



RISK MANAGEMENT REPORT

Report Number	PARA 20151019-1606
Date	19-October-2015
Date Completed	20-October-2015
Created By	David Robson
Assessor	David Robson
Assist. Assessor(s)	David Leonard
Company	Plant Assessor Risk Assessment Services
Owner	DL Civil Pty Ltd
Make	Hitachi
Model	ZX30U-3F
Type	Excavator - Small
Chassis / VIN	HCM1NF00E00050171
Identifier 2	
Contractor Name	
Assessment Purpose	Plant in use
State	NSW

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Section 1 - Important Information

Contains information outlining the scope and any limitations applicable to this Risk Management Report

Section 2 - Unit Details

Contains standard machine specifications and details of any extras fitted

Section 3 - Risk Analysis, Risk Evaluation & Risk Treatment

Contains details of the technique used to calculate risk ratings, time frame and risk treatments. Please refer to this information when reviewing and interpreting the information in section 4

Section 4 part 1 - Risk Treatments Required

Contains detailed information regarding the risk treatments to be implemented including hazard, risk rating, time frame, relevant standards & legislative references

Section 4 part 2 - Risk Treatments in Place

Contains detailed information regarding the risk treatments in place including hazard, risk rating, relevant standards & legislative references

Section 5 - Images & Documents

Contains images & any relevant information entered by the assessor

SECTION 1 IMPORTANT INFORMATION

All operators of this item of plant must read and understand this report prior to operating this item of plant. This report pertains to this item of plant as it appeared on the day of inspection.

The safety hazards associated with the operating and maintaining of this item of plant have been identified as far as practical by visual inspection. The condition of this item of plant will change with use. No physical testing has been conducted (eg. Wire rope tests, stress tests, structural/non-destructive tests, noise tests, vibration tests, brake tests, insulation tests etc.) unless stated otherwise in the notes.

Controls outlined in both part 1 and part 2 of section 4 of this report must be maintained at all times whilst this item of plant is in operation. Any information contained in the notes section of this report shall be read in conjunction with section 3. Any information relating to the standard features have been supplied via the manufacturer and shall be used as a guide only until verified.

Additional Risk Assessment may be required, specific to the operating environment, for this item of plant.
All operators and maintenance personnel must be appropriately trained in the use & maintenance of this item of plant.

For further information regarding this report contact Online Safety Systems on 1300 72 88 52

SECTION 2 MACHINE DETAILS

STANDARD SPECS

- Noise Test Results

1. Manufacturers specified noise level dBA	
2. Ambient noise level dBA	
3. Noise level - Operator position (high idle) dBA	
4. Noise level - Operator position (low idle) dBA	
5. Noise level LHS dBA @ m (high idle)	
6. Noise level Front dBA @ m (high idle)	
7. Noise level RHS dBA @ m (high idle)	
8. Noise level Rear dBA @ m (high idle)	

Bucket

Standard bucket capacity, SAE rated (m3)	
Standard bucket width (mm)	

Dimensions/Weights

Dig depth (mm)	2780
Dig depth to cut 244 m level bottom (mm)	
Dump height (mm)	3210
Ground clearance (mm)	270
Max depth of vertical wall (mm)	2340
Operating weight (kg)	3250
Reach @ ground level (mm)	4890
Tailswing radius (mm)	775
Transport height (mm)	2500
Transport length (mm)	4450
Width (mm)	1550

Engine

Engine Displacement (Ltr)	1.6
Engine Hours	
Engine Make & Model	Yanmar 3TNV88
Engine Number	
Engine Power (kW@rpm)	22kW@2400rpm

**MACHINE
DETAILS**

**Make
Model
Type** Hitachi
ZX30U-3F
Excavator - Small

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Number of Cylinders	3
Extras	
Spare spool for attachments? Yes/No	
Hitch	
Quick Hitch Serial No.	
Hydraulics	
Flow of main pumps (lit/min)	2x38.4
Pump types	
Relief valve pressure, main pumps (bar)	
Plant Classifications	
Class	
Year	
Safety Structures	
FOPS Compliance No.	
FOPS Serial No.	
ROPS Compliance No.	
ROPS Serial No.	
Tracks	
Track length on ground (mm)	2120
Track pad width (mm)	300
Transmission	
Speed (km/h)	4.4
Work Capabilities	
Arm breakout (kgf)	1610
Bucket breakout (kgf)	2350
Gradeability (%)	58

EXTRAS

DETAILS

- Auger Drive
- Bucket - 1200mm
- Bucket - 300mm
- Bucket - 450mm
- Bucket - Mud - 1200mm
- FOPS
- Front grader blade
- Hammer Piping
- Hitch - Quick
- Ripper
- ROPS - Four Post

SECTION 3

Risk Analysis						
Consequence						
		1 Insignificant Dealt with by in house first aid	2 Minor Treated by medical professionals, hospital out patients	3 Moderate Significant non permanent injury, overnight hospital stay	4 Major Extensive permanent injury, e.g. Loss of fingers, extended hospital stay	5 Catastrophic Death, permanent disabling injury e.g. Loss of hand, quadriplegia
Likelihood	A Almost certain to occur in most circumstances	MEDIUM 8	HIGH 16	HIGH 18	CRITICAL 23	CRITICAL 25
	B Likely to occur frequently	MEDIUM 7	MEDIUM 10	HIGH 17	HIGH 20	CRITICAL 24
	C Possible and likely to occur at sometime	LOW 3	MEDIUM 9	MEDIUM 12	HIGH 19	HIGH 22
	D Unlikely to occur but could happen	LOW 2	LOW 5	MEDIUM 11	MEDIUM 14	HIGH 21
	E May occur but only in rare circumstances	LOW 1	LOW 4	LOW 6	MEDIUM 13	MEDIUM 15

Risk Evaluation	
CRITICAL	Act immediately to mitigate risk. Implement risk treatment(s) in accordance with the risk treatment table below.
HIGH	Act immediately to mitigate risk. Implement risk treatment(s) in accordance with the risk treatment table below. If the appropriate permanent risk treatments are not immediately accessible establish interim risk treatment strategies. Permanent risk treatments must be implemented within one week.
MEDIUM	Take reasonable steps to mitigate and monitor the risk. Implement risk treatment(s) in accordance with the risk treatment table below. Permanent risk treatments must be implemented within one month.
LOW	Take reasonable steps to mitigate and monitor the risk. Implement risk treatment(s) in accordance with the risk treatment table below. Permanent risk treatments must be implemented within three months.

Risk Treatment	
Selecting the most appropriate risk treatment option involves balancing the costs and efforts of implementation against the benefits derived, with regard to legal, regulatory and other requirements. (source AS/NZS ISO 31000:2009)	
Eliminate	Eliminate the risk source.
Substitute	Provide an alternative that is capable of performing the same task which is safer.
Engineering	Provide or construct a physical barrier or guard.
Administrative	Develop policies, procedures, practices and guidelines in consultation with employees to mitigate the risk. Provide training, instruction and supervision about the risk source.
Personal protective	Provide personal protective equipment to protect the individual from the risk source.

**MACHINE
DETAILS**

**Make
Model
Type**
Hitachi
ZX30U-3F
Excavator - Small

**Chassis / VIN
Assessed By
Date**

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SECTION 4 PART 1 RISK TREATMENTS REQUIRED

This section of the report pertains to hazards created by use of this item of plant which currently do not have risk treatments in place. The risk treatments recommended in this section have been developed based on relevant Australian Standards, health & safety legislation, the hierarchy of risk treatment in accordance with the guidelines set forth in AS/NZS ISO 31000 – Risk Management and various other sources. The recommended risk treatment measures must be developed, implemented and validated as effective prior to the operation, maintenance or testing of this item of plant. Treatments applied must be dated and initialled adjacent the recommendations. All operators must read and understand the entire contents of this section prior to operating this item of plant.

Operation



Hazard(s): Incorrect Operation

Relevant References: AS1470, ISO31000-2009 Risk Management

Preliminary Risk Rating: CRITICAL 24

Time Frame: Immediate

Due Date: 20-Oct-15

Residual Risk Rating: MEDIUM 15

Date Rectified:
Initial:

Risk Treatment Required: Operator Competency

Only persons who are qualified, trained and experienced and/or hold the relevant certification/license can operate this item of plant. If there is not a competent/licensed person available for operation of this item of plant then only persons who are supervised by a competent/licensed person can operate this item of plant.

Legislation: State Health & Safety Legislation & Regulation

Design Compliance



Hazard(s): Falling, Slipping

Relevant References: AS1470, AS1657-2013, AS2153.1, AS2153.3, AS2153.7, AS3868-1991, ISO31000-2009 Risk Management

Preliminary Risk Rating: MEDIUM 12

Time Frame: 1 Month

Due Date: 19-Nov-15

Residual Risk Rating: LOW 6

Date Rectified:
Initial:

Risk Treatment Required: Access/Egress Instruction Label

Ensure the access and egress to the cabin/work area has an instruction label fitted with the following information as a minimum -

All personnel must -

- 1. Always face the item of plant during access and egress.
- 2. Always maintain three points of contact during access and egress.
- 3. Ensure the steps are clean.
- 4. Never jump off machine.

Once fitted this label must be clear and legible at all times whilst this item of plant is in operation.

SECTION 4 PART 2 RISK TREATMENTS IN PLACE

This section of the report pertains to risk treatments currently in place on this item of plant. This section must be read in conjunction with the safety section of the manufacturers handbook. All operators must read and understand the entire contents of this section prior to operating this item of plant. These treatments or equivalent must remain in place at all times whilst this item of plant is in operation.

Delivery



Hazard(s): Crushing

Relevant References:

Preliminary Risk Rating: HIGH 22

Residual Risk Rating: MEDIUM 15

Risk Treatment: SWMS Loading/Unloading

Ensure that all operators follow approved SWMS/SOP when loading and unloading this machine to and from a flat top truck or trailer, low loader or tilt tray.



Hazard(s): Crushing

Relevant References:

Preliminary Risk Rating: HIGH 22

Residual Risk Rating: MEDIUM 15

Risk Treatment: SWMS Load Restraint

Ensure that all operators follow the approved SWMS/SOP when restraining this machine for transport.

Operation



Hazard(s): Crushing, Incorrect Operation

Relevant References: AS1418.8

Preliminary Risk Rating: HIGH 22

Residual Risk Rating: HIGH 21

Risk Treatment: Boom Rated Capacity Label

This item of plant has a rated capacity label fitted to each side of the boom. Ensure that these labels are clear and legible at all



times whilst this item of plant is in operation. Operators must not exceed this rated capacity at any time during operation.



Hazard(s): Incorrect Operation

Relevant References: AS1470, AS2153, ISO31000-2009 Risk Management

Preliminary Risk Rating: HIGH 22

Residual Risk Rating: MEDIUM 15

Risk Treatment: Operation Handbook

The manufacturer's operation handbook has been supplied for this item of plant.

This handbook must be available at all times to all potential operators and supervisory staff. All potential operators must read and be familiar with this handbook prior to operating.

A complete risk assessment/Job Safety Analysis must be undertaken covering all operating processes and environments associated with this item of plant. SWMS should be produced for specific tasks associated with use of this item of plant.



Hazard(s): Incorrect Operation

Relevant References: ISO31000-2009 Risk Management

Preliminary Risk Rating: HIGH 22

Residual Risk Rating: MEDIUM 15

Risk Treatment: Pre-op Checklist Excavator

A pre-operation checklist is available for this Excavator. This checklist must be completed by all operators prior to operating this Excavator.



Hazard(s): Incorrect Operation

Relevant References: ISO31000-2009 Risk Management

Preliminary Risk Rating: HIGH 22

Residual Risk Rating: MEDIUM 15

Risk Treatment: SOP Excavator

Safe Operation Procedures are available for this Excavator. The information in the Safe Operation Procedures must be followed at all times whilst operating this Excavator.



Hazard(s): Incorrect Operation

Relevant References: AS1470, AS4024, ISO31000-2009 Risk Management

Preliminary Risk Rating: HIGH 22

Residual Risk Rating: MEDIUM 15

Risk Treatment: Control Labels

All controls including all levers, buttons, pedals, switches etc. are clearly labelled as to their purpose and method of operation. These labels must be maintained in a clean and serviceable condition at all times.



Hazard(s): Crushing, Falling

Relevant References: AS1470, AS1636, AS2294, ISO31000-2009 Risk Management

Preliminary Risk Rating: HIGH 22

Residual Risk Rating: MEDIUM 15

Risk Treatment: Passenger Seat Label

This item of plant is fitted with a clear hazard warning label re: Operator only, No passengers. Passengers must not be carried at anytime. This label must be clear and legible at all times whilst this item of plant is in operation.

Legislation: State Health & Safety Legislation & Regulation



Hazard(s): Crushing, Incorrect Operation

Relevant References: AS4772-2008

Preliminary Risk Rating: HIGH 21

Residual Risk Rating: MEDIUM 15

Risk Treatment: Quick Hitch Information

This hydraulic quick hitch has the following information marked upon it -

1. A unique identification mark (serial number)
2. The manufacturer's name and model clearly and durably marked upon it
3. The maximum rated capacity clearly and durably marked upon it
4. The mass of the hitch clearly and durably marked upon it
5. The lift point capacity (kg) clearly and durably marked upon it

This information must be considered by all operators when assessing the suitability of the hitch for any task. Failure to consider and or comply with this information could lead to serious injury or death.



Hazard(s): Crushing

Relevant References: AS1470, AS1636, AS2294, ISO31000-2009 Risk Management

Preliminary Risk Rating: HIGH 22

Residual Risk Rating: MEDIUM 15

Risk Treatment: ROPS Label

The warning label stating that the ROPS must not be damaged at any time (including cuts, drill holes and welds) must be present, clean and legible at all times.



Hazard(s): Crushing

Relevant References: ISO31000-2009 Risk Management, ISO3471-2008

Preliminary Risk Rating: HIGH 22

Residual Risk Rating: MEDIUM 15

Risk Treatment: ROPS seat belt label

The advisory label stating that a "ROPS is fitted seatbelts must be worn" must be followed at all times whilst operating this item of plant. This label must be present, clean and legible at all times.

Hazard(s): Electrocutation

Relevant References: AS1470, AS2550, AS3017, ISO31000-2009 Risk Management



Preliminary Risk Rating: HIGH 22

Residual Risk Rating: MEDIUM 15

Risk Treatment: Electrical Approach Distances

This item of plant has a hazard warning label re: overhead electrical hazards and minimum approach distances fitted. These distances must be adhered to strictly. These labels and tables must be present, clear and legible at all times.

Spotters are required when working within 5 metres of the minimum approach distance of any live electrical apparatus.

Any encroach within the minimum approach distances must only occur if the following provisions have been met -

1. The machine is designed to work within the minimum approach distances
2. Permission has been granted by the electricity company and
3. Safe systems of work have been documented and approved.



Hazard(s): Electrocution, Explosion

Relevant References: AS1470, AS3017

Preliminary Risk Rating: HIGH 22

Residual Risk Rating: MEDIUM 15

Risk Treatment: Dial Before You Dig (AUS)

This item of plant is fitted with a clear hazard warning label re: underground services and advice to "Dial 1100 Before You Dig" to the operator work area. This advice must be adhered to strictly. Digging into an electricity cable or gas pipe can cause serious injury or death. Damaging a pipe or cable may also lead to isolating a community from emergency services such as fire, police or ambulance. This label must be present, clear and legible at all times.



Hazard(s): Collision

Relevant References: ISO31000-2009 Risk Management

Preliminary Risk Rating: HIGH 22

Residual Risk Rating: MEDIUM 15

Risk Treatment: Phone Use label

This item of plant is fitted with an instruction label advising that mobile phones must not be used whilst operating this machine. Accordingly all operators must not use a mobile phone at any time whilst operating machine. If phone use is necessary then operator must place machine in park configuration in a safe position prior to phone use. Operators MUST adhere to this advice at all times.

This label must be clear and legible at all times whilst this item of plant is in operation.



Hazard(s): Burns, Explosion, Poisoning

Relevant References: AS1470, AS2153, ISO31000-2009 Risk Management

Preliminary Risk Rating: HIGH 22

Residual Risk Rating: MEDIUM 15

Risk Treatment: Tank ID Label

The tank(s) on this item of plant have clear, legible label(s) identifying their contents, and if appropriate any necessary controls re: the contents. These must be present, clear and legible at all times. (this includes radiator, hydraulic and petrol/diesel tanks)



Hazard(s): Crushing, Pinching

Relevant References: AS1470, AS4024, ISO31000-2009 Risk Management

Preliminary Risk Rating: MEDIUM 14

Residual Risk Rating: MEDIUM 13

Risk Treatment: Swing Boom Crush Label

This item of plant has clear hazard warning labels re: pinch point/crush zone, keep clear, that are attached to each side of the boom swing/pivot point. These must be present, clear and legible at all times whilst this item of plant is in operation.



Hazard(s): Burns, Entanglement, Shearing

Relevant References: AS1470, AS2153

Preliminary Risk Rating: HIGH 19

Residual Risk Rating: MEDIUM 13

Risk Treatment: Engine Guard Label

The engine fan and alternator belts, pulleys and gears are guarded. These guards have clear legible hazard warning labels re do not open or remove guards while engine is running. These labels must be present, legible and easily seen at all times whilst this item of plant is in operation.



Hazard(s): Crushing, Poor Signage

Relevant References: AS1418.8, AS1470, AS4024, ISO31000-2009 Risk Management

Preliminary Risk Rating: HIGH 19

Residual Risk Rating: MEDIUM 13

Risk Treatment: Boom Lifting Point Table

This item of plant has a lifting point fitted to the boom, accordingly a load/distance table is present at the operator work area. This must be clear and legible at all times. This item of plant must comply with the relevant parts of AS 1418 at all times. All operators must be appropriately trained to use this item of plant and licenced where necessary.



Hazard(s): Burns

Relevant References: AS1470, ISO31000-2009 Risk Management

Preliminary Risk Rating: MEDIUM 12

Residual Risk Rating: MEDIUM 12

Risk Treatment: Open Cabin

Dust, exhaust fumes, chemical fumes, sunstroke and sunburn pose serious risk to the operator both short and long term. The appropriate controls for all of these hazards must always be available whilst this item of plant is in operation. If these controls e.g. hats, sunscreen, dust masks etc are not available then operation of this item of plant must cease until these are made available to all operators.

Hazard(s): Collision, Crushing

Relevant References: AS1470, AS2153, AS2359, ISO31000-2009 Risk Management

**MACHINE
DETAILS**

**Make
Model
Type** Hitachi
ZX30U-3F
Excavator - Small

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Preliminary Risk Rating: MEDIUM 12

Residual Risk Rating: LOW 6

Risk Treatment: Warning Device (horn)

This item of plant is fitted with a fully functional audible warning device such as a horn. This must be easily accessed by the operator, and easily identifiable by nearby pedestrians.

All operators should ensure the warning devices are functional at the start of each shift, by completing pre-start checklists. Warning devices should operate automatically where appropriate (eg reversing)

Hazard(s): Crushing

Relevant References: AS1470, AS2153.7, ISO31000-2009 Risk Management



Preliminary Risk Rating: MEDIUM 12

Residual Risk Rating: LOW 6

Risk Treatment: Front Grader Blade Label

The front blade on this item of plant is fitted with a hazard warning label re: crush zone, keep clear. This label must be present and fully functional and serviceable at all times.

Hazard(s): Collision, Crushing, Striking

Relevant References: AS1470, AS2153, AS4024, ISO31000-2009 Risk Management



Preliminary Risk Rating: MEDIUM 12

Residual Risk Rating: LOW 6

Risk Treatment: Tail Swing Label

The rear of this item of plant has a hazard warning label re: general plant movement, tail swing, keep clear. It must be present and fully functional and serviceable at all times.

Hazard(s): Collision

Relevant References: ISO31000-2009 Risk Management



Preliminary Risk Rating: MEDIUM 9

Residual Risk Rating: LOW 5

Risk Treatment: Recovery Point Label

This item of plant is fitted with a hazard warning label adjacent the recovery tow point which states "Danger - Do not tow this item of plant until you read, understand and follow the manufacturers' towing instructions. Failure to do so could result in DEATH or Serious Injury".

This label must be clear and legible at all times whilst this item of plant is in operation.

Hazard(s): Fire

Relevant References: AS1470, AS1841, AS1851, AS2153.7, ISO31000-2009 Risk Management



Preliminary Risk Rating: MEDIUM 13

Residual Risk Rating: LOW 4

Risk Treatment: Fire Extinguisher

This item of plant is fitted with an approved and maintained fire extinguisher. Fire extinguisher(s) must be present and fully functional at all times. They must be readily accessible to the operator. Regular inspections must also be carried out in accordance with the manufacturer's requirements and AS 1851 – 1995

Design Compliance



Hazard(s): Collision

Relevant References: AS1470, ISO31000-2009 Risk Management

Preliminary Risk Rating: HIGH 22

Residual Risk Rating: HIGH 21

Risk Treatment: Beacon

This item of plant is fitted with a safety beacon. This beacon must meet the following criteria at all times whilst this item of plant fitted is in operation -

- Is visible up to 200m in all directions (allowing for intermittent obstruction from the plant structure whilst the plant is in operation)
- Is fitted in the most appropriate location on machine to maximise visibility without risking continual damage

NOTE: more than one beacon may be fitted to meet these criteria.



Hazard(s): Crushing

Relevant References: AS4772-2008

Preliminary Risk Rating: HIGH 22

Residual Risk Rating: MEDIUM 15

Risk Treatment: Quick Hitch Controls

The quick hitch operation control fitted with a device/method to prevent accidental operation. This device must be fully functional at all times whilst this item of plant is in operation.



Hazard(s): Collision, Crushing, Entanglement, Striking

Relevant References: AS1470, AS2153, ISO31000-2009 Risk Management

Preliminary Risk Rating: HIGH 22

Residual Risk Rating: MEDIUM 15

Risk Treatment: Neutral Start

This item of plant has neutral start control in place. It must be fully functional and serviceable at all times whilst this item of plant is in operation.

Hazard(s): Crushing

Relevant References: ISO24135.1-2006, ISO3776.1-2006, ISO6683-2005

**MACHINE
DETAILS**

**Make
Model
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ZX30U-3F
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Preliminary Risk Rating: HIGH 22
Risk Treatment: Seat Belt

Residual Risk Rating: MEDIUM 15

This item of plant is fitted with an operator seat belt. This seat belt must be free from damage, and permanently and sturdily attached at all times whilst this item of plant is in operation. Operators must use this seat belt at all times during operation.



Hazard(s): Crushing
Preliminary Risk Rating: HIGH 22
Risk Treatment: Quick Hitch Operation Alarm

Relevant References: AS4772-2008
Residual Risk Rating: MEDIUM 15

This item of plant is fitted with a quick hitch with a fully functional audible alarm fitted to the operator work area to alert the operator that the host machine is in the mode that allows for the controls to be operated to engage or disengage attachments.

This alarm must be fully functional at all times whilst this item of plant is in operation.



Hazard(s): Crushing
Preliminary Risk Rating: HIGH 22
Risk Treatment: Movement Awareness Alarm

Relevant References: AS1470, ISO31000-2009 Risk Management, ISO7731-2003, ISO9533-2010
Residual Risk Rating: MEDIUM 15

An automatic movement awareness alarm is fitted to this item of plant. This alarm is automatically activated when travel in any direction occurs. It must be fully functional and serviceable at all times whilst this item of plant is in operation.



Hazard(s): Crushing
Preliminary Risk Rating: HIGH 22
Risk Treatment: Quick Hitch - Fully Automatic

Relevant References: AS4772-2008
Residual Risk Rating: MEDIUM 15

This item of plant is fitted with a fully automatic hydraulic (quick) hitch (i.e. has hydraulically operated latch as primary retention device and remotely controlled safety device as back up) between the excavator arm and attachments.

This safety device must meet all of the following criteria at all times prior and during operation -

1. Is a mechanical device i.e. not just an indicating system/device
2. Must be intentionally disengaged to remove attachments
3. Is not the primary source of retention of attachments
4. Has means of verifying engagement of the primary retention device from the operator position and
5. Has means of verifying engagement of safety system from operator position

If any of these criteria are not met at any time then operation must cease.



Hazard(s): Crushing
Preliminary Risk Rating: HIGH 21
Risk Treatment: ROPS

Relevant References: AS2294, AS4987-2002, ISO31000-2009 Risk Management, ISO3471-2008
Residual Risk Rating: MEDIUM 15

A Roll Over Protective Structure (ROPS) to ISO 3471, ISO 12117.1 or 2, AS 2294 or AS 4987 is fitted to this item of plant. A permanent label stating this standard must be attached to the structure at all times. This structure provides a safety envelope during a rollover. A warning label re: wearing of seat belts at all times whilst this item of plant is in operation and accordingly seat belts must be worn at all times during operation.



Hazard(s): Burns, Crushing, Entanglement, Pinching,
Preliminary Risk Rating: HIGH 22
Risk Treatment: Safe Operator Location

Relevant References: AS4024.1202-2006
Residual Risk Rating: MEDIUM 15

This machine is designed so that the operator is isolated from all danger zones whilst at the operator position. This condition must exist at all times whilst this item of plant is in operation.



Hazard(s): Burns, Striking
Preliminary Risk Rating: HIGH 22
Risk Treatment: Hydraulic Hoses

Relevant References: AS2671-2002, ISO4413-1998
Residual Risk Rating: MEDIUM 15

This item of plant has hydraulic hoses. These hoses must be inspected each day or before each use for wear and tear. If there are visible signs of wear immediate action must be taken to control the risk arising from this wear. These inspections must be documented.

Hydraulic fluid at high pressure can penetrate the skin, never use any part of your body to check for leaks. If oil penetrates the skin seek medical advice immediately. Always use a piece of cardboard or similar to check for suspected leaks.

Hydraulic pressure can be stored and is a hazard. Before disconnection or connection of hydraulic hoses complete the following steps -

1. Stop engine
2. Keep all bystanders clear of the work area
3. Refer to operators manual as to methods to release pressure
4. Wait 5 minutes

**MACHINE
DETAILS**

Make Model Type Hitachi ZX30U-3F Excavator - Small

Chassis / VIN Assessed By Date

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David Robson
19-October-2015



Hazard(s): Entanglement
Preliminary Risk Rating: HIGH 22
Risk Treatment: Engine Guards

Relevant References: AS4024
Residual Risk Rating: MEDIUM 15

The engine fan and alternator belts, pulleys and gears are guarded. These guards must be present and fully functional and serviceable at all times whilst this item of plant is in operation.



Hazard(s): Crushing, Instability, Tip Over
Preliminary Risk Rating: HIGH 22
Risk Treatment: Levelness Device

Relevant References: AS1418.11-2014, AS1418.8, ISO31000-2009 Risk Management
Residual Risk Rating: MEDIUM 15

This item of plant is fitted with a level indicator. This device indicates the "levelness" of the machine chassis. During operation operators must ensure the machine is within the manufacturers guidelines for levelness. The rated capacity chart fitted for lifting operations has a maximum level angle which must never be exceeded during lifting operations. This level indicator must be present and fully functional at all times whilst this item of plant is in operation.



Hazard(s): Incorrect Operation
Preliminary Risk Rating: HIGH 20
Risk Treatment: Intuitive Controls

Relevant References: AS4024.1906-2014, ISO31000-2009 Risk Management
Residual Risk Rating: MEDIUM 14

The controls fitted to this item of plant are orientated so that the movement of the control is consistent with the action of the machine e.g. moving a control lever to the left results in the machine turning to the left. This design feature must be maintained at all times whilst this item of plant is in operation.



Hazard(s): Collision, Poor Visibility
Preliminary Risk Rating: MEDIUM 12
Risk Treatment: Operator Mirrors

Relevant References: AS1470, AS2153, ISO13564-1.2, ISO14401.1-2009, ISO31000-2009 Risk Management
Residual Risk Rating: MEDIUM 11

The operator rear view mirrors fitted to this item of plant must be fully functional and kept clean at all times. There must always be at least one mirror on each side to provide rear vision to the operator to avoid striking bystanders and objects.



Hazard(s): Slipping
Preliminary Risk Rating: MEDIUM 12
Risk Treatment: Operator Work Area Access/Egress

Relevant References: AS1470, AS1657-2013, AS2153.1, AS2153.3, AS2153.7, AS3868-1991, ISO31000-2009 Risk Management
Residual Risk Rating: LOW 6

Safe access and egress to the cabin/work area(s) must be maintained at all times whilst this item of plant is in operation. It must be non slip, free from damage, located at a height so as to not cause undue body stresses and strains with three points of contact available to personnel at all times.

- All personnel must -
1. Always face the item of plant during access and egress.
 2. Always maintain three points of contact during access and egress.
 3. Never carry an object(s) in his/her hand(s) during access and egress.
 4. Never jump off machine.



Hazard(s): Incorrect Operation, Slipping
Preliminary Risk Rating: HIGH 17
Risk Treatment: Control Levers/Pedals/Buttons

Relevant References: AS1470, AS2153.3, AS2153.6, AS2153.7, AS4024, ISO31000-2009 Risk Management
Residual Risk Rating: LOW 6

All controls including all levers, buttons, pedals, switches etc. must be kept non-slip and free from damage at all times.



Hazard(s): Burns, Electric Shock
Preliminary Risk Rating: MEDIUM 12
Risk Treatment: Battery Cover

Relevant References: AS1470, AS4024, ISO31000-2009 Risk Management
Residual Risk Rating: LOW 6

All batteries fitted to this item of plant are constrained to prevent displacement & fitted with a permanent sturdy cover which allows for ventilation. The constraint and cover must be present and fully functional and serviceable at all times whilst this item of plant is in operation.



Hazard(s): Strains
Preliminary Risk Rating: HIGH 19
Risk Treatment: Controls Ergonomics

Relevant References: AS1470, AS4024
Residual Risk Rating: LOW 5

All controls including all levers, buttons, pedals, switches etc, are placed near the operator work position and are easy to reach and operate during the execution of the operator's normal duties. This applies for all persons within the 95th percentile of the normal population distribution.

Hazard(s): Crushing
Relevant References: ISO10262-1998, ISO31000-2009 Risk Management, ISO3449-2005

**MACHINE
DETAILS**

Make Model Type Hitachi ZX30U-3F Excavator - Small

Chassis / VIN Assessed By Date

HCM1NF00E00050171
David Robson
19-October-2015



Preliminary Risk Rating: HIGH 21
Risk Treatment: FOPS General

Residual Risk Rating: LOW 5

This item of plant is fitted with a Level I Falling Objects Protective Structure (FOPS). This structure is designed to protect the operator from small falling objects (e.g. bricks, small concrete blocks, hand tools)

Before operating this item of plant a risk assessment must be conducted to determine the level of FOPS required.

- Level I - withstands 1,365 joules (e.g. 20kgs @ 7m drop, 70kgs @ 2m drop)
 - operations such as highway maintenance, landscaping and other construction site services
- Level II - withstands 11,600 joules (e.g. 200kgs @ 6m drop, 394kgs @ 3m drop)
 - operations such as site clearing, overhead demolition or forestry

This risk assessment must be undertaken before each operation, in particular when the item of plant is moved to a new location, even if it is within the same site.

Hazard(s): Burns, Striking

Relevant References: AS1418.1-2002 Cranes - General requirements, AS4024.1202-2006, ISO31000-2009 Risk Management



Preliminary Risk Rating: HIGH 19
Risk Treatment: Hydraulic Hose Failure Shield

Residual Risk Rating: LOW 5

This item of plant is fitted with a sturdy, permanent shield(s) between the hydraulic hoses and any body parts of the operator to provide protection during a hose or component failure. This shield(s) must be present and fully functional at all times whilst this item of plant is in operation.

Hazard(s): Collision, Poor Visibility

Relevant References: AS1470, AS2153, AS4024, ISO31000-2009 Risk Management



Preliminary Risk Rating: HIGH 22
Risk Treatment: Machine Lights

Residual Risk Rating: LOW 5

This item of plant is fitted with self contained lighting. All of these lights must be fully functional and serviceable whilst this item of plant is in operation in areas of reduced light. If any of these lights stop working the operation must cease immediately and the faulty light be repaired before operation can continue in the areas of reduced light.

Hazard(s): Burns

Relevant References: AS1019, AS1470, AS2153, AS4024, ISO31000-2009 Risk Management



Preliminary Risk Rating: MEDIUM 9
Risk Treatment: Exhaust

Residual Risk Rating: LOW 5

The engine exhaust on this item of plant is fitted with a guard to prevent injury to any person and control the risk of initiating a fire. It must be present and fully functional and serviceable at all times whilst this item of plant is in operation.

Hazard(s): Incorrect Operation, Slipping

Relevant References: AS1470, AS2153.1, AS2153.6, AS2153.7, ISO31000-2009 Risk Management



Preliminary Risk Rating: MEDIUM 9
Risk Treatment: Operator Floor

Residual Risk Rating: LOW 4

All work area floors are non-slip and free from damage & debris.

Floor area must remain non-slip and free from damage & debris, including rubbish, tools and other items, at all times whilst this item of plant is in use.

Hazard(s): Operational Malfunction

Relevant References: AS1470, ISO31000-2009 Risk Management



Preliminary Risk Rating: HIGH 22
Risk Treatment: Plant Modification

Residual Risk Rating: LOW 2

The plant is in original condition.

Hazard(s): Strains

Relevant References: AS1470, AS2153.1, AS2153.2, AS2153.6, AS2153.7, AS2953, ISO31000-2009 Risk Management, ISO3691-1980



Preliminary Risk Rating: MEDIUM 9
Risk Treatment: Operator Seat

Residual Risk Rating: LOW 1

The operator seat fitted to this item of plant must remain free from damage and tears, and be permanently and securely fitted at all times.

Hazard(s): Crushing

Relevant References: AS1418.8



Preliminary Risk Rating: CRITICAL 24
Risk Treatment: Closed Eye Lifting Point

Residual Risk Rating: LOW 1

The lifting point fitted to this item of plant is the closed eye type. Hooks with or without latching devices must not be used as a lifting point at any time.

Maintenance

Hazard(s): Incorrect Operation

Relevant References: AS1470, AS2153, ISO31000-2009 Risk Management



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Tuesday, 20 October, 2015

8:31 am

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MACHINE DETAILS

**Make
Model
Type** Hitachi
ZX30U-3F
Excavator - Small

**Chassis / VIN
Assessed By
Date**

HCM1NF00E00050171
David Robson
19-October-2015



Preliminary Risk Rating: HIGH 22

Residual Risk Rating: MEDIUM 15

Risk Treatment: Maintenance Manual

The manufacturer's maintenance manual(s) has been supplied for this item of plant

These manual(s) must be available at all times to all users and maintenance staff of this item of plant. All users and maintenance staff must read and be familiar with these handbook(s) prior to maintaining or repairing this item of plant.

A complete risk assessment/JSEA must be undertaken covering all inspection, maintenance, servicing and transportation requirements of this piece of plant prior to use.

A full assessment of the competence of people using the book(s) must also be undertaken



Hazard(s): Operational Malfunction

Relevant References: AS1470, ISO31000-2009 Risk Management

Preliminary Risk Rating: HIGH 21

Residual Risk Rating: MEDIUM 15

Risk Treatment: Service Records

Service and maintenance records are available for this item of plant.

These records must continue to be maintained and stored in a secure area as part of your plant safety management programme. This programme includes the undertaking of regular inspections concerning the general condition of the item of plant including (but not limited to) tyre condition, oil levels and wear and tear on critical items such as brakes and steering, etc. All OEM prescribed, scheduled and non scheduled maintenance must also be documented as part of these records and attended to within a risk management framework.



Hazard(s): Crushing

Relevant References: AS1470, AS1636, AS2294, ISO31000-2009 Risk Management

Preliminary Risk Rating: HIGH 22

Residual Risk Rating: MEDIUM 15

Risk Treatment: ROPS Damage

The Roll Over Protective Structure (ROPS) fitted to this item of plant must remain free from damage at all times whilst this item of plant is in operation.



Hazard(s): Burns, Striking

Relevant References: AS2550, AS2671-2002, ISO31000-2009 Risk Management, ISO4413-1998

Preliminary Risk Rating: HIGH 22

Residual Risk Rating: MEDIUM 15

Risk Treatment: Hydraulic Damage

The hydraulic hoses to this item of plant are free from damage and protected against damage arising from contact with the plant structure. Ensure that hoses are free from damage and that protection is in place at all times whilst this item of plant is in operation. Inspection of the hydraulic hoses and protection system should be conducted regularly and documented as part of your plant safety programme.



Hazard(s): Current or previous structural damage

Relevant References: AS1470, ISO31000-2009 Risk Management

Preliminary Risk Rating: CRITICAL 25

Residual Risk Rating: MEDIUM 15

Risk Treatment: Structural Integrity

Regular checks for structural damage must be undertaken. Look for cracks in frames/chassis (current or repaired), bends or damage to structural components, etc.



Hazard(s): Collision, Instability

Relevant References: AS1470, ISO31000-2009 Risk Management

Preliminary Risk Rating: MEDIUM 9

Residual Risk Rating: LOW 4

Risk Treatment: Tracks

The tracks and track components must be inspected as part of a "pre start" checklist. These inspections must be documented as part of your plant safety programme.



Hazard(s): Operational Malfunction

Relevant References:

Preliminary Risk Rating: HIGH 22

Residual Risk Rating: LOW 2

Risk Treatment: Major Fluid Leaks

This item of plant must remain free from major and minor leaks at all times whilst in operation (this includes engine, transmission, cooling system, air, fuel, drive line, wheel hubs, steering and hydraulics). Development of a major leak will require this item of plant to be stood-down until repaired. Minor leaks detected must be repaired within 1-14 days.

SECTION 5 IMAGES AND DOCUMENTS

NOTES

IMAGES

There are no images

<END OF RISK ASSESSMENT REPORT>

**MACHINE
DETAILS**

Make Hitachi
Model ZX30U-3F
Type Excavator - Small

Chassis / VIN
Assessed By
Date

HCM1NF00E00050171
David Robson
19-October-2015

RISK MANAGEMENT REPORT

Report Number PARA 20151019-1606
Date 19-October-2015
Date Completed 20-October-2015
Created By David Robson
Assessed By David Robson
Assist. Assessor(s) David Leonard
Company Plant Assessor Risk Assessment Services
Owner DL Civil Pty Ltd
Make Hitachi
Model ZX30U-3F
Type Excavator - Small
Chassis / VIN HCM1NF00E00050171
Identifier 2
Contractor Name

Assessment Purpose Plant in use
State NSW

OPERATOR ACKNOWLEDGEMENT

I the undersigned acknowledge that I have read and understand the risk management report described above.

I also acknowledge that I have received a copy of this risk management report.

Name _____

Company Name _____

Position _____

Signature _____ Date _____

The manufacturers' operational & maintenance handbooks have been supplied, _____ (initial)

 (please tick one)
 Yes
 No