

RISK ASSESSMENT

Pre-Start Hazard Assessment (PHA) – Pneumatic Tyre Roller Operation

Form Reference:	ISO-BMS-RA-010
Plant/Vehicle/Machine Type:	CAT 20T Pneumatic Tyre Roller
Project/Location:	

Purpose & Scope: This Pre-Start Hazard Assessment (PHA) identifies the tasks, hazards, and required control measures for the safe operation of this vehicle across Consolidated Group of Companies (CG/CTS/JG) sites, including Pilbara mining and civil construction environments. It must be read, understood, and signed by every operator prior to first use, and reviewed whenever conditions, plant, or the system of work change.

ALL OPERATORS MUST SIGN BELOW TO ACKNOWLEDGE THEY HAVE READ AND UNDERSTOOD THIS PHA, AT LEAST ONCE, PRIOR TO THE OPERATION OF THIS MACHINE.

Name	Date	Time	Signature

Approval & Sign-Off

Supervisor/s Responsible for this Document:	
Full Name:	
Location/Project ID:	
Date:	
Signature:	

Follow-Up Review Triggers

Follow-up trigger – review this PHA on change to: use of plant, system of work, plant environment, new information, or plant modification.	Y	N
Is the plant designed to perform the task?	☐	☐
Has the plant been modified from the original condition?	☐	☐

Follow-up trigger – review this PHA on change to: use of plant, system of work, plant environment, new information, or plant modification.	Y	N
Is the plant in good working condition and free of leaks, damage, mud and vegetation build-up?	☐	☐
All identified action items closed out/addressed (plant checks)?	☐	☐
Is the plant safe to operate? (on completion of PHA and any action closures)	☐	☐

Task, Hazard & Control Assessment

Task	Hazard	Initial Risk	Current Control Measures	Residual Risk	Responsible
PRE-START					
Operator competency & fitness for work	Unqualified, unlicensed, unfit, or fatigued operator	H17	- Operator holds current VOC (Verification of Competency) for this specific plant item and has completed site induction. - Fit for Work declaration completed; zero tolerance for alcohol and non-prescription drugs. - No operation while affected by fatigue, medication, drugs or alcohol - report to supervisor immediately if unfit.	L4	Operator
Pre-start inspection	Undetected plant defect leading to failure during operation	H17	- Complete documented pre-start/prestart book covering the items specific to this plant (see below), guards, isolators, e-stops, reversing alarm, beacon, fire extinguisher, first aid kit and spill kit. - Regular scheduled servicing/maintenance per manufacturer's schedule; defects tagged out and reported - do not operate a tagged/defective item. - Registration/inspection current where applicable.	M8	Operator
PLANT DESIGN COMPLIANCE					
Lighting for night/low-light operation	Collision or loss of visibility - OEM-fitted lighting on compact excavators is often limited to front working lights only	H14	- Confirm the fitted lighting package before any night or reduced-light operation; where the machine only has front working lights, additional self-contained lighting (head, reversing, rear, control/work area) must be fitted and confirmed serviceable before use in those conditions. - Do not operate in low light/night conditions until compliant lighting is fitted and tested.	M9	Operator / Management
Beacon / strobe visibility	Struck-by injury due to the machine not being visible to other plant/vehicles on site	H14	A minimum 55-watt amber rotating beacon or strobe fitted, visible up to 200m in all directions in normal daylight,	M9	Operator / Management

Task	Hazard	Initial Risk	Current Control Measures	Residual Risk	Responsible
			positioned to maximise visibility while minimising damage risk (more than one beacon may be needed depending on machine profile). • Beacon confirmed operating at pre-start; machine not to be operated with a non-functional beacon.		
LOADING & TRANSPORT					
Loading/unloading onto flat-top truck, trailer, low-loader or tilt tray	Rollover or loss of control loading/unloading the CAT 20T Pneumatic Tyre Roller	H18	• Carrier vehicle load rating confirmed equal to or greater than the combined weight of the roller and any ancillary equipment; deck clean and clear before loading. • Loading/unloading site level in camber; combined grade of site and ramps must never exceed the machine's rated gradeability; site isolated from traffic movement and clear of overhead powerlines. • Creep gear engaged, bystanders cleared from both sides of the carrier and ramps, machine driven on slowly and placed in transport/park configuration with brakes applied and engine shut off before egress. • Extreme caution used egressing onto a tilt tray specifically - confirm the tray is fully lowered and stable before stepping off.	M8	Operator
Tie-down and transport	Load shift during road transport	H14	• Roller secured with rated chains/straps at manufacturer-specified tie-down points. • Articulation lock (where fitted) engaged for transport; tie-downs checked before departure and at rest stops on longer transits.	L5	Operator
COMPACTION OPERATION					
Tyre condition and pressure	Tyre burst or uneven compaction from incorrect tyre pressure or damaged tyres	H14	• Tyre pressures checked and set evenly across all wheels at pre-start per manufacturer's specification for the compaction task. • Tyres inspected for cuts, damage, or excessive wear before use; damaged tyres reported and replaced before operation continues.	M9	Operator
Ballast box loading (where fitted)	Crush injury or instability loading/adjusting the ballast box used to vary compaction weight	H14	• Ballast (water or sand) loaded per manufacturer's procedure with the machine stationary and stable.	M9	Operator

Task	Hazard	Initial Risk	Current Control Measures	Residual Risk	Responsible
			Ballast box access covers secured before operation; no personnel in the loading area during filling.		
Rollover on slopes, windrows, or embankment edges	Rollover compacting near embankments, table drains, or windrows - handling characteristics differ from drum rollers given the multi-tyre wheel configuration	H18	- Ground assessed for stability and edge distance before compacting near any drop-off, windrow, or embankment. - Machine operated within manufacturer's rated slope limits; spotter used when compacting near excavations or edges.	M9	Operator
Operating near other plant during rolling patterns	Collision with other plant/trucks operating in the same compaction area	H14	- Rolling pattern and direction coordinated with other plant operating in the same area; UHF radio communication maintained. - Reversing alarm and beacon operational; overlap/pass sequencing agreed with supervisor before multi-machine compaction.	M9	Operator
Noise & vibration exposure	Hearing damage and whole-body vibration injury from sustained operation	M8	- Hearing protection worn per site noise management plan; seat suspension adjusted correctly for operator weight. - Rest breaks taken in line with site vibration exposure management on extended compaction runs.	L4	Operator
MAINTENANCE & ISOLATION					
Maintenance and servicing	Injury during servicing, or unit returned to service with an unresolved defect	H14	- Full isolation (lock-out/tag-out) before any maintenance task, including tyre/ballast work. - Maintenance carried out by accredited personnel only, following the operator's/maintenance manual. - Tyres, ballast box and scraper bars inspected per service schedule; defects tagged and reported immediately.	L4	Operator / Mechanical Team

Post-Task Activities

Post-Task Activities	Y	N
Ensure all tools are collected & returned to store/workshop.	☐	☐
Remove all waste materials from the area & place in the appropriate bins.	☐	☐
Report any damaged equipment.	☐	☐
Remove any barricades erected if no longer required.	☐	☐

Post-Task Activities	Y	N
Leave area clear of hazards.	☐	☐
Check area for hydrocarbon spillages.	☐	☐
Remove isolations and complete any permits/certificates if applicable.	☐	☐
Clean the cabin for the next person on shift to ensure a healthy work environment.	☐	☐

Additional Notes

Important: Every person on site must read this document and be familiarised with the underlying risks associated with operating this vehicle. It is the site supervisor's responsibility to check every team member has been briefed and has signed to acknowledge. Please add a note for any new risk identified during operation.

Risk Matrix

Likelihood \ Consequence	1 Insignificant No injury / near miss	2 Minor First aid / medical treatment	3 Significant LTI or restricted work duties	4 Major Fatality or serious permanent injury	5 Catastrophic Multiple fatalities – 50 or more health effects
Almost certain – Expected to happen	H11	H16	E20	E24	E25
Likely – Could happen frequently	M7	H12	H17	E22	E23
Possible – Could happen occasionally	L4	M8	H13	H18	E21
Unlikely – May occur sometime	L2	L5	M9	H14	E19
Rare – May only occur in exceptional circumstances	L1	L3	M6	H10	H15

Risk Rating – Actions Required After Ranking Risk

E STOP	H REVIEW	M PROCEED	L PROCEED
Eliminate or reduce the hazard to acceptable level (e.g. Medium or Low) in order to proceed	Controls to reduce hazard as far as reasonably practicable	With stated controls and supervision	And monitor for changes in conditions

Control the Risk – Hierarchy of Controls

Hierarchy of Controls	Examples of Controls
Elimination	Design change, change of construction methodology
Substitution	- Use safer substance/chemical - Environmental catchments/sedimentation pools
Isolation	- Guards on power tools; effective screens, barriers and edge protection - Enclose noisy machinery; environmental swales, booms or barriers, paint washout station
Engineering	Earth leakage device (safety switch) on electrical sources



Hierarchy of Controls	Examples of Controls
	• Use a machine to lift heavy objects; use scaffold rather than a ladder as a working platform
Administration	• Change work practices and safe work method procedures • Tagging and testing procedures or waste sorting
PPE	• Hard hats, glasses, hearing protection, hi-vis vests, safety boots/shoes • (Note: PPE should be the last option to protect people)