

Shop Manual

DL300-3 / DL350-3 Wheel Loader

Serial Number 10001 and Up

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Wheel Loader Safety

Edition 1

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SAFETY INSTRUCTIONS



WARNING

AVOID DEATH OR SERIOUS INJURY

Instructions are necessary before operating or servicing machine. Read and understand the Operation and Maintenance Manual and signs (decals) on machine. Follow warnings and instructions in the manuals when making repairs, adjustments or servicing. Check for correct function after adjustments repairs or service. Untrained operators and failure to follow instructions can cause death or serious injury.

APPLICABLE MODELS

The contents of this section apply to the following models and serial number ranges.

MODEL	SERIAL NUMBER RANGE
DL200-3	10001 and Up
DL220-3	10001 and Up
DL250-3	10001 and Up
DL300-3	10001 and Up
DL350-3	10001 and Up
DL420-3	10001 and Up
DL450-3	10001 and Up
DL550-3	10001 and Up

SAFETY MESSAGES

Safety messages and safety decals included in this manual and on the machine provide instructions how to operate, service and maintain the machine. Safety messages and safety decals indicate potential hazards and describe safety precautions required to avoid hazards. Operator and maintenance personnel should read and understand these safety messages and decals before beginning operation or maintenance.

SAFETY ALERT SYMBOL

Be Prepared - Get to Know All Operating and Safety Instructions.

This is a Safety Alert Symbol. Wherever it appears in this manual or on safety decals on the machine, you must be alert to the potential for personal injury or accidents. Always observe safety precautions and follow recommended procedures.

Signal Words

The signal words "DANGER", "WARNING", "CAUTION" are used throughout safety messages and safety decals in this manual or on the machine. They indicate an existence of, and the relative seriousness of a hazard. All three indicate that a safety risk is involved. Observe the precautions indicated whenever a Safety Alert Symbol is present, no matter which signal word appears next to it.

DANGER

DANGER - This signal word is used on safety messages and safety labels and indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

WARNING

WARNING - This signal word is used on safety messages and safety labels and indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION

CAUTION - This signal word is used on safety messages and safety labels and indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury.

SAFETY DECALS

Location of safety labels (decals) can vary from unit to unit.

Refer to appropriate Operation and Maintenance Manual, and parts manual for your unit.

Always replace damaged or faded decals.

GENERAL

Safe Operation is Operator's Responsibility

Only trained and authorized personnel should operate and maintain the machine.

Follow all safety rules, regulations and instructions when operating or performing maintenance on machine.

- Do not operate machine if you are under the influence of drugs or alcohol. An operator who is taking prescription drugs must get medical advice to determine if he or she can safely operate the machine.
- When working with other personnel on a work site, be sure that all personnel know the nature of work and understand all hand signals that are to be used.
- Be sure that all guards and shields are installed in their proper location. Have guards and shields repaired or replaced immediately if damaged.
- Be sure that you understand the use and maintenance of all safety features such as pilot cutoff switch and seat belt. Use them at all times.
- Never remove, modify or disable any safety features. Always keep them in good operating condition.
- Always check for and know the location of underground and overhead utility lines before working.
- Failure to use and maintain safety features according to instructions in this manual, Safety Manual and Shop Manual can result in death or serious injury.

Know Your Machine

Know how to operate your machine. Know the purpose of all controls, gauges, signals, indicators and monitor displays. Know the rated load capacity, speed range, braking and steering characteristics, turning radius and operating clearances. Keep in mind that rain, snow, ice, loose gravel, soft ground, slopes etc., can change operating capabilities of your machine.

Engine

Edition 1

SAFETY INSTRUCTIONS



WARNING

AVOID DEATH OR SERIOUS INJURY

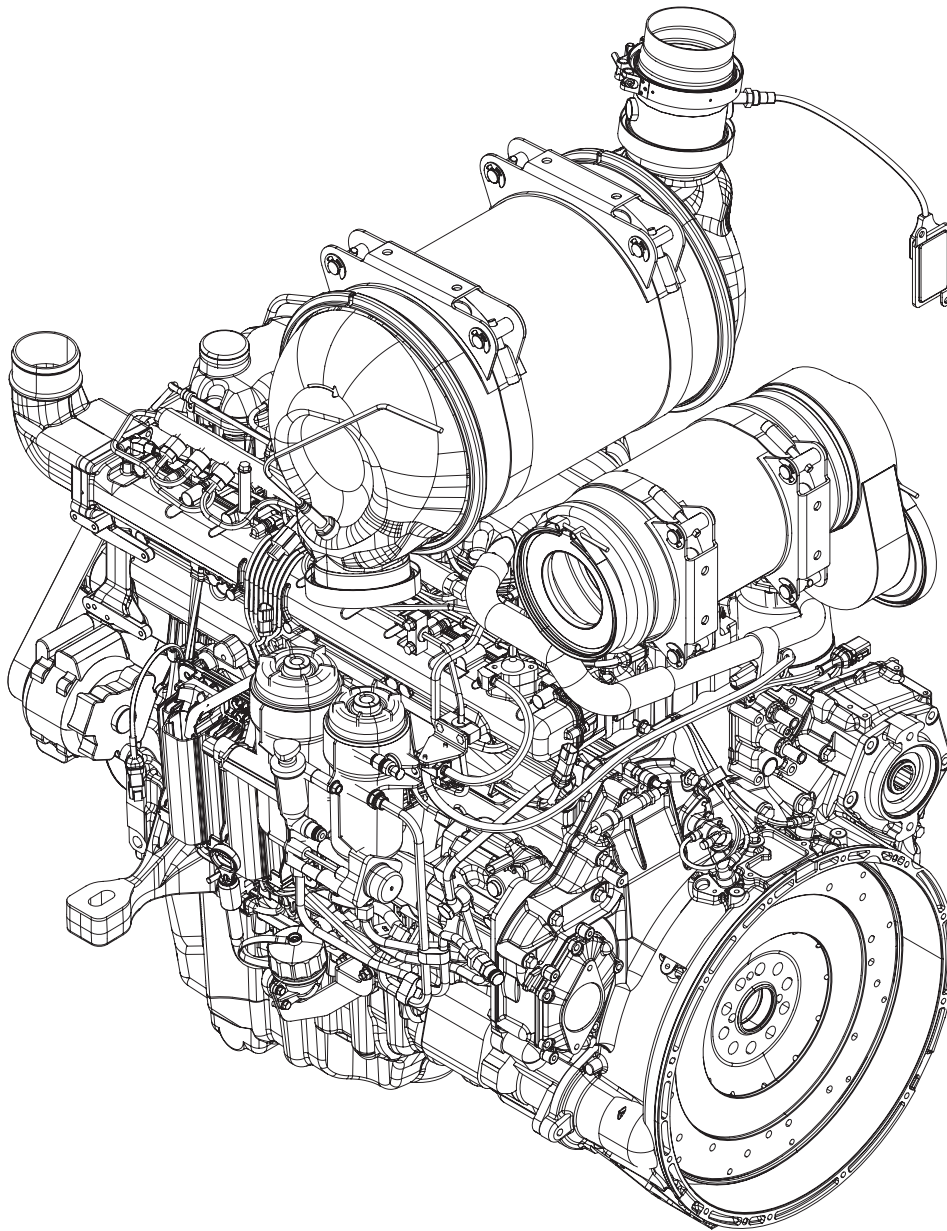
Instructions are necessary before operating or servicing machine. Read and understand the Operation and Maintenance Manual and signs (decals) on machine. Follow warnings and instructions in the manuals when making repairs, adjustments or servicing. Check for correct function after adjustments repairs or service. Untrained operators and failure to follow instructions can cause death or serious injury.

APPLICABLE MODELS

The contents of this section apply to the following models and serial number ranges.

MODEL	SERIAL NUMBER RANGE
DL300-3	10001 and Up
DL350-3	10001 and Up

DC9 ENGINE



FG024302

Figure 1

CYLINDER

Cylinder Head

Removal

1. If the engine has EGR:
Remove water-cooled EGR cooler as instructed in the work description for Removing the water-cooled EGR cooler.
Remove brackets for the water-cooled EGR cooler.
2. Remove bolts for the exhaust manifold on the relevant cylinder and slacken the bolts on the adjacent cylinders so the relevant part of the exhaust manifold comes loose.
3. Remove cooling system bleeder hose, separate the quick release coupling at the front lifting eye.
4. Remove cable duct from the intake.
5. Remove cable ties for the cable harness from the engine control unit.

IMPORTANT

The fuel system components are extremely sensitive to dirt. Clean thoroughly before dismantling and plug all connections with lint-free rags and tape.

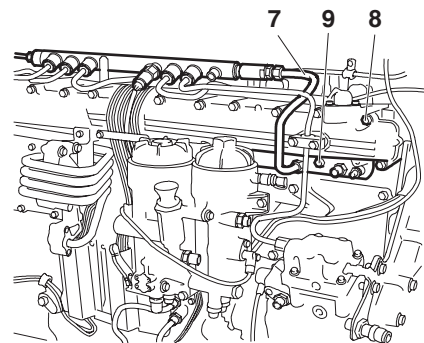
6. Depressurize the fuel system and detach the fuel pipe running between the accumulator and fuel manifold.
7. Detach the fuel manifold and remove bolts on the relevant cylinder.
8. Detach the intake manifold and remove bolts on the relevant cylinder.

IMPORTANT

All parts in the fuel injection system and valve mechanism must be marked. Everything must be reinstalled in the same position.

9. Remove injectors as instructed in the work description for Removing the injectors.

Also remove high-pressure pipes and connection on the cylinder head at the back viewed from the coolant pump.



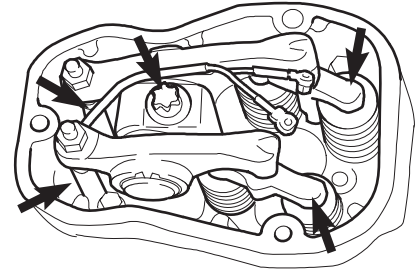
FG020250

Figure 11

IMPORTANT

If work is done on the 6th cylinder of an engine with an EGR system, the EGR valve control cylinder must be detached at the damper and removed.

10. Remove upper rocker cover and then the rocker arm housing, valve bridges and pushrods.



FG020251

Figure 12

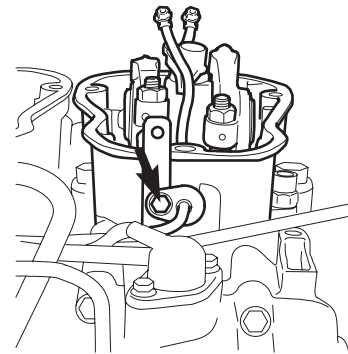
11. Pull the cable harness out of the lower rocker cover and remove it.

NOTE: *Take care when pulling the cable harness out of the rocker cover: the cable terminals can be damaged which can cause the nut securing the cable harness to the injector to come loose.*

12. Work on the adjacent cylinders. Remove upper rocker cover, release the cable harness and the lower rocker cover so it can be moved.
13. Remove relevant cylinder head. Be careful with the adjacent rocker covers.

NOTE: *Mark the cylinder heads if more than one is being removed at the same time.*

NOTE: *If all cylinder heads are removed at the same time, the turbocharger must be removed or supported against the frame.*



FG020252

Figure 13

Installing

1. Check the liner height as described in the work description for Checking the liner height.
2. Clean the cylinder head and cylinder block. Lubricate the threads and below the heads of the cylinder head bolts.
3. Install a new cylinder head gasket.
4. Install the cylinder head.

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