FURTHER READING

Tractor units in tree work	FISA501
Emergency planning	FISA802
Training and certification	FISA805
First aid at work: Your questions answered	INDG214
Managing health and safety in forestry	INDG294
Don't lose your hearing	INDG363
PUWER 98: Retrofitting of braking to woodworking machines	WIS38
Power take-offs and power take-off drive shafts	AS24

These publications are available from the FISA and HSE websites.

Name:.....

Checklist verified by:.....

Date: .....

Further information

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Copies of this guide and all other FISA priced and free publications are available by mail order from the FISA office or through the FISA website www.ukfisa.com. From here you will also be able to access a wide range of additional forestry safety information including frequently updated safety alerts.

This guide sets out evidence of good practice for a specific forestry task. Deviation from the guide should only be considered after a full risk assessment has been undertaken by competent persons. Health and safety obligations MUST be met at all times.

THINK SAFE / STAY SAFE

This publication is based on guidance previously published by HSE in AFAG607 Firewood processors, which was withdrawn in 2013.

For more general information about health and safety, please visit the Health and Safety Executive website www.hse.gov.uk

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Firewood processors

Image courtesy of Forestry Commission Picture Library

FISA Safety Guide 607

INTRODUCTION

This leaflet covers the safe working practices to be followed when using firewood processors. It covers machines with a cutting device (either circular saw or chainsaw types) and a splitting ram and includes advice for electrically powered, power take-off (PTO) shaft or petrol-engine-driven machines.

You can use this leaflet, along with the machine manufacturer's handbook, as part of the risk assessment process to help identify the controls to put in place when using a firewood processor.

You must also assess the effect of the site conditions and the weather as well as following this guidance.

All operators must have had appropriate training in how to operate the machine and how to carry out the tasks required (see FISA leaflet 805 *Training and certification*). No person under school leaving age (16 years old) should operate this machine. Those who have reached school leaving age but are below the age of 18 may only operate a firewood processor if supervised by a competent person of 18 years or over.

When using a tractor as a power source this leaflet must be read in conjunction with FISA leaflet 501 *Tractor units in tree work*.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

❑ **1** Use the following PPE:

- Safety helmet (complying with EN 397) where identified as required in the risk assessment.
- Hearing protection (complying with EN 352) where the noise level exceeds 85 dB(A) (see HSE pocket card INDG363 *Don't lose your hearing*).
- Eye protection (mesh visor complying with EN 1731 or safety glasses to EN 166) to protect against flying chips.
- Protective boots with good grip and ankle support (complying with EN ISO 20345).
- Gloves with reinforced palms and fingers that provide a good grip of the timber being cut.
- Non-snag outer clothing appropriate to the prevailing weather conditions. High-visibility clothing (complying with EN 471) should be worn when the risk assessment identifies that it is needed.

❑ **2** A suitable first-aid kit including a large wound dressing, eyewash and eye dressing should be available at the worksite (see HSE leaflet INDG214 *First aid at work: Your questions answered*).

❑ **3** Hand-cleaning material such as waterless skin cleanser or soap, water and paper towels should be readily available.

THE MACHINE

❑ **4** All pulleys, belts, drive shafts and fan blades must be suitably guarded.

❑ **5** There must be a clearly marked stopping device accessible from the working position(s). Operators must be aware of what this stops (ie cutting blade, ram conveyors etc) and of any relevant run-down time for saw blades.

❑ **6** Make sure a suitable fire extinguisher and tool kit are readily available.

❑ **7** The run-down time of the saw blade should be less than 10 seconds if a person can make contact with the teeth of the blade before it has come to rest. Where practical, this may be achieved by fitting a brake that operates automatically when the stop control is applied (see HSE Woodworking Information Sheet WIS38 *PUWER 98: Retrofitting of braking to woodworking machines*).

❑ **8** The machine must have either an interlocking guard or two-hand control system (hold-to-run type) to prevent access to the log splitting zone during operation.

MAINTENANCE

❑ **9** Ensure the machine is maintained in accordance with the manufacturer's handbook (including daily checks and lubrication).

❑ **10** Check the structure of the saw bench, ram, splitting trough and conveyors for visible defects.

❑ **11** Check that no circular blades are cracked and that no teeth are missing.

❑ **12** Check that the circular saw/chainsaw teeth are correctly sharpened and set. Wear gloves when handling blades/chains and suitable eye protection when filing.

❑ **13** Check that the blade packings for circular saw blades are undamaged.

❑ **14** Check that the chainsaw blades are adequately lubricated and correctly tensioned.

❑ **15** Check the ram hydraulic oil level.

FUELLING PETROL-ENGINE MACHINES

❑ **16** Stop the engine and, if necessary, allow to cool before refuelling.

❑ **17** Petrol vapour is invisible and can travel considerable distances from spillage or fuelling sites. Maintain a safe distance from all sources of ignition at all times.

❑ **18** Store fuel to avoid vapour ignition from any source such as fires, people smoking or the machine. Select a site shaded from direct sunlight and away from watercourses and drains.

❑ **19** Fuel containers must be clearly labelled and have securely fitting caps. Plastic containers must be designed and approved for use with petrol or diesel fuel.

❑ **20** Replace the fuel cap securely.

❑ **21** Keep fuel from contacting the skin. If fuel gets into the eyes wash out immediately with sterile water and seek medical advice as soon as possible.

PREPARING TO WORK

❑ **22 Select a worksite that has enough space to organise the movement of timber, people, split logs and vehicles safely.**

❑ **23** Reduce the need for manual handling of timber between the stack and the machine infeed as far as possible, eg lifting and carrying can be eliminated by the use of a hydraulic loader (forwarder, lorry loader etc) and a suitable skid or roller loading table. Where this is not appropriate, timber should be transferred to the machine by mechanical means or the machine regularly moved closer to the stack as the stack is used up.

❑ **24** Avoid the need to manually handle split logs by storing them where they fall from the outfeed conveyor (requires regular moving of the machine and any infeed conveyors) or by collecting them directly from the outfeed conveyor into a suitable crate or trailer. They can then be driven directly to the store in bulk.

❑ **25** Set up the machine on a firm, level surface that is free from obstructions and tripping hazards. Ensure the machine and any connecting conveyors are stable.

❑ **26** Ensure the work area has enough natural or artificial light.

❑ **27** Check that all guards and other safety protective devices (including interlock devices) are correctly adjusted and functioning. **Do not remove or modify the splitting chamber guard or bypass the interlock device.**

❑ **28** Ensure ventilation is adequate and any exhaust fumes are vented into open air if working in an enclosed space.

❑ **29** For machines driven by a PTO shaft, before starting ensure:

- the PTO shaft is fitted with a suitable guard (complying with BS EN 5674) that encloses the shaft along its full length from tractor to machine;
- the guard is correctly fitted and in effective working order (see HSE leaflet AS24(rev) *Power take-offs and power take-off drive shafts*);
- the tractor PTO speed is suitable for the machine.

❑ **30** Adjust the splitting length on the machine before starting.

❑ **31** Check for any hydraulic leaks and repair where necessary.

❑ **32** Check that the saw blades are rotating in the correct direction.

❑ **33** Check that the emergency stopping device is functioning correctly and is clearly marked.

EMERGENCY PROCEDURES

❑ **34** Ensure a designated and responsible person knows the daily work programme and agree with them a suitable emergency contact procedure. Where reasonably practicable, use a mobile phone or radio and a pre-arranged call-in system.

❑ **35** Ensure the operators can provide the emergency services with enough detail for them to be found in the event of an accident, eg the grid reference, the distance from the main road, the type of access (suitable for car/four-wheel drive/emergency service vehicles). In urban areas street names are essential. Know the location details before they are needed in an emergency (see FISA leaflet 802 *Emergency planning*).

OPERATING THE MACHINE

❑ **36** Ensure the machine and working area are kept free of obstructions such as offcuts, unstacked produce and excess sawdust.

❑ **37** If operating the machine in cold temperatures follow the cold start procedure recommended in the manufacturer's handbook.

❑ **38** Keep hands well clear of the blade. Do not clear debris from the bench table with the hands. Do not reach inside the guards.

❑ **39** Do not cut timber which has nails, stones or other foreign bodies embedded in it. These may damage the blade or be ejected during cutting.

❑ **40** Do not cut timber that is either too small or too large in diameter or length for the machine being used (see the manufacturer's handbook).

❑ **41** Follow best practice when manual handling. Use appropriate aid tools for lifting and moving timber, eg pulp hooks, lifting tongs.

- ❑ **42** Use extreme care when handling wet, bent or twisted timber and reject any that is too badly affected. Some forked or severely knotted timber may also need to be rejected.
- ❑ **43** Ensure you have a good grip on the timber being cut – use a log-gripping device if fitted.
- ❑ **44** Ensure timber is placed as flat in the saw trough as possible.
- ❑ **45** Try to cut timber of a similar size in batches.
- ❑ **46** Do not cut bunched timber – only cut one piece at a time.
- ❑ **47** Do not force the saw blade through timber.
- ❑ **48** Do not approach the outfeed conveyor while it is running.
- ❑ **49** Follow the manufacturer's instructions for processing the last log through the machine.
- ❑ **50** If a blockage occurs follow a **Safe Stop** procedure – stop the machine with the approved stopping device and wait until both the saw and ram have come to rest (or, on some machines, locked back into the protective housing) before attending to the blockage.
- ❑ **51** Check that the ram trough is free of timber before continuing to cut. Do not reach inside the splitter trough until the ram has stopped.
- ❑ **52** Do not make any adjustments to the engine, blade, packings, ram or guards unless the power source has been turned off (and any key removed) and the blade and ram have come to rest.
- ❑ **53** Stop work whenever a fault is noticed and report any defects.
- ❑ **54** Do not leave the machine running unattended.
- ❑ **55** Firewood processors are designed for operation by one person. Other workers may be present to help load timber up to the infeed or remove full bins, trailers etc from the outfeed, but should otherwise not be involved in the operation of the machine. Stop the machine (when it is safe to do so) if another person approaches during operation.

AFTER WORK

- ❑ **56** Immobilise the machine against unauthorised use when left unattended and cover the blade.
- ❑ **57** Clean down and inspect the machine after use and before transport. If being towed to another site, ensure it is placed in the transport position (see the manufacturer's handbook) and that all parts are properly secured.

NOTES