

RISK ASSESSMENT

Pre-Start Hazard Assessment (PHA) – Wheel Loader Operation

Form Reference:	ISO-BMS-RA-012
Plant/Vehicle/Machine Type:	CAT 966M Wheel Loader (or similar)
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, positioned to maximise	M9	Operator / Management

Task	Hazard	Initial Risk	Current Control Measures	Residual Risk	Responsible
			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.		
OPERATION - LOADING					
Bucket loading and truck/hopper interaction	Struck-by injury from falling material, or collision with the truck/hopper being loaded	H17	• Vehicle/hopper being loaded positioned only on instruction from the loader operator; exclusion zone maintained around the loading area. • Positive radio communication established with the vehicle/hopper operator before loading commences. • Bucket loaded evenly and travelled low; no personnel within the bucket's swing/tip arc.	M8	Operator
Overhead loading into truck trays	Struck-by injury to truck driver/personnel from the raised bucket or falling material	H17	• Truck driver required to remain in the cab with seatbelt on during loading unless instructed otherwise by the loader operator. • Bucket never passed over an occupied cab; loader operator maintains clear line of sight before tipping.	M8	Operator
OPERATION - TRAVEL & VISIBILITY					
Reversing and blind spots	Struck-by/collision injury given the CAT 966M Wheel Loader's reduced rear visibility, particularly with a raised bucket	H17	• Reversing alarm and beacon operational and checked at pre-start; camera used where fitted. • Spotter used when reversing in congested areas or where visibility is restricted. • Bucket carried low while travelling to maximise forward visibility.	M8	Operator
Articulation joint (pinch point)	Crush injury at the articulated steering joint	H14	• Articulation lock engaged before any inspection, maintenance, or when personnel need to approach the joint area. • No personnel between the front and rear sections while the engine is running.	M9	Operator
Travel on uneven or sloped ground	Rollover or tip-over given the machine's high centre of gravity when the bucket is loaded and raised	H17	• Bucket carried low while travelling; avoid travelling across steep side-slopes with a raised/loaded bucket. • Machine operated within manufacturer's rated slope limits at all times.	M8	Operator
ATTACHMENT CHANGEOVER					

Task	Hazard	Initial Risk	Current Control Measures	Residual Risk	Responsible
Attachment changeover (forks, buckets, jib)	Crush injury during attachment coupling/uncoupling	H17	• Quick-hitch/coupler fully engaged and visually confirmed locked before use. • Changeover carried out on level ground with the machine stationary. • Manufacturer's coupling procedure followed exactly; JSEA for attachment work.	M8	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) and articulation lock engaged before any maintenance task. • Maintenance carried out by accredited personnel only, following the operator's/maintenance manual. • Bucket/attachment lowered and supported before undertaking any work beneath it.	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.	☐	☐
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 - 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)