

SAFETY MANAGEMENT SYSTEM

Plant and Equipment Risk Assessment

Equipment Location:	Hired From All Master Hire Stores	Equipment:	Knuckle Boom		Approved By:	Steven Jose	
					Signature:		
		Manufacturer Details	Various				
Hazard		Action Required Yes/No	Risk Level (Refer to risk matrix)	Hierarchy of Control	Hazard and Risk Treatment (Complete Hazard Report Form)		Risk Level after Risk Treatment (Refer to risk matrix)
Entanglement							
Can anyone's hair, clothing, gloves, necktie, jewellery, cleaning brushes, rags or other materials become entangled with moving parts of the plant, or materials in motion?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	LOW	<input checked="" type="checkbox"/> Elimination <input type="checkbox"/> Substitution <input checked="" type="checkbox"/> Isolation <input type="checkbox"/> Engineering <input checked="" type="checkbox"/> Administration <input checked="" type="checkbox"/> PPE	<i>Follow manufacturers' instructions</i> <i>Obey all warning decals</i> <i>Do not lean or reach into engine area with motor running</i> <i>Do not do any servicing or maintenance with motor running</i> <i>Ensure to wear the appropriate PPE whilst operating this machine</i>		LOW
Crushing							
Can anyone be crushed due to: <ul style="list-style-type: none"> ▪ Material falling off the plant? ▪ Uncontrolled or unexpected movement of the plant or its load? ▪ Lack of capacity for the plant to be slowed, stopped or immobilized? ▪ The plant tipping or rolling over? ▪ Parts of the plant collapsing? ▪ Coming in contact with moving parts of the plant during testing, inspection, use, maintenance, cleaning or repair? ▪ Being thrown off or under the plant? ▪ Being trapped between the plant and materials or fixed structures? • Other factors? 		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	HIGH	<input checked="" type="checkbox"/> Elimination <input type="checkbox"/> Substitution <input type="checkbox"/> Isolation <input type="checkbox"/> Engineering <input checked="" type="checkbox"/> Administration <input checked="" type="checkbox"/> PPE	<i>Follow manufacturers' instructions</i> <i>Obey all warning decals</i> <i>Ensure travel of moving vehicle (forward or reversing) is free of all personnel</i> <i>Use spotter in restricted areas</i> <i>Ensure machine and attachments are tied down securely when being transported</i> <i>Ensure to wear the appropriate PPE whilst operating this machine</i> <i>The boom is clearly labelled with warning decals due to the potential crushing hazard associated with boom type plants</i> <i>Ensure to wear the appropriate PPE whilst operating this machine</i>		MEDIUM

<p>Cutting, Stabbing and Puncturing</p> <p>Can anyone be cut, stabbed or punctured due to?</p> <ul style="list-style-type: none"> ▪ Coming in contact with sharp or flying objects? ▪ Coming in contact with moving parts of the plant during testing, inspection, operation, maintenance, cleaning or repair of the plant? ▪ Plant, parts of the plant or work pieces disintegrating? ▪ Work pieces being ejected? ▪ The mobility of the plant? ▪ Uncontrolled or unexpected movement of the plant? ▪ Other factors? 	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	LOW	<input type="checkbox"/> Elimination <input type="checkbox"/> Substitution <input checked="" type="checkbox"/> Isolation <input type="checkbox"/> Engineering <input checked="" type="checkbox"/> Administration <input checked="" type="checkbox"/> PPE	<p><i>Follow manufacturers' instructions</i></p> <p><i>Obey all warning decals</i></p> <p><i>Do not lean or reach into engine area with motor running</i></p> <p><i>Do not do any servicing or maintenance with motor running</i></p> <p><i>Ensure all guards and fixtures are in place</i></p> <p><i>Ensure machine is switched off before adjusting depth of tiller</i></p> <p><i>Ensure guards cover the entire width of the rotating parts</i></p> <p><i>Ensure appropriate PPEs are used (e.g. protection for eyes, hearing and footwear)</i></p>	LOW
<p>Shearing</p> <p>Can anyone's body parts be:</p> <ul style="list-style-type: none"> ▪ Sheared between two or more parts of the plant, or between a part of the plant and a work piece or structure? 	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	MEDIUM	<input type="checkbox"/> Elimination <input type="checkbox"/> Substitution <input checked="" type="checkbox"/> Isolation <input type="checkbox"/> Engineering <input checked="" type="checkbox"/> Administration <input checked="" type="checkbox"/> PPE	<p><i>Follow manufacturers' instructions</i></p> <p><i>Obey all warning decals</i></p> <p><i>Do not lean or reach into engine area with motor running</i></p> <p><i>Do not do any servicing or maintenance with motor running</i></p> <p><i>Ensure to wear appropriate PPE whilst operating this machine</i></p>	MEDIUM
<p>Friction</p> <p>Can anyone be burnt, gain abrasions etc. due to:</p> <ul style="list-style-type: none"> ▪ Contact with moving parts or surfaces of the plant, or material handled by the plant? 	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	MEDIUM	<input type="checkbox"/> Elimination <input type="checkbox"/> Substitution <input checked="" type="checkbox"/> Isolation <input type="checkbox"/> Engineering <input checked="" type="checkbox"/> Administration <input checked="" type="checkbox"/> PPE	<p><i>Follow manufacturers' instructions</i></p> <p><i>Obey all warning decals</i></p> <p><i>Do not lean or reach into engine area with motor running</i></p> <p><i>Do not do any servicing or maintenance with motor running</i></p> <p><i>Allow motor and other components to cool before servicing</i></p> <p><i>Hot parts that require access should be guarded and wear appropriate PPE</i></p>	LOW

Plant and Equipment Risk Assessment

<p>Striking</p> <p>Can anyone be struck by moving objects due to:</p> <ul style="list-style-type: none"> ▪ Uncontrolled or unexpected movement of the plant or material handled by the plant? ▪ Plant, parts of the plant or work pieces disintegrating? ▪ Work pieces being ejected? ▪ Mobility of the plant? ▪ Other factors? 	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	MEDIUM	<input checked="" type="checkbox"/> Elimination <input type="checkbox"/> Substitution <input type="checkbox"/> Isolation <input checked="" type="checkbox"/> Engineering <input checked="" type="checkbox"/> Administration <input checked="" type="checkbox"/> PPE	<p><i>Follow manufacturers' instructions</i></p> <p><i>Obey all warning decals</i></p> <p><i>Ensure travel path of moving vehicle (forward or reversing) is free of all personnel and obstacles</i></p> <p><i>Ensure all loads are placed and secured within tray or basket/platform</i></p> <p><i>Ensure exclusion zone in and around vehicle while loading/unloading</i></p> <p><i>Ensure all overhead and underground conditions are capable of supporting safe operation of equipment</i></p> <p><i>Ensure to wear the appropriate PPE whilst operating this machine</i></p>	LOW
<p>High Pressure Fluid</p> <p>Can anyone come into contact with?</p> <ul style="list-style-type: none"> ▪ Fluids under high pressure in normal use, in the instance of plant failure? 	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	MEDIUM	<input checked="" type="checkbox"/> Elimination <input type="checkbox"/> Substitution <input type="checkbox"/> Isolation <input type="checkbox"/> Engineering <input checked="" type="checkbox"/> Administration <input checked="" type="checkbox"/> PPE	<p><i>Ensure that during maintenance hydraulic hoses are secure before operating</i></p> <p><i>Be aware that High temperature components (motor and pump) are positioned within turntable</i></p> <p><i>Ensure to wear the appropriate PPE whilst operating this machine</i></p>	LOW
<p>Electrical</p> <p>Can anyone be injured by electrical shock or burnt due to:</p> <ul style="list-style-type: none"> ▪ The plant contacting live electrical conductors? ▪ Plant working close to electrical conductors? ▪ Overload of electrical circuits? ▪ Damaged or poorly maintenance electrical leads or cables? ▪ Damaged electrical switches? ▪ Water near electrical equipment? ▪ Lack of isolation procedures? ▪ Other factors 	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	MEDIUM	<input checked="" type="checkbox"/> Elimination <input type="checkbox"/> Substitution <input type="checkbox"/> Isolation <input checked="" type="checkbox"/> Engineering <input checked="" type="checkbox"/> Administration <input checked="" type="checkbox"/> PPE	<p><i>Follow manufacturers' instructions</i></p> <p><i>Obey all warning decals</i></p> <p><i>Do not operate in areas with overhead/underground wiring or other obstructions – machine is NOT insulated</i></p> <p><i>Have power disconnected before loading or unloading</i></p> <p><i>Ensure to wear the appropriate PPE whilst operating this machine</i></p>	LOW

Plant and Equipment Risk Assessment

Explosion					
Can anyone be injured by fuels such as gases, vapors, liquids, dusts or other substances being ignited triggered by the operation of the plant or by materials handled by the plant?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	MEDIUM	<input type="checkbox"/> Elimination <input type="checkbox"/> Substitution <input checked="" type="checkbox"/> Isolation <input type="checkbox"/> Engineering <input checked="" type="checkbox"/> Administration <input checked="" type="checkbox"/> PPE	<i>Follow manufacturers' instructions</i> <i>Obey all warning decals</i> <i>Fuel filling must be carried out in well ventilated space, away from ignition source/s</i> <i>Engine must be switched off and cooled before fuel filling</i> <i>Avoid contact with hot surfaces such as exhaust system</i> <i>Ensure to wear the appropriate PPE whilst operating this machine</i>	LOW
Slipping, tripping and Falling					
Can anyone using the plant, or in the vicinity of the plant, slip, trip or fall due to: <ul style="list-style-type: none"> ▪ Uneven or slippery work surfaces? ▪ Poor housekeeping, such as shavings in the vicinity of the plant, spillage not cleaned up? ▪ Obstacles being placed in the vicinity of the plant? ▪ Other factors? 	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	LOW	<input type="checkbox"/> Elimination <input type="checkbox"/> Substitution <input type="checkbox"/> Isolation <input checked="" type="checkbox"/> Engineering <input checked="" type="checkbox"/> Administration <input checked="" type="checkbox"/> PPE	<i>Follow manufacturers' instructions</i> <i>Obey all warning decals</i> <i>Wear appropriate footwear</i> <i>Use steps provided when getting in/on equipment</i> <i>Never climb on or enter basket/platform area while it is elevated</i> <i>Always observe 'three points of contact' if need to get on/in basket/platform</i> <i>Maintain cleanliness of equipment (inside and out)</i> <i>Ensure to wear the appropriate PPE whilst operating this machine</i>	LOW
High Temperature					
Can anyone: <ul style="list-style-type: none"> ▪ Come into contact with objects at high temperature? ▪ Come into contact with hot fluids? ▪ Be injured by fire? 	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	MEDIUM	<input type="checkbox"/> Elimination <input type="checkbox"/> Substitution <input checked="" type="checkbox"/> Isolation <input type="checkbox"/> Engineering <input checked="" type="checkbox"/> Administration <input checked="" type="checkbox"/> PPE	<i>Follow manufacturers' instructions</i> <i>Obey all warning decals</i> <i>Do not lean or reach into engine area with motor running</i> <i>Do not do any servicing or maintenance with motor running</i> <i>Allow motor and other components to cool before servicing</i> <i>Be aware of Turntable covers as they are hot and cause personal injury</i> <i>Ensure to wear the appropriate PPE whilst operating this machine</i>	LOW

Temperature and Thermal Comfort					
Can anyone suffer ill-health due to: <ul style="list-style-type: none"> ▪ Exposure to high or low temperatures? ▪ Failure of air conditioning equipment? 	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Elimination <input type="checkbox"/> Substitution <input type="checkbox"/> Isolation <input type="checkbox"/> Engineering <input type="checkbox"/> Administration <input type="checkbox"/> PPE		
Suffocation					
Can anyone be suffocated due to: <ul style="list-style-type: none"> ▪ Lack of oxygen, or atmospheric contamination? 	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<input checked="" type="checkbox"/> Elimination <input checked="" type="checkbox"/> Substitution <input type="checkbox"/> Isolation <input type="checkbox"/> Engineering <input checked="" type="checkbox"/> Administration <input type="checkbox"/> PPE	<i>Follow manufacturers' instructions</i> <i>Obey all warning decals</i> <i>Take regular breaks/rests</i> <i>Exercise/stretch regularly</i> <i>Do not operate beyond your personal capabilities</i> <i>Do not use in confined space</i> <i>Only use in well ventilated areas</i> <i>Ensure to wear the appropriate PPE whilst operating this machine</i>	
Ergonomics					
Can anyone be injured due to: <ul style="list-style-type: none"> ▪ Poorly designed seating? ▪ Repetitive body movements? ▪ Constrained body posture or the need for excessive effort? ▪ Design deficiency causing physical or personal stress? ▪ Inadequate or poorly placed lighting? ▪ Lack of consideration given to human error or human behavior? ▪ Mismatch of the plant with human traits and natural limitations? ▪ Other factors? 	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	LOW	<input checked="" type="checkbox"/> Elimination <input type="checkbox"/> Substitution <input type="checkbox"/> Isolation <input checked="" type="checkbox"/> Engineering <input checked="" type="checkbox"/> Administration <input checked="" type="checkbox"/> PPE	<i>Follow manufacturers' instructions</i> <i>Obey all warning decals</i> <i>Take regular breaks/rests</i> <i>Exercise/stretch regularly</i> <i>Do not operate beyond your personal capabilities</i> <i>Use suitably designed and secured loading/unloading procedures including crane, hoist, ramps etc.</i> <i>Observe and use proper manual handling techniques</i> <i>Ensure to wear the appropriate PPE whilst operating this machine</i>	LOW
Transportation					
Can anyone be injured by this equipment falling or driven off vehicle or trailer while loading, unloading or transportation?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	MEDIUM	<input type="checkbox"/> Elimination <input type="checkbox"/> Substitution <input type="checkbox"/> Isolation <input checked="" type="checkbox"/> Engineering <input checked="" type="checkbox"/> Administration <input checked="" type="checkbox"/> PPE	<i>Follow manufacturers' instructions</i> <i>Obey all warning decals</i> <i>Load/unload on firm, flat, level ground</i> <i>Ensure vehicle capacities are not exceeded by the equipment</i> <i>Ensure equipment, attachments and sundry items are securely tied down</i>	LOW

				<p><i>Apply/use chocks if necessary</i> <i>Ensure liquids are prevented from spillage</i> <i>Maintain vehicle and/or equipment in good working order - report any malfunction or damage to Master Hire immediately and stop using equipment where it is reasonable to foresee further risk to persons or damage to equipment</i> <i>Ensure to wear the appropriate PPE whilst operating this machine</i></p>
Operational				
<p>Can anyone be injured by this equipment</p>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	MEDIUM	<input type="checkbox"/> Elimination <input type="checkbox"/> Substitution <input type="checkbox"/> Isolation <input checked="" type="checkbox"/> Engineering <input checked="" type="checkbox"/> Administration <input checked="" type="checkbox"/> PPE	<p><i>Follow manufacturers' instructions</i> <i>Obey all warning decals</i> <i>Complete Daily Checklist each day or shift</i> <i>Ensure shutdown is completed at the end of use and equipment is secured from unauthorised use</i> <i>Ensure equipment is on stable ground and clear of obstructions when in use and being stowed</i> <i>Ensure adequate ventilation</i> <i>Ensure safety gears, levers, switches etc. are engaged/disengaged appropriately before starting/operating</i> <i>Ensure all guards and fixtures are in place</i> <i>Ensure machine is switched off before making any adjusts</i> <i>Do not operate on steep slope</i> <i>Ensure handles and other adjustable parts are set right for the operator</i> <i>Ensure guards cover the entire width of the rotating parts</i> <i>Ensure appropriate PPEs are used (e.g. protection for eyes, hearing and footwear)</i></p>
				LOW

Other Hazards					
Can anyone be injured or suffer ill-health from exposure to: <ul style="list-style-type: none"> • Chemicals? • Toxic gases or vapors? • Fumes? • Dust? • Noise? • Vibration? • Radiation? • Other Factors? 	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	LOW	<input checked="" type="checkbox"/> Elimination <input type="checkbox"/> Substitution <input type="checkbox"/> Isolation <input checked="" type="checkbox"/> Engineering <input checked="" type="checkbox"/> Administration <input checked="" type="checkbox"/> PPE	<i>Follow manufacturers' instructions</i> <i>Obey all warning decals</i> <i>Operate in well-ventilated areas only</i> <i>Check for overhead/underground utilities (gas, water, electrical) before operation</i> <i>Ensure equipment is appropriately labeled and meet the relevant State Legislative requirements</i> <i>Maintain vehicle and/or equipment in good working order - report any malfunction or damage to Master Hire immediately and stop using equipment where it is reasonable to foresee further risk to persons or damage to equipment</i> <i>Ensure appropriate PPEs are used (e.g. protection for eyes, hearing and footwear)</i>	LOW
Further Comments:	A Specific Risk Assessment on site must be undertaken prior to plant operation?				
	This equipment must only be driven/operated by competent persons and holders of the appropriate license				
Checklist:	<input checked="" type="checkbox"/> <i>Manufacturers' manuals referenced</i> <input checked="" type="checkbox"/> <i>Copy kept in Master Hires' Risk Management File</i>				

Hazard / Risk Matrix

Reference: Workplace Health and Safety Queensland - Risk Assessment - Supplement 2
Risk Management Code of Practice 2007

Step 1 Determine Likelihood – What is the possibility of the event happening?

	Criteria	Description
Almost certain	Expected in most circumstances.	Event is a common problem
Likely	Will probably occur in most circumstances.	Event is known to have occurred at this site or it has happened
Possible	Might occur at some time	Event could occur at the site or I've heard of it happening
Unlikely	Could occur at some time	Event is not likely to occur at the site or I have not heard of it happening
Rare	May occur only in exceptional circumstances	Event is practically impossible.

Step 2 Determine Consequence - What will be the result if it happens?

Classification	Example detail description
Insignificant	No injuries
Minor	First aid treatment only; spillage contained at site.
Moderate	Medical treatment; spillage contained but with outside help.
Major	Extensive injuries; loss of production
Catastrophic	Death; toxic release of chemicals

Step 3 Determine the risk score

LIKELIHOOD	CONSEQUENCE				
	Insignificant	Minor	Moderate	Major	Catastrophic
Almost certain	3 High	3 High	4 Acute	4 Acute	4 Acute
Likely	2 Medium	3 High	3 High	4 Acute	4 Acute
Possible	1 Low	2 Medium	3 High	4 Acute	4 Acute
Unlikely	1 Low	1 Low	2 Medium	3 High	4 Acute
Rare	1 Low	1 Low	2 Medium	3 High	3 High

Step 4 Record risk score against the job sequence steps

(Note – Risk scores have no absolute value and should only be used for comparison and to engender discussion.)

Score	Action
4 A: Acute	ACT NOW – Urgent – do something about the risks immediately. Requires immediate attention.
3 H: High	Highest management decision is required urgently.
2 M: Medium	Follow management instructions.
1 L: Low	OK for now. Record and review if any equipment/ people/ materials/ work processes or procedures change.