



C100 WOOD CHIPPER

HAZARD EVALUATION



Online Demonstration Available at: www.redroo.com/products/mulcher

QUESTION? CAN A PERSON BE INJURED?	HAZARD Y OR N?	What is the Hazard?	HAZARD RATING No.	If Rating No. is 15 or less What is the CONTROL?
A. ENTANGLEMENT 1. 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?	Y	Carelessness putting Brushes, Rags into the Hopper	23	Common Sense. Clear hopper prior to Start up
B. CRUSHING 1. Can anyone be crushed due to				
a. Material falling off the plant?	N			
b. Uncontrolled or unexpected moving of the plant or its load?	Y	Unit with Jockey Wheel down. Mobile	23	Common Sense. Can Roll on Incline. Block Wheels.
c. Lack of capacity for the plant to be slowed, stopped or immobilised?	Y	Unit with Jockey Wheel down. Mobile	23	Can Roll on Incline or Slippery Surface. Block Wheels
d. The plant tipping or rolling over?	Y	Steep Angle of Bank, Drop Drive Wheel in Hole	23	Common Sense. Leave on Tow Ball when pulling Plant
e. Part of the plant collapsing?	Y	Trailer Wheel comes off	23	Check Wheel for tightness. Check Jockey Wheel for secure fitting
f. Coming in contact with moving parts of the plant during testing, inspection, operation, maintenance, cleaning or repair?	Y	If done while Machine is running	23	Do not perform while machine is running
g. Being thrown off or under the plant?	Y	Standing on Trailer Frame	23	Block Wheels if standing on frame
h. Being trapped between the plant and material or fixed structures?	Y	Movement of Unit could pin against fixed structure	23	Block Wheels if Machine could move.
i. Other factors not mentioned? (<i>Spectators must be kept away</i>)	N			
C. CUTTING, STABBING & PUNCTURING? 1. Can anyone be cut, stabbed or punctured due to				
a. Coming in contact with sharp or flying objects?	Y	Chip might elude all Safety Flaps	23	Wear Safety Gear including Full Face Visor combination
b. Coming in contact with moving parts of the plant during testing, inspection, operations, maintenance, cleaning or repair of the plant?	Y	Running the Unit with Guards Removed	21	Button up Machine Common Sense Do not run until Machine is Fixed
c. The plant, parts of the plant or work pieces disintegrating?	Y	If escape past Guards/Flap	21	Wear Proper Safety Gear Shut Machine down
d. Work pieces being ejected?	Y	If escape past Guards/Flap	21	Wear Proper Safety Gear Shut Machine down
e. The mobility of the plant?	N			
f. Uncontrolled or unexpected movement of the plant?	N			
g. Other factors not mentioned? (<i>Spectators must be kept away</i>)				
D. SHEARING 1. Can anyone's body parts be sheared between two parts of the plant, or material handled by the plant?	N			
E. FRICTION 1. Can anyone be burnt due to contact with moving parts or surfaces of the plant, or between a part of the plant and a work piece or structure?	Y	Engine Exhaust	23	Knowledge of Hot Surface Guard in Place
F. STRIKING 1. Can anyone be struck by moving objects due to :				
a. Uncontrolled or unexpected movement of the plant?	N			
b. The plant, parts of the plant or work pieces disintegrating?	Y	If escape past Guards/Flap	21	Wear proper Safety Gear. Shut Machine Down.
c. Work pieces being ejected?	Y	If escape past Guards/Flap	21	If Failure warnings are noticed
d. The mobility of the plant?	N			
e. Other factors not mentioned (<i>Spectators must be kept away</i>)	N			
G. HIGH PRESSURE SUBSTANCES 1. Can anyone come into contact with substances under high pressure, due to plant failure or misuse of the plant?	Y	Tank (Fuel) Explosion	24	Relieve Fuel Pressure if very hot, if Vent becomes Plugged

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H. ELECTRICAL				
1. Can anyone be injured by electrical shock or burnt due to:				
a. The plant contacting live electrical conductors?	Y	Grounding not Intact	21	Wear proper Boots. Common Sense, Correct whether proper Grounding
b. The plant working in close proximity to electrical conductors?	N			
c. Overload of electrical circuits?	N			
d. Damaged or poorly maintained electrical leads and cables?	N			
e. Damaged electrical switches?	N			
f. Water near electrical equipment?	N			
g. Lack of isolation procedures?	N			
h. Other factors not mentioned?	N			
I. EXPLOSION				
1. Can anyone be injured by explosion of gases, vapours, liquids, dusts or other substances, triggered by the operation of the plant or by material handled by the plant?	Y	Fuel Tank Explosion	24	Relieve Build up by taking off Cap if Vent Plugged in Hot Weather.
J. SLIPPING, TRIPPING & FALLINGS				
1. Can anyone using the plant, or in the vicinity of the plant, slip, trip or fall due to				
a. Uneven or slippery work surfaces?	Y	Assumed Risk	23	Common Sense Good Safety Boots
b. Poor housekeeping, eg swarf in the vicinity or the plant spillage not cleaned up?	Y	Human Error	23	Common Sense, Supervision
c. Obstacles being placed in the vicinity of the plant, other factors not mentioned?	Y	Human Error	23	Common Sense Supervision
2. Can anyone fall from a height due to:				
a. Lack of proper work platform?	N			
b. Lack of proper stairs or ladders?	N			
c. Lack of guardrails or other suitable edge protection?	N			
d. Unprotected holes, penetrations or gaps?	N			
e. Poor floor or walking surfaces, such as the lack of slip-resistant surface?	N			
f. Steep walking surfaces?	Y	Use on Level Ground	20	Common Sense Rules of Use
g. Collapse of supporting structure?	N			
h. Other factors not mentioned?	N			
K. ERGONOMIC				
1. Can anyone be injured due to:				
a. Poorly designated seating?	N			
b. Repetitive body movement?	N			
c. Constrained body posture or the need for excessive effort?	N			
d. Inadequate or poorly placed lighting?	N			
e. Lack of consideration given to human error or human behaviour?	Y	Human Lazy, Tired, Cocky, Foolish	23	Common Sense Supervision

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f. Mismatch of the plan with human traits and natural limitations?	Y	Human, Lazy, Cocky, Tired, Foolish, Under the Influence	23	Common Sense Supervision
g. Other factors not mentioned:				
L. SUFFOCATION 1. Can anyone be suffocated due to lack of oxygen, or atmospheric contamination?	N			
M. HIGH TEMPERATURE OR FIRE 1. Can anyone come into contact with objects at high temperature?	Y	Hot Surface, Engine Exhaust	20	Knowledge of Hot Surfaces,
N. TEMPERATURE (THERMAL COMFORT) 1. Can anyone suffer ill health due to exposure to high or low temperature?	N			
O. OTHER HAZARDS 1. Can anyone be injured or suffer ill health from exposure to:				
a. Chemicals?	N			
b. Toxic gases or vapours?	N			
c. Fumes?	Y	Gas Fumes Operation in confined area.	21	Common Sense, Ventilation, Safety Mask
d. Dust?	Y	Human	23	Wet Material, Wear Mask
e. Noise?	Y	Lack of Maintenance	23	Maintenance
f. Vibration?	Y	Lack of Maintenance	23	Maintenance
g. Radiation?	N			
h. Other factors not mentioned?				



You alone know the operational demands and special conditions affecting the equipment in your situation and therefore assume the responsibility for developing, carrying out, and enforcing the safety concepts which apply to your own operation to effect the greatest safety for yourself & the peoples around you.

CALCULATION FOR RISK ASSESSMENT

For each identified hazard consider the maximum credible, not absolute worst case risk that may result and select from each of the following Lists

	Likelihood of Occurrence
1	Expected to Happen
2	Common
3	Sometimes
4	Rarely
5	Highly unlikely

	Severity of Result
A	Fatality
B	Permanent Disability
C	Lost Time Injury
D	Medical Treatment
E	First Aid Injury

Plot the categories selected from 'Likelihood of Occurrence' and 'Severity of Result' onto the Hazard Rating Grid to determine the Hazard Rating Number.

eg. If we plot 4 and B on the Hazard Rating Grid, the Hazard Rating number will be 14.

HAZARD RATING GRID

	A	B	C	D	E
1	1	2	4	7	11
2	3	5	8	12	16
3	6	9	13	17	23
4	10	14	18	21	23
5	15	19	22	24	25

The Hazard Rating Number calculated for the risk assessment of an identified hazard is classified as follows:

- a) Relatively High Risk 1 to 6
- b) Medium Risk 7 to 15
- c) Relatively Low Risk 16 to 25 (acceptable risk)