



BI014681

Revision No 1  
17 June 2013



# Operation Manual

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## **FBL-10 (CL210) Load Haul Dump**

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Serial Number 5001830

*Wet Exhaust Conditioner Upgrade - 2013*

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## Section 2

### General Safety and Precautions

This section contains specific safety precautions that shall be followed whilst the machine is being used by suitably qualified operators. This list is *NOT* all inclusive and a measure of commonsense should always be applied together with established and ongoing site specific risk assessment and safety procedures.

#### **ONLY TRAINED AND AUTHORISED OPERATORS SHALL OPERATE THIS MACHINE**

- DO NOT** use the machine for any purpose other than its intended use.
- DO NOT** for any reason exceed the indicated capacity of the machine.
- DO NOT** operate the machine unless all operator checks and scheduled servicing have been performed. Report any damage or faulty operation immediately and do not operate the machine until the fault has been corrected.
- DO NOT** tie down or tow equipment such that the chains or slings are not rated for the capacity of the machine and equipment.
- DO NOT** operate the machine unless:
- There are no tags attached stating otherwise.
  - All covers and guards are correctly installed.
  - Personal protective equipment is worn.
- DO NOT** start the machine unless:
- There are no tags attached stating otherwise.
  - The area around the machine is clear.
  - The park brake is applied.
  - Transmission is in *neutral*.
  - All water and oil levels are checked.
  - All site specific checks are completed.
- DO NOT** leave the machine unless:
- The machine is parked in a safe place.
  - The transmission is in *neutral*.
  - The park brake is applied and brake head pressure is *zero*.
  - The lift arms are lowered or any attachment is flat on the ground or supported.
  - The engine is stopped.
- DO NOT** work on the machine in low ventilated areas while the engine is running.
- ALWAYS** sound the horn before starting the engine to alert anyone who may be around the machine.
- ALWAYS** ensure that the operator's compartment door is closed and made secure before operating the machine.



**TRANSMISSION GEAR CONTROL LEVER**

The transmission gear control lever has four positions, *first*, *second*, *third* and *fourth*. Shifting from one range to another can be made at any time conditions permitting. Momentarily decrease engine revs when selecting a higher gear. Momentarily increase engine revs when selecting a lower gear.



**NOTICE**

The transmission in the machine is modulated. This prevents severe shocks being transmitted through the drive train when the transmission is shifted between gears.

**TRANSMISSION DIRECTIONAL CONTROL LEVER**

A directional control lever controls the transmission and direction of travel. This lever has three positions, *forward*, *neutral* and *reverse*. The engine should be at low idle when the transmission is shifted from the *neutral* position to either *forward* or *reverse* direction.



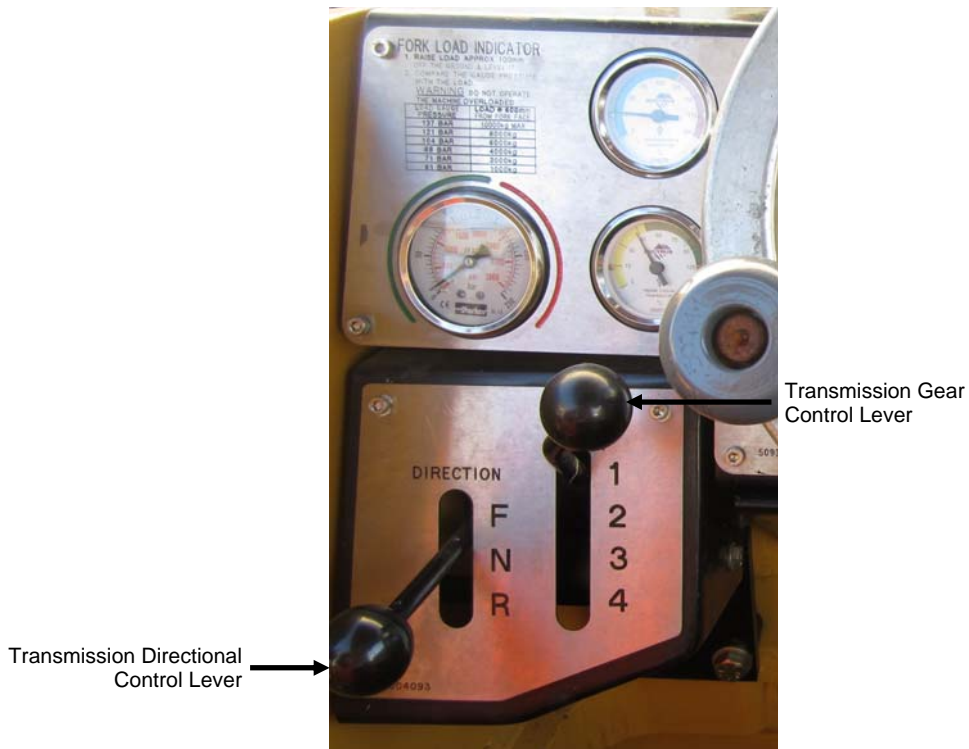
**NOTICE**

The transmission must be placed in the *neutral* position for the starter motor to engage when starting the engine.



**WARNING**

If the engine starts when the transmission is not in neutral, the machine should be tagged out of service until the problem is rectified.



TRANSMISSION CONTROLS



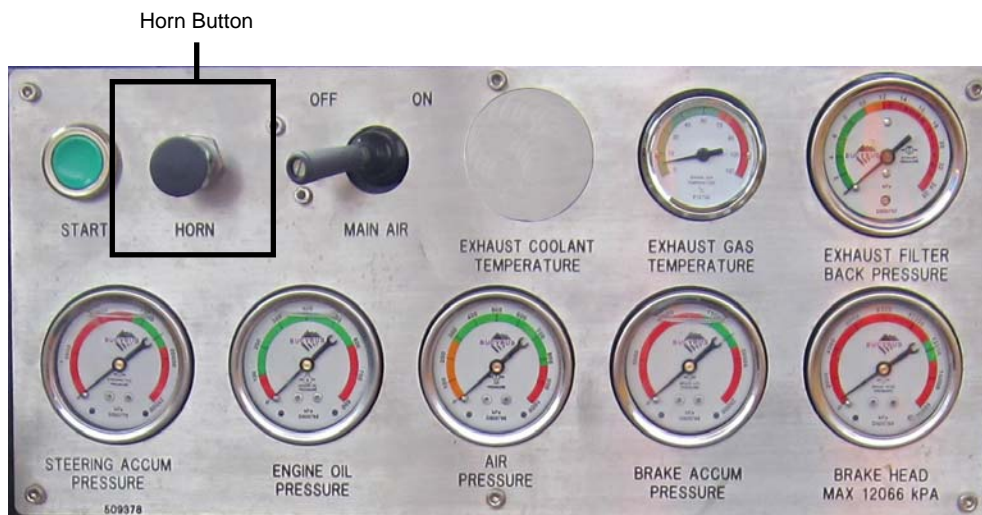
## HORN BUTTON

Pushing this button sounds the air horn.



### NOTICE

It is good operating procedure to sound the horn 2-3 seconds before an engine start or whenever approaching blind intersection.



RIGHT HAND SIDE OPERATOR'S PANEL

## ENGINE SERVICE HOUR METER

This electric meter is mounted on the off driver's side at the rear of the machine. Use the hour meter to determine servicing intervals.



## Section 5 Machine Isolation

Before commencing work on the machine, it is imperative to ensure the system to be worked on is correctly isolated. This may also require the isolation of other systems that affect the safe completion of the job.



### NOTICE

**Any site/mine specific isolation procedures override those listed on the following pages. The procedures presented here are the minimum required to perform any work on the machine. Before commencing check with the relevant people regarding any site/mine specific isolation procedures.**

### ENGINE ISOLATION

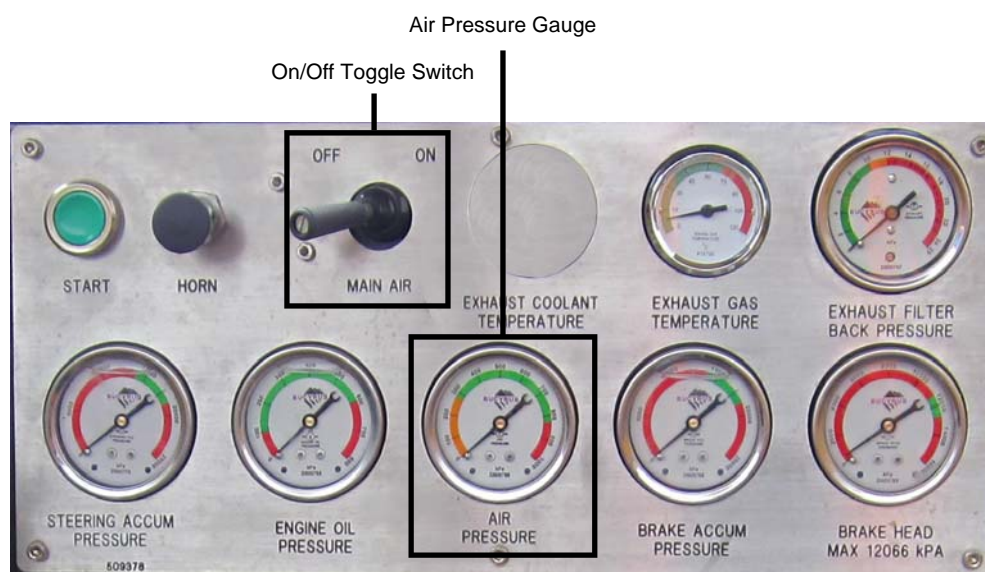
To isolate the engine perform the following procedure:

1. Ensure the area is clear of any obstructions and area is fit for carrying out safe operation and maintenance.
2. Ensure machine is in a straight line (not articulated).
3. Lower the lift arms or any attachment to the ground.
4. Select *neutral* on the transmission directional control lever.
5. Apply the park brake.
6. Shutdown the engine.
7. Fit a personal danger tag to the on/off toggle switch.
8. Connect the articulation lock and chock the wheels.
9. Close the main air isolation valve and fit a personal danger tag (see Pneumatic Isolation). This valve provides for personal isolation locks to be fitted.



### WARNING

**Be careful of hot surfaces, when working on or around the machine , allow time for them to cool down.**



RIGHT HAND SIDE OPERATOR'S DISPLAY PANEL

## Section 6

### Pre-Start Procedure

Walk around the machine:

1. Ensure the area is clear of any obstructions and the area is fit for carrying out safe operation and maintenance.
2. Check condition of all tyres. Inspect for sidewall cuts, tread cuts and separation.
3. Look for damaged or missing wheel nuts and studs.
4. Check for loose wheel nuts.
5. Guards and covers are in place and secure.
6. Check for missing or loose bolts.
7. Check for oil leaks.
8. Check for visible hose damage.



**WARNING**

**Never start or operate the machine if the diesel control system has been bypassed, report to service personnel.**



**WARNING**

**Always ensure the machine is correctly isolated before undertaking any tasks.**

Check the hydraulic tank oil level:

1. Be sure the machine is on a level surface when checking oil level.
2. Ensure the lift arms are in the lowered position, the engine is turned off and the machine is isolated as per Section 5 - Pneumatic Isolation.
3. Check the level at normal operating temperature.
4. When the oil level has dropped below the mark shown below, add hydraulic oil to restore the correct operating level.
5. The tank fill cap is located on the off driver's side of the machine on the top of the hydraulic tank.



**CAUTION**

**Always use the specified fuel for the application and the region's seasonal temperatures. (See Section 23).**



Hydraulic Level Sight Gauge



Hydraulic Tank Fill Point

## Section 7

### Engine Starting Procedure

**WARNING**

Always sound the horn and make sure the area around the machine, especially between the front and rear frames, is clear before starting the engine. Never attempt to start an engine without first knowing how to shut it off.

**WARNING**

Do not start the engine if machine is tagged out of service or Personal Danger Tag/Lock is affixed.

If the Emergency Intake Shut Off valve has been operated, restarting of the engine should be done in compliance with the Manager's Rules.

**WARNING**

**ONLY RESTART THE ENGINE AFTER VERIFYING THAT THERE HAS BEEN NO INGRESS OF WATER FROM EXHAUST CONDITIONER INTO THE ENGINE.**

**THIS IS TO BE VERIFIED BY SERVICE PERSONNEL PRIOR TO ATTEMPTING ENGINE START.**

1. Turn the main air isolation valve, located in the engine compartment to the *on* position.
2. Enter the operator's compartment and close and latch the door.
3. Place the transmission directional control lever in the *neutral* position.
4. Make sure the park brake is applied. Check the air pressure gauge. If the start pressure is below 275 kPa (39 psi) the engine will not start. If the air pressure is below 275 kPa (39 psi) , recharge the air receiver up to maximum 827 kPa (120 psi).
5. Turn the on/off toggle switch to the *on* position.

**NOTICE**

**The diesel control system display will not activate if the air pressure is below 275 kPa**

6. Wait for the display to indicate *Waiting for Start* (showing three green LEDs).
7. Hold the accelerator pedal approximately  $\frac{1}{3}$  to  $\frac{1}{2}$  open.
8. Press the engine start button and release it when the engine has fired.
9. Check the display indicates *Engine Running*.
10. Carry out post start checks and operate machine normally.

See Section 22 - Operating Electronic Shutdown System

As soon as the engine starts, check all gauges and indicators to ensure that all systems are functioning correctly. Always let the engine warm up before applying load. Never apply load to a cold engine.

**CAUTION**

**Do not engage the starter motor when the flywheel is moving.**

## Section **11** Stopping and Braking

1. Use the transmission to help slow down the machine, by shifting down gears when possible.
2. Apply the brakes and bring the machine to a halt at the side of the roadway, turn the machine toward the rib and lower the lift arms to the ground.
3. Apply the park brake.
4. Observe brake head pressure gauge and primary park brake valve gauge within the operator's compartment reads zero pressure.
5. The engine should not be shutdown from full load. To stabilise temperatures allow it to idle for a few minutes before stopping.
6. Shut off the engine by turning the on/off toggle switch to the *off* position.
7. After stepping off the machine, switch *off* the main air isolation valve.



**WARNING**

The brakes fitted to the machine are extremely effective to cope with towing large loads. Operators should be prepared for rapid deceleration when the brakes are applied.



**NOTICE**

In an emergency immediately apply the brake. If this fails to activate the brakes, immediately apply the park brake.



**WARNING**

The machine must not be used under any circumstance if the primary park valve gauge and brake head pressure gauge do not indicate zero pressure.



**NOTICE**

The primary park brake valve gauge maybe located undercover within the machine adjacent to the operator's compartment.



**NOTICE**

The seat belt should be worn whilst operating the machine at all times.

If the brakes fail on the machine you should:

- Use the gears to help slow the machine.
- Lower the lift arms or any attachment.
- Gradually turn machine to the rib.
- Apply the park brake.
- Shutdown the engine.

## Section 16

### Towing the Machine when Disabled



#### WARNING

Apply the park brake, lower the lift arms or any attachment to the carry position and stop the engine. The towing machine must have sufficient braking capacity to stop and hold both machines.

1. The machine should be secured by 2 x 15 Tonne safety chains in addition to a 30 tonne capacity draw bar.
2. If the machine must be towed and the distance is less than 1000 metres:
  - a. Connect the machine to the towing machine.
  - b. Place the transmission in *neutral*.
  - c. Release the spring applied brake by hydraulically overcoming the brake spring pressure by use of an hydraulic hand pump and tow at low speed.



#### NOTICE

The brakes can be released with a hydraulic hand pump (maximum 12756 kPa [1850 psi]) connected into the pressure port on the brake and steer valve. The operator is to stay in the operator's compartment to apply the brake or park brake if necessary. If these are applied the hydraulic hand pump needs to be pumped (minimum 11376 kPa [1650 psi]) to release the brakes again.

Hydraulic Manifold BRK



#### CAUTION

Do not over-pressurise the brake system or serious damage will be done to the seals in the brake heads.



#### WARNING

The transmission will not hold the machine when the spring applied park brakes are bypassed by the hydraulic hand pump pressure.

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## Section **21**

### Disconnecting Attachments

1. Ensure the area that the attachment is to be stowed will not block access and is level.
2. Lower the attachment to the ground. Select *neutral*, apply the park brake, switch the machine off and exit the machine.
3. Press pressure release button to release pressure in hydraulic hoses.
4. Connect the PTO lines to the RAS Pilot Lock Cylinder Release Button.
5. If fitted, disconnect the second set of PTO lines to the attachment.



**Failure to disconnect the second set of hoses may result in hose and fitting damage when the machine drives off the attachment.**

#### **WARNING**

6. Enter the operator's compartment.
7. Release the park brake.
8. Depress the RAS Pilot Lock Cylinder Release Button and at the same time pull the two-way hydraulic control lever (closest to the operator).
9. Select *reverse* and *first* gear.
10. Drive away from the attachment whilst rolling the RAS back plate forward.



**DO NOT leave the attachment unsecured. An unstable attachment may roll and crush personnel.**

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