

GUIDELINES FOR SAFE HANDLING AND USE OF : CHAIN SAWS, BAND SAWS AND BAND KNIVES.

**A guide by: Occupational Health
and Safety Programme.**

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FOREWORD

The main purpose of this guide is to inform employers and workers of the dangers and safety aspects of working with chain saws. Some of the most important features are personal protective clothing, guidelines for drawing up your own safety code for cutters and duties of the employee. Finally, band saws and band knives are dealt with briefly.

This guide does not replace the Occupational Health and Safety Act of 1993 or any regulation made under the Act. Therefore, the guide should not be taken as the only source of guidance. It was written to point out the most important legislation applicable to chain saws, band saws and band knives, and should be read in conjunction with the Act and relevant regulations.

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PROGRAMME MANAGER.

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CHAIN SAWS

1. OPERATION AND MAINTENANCE

Although chain saws are designed to be operated without safety guards, the employer or user must ensure that chain saws are operated and maintained in such a way that persons are not exposed to hazardous conditions. To use

chain saws safely, regular maintenance checks should be done on safety equipment such as hand guards and anti kick-back devices. Also regularly check the sharpness of blades.

2. PERSONAL PROTECTIVE CLOTHING

Every employer must provide personal protective clothing and maintain it in good and clean condition. This protective clothing should be designed specifically for the use of chain saws. The following protective clothing is recommended for the corresponding body parts:

Feet: Steel toe-cap boots.

Legs: Trousers with several layers of loose ballistic nylon filler material are recommended. This material is designed to clog a chain and is known to stop the saw before it cuts through the material to the user's leg.

Hands: Gloves.

Head: Face protectors, hearing protectors and hard hats.

General Safety Regulation 2

Although it is the employer's responsibility to supply the employee with protective clothing, it is the employee's duty to wear the protective clothing.

See *Duties of the chain saw operator (page 9)* for the consequences of not wearing protective clothing.

3. NOISE

The employer must ensure that every employee employed in a noise zone undergoes audiometric testing as prescribed in section 7 of the South African Bureau of Standards' Code of Practice for the Measurement and Assessment of Occupational Noise for Hearing Conservation Purposes (SABS 083). A noise zone is an area where the noise level is equal to or

higher than 85 dB (A) when measured as prescribed in SABS 083. This means that the employer has a duty to test the noise level of the work area.

4. COMMON INJURIES

The most common injuries resulting from chain saw related incidents are the following:

- Cutting off an arm, a hand or a leg;
- deep bad cuts in the skin;
- hearing damage or even loss of hearing;
- burns;
- white finger syndrome (due to vibration during cold weather);
- splinters etc. flying into the eyes; and
- being hit by falling trees.

Often an injury to one worker is caused by the recklessness or carelessness of another worker.

5. SAFETY FEATURES

Chain saws usually have safety features that are designed and installed for the following reasons:

Anti-kick-back devices: to prevent the saw from kicking back when the nose of the saw touches the tree or a branch;

Anti-vibration system: to minimise vibration damage to operators and reduce fatigue;

Chainbrakes: to stop the chains when kick-backs occur;

Chain catchers: catch a broken chain or chain that comes off the bar;

Hand guards: to protect the hands in case of careless contact or a chain brake.

6. TRAINING

Every user of a chain saw must be given specific training in the operation of and safety precautions for chain saws. Only trained persons may use chain saws. In fact, the user may not leave his or her chain saw running or hand it over to another person unless the person has been trained to use the chain saw.

Most suppliers of chain saws offer safety programmes to their clients. These safety programmes should form the basis of your training course. One of the most important aspects your course should contain, is how to make in-field adjustments to saws and chains.

7. GUIDELINES FOR A SAFETY CODE FOR CUTTERS

The following guidelines have been drawn up to help you compile your own safety code for cutters:

7.1 The user

- Always be sober.
- Do not use drugs.
- Do not smoke while using the saw.
- Do not work when in a temper. Always stay calm.
- Do not allow untrained persons to use the saw.
- Make sure that there are no other persons in the work area when felling trees. A minimum safety barrier of two tree lengths must be maintained between persons.
- Take exceptional care when felling trees near powerlines.
- Report sickness to your supervisor.

7.2 Protective clothing and equipment

Consider training in the correct wearing, maintenance and keeping of the following items:

- Gloves;
- visors;
- helmets;
- earmuffs;
- shirts;
- long trousers;
- leg protectors;
- boots, anklets and laces;
- log hooks; and
- covers to be placed on guide bars when saws are not in use, particularly when moving between the work site and the storage place.

7.3 Chain-saw safety-check

- Idle speed. Too fast if chain rotates.
- Check chain for tension, defects and to be correctly sharpened at all times.
- Check bar and keep bar nuts tight at all times.

- Do not use unmixed petrol in a chain saw.
- Check safety brake after each refuelling.
- Check that the saw is not running or near an open flame when refuelling.
- Do not refuel while the machine is running or near an open flame.
- Do not smoke while refuelling.
- Check handle and mounting rubbers daily.
- Check safety lock on trigger-grip daily.
- Check safety guard on rear handle daily.
- Check that hooks are sharp and facing in the right direction.
- Check that the guide-bar cover is securely fitted.
- Check chain-catcher stub.

7.4 Starting up the saw

- Move the saw away from the refuelling point and place fuel containers in a shady area.
- Start the saw clutched between the knees away from the refuelling point.
- Let the saw warm up before work.
- Check the felling area for hook-ups and clear.
- Where there are overhead power-lines in the work area, make sure that trees cannot fall within 15 metres of a line.

7.5 Felling

- First plan to fell the tree right.
- Move brushwood and needles around the tree before felling and plan an escape route.
- Never cut halfway through a tree and fell another against it to push it over.
- ***Beware of people moving in the felling area.***
- A minimum safety barrier of two tree lengths must be maintained between persons at all times.
- Beware of kick-backs while clearing branches.
- Be careful when cutting the hinge while it is still attached to the stump. Stand well clear of the tree and cut the hinge with the cutter bar horizontally to the stump.

7.6 Debranching

- Use the six-point system for debranching and support the machine with your thighs. When moving the feet, the saw must be on the far-side of the tree.

- Keep balance at all times.
- Do not reach across the guide bar of a running machine or touch the chain when pulling branches.
- Beware of kick-back when the nose of the guide bar makes contact with a branch.
- Make sure that the log is stable and will not move or roll over when cutting off a branch.

7.7 Cross cutting

- Make sure that your feet are well clear of falling logs.
- Switch off the saw if jamming occurs.
- Find a safe position of work so that the log will not hit you when cut.
- Keep clear of moving skidder while cross cutting at the roadside.
- Keep all chain saws clear of moving skidder.
- Hold the chain saw with both hands.
- Beware of kick-back when the nose of the guide bar makes contact with a branch.
- Beware of placing yourself below loose legs that could slip or roll onto you.

7.8 Hang ups

- Never use the chain saw above chest height.
- Either roll the tree with the felling-bar pole or felling-bar-and-pole combination or cut short lengths off.
- Warn other people to keep clear.
- Do not work under a hung-up tree.
- Do not try to dislodge a hung-up tree by felling the supporting tree.
- Do not fell another tree onto a hung-up tree in an attempt to dislodge it.
- Do not climb a hung-up tree.
- Choose a suitable escape route.

7.9 Servicing

- Do not use petrol to clean any part of the machine.
- Move away from the servicing area before test-running the machine.
- Do not smoke near the mobile workshop or when servicing the machine.

8. DUTIES OF THE CHAIN SAW OPERATOR

It is the duty of the operator to:

- take care of his or her own health and safety, as well as that of other persons who may be affected by working with the chain saw. Many people have been injured and even killed because they were careless;
- co-operate with the employer where health and safety laws impose duties or requirements on the employer;
- carry out any lawful instruction which the employer gives him or her;
- meet the rules and procedures which the employer, or a person authorised by the employer, gives in the interest of health and safety;
- if he or she becomes aware of an unsafe or unhealthy condition, report it to the employer or the health and safety representative as soon as possible; and
- if he or she is involved in an incident that might endanger his or her health or cause an injury, report it to the employer or to the health and safety representative as soon as possible, but certainly before going home that day.

One of the most important duties of the chain saw operator is the wearing of safety clothing and the use of safety equipment, because failure to do so, makes the worker guilty of an offence. And an offender may expect a fine of up to R50 000 or imprisonment of up to one year, or both. The same penalty should be expected when employees tamper with safety clothing or equipment, or intentionally do something with the chain saw which threatens the health or safety of any person.

Section 38 of the OHS Act

9. FIRST AID

The employer must make sure that prompt first aid treatment can be given in case of injury. Where more than five employees are employed, the employer must provide a first-aid box which is easy to reach and use in case of an emergency. Every first-aid box should contain at least the following:

Item 1:	wound cleaner / antiseptic (100 ml)
Item 2:	swabs for cleaning wounds
Item 3:	wool for padding (100 g)
Item 4:	sterile gauze (minimum quantity 10)
Item 5:	1 pair of forceps (for splinters)

Item 6:	1 pair of scissors (minimum size 100 mm)
Item 7:	1 set of safety pins
Item 8:	4 triangular bandages
Item 9:	4 roller bandages (75 mm x 5 m)
Item 10:	4 roller bandages (100 mm x 5 m)
Item 11:	1 roll elastic adhesive (25 mm x 3 m)
Item 12:	1 non-allergic adhesive strip (25mm x 3m)
Item 13:	1 packet adhesive dressing strips (minimum quantity, 10 assorted sizes)
Item 14:	4 first-aid dressings (75 mm x 100 mm)
Item 15:	4 first-aid dressings (150 mm x 200 mm)
Item 16:	2 straight splints
Item 17:	2 pairs of large and 2 pairs of medium disposable latex gloves
Item 18:	2 CPR mouth pieces or similar devices.

Employees should also be encouraged to do first-aid courses and to know how to apply first-aid.

BAND SAWS AND BAND KNIVES

1. MACHINERY

Band saws come in a range of sizes and applications. Blades are designed to cut specific materials, and, in the case of a general purpose saw, it must be clearly defined on the machinery what material each type of blade is designed to cut.

Blades are available for special purposes, for example, cutting meat or steel. A special-purpose blade should never be used to cut material it was not designed to cut.

Blade speed is also important and must be checked against the machine speed.

2. GENERAL SAFETY

- Blades should be sharp and correctly tensioned.
- Guides and guide blocks should be correctly positioned and undamaged.
- Material guides should be used where possible and push blocks must be used when working near the blade.

- Goggles should be used where there is a danger of fine metal or wood chips being thrown by the blade.
- Band knives should only be handled while wearing special protective gloves such as chain mail.

3. COMMON INJURIES

- lacerations
- amputations
- foreign bodies in the eyes

4. PERSONAL PROTECTIVE EQUIPMENT

The most important items of personal protective equipment are the following:

- goggles
- gloves
- push blocks
- dust masks
- hearing protection (*see page 4 for Noise*).
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5. LEGAL REQUIREMENTS

Here follow the most important regulations:

The user of a band saw or band knife must make sure that all moving parts, except the working part of the blade at the point of operation, of every band saw or band knife is effectively guarded.

Driven Machinery Regulation 4

An employer or user of machinery must make sure that every person authorised to operate the machinery is fully aware of the dangers of working with the machine and understands the precautionary measures to be taken to avoid such dangers. No person may, without permission, operate machinery. And no operator may authorise anyone else to do his or her work.

General Machinery Regulation 4

6. CONTACT

For more information, contact :-

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