

PRE-START INSPECTIONS FRONT END LOADER

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Plant pre-start inspections occur once the plant has been introduced to the site and provide an opportunity to check for any indicators that the plant may not operate safely before it is put into use for the day.

The pre-start inspection should involve checks in the following sequence:

1. Before the plant is turned on (walk around)

Generally, this step considers the operating features of the plant as further detailed in this presentation, e.g., hydraulics, batteries, oils, coolants, fuel, tracks, booms, plant safety features, condition of attachments, etc.

2. Once the plant is turned on (functional checks)

This step checks that all controls used by the operator are functioning correctly, including hand controls, reversing beepers, lights, and park brakes etc.

3. Initial operation of the plant (initial operation)

The final step should be guided by the Original Equipment Manufacturer's (OEM) manual and involves operating the mobile plant for a short distance to confirm there are no indicators of issues.



NOTE

The following is a general overview of key items that need to be regularly checked to ensure a front end loader is fit for use.

Pre-start inspections should be completed using pre-start tools developed for that particular type of plant, taking into account:

- The Original Equipment Manufacturer's (OEM) manual
- Results of the plant risk assessment
- Legislative requirements and
- Any site-specific specifications for plant.

Where an item is identified as being defective, faulty or not to a satisfactory standard, it must be reported to your leader. They must take suitable action(s) to address the identified risk e.g., place it out of service and refer for repair.



HEAVY METAL PRE-START INSPECTIONS FRONT END LOADER



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BEFORE COMMENCING

CHECK FOR HAZARDS

- Visually check around and above the machine for hazards and personnel.
- Check for other plant, vehicles, overhead hazards and any people in the area.
- Exclusion zones and or barriers should be used. Work area should be clear of any pedestrians.
- Plant must be parked on suitable flat ground.
- Ensure the plant is fundamentally stable.
- PPE must be worn during pre-start inspections as per the risk assessment.





BEFORE COMMENCING

ISOLATE MACHINE

Isolate the plant before undertaking prestart inspections to avoid accidental start-up.

Ensure all hydraulic, pneumatic and electrical circuits are not operational and any stored energy is dissipated.

Isolate using:

- Lockable battery isolators
- Starter isolators
- Through the back of the E-Stops (on newer models).

How:

- Place a red personal lock/tag on the designated isolation point.
- Lock the cab and place keys in pocket.
- Check plant is secured from any movement.





TYRES & WHEELS

Why

Tyres on wheeled machines pose a risk of explosion as tyres burn. Hot shrapnel and debris can be thrown great distances in an explosion.

- Condition and tread of tyres.
- Tyre pressure is in accordance with recommendations.
- Rims free from damage and cracks.
- Wheel nuts all supplied and secure.
- Wheel nut indicators confirm no movement of wheel nuts.





BUCKET LIFT & CYLINDER

- Lift arm and cylinder linkage lubrication.
- Tilt cylinder bearings are lubricated.
- Check for cracks.
- Check cylinders for seepage.
- Check pins and bolts for broken or missing parts.
- Inspect linkage pins for grease and lubrication.
- Identify any fluid or oil leaks.
- Look for damage, wear and any abnormalities.
- Check correct lubrication and maintenance (can be found in the operating manual).





FRAME & ARMS

Check frame and arms for excessive wear, damage, cracks and functionality.

Why:

To maintain the integrity of the loader and avoid structure failure or collapse.

- Check for cracks on arms.
- Inspect linkage pins for grease and lubrication.
- Identify any fluid or oil leaks.
- Look for damage, wear and any abnormalities.
- Check correct lubrication and maintenance (can be found in the operating manual).
- Check pins and bolts for broken or missing parts.





BUCKET CUTTING EDGE

Check bucket (or other attachments) for excessive wear, damage, cracks.

Why:

Over time metal on the bucket can become weakened or cracked causing the bucket to break apart while it is operational.

- Regular inspections for any signs of damage including looking for cracks, dents, or other types of wear and tear.
- No leaks from hydraulic hoses.
- Review cutting blades on the side of the bucket.





UNDERNEATH MACHINE

- Look underneath the machine before starting the engine.
- Check the ground for any obvious sign of leakage.
- Check for any obvious signs of damage or cracks.
- Check for any debris that may have accumulated or be stuck in the undercarriage frame.





FUEL & HYDRAULICS

Check fuel and fluid levels, leaks and damage.

Why:

- If oil or fuel leaks from high-pressure hoses or piping, it may cause a fire or defective operation, and can cause injuries if released under high pressure.
- Serious crush injuries can result when the hydraulic systems fail, from falling loads or unexpected moving parts.
- Plant arms or equipment can cause injury through rapid movement.

- Look at the underside of chassis for any leakage before starting the engine.
- Check oil levels in hydraulic tank.
- Inspect the hoses for leaks.
- Check fuel levels.
- Check the ground for any obvious sign of leakage.
- Check for sufficient lubrication and no evidence of damage.





BATTERIES AND HOLD DOWNS

Check battery, cables and hold downs for signs of wear or damage.

Why:

To minimize the risk of fire or explosion related to the battery.

What:

Check for signs of damage to:

- Cables that are visible
- Clips
- Straps
- Battery casing is cracking or greatly discoloured
- Corroded terminals, damaged or loose terminals.





ENGINE COMPARTMENT

Check the engine bay is free from leaks and dirt build up.

Check:

- Any cracks or damage.
- Fluid and oil levels.
- Look for damage, wear and any abnormalities.
- Hoses wires, belts.

Remove flammable material such as leaves, twigs, papers, etc. as these items may accumulate in the engine compartment and cause fire or explosion.





ENGINE OIL & COOLANT

Check that all fluids levels are sufficient and there is no signs of leaks or damage.

What

- Check oil levels with dipstick.
- Check coolant levels.
- Check the ground for any obvious sign of leakage.





HOSES & BELTS

Check hoses and belts for damage, cracks and leaks.

- Check for visible stains.
- Examine belts for signs of fraying, being loose or missing.
- Check hoses and couplings.
- Check for any damage and secure connections.





HANDHOLDS AND STEPS

Check condition, cleanliness and slip resistance of steps and the condition and suitability of handrails and edge protection.

Why:

- To avoid hazards such as slips, trips and falls.
- To improve access to awkward areas.
- To maintain 3 points of contact.

What:

- Check steps and walkway is free from dirt, dust and mud.
- Check the handrail and steps for any oil or grease.
- Tighten any loose bolts on handrails and steps.

Action:

If the handrails or steps are damaged or deformed, they must be repaired immediately.





PROTECTIVE STRUCTURE

Roll Over Protection (ROPS) and Operator Protective Structures (OPS) are suitable for the plant and appear free of damage.

FITTE

Why:

Damaged protective structures may reduce the level of protection provided. If identified, report to your supervisor and place out of service.

- Check corrosion from age or moisture.
- Metal fatigue.
- General damage.
- Confirm that any ROPS and OPS installed on loaders include an appropriate manufacturer's compliance plate on the machine that is visible and legible.





INSIDE THE CABIN

After conducting pre-start inspections on the outside, functional checks are required.

This second step in the process allows the operator to check that all the controls are functioning correctly, including hand controls, reversing beepers, lights, and park brakes etc.

- The isolation has been removed.
- The door is unlocked with the key.
- Three points of contact are maintained.
- The cabin is free from any rubbish and that there is nothing under the pedals.





SEATBELT

Check seatbelt and mounting for damage, wear and adjustment.

Why:

Operator restraint systems, when used properly, hold the operator in the seat and help contain the operator inside the Roll Over Protection Structure (ROPS) in the event of a collision or tip-over.

- Belt is retractable and in good condition.
- Webbing material is not shredded, torn or twisted.
- Mounting hardware and bolts present and secure.
- Tongue latch to ensure that it engages securely.
- Seat belt label for date of installation.
- Refer to OEM for life span and replacement requirements.





SEAT

Check the seat is operational and in good condition to avoid musculoskeletal injuries.

Why:

The seat ensures ergonomic positioning and protects the operator from harmful levels of whole-body vibration which can lead to fatigue and strain on body.

- Seat is adjusted to the operator.
- Air seat suspension or air reservoir tank is operational and comfortable to reduce vibrational impacts.
- Seat height and angle is adjusted to meet the operator's physical requirements.
- Electric wiring is connected and protected (if applicable).
- Adequate seat padding (i.e free from rips and tears).





WINDOWS & DOORS

Check windshield, windows and doors for cracked glass, cleanliness, functionality and visibility.

Why:

- The glass installed in heavy equipment protects the operator from flying debris.
- A shattered or broken windscreen or door is not safe while the loader is in use.
- Damaged glass can obstruct the operator's view.

- Identify the potential hazards from falling or flying objects.
- Any impact on visibility.
- Consult with original equipment manufacturers (OEMs) for operator cabin protection and glass options.
- Consider laminated glass and external structural protection requirements.





GAUGES & INDICATORS

Conduct a pre-operational start-up check in accordance with the manufacturer's specifications /operating manual.

Check:

- The gauge panel
- Fuel level
- Battery voltage
- Hydraulic oil temperature
- Engine coolant
- Machine indicators (warning lights)

The LCD screen (where relevant) displays the service meter hours, machine direction and engine speed.

Action:

If the gauges, indicators or screen display a warning, isolate the item of plant and notify your supervisor.





SAFETY SIGNS & LABELS

Check safety signs and labels are in place and legible, including compliance and load charts.

Why:

Safety signs and labels serve as a visual reminder of potential dangers such as electrical hazards, moving parts, hot surfaces and chemical exposure.

- Labels and signs comply to AS/NZ Standards.
- Labels are not damaged and clearly legible.
- Labels are located in an area that can be easily seen and do not impede the operator's visibility.





MIRRORS

Check mirrors for cracked glass, cleanliness, functionality and visibility.

Why:

Mirrors improve the operator's visibility around the machine and help prevent contact with other people, plant and/or structures.

What:

- Check mirrors are clean.
- Glass is not cracked.
- Adjusted so that the area at the rear can be seen from the operator's seat.
- Check reverse cameras are operational and visible; wipe the camera before operating.

Action:

Before moving, look around and check mirrors and monitor to confirm that no one is around the machine.

If assessed as safe to do so, use a spotter if the view is obstructed.





SERVICE REPORT & OEM

Check that the Original Equipment Manufacturer (OEM) or Operating and Maintenance Manual (O&M) is in the cabin.

Why:

- Provides instructional material by the manufacturer to correctly operate and maintain the plant.
- Highlights the safety hazards within the plant.

Check:

- O&M is understood before operating the plant.
- Periodically reviewed by operators to stay informed of the safety hazards and operational requirements.

Action:

If the manual is missing or cannot be read, a new copy can be downloaded and printed from the supplier's website.



FAT





Operation and Maintenance Manual

906M, 907M, 908M Compact Wheel Loader

K56 1-UP (906M) K57 1-UP (907M) K58 1-UP (908M)

FIRE EXTINGUISHER

Check there is a fire extinguisher, its location and that it is ready for use.

- Fire extinguishers should be easily accessible.
- fire extinguishers can be located inside the cabin or mounted outside near the engine (or both).

Check:

- Correct class (type) of extinguisher.
- Pressure gauge is displaying that it is suitably pressurised.
- Locking pin is intact and tamper seal not broken.
- No visible damage to cylinder, handle, nozzle and hose.
- Date stamp on yellow inspection tag is in date i.e., less than 6 months.
- Extinguisher is suitably mounted.

Action:

If the fire extinguisher is out of date or cannot be located, report it to your supervisor or leader and locate an alternative.



INITIAL OPERATION

This final step in the pre-start inspection process should be guided by the Original Equipment Manufacturers (OEM) manual.

It involves operating the mobile plant for a short distance to confirm there are no indicators of issues.

Before operating the plant, check to confirm that plant, vehicles, overhead hazards and any people in the area are controlled.

Check:

- Bucket can tilt and raise up and down.
- Loader moves slowly forward and backwards, can turn left and right as directed.
- Confirm plant stops when brakes applied.
- Listen for any sounds that are not normal, squeaking or banging.
- Check E-Stop (stop button) to ensure it is operational.

If any defects are found, the excavator should be stood down and the supervisor notified before operations can re-commence.





START-UP MACHINE

Put the key in the ignition and let the machine warm up as per the OEM requirements. This allows the oil to get to the right temperature before the loader operates effectively.

Check:

- Horn is working.
- Gauges and lights on the control panel.
- Lights are on and working.
- Wipers are functional.
- Check reverse cameras are operational and visible (where fitted).

Note:

Refer to the OEM for additional start-up checks before commencing the next step in the process that involves operating the plant for a short distance to confirm there are no indicators or issues.





RADIO

Check the radio is functional prior to commencing excavator operations.

What:

- Test the radio by contacting someone.
- Recognise that multiple users may also be using the radio.

How:

- Turn the radio to correct channel and call up supervisor.
- Hold the handpiece approximately 25mm from your mouth.
- Press the Press To Talk (PTT) button.
- Wait two seconds with the button depressed before speaking.
- Talk across the handpiece to prevent distortion (hold at a right angle to mouth).
- Release PTT button and listen for a response.
- Acknowledge the response.

Action:

If the radio is defective the loader should be stood down. The supervisor should be notified, and an alternative radio sourced before operations can commence.





REVERSE ALARM & FLASHING LIGHT

Check reversing alarm is audible and flashing light is working.

Why:

A reversing alarm can effectively warn pedestrians of the machine's forward or reversing movement.

Flashing lights provide a visual warning to help ensure that other plant, vehicles or pedestrians are aware of its forward or reversing movements, minimising the risk of a collision.

Check:

- Light is operational and in good working order.
- Light is bright enough to be visible from required distance.
- Reverse alarm is audible when machine is moving.

Note:

Managing the risks of plant in the workplace code of practice refers to forward or reversing movements.





Information and resources

Scan the QR code to learn about our Heavy Metal Mobile Plant Safety Campaign.



