

# HAZARD EVALUATION AND CONTROL

Description of Plant: Walk Behind Power Trowel

Model No: TP93\_TP110

Assessed By: Evan Miller

Company : Flextool (Aust) Pty Ltd

Date: 01/08/98

Issue: A

Hazard Description	Hazard Y/N	Plant & / or Situation	Likelihood	Severity	Risk Control
<b>A - ENTANGLEMENT</b> 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	Entanglement drive belt/s, drive mechanism	5	C	• DO NOT operate the machine unless all protective guards are in place. • ENSURE that the motor operation switch is in the OFF position and if using a petrol motor the spark plug ignition lead is disconnected before removing the guards, removing or refitting the trowel blades or making adjustments to the vee belt tension. • KEEP hands and feet clear of rotating or moving parts as they will cause injury if contacted.
<b>B - CRUSHING</b> 1. Can anyone be crushed due to:-					
a. Material falling off the plant?	N				
b. Uncontrolled or unexpected movement of the plant or its load?	N				
c. Lack of capacity for the plant to be slowed, stopped or immobilised?	N				
d. The plant tipping or rolling over?	N				
e. Parts of the plant collapsing?	N				
f. Coming in contact with moving parts of the plant during testing, inspection, operation, maintenance, cleaning or repair?	Y	Drawing in between rotating pulley and moving belt	5	C	• DO NOT operate the machine unless all protective guards are in place. • ENSURE that the motor operation switch is in the OFF position and if using a petrol motor the spark plug ignition lead is disconnected before removing the guards, removing or refitting the trowel blades or making adjustments to the vee belt tension. • KEEP hands and feet clear of rotating or moving parts as they will cause injury if contacted.

• Refer to Flextool operating instructions.

**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

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g. Being thrown off or under the plant?	N				
h. Being trapped between the plant and material or fixed structures?	Y	Loss of control	5	C	<ul style="list-style-type: none"> <li>• Be sure the runaway protection switch provided is working properly so that if the handle should slip away from your control, the ignition supply will be cut off. However momentum may cause the handle to rotate one full turn, so watch your back.</li> <li>• It is important that the operator retains a firm grip with the left hand at some point on the handle when starting the engine, preferably close to the throttle control.</li> <li>• When starting the trowel do not exceed 1/4 throttle setting. A higher setting could engage the centrifugal clutch causing the handle to rotate.</li> <li>• Be careful with the trowel around pipes sticking out of the floor or other obstacles. Should the trowel blades catch on these, serious damage to the machine or harm to the operator may result.</li> <li>• Always maintain good footing so that you do not slip and lose control of the handle when starting or operating the trowel</li> </ul>
i. Other factors not mentioned?	N				
<b>C. CUTTING, STABBING &amp; PUNCTURING?</b>					
1. Can anyone be cut, stabbed or punctured due to:					
a. Coming in contact with sharp or flying objects?	N				
b. Coming in contact with moving parts of the plant during testing, inspection, operation, maintenance, cleaning or repair of the plant?	Y	Contact with drive belt, blades and blade arm assembly	5	C	<ul style="list-style-type: none"> <li>• Do not operate the machine unless all protective guards are in place.</li> <li>• Ensure that the motor operation switch is in the off position and if using a petrol motor the spark plug ignition lead is disconnected before removing the guards, removing or refitting the trowel blades or making adjustments to the vee belt tension.</li> <li>• Keep hands and feet clear of rotating or moving parts as they will cause injury if contacted.</li> </ul>
c. The plant, parts of the plant or work pieces disintegrating?	N				

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d. Work pieces being ejected?	N				
e. The mobility of the plant?	N				
f. Uncontrolled or unexpected movement of the plant?	Y	Loss of control	5	C	<ul style="list-style-type: none"> <li>• Be sure the runaway protection switch provided is working properly so that if the handle should slip away from your control, the ignition supply will be cut off. However momentum may cause the handle to rotate one full turn, so watch your back.</li> <li>• It is important that the operator retains a firm grip with the left hand at some point on the handle when starting the engine, preferably close to the throttle control.</li> <li>• When starting the trowel do not exceed 1/4 throttle setting. A higher setting could engage the centrifugal clutch causing the handle to rotate.</li> <li>• Be careful with the trowel around pipes sticking out of the floor or other obstacles. Should the trowel blades catch on these, serious damage to the machine or harm to the operator may result.</li> <li>• Always maintain good footing so that you do not slip and loose control of the handle when starting or operating the trowel</li> </ul>
g. Other factors not mentioned?	N				
<b>D. SHEARING</b> 1. Can anyone's body parts be sheared between two parts of the plant, or material handled by the plant?	Y	Contact with blades and blade arm assembly	5	C	<ul style="list-style-type: none"> <li>• Do not operate the machine unless all protective guards are in place.</li> <li>• Ensure that the motor operation switch is in the off position and if using a petrol motor the spark plug ignition lead is disconnected before removing the guards, removing or refitting the trowel blades or making adjustments to the vee belt tension.</li> <li>• Keep hands and feet clear of rotating or moving parts as they will cause injury if contacted.</li> </ul>
<b>E. FRICTION</b> 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	Contact between stationary object and moving V-belt	5	C	<ul style="list-style-type: none"> <li>• Do not operate the machine unless all protective guards are in place.</li> <li>• Ensure that the motor operation switch is in the off position and if using a petrol motor the spark plug ignition lead is disconnected before removing the guards, removing or refitting the trowel blades or making adjustments to the vee belt tension.</li> <li>• Keep hands and feet clear of rotating or moving parts as they will cause injury if contacted.</li> </ul>

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<b>F. STRIKING</b> 1. Can anyone be struck by moving objects due to :					
a. Uncontrolled or unexpected movement of the plant?	Y	Loss of control	5	C	<ul style="list-style-type: none"> <li>• Be sure the runaway protection switch provided is working properly so that if the handle should slip away from your control, the ignition supply will be cut off. However momentum may cause the handle to rotate one full turn, so watch your back.</li> <li>• It is important that the operator retains a firm grip with the left hand at some point on the handle when starting the engine, preferably close to the throttle control.</li> <li>• When starting the trowel do not exceed 1/4 throttle setting. A higher setting could engage the centrifugal clutch causing the handle to rotate.</li> <li>• Be careful with the trowel around pipes sticking out of the floor or other obstacles. Should the trowel blades catch on these, serious damage to the machine or harm to the operator may result.</li> <li>• Always maintain good footing so that you do not slip and lose control of the handle when starting or operating the trowel</li> </ul>
b. The plant, parts of the plant or work pieces disintegrating?	N				
c. Work pieces being ejected?	N				
d. Mobility of the plant?	N				
e. Other factors not mentioned?					
<b>G. HIGH PRESSURE SUBSTANCES</b> 1. Can anyone come into contact with substances under high pressure, due to plant failure or misuse of the plant?					
	N				
<b>H. ELECTRICAL</b> 1. Can anyone be injured by electrical shock or burnt due to:					
	N				

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a. The plant contacting live electrical conductors?	N				
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. <b>EXPLOSION</b> 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	Petrol vapour	5	B	* Petrol is extremely flammable and explosive under certain conditions. * Ensure that petrol is only stored in an approved storage container. * Do not refuel the motor while it is in operation or hot. * Do not refuel the motor in the vicinity of sparks, a naked flame or a person smoking. * Do not over fill the fuel tank and avoid spilling petrol when refuelling. Spilled petrol or petrol vapour may ignite. If spillage occurs, ensure that the area is dry before starting the motor. * Ensure that the fuel tank cap is securely fitted after refuelling.
J. <b>SLIPPING, TRIPPING &amp; FALLING</b> 1. Can anyone using the plant, or in the vicinity of the plant, slip, trip or fall due to:					

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a. Uneven or slippery work surfaces?	Y	Slip/Trip/Fall	3	E	<ul style="list-style-type: none"> <li>* Slip/Trip/Fall is a major cause of serious injury or death. Beware of obstacles or water left on the walking or work surface.</li> <li>• Exercise caution and ensure the perimeter of elevated formwork or platforms is protected.</li> <li>• Always maintain good footing so that you do not slip and loose control of the handle when starting or operating the trowel</li> </ul>
b. Poor housekeeping, eg, swarf in the vicinity of the plant, spillage not Cleaned up?	Y	Slip/Trip/Fall	3	E	<ul style="list-style-type: none"> <li>* Slip/Trip/Fall is a major cause of serious injury or death. Beware of obstacles or water left on the walking or work surface.</li> <li>• Exercise caution and ensure the perimeter of elevated formwork or platforms is protected.</li> <li>• Always maintain good footing so that you do not slip and loose control of the handle when starting or operating the trowel</li> </ul>
c. Obstacles being placed in the vicinity of the plant, other factors not mentioned?	Y	Slip/Trip/Fall	3	E	<ul style="list-style-type: none"> <li>* Slip/Trip/Fall is a major cause of serious injury or death. Beware of obstacles or water left on the walking or work surface.</li> <li>• Exercise caution and ensure the perimeter of elevated formwork or platforms is protected.</li> <li>• Always maintain good footing so that you do not slip and loose control of the handle when starting or operating the trowel</li> </ul>
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 a slip-resistant surface?	N				

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f. Steep walking surfaces?	N				
g. Collapse of the supporting structure?	N				
h. Other factors not mentioned?	N				
<b>K. ERGONOMIC</b>					
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?	N				
f. Mismatch of the plant with human traits and natural limitations?	N				
g. Other factors not mentioned?	N				
<b>L. SUFFOCATION</b> 1. Can anyone be suffocated due to lack of oxygen, or atmospheric contamination?	Y	Motor exhaust fumes	4	A	Warning label on motor * Do not operate or refuel a petrol motor in a confined area without adequate ventilation. * Carbon Monoxide exhaust gases from internal combustion motor driven units can cause death in confined spaces.
<b>M. HIGH TEMPERATURE OR FIRE</b> 1. Can anyone come into contact with objects at high temperature?	Y	Motor muffler	3	E	* Be careful not to come in contact with the muffler when the engine is hot, since it can cause severe burns.

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<b>N. TEMPERATURE (THERMAL COMFORT)</b> 1. Can anyone suffer ill health due to exposure to high or low temperatures?	N				
<b>O. OTHER HAZARDS</b> 1. Can anyone be injured or suffer ill health from exposure to:					
a. Chemicals?	N				
b. Toxic gases or vapours?	Y	Motor exhaust fumes	4	A	Warning label on motor * Do not operate or refuel a petrol or diesel motor in a confined area without adequate ventilation. * Carbon Monoxide exhaust gases from internal combustion motor driven units can cause death in confined spaces.
c. Fumes?	Y	Motor exhaust fumes	4	A	Warning label on motor * Do not operate or refuel a petrol or diesel motor in a confined area without adequate ventilation. * Carbon Monoxide exhaust gases from internal combustion motor driven units can cause death in confined spaces.
d. Dust?	N				
e. Noise?	Y	Motor and blade operation	2	B	* Excessive noise can lead to temporary or permanent loss of hearing. * Wear an approved hearing protection device to limit noise exposure. As required by Occupational Health and Safety regulations.
f. Vibration?	N				
g. Radiation	N				

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h. Other factors not mentioned?	Y	Fire, petrol vapour	4	C	<ul style="list-style-type: none"> <li>* Petrol is extremely flammable and explosive under certain conditions.</li> <li>* Ensure that petrol is only stored in an approved storage container.</li> <li>* Do not refuel the motor while it is in operation or hot.</li> <li>* Do not refuel the motor in the vicinity of sparks, a naked flame or a person smoking.</li> <li>* Do not over fill the fuel tank and avoid spilling petrol when refuelling. Spilled petrol or petrol vapour may ignite. If spillage occurs, ensure that the area is dry before starting the motor.</li> <li>* Ensure that the fuel tank cap is securely fitted after refuelling.</li> </ul>

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