RISK ASSESSMENT

Pre-Start Hazard Assessment (PHA) – 36T Excavator Operation

Form Reference:	ISO-BMS-RA-006
Plant/Vehicle/Machine Type:	CAT 336 Excavator - 36T
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

Task	Hazard	Initial Risk	Current Control Measures	Residual Risk	Responsible
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 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.	**M9**	Operator / Management
TRANSPORT & RELOCATION					
Low-loader transport between sites	Rollover, load shift, or road incident transporting the 36T CAT 336 by low-loader given its oversize/heavy weight	**H18**	• Low-loader/float rated for this machine's transport weight and dimensions used; pilot/escort vehicle arranged where required by permit conditions. • Machine loaded/unloaded on level, stable ground with a spotter directing all movements; travel locks and pins engaged before departure. • Route assessed for overhead clearances, bridge/culvert load limits and turning geometry before transport.	**M9**	Operator / Transport Team
Track relocation on site	Rollover or loss of control tracking on uneven, sloped, or unstable ground	**H18**	• Ground assessed for stability and load-bearing capacity before track relocation. • Spotter used near excavations, drop-offs, other plant or personnel; exclusion zone maintained while tracking.	**M8**	Operator
EXCAVATION OPERATION					
Digging near underground/overhead services	Contact with underground services, or overhead powerlines - increased risk given this machine's greater reach and dig depth	**H18**	• Dial Before You Dig / site services plan checked and services located/marked before digging commences. • Safe approach distances maintained from overhead powerlines, accounting for maximum boom reach; spotter used near marked services. • Hand-digging or potholing used to confirm service location before mechanical excavation within tolerance zones.	**M9**	Operator
Deep excavation / trenching	Trench or excavation wall collapse given this machine's capacity for	**H18**	• Trench shoring, battering, benching, or a trench box/shield used per site excavation procedure for	**M9**	Operator

Task	Hazard	Initial Risk	Current Control Measures	Residual Risk	Responsible
	significant excavation depth		any excavation personnel may enter. • Excavated spoil placed clear of the edge to avoid collapse from surcharge loading; edge protection/barricading maintained. • Geotechnical assessment obtained for excavations beyond standard site procedure depth thresholds.		
Swing radius, counterweight and stability	Struck-by injury within the swing radius, or instability/tip-over given this machine's greater counterweight and reach	**H18**	• Exclusion zone/barricading maintained around the full swing radius at all times - larger than for compact excavators, sized to this machine's specifications. • Machine operated within manufacturer's rated slope and load charts; avoid working across steep side-slopes with a raised/extended load. • Load charts followed for any lifting operation; bucket/attachment load kept within rated capacity.	**M9**	Operator
Heavy attachment changeover (rock breaker, grapple, etc.)	Crush injury or attachment detachment during heavy attachment changeover	**H17**	• Quick-hitch fully engaged and visually confirmed locked before use - never rely on hydraulic pressure alone to hold an attachment. • Changeover carried out on level ground with the machine stationary and, where practicable, a second person assisting from a safe position. • Manufacturer's coupling procedure followed exactly; JSEA completed for attachment-specific hazards (e.g. rock breaker vibration/flying debris).	**M8**	Operator
Working alongside other plant/trades	Struck-by or collision injury given this machine's size and reach relative to other site activity	**H17**	• Exclusion zone/barricading maintained around the work area; other trades and plant excluded while the excavator is operating. • Positive communication (radio) with other personnel/plant operators on site before and during operation. • Site-specific JSEA/SWMS and traffic management plan reviewed before work in shared areas.	**M8**	Operator

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

Hierarchy of Controls	Examples of Controls
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)