



80ZV



93109-00273

May 16, 2007

OPERATION & MAINTENANCE MANUAL

WHEEL LOADER

80ZV

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(オーストラリア用)

93109-00273

Powered by CUMMINS 6CTAA8.3 Engine
Serial No. 80C4-8001 and up

NOTICE
READ AND UNDERSTAND THIS
MANUAL BEFORE OPERATING
AND SAVE THIS MANUAL ON
THE MACHINE

CLICK HERE TO **DOWNLOAD** THE COMPLETE MANUAL

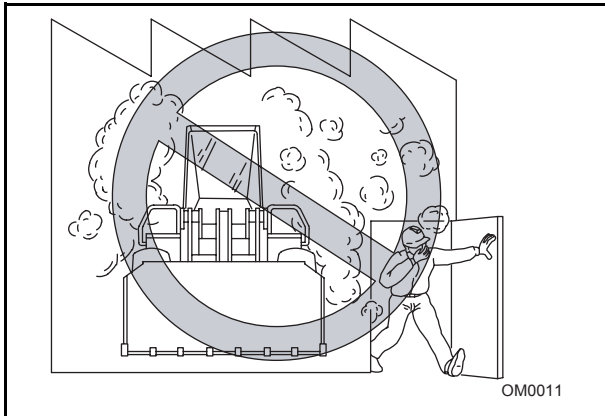
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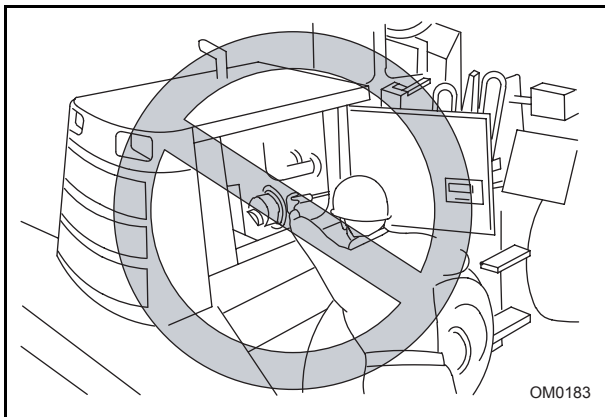
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1.6
SAFETY
Safe Operation



Do not start to work in an enclosed area if adequate ventilation is not provided. Fumes could build up during operation that could cause drowsiness, injury, or death.

Blow the horn for a few seconds just before starting the engine to alert bystanders.



Start the machine only from in the operator's seat.

- Do not reach through the window to start.
- Do not stand on the ground and start.
- Never attempt to start by shorting across the starter motor terminals since this can bypass the neutral start safety device.

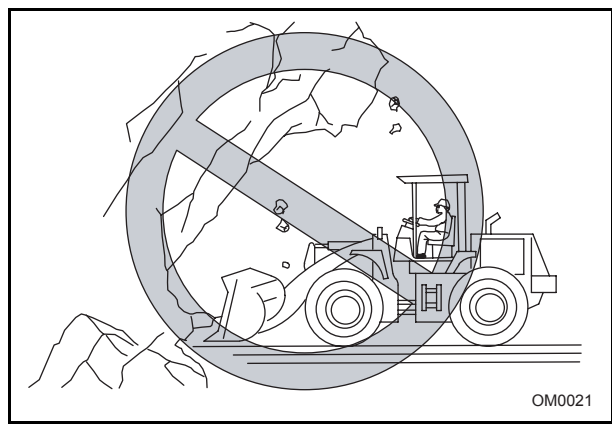
If jumper cables are required to start the engine, follow the correct procedure in "Booster Batteries / Jumper Cables" page 2.78.

Operational Safety

SITE SAFETY:

Consider the safety of the job site before operating the machine:

- Be aware of and avoid cliffs, ditches, trenches, overhead or underground wires, underground pipes, other equipment, and workers in the area.
- If required, be aware of hand signals that may be used by ground guides.



Avoid working under or near overhanging material that could fall on the machine.

Keep bystanders out of the work area.

Keep the work site as clean and flat as possible.

Do not operate the machine at work area close to fire or dry grass is.

Operate the machine slowly over rough ground and on a grade.

Do not operate on any grade that may be unstable (loose material, soft material, snow, or ice).

The range of temperature the machine is to be operated is between -35°C ~ 45°C .

Safety Signs

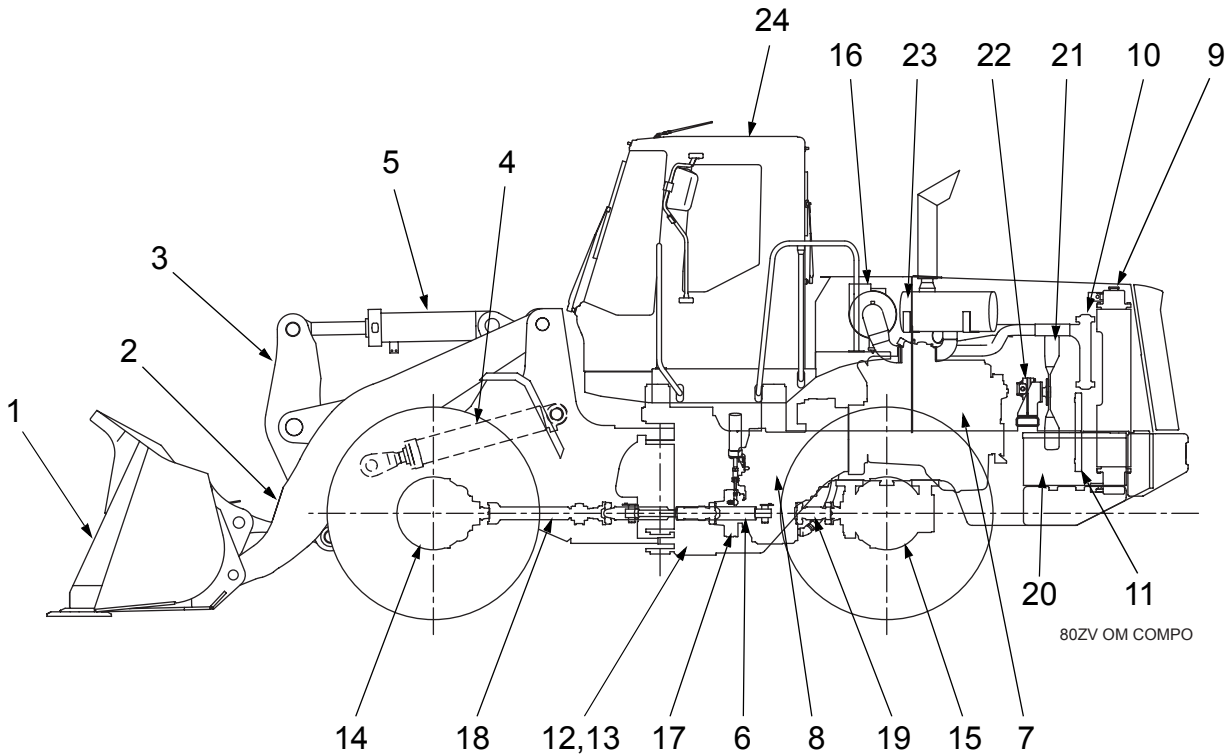
All safety signs which are on the machine are shown here. Read them and understand them thoroughly. They contain information which is important for the safe operation and the safe maintenance. Follow the directions on the safety signs carefully.

It is very important that all safety signs be on the machine in the locations shown. If any sign is missing, damaged, or worn, get a replacement from your Kawasaki dealer and install it in the correct position.

NOTE

The sample safety signs in this section have part numbers to help you and your dealer obtain the correct replacement.

COMPONENT NAME/LOCATION

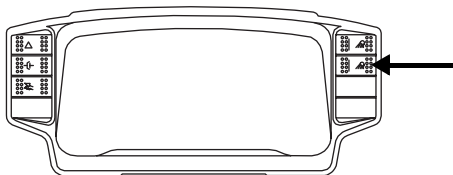


- | | |
|---|--|
| 1. Bucket (Attachment) | 13. Hydraulic Oil Tank (Right hand side) |
| 2. Boom | 14. Front Axle / Differential Ass'y |
| 3. "Z" Lever | 15. Rear Axle / Differential Ass'y |
| 4. Boom Cylinders (2) | 16. Air Cleaner (Right hand side) |
| 5. Bucket Cylinder | 17. Parking Brake |
| 6. Steering Cylinders (2) | 18. 2nd Propeller Shaft |
| 7. Engine | 19. 3rd Propeller Shaft |
| 8. Torque Converter & Transmission Ass'y | 20. Batteries (2) |
| 9. Radiator & Torque Converter Cooler (Lower tank) | (one each side--two 12VDC=24VDC system) |
| 10. Air Cooler (for engine intake air) | 21. Cooling Fan |
| 11. Hydraulic Oil Cooler | 22. Fan Motor (hydraulic type) |
| 12. Fuel Tank | 23. Exhaust Muffler |
| | 24. ROPS Cab |

NOTE

When a component or an item location is given as "Left hand side" or "Right hand side", it is according to the operator's left side or right side when sitting in the seat.

5. Rear Working Light Switch

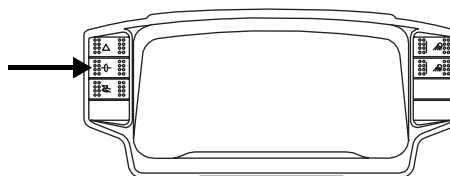


70ZV0006

Rear working light switch is used for turning on and off the rear working lights.

Turn off the rear working lights when roading to prevent blinding the driver behind you.

6. Transmission Cut-Off Selector Switch



70ZV0006

Transmission cut-off selector switch is used to change the function of the brake pedals.

Normally this switch should be "ON".

OFF

- When the brake pedals are depressed, only the service brakes are engaged keeping the transmission directional clutch engaged. (brake only)

ON

- When the brake pedals are depressed, the service brakes are engaged and the transmission directional clutch is disengaged (brake and declutch).

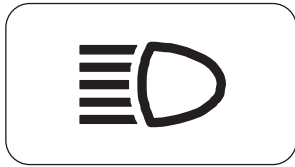
Refer to "Brake Pedals" page 2.7 for the function of both left and right brake pedals.

CAUTION

Transmission cut-off feature momentarily places transmission in neutral which may allow machine to roll when on a grade.

Do not turn transmission cut-off selector switch to "ON" when operating on a grade.

19. High Beam Indicator Lamp (blue)



OM0067

Lights up when headlights are switched to high beam.

20. Auto Shift Indicator Lamp



OM0068

Lights up when the transmission control lever is in the [A] position.

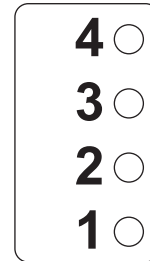
21. Neutral Indicator Lamp



OM0069

Lights up when transmission is in neutral.

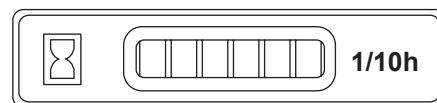
22. Transmission Status Monitor



OM0070

- **1st Gear**
Lights up when the shift lever is in [1] position and transmission is in 1st gear. Machine stays in this gear until manually shifted.
- **2nd Gear**
Lights up when the shift lever is in [2] or [A] position and transmission is in 2nd gear.
- **3rd Gear**
Lights up when the shift lever is in [3] or [A] position and transmission is in 3rd gear.
- **4th Gear**
Lights up when the shift lever is in [A] position and transmission is in 4th gear.

23. Hour Meter




OM0071

Hour meter indicates the accumulated total hours of engine operation. Use to determine the timing of periodic inspection and maintenance service.

2.32

OPERATOR'S AREA

Radio - AM / FM Cassette (24Volt Type) (option)

| Symbol | Name of part | Function | Operation method | Description | Remarks |
|--------|---|------------------------|------------------|---|---------|
| 9 |  Eject button | Cassette tape ejection | PUSH | Push this button to eject the cassette tape. This can be performed even with ACC off. | |
| 10 | DISP Display button | Display change | PUSH | <p>Push this button to switch the indications shown on the display panel. Each time you push this button, the current time, alarm time, frequency (in radio mode), track No. and disc NO. indications (in CD changer mode), and cassette tape EQ position indication (in cassette tape mode) will be shifted to sequentially.</p> <p>While the current time is shown on the display panel, pushing the button for 2 sec. or more will generate a beep sound. Then the indication will blink, and the mode will be shifted to the clock setting mode.</p> <p>While the alarm time is shown on the display panel, pushing the button for 2 sec. or more will generate a beep sound and the mode will shift to the alarm setting mode.</p> | |
| 11 | SCAN SCAN button | Radio scanning | PUSH | <p>Pushing this button will change the mode to Auto Tuning mode and will play each station for 5 sec.</p> <p>To stop the scan feature and listen the currently tuned station continuously, push the button again while the station is tuned in and is being played.</p> | |

Action to be taken when the air conditioner is not used

Even if the air conditioner is not used, operate the air conditioner with the engine low idle for several minutes at least once a month so that the lubricating oil in each part of the compressor is not eliminated (running-in of the air conditioner).

If the temperature inside the cabin is low in winter, the air conditioner may be disabled. In such a case, increase the temperature inside the cabin by using the heater, then perform running-in of the air conditioner.

IMPORTANT

- If the air conditioner is not operated for a long time, the lubricating oil inside the compressor may be eliminated, and the compressor may be seized or damaged. Make sure to operate the air conditioner once or twice a month even while the air conditioner is not necessary or while the machine is stored for a long time.
- During running - in of the air conditioner, make sure to start it up with the engine low idle. Never start up the air conditioner with the engine high idle: Such start up may damage the air conditioner.
- If water enters the control panel or the insolation sensor, unexpected failure may be caused. Pay attention so that water does not enter. In addition, make sure to keep fire off the control panel and the insolation sensor.
- Always keep the insolation sensor clean and free from adhesion of dusts so that the air conditioner can offer its auto function sufficiently. Keep the area around the insolation sensor free from objects which may hinder the sensor function.
- Special tools and instruments are required to fill the refrigerant (gas) and perform other servicing. Make sure to let such works be performed in a service shop with required facilities specified by our company.

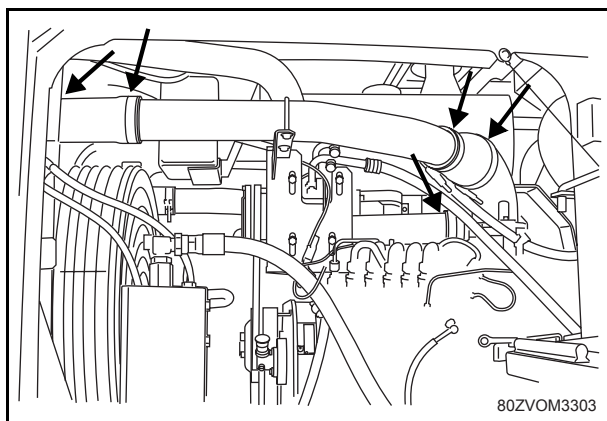
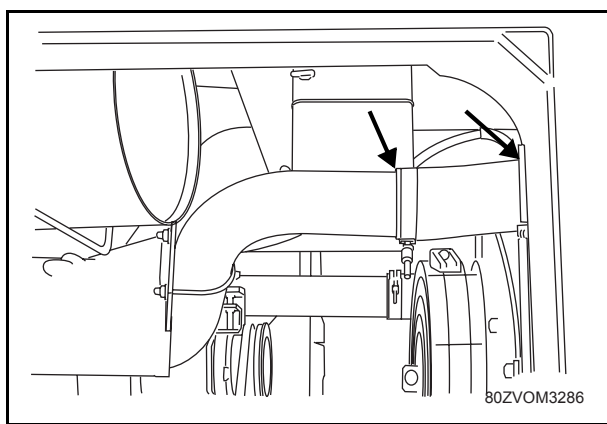
Check Air Intake System

CAUTION

Hot engine components may cause burns.

Avoid contact with hot engine components.

1. Park the machine on level ground, apply the parking brake, lower the attachment to the ground, and stop the engine.



2. Check the engine intake hose, intake pipes, pipe clamps and hose bands for damage and tightness.

3. If damaged or loose, replace or retighten or contact your nearest Kawasaki dealer.

IMPORTANT

Severe engine damage may result from running with unfiltered air.

Do not operate engine if any leaks or defects are found on air intake system.

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Operating the Machine

WARNING

Stopping engine while machine is moving will cause loss of steering control which could cause serious injury or death.

Do not stop engine while machine is moving.

WARNING

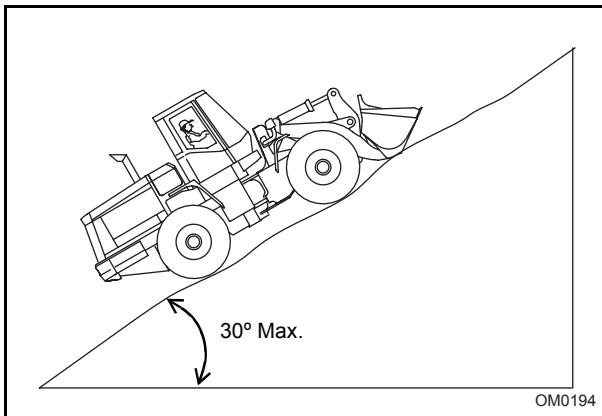
Moving machine in congested areas could result in death or serious injury.

Be sure area is clear of personnel and obstructions.

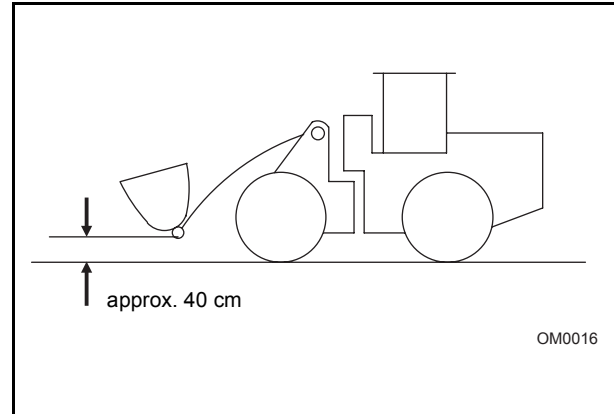
IMPORTANT

Operating machine on a grade may cause lack of lubrication resulting in severe engine or components damage.

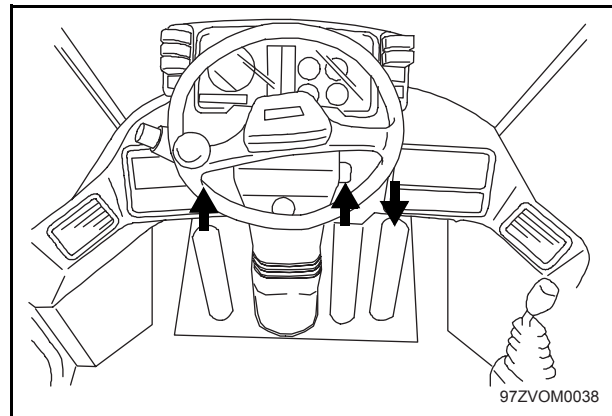
Do not operate machine on a grade over 30°.



Starting the Machine



1. Raise the bucket to the carry position approximately 40 cm above the ground.
2. Depress the brake pedal.
3. Push the parking brake switch to release the parking brake.
4. Turn the transmission shift lever to the desired travel speed mode and then shift to the desired direction.



5. Release the brake pedal then depress the accelerator pedal to drive the machine.

WARNING

When parking brake is released, machine could roll on a grade unexpectedly causing injury or death.

When starting machine on a grade, firmly depress brake pedal before releasing parking brake.

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OPERATION

Operating Techniques

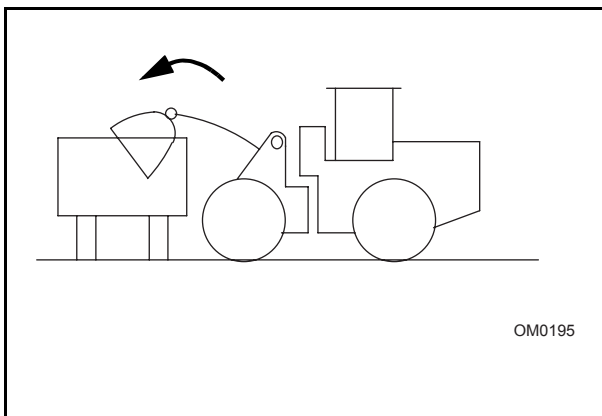
3. Return the boom control lever to the "Hold" position when the bucket reaches the enough height to clear the truck or hopper sideboards.

If the boom is equipped with the kickout device, the boom will automatically stop and the boom control lever will return to the "Hold" position when the bucket reaches the preset height.

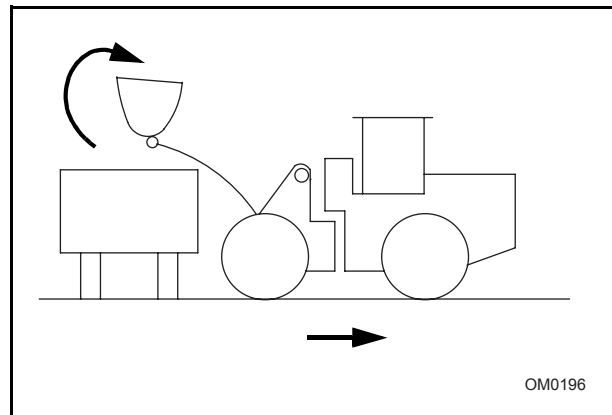
Holding the boom control lever in the "Raise" position will continue to raise the boom if required.

Refer to "Boom Kickout Adjustment" page 2.75 for adjustment of the preset height.

4. Position the machine in the center of the truck body or hopper to dump the load.



5. Push the bucket control lever forward to the "Dump" position to empty the bucket.



6. Roll back the bucket to clear the truck or hopper sideboards and lower the boom while reversing the machine.

! WARNING

Fast boom lowering motion may cause machine rear wheels to jump up, reducing stability and control.

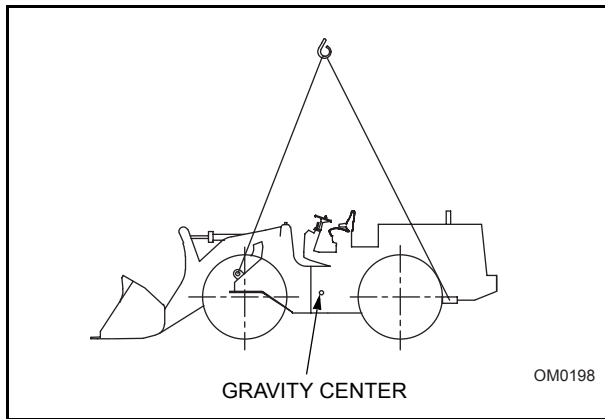
Do not lower boom using detented "Float" position especially when bucket is full.

2.82

SPECIAL PROCEDURES

Transportation

10. Determine the route for transporting the machine by taking into account the width, height and weight of the machine and truck.



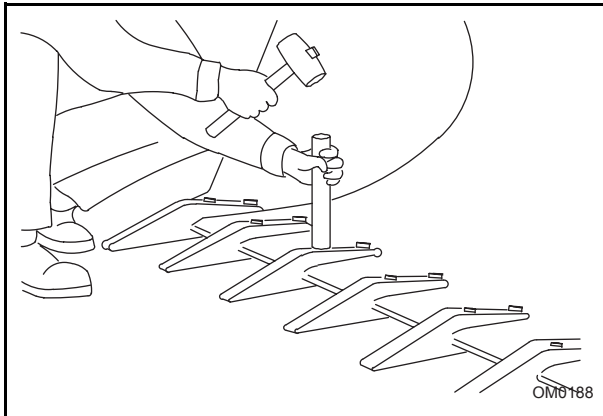
11. In the case that it is necessary to lift the machine, sling the machine at 4 fixing points (red painted) provided on the machine as shown.

Weight: 20 ton

3.8

MAINTENANCE

When Required Inspection and Maintenance



⚠ WARNING

Teeth and bucket edges are hardened steel which may chip when struck by steel hammer causing injury.

- Always wear eye protection.
- Use deadblow hammer or brass drift between hammer and tooth.
- Keep bystanders away from work area.

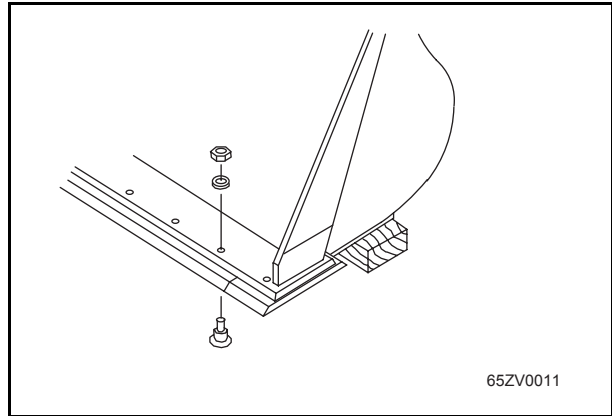
6. To prevent any clearance between the tooth and the edge of the bucket, tighten the nut partially, then hit the top of the tooth.
7. Tighten the nuts to 696~834 N-m.
8. Retighten them after operating the machine for a few hours.

NOTE

For non-Kawasaki buckets or teeth, consult the manufacturer for the proper procedures.

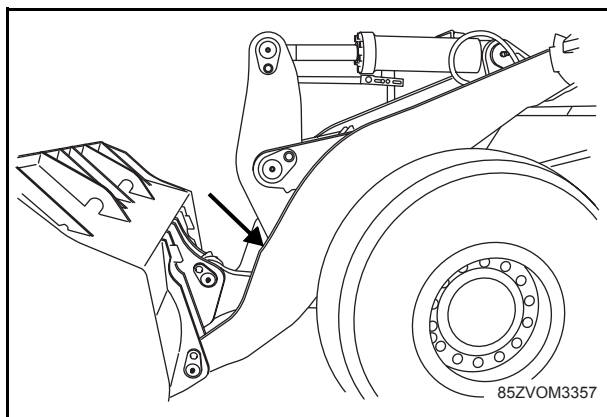
Replace Cutting Edge

1. Park the machine on level ground and apply the parking brake.

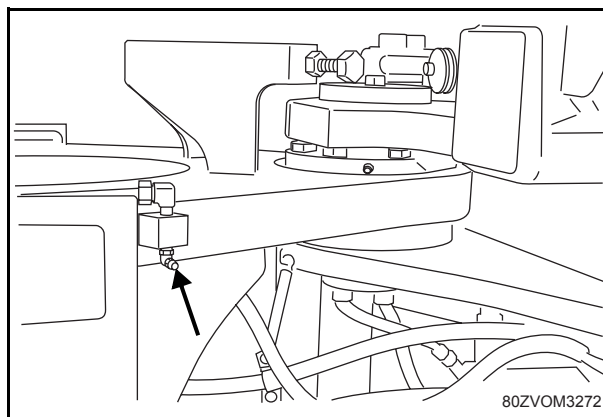


2. Raise the bucket to a convenient height and put blocks under the bucket to prevent it from coming down.
3. Stop the engine.
4. Remove the cutting edge. Clean all contact surfaces (bottom of bucket, top of cutting edge).
5. If other side of the cutting edge is not worn, turn it around and install it so that the new side faces the front. If both sides are worn, install a new cutting edge.
6. Install all bolts and tighten them to 696~834 N-m.
7. Retighten them after a few hours operation.

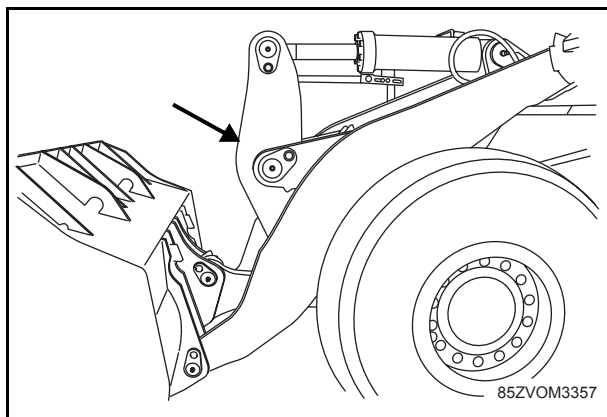
3.18
MAINTENANCE
Every 50 Hours or 1 Week



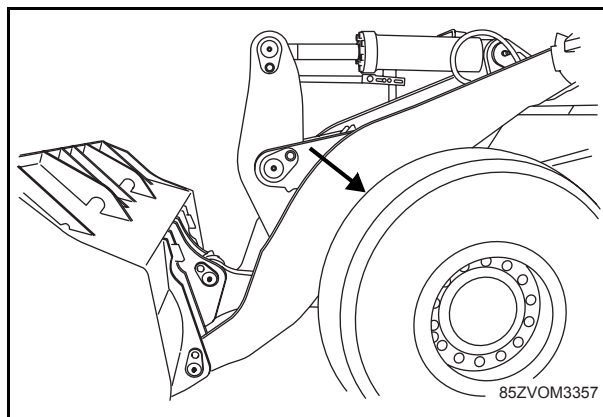
- Lever-Rod
(one place)



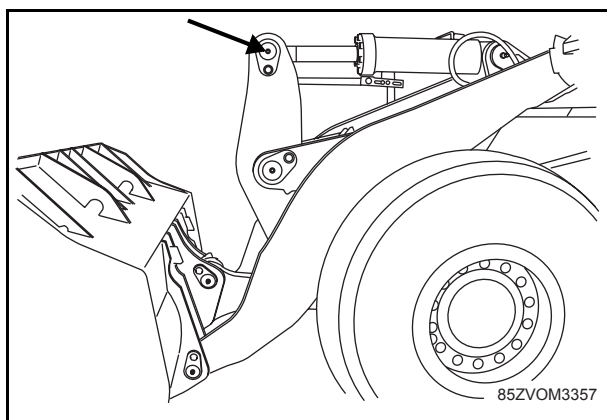
- Bucket Cylinder-Front Chassis
(one place)



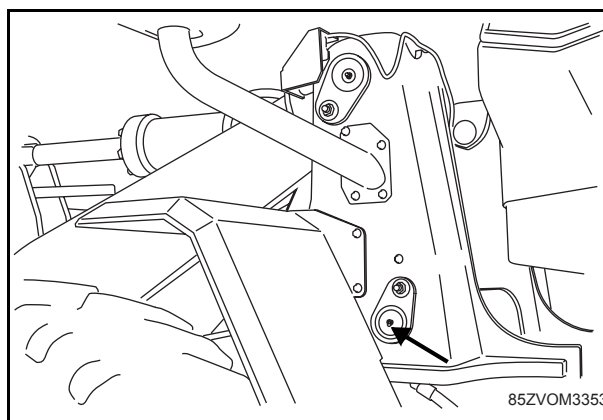
- Lever-Boom
(one place)



- Boom Cylinder-Boom
(two places)



- Bucket Cylinder-Lever
(one place)



- Boom Cylinder-Front Chassis
(two places)

Replace DCA4 Coolant Filter Cartridge

CAUTION

Pressurized radiator tank is used for this machine.

Spray of hot coolant may cause burns.

Stop engine and allow radiator and coolant to cool completely, then open cap slowly to relieve pressure.

CAUTION

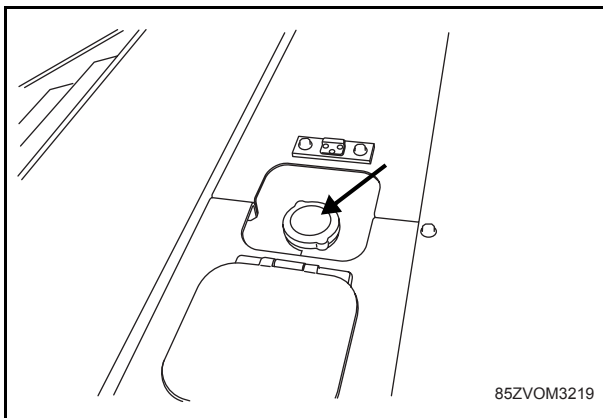
Hot coolant and engine components can cause burns.

Avoid contact with coolant or engine components.

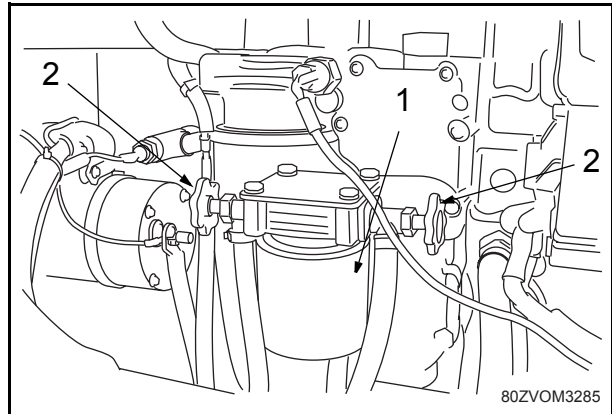
NOTE

The filter WF2073 is initially installed when the machine is shipped from the factory. This filter can not be obtained as a spare parts.

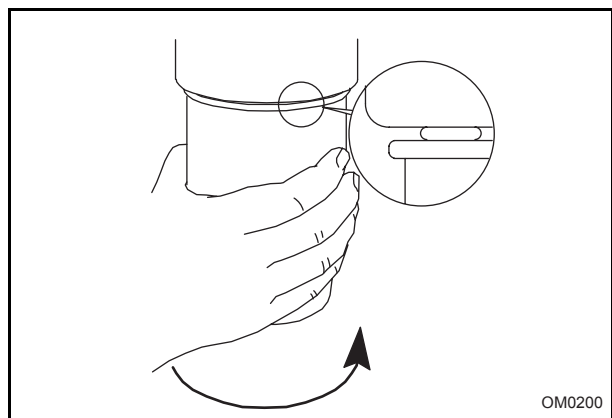
1. Park the machine on level ground, apply the parking brake, lower the attachment to the ground, and stop the engine.



2. Slowly open the radiator cap.



3. Close the coolant shut-off valves (2).
4. Remove and properly dispose of the coolant filter (1).
5. Clean the filter head gasket surface.
6. Apply a light film of clean engine oil to the gasket surface of a new DCA4 coolant filter cartridge (WF2071).



7. Install the filter firmly by hand. Follow the instructions supplied with the filter.
8. Open the coolant shut-off valves and install the radiator cap.
9. Run the engine and check for coolant leaks.
10. Idle the engine for about five minutes to purge all the air from the coolant.
11. After air has been purged from the system, stop the engine and check the coolant level again.

3.38

MAINTENANCE

Every 1000 Hours or 6 Months

6. Remove the flange (3) together with the pipe and suction strainer.
7. Remove the suction strainer from the flange, brush off any debris and clean with solvent.

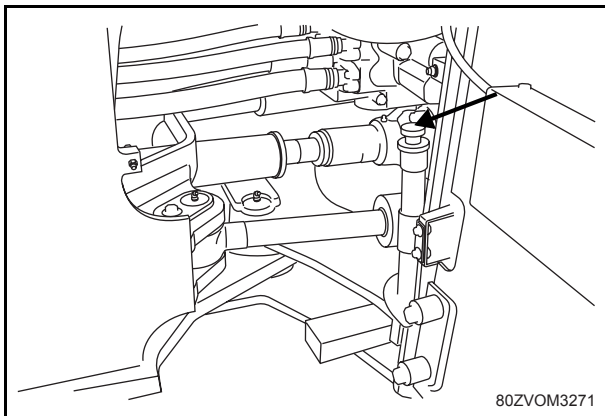
It is normal for a few fine particles to be on the strainer. Large pieces or a large quantity of particles indicates a problem.

Contact a Kawasaki dealer.

8. Reinstall the drain plug and the strainer with a new gasket.
9. Tighten the four bolts (2) to 53.0 N-m.
10. Fill with the specified oil.

Refer to "Recommended Lubricants" page 3.54.

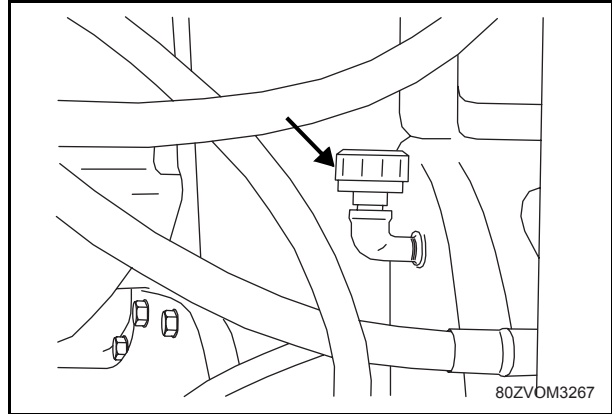
11. Idle the engine and check for leaks.



12. Check the oil level with the dipstick. Add the specified oil if necessary to maintain the proper oil level.

Refer to "Check Transmission Oil Level" page 2.58 and "Recommended Lubricants" page 3.54.

Clean or Replace Transmission Breather

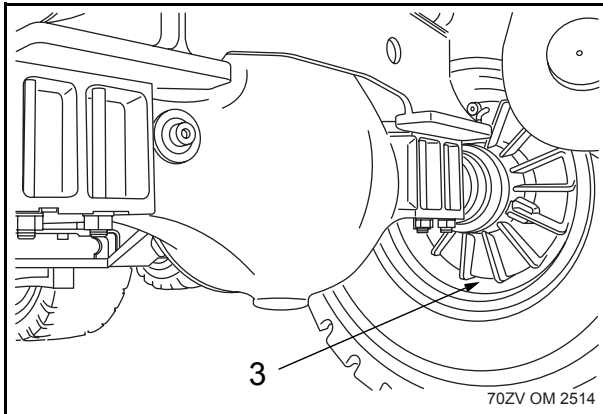


1. Park the machine on level ground, apply the parking brake, lower the attachment to the ground, and stop the engine.
2. Remove the breather from the transmission case.
3. Clean the breather in the cleaning oil tub, then spray dry compressed air from the bottom of the breather.

Even after cleaning, if the breather is not clean enough, replace the breather.

4. Install the breather onto the transmission case.

3.48
MAINTENANCE
Every 2000 Hours or 1 Year



4. Remove the level plug (2) and drain plug (3) from the planetary gear housing, using a 12 mm hex (Allen) wrench.

Some fine metallic powder will normally stick to the magnet plug (2).

Simply wipe it off.

5. Drain the oil (about 12 liters) into a suitable container.
6. Dispose of the waste oil properly.

CAUTION

Used oil may cause skin disease.

Do not allow used oil to remain on skin for prolonged periods of time.

Clean skin thoroughly with soap and water.

7. Install and tighten the drain plug.
8. Refill the recommended oil through the level plug hole (2) until the oil comes out from the hole.

Refer to "Recommended Lubricants" page 3.54.
9. Install and tighten the level plug.
10. Repeat these steps for all four planetaries.

Clean Fuel Tank

CAUTION

Escaping fuel is flammable and harmful to skin.

Do not smoke while draining moisture and sediment from tank.

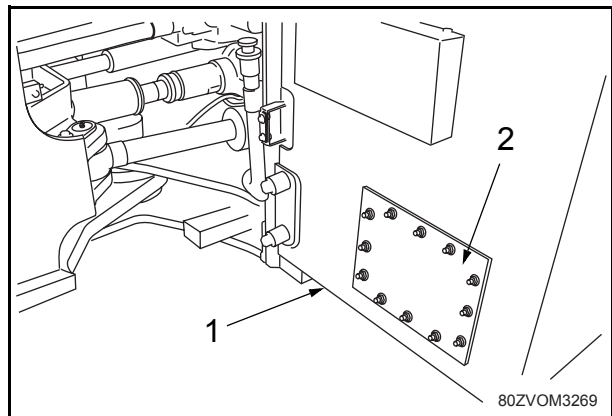
Do not drain with engine running.

Do not allow fuel to remain on skin for an extended period of time. Wash thoroughly with soap and water.

NOTE

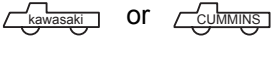
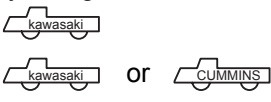
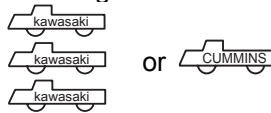
It is easiest to clean the fuel tank when the fuel is almost empty.

1. Park the machine on level ground, apply the parking brake, lower the attachment to the ground, and stop the engine.






2. Open the drain cock (1) on the fuel tank.
3. Drain the remaining fuel into a suitable container.
4. Remove the nuts with a 17 mm wrench to remove the inspection cover (2).
5. Clean inside of the tank.
6. Install the inspection cover with a new gasket. Tighten the nuts evenly. Do not overtighten.
7. Close the drain cock.
8. Fill the fuel tank.
9. Check for any leaks at the cover and plug.

ELECTRICAL

| PROBLEM | POSSIBLE CAUSES | SOLUTIONS | PAGE |
|--|--|--|---------------------|
| Charge lamp lights up | Broken or slipping alternator belt Defective battery Alternator failure Defective wiring Defective wiring to ground (short) | Adjust or replace belt Replace battery  | 2.51 |
| Starter motor does not turn when starter switch key is turned to "START" | Transmission not in NEUTRAL Insufficient battery charge Starter switch failure Defective wiring Starter motor failure | Shift to NEUTRAL Battery charge or booster  | 1.22 2.78 |
| Starter motor turns engine slowly | Hydraulic control levers not in NEUTRAL Insufficient battery charging Engine oil viscosity too high (thick) Poor connection at batteries or ground Defective wiring Starter motor failure Steering valve failure | Move levers to NEUTRAL Battery charge or booster Replace oil Clean and tighten all terminals  | 2.5 2.78 3.24 |

STEERING

| PROBLEM | POSSIBLE CAUSES | SOLUTIONS | PAGE |
|----------------|--|---|--------------|
| Hard steering | Tires are underinflated Severe conditions (over loaded, deep mud, etc.) Oil pressure too low Steering valve failure Steering cylinder failure Defective Orbitrol® Pump failure | Check/adjust tire pressure Change operation  | 3.21 |
| Will not steer | Articulation stopper in locked position Excessive load on steering Steering valve failure Orbitrol® failure Pump failure Relief valve failure Steering cylinder failure Blocked screen filter | Move articulation stopper to "STORED" position Reduce load  Clean filter | 1.21 3.52 |
| Steering Drift | Excessively cold oil / wrong grade oil Steering control valve failure Steering pilot valve failure | Warm oil / Replace oil with proper viscosity for temperature  | 3.54 |

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