

Safe Operating Procedures – Excavator

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| **Task sequence** | **Identified hazards in task** | **Key processes to be followed** | **Precautions / PPE required** |
| **1.** Pre-start checks | Roll-over protection  Fuel and fluids  Tyre (rubber tyre units) Tracks (tracked units) Buckets  Hydraulics | Tractors must be fitted with an approved roll-over protective structure (ROPS) unless specifically exempted by the appropriate statutory authority. Check fuel, hydraulic oil, engine oil, transmission oil, coolant and battery. Check tyre condition and pressures; remove any mud lumps from treads.  Check condition and tension of tracks (refer to operator’s manual to determine correct sag range).  Inspect for worn or missing teeth or worn cutting  edges. Check pins, bushes and connections for  excessive wear.  Check rams, hoses and connections for splits, leaks or fractures. | Wear **eye and hand**  **protection**. Wear **gloves**. |
| **2.** Entry and exit | Slipping and falls | Steps and ladders should be of a non-slip type.  Hand holds must be provided to assist operator to maintain 3 points of contact at all times while mounting or dismounting tractor. | Safe means of access must be provided and used for  machines  when being transported or used. |
| **3.** Operator position | Seating  Control  s  Cabin (if fitted) | Seat should be well-sprung and adjustable to allow operator to maintain a comfortable operating position.  All levers and gauges must be clearly identified, within easy reach and be easily read. Preferred orientation should be such that all needles are in vertical position during correct operating conditions. Exhaust must be placed so as to not allow fumes to enter cabin. | Maintain proper ergonomic principles when setting up seat for operating position.  Adequate ventilation must be provided. |
| **4.** Controls | Lights and alarms  Steering and brakes  Hydraulic controls | Test all lights, indicators, horn and reversing alarm.  Test steering both ways. Check braking and park brake operation. Lock separated brake pedals together if  travelling.  Test all hydraulic operations before loading bucket. |  |

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| **Task sequence** | **Identified hazards in task** | **Key processes to be followed** | **Precautions / PPE required** |
| **6.** Operation | Buried  services  Overturning  Moving machinery, crush injury  Overstressing of parts Dust, falling objects,  noise | Ensure that all underground services have been identified and located before commencing to dig.  Outriggers must be extended and in contact with firm surface before commencing to dig.  Exercise care to not cause trench collapse when using outriggers. Avoid swinging loaded bucket with booms  extended.  Prevent entry to swing area of boom and bucket when excavating. Ensure that all persons are clear of boom before swinging. Persons working near machinery in operation or areas where traffic may be a hazard should wear high-visibility garments.  Do not load bucket in excess of working load limit.  Avoid stressing of parts when excavating rock, shale or other tight material. Appropriate protective equipment should be used where hazards may be  encountered during operation. | Have representative on  site if unsure of actual  location.  Use packing where ground surface  is uneven or unable to  support weight of machine. Keep load close to machine when swinging.  Wear **high-visibility garment**.  NOTE: Wet materials will  weigh more per unit than dry material. Wear **head, eye and hearing and**  **foot protection** as necessary. |
| **7.** Repairs, etc, to buckets | Replacement of teeth | Place bucket on firm, stable, level surface to carry out work. Ensure that engine is switched off and hydraulic pressure is relieved before replacing teeth on bucket attached to excavator. Clean excess mud and soil from bucket before replacing teeth. Ensure that replacement teeth are compatible with the bucket. Check that hand tools to remove damaged or worn teeth are in good condition.  Ensure that replacement teeth are firmly locked in position before digging. | Ensure that bucket is stable and cannot fall during work.  Wear **eye protection** when washing or using compressed air. Wear **eye protection** when using  hand tools such as hammers, cold chisels, etc. |
| **8.** Transport of buckets | Moving objects | Ensure that buckets are carried in manner which will prevent them moving or falling during transport.  If loaded loose on truck, ensure that buckets are strapped down firmly. Use machine to load or unload buckets from truck or trailer. | Carry in raked loader  bucket if fitted.  Buckets should be carried “upside  down” to prevent movement. |
| **6.** Maintenance | Burns  Over-exertion/strain injury Crush injury from falling object | Allow engine to cool before removing radiator cap.  Rear tyres may be water-filled as ballast – always have valve stem at top position to check pressure or inflate tyre. Place valve at bottom position to drain water from tyre.  Use mechanical aid to remove or replace counterweights. | **Hand protection** should be worn. Use mechanical aids to remove or replace wheel and tyre assembly.  Wear **type 1 footwear**. |

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| **PRECAUTIONS:**  The following precautions are to be observed in areas where these procedures are carried out. |  |  |  |  |  |  |  |

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