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| **OVERVIEW:** | Describes safe work considerations and practices associated with ground-based chainsaw use | | | | | | |
| **Personnel required:** | * Minimum **Two** competent personnel (for any physical works). Chainsaw maintenance by lone individuals is permitted provided no actual cutting is carried out | | | | | | |
| **Equipment required:** | * Emergency response equipment including First Aid Kit & Fire Extinguisher * Reliable external communication system with access to emergency services * Two-stroke fuel & chain-bar lubricant in approved containers * Spill containment & recovery kit * Chainsaw maintenance tools | | | | | | |
| **PPE required:** |  |  |  |  |  |  |  |
| ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | As required |
| **Additional PPE:** | * Chainsaw protective trousers or chaps * Snag-free clothing | | | | | | |

**Note:**

* For the purposes of this document, no distinction is made between internal combustion and electric motor driven chainsaws

**Authorised users**

Chainsaws are only to be maintained and operated by individuals deemed competent through a combination of either:

* Formal training
* A demonstrated understanding of principles of operation, explanation of safety considerations (including personal protective equipment, kickback etc.), correct handling (incl. use of mitt), infield maintenance, safe and efficient use throughout a range of applications (delimbing/cross-cutting, compression and tension wood etc.).
* Or as a trainee under direct supervision of a competent person

**Ground-based chainsaw use**

A chainsaw may only be used if it meets the following requirements:

* An operational on-off (‘kill’) switch
* An operational front hand guard/chain brake, chain catcher hook, anti-vibration mounts and a chainsaw mitt
* Non-leaking fuel and oil tanks
* An effective, undamaged exhaust silencer
* A sound, undamaged, and correctly tensioned chain that meets manufacturer’s specifications and does not ‘run-on’ when the saw is at idle

**Pre-start requirements:**

* Conduct a site-specific prestart hazard and risk assessment
* Establish a designated re-fuelling and maintenance ‘safe zone’ where emergency equipment and personal equipment is to be stored
* Agree a safe separation distance between chainsaw users and others (recommended minimum: 5m)
* Set up all necessary signage and barriers to delineate the site and prevent unauthorised access.

**Maintenance**

* Ensure all maintenance is carried out in accordance with manufacturers recommendations
* Check all fixtures are tight and secure
* Ensure chain tension is correct – i.e. it can be manually drawn along the chain bar guide rails with minimal resistance but is not so loose that the drive links can be lifted clear of the guide rail if pulled upwards.

While working check:

* The kill-switch works
* The chain brake operates correctly
* Chain tension is correct, and does not run-on at idle
* The chain oiler is functioning
* Chain sharpness is maintained. Re-sharpen as necessary or immediately after hitting any foreign object or soil
* The safety mitt is being used

For ground-based use, rear-handled chainsaws must be used with two hands at all times, with the right hand on the rear handle (i.e. controlling the throttle) and the left hand in the safety mitt and the thumb under (not pressing on) the front handle. This positioning gives maximum control, particularly in case of a kick-back.

Kickbacks are extremely dangerous and can result in serious harm or death. They typically occur when the upper-side tip of the chain bar contacts a non-moving obstruction while the chain is spinning at speed.

In a kick-back, the energy of the spinning chain is transferred to the static object (often another log or branch) causing the chainsaw recoil violently – typically up and backward, directly toward the operator’s head and right shoulder.

Kick-back can be avoided by:

* Maintaining a clutter-free work site
* Being actively aware of the bar tip position at all times
* Using a two-handed stance where the line of chain bar is offset from body (rather than directly in front)
* Maintaining a sharp, correctly tensioned chain at all times.

**Fuelling**

Internal combustion chainsaws typically run on two-stroke fuel, where the upper cylinder lubricating oil is mixed in with the petrol.

Two-stroke fuel is highly flammable in both liquid and vapour forms so may only be stored, transported and dispensed from approved, clearly marked containers with non-leak caps.

Smoking is prohibited within 5 metres of any fuel container regardless of whether full or empty.

Fuel should be stored in a well ventilated, shaded area. Storing sealed fuel canisters in direct sunlight can result in a build-up of vapour causing canisters to expand. Care must be taken when releasing canister caps to ensure the highly flammable vapour released is not inhaled or exposed to any flame or ignition source.

Care is required when refuelling chainsaws to prevent spillage. Spilled fuel and chain bar oil are eco-toxic and can be very damaging to vegetation, concrete and asphalt. It is advisable to establish a designated flat, clear refuelling site where spillages can be avoided and contained if necessary.

When refuelling a saw, it is good practice to fill the chain lube tank first as it gives a hot saw slightly more time to cool down and prevents the bar lube being forgotten. Refuelling is also a good opportunity for the operator to rehydrate and/or take on some food. It is also the time to check over the saw, air filter, chain tension, sharpness etc.

**Charging**

Electrically powered chainsaws use removable/interchangeable rechargeable batteries. Depending on the model, a fully charged chainsaw battery typically gives 30 to 45 minutes of cutting before requiring recharging.

Electrically powered chainsaws typically have an illuminated power meter that indicates the level of charge.

Batteries should be fully recharged at the end of each working day. For optimal battery life consult original manufacturer’s recommendations regarding short term, incomplete ‘boost’ charging and/or periodically allowing batteries to fully discharge.

**Chainsaw starting procedure (petrol motor)**

* Ensure the saw is in sound condition and the operator is wearing all required personal protective equipment
* Maintain a safe distance from other people (≥ 2m) and clear of any obstructions.

**Note:**

* **‘**Drop-starting’ a chainsaw is extremely dangerous and is prohibited

If cold starting a chainsaw, place it on clear, flat ground, depress the decompression button (if fitted) and close the choke. Place the right foot on the rear handle plate and the left hand on the front handle. Pull the starter cord firmly until the engine ‘fires’ once. Open the choke and repeat. Do not give any throttle until the engine is running.

If hot starting, as above but no choke is required.

Leg-lock starting is permitted provided the rear handle is ‘locked’ between the operator’s legs, just above the knees. With ignition switch set in the ‘on’ position and the left hand in the safety mitt and holding the front handle, pull the starter cord firmly. Do not give any throttle until the engine is running.

**Chainsaw ‘starting’ procedure (electric motor)**

Electric chainsaws are activated by pressing and briefly holding the power button. Once the light within the button is solidly lit the chainsaw is effectively active.

As with petrol-powered chainsaws, the chain of an electric motor chainsaw will not start spinning unless the twig-guard on the top side of the rear handle is depressed in conjunction with the throttle switch.

A key difference between a petrol-powered chainsaw and an electrically powered chainsaw is that petrol motors ‘tell you’ they are going (i.e. through the noise and vibration generated by the motor).

An activated but idle electric chainsaw by comparison is silent and ‘tells you’ nothing – so inadvertently activating the twig guard/throttle switches will set the chain spinning. This subtle difference can introduce a significant risk to experienced petrol-powered chainsaw users using electric powered chainsaws for the first time.

As a precaution, treat all electrically powered chainsaws as ‘live’ and remove batteries prior to stowing and transportation.

**General**

* Always check your chainsaw has sufficient fuel/power to complete the cut you are about to make before starting the cut
* Always apply the chain brake when repositioning, or temporarily setting the saw down on the ground
* Turn all chainsaws off when not in use (i.e. >1 minute)
* Never operate a chainsaw with a chain that spins at idle. Check chain tension or idle adjustment. If the problem cannot be rectified in the field, tag and withdraw the saw from service until it can be repaired
* Put scabbards back on saws when not in use
* Carry switched off chainsaws by the top of the front handle with the chain bar facing backwards

**Note:**

* Due to the high likelihood of one-handed use and potential uncontrolled kick-back, top handled chainsaws are not recommended for ground-based works

**End.**

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