# RISK ASSESSMENTS FOR MAINTENANCE AND USE OF CHAINSAW, WOOD CHIPPER & STUMP GRINDER.

# **Contents**

1. The Chainsaw	3
Chainsaw Maintenance	3
Chainsaw Use	6
2. The Wood Chipper	9
Wood Chipper Maintenance	9
Wood Chipper Use	12
3. The Stump Grinder	15
Stump Grinder Maintenance	15
Stump Grinder Use	17

# 1. The Chainsaw

# **Chainsaw Maintenance**

The assessment is based on the site being one of the arboriculture workshops.

SITE	
THREAT	CONTROL
Slips, trips and falls	<ul><li>Operator awareness</li><li>Communication</li><li>Good housekeeping</li></ul>
Third party access	<ul><li>Close doors</li><li>Operator awareness</li><li>Communication</li></ul>
Collision damage to machines or impact injury	- Good housekeeping
from other operators doing maintenance	- Operator awareness - Communication
Fumes from fuel	<ul><li>Ensure the workshop is well ventilated</li><li>Minimise transfer of fuel</li><li>Correct storage of fuel</li></ul>
Ignition of fuel	<ul><li>No flames, vaping or smoking in workshop</li><li>Correct storage of fuel</li></ul>
TASK	
THREAT	CONTROL
Cuts to operators hands or fingers whilst sharpening or handling the chain or from sharp edges of the guide bar.	<ul><li>Minimise handling of cutters</li><li>Correct work positioning</li><li>Operator awareness</li><li>Wear appropriate gloves</li></ul>
Crush Injury to operators fingers or hand from use of vice.	- Operator awareness

Cuts or other injury to operator from use of hand tools	<ul><li>Operator awareness</li><li>Right tool for the right job</li><li>Don't use excessive or uncontrolled force</li><li>PPE</li></ul>
Damage to machine from incorrect maintenance	<ul> <li>Follow manufacturers guidance</li> <li>Proper training</li> <li>Right tool for the right job</li> <li>Don't use excessive or uncontrolled force</li> </ul>
Loss of small, but critical parts of the machine during maintenance	<ul><li>Operator awareness</li><li>Use containers to store small parts</li><li>Good housekeeping</li></ul>
Acute or chronic injury to operator from use of compressed air.	<ul><li>Operator awareness</li><li>Communication</li><li>Eye protection, hearing protection and hand protection.</li></ul>

MACHINE	
THREAT	CONTROL
Injury or •• death •• caused by unfamiliarity with machine	<ul><li>Follow manufacturers instructions</li><li>Read safety decal</li><li>Training</li><li>Operator awareness</li></ul>
Acute or chronic damage to operators hearing from noise	<ul><li>Do not use in enclosed spaces</li><li>Correctly rated ear protection</li></ul>
Acute or chronic damage to operator from fumes	<ul><li>Do not use in enclosed spaces</li><li>Ensure exhaust is working correctly</li><li>Correct working position</li></ul>
Acute or chronic damage to operator nerves from vibration	<ul> <li>Use battery saws</li> <li>Ensure hands are warm</li> <li>Ensure AV system working correctly</li> <li>Use models with heated handles</li> <li>Use chainsaw gloves</li> </ul>

Acute trauma injury to operator or other
operators from contact with running chain

- Operator awareness
- Safe working distances
- Safe starting procedure
- Safe stop procedure
- Correct chain brake usage
- Correct training
- Correct work positioning
- Protective chainsaw trousers (Type C aerial, Type A ground)
- Protective chainsaw boots with steel toe caps

Damage to environment from leaking fuel or oil

- Ensure fuel and oil caps are fastned
- Check at fuel site
- Correct maintenance

# **Chainsaw Use**

The assessment is based on the site being the arboretum or pinetum

SITE	
THREAT	CONTROL
Slips, trips and falls	- Operator awareness - Communication
Minor or major Injury to third party through unauthorised access	<ul><li>Good housekeeping</li><li>Signage and cordon off the area</li><li>Banksman</li><li>Operator awareness</li><li>Communication</li></ul>
Sudden inclement weather creating unsafe working conditions.	<ul><li>Check weather forecast for alerts at start of day</li><li>Operator awareness</li><li>Communication</li></ul>
Damage to environment from spillage of fuel or oil	<ul> <li>Dedicated fueling site</li> <li>Use of spill mats</li> <li>Ensure caps are correctly tightened</li> <li>Operator awareness</li> <li>At least ten metres from watercourses</li> <li>Correct storage of fuel</li> </ul>
Strike injury to operator from unseen deadwood or debris above the operator	<ul><li>Operator awareness</li><li>Communication</li><li>Helmet</li></ul>
Transmission or transport of a bio-pathogen through the use of the tool.	<ul><li>Sanitise saw before and after use</li><li>Leave infected materials in place</li></ul>
TASK	
THREAT	CONTROL
Acute injury to operator from kickback	<ul><li>Operator awareness</li><li>Avoid kickback zone</li><li>Use anti-kickback chain</li></ul>

Saw becoming stuck whilst cutting	<ul> <li>Read timber for compression and tension</li> <li>Cut compression wood first (1/3), then complete by cutting tension wood</li> <li>Use of relief cuts 12" away from power unit with another saw</li> <li>Operator awareness</li> <li>Communication</li> </ul>
Ignition of fuel when refuelling	<ul><li>No flames, vaping or smoking around fuel</li><li>Correct storage of fuel</li></ul>
Acute or chronic damage to operators hearing from noise	<ul><li>Do not use in enclosed spaces</li><li>Correctly rated ear protection</li></ul>
Acute or chronic damage to operator from fumes	<ul><li>Do not use in enclosed spaces</li><li>Ensure exhaust is working correctly</li><li>Correct working position</li></ul>
Acute or chronic damage to operator nerves from vibration	<ul> <li>Use battery saws</li> <li>Ensure hands are warm</li> <li>Ensure AV system working correctly</li> <li>Use models with heated handles</li> <li>Use chainsaw gloves</li> </ul>
Acute trauma injury to operator or other operators from contact with running chain	<ul> <li>Operator awareness</li> <li>Safe working distances</li> <li>Safe starting procedure</li> <li>Safe stop procedure</li> <li>Correct chain brake usage</li> <li>Correct training</li> <li>Correct work positioning</li> <li>Protective chainsaw trousers (<i>Type C aerial, Type A ground</i>)</li> <li>Protective chainsaw boots with steel toe caps</li> </ul>
Acute trauma from flying debris	<ul><li>Correct operator positioning</li><li>Eye protection</li></ul>

Acute or chronic damage to operator from continued chainsaw use

- Follow manufacturers instruction
- Correct training
- Correct work positioning
- Improve physical readiness

MACHINE	
THREAT	CONTROL
Acute or chronic damage to operators hearing from noise	<ul><li>Do not use in enclosed spaces</li><li>Correctly rated ear protection</li></ul>
Acute or chronic damage to operator from fumes	<ul><li>Do not use in enclosed spaces</li><li>Ensure exhaust is working correctly</li><li>Correct working position</li></ul>
Acute or chronic damage to operator nerves from vibration	<ul> <li>Ensure hands are warm</li> <li>Ensure AV system working correctly</li> <li>Use models with heated handles</li> <li>Use chainsaw gloves</li> </ul>
Damage to environment from leaking fuel or oil	<ul> <li>Ensure fuel and oil caps are fastened after filling</li> <li>Correct maintenance</li> </ul>

# 2. The Wood Chipper

# **Wood Chipper Maintenance**

The assessment is based on the site being one of the arboriculture workshops.

SITE	
THREAT	CONTROL
Slips, trips and falls	- Operator awareness
	- Communication
	- Good housekeeping
Third party access	- Close doors
	- Operator awareness
	- Communication
Fumes from fuel	- Ensure the workshop is well ventilated
	- Minimise transfer of fuel
	- Correct storage of fuel
Ignition of fuel	- No flames, vaping or smoking in workshop
	- Correct storage of fuel
TASK	
THREAT	CONTROL
Acute trauma, amputation or odeath oto	- Keys out of the machine and into operators pocket
operator from accidental starting of the	- Operator awareness
machine whilst performing maintenance	- Communication
Crush injury or acute trauma to operator from	- Follow manufacturers instructions
dismantling machine to expose engine	- Correct work positioning
	- Operator awareness
	- Wear appropriate gloves

Cuts or other injury to operator from use of - Operator awareness hand tools - Right tool for the right job - Don't use excessive or uncontrolled force with hand tools - PPE Damage to machine from incorrect - Follow manufacturers guidance maintenance - Proper training - Right tool for the right job - Don't use excessive or uncontrolled force with hand tools - Do not cross thread bolts or nuts Loss of small, but critical parts of the machine - Operator awareness during maintenance - Use containers to store small parts - Good housekeeping Acute or chronic injury to the operator from Operator awareness use of compressed air. Communication Eye protection, hearing protection and hand protection. Acute discomfort or chronic illness from - Avoid skin contact exposure to carcinogenic substances (engine - Well ventilated area oil, hydraulic oil, coolant, diesel or petrol) - Eye protection, hearing protection and hand protection. Irreparable damage to flesh and organs from - Visual check for hydraulic leaks before other methods hydraulic injection. - Avoid direct contact with pressurised hydraulic lines - Use safe methods of diagnosis when fault finding hydraulics - Eye protection and hand protection when working on

MACHINE	
THREAT	CONTROL
Injury or so death so caused by unfamiliarity with machine.	<ul> <li>Follow manufacturers instructions</li> <li>Read safety decal</li> <li>Training</li> <li>Operator awareness</li> <li>PPE</li> </ul>

or next to hydraulic systems

Crush injury from incorrect manoeuvring.	- Follow manufacturers instructions - PPE
Acute or chronic damage to operators hearing from noise	<ul><li>Do not use in enclosed spaces</li><li>Correctly rated ear protection (30snr+)</li></ul>
Acute or chronic damage to operator from fumes	<ul><li>Do not use in enclosed spaces</li><li>Ensure exhaust is working correctly</li><li>Correct working position</li></ul>
Damage to the environment from leaking fuel, engine oil, hydraulic oil or coolant.	<ul><li>Use dedicated fueling &amp; oil sites</li><li>Correct maintenance</li><li>Operator awareness</li><li>Spill kits</li></ul>

# **Wood Chipper Use**

The assessment is based on the site being the arboretum or pinetum

SITE	
THREAT	CONTROL
Slips, trips and falls	<ul><li>Operator awareness</li><li>Communication</li><li>Good housekeeping</li></ul>
Minor or major injury to third party through unauthorised access	<ul><li>Signage and cordon off the area</li><li>Banksman</li><li>Operator awareness</li><li>Communication</li></ul>
Sudden inclement weather creating unsafe working conditions.	<ul><li>Check weather forecast for alerts at start of day</li><li>Operator awareness</li><li>Communication</li></ul>
Damage to the environment from spillage of fuel, engine oil, hydraulic oil or coolant.	<ul> <li>Correct maintenance</li> <li>Dedicated fueling site</li> <li>Use of spill mats</li> <li>Ensure caps are correctly tightened</li> <li>Operator awareness</li> <li>At least ten metres from watercourses</li> <li>Correct storage of fuel</li> </ul>
Strike injury to operator from unseen deadwood or debris above the operator	<ul><li>Operator awareness</li><li>Communication</li><li>Helmet</li></ul>
Damage to site ground layer and mechanical damage to trees from tracks	<ul> <li>Operator awareness</li> <li>Gentle, wide turns</li> <li>Avoid wet ground</li> <li>Use of matting in delicate areas</li> </ul>
Transmission or transport of a bio-pathogen through the use of the chipper.	<ul> <li>Sanitise chipper before and after use</li> <li>If possible, do not chip infected material</li> <li>Do not remove infected chip from site</li> </ul>

TASK	
THREAT	CONTROL
Crush, mechanical amputation or odeath from being drawn into feed mechanism	<ul> <li>Pre-use checks ensure emergency stops are working</li> <li>Stand to the site of hopper when loading stuff</li> <li>Wear non-snag outer clothing</li> <li>Never put hands beyond the in-feed chute</li> <li>Operator awareness</li> <li>PPE</li> </ul>
Crush injury to hands or wrist from stuff being turned unexpectedly by feed roller	<ul> <li>Do not hold onto stuff once it has entered feed roller</li> <li>Never put hands beyond the in-feed chute</li> <li>Operator awareness</li> <li>PPE</li> </ul>
Strike injury to face or body from unexpected ejected material	<ul><li>Correct positioning at side of hopper</li><li>Understanding of timber characteristics</li><li>PPE</li></ul>
Damage to trees, persons or property from wood chip ejection either from accidental loosening of chute or incorrect set up.	<ul> <li>Ensure ejection chute is properly aimed before chipping</li> <li>Ensure chute is property secured</li> <li>Operator awareness</li> <li>Communication</li> </ul>
Risk to climbers from accidentally putting rope into the chipper	<ul><li>Keep all ropes zoned away from chipper</li><li>Good housekeeping</li><li>Operator awareness</li><li>Communication</li></ul>
Damage to chipper blades from non-woody materials	<ul><li>Stage arisings on stone free staging area</li><li>Inspect all stuff for the chipper before chipping</li><li>If unsure, do not chip it.</li></ul>
MACHINE	
THREAT	CONTROL
Acute or chronic damage to operators hearing from noise	<ul> <li>Do not use in enclosed spaces</li> <li>Correctly rated ear protection for wood chippers (30 snr+)</li> </ul>

Acute or chronic damage to operator from fumes	<ul><li>Do not use in enclosed spaces</li><li>Ensure exhaust is working correctly</li></ul>
Damage to the environment from leaking fuel, coolant, engine oil or hydraulic oil.	- Ensure correct maintenance - Operator awareness

# 3. The Stump Grinder

# **Stump Grinder Maintenance**

The assessment is based on the site being one of the arboriculture workshops.

SITE	
THREAT	CONTROL
Slips, trips and falls	<ul><li>Operator awareness</li><li>Communication</li><li>Good housekeeping</li></ul>
Third party access	<ul><li>Close doors</li><li>Operator awareness</li><li>Communication</li></ul>
Fumes from fuel	<ul><li>Ensure the workshop is well ventilated</li><li>Minimise transfer of fuel</li><li>Correct storage of fuel</li></ul>
Ignition of fuel	<ul><li>No flames, vaping or smoking in workshop</li><li>Correct storage of fuel</li></ul>
TASK	
THREAT	CONTROL
Acute trauma, amputation or death to operator from accidental starting of the machine whilst performing maintenance	<ul><li>Keys out of the machine and into operators pocket</li><li>Operator awareness</li><li>Communication</li><li>PPE</li></ul>
Crush injury or acute trauma to operator from dismantling machine to expose engine	<ul><li>Follow manufacturers instructions</li><li>Correct work positioning</li><li>Operator awareness</li><li>Wear appropriate gloves</li></ul>

Cuts or other injury to operator from use of hand tools

- Operator awareness
- Right tool for the right job
- Don't use excessive or uncontrolled force
- PPE

Damage to machine from incorrect maintenance

- Follow manufacturers guidance
- Proper training
- Right tool for the right job
- Don't use excessive or uncontrolled force with hand tools
- Do not cross thread bolts or nuts

Loss of small, but critical parts of the machine during maintenance

- Operator awareness
- Use containers to store small parts
- Good housekeeping

Acute or chronic injury to the operator from use of compressed air.

- Operator awareness
- Communication
- Eye protection, hearing protection and hand protection.

Acute discomfort or chronic illness from exposure to carcinogenic substances (engine oil, hydraulic oil, coolant, diesel or petrol)

- Avoid skin contact
- Well ventilated area
- Eye protection, hearing protection and hand protection.

Irreparable damage to flesh and organs from hydraulic injection.

- Visual check for hydraulic leaks before other methods
- Avoid direct contact with pressurised hydraulic lines
- Use safe methods of diagnosis when fault finding hydraulics
- Eye protection and hand protection when working on or next to hydraulic systems

#### **MACHINE**

# THREAT CONTROL Injury or death caused by unfamiliarity with machine. - Follow manufacturers instructions - Read safety decal - Training - Operator awareness - PPE

Crush injury from incorrect manoeuvring.	- Follow manufacturers instructions
Acute or chronic damage to operators hearing from noise	<ul><li>Do not use in enclosed spaces</li><li>Correctly rated ear protection</li></ul>
Acute or chronic damage to operator from fumes	<ul><li>Do not use in enclosed spaces</li><li>Ensure exhaust is working correctly</li><li>Correct working position</li></ul>
Damage to the environment from leaking fuel, engine oil, hydraulic oil or coolant.	<ul><li>Use dedicated fueling &amp; oil sites</li><li>Correct maintenance</li><li>Operator awareness</li><li>Spill kits</li></ul>

# **Stump Grinder Use**

The assessment is based on the site being the arboretum or pinetum

SITE	
THREAT	CONTROL
Slips, trips and falls	<ul><li>Operator awareness</li><li>Communication</li><li>Good housekeeping</li></ul>
Minor or major injury to third party through unauthorised access	<ul><li>Signage and cordon off the area</li><li>Banksman</li><li>Operator awareness</li><li>Communication</li></ul>
Sudden inclement weather creating unsafe working conditions.	<ul><li>Check weather forecast for alerts at start of day</li><li>Operator awareness</li><li>Communication</li></ul>

Damage to the environment from spillage of	- Correct maintenance
fuel, engine oil, hydraulic oil or coolant.	- Dedicated fueling site
	- Use of spill mats
	- Ensure caps are correctly tightened
	- Operator awareness
	- At least ten metres from watercourses
	- Correct storage of fuel
Strike injury to operator from unseen deadwood or debris above the operator	<ul><li>Operator awareness</li><li>Communication</li><li>Helmet</li></ul>
Damage to site ground laver and mechanical	- Operator awareness
Damage to site ground layer and mechanical damage to trees from wheeled machine	- Operator awareness - Gentle, wide turns
Damage to site ground layer and mechanical damage to trees from wheeled machine	- Gentle, wide turns
	' '
	- Gentle, wide turns - Avoid wet ground
	- Gentle, wide turns - Avoid wet ground
damage to trees from wheeled machine	- Gentle, wide turns - Avoid wet ground - Use of matting in delicate areas

TASK	
THREAT	CONTROL
Mechanical amputation or destruction of bone and muscle tissue from contact with the flywheel.	<ul><li>Operator positioning</li><li>Training</li><li>Read operators manual</li><li>Operator awareness</li><li>PPE</li></ul>
Damage to buried services and costly fixes.	<ul><li>Diligent inspection on site for services before</li><li>If in doubt dig area out by hand</li><li>Operator awareness</li></ul>
Disturbance to burrowing wildlife	<ul><li>Inspection of the area before grinding</li><li>If in doubt dig area out by hand</li><li>Operator awareness</li></ul>

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- Operator awareness
- Training
- Damage to windows from flying debris
- Protective boarding
- Machine and operator positioning

MACHINE	
THREAT	CONTROL
Acute or chronic damage to operators hearing from noise	<ul><li>Do not use in enclosed spaces</li><li>Correctly rated ear protection</li></ul>
Acute or chronic damage to operator from fumes	<ul><li>Do not use in enclosed spaces</li><li>Ensure exhaust is working correctly</li></ul>
Damage to the environment from leaking fuel, coolant, engine oil or hydraulic oil.	<ul><li>Ensure correct maintenance</li><li>Operator awareness</li></ul>