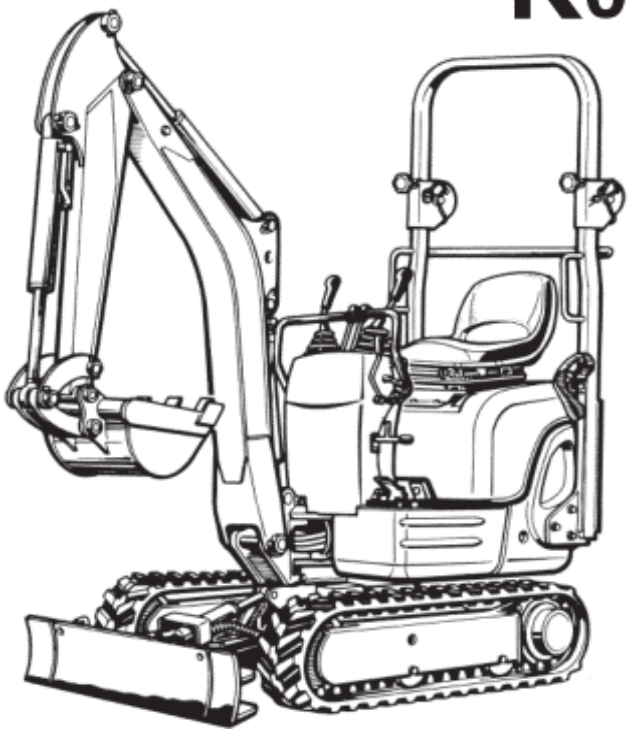
For Earth, For Life
Kubota

Kubota Tractor Australia Pty Ltd
25-29 Permas Way
TRUGANINA, 3029
Victoria Australia

HAZARD IDENTIFICATION and RISK ASSESSMENT

MODEL **K008-3**



Assessment Date	1/09/2016
Revision	A
Assessment Location	KTA
Assessment Team	Alex Pedemont
Model Assessed	K008-3S
Serial Number	41670

	Sample	Production
Type of Unit		✓

Kubota Tractor Australia have performed this risk assessment on a standard unit for flat ground application. A thorough risk assessment, specific to their application, must be carried out by the end user before the operation of this machine. All operating processes and environments must be carefully considered.

This risk assessment is void unless all the risk controlls in section 4 have been completed and all the actions in section 3 J have been controlled.

PREPARED BY:		**RELEASED BY:**	
Alex Pedemont		Benjamin Binns	
Technical Engineer	Date: 1/09/2016	Engineering Manager	Date: 1/09/2016

Noise level testing - Tested by KTA to AS2012

	Noise Level dBA	Reference Standard
Average at operators ear	74.5	<85 dBA eq 8 hr
Average at 7m	66.4	<85 dBA eq 8 hr

TECHNICAL DATA

			KUBOTA EXCAVATOR
Model name			K008-3
Type			Rubber tracks
Machine weight		kg	920
Standard bucket	Volume (CECE)	m^3	0.022
	Width	mm	350
Engine	Type		Water cooled 3 cylinder Diesel
	Model name		KUBOTA D722-EBH
	Total displacement	m^3	719
	Engine power	HP (kW)	10.2 (7.4)
	Rated speed	rpm	2050
Performance	Swing speed	rpm	8.3
	Travel speed	km/h	2.0/4.0
	Ground pressure	Mpa (kgf/cm^2)	0.024 (0.24)
	Climbing angle	% (deg)	27 (15)
Dozer (width & height)		mm	700 x 200 860 x 200
Boom swing angle	Left	rad (deg)	0.96 (55)
	Right	rad (deg)	1.05 (60)
Pressure connection for attachments	Displacement	L/min	21.0
	Max. pressure	Mpa (kgf/cm^2)	16.67 (170)
Fuel tank capacity		L	12

NOTE :

- Above dimensions are based on the machine with JPN bucket.
  JPN = made in Japan

2. Risk Assessment Tables

Likelihood Table

	Category	Description
1	Rare	Cannot imagine that this could occur (over 5 years)
2	Unlikely	Incident is possible, but unlikely to occur (2 years - 5 years)
3	Slight	Incident is possible to occur (1 year - 2 years)
4	Likely	Incident could occur at some time (1 month - 1 year)
5	Almost Certain	Incident will occur at some time (0 - 1 month)

Consequences Table

	Category	Description
1	Negligible	Effects unlikely to last until the next day.
2	Minor	Likely to affect employee the next day.
3	Moderate	Injury needs formal medical treatment.
4	Major	Injury requiring extensive medical treatment and/or hospitalisation.
5	Severe	Injury resulting in death or permanent incapacity.

Risk Score Calculator

		Consequences				
		Negligible	**Minor**	**Moderate**	**Major**	**Severe**
Likelihood	**Almost Certain**	Medium	High	Very High	Very High	Very High
	Likely	Medium	Medium	High	Very High	Very High
	Slight	Low	Medium	High	High	Very High
	Unlikely	Low	Low	Medium	Medium	High
	Rare	Low	Low	Low	Medium	Medium

Risk Priority Table

	Priority	Action
Very High	1	Immediate action required
High	2	Implement short term safety controls immediately
Medium	3	Short term safety controls implemented to minimise risk of injury
Low	4	Monitor activity

3. Hazard Identification and Risk Assessment (Risks associated with handling, operating, cleaning, maintaining and transport of the unit within fair and reasonable circumstances)

	A	B	C	D	E	F	G	H	J
	Hazard Identification			Risk Control		Residual Risk			
	Hazard Source	Need to access hazard	Potential Consequence	Current Controls	Hierarchy of Control	LH	Con	Risk	Action Required
1	Blind spots at rear and side of the unit.	Machine may be required to operate in public areas around bystanders or around obstacles and structures.	Impact or crushing.	The operator's manual provides SOP. An audible horn can warn bystanders of the machines movement. Unit is fitted with warning decals against standing too close to the back of the machine whilst operating. Clear vision of front, rear and side of the machine.	**3. Engineering**	**2. Unlikely**	**3. Moderate**	**3. Medium**	The manager of the machine is responsible to be fit a rotating beacon, if required by local regulation / work site requirements.
2	Burns or abrasion by moving parts.	Operator.	Burns.	Current Controls	**3. Engineering**	**2. Unlikely**	**2. Minor**	**4. Low**	
3	Changing of attachments.	Operator and maintenance personnel required to connect and remove attachments.	Pinching fingers / crushing hands.	The operators manual provides SOP.	**5. Administration**	**1. Rare**	**3. Moderate**	**4. Low**	
4	Contact with hot surfaces.	Operator and maintenance personnel required to conduct daily inspection, maintenance and troubleshooting.	Burns.	The operator's manual provides SOP. Hot surfaces are isolated by lockable hood. Protective guards and safety decals warn the operator and maintenance person of the hot surfaces.	**3. Engineering**	**2. Unlikely**	**2. Minor**	**4. Low**	
5	Engine exhaust.	Operator, maintenance personnel.	Exposure to toxic gas/ asphyxiation/death.	Exhaust system points away from operator platform. Operator's manual instructs operator not to operate the machine in enclosed spaces and warns of asphyxiation.	**3. Engineering**	**2. Unlikely**	**2. Minor**	**4. Low**	
6	Excessive noise.	Operator required to be seated on the machine to operate.	Hearing damage.	Machine noise levels within an acceptable level.	**3. Engineering**	**1. Rare**	**1. Negligible**	**4. Low**	
7	Extremely hot radiator fluid.	Operator or maintenance personnel required to conduct daily inspection, maintenance and troubleshooting.	Burns or Scalding.	The operator's manual provides SOP, The radiator is isolated hood. A safety decal above the radiator cap warns the operator and maintenance person not to remove radiator cap until cold.	**3. Engineering**	**2. Unlikely**	**2. Minor**	**4. Low**	
8	Fire or explosion caused by ignition of fuel supply.	Operator, maintenance personnel or bystander.	Burns.	Fuel tank sealed under the hood and safety decal warns of flammable substance.	**3. Engineering**	**2. Unlikely**	**3. Moderate**	**3. Medium**	The manager of the machine is responsible to fit a spark arrestor (complying to AS1019) if local regulation specifies. The manager of the machine is responsible to fit a fire extinguisher (complying to AS1841) if required by local regulation / worksite requirements.
9	High pressure hydraulic oil.	Operator and maintenance personnel required to complete daily inspections, maintenance and removal of components.	Oil injection.	Hoses are manufactured to ISO standard. Operator's manual provides SOP for identifying oil leaks.	**3. Engineering**	**1. Rare**	**3. Moderate**	**4. Low**	

	Hazard Identification			Risk Control		Residual Risk			
	Hazard Source	**Need to access hazard**	**Potential Consequence**	**Current Controls**	**Hierarchy of Control**	**LH**	**Con**	**Risk**	**Action Required**
10	Instability from overloading.	Operator required to be seated on the machine to operate. Machine may be required to operate in public area with bystanders.	Crushing/impact/death.	Operator is protected by a safe zone of clearance by a certified ROPS structure. An certified seatbelt ensures the operator remains in the safe zone of clearance in the event of a roll over. The operator's manual provides SOP. A lifting chart decal near operator and operators manual notifies the operator of the lifting capacity of the machine. Safety decals warn bystanders not to enter the exclusion zone during operation.	**3. Engineering**	**2. Unlikely**	**2. Minor**	**4. Low**	
11	Instability on slopes.	Operator required to be seated on the machine to operate.	Crushing/impact/death.	Operator is protected by a safe zone of clearance by a certified ROPS/OPG. A certified seatbelt ensures the operator remains in the safe zone of clearance in the event of a roll over. The operator manual provides SOP for working on slopes.	**3. Engineering**	**2. Unlikely**	**2. Minor**	**4. Low**	
12	Left/right swing operation of the main boom moves towards the cabin	None.	Crush between boom and cabin.	Hydraulic lock lever unloads control pressure and applies parking brake reducing the likelihood of operation of the machine without the operator in the driving position. The operator's manual instructs the operator not to touch the hydraulic controls while standing outside the cabin.	**3. Engineering**	**1. Rare**	**3. Moderate**	**4. Low**	
13	Loading/unloading machine from truck or trailer.	Operator required to be seated on the machine to operate.	Crushing/fall from trailer.	Operator is protected by a safe zone of clearance by a certified ROPS/OPG. An SAE J 386 certified seatbelt ensures the operator remains in the safe zone of clearance in the event of a roll over. Operator's manual provides SOP for loading and unloading the machine.	**3. Engineering**	**2. Unlikely**	**2. Minor**	**4. Low**	
14	Machine mobility.	Machine may be required to operate in public area with bystanders.	Collision.	The machine is fitted with a travel alarm and horn to warn bystanders of the machines movement. Machine is fitted with side and rear mirrors to eliminate blind spots.	**3. Engineering**	**1. Rare**	**3. Moderate**	**4. Low**	
24	Machine runaway starting machine by short circuiting starter motor.	None.	Crushing or impact, electric shock.	SOP, safety decal instructs the operator and maintenance person not to short circuit the starter motor. The starter motor is isolated by a lockable access hood.	**4. Isolation**	**1. Rare**	**3. Moderate**	**4. Low**	

	Hazard Identification			Risk Control		Residual Risk			
	Hazard Source	**Need to access hazard**	**Potential Consequence**	**Current Controls**	**Hierarchy of Control**	**LH**	**Con**	**Risk**	**Action Required**
25	Mounting/dismounting.	Operator required to access / egress driving position.	Slip, trip or fall.	Non-slip surface (door tread and rubber mat) reduces the likelihood of slipping. Hand rails provide the operator three points of contact reducing the likelihood of falling. Warning decal outlines correct SOP for mounting/dismounting operartors compartment.	**3. Engineering**	**3. Slight**	**1. Negligible**	**4. Low**	
26	Overhead/underground power lines.	Operator required to be seated on the machine to operate.	Electrocution/death.	The operator's manual provides SOP.	**5. Administration**	**1. Rare**	**2. Minor**	**4. Low**	Dial before you dig decal is to be added to the unit before delivery to customer.
27	Engine access hood closes against the body of the machine.	Operator and maintenance personnel need to access under hood to conduct daily checks and maintenance.	Pinch finger or hand.	Locking lever to prevent unintentional closing of hood. SOP for carrying out maintenance and checks.	**3. Engineering**	**2. Unlikely**	**2. Minor**	**4. Low**	
28	Restoring fluid levels.	Operator and maintenance personnel required to conduct daily inspections and replenish fluid as required.	Skin/eye irritation.	The operator's manual provides SOP. Machine has easy to access fill points.	**3. Engineering**	**2. Unlikely**	**2. Minor**	**4. Low**	
29	Rotating engine belt and fan.	Operator and maintenance personnel access for service and maintenance.	Crush/severe hand.	Rotating components are isolated by a hood during normal operation. Caution decal warns the operator and maintenance person of risk of entanglement when hood is open.	**3. Engineering**	**1. Rare**	**3. Moderate**	**4. Low**	
30	Unintentional or sudden machine movement.	Operator and maintenance personnel required to conduct daily inspections and maintenance.	Crushing/impact.	The operator's manual provides SOP before beginning any operation, daily checks or maintenance. Safety decal clearly describes functions of controls. Hydraulic locking mechanism to isolate control levers.	**3. Engineering**	**2. Unlikely**	**2. Minor**	**4. Low**	