

RISK ASSESSMENT

Pre-Start Hazard Assessment (PHA) – Grader Operation

Form Reference:	ISO-BMS-RA-020
Plant/Vehicle/Machine Type:	CAT 140 Motor Grader
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 - BLADE & GRADING					
Moldboard/blade operation	Struck-by injury to ground personnel, or contact with buried services from the blade	H17	- Exclusion zone maintained around the blade and full machine footprint at all times. - Dial Before You Dig / site services plan checked before grading in new areas; blade depth controlled to avoid unmarked shallow services. - Spotter used when grading near excavations, edges, or other plant/personnel.	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
GPS/Trimble machine control system	Incorrect grade/design data leading to unintended blade movement or over-excavation	M8	- Design file and control system checked and confirmed correct before starting work; system calibration verified at pre-start. - Operator remains alert to automatic blade movement when machine control is engaged; manual override available at all times.	L5	Operator
Ripper attachment operation (where fitted)	Struck-by or crush injury operating the rear ripper, or contact with buried services	H14	- Services located/marked before ripping in new areas; exclusion zone maintained behind the machine while the ripper is in use. - Ripper raised and secured during transport and when not in use.	M9	Operator
TRAVEL & VISIBILITY					
Working near edges, windrows, or table drains	Rollover or tip-over grading close to drop-offs given the grader's long wheelbase	H17	- Ground assessed for stability and edge distance before grading near any drop-off or windrow. - Machine operated within manufacturer's rated slope limits; reduced speed near edges.	M8	Operator
Long wheelbase blind spots	Struck-by injury given restricted visibility along the grader's long frame, particularly to the rear	H14	Reversing alarm and beacon operational and checked at pre-start.	M9	Operator

Task	Hazard	Initial Risk	Current Control Measures	Residual Risk	Responsible
			Spotter used in congested work areas or where visibility is restricted.		
Road travel between worksites	Collision with traffic while roading between sites	H14	- Current registration and roadworthiness maintained; blade and ripper secured in transport position. - Wide-load/slow-moving vehicle signage displayed as required; obey road rules and posted speed limits.	M9	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. - Blade, circle drive and hydraulic systems 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.	☐	☐
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)