

# HAZARD EVALUATION AND CONTROL

Description of Plant: Drive Unit - Diesel

Model No: DD4

Assessed By: Evan Miller

Company : Flextool (Aust) Pty Ltd

Date: 09/09/97

Issue: B

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	Entaglement with output shaft, drive dog while rotating	5	C	* Do not operate the machine unless all protective guards are in place. * Keep hands and feet clear of rotating and moving parts as they will cause injury if contacted. * Ensure that the throttle lever is in the stop position before removing guards or making adjustments.
<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?	Y	In use on an incline	5	E	* Ensure both the machine and the operator are stable by setting up on level terrain and the machine will not move or fall while in operation or unattended.
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?	N				
g. Being thrown off or under the plant?	N				
h. Being trapped between the plant and material or fixed structures?	N				

\* 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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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	Output shaft, drive dog contact while rotating	5	E	* Do not operate the machine unless all protective guards are in place. * Keep hands and feet clear of rotating and moving parts as they will cause injury if contacted. * Ensure that the throttle lever is in the stop position before removing guards or making adjustments.
c. The plant, parts of the plant or work pieces disintegrating?	N				
d. Work pieces being ejected?	N				
e. The mobility of the plant?	N				
f. Uncontrolled or unexpected movement of the plant?	N				
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	Rotating output shaft, drive dog against stationary guard	5	C	* Keep hands and feet clear of rotating and moving parts as they will cause injury if contacted. * Ensure that the throttle lever is in the stop position before removing guards or making adjustments.
<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?					
	N				

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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	Plant moving while unattended	4	E	* Do not leave the machine in operation while it is unattended
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?	N				
<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:					
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				

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g. Lack of isolation procedures?	N				
h. Other factors not mentioned?	N				
<b>I. 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	Diesel vapour	5	B	* Ensure that fuel 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 overfill the fuel tank and avoid spilling fuel when refuelling. If spillage occurs, ensure that the area is dry before starting the motor. * Ensure that the fuel tank cap is securely fitted after refuelling.
<b>J. SLIPPING, TRIPPING &amp; FALLING</b> 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	Slip, trip, fall	3	E	* Slip/Trip/Fall is a major cause of serious injury or death. Beware of excess hose, the flexible shaft and water left on the walking or work surface. * Do not allow waste water to accumulate under foot.
b. Poor housekeeping, eg, swarf in the vicinity of the plant, spillage not Cleaned up?	Y	Slip, trip, fall	3	E	* Slip/Trip/Fall is a major cause of serious injury or death. Beware of excess hose, the flexible shaft and water left on the walking or work surface. * Do not allow waste water to accumulate under foot.
c. Obstacles being placed in the vicinity of the plant, other factors not mentioned?	N				
2. Can anyone fall from a height due to:					
a. Lack of proper work platform?	N				

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b. Lack of proper stairs or ladders?	N				
c. Lack of guardrails or other suitable edge protection?	N				
d. Unprotected holes, penetrations or gaps?	Y	Slip, trip, fall	3	C	* Exercise caution and ensure that the perimeter of elevated formwork or platforms is protected. * Exercise care when working in the vicinity of unprotected holes or excavations.
e. Poor floor or walking surfaces, such as the lack of a slip-resistant surface? 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				

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<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 Diesel motor in a confined area without adequate ventilation. * Carbon monoxide exhaust gases from internal combustion motor driven units can cause poisoning 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 to avoid contact with the muffler when engine is hot as it may cause severe burns.
<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 Diesel motor in a confined area without adequate ventilation. * Carbon monoxide exhaust gases from internal combustion motor driven units can cause poisoning in confined spaces.
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d. Dust?	N				
e. Noise?	Y	Motor operation	3	B	* Excessive noise can lead to temporary or permanent loss of hearing.

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f. Vibration?	N				
g. Radiation	N				
h. Other factors not mentioned?	Y	Fire - Diesell vapour	4	C	* Ensure that fuel 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 overfill the fuel tank and avoid spilling fuel when refuelling. If spillage occurs, ensure that the area is dry before starting the motor. * Ensure that the fuel tank cap is securely fitted after refuelling.

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