

Working  
Safer and  
Smarter  
with  
**POWER  
CUT-OFF  
SAWS**



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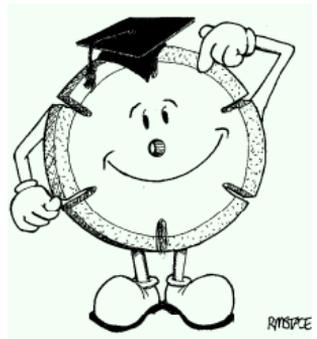
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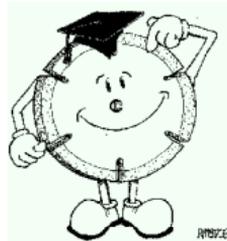


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# Introduction



This booklet is for all users of power cut-off saws.

You will find it useful whether you are a first-time user, or a seasoned operator, but should read it in conjunction with the manufacturer's recommendations.

Power cut-off saws are now used for many applications in different industries in New Zealand. The increased use, combined with the inherent safety considerations of the saw, has created a need for such a guide.

The Health and Safety in Employment Act 1992 clearly sets out the responsibilities of employers, employees, the self-employed and principals to contracts, with regard to preventing harm to employees and others in the workplace.

The Act requires employers to take "all practicable steps" to have safe systems of work and equipment to prevent harm. This guide is intended to explain the "all practicable steps" requirement for users of power cut-off saws.

## The dangers of power cut-off saws

The "power cut-off saw" — often incorrectly called a "chainsaw" — is a high-powered saw, designed to cut the toughest materials used in the construction industry.

Typically, diamond saw blades and cut-off discs have a surface cutting speed of approximately 300 km/h. At this speed cutting forces are great, and as a result operators are often incapable of reacting quickly enough to avert the severe injuries, even death that may arise from incidents.

Safety equipment meeting the highest standards must be worn by operators and workers in the close vicinity of cut-off saw operations.

To prevent injuries and fatalities, there needs to be constant awareness of the hazards presented by the equipment.

An employer must be responsible for their employees, and it is advised that every user should be issued with this guide as a first step in operator training. Practical training should be carried out in "real life" by suitably qualified instructors, supplemented by group safety discussion amongst employees, employers, and suppliers.

# 1 General safety precautions

## Before you use the saw

Read this booklet **before** you use the saw — even if you already have some experience in using power cut-off saws.

- It is important to be familiar with the operation of your particular cut-off saw. If you are insufficiently trained or informed, you will endanger yourself and others.
- Only people experienced with these types of saws or similar equipment should use these saws. In cases where inexperienced or infrequent users will be working with the saw, supervision and and/or training must be provided by the employer or the owner of hired equipment. The safety guide should be provided first.
- If you are a first-time operator hiring or borrowing a saw— ask a specialist to instruct you in working with petrol powered cut-off saws. Only when you are completely comfortable with the saw's features and operation, should you attempt to start basic cutting.
- Ensure the guards are set up and operating correctly, are secure and in good condition.

## Young workers

- People under 18 years of age should not be allowed to use a power cut-off saw. However, persons over the age of 16 years may use a power cut-off saw for the purpose of being trained, as long as they are under the direct supervision of a suitably qualified trainer.

## When using the saw

- Working with a power cut-off saw requires high concentration.
- Operate the power cut only if you are in good physical condition. If you are tired, your attention will be reduced. Be especially careful at the end of the working day. If you are fatigued, you may not have enough strength to control the saw. Perform all work calmly and carefully. The user has to accept liability for the safety of others.



- **NEVER** use a power cut-off saw under the influence of alcohol or drugs! Even prescription drugs can affect your senses and cause drowsiness. Check with your doctor if you are not sure what effects your drugs may have.
- A fire extinguisher must be available in the immediate vicinity when working with power cut-off saws. If working around dry vegetation or if the weather has been particularly dry, fires can quite easily occur. The petrol tank on the cut-off saw must be protected from flying sparks — designers, manufacturers, suppliers, and the employer all have duties to ensure that equipment is safe in this and other respects.

## Asbestos and asbestos cement products

- Asbestos and asbestos cement products must only be cut with power tools when special precautions are taken. These include:
  - The work carried out under the direct supervision of a person who holds an open Certificate of Competency for Asbestos Removal.
  - The work notified to OSH 24 hours prior to commencement.
  - The wearing of all personal protective equipment as directed.
  - The complete isolation of the area.
  - The containment of all contaminated waste.
  - The total cleanup of the containment area.



# 2 Protective clothing and equipment

For your protection, while you are using power cut-off saws you must wear the following personal protective clothing and equipment:

- **Non-fogging vented safety goggles or a face screen** —to protect your eyes from loose objects that may be thrown from the unit.



- **Sturdy, properly-fitted clothing** that allows freedom of movement. . To protect your legs, long pants should be worn. Scarves, neckties, jewellery loose pants and jackets should be avoided, as they can be caught on obstacles or become entangled in the unit.

- **Sturdy boots with non-slip soles** aid in providing proper footing. Steel-toed safety boots and Kevlar reinforced chainsaw



boots are both suitable for the work, however in some situations the latter type offer better protection.

- **Heavy-duty non-slip**

**gloves** — to improve your grip and protect your hands.

- **A safety hard hat**, of an approved type, should always be worn to protect your head.



- **Comfortable grade 5 hearing protectors**.



- **A respirator**—for all dry cutting of concrete where there is dust generated. Respiratory protection must be worn where there is a danger from the silica in concrete, or lead, or many other hazardous dusts.

- For wet cutting operations, a **heavy-duty rubber apron** can be used to reduce operator discomfort.

**NEVER** wear clothes made of flammable fabrics — under certain conditions, sparks may fly and ignite them.

**NEVER** operate the machine while alone — have someone available for assistance in case of injury or accident.

# 3 Wheel/blade safety

“Dry cut” diamond or abrasive cut-off wheels —referred to here as “wheels” — may be used on these machines with or without water. However, “wet cut” diamond wheels must be water cooled.

Below are some safety points to consider with both types of blade.

## Selection and installation

- Make sure the wheel is of proper specification and size for the application, and always comply with the wheel manufacturer’s recommendations for the application and use of their products.
- Clean the wheel and both wheel flanges when installing the wheel. When using abrasive wheels, wheel blotters must be used between flanges and wheel to compensate for irregularities in the wheel. Any dirt in-between the flange area can cause the flange to sit out of line with the blade, and result in “rough true” running and short blade life.
- Cut only materials that are specified for each cutting wheel. Read the instructions supplied with each cutting wheel concerning wheel speed, and other user advice.
- Handle abrasive wheels carefully. They may break if nicked, scratched, subjected to heavy side pressure, or impregnated with certain fluids.
- Never force wheels onto the arbor. Never alter the wheel mounting hole to make the wheel fit. Wheels are available with different hole sizes for different machines. Any forced wear on the arbor can cause “play” in the fit. Your diamond wheel should fit tight within 0.08mm (Imperial .003”) tolerance. Failure in maintaining your shaft/arbor can result in:
  1. Vibrations that can cause uneven cuts; and/or
  2. Wobbling and premature blade loss.
- **NEVER** use old bushes, these can be worn and out of round. A worn bush is as ineffective as a worn shaft.
- **NEVER** use damaged or severely worn wheels.
- Always change the wheel with the motor off.

## Using wheels

- Lower the wheel slowly into the material being cut. Do not allow the wheel to drop onto the surface, as blade damage may result.
- Do not force the wheel while cutting. Use proper forward speed and allow the wheel to cut and not climb out of the cut or stall in the cut.
- Use a back-and-forth cutting action. Keep the wheel moving all the time to prevent overheating of the material being cut. With some wheels, cutting in one spot will heat the material and put a glaze on the wheel. (Typified by a ring of red hot spark around the extreme cutting edge of the wheel.)

**NEVER** twist or turn a wheel in the cut, as this can cause wheel breakage. Use care when lowering the blade into an existing cut, making sure the blade is aligned with the cut. Never cut or grind with the side of the wheel.

**NEVER** apply excessive pressure. Let the blade do most of the work. Excessive pressure can result in overheating and/or damage to the blade.



- Avoid letting the cutting wheel hit the ground or any other hard objects. Damaged wheels may shatter and cause serious injury.

**Warning:** The machine's governor is designed to limit the maximum engine speed to a prescribed limit. Excessive engine speed will cause the wheel to exceed safe limits. Do not operate the machine if you suspect it is exceeding the manufacturer's prescribed speed limit.

- When setting the unit down after use, make sure the wheel does not make contact with the ground or any other surface. This could result in the machine spinning out of control and causing injury.



- Be sure sparks from the cutting operation cannot reach flammable surroundings. Make sure the petrol cap is in good order and secure.

When cutting metals, keep a fire extinguisher on hand.

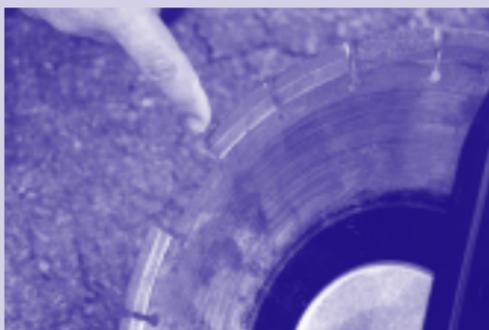
- If a wheel shatters, carefully examine the wheel guard for damage. A damaged wheel guard must be replaced to assure continued protection.

## Warning:

Examine cutting wheels before each use.

Abrasive wheels should be free of cracks, nicks and flaws. Diamond blades should be free of

cracks and should not be used if severely undercut. Use only the wheels recommended by your supplier.



# 4 Cutting/work area

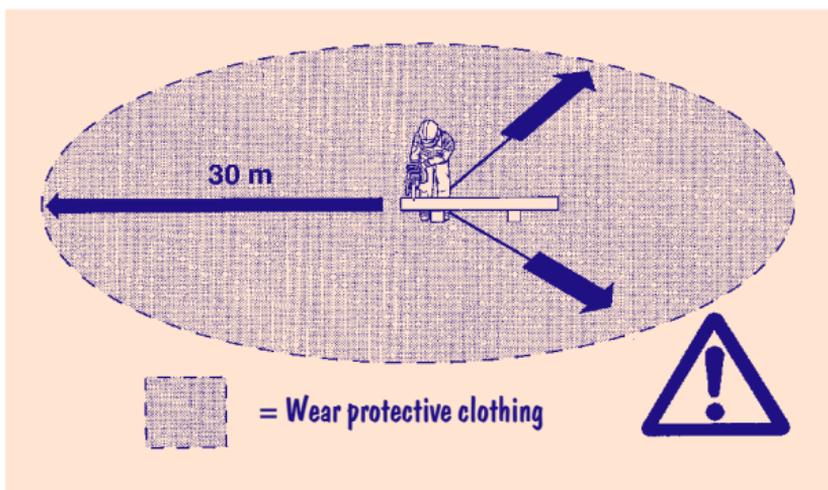
Never operate the saw in any application or job where you are not trained or supervised. Never use a cut-off saw to cut hazardous materials such as asbestos wrapped pipe unless the requirements in section 1 of this guide and the Asbestos Regulations are complied with.

**Warning:** Operate only in well-ventilated areas. Carbon monoxide levels should be monitored where appropriate. Exhaust fumes, if breathed, can cause serious injury or death. (Refer to OSH publication *Safe Working in a Confined Space* or AS2865:1995.)

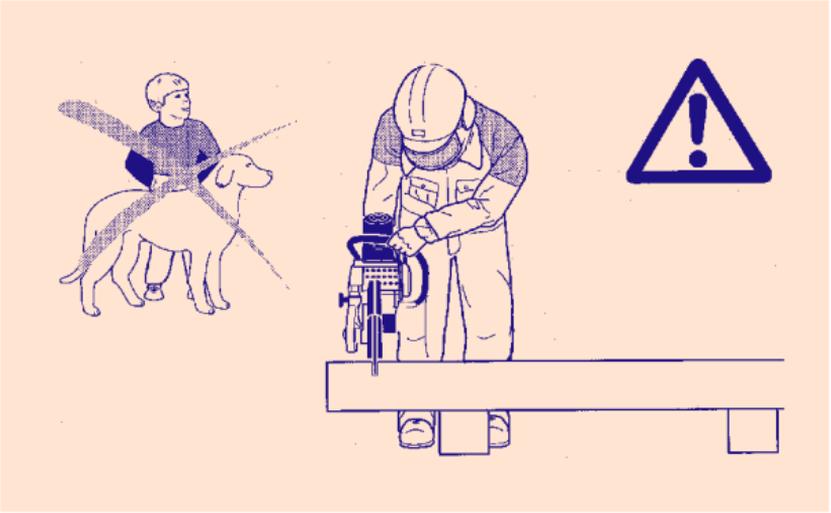
- Observe all safety regulations for the safe handling of fuel. Mix and handle fuel only in approved safety containers. Wipe the saw dry if fuel is spilled on it. Always move away from the fuelling area before starting the engine.

**NEVER** smoke while refuelling.

- Fuel the saw at least 3m from the place where you start the engine and operate the saw.
- Concrete tends to build up on the power head which should be cleaned regularly to reduce fire hazards.
- Always keep hands and feet well clear of the wheel's path.
- Safety barriers must be used to prevent entry by the public.
- People within a 30m radius of cutting activity **MUST** be wearing protective gear.



- If working near the public, always look behind you before cutting. Circumstances can change quickly. When the saw is running, it is difficult to hear or see what is happening around you.



# 5 Basic saw operation

Before you even start the engine, there are certain things that should be checked and done for trouble free and safe cutting:

- Check that the V-drive belt is in good order and is tensioned correctly.
- Check that the fuel mix is correct, and that there is enough fuel for the duration of cutting required. The correct mix is approximately 22:1 (petrol: standard two-stroke oil). Check the manufacturer's recommendations.
- Check the air filters. Worn or old filters can result in costly repairs, or may cause the engine to cease totally.

## Preparing the workpiece

**Important!:** Before you commence cutting, remove all foreign objects such as, rocks, gravel, nails etc. from the cutting area. Otherwise, such objects could be flung with great force away from the cutting disc at great speed causing injury.

- Make sure that what you are cutting is secure. **DON'T** hold it down with your foot, and **DON'T** get someone else to hold the material steady!
- If cutting round objects, always make sure that they are secure enough to resist rolling.
- Never cut more than one piece at a time! When cutting, make sure that no other workpiece comes in contact with the cutting edge. Always cut in a clear area.
- Only use the power cut-off saw with good light and visibility. Be aware of slippery or wet areas, and of ice or snow (risk of slipping and injury).



- Never work on unstable surfaces, such as ladders. Make sure that there are no obstacles in the working area that increase the risk of stumbling. Always make sure you have a safe footing.
- Ensure that the material being cut is stable and unlikely to move during cutting. Wedges, shoring, and/or props may be required. In some cases you may need to consult a structural engineer.
- If cutting on scaffolding, make sure that there is no one below, that the area is clear behind the operation and the scaffolding is to required standards.

## Starting the saw

**Caution:** Place the saw on a clear, level spot where the wheel will not be obstructed. Make sure all the controls work smoothly.

Before you start cutting:

1. Move the on-off switch to the ON position.
2. Fully engage the choke lever.
3. Depress trigger lockout lever and squeeze the trigger. (Note: the trigger cannot be moved unless the trigger lockout lever is depressed.)
4. While squeezing the trigger, push in the throttle latch button and release the trigger. This advances the throttle for easier starting.

**Caution:** Hold the saw down with one hand on top of the front handlebar. Place your toe in the throttle handle base for additional support.



5. Grasp the starter grip and pull the starter grip straight up to spin the engine rapidly. Use the following sequence for starting or refer to the manufacturer's operator's manual.
  - a) Pull repeatedly with full choke.
  - b) As soon as the engine fires, go to half-choke and pull to start.
  - c) When engine runs, push in the choke to open position.

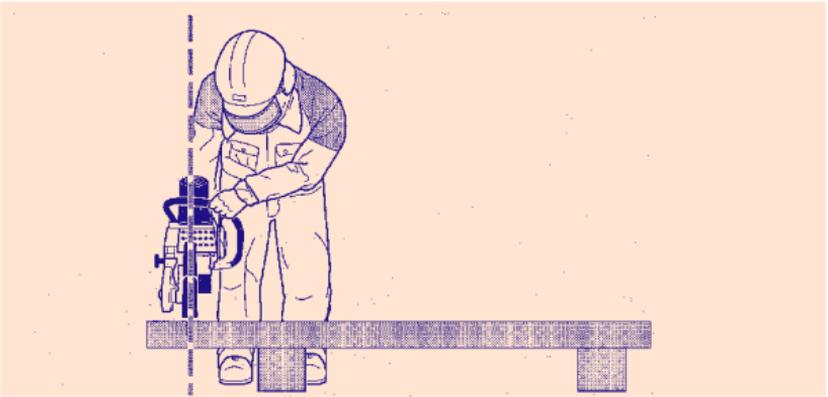


6. Squeeze the trigger. This unlatches the throttle latch and gives you control of the throttle for cutting.

7. To stop, move the switch to the off position.

## Holding the saw

- Grip the front handlebar in the webbing between the thumb and index finger of your left hand. Wear non-slip gloves.
- Stand to one side, as far as practicable so that no point on your body or legs is in line with the cutting wheel.



- Get a good grip on the rear handle.
- Maintain your grip (and balance on both feet) and position yourself so that you will not be drawn off balance by any possible kickback reaction of the cutting wheel. This action is usually unpredictable.
- Always operate a power cut off saw with both hands. Take the back handle with the right hand and the tubular handle with the left hand. Hold the handle tightly with your thumbs facing your fingers.
- When starting a cut, apply the disc to the workpiece with care. Don't shove it into the material.

## Making cuts

Guide the saw in such a way that no part of your body is within the extended swing range of the disk.

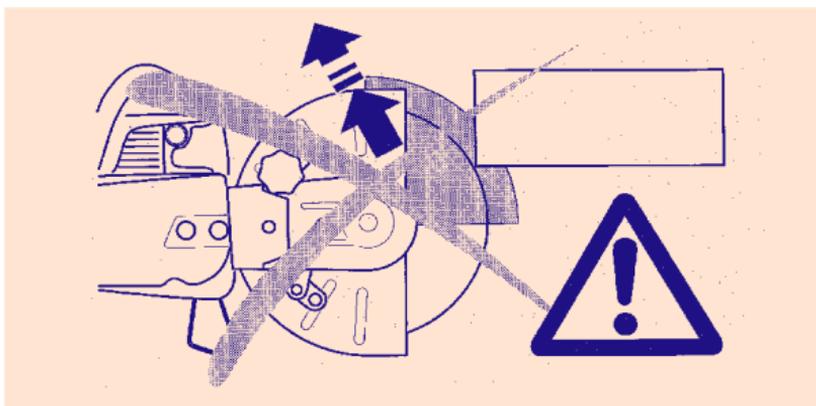


## Preventing kickback

Kickback occurs when the top of the cutting disk is used for cutting. It causes the saw to be thrown back toward the user with great force, and out of control.

To prevent kickback, observe the following:

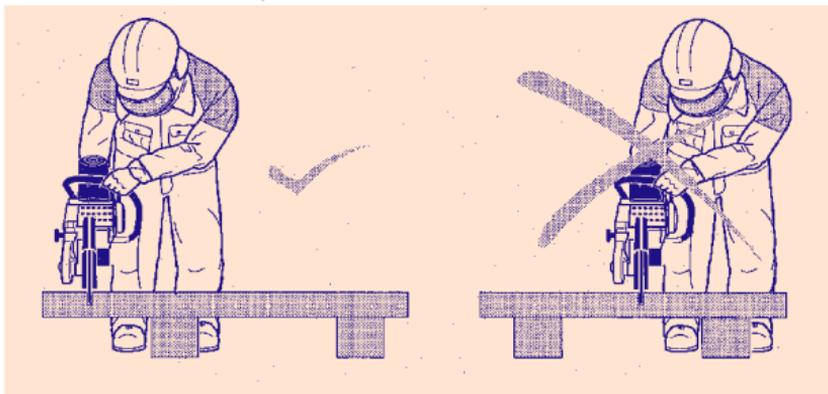
- Never cut with the section shown in the diagram below.
- Be especially careful when re-inserting the disk into cuts that have already been started.



## Preventing lock-in

Lock-in occurs when the cut narrows (crack, or workpiece under stress). This causes the power cut-off saw to suddenly jump forward or up, out of control and with great force. To prevent lock-in, observe the following:

- When re-inserting the wheel back into existing cuts, have the engine running at moderate speed.
- Always support the workpiece so that the cut is under tension (shown below). This means that the cut does not press together and jam the cutting disc as it proceeds through the material.



# 6 Special conditions

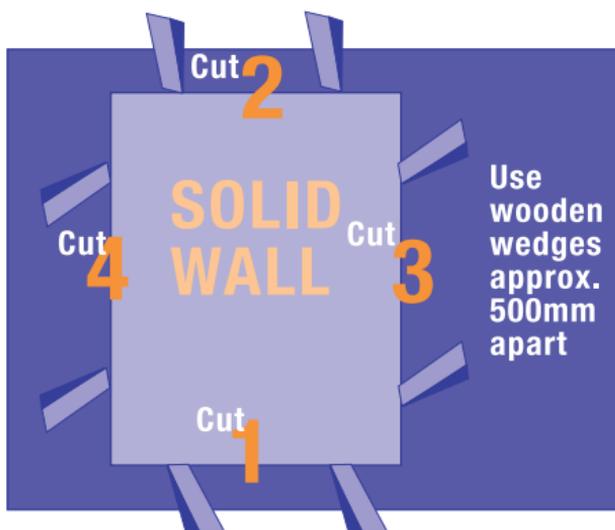
## Wall cutting and openings/doorways

### Method 1

Make cut 1 first. Wedge the cut area. Then repeat this process for the other three. Cut, then wedge.

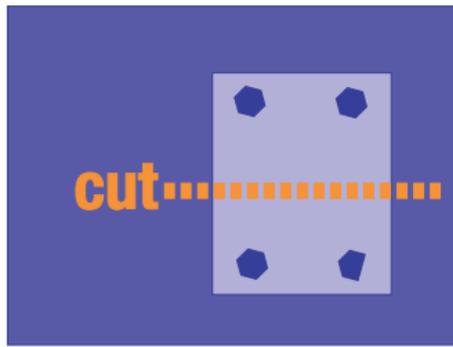
If this procedure is carried out correctly, there should be no risk of the operator getting hit with the falling section.

*If in doubt, use more wedges!*



Cutting of pre-stressed and post-tensioned floors and walls, should only be carried out after consultation with the job engineer and cut by trained professionals only.





## Method 2

Due to the hollow nature of block walls, steel plates and through bolts must be used *instead of wedges* to support the cut areas. Holes should be drilled through the plates and bolts placed through the wall, secured by nuts on the other side. These are to be used in the same frequency as wedges.

### Caution:

**NEVER** trust a piece of concrete. What may look like a solid piece of concrete, may in fact be incorrectly made.

Concrete gives way with virtually no warning. It is imperative that when cutting vertically, that the concrete is stabilised with strong wooden wedges or steel plates as shown above.



# 7 Cutting metals

Always wear approved respiratory protection when cutting metals. When cutting follow the following procedure:

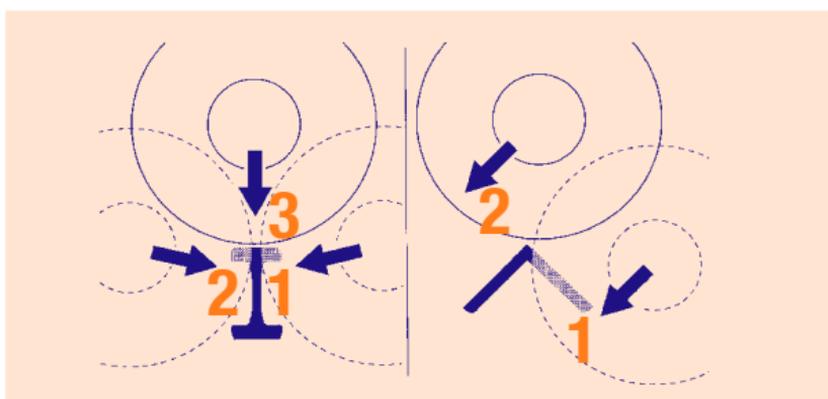
- Before you start, determine the direction of cutting. Mark the cut and apply the wheel to the material at a moderate speed so as to cut a guide groove before going to top speed. As you increase the speed, apply more pressure to the saw.

**Caution:** The rapid rotation of the cutting disk heats the metal and melts it at the point of contact. Swing the guard as far round as possible behind the cut in order to direct the stream of sparks forward, away from the operator.

- Keep the wheel straight and vertical. Don't tip it, as this can break the disk and result in injury.
- The best way to get a good, clean cut is to pull or move the power cut back and forth. Do not simply press the disk into the material.
- Worn disks have a smaller diameter than new disks. Their reduced diameter means less disk speed at the cutting surface — and therefore they do not cut as well.

## Cutting metal sections

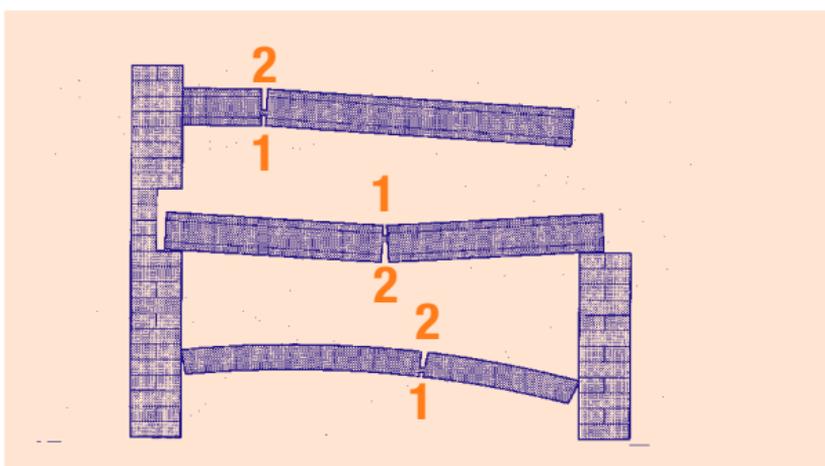
- **Thin tubing and pipes** can be cut in a simple downward motion.
- **Cut large diameter pipes** in the same way as round stock. (Diagram shown on following pages). To prevent tipping, and for better control, do not let the disk sink too deeply into the material. Instead, always make a shallow cut around the whole piece.
- **Cut I-beams and L-bars** in steps (as shown below).



- Cut bands and plates with the same technique as for pipes. Cut along the wide side with a long cut.
- Thick round stock is best cut in stages (see following diagram).

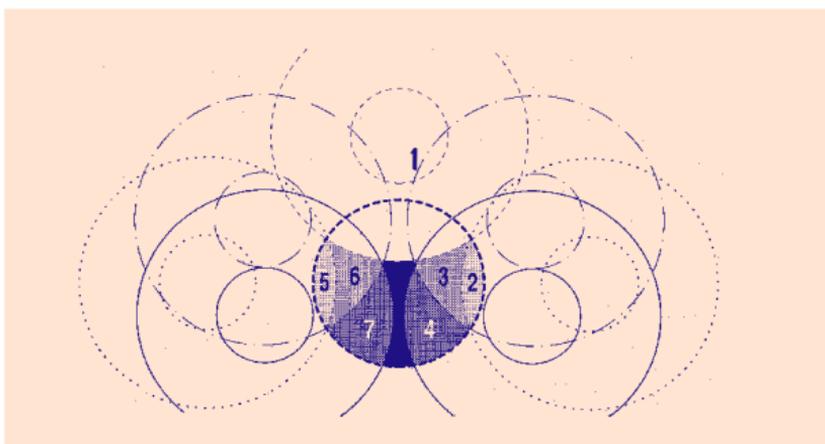
## Hazardous cutting situations

When cutting material under stress (supported material or material in structures), always make sure a notch in the thrust (pressure) side, and then cut from the tension side. This is so that the wheel does not lock-in (see below).



**Caution:** If there is a chance that the material being cut is under stress, take the necessary precautions by propping or wedging before beginning the cut. This should minimise the risk of a kickback. Ensure that your stance is always correct so that in the event of a kickback, you will be clear of possible danger.

- Cut round stock in stages (see below).



- Be particularly careful in scrap metal yards, junkyards, at accident sites, and with haphazard piles of material. Precariously balanced pieces, or pieces under stress can act in unpredictable ways, and may slide, jump out, or burst. Always exercise extreme caution and use only equipment that is in perfect working order.

Observe the accident prevention rules and procedures of your employer and/or insurance organisation. Section 8 of this booklet describes the general requirements of the Health and Safety in Employment Act.

# 8 General maintenance and storage

Every machine owner/operator is encouraged to establish a preventative maintenance programme based on the saw manufacturer's recommendations. Inadequate maintenance schedules or procedures can result in machine failure and/or an unsafe piece of machinery.

- **DON'T** operate any machine that is damaged or improperly adjusted.
- Read and follow all operational, repair and maintenance instructions in the manual provided with the saw.
- Before attempting any maintenance, cleaning, or repair work, stop the engine and wait for the wheel to stop spinning. Any maintenance or repair work that is not specifically described in the owner's manual should only be performed by an authorised service person.
- Air filters should be checked frequently. An ineffective air filter can cause serious engine damage.
- After use, clean any foreign material from the machine.
- Make sure the control handles have not accumulated oil and fuel and are clean and dry.
- Always keep equipment in clean, serviced condition.
- Ensure the guards are set up and operating correctly, are secure, and in good condition.

## Frequent maintenance checks

The following maintenance checks should be made each time the saw is used, or at least daily where it is in continuous use:

1. Repair or replace all worn or damaged components immediately.
2. Check belt drive tension, do not over tension. Make sure the belt is in good condition.
3. Check the spindle, making sure the arbor and threads are not worn, damaged, or bent.



4. Spindle bearings should be tight, without any free play side-to-side, or up-and-down.
5. Wheel flanges should be clean, flat, and free of nicks or burrs. Check for excessive diameter wear, run out, or wobble.
6. Check all guards in place, secure, and in good condition.
7. Check all fasteners are tight and secure.
8. Clean pre-filters and air filter regularly.



## Storage

- Regulations for the safe storage of fuel supplies must be observed. Non-stabilised fuel supplies should not be used in other equipment or discarded.
- Remove the abrasive wheel from the machine for storage. One wheel may be laid on a flat surface. Where there are several wheels to be stored, keep them vertical, or place supports between them if they are to be stacked.
- Clean all foreign material from the outside surfaces of the saw. The finish can be preserved with a coat of auto wax or spray lubricants.
- Store the saw in a well-ventilated place where it is inaccessible to children and away from corrosive agents such as garden chemicals, salts or fertilisers.

# 9 Health and safety and the law

Because of the hazards of using power cut-off saws, we strongly suggest that you and your company as a whole, establish systems of work that meet the requirements of the Health and Safety in Employment Act.

Failure to meet legal requirements can result in large fines and/or the loss of an operator's licence.

The Health and Safety in Employment Act is enforced by the Occupational Safety and Health Service of the Department of Labour (OSH). The service employs inspectors to ensure the law is being met in workplaces and investigate accidents. It also publishes information to help businesses comply with the law.

We strongly recommend that relevant OSH publications are acquired, read and understood. You can get copies from your nearest OSH office (listed on the back page).

The following few pages are relevant excerpts from the Health and Safety in Employment Act 1992 which should be read by both employers and employees and understood.

These pages provide the relevant information to help you understand your rights and necessary commitments to create a safe place of work. We also recommend that you and your employees routinely undergo practical safety education and training on the subjects covered in this manual. Your diamond saw blade supplier or HPDT Ltd could provide you with such training.

## Employers' duties

### *General duty*

#### **6. Employers to ensure the safety of their employees**

Every employer must take all practicable steps to ensure the safety of employees while at work, and in particular shall take all practicable steps to-

- (a) Provide and maintain for employees a safe working environment; and
- (b) Provide and maintain for employees while they are at work facilities for their safety and health; and



(c) Ensure that plant used by any employee at work is so arranged, designed, made and maintained that it is safe for the employee to use; and

(d) Ensure that while at work employees are not exposed to hazards arising out of the arrangement, disposal, manipulation, organisation, processing storage, transport, working or use of things-

(i) In their place of work; or

(ii) Near their place of work and under the employer's control; and

(e) Develop procedures for dealing with emergencies that may arise while employees are at work.

### *Duties of employers in relation to hazard management*

## **7. Identification of hazards-**

(1) Every employer shall ensure that there are in place effective methods for-

(a) Systematically identifying existing hazards to employees at work; and

(b) Systematically identifying (if possible before and otherwise as they arise) new hazards to employees at work; and

(c) Regularly assessing each hazard identified and determining whether or not it is a significant hazard.

(2) Where there occurs any accident or harm in respect of which an employer is required by section 25 of this Act to record particulars, the employer shall take all practicable steps to ensure that the occurrence is so investigated as to determine whether it was caused by or arose from a significant hazard.

**8. Significant hazards to employees to be eliminated if practicable** — Where there is a significant hazard to employees at work, the employer shall take all practicable steps to eliminate it.

**9. Significant hazards to employees to be isolated where elimination impracticable** —Where —

(a) There is a significant hazard to employees at work and

(b) Either—

- (i) There are no practicable steps that may be taken to eliminate it; or
- (ii) All practicable steps to eliminate it have been taken, but it has not been eliminated—

The employer shall take all practicable steps to isolate it from the employees.

**10. Significant hazards to employees to be minimised, and employees to be protected, where elimination and isolation impracticable— Where—**

(a) There is significant hazard to employees at work, and

(b) Either-

(i) There are no practicable steps that may be taken to eliminate it; or

(ii) All practicable steps to eliminate have been taken, but it has not been eliminated; and

(c) Either-

(i) There are no practicable steps that may be taken to isolate it from the employees; or

(ii) All practicable steps to isolate it from the employees have been taken, but it has not been isolated, —

the employer shall take the steps set out in subsection (2) of this section.

(2) The steps are—

(a) To take all practicable steps to minimise the likelihood that the hazard will be a cause of source of harm to the employees; and

(b) To ensure that where is provided for, accessible to, and used by the employees suitable clothing and equipment to protect them from any harm that may be caused or may arise out of the hazard; and

(c) To monitor the employees exposure to the hazard; and

(d) To take all practicable steps to obtain the employees consent to the monitoring of their health in relation to the hazard; and

(e) With their informed consent, to monitor the employees' health in relation to exposure to the hazard.

*Duties of employers in relation to training and supervision*

**13. Training and supervision** — Every employer shall take all practicable steps to ensure that every employee who does work of any kind, in a place of work —

(a) Either—

(i) Has, or

(ii) Is so supervised, by a person who has,—

such knowledge and experience of similar places, and work, plant, or substances of that kind, as to ensure, that the employee's doing the work using the plants, or dealing with the substance, is not likely to cause harm to the employee or other people, and

(b) Is adequately trained in the safe use of all plans, objects, machines, substances, and protective clothing and equipment that the employee is or may be required to use or handle.

**14. Employers to involve employees in development of health and safety procedures** — Every employer shall ensure that all employees have the opportunity to be fully involved in the development of procedures developed for the purpose of —

(a) Complying with sections 7 to 10 of the Act; or

(b) Dealing with or reacting to emergencies or imminent dangers.

*Other duties*

**15. Duties of employers to people who are not employees** — Every employer shall take all practicable steps to ensure that no action of any employee while at work harms any other person.

**17. Duties of self-employed people** —

Every self employed person shall take all practicable steps to ensure that no action or inaction of the self employed person while at work harms the self employed person or any other person.

**19. Duties of employees** — Every employee shall take all practicable steps to ensure-

(a) The employee's safety while at work; and

(b) That no action or inaction of the employee while at work causes harm to any other person.

### ***Commentary***

The Health and Safety in Employment Act requires employers to be proactive in the identification and elimination of hazards. A saw during its operation is a significant hazard because of its potential to cause **serious harm**. As such the Act places a number of obligations upon employers. Simply because an accident with a saw may not have occurred does not mean the employer has discharged their obligations to the Act.

The Act also applies to persons who control places of work, the self-employed, principals and employees. A person may have multiple responsibilities including being an employer, person with control over a place of work and a principal.

A person who is either an employer, in control of a place of work, self employed, principal or employee must ensure that on the balance of probabilities they took all reasonable practicable steps to avoid the possibility of an injury occurring. The "all practicable steps" requirement is not a counsel of perfection in hindsight. The person involved does not need to establish that all possible steps were taken.

However, if a step was not taken which in all the circumstances was practicable it is likely that the Act will have been breached.

## **Duties of persons with control of places of work**

Section 16 of the Act contains this duty. It is not reproduced here, but broadly, any person who controls a place of work must take all practicable steps to ensure the following people are not harmed by hazards in the place of work:

- People in the vicinity of the place of work;
- People who are working in the place, for persons who control the place, as employees or as contractors or sub-contractors (or their employees);



- People with consent to be in the place and who have paid to be there or are customers.

Other people must be warned of significant, out of the ordinary, work-related hazards if they:

- Have been given express authorisation by the occupier of the place to be in the place; or
- Have given the occupier of the place oral advice that they will be working in the place under statutory authority.

## Duties of principals

The Act requires every principal to a contract, except for work in or on a private home, to take all practicable steps to ensure that no contractor or employee of a contractor or sub-contractor is harmed while doing any work that the contractor was engaged to do. This duty is set out in section 18 of the Act.

# 10 Further information

For further information on the safety requirements of power cut-off saws, or certificated training, contact High Performance Diamond Technology Ltd. Contact details appear inside the front cover of this booklet.

For further advice on complying with the Health and Safety in Employment Act, contact your nearest office of the Occupational Safety and Health Service. Contact details are listed in the *Blue Pages* at the front of your telephone directory.

