

# Operation & Maintenance Manual

SEAM059800T

**WA30-5**  
**WA50-3**

**WHEEL LOADER**

SERIAL NUMBERS WA30-26001 and up  
WA50-23001

**⚠ WARNING**

Unsafe use of this machine may cause serious injury or death. Operators and maintenance personnel must read this manual before operating or maintaining this machine. This manual should be kept near the machine for reference and periodically reviewed by all personnel who will come into contact with it.

**NOTICE**

Komatsu has Operation & Maintenance Manuals written in some other languages. If a foreign language manual is necessary, contact your local distributor for availability.

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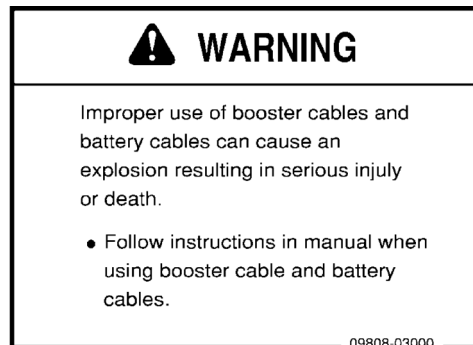
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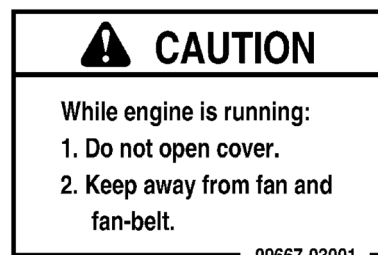
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(8) Precautions when handling battery cable (09808-03000)



(9) Caution for engine running (09667-03001)



(10) Caution for approach when machine moving (09812-13000)



(11) Warning for coming-down of work equipment (09807-C1201)



Sign indicates a crush hazard from falling off of working device.

Keep away when the working device is raised.

**VENTILATION FOR ENCLOSED AREAS**

Asbestos dust in the air can cause lung cancer if it is inhaled. There is danger of inhaling asbestos when working on jobsites handling demolition work or work handling industrial waste. Always observe the following.

- Spray water to keep down the dust when cleaning.
- Do not use compressed air for cleaning.
- If there is danger that there may be asbestos dust in the air, always operate the machine from an upwind position.
- All workers should use an approved respirator.
- Do not allow other persons to approach during the operation.



- Always observe the rules and regulations for the work site and environmental standards.

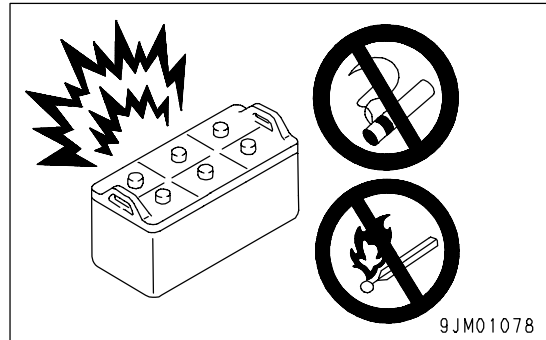
This machine does not use asbestos, but there is a danger that imitation parts may contain asbestos, so always use genuine Komatsu parts.

## BATTERY

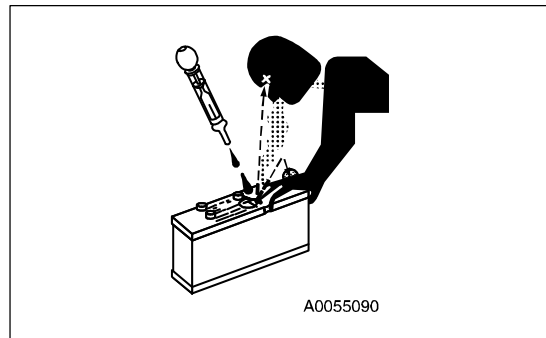
### BATTERY HAZARD PREVENTION

Battery electrolyte contains sulphuric acid, and batteries generate flammable hydrogen gas, which may explode. Mistaken handling can lead to serious injury or fire. For this reason, always observe the following precautions.

- Do not use or charge the battery if the battery electrolyte level is below the LOWER LEVEL line. This may cause an explosion. Always check the battery electrolyte level periodically and add distilled water to bring the electrolyte level to the UPPER LEVEL line.
- When working with batteries, always wear safety glasses and rubber gloves.
- Never smoke or use any flame near the battery.



- If you spill acid on your clothes or skin, immediately flush the area with large amount of water.
- If acid gets into your eyes, flush them immediately with large amount of water and seek medical attention.



- Before working with batteries, turn the starting switch to the OFF position.

As there is a hazard that sparks will be generated, always do as follows.

- Do not let tools or other metal objects make any contact between the battery terminals. Do not leave tools or other metal objects lying around near the battery.
- Always disconnect the negative (-) terminal (ground side) first when removing the battery; when installing the battery, connect the positive (+) terminal first, and connect the ground last. Tighten the battery terminals securely.
- Flammable hydrogen gas is generated when the battery is charged, so remove the battery from the chassis, take it to a well-ventilated place, and remove the battery caps before charging it.
- Tighten the battery caps securely.
- Install the battery securely to the determined place.

# OPERATION

 **WARNING**

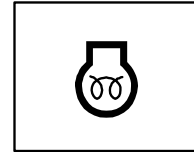
Please read and make sure that you understand the SAFETY section before reading this section.

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**PREHEATING PILOT LAMP**

This lamp (3) informs the operator that the glow plug is heated.

This lamp lights up when the starting switch is turned to the HEAT position, and goes out after 15 seconds.



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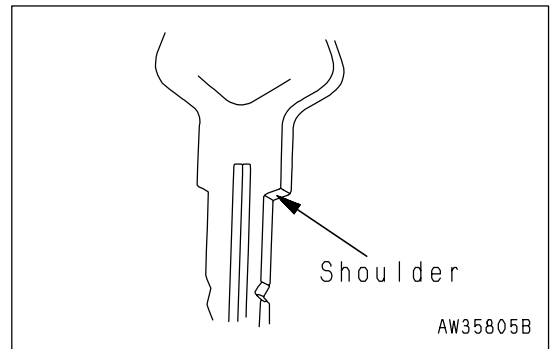
## CAP WITH LOCK

The fuel tank filler port is equipped with locks.  
Use the starting key to open and close the cap.

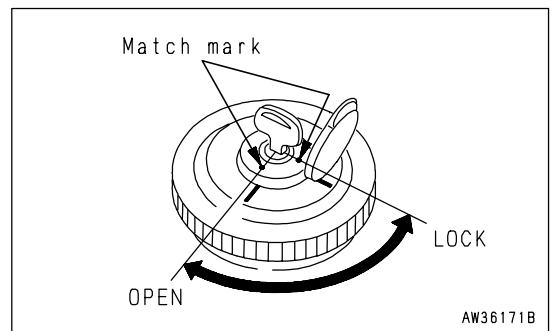
### METHOD OF OPENING AND CLOSING CAP WITH LOCK (FOR THE FUEL TANK FILLER PORT)

#### TO OPEN THE CAP

1. Insert the starting switch key into the cap as far as it will go (to the shoulder).  
If the starting switch key is turned before it is inserted all the way, it may break.



2. Turn the starting switch key clockwise, align the match mark on the cap with the rotor groove, then remove the cap.



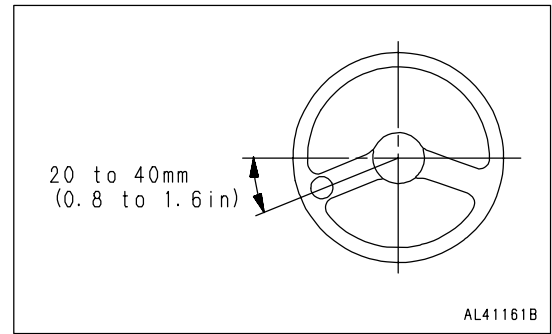
#### TO LOCK THE CAP

1. Screw the cap into place.
2. Turn the key counterclockwise and take the key out.

**CHECK PLAY OF STEERING WHEEL, CHECK OPERATION OF STEERING**

The play at the outside circumference of the steering wheel should be 20 to 40 mm (0.8 to 1.6 in).

If it is more than 40 mm (1.6 in) or the operation of the steering is not smooth, please contact your Komatsu distributor for inspection.

**CHECK ELECTRIC WIRING****WARNING**

- If the fuses frequently blow or if there are traces of short circuits on the electrical wiring, locate the cause immediately and carry out repairs, or contact your Komatsu distributor for repairs.
- Keep the top surface of the battery clean and check the breather hole in the battery cap. If it is clogged with dirt or dust, wash the battery cap to clean the breather hole.

Check for damage and wrong capacity of the fuse and any sign of disconnection or short circuit in the electric wiring. Check also for loose terminals and tighten any loose parts.

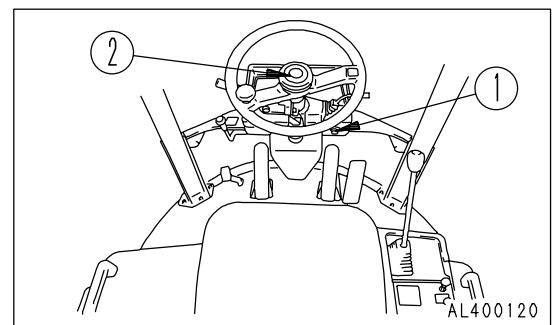
Particularly, check the wiring of the "battery", "starting motor" and "alternator" carefully.

When carrying out checks around the battery, always check if there is any accumulation of flammable material around the battery, and remove such flammable material.

Please contact your Komatsu distributor for investigation and correction of the cause.

**CHECK SOUND OF HORN**

1. Turn the starting switch (1) to ON.
2. Check for sound of horn by pushing the horn switch (2).



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## MOVING THE MACHINE (DIRECTIONAL, SPEED), STOPPING THE MACHINE

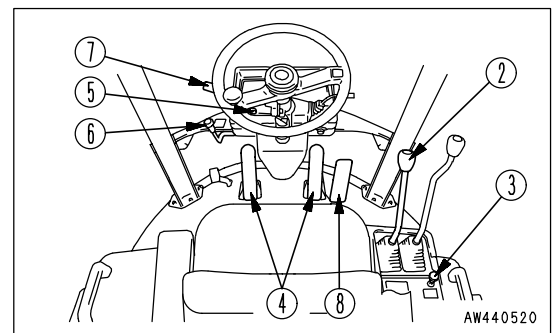
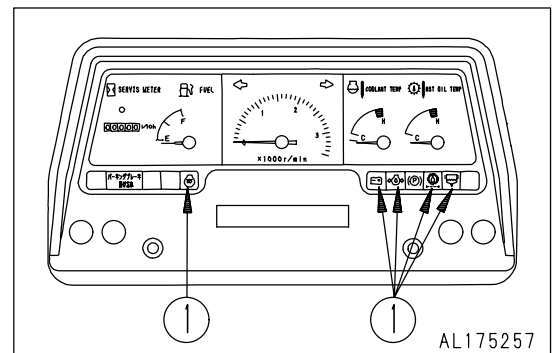


### WARNING

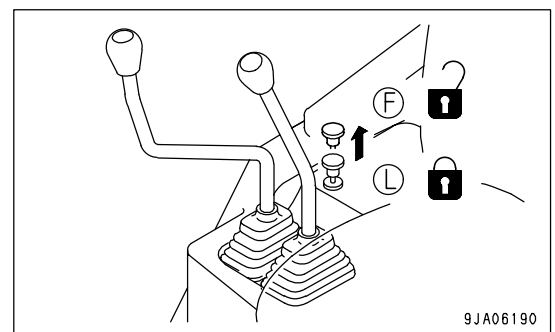
- When moving the machine off, check that the area around the machine is safe, then sound the horn before starting.
- Do not allow people to get near the machine.
- Clear the machine's travel path of any obstacle.
- Pay a particular attention to the blind spot at the rear of the machine, when traveling the machine in reverse.

### PREPARATIONS FOR MOVING MACHINE

1. Check that warning pilot lamp (1) is not lighted up.



2. Set safety lock (3) of work equipment control lever (2) to the FREE position.

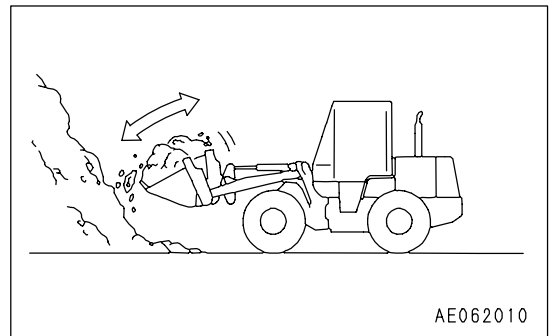
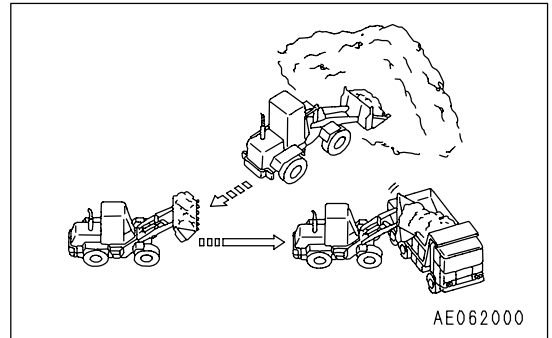


**V-SHAPE LOADING**

Position the dump truck so that the direction of approach of the wheel loader is approx. 60° from the direction of approach to the stockpile. After loading the bucket, drive the wheel loader in reverse, then turn it to face the dump truck and travel forward to load the dump truck.

The smaller the turning angle of the wheel loader is, the more efficient the operation becomes.

When loading a full bucket and raising it to the maximum height, first shake the bucket to stabilize the load before raising the bucket. This will prevent the load from spilling to the rear.

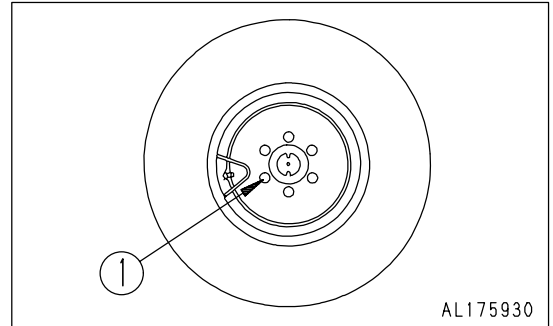
**PRECAUTIONS WHEN PILING UP LOADS**

When forming products into a pile, be careful not to let the rear counterweight come into contact with the ground. Do not set the bucket to the DUMP position when piling-up loads.

## REPLACING TIRES

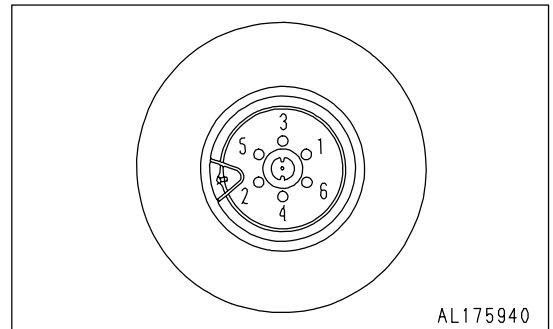
### REMOVING TIRES

1. Lower the work equipment to the ground and apply the parking brake.
2. Loosen all wheel hub bolts (1) one turn.
3. Jack up the machine.
4. Remove wheel hub bolts (1), then replace the tire.



### INSTALLING TIRE

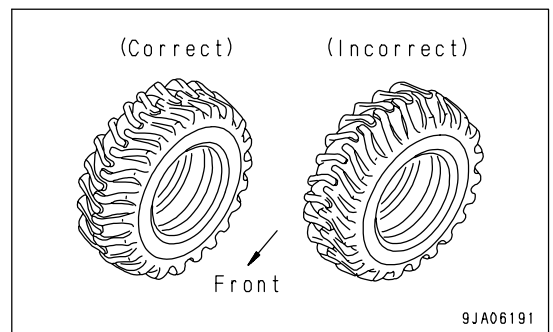
1. Coat the wheel hub bolts and tap holes with oil.
2. With the tire jacked up off the ground, tighten the wheel hub bolts lightly in the order shown in the diagram on the right.
3. After tightening the wheel hub bolts partially, lower the machine to the ground, then tighten to the specified torque.



	Tightening torque N·m (kgf·m, lbf)
WA30, 50	441 ± 49 (45 ± 5, 325.5 ± 36.2)

### DIRECTION FOR INSTALLING TIRE

The tire tread has a lug shape (to provide strong rimpull and flotation even on soft ground), so be careful to install with the tread pattern facing in the correct direction.



## COLD WEATHER OPERATION

### PRECAUTIONS FOR LOW TEMPERATURE

If the temperature becomes low, it becomes difficult to start the engine, and the coolant may freeze, so do as follows.

### FUEL AND LUBRICANTS

Change to fuel and oil with low viscosity for all components. For details of the specified viscosity, see "USE OF FUEL, COOLANT AND LUBRICANTS ACCORDING TO AMBIENT TEMPERATURE (PAGE 4-8)".

### COOLANT



#### WARNING

- Antifreeze is toxic. Be careful not to get it into your eyes or on your skin. If it should get into your eyes or on your skin, wash it off with large amounts of fresh water and see a doctor at once.
- When changing the coolant or when handling coolant containing antifreeze that has been drained when repairing the radiator, please contact your Komatsu distributor. Antifreeze is toxic, so do not let it flow into drainage ditches or spray it on to the ground surface.
- Antifreeze is flammable, so do not bring any flame close. Do not smoke when handling antifreeze.

### NOTICE

- Never use methanol, ethanol, or propanol-based antifreeze.
- Never use any water-leakage prevention agent or any antifreeze containing such an agent.
- Do not mix different types of antifreeze.

For details of the antifreeze mixture when changing the coolant, see "CLEAN INSIDE OF COOLING SYSTEM (PAGE 4-18)".

Use a Permanent Antifreeze (ethylene glycol mixed with corrosion inhibitor, antifoam agent, etc.) meeting the standard requirements as shown below. With permanent antifreeze, no change of coolant is required for a year. If it is doubtful that an available antifreeze meets the standard requirements, ask the supplier of that antifreeze for information.

Standard requirements for permanent antifreeze

- SAE J1034
- FEDERAL STANDARD O-A-548D

### REMARK

In areas where permanent antifreeze is not available, it is possible to use antifreeze whose main component is ethylene glycol and does not contain any corrosion inhibitor. (Such antifreeze can be used for the winter season only.) However, in such a case, the cooling water must be changed twice a year (spring and fall), so use permanent antifreeze when possible.

**CHASSIS**

- ( ): Always contact your Komatsu distributor when dealing with these items.
- In cases of abnormalities or causes which are not listed below, contact your Komatsu distributor for repairs.

Problem	Main causes	Remedy
<b>HST</b>		
Engine is running but machine does not move	<ul style="list-style-type: none"> <li>• Parking brake is applied</li> <li>• Directional lever is not shifted properly</li> <li>• No electricity flows to directional lever (electrical type)</li> <li>• Lack of oil in hydraulic tank</li> <li>• Inching control linkage disconnected</li> </ul>	<ul style="list-style-type: none"> <li>• Release parking brake</li> <li>• Shift lever properly</li> <li>• Check fuses and wiring harness connector</li> <li>• Add oil to specified level. See EVERY 250 HOURS SERVICE or EVERY 3 MONTHS.</li> <li>• Connect linkage (check brake control)</li> </ul>
Even when engine is run at full throttle, machine only move slowly and lacks power	<ul style="list-style-type: none"> <li>• Lack of oil in hydraulic tank</li> <li>• Inching control linkage disconnected</li> <li>• Hydraulic oil temperature is low</li> </ul>	<ul style="list-style-type: none"> <li>• Add oil to specified level. See EVERY 250 HOURS SERVICE or EVERY 3 MONTHS.</li> <li>• Connect linkage (check brake control)</li> <li>• Carry out warming-up operation</li> </ul>
Oil overheats	<ul style="list-style-type: none"> <li>• Too much oil or too little oil</li> <li>• Clogged oil cooler core</li> </ul>	<ul style="list-style-type: none"> <li>• Add or drain oil to specified level. See WHEN REQUIRED.</li> <li>• Clean oil cooler core</li> </ul>
Noise generated	<ul style="list-style-type: none"> <li>• Lack of oil</li> </ul>	<ul style="list-style-type: none"> <li>• Add or drain oil to specified level. See WHEN REQUIRED.</li> </ul>
<b>Axle</b>		
Noise generated	<ul style="list-style-type: none"> <li>• Lack of oil</li> </ul>	<ul style="list-style-type: none"> <li>• Add or drain oil to specified level. See WHEN REQUIRED.</li> </ul>
<b>Wet type disc brake</b>		
Brake is not applied when pedal is depressed	<ul style="list-style-type: none"> <li>• Brake linkage disconnected</li> <li>• Disc has reached wear limit</li> </ul>	<ul style="list-style-type: none"> <li>• Connect linkage (check brake control)</li> <li>( • Replace disc)</li> </ul>
Brake drags or remains applied	<ul style="list-style-type: none"> <li>• Improper adjustment of brake pedal linkage</li> </ul>	<ul style="list-style-type: none"> <li>• Adjust (check brake control)</li> </ul>
<b>Parking brake</b>		
Braking effect is poor	<ul style="list-style-type: none"> <li>• Linkage is loose</li> <li>• Disc is worn</li> </ul>	<ul style="list-style-type: none"> <li>• Adjust (check brake control)</li> <li>( • Replace disc)</li> </ul>

## WEAR PARTS

Wear parts such as the filter element, air cleaner element, bolt on edge, etc. are to be replaced at the time of periodic maintenance or before their abrasion limits.

The wear parts should be changed correctly in order to use the machine economically.

For part change, Komatsu genuine parts of excellent quality should be used.

When ordering parts, please check the part number in the parts book.

## WEAR PARTS LIST

The parts in parentheses are to be replaced at the same time.

Item	Part No.	Part Name	Q'ty	Replacement frequency
Engine oil filter	YM129150-35151	Cartridge	1	Every 500 hours (or every 6 months)
Fuel filter	YM119802-55800	Cartridge	1	Every 500 hours (or every 6 months)
Hydraulic filter	363-60-35310	Cartridge	1	Every 1000 hours (or every 1 year)
HST oil filter	363-18-31470 (07000-02065)	Element (O-ring)	1 (1)	Every 1000 hours (or every 1 year)
Water separator	YM119802-55710	Element	1	-
Air cleaner	YM121120-12900	Element	1	-
Cutting edge (WA30)	362-972-1111	Edge	1	-
	(02090-11050)	(Bolt)	(6)	
	(02205-11015)	(Nut)	(6)	
	(01643-31645)	(Washer)	(6)	
Cutting edge (WA50)	363-70-21190	Edge	1	-
	(02090-11050)	(Bolt)	(7)	
	(02205-11015)	(Nut)	(7)	
	(01643-31645)	(Washer)	(7)	

WHEN REQUIRED

REPLACE AIR CLEANER ELEMENT

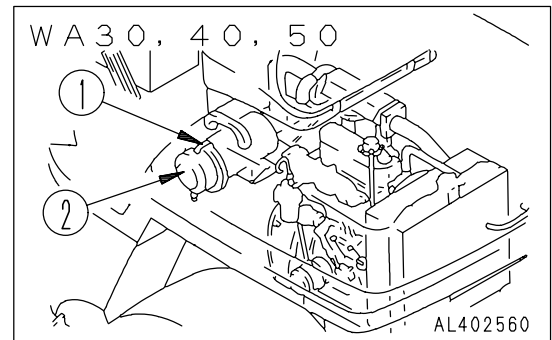
 **WARNING**

- If inspection, cleaning, or maintenance is carried out with the engine running, dirt will get into the engine and damage it. Always stop the engine before carrying out these operations.
- When using compressed air, there is danger that dirt may be blown around and cause serious injury. Always use safety glasses, dust mask, and other protective equipment.

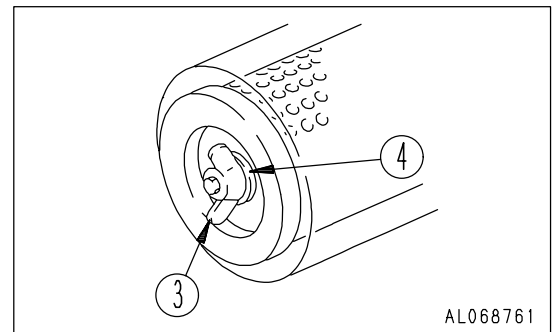
NOTICE

Replace the element if it has been cleaned six times or used for one year.

1. Open the tilt hood at the rear of the machine.
2. Loosen clip (1) and remove dust cup (2).



3. Loosen wing nut (3) and take out the element.
4. Blow with dry compressed air (max. 0.69 MPa (7 kgf/cm<sup>2</sup>, 99.4 PSI)) to clean the inside of the case and the dust cup.
  - 1) Install a cover to the air intake after removing the element.
  - 2) When installing the element, be sure to assemble the seal washer.
  - 3) When installing the dust cup, install with the arrow mark on the dust cup pointing up.



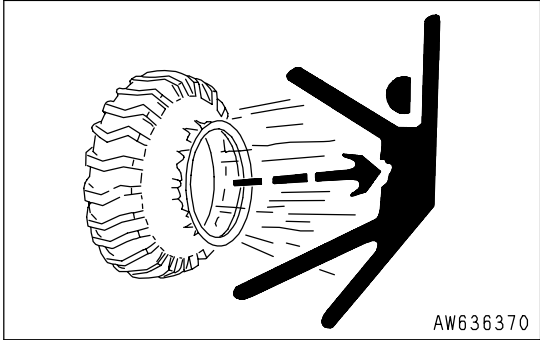
- 4) Replace the element which has been cleaned 6 times repeatedly or used throughout a year.
  - 5) Never remove the air cleaner element when the engine is running.
  - 6) If seal washer (4) is damaged or the thread of wing nut (3) is damaged, replace with new parts.
5. After cleaning, assemble the new element and install the dust cup.

**SELECTION AND INSPECTION OF TIRES**

**⚠ WARNING**

If a tire or a rim is handled wrongly, the tire may burst or may be damaged and the rim may be broken and scattered, and that can cause serious injury or death.

- Since maintenance, disassembly, repair and assembly of the tires and rims require special equipment and skill, be sure to ask a tire repair shop to carry out the work.
- Do not heat or weld the rim to which the tire is installed. Do not make a fire near the tire.



**SELECTION OF TIRES**

**⚠ WARNING**

Select the tires according to the conditions of use and the weight of the attachments on the machine. Use only specified tires and inflate them to the specified pressure.

Select the tires according to the conditions of use and the weight of the attachments of the machine. Use the following table.

Since the travel speed indicated on the speedometer varies with the tire size, consult your Komatsu distributor when using optional tires.

		Maximum load [kg(lb)]	Tire size
WA30	Front and rear wheel	1,225 (2,701)	12.5/70-16-6PR
WA50	Front and rear wheel	1,680 (3,704)	15.5/60-18-8PR

**CHECK FOR LOOSE WHEEL HUB BOLTS, TIGHTEN**

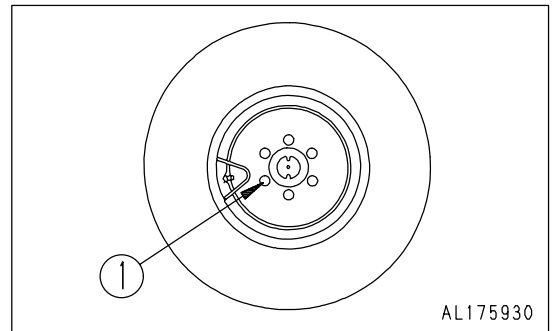
If wheel hub bolts (1) are loose, tire wear will be increased and accidents may be caused.

1. Check for loose nuts, and tighten if necessary.

When checking for loose nuts, always turn the nuts in the direction of tightening to check.

Tightening torque:  $441 \pm 49$  N·m ( $45 \pm 5$  kgf·m,  $325 \pm 36$  ft. lbs.)

2. If any wheel bolt is broken, replace all the wheel bolts for that wheel.



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