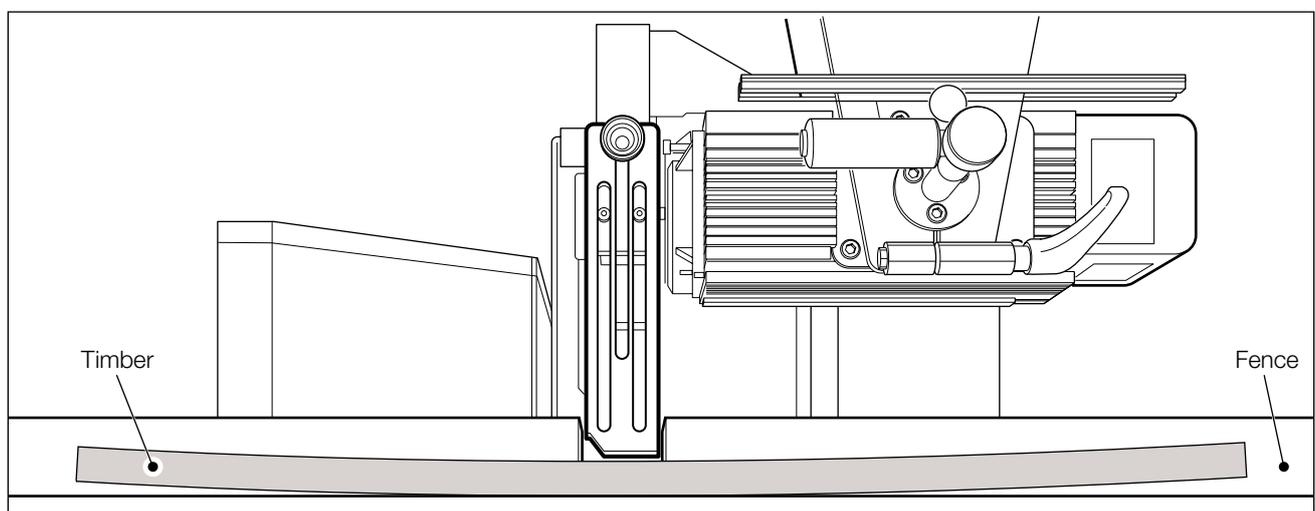


Figure 7 Bowed timber – rounded face down to prevent snatching

Restricted operations

Although a radial arm machine is capable of ripping material, this is classed as an extremely high-risk operation and, therefore, should not be carried out on this machine unless it is correctly safeguarded as per manufacturer's instructions. A more suitable machine is a circular rip saw bench.

Pointing of stakes. This is also a high-risk operation and an appropriate guide piece fastened to the table should be used.

Trenching. A suitable jig must be used which will safely and securely hold the component. Chip limitation tooling must also be used.

References and further reading

- 1 *Machinery – Guidance notes on the UK Regulations (September 2009)* URN 09/P86 Department for Business, Innovation & Skills (BIS) Copies from www.bis.gov.uk/files/file52968.pdf
- 2 *Management of health and safety at work. Management of Health and Safety at Work Regulations 1999. Approved Code of Practice and guidance L21 (Second edition)* HSE Books 2000 ISBN 978 0 7176 2488 1 www.hse.gov.uk/pubns/books/l21.htm
- 3 *Safe use of work equipment. Provision and Use of Work Equipment Regulations 1998. Approved Code of Practice and guidance L22 (Third edition)* HSE Books 2008 ISBN 978 0 7176 6295 1 www.hse.gov.uk/pubns/books/l22.htm
- 4 *Safe use of power-operated cross-cut saws* WIS35 HSE Books 2011 www.hse.gov.uk/pubns/wis35.pdf

5 *Safe use of woodworking machinery. Provision and Use of Work Equipment Regulations 1998 as applied to woodworking machinery. Approved Code of Practice and guidance* L114 HSE Books 1998
ISBN 978 0 7176 1630 5
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Further information

Further information on health and safety for woodworking can be found on HSE's woodworking website: www.hse.gov.uk/woodworking/

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This information sheet contains notes on good practice which are not compulsory but which you may find helpful in considering what you need to do.

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