

Plant name	Mini Excavator			Serial No. or Model	Takeuchi TB016		
Location of item	Various locations						
Tick the reasons for the risk assessment:	<input type="checkbox"/> Change to work practices, procedures or environment	<input type="checkbox"/> New plant or alteration to plant	<input type="checkbox"/> Planning to improve productivity or reduce costs	<input type="checkbox"/> New information about workplace risks has become available	<input type="checkbox"/> Responding to workplace incidents	<input type="checkbox"/> Responding to concerns raised by workers, HSRs or others	<input type="checkbox"/> Required by WHS regulations for specific hazards <input type="checkbox"/> Review of Risk assessment
Job title of plant operators: OPERATOR / TRAINED PERSONEL	Purpose of plant: DIGGING AND MOVING EARTH			Brief description of how the plant is used: <i>Operator is seated in cabin. Using foot pedal, joystick and levers to move the plant and boom arm to perform digging operations</i>			
Description of the environment: OUTDOORS	Does the plant require licensing or competency: YES			Others that may be affected by the plant operations: SITE WORKERS, MEMBER OF PUBLIC			
Operations outside normal conditions: MAINTENANCE	Other systems of use: N/A						

Is there a past experience or background material that may assist in the assessment:

- Existing controls Safe Operating Procedures Manuals Incident or near-miss reports
 Standards Code of Practice Training materials Incident investigations

- AS/NZS 2210 (1980) Type 1 Safety Footwear
- AS/NZS 2161.1 Occupational Protective glove

- How to Manage Work Health & Safety Risks
- Hazardous Manual Tasks
- Managing the Work Environment & Facilities

- Construction Work
- Managing Risks of Hazardous Chemicals
- Work Health & Safety Consultation, Cooperation & Coordination
- Managing the risks of plant in the workplace
- Plant operator's manual
- Working in the vicinity of overhead and underground electric lines

This document is authored and made available to the client to meet duty of care obligations as set out in relevant state and territory health and safety regulations for the supply of plant. The hazards associated with all aspects of this item of plant have been identified as far as practical by visual inspection by a qualified person. No physical testing has been conducted unless documented otherwise. This document is not intended to provide definitive information on the structure, specification or use of the item of plant. Any information provided on use and specs either written or verbal from Syzygy Telecommunications Pty Ltd staff should be used as a guide only until otherwise verified by the manufacturer. This item of plant, the site it operates on and the task it undertakes should be risk assessed by the operator. This plant must be operated in accordance with relevant standards, regulations and acts. Under common law and relevant state and territory health and safety acts, regulations and codes of practice, there is a requirement for the plant owner, PCBU and operator to exercise a duty of care in the safe operation and care of plant. Before this item of plant is used at any workplace it must be inspected to ensure it is in a fully operational, safe and serviceable and that operators and maintenance personnel are appropriately trained in the use & maintenance of this item of plant.

Hierarchy of risk control

<p>HIGHEST</p> <p>↑</p> <p>Level of health and safety protection</p> <p>↓</p> <p>LOWEST</p>	<p>Level 1</p> <p>Eliminate the hazards</p> <p>↓</p>	<p>MOST</p> <p>↑</p> <p>Reliability of control measures</p> <p>↓</p> <p>LEAST</p>
	<p>Level 2</p> <p>Substitute the hazard with something safer</p> <p>Isolate the hazard from people</p> <p>Reduce the risks through engineering controls</p> <p>↓</p>	
	<p>Level 3</p> <p>Reduce exposure to the hazard using administrative actions</p> <p>Use personal protective equipment (PPE)</p>	

RISK MATRIX

Step 1: Determine Likelihood What is the possibility that the event will occur?	
Likelihood	Criteria
Almost certain	Expected in most circumstances.
Likely	Will probably occur in most circumstances
Possible	Might occur at some time
Unlikely	Could occur at some time

Step 2: Determine Consequence What will be the expected outcome?			
Level of Effect:	Example of each level:	Level of Effect:	Example of each level:
Minor	First Aid treatment only; no lost time injury	Negligible Discharge	Minor clean up necessary
Moderate	Medical treatment; serious injuries, temporary partial disability; lost time injury < 7 days	Moderate Breach	Spill kit deployed, drains and gutters secured
Major	Hospital admittance; extensive injuries; lost time injury > 7 days; Permanent Total Disability injury; death	Major Breach of Environmental Statutes	Fire brigade services required for clean-up; Public diverted or evacuated. Principal Contractor notified.
Catastrophic	Multiple Permanent Total Disability injuries; multiple deaths	Shutdown of Project due to Environmental Breach	Site shutdown and emergency services required; evacuation of personnel and public

Step 3: Determine the risk score Using the above steps, determine the risk score?						
		Consequences				
		People	Minor	Moderate	Major	Catastrophic
		Environment	Negligible Spill/effect	Moderate Breach of Environmental law	Major Breach of Environmental law	Shutdown of Project due to Environmental Breach
Likelihood	Almost certain	3 High	4 Severe	4 Severe	4 Severe	
	Likely	3 High	3 High	4 Severe	4 Severe	
	Possible	2 Moderate	3 High	4 Severe	4 Severe	
	Unlikely	1 Low	2 Moderate	3 High	4 Severe	

Step 4: Record risk score on worksheet (Note – Risk scores are a subjective value and should only be used for comparison and to engender discussion.)	
Score	Action
4 Severe	DO NOT PROCEED. Requires immediate attention. Introduce further high-level controls to lower the risk level. Re-assess before proceeding.
3 High	Review before commencing work. Introduce new controls and/or maintain high-level controls to lower the risk level. Monitor frequently to ensure control measures are working.
2 Moderate	Maintain control measures. Proceed with work. Monitor and review regularly, and if any equipment/people/materials/work processes or procedures change.
1 Low	Record and monitor. Proceed with work. Review regularly, and if any equipment/people/materials/work processes or procedures change.

Identify the Hazards and Risk Controls

<p>For each of the following HAZARD CATEGORY sections:</p> <ul style="list-style-type: none"> • Check the box for each hazard that you identify for the plant; • Apply a risk rating based on the Risk Matrix • In the comments box, describe what the hazards are and the consequences; • Specify the risk control type from the hierarchy of control at right, for each current or proposed risk control; • Explain what controls will be put in place for the hazard in CONTROL DESCRIPTION • Determine the residual risk score using the Risk Matrix 	<p>Hierarchy of Control (Control Type)</p> <p>El – Elimination S – Substitution En – Engineering Is – Isolation A – Administrative</p> <p>Other: T – Training H – Health Monitoring P – PPE G – Guarding</p>
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HAZARD CATEGORY	RISK RATING	COMMENTS WHAT ARE THE HAZARDS AND CONSEQUENCES?	CONTROL TYPE	CONTROL DESCRIPTION (CURRENT AND PROPOSED)	RESIDUAL RISK RATING
Can the following items become ENTANGLED with moving parts of the plant, or materials in motion:	2M	Crush injury from tracks	A - T-Is	Operator is to remain 3m from pedestrians and other workers when in motion	1L
Hair Jewelry Rags Gloves <input checked="" type="checkbox"/> Clothing Other – specify: _____					
Can anyone be CRUSHED due to:	3H	Plant has lateral movement of cabin, boom arm and attachments. forward and reverse motion Possibility that plant may roll or tip when transporting, driving or struck by other plant Person may be thrown from plant Contact with boom swing frame or cylinder during maintenance	A - T-PPE	Refer to SWMS.SOP for loading/unloading of plant. ROPS must not be damaged, cut, welded, drilled or in any way modified. Do not exceed boom rated capacity – check label and ensure label is legible Exclusion zones for pedestrians are enforced onsite - 3m clearance outside the swing area must be maintained. Workers outside the exclusion zone are to work facing the plant. Barricades are recommended.	2M
<input checked="" type="checkbox"/> Falling, uncontrolled or unexpected movement of plant or load <input checked="" type="checkbox"/> Trapped under or between plant and materials/structure <input checked="" type="checkbox"/> Contact with moving parts during testing, inspection, maintenance, cleaning or repair <input checked="" type="checkbox"/> Being thrown off <input checked="" type="checkbox"/> Tipping or rolling over Ingathering nip points Other – specify: _____					

HAZARD CATEGORY	RISK RATING	COMMENTS WHAT ARE THE HAZARDS AND CONSEQUENCES?	CONTROL TYPE	CONTROL DESCRIPTION (CURRENT AND PROPOSED)	RESIDUAL RISK RATING
				<p>Plant is to always be loaded on solid, even ground.</p> <p>Ramps of proper height, weight, strength and skid resistant.</p> <p>Never exceed 15° ramp. Ramps must be secured with locking pins.</p> <p>Appropriate load securing devices and configuration must be used refer to Nat. transport commission's Load restraint guide section E.</p> <p>Wear seatbelt when loading unloading plant. Bucket and other attachments secured as well. Load/unload with bucket facing direction of travel.</p> <p>Do not drive across slopes of more than 35° - When travelling up and down grades plant should be facing either up the grade (when travelling up grade) or down the grade (when travelling down grade) have the superstructure square to the body, travel motors at the rear, do not slew and if necessary use the bucket via the boom and stick to pull plant up grade, or when travelling down grade use the bucket to float over the ground via the boom to counterbalance the machine.</p> <p>Travel slow at all times while moving up/down grades.</p> <p>Adjustment must be made in wet conditions. Ground should be inspected before work to identify boulders, slippery ground and other tip or slip hazards</p> <p>Refer to operator manual for operating ratios and procedures.</p> <p>Induction into site is recommended for operator. Discuss location of other plant and equipment. Plant is to be 6m (outside swing area) from other plant. Consider the swing of other plant</p>	

HAZARD CATEGORY	RISK RATING	COMMENTS WHAT ARE THE HAZARDS AND CONSEQUENCES?	CONTROL TYPE	CONTROL DESCRIPTION (CURRENT AND PROPOSED)	RESIDUAL RISK RATING
				<p>including cranes and excavators. Seat belt must be worn at all times during operation. No persons are to ride on the plant or attachments. One person at a time in the cabin. Machine is to be isolated and keys removed during maintenance. Fingers are to be kept clear of boom cylinder and swing arm Competent operators are to use this machine. Isolate machine to prevent unauthorised access. Never attempt to raise chassis off the ground with blade or attachments. Safety labels must be maintained</p>	

<p>Can anyone be CUT, STABBED or PUNCTURED by coming in contact with:</p> <p><input type="checkbox"/> Moving plant or parts <input type="checkbox"/> Sharp stationary edges</p> <p><input checked="" type="checkbox"/> Sharp or ejected material</p> <p><input type="checkbox"/> Other – specify: _____</p>	2M	Ejected material or dust may cause eye injuries	A-T-PPE-Is	All workers onsite should wear eye protection including operator of plant. Exclusion zone in place for pedestrians. Inspect ground before digging and remove loose material that may become airborne.	1L
<p>SHEARING – Can anyone’s body parts be cut off between:</p> <p><input type="checkbox"/> Two parts of the plant</p> <p><input checked="" type="checkbox"/> A part of the plant and material/structure</p> <p><input type="checkbox"/> Other – specify: _____</p>	2M	Plant and other persons may be suffer shearing injuries if contacted between plant and structure/other plant	A-T- Is	3 meters exclusion zone for pedestrians - High visibility work wear must be work. Steel cap boots must be worn.	1L
<p>Can anyone be STRUCK by moving objects due to:</p> <p><input checked="" type="checkbox"/> Plant or work pieces being ejected or disintegrated</p> <p><input checked="" type="checkbox"/> Plant Mobility</p> <p><input checked="" type="checkbox"/> Uncontrolled or unexpected plant movement</p> <p><input type="checkbox"/> Other – specify: _____</p>	3H	Plant or load may strike persons if they were to move under load or move within swing area. If plant lost control a person may be hit	A-T-E – Is- PPE	3 meters exclusion zone for pedestrians - High visibility work wear must be work... Site safety induction for all workers. Barricade work area if possible. Operators are never to move loads over people or structures. Machine has neutral start operation. Check this during pre-start. Machine is to be started from operator's seat only. Operator is never to leave cabin until lock levers are locked, keys removed and implements are grounded. Loads are to be in buckets before moving. Lifting operations are discouraged. If lifting takes place, the plant operates as a crane. Regulations and procedures for crane use are in effect. Operator is to be competent in the use of plant, healthy and of sound mind. Plant is equipped with external emergency stop button if plant is to	2M

				<p>become uncontrolled.</p> <p>Attachments are to be secured and locking pins double-checked. Refer to operator manual.</p> <p>Attachments designed for this plant only to be used.</p> <p>No modifications are to be performed on this plant unless certified by an engineer</p> <p>Safety labels must be maintained</p>	
<p>Can anyone using the plant or in the vicinity of the plant, SLIP, TRIP or FALL due to:</p> <p><input checked="" type="checkbox"/> The working environment <input checked="" type="checkbox"/> Uneven work surface</p> <p><input type="checkbox"/> Lack of guardrails <input checked="" type="checkbox"/> Poor housekeeping</p> <p><input type="checkbox"/> Slippery work surfaces <input type="checkbox"/> Cables or Hoses</p> <p><input checked="" type="checkbox"/> Other – specify: <u>fall from cab</u></p>	2M	<p>Excavators operations make the ground uneven - debris and materials may create trip hazards</p> <p>Operator may fall from cab</p>	A-T-PPE	<p>All workers onsite to wear steel capped lace up boots - site induction where available</p> <p>Debris should be removed ASAP</p> <p>Operator is to use 3 points of contact to enter and exit cabin.</p> <p>Always face the cabin when accessing and exiting cabin. - Care must be taken in wet or dusty conditions.</p>	1L

<p>FRICITION - Can anyone be burnt due to:</p> <p><input checked="" type="checkbox"/> Contact with moving parts or surfaces of the plant <input type="checkbox"/> Material handled by the plant <input type="checkbox"/> Other factors – specify: _____</p>	2M	Persons may be burned when contacting exhaust or engine components during maintenance	A-G-T-PPE	<p>Maintenance must take place once the plant is isolated and cooled. Gloves, long sleeved shirt and pants must be worn while performing maintenance. Consult safety labeling to identify hot areas. Refer to SWMS/SOP for maintenance Competent persons only to undertake maintenance</p>	1L
<p>Can anyone be injured by ELECTRICAL shock or burnt due to:</p> <p><input checked="" type="checkbox"/> Damaged/poorly maintained leads and/or switches <input checked="" type="checkbox"/> Working near or contact with live electrical conductors <input type="checkbox"/> Water near electrical equipment <input checked="" type="checkbox"/> Lack of isolation procedures <input type="checkbox"/> Other – specify: _____</p>	3H	<p>Operator may contact underground wires, services and other electrical equipment (lights, signs etc.) Shock may occur during maintenance.</p>	A-PPE-I-T	<p>Site induction and planning is the responsibility of the principal contractor. Unregulated sites may use 'dial before you dig' information Operator and principal contractor must identify areas with underground services and check local area for evidence of underground services For example: •Hydrants, signs of previous excavation (low spots in ground, etc.) •meters/cabinets •utility poles •outbuildings with utilities running to them •tanks •buried utility sign post along fence line •If possible, verify using an electronic locator. Ensure all site personnel receive appropriate instruction on all electrical service locations and associated control measures Minimum approach distances must be adhered to at all times The plant must be isolated prior to maintenance. Safety labels must be maintained</p>	2M
<p>EMERGENCY STOP BUTTONS</p>	3H	Failure or loss of control of plant	A-T-G	Emergency stop buttons must be	1L

<input type="checkbox"/> Lack of prominence of emergency stop <input type="checkbox"/> Emergency stop not being fail to safe <input type="checkbox"/> Emergency stop not red in colour <input type="checkbox"/> Stored energy or air pressure being released slowly <input type="checkbox"/> Lack of clarity of emergency stop markings <input checked="" type="checkbox"/> Restarting plant by resetting the emergency stop button <input type="checkbox"/> Other – specify: _____				inspected prior to use of the plant. If the buttons are damaged in any way the plant is to be tagged out and reported to site management and Syzygy Telecommunications Pty Ltd immediately.	
<p>Can anyone be injured by an EXPLOSION of the following items triggered by operation</p> <input checked="" type="checkbox"/> Gas <input type="checkbox"/> Vapours <input type="checkbox"/> Other – specify: _____ <input checked="" type="checkbox"/> Dust <input type="checkbox"/> Liquids	3H	Digging operations may strike underground gas services Plant operation may create dust	A-T-PPE	Site induction and planning is the responsibility of the principal contractor. Unregulated sites may use 'dial before you dig' information Operator and principal contractor must identify areas with underground services and check local area for evidence of underground services For example: •Hydrants, signs of previous excavation (low spots in ground, etc.) •meters/cabinets •utility poles •outbuildings with utilities running to them •tanks •buried utility sign post along fence line •If possible, verify using an electronic locator. Ensure all site personnel receive appropriate instruction on all electrical service locations and associated control measures Minimum approach distances must be adhered to at all times Safety labels must be maintained	1L

<p>ENVIRONMENTAL CONDITIONS – Can anyone suffer ill health due to:</p> <p><input type="checkbox"/> Exposure to high temperatures <input type="checkbox"/> Exposure to low temperatures <input checked="" type="checkbox"/> Rain <input checked="" type="checkbox"/> Sun <input checked="" type="checkbox"/> Flora <input checked="" type="checkbox"/> Fauna <input type="checkbox"/> Other – specify: _____</p>	3H	<p>Outdoor hazards apply to this plant including UV exposure Rain Hazardous plants or animals</p>	A-T-PPE-	<p>Operators are to apply sun cream as necessary. Long sleeve shirt, pants, hat and tinted safety glasses are to be worn. Weather conditions are to be monitored and work ceased when conditions are inappropriate for plant use – e.g. extreme weather or heavy rain</p> <p>Site induction is to take place and plant, animal hazards discussed</p> <p>All plants and animals are to be avoided by operator. Cabin is to be inspected before use and plant material removed.</p> <p>Environmental wash-down procedures to take place in high risk areas to prevent spread of pests (e.g. fire ants)</p>	2M
<p>HIGH TEMPERATURE or FIRE – Can anyone:</p> <p><input checked="" type="checkbox"/> Be burnt or scolded by hot parts of the plant <input checked="" type="checkbox"/> Be injured by fire <input type="checkbox"/> Other – specify: _____</p>	3H	<p>Hot areas of plant may be contacted during maintenance Sparks from maintenance may cause fire refueling may cause fire</p>	A-PPE- Is-A-T	<p>The plant must be isolated prior to maintenance. Gloves must be worn by maintenance personnel</p> <p>Maintenance must take place in an isolated area clear of dry grass/vegetation, wood and other flammable items.</p> <p>All welding must be conducted with a hot work permit and after consultation with site safety/management</p> <p>Refueling must take place in designated area. Funnel must be used and overfill/spills cleared up.</p> <p>Refueling must only occur on cooled machine.</p> <p>PPE must be used as per SDS.</p> <p>No smoking during refueling and static electricity must be discharged</p> <p>Fire extinguisher is available in all cabins and regularly inspected</p> <p>Fuel tank labels to be legible</p> <p>Pre-start inspection to identify missing or damaged guards</p>	2M
<p>Can anyone come into contact with FLUIDS or GASES under HIGH PRESSURE due to:</p>	3H	<p>Hydraulic fluid under pressure may escape if the plant fails/malfunctions</p>	A-T-G-PPE	<p>Exclusion zone for pedestrians must be enforced</p>	1L



Takeuchi Excavator – Risk Assessment

Hirepool Group Limited
Version No.1.0
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<p><input checked="" type="checkbox"/> Failure of the plant? <input type="checkbox"/> Misuse of the plant? <input type="checkbox"/> Other – specify: _____</p>			<p>Regular maintenance is to take place and the log book must be checked each day. Pre-start check takes place by operator.</p> <p>Maintenance personnel are to wear gloves and safety glasses.</p> <p>All guards to remain in place at all times.</p> <p>Tag plant out and report if it operates unexpectedly including vibration, noises, loss of power or hydraulic pressure or warning lights are illuminated.</p>	
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<p>ERGONOMIC (incl manual handling) - Can anyone be injured due to:</p> <p><input checked="" type="checkbox"/> Seating design <input checked="" type="checkbox"/> Excessive effort <input type="checkbox"/> Poor lighting</p> <p><input type="checkbox"/> Repetitive body movement</p> <p><input type="checkbox"/> Poor workplace or plant design <input type="checkbox"/> Controls layout and design</p> <p><input checked="" type="checkbox"/> Other factors – specify: <u>access or egress from cabin</u></p>	2m	<p>Operator may experience musculoskeletal disorder from sitting or enter/exit of cabin</p> <p>Person may experience strain or if they attempt manual movement of attachments</p>	A-T	<p>Operator is to have regular breaks</p> <p>Operator is to use 3 points of contact to enter and exit cabin. Always face the cabin when accessing and exiting cabin.</p> <p>- Care must be taken in wet or dusty conditions.</p> <p>Do not attempt to move buckets or attachments manually. Use plant or lifting machinery (forklift, crane etc.)</p>	1L
<p>RADIATION Can anyone be injured/suffer ill health due to:</p> <p><input type="checkbox"/> Lasers <input type="checkbox"/> Ultraviolet light</p> <p><input type="checkbox"/> Microwaves <input type="checkbox"/> Radio waves</p> <p><input type="checkbox"/> Infrared <input type="checkbox"/> Other – specify: _____</p>					
<p>Can anyone be injured or suffer ill health from exposure to OTHER HAZARDS:</p> <p><input checked="" type="checkbox"/> Chemicals <input type="checkbox"/> Fumes</p> <p><input type="checkbox"/> Vibration <input type="checkbox"/> Noise</p> <p><input type="checkbox"/> Biological <input type="checkbox"/> Dusts</p> <p><input type="checkbox"/> Lighting <input type="checkbox"/> Gases or vapours</p> <p><input type="checkbox"/> Other – specify: _____</p>	2M	<p>Persons may be exposed to substances when refueling</p> <p>Plant operation exposes user to sub-85dB noise level.</p> <p>Plant must be operated in fair lighting conditions - lights and operating schedule are the responsibility of the site management.</p> <p>Maintenance personnel may be exposed to battery chemicals</p>	A-Is-PPE-T	<p>Refueling must take place in designated area. Funnel must be used and overflow/spills cleared up.</p> <p>Refueling must only occur on cooled machine.</p> <p>PPE must be used as per SDS.</p> <p>No smoking during refueling and static electricity must be discharged</p> <p>Competent persons only to perform maintenance.</p>	1L