

**OPERATION &
MAINTENANCE
MANUAL**

WHEEL LOADER

80ZIV

WITH NISSAN NE6T04 ENGINE

SERIAL NUMBERS
80N2-0101 and up.

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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.

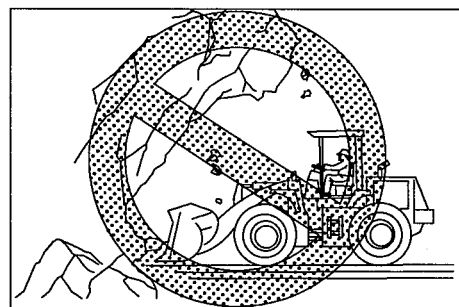
Keep the work site as clean and flat as possible.

Operate the machine slowly over rough ground and on slopes.

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

When working on slopes:

- Turn "OFF" the transmission cut-off selector switch.
- Keep the attachment low.
- Keep the attachment facing up the slope as often as possible.
- Drive directly up or down the slope -- never across the slope.
- Stop when changing direction on a slope to maintain stability.
- Never coast down a slope.
- Select the same low gear to go down the slope as was selected to climb the slope. This provides some engine braking.

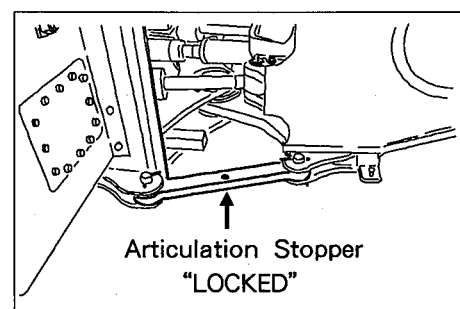


Do not enter the articulation area when engine is running.

When transporting the machine on a truck or lifting the machine, lock the articulation stopper in the "LOCKED" position.

Used oil may cause skin disease if allowed to remain on the skin for extended periods. Wash skin completely to remove used oils.

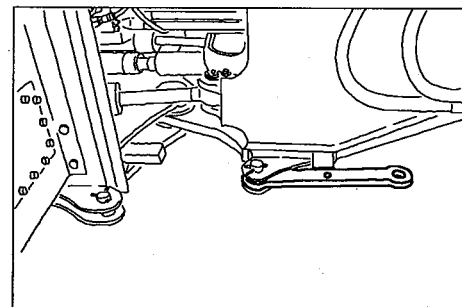
Drain and discard of used oil and coolant properly to prevent environmental pollution.



5. Insert the pin and clip pin. (This is the LOCKED position.)

To unlock:

1. Remove the clip pin and pin from the end of the Articulation Stopper on the rear chassis bracket.
2. Turn the link to the front chassis bracket.
3. Insert the pin and clip pin. (This is the STORED position.)
4. Tighten the bolt to fix the Articulation Stopper on the bracket.

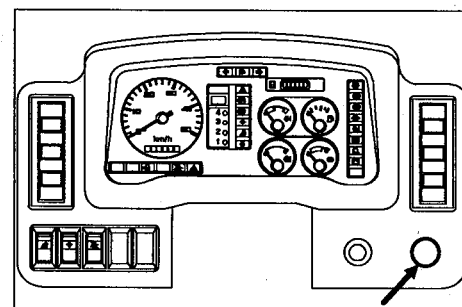
**Neutral Start System**

The transmission has a Neutral Start System which allows the engine to start only when the transmission shift lever is in NEUTRAL position.

Emergency Brake

When the service brake does not work, Emergency Brake can be applied manually;

- Pull the emergency brake switch to engage the Emergency Brake and disengage the transmission.

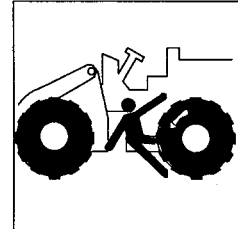


② Parking Brake Switch

⚠ WARNING

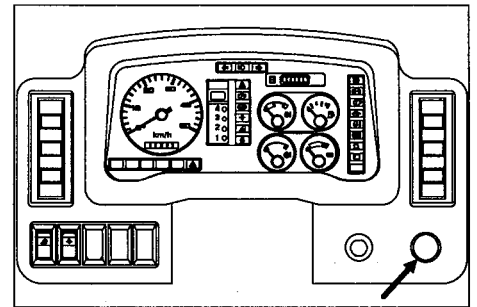
Accidental movement of machine may cause injury or death.

Be sure to pull Parking Brake Switch when parking or leaving machine, and during maintenance or transportation.



Parking Brake Switch is used for parking the machine. When the switch is pulled, the parking brake applies and the transmission is disengaged. When the switch is pushed, the parking brake is released.

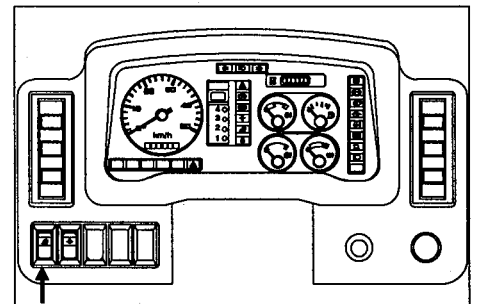
Should the directional shift lever be moved into the forward or reverse position while the parking brake is applied and the engine is running, a warning buzzer will sound.



③ Rear Working Light Switch

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.



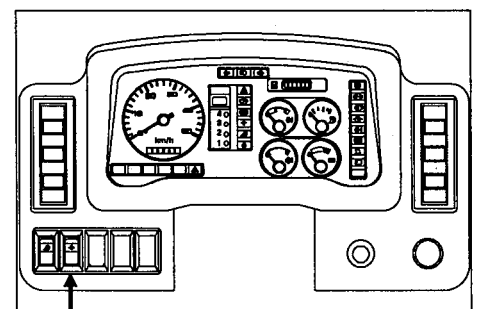
④ Transmission Cut-Off Selector Switch

Transmission Cut-Off Selector Switch is used to change the function of the left brake pedal.

Normally this switch should be "ON".

"OFF" ... When the left brake pedal (declutch brake pedal) is depressed, only the service brakes are engaged keeping the transmission directional clutch engaged. (brake only)

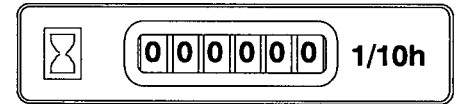
"ON" When the left brake pedal (declutch brake pedal) is depressed, the service brakes are engaged and the transmission directional clutch is disengaged (brake and declutch).



Refer to "Brake Pedals" page 32 for the function of the left brake pedal.

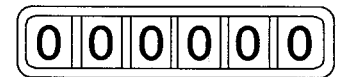
②⑤ **Hour Meter**

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



②⑥ **Odometer**

Indicates the accumulated travel distance in km.





②⑦ **Steering Hydraulic Warning Lamp (red)(option)**

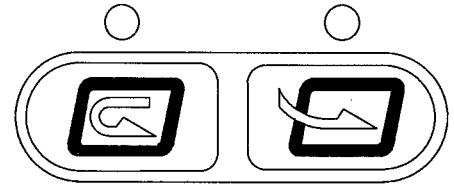
Lights up when the steering hydraulic pressure downs below specified when the engine is running.



③ Air Intake Control Switch

Air Intake Control Switch is used to select intake air, either outside air or recirculated air.

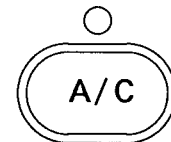
- Press () switch to allow filtered fresh air from outside the machine and pressurize the cab.
- Press () switch to recirculate and filter air inside the cab. The cab is heated or cooled more effectively with this mode.



④ Air Conditioner On-Off Switch

Air Conditioner On-Off Switch is used to turn on and off the air conditioner for cooling and dehumidifying function.

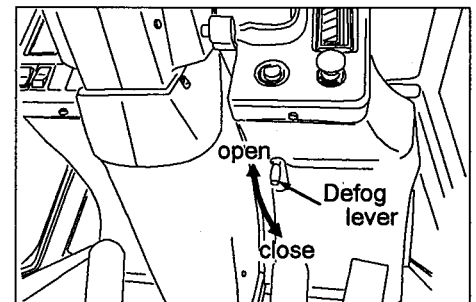
- With the switch pressed, the air conditioner turns on.
- Pressing the switch again will turn the air conditioner off.




⑤ Defog Lever

Defog Lever is used to open or close the vent D near the front windshield.

- Pull up the lever to open the vent D for defogging the front windshield.
- Push down the lever to close the vent D.



NOTE: When the engine start switch is turned off while air conditioner is operating, all switch settings are memorized except for the air flow control switch. Restart the engine turns on the air conditioner again with the former settings but with air flow in the middle () position.

Operation

Cooling

- For maximum cooling, open the vents B and C and close other vents.
- If the air in the cab is very hot, ventilate the cab by opening the door and window before cooling.
- In summer, the ideal air temperature is about 5°C (9°F) below the outside temperature.

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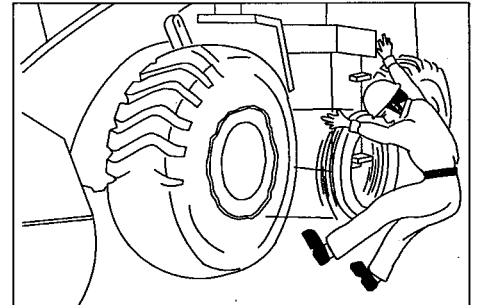
P. Check tire for damage

⚠ WARNING

Improper servicing or changing tires and rims can cause explosion resulting in serious injury or death.

Do not service or change tires and rims unless properly trained and equipped.

Contact your nearest Kawasaki loader dealer or tire manufacturer's local dealer for tire servicing or changing.



⚠ WARNING

Overheated tire may explode causing serious injury or death.

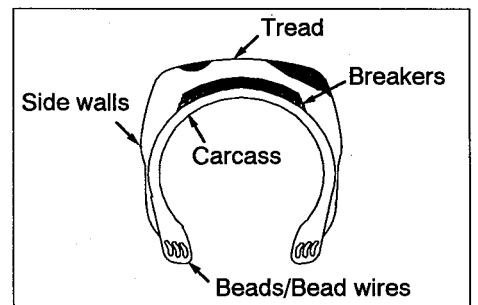
If overheated tire is suspected, do not approach tire to distance of less than 15m (50ft).

Stay away until tire and rim cool down.

If the following defects are found in tires, for safety reasons the tires should be replaced with new tires.

For the replacement contact Kawasaki loader dealer or a tire manufacturer's local dealer.

- Bead wire is broken or bent, or the tire is greatly deformed.
- Wear is excessive and the carcass ply (including breaker) is exposed for more than 1/4 of the circumference.
- Damage to the carcass exceeds 1/3 of the tire width.
- Tire layers are separated.
- Radial cracks reach the carcass.
- Deformation or damage which makes the tire unsuitable for use.



Lever Position	Selected Gear	Operating Condition
1	1st.	1.Excavating or scooping in a narrow space 2.Running downhill on a steep slope
2	2nd.	1.Scooping or loading loose material 2.Running downhill on a slope
3	3rd.	Carrying or roading
A	2nd.,3rd, or 4th. (automatically shifted)	Scooping, loading, carrying or roading

IMPORTANT

Using too high gear for job can cause torque converter overheating.

Use proper gear for each job.

SPECIAL PROCEDURES

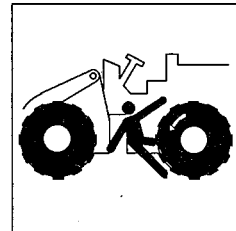
Adjustments

Bucket / Attachment Positioner Adjustment

⚠ WARNING

Accidental movement of machine can cause serious injury or death.

Apply parking brake and use wheel chocks to prevent sudden movement of machine.



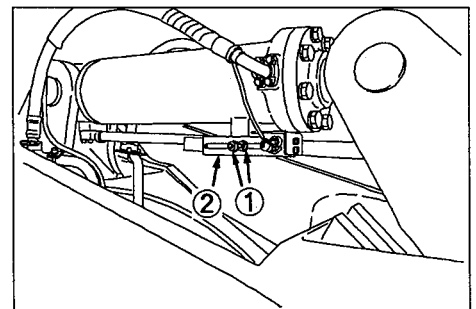
⚠ WARNING

Standing on tire, boom or linkage can cause accidents and serious injury or death.

Use safe sturdy platform to reach bucket positioner adjustment.



1. Park the machine on a level surface and apply the parking brake.
2. Lower the attachment to the ground, adjust it to the desired angle, set the bucket control lever to the hold position, and stop the engine.
3. Loosen the bolts ① with a 19mm wrench.



4. Move the bracket ② forward to increase, or rearward to decrease the attachment preset angle.
5. Tighten the bolts ①.
6. To test the adjustment; start the engine, raise the boom approximately half way, dump the attachment, and move the bucket control lever to the "Rollback" detent position to rollback the attachment.
When the preset angle is reached, the bucket control lever should return to the "Hold" position. Lower the attachment to the ground and confirm the proper angle has been set.

1. Check the following points.
Refer to "Check before Operation" page 58 and "Check after Starting the Engine" page 66.
 - Coolant level
 - Engine oil level
 - Hydraulic oil level
 - Brake oil level
 - Transmission oil level
 - Brake function
 - Steering function

2. Operate the machine as follows.
 - Run just the engine for five to ten minutes at low idle.

 - Move all cylinders of the hydraulic system full stroke 10 to 15 times.

 - Run the machine about 10m (30ft) in every gear and direction.

 - Move the steering full stroke each way about ten times.

After Storage

1. Loosen the drain cock or plug of the fuel tank and the hydraulic oil tank to drain any water into a suitable container. Dispose of properly.

2. Remove the covers and start the engine.

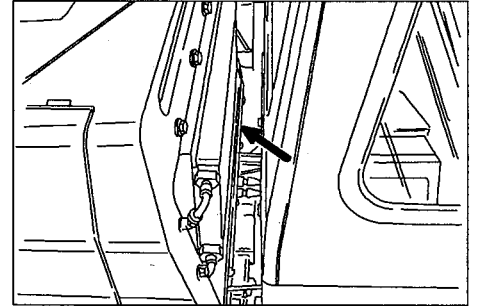
3. Replace engine and transmission oil with new specified oil after warming up both engine and transmission.
Refer to "Replace Engine Oil" page 114 and "Replace Transmission Oil" page 126.

4. Start the engine and check for any abnormalities.

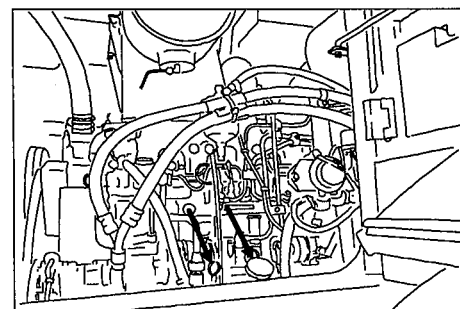
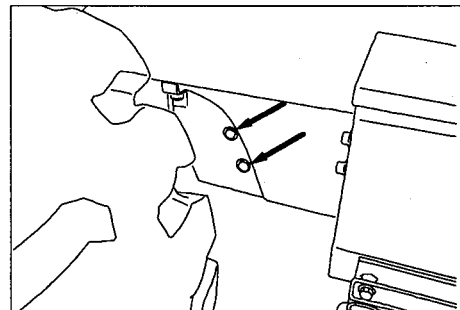
5. Warm up the machine until all gauges reach the normal range.

WHEN REQUIRED MAINTENANCE

1. Park the machine on a level surface, apply the parking brake, lower the attachment to the ground, and stop the engine.
2. Inspect the condenser and replace it if any damage is found.
3. Clean its fins using compressed air, a pressure washer, steam cleaner, or a soft brush. Be sure the air pressure is below 2kg/cm² (30psi). If a pressure washer or steam cleaner is used, keep the nozzle about 50cm (20in) away from the fins to prevent fin damage.
4. If water is used for the cleaning, cover the electrical parts of the engine and the electric condenser fan with plastic sheets. Remove the plastic after cleaning.



5. Remove the oil filter and properly dispose of it. Make sure the O-ring is removed with the filter.
6. Clean the oil filter head gasket surface.
7. Apply a light film of engine oil to the gasket surface of the new filter cartridge.
8. Install and tighten the filter until the gasket contacts filter head surface. Then tighten it by hand an additional three-fourths to one (3/4 to 1) turn.
9. Clean and install the oil drain plugs, and tighten to 7.8 kgf•m (57ft•lbs) torque.
10. Fill the engine with clean oil to the proper level. Refer to "Recommended Lubricants" page 138 for the oil specifications. Total system capacity including the filter is 16 liters (4.2 gal).
11. Idle the engine to inspect for leaks at the filter and the drain plugs.
12. Stop the engine. Wait approximately five (5) minutes to let the oil drain back to the oil pan.
13. Check the oil level again.
14. Add the specified oil if necessary to bring the oil level to the "H"(High) mark on the dipstick.
15. Properly dispose of or recycle the waste oil.



▲ CAUTION

Used engine oil may cause skin disease.

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

Clean skin thoroughly with soap and water.

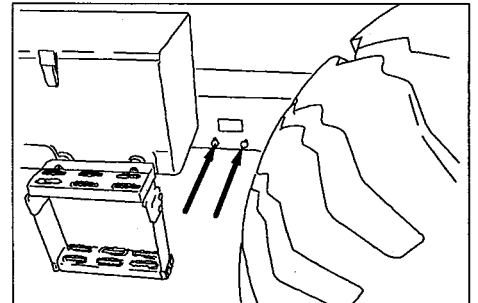
D. Check Moisture in Air Dryer (option)

⚠ CAUTION

Escaping pressurized air may cause injury.

Do not stand directly in front of air drain cock when draining air tank.

1. Park the machine on a level surface, apply the parking brake, lower the attachment to the ground, and stop the engine.
2. Pull the rings to check moisture in the air tank.
3. If no moisture comes out, the air dryer is operating normally.
4. If moisture is seen, refer to the Air Dryer Shop Manual to remove the air dryer and check the desiccant.
5. Replace the desiccant if it is soaked more than one-fifth (1/5) with water.

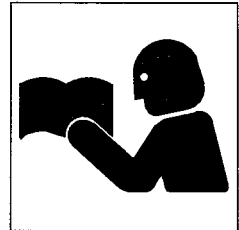


Every 2000 Hours or 1 Year Inspection and Maintenance

⚠ WARNING

Improper inspection or maintenance can cause injury or death.

Read, understand, and follow all warnings and instructions contained in "Safe Maintenance" page 11 before performing any inspection or maintenance procedures.



Every 2000 hours or 1 year, whichever comes first, perform the following inspection and maintenance in addition to the "Daily", "50 hours", "250 hours", "500 hours", and "1000 hours" inspections and maintenance.

A. Replace Hydraulic Oil

⚠ CAUTION

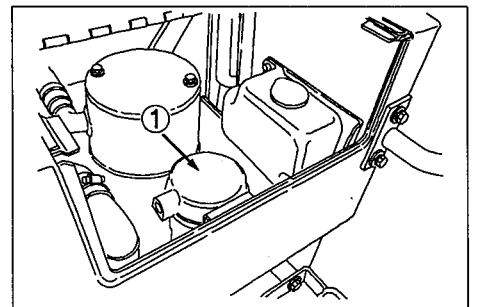
Pressurized hydraulic tank.

Pressurized hot oil can cause injury or burns.

Vent all pressure by pressing cap before opening.



1. Park the machine on a level surface, apply the parking brake, lower the attachment to the ground, and stop the engine.
2. Move the bucket and boom control levers back and forth to relieve the pressure.
3. Insert the key into the side of the filler cap ① and turn the key counterclockwise.
4. Press down the filler cap ① to relieve the tank pressure.
5. Remove the filler cap.



⚠ CAUTION

Hydraulic oil may be hot and can cause burns.

Avoid contact with hydraulic oil.

6. Prepare a suitable container to catch the draining oil (about 92 liters (24gal.)).

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