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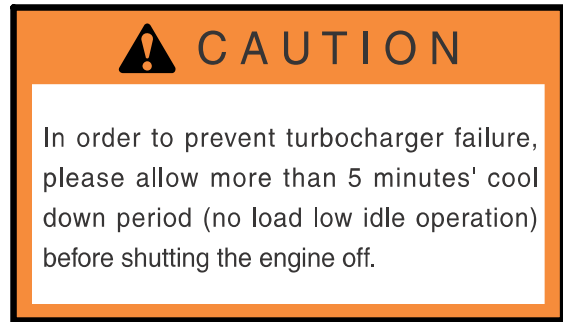
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12) **TURBOCHARGER** (item 16)

This warning label is positioned on the right side window of the cab.

- ▲ **In order to prevent turbocharger failure, please allow more than 5 minutes' cool down period (no load low idle operation) before shutting the engine off.**



7807AFW20

13) **LIFT & TIE** (item 18)

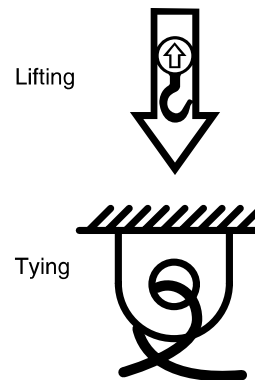
This label is positioned on the both side of the front and rear frame.

- **Lifting point**

In order to lift the machine, attach the lifting devices to the lifting points.

- **Tying point**

In order to tie down the machine, attach the tie-downs to the tying points.

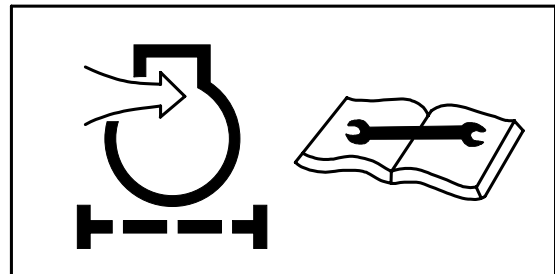


75790FW04

14) **AIR CLEANER** (item 19)

The warning label is positioned on the air cleaner.

- ▲ **Periodic and proper inspection, cleaning and change of elements prolong engine life time and maintain the good performance of engine.**



21070FW01

15) **RADIATOR CAP** (item 20)

This warning label is positioned on the radiator cover.

- ▲ **Never open the filler cap while engine running or at high coolant temperature.**



77070FW11

## FIRE PREVENTION AND EXPLOSION PREVENTION

### Regeneration

The exhaust gas temperatures during regeneration will be elevated. Follow proper fire prevention instructions and use the disable regeneration function when appropriate.

### General

All fuels, most lubricants, and some coolant mixtures are flammable.

To minimize the risk of fire or explosion, the following actions are recommended.

Always perform a Walk-Around Inspection, which may help you identify a fire hazard.

Do not operate a machine when a fire hazard exists. Contact your dealer for service.



3001SH01

Understand the use of the primary exit and alternative exit on the machine.

Do not operate a machine with a fluid leak. Repair leaks and clean up fluids before resuming machine operation. Fluids that are leaking or spilled onto hot surfaces or onto electrical components can cause a fire. A fire may cause personal injury or death.

Do not weld on or drill holes in the engine cover. Flammable material such as leaves, twigs, papers, trash may accumulate in engine compartment.

Remove flammable material such as leaves, twigs, papers, trash and so on. These items may accumulate in the engine compartment or around other hot areas and hot parts on the machine.

Keep the access doors to major machine compartments closed and access doors in working condition in order to permit the use of fire suppression equipment, in case a fire should occur.

Clean all accumulations of flammable materials such as fuel, oil, and debris from the machine.

Do not operate the machine near any flame.

Keep shields in place. Exhaust shields (if equipped) protect hot exhaust components from oil spray or fuel spray in a break in a line, in a hose, or in a seal. Exhaust shields must be installed correctly.

Do not weld or flame cut on tanks or lines that contain flammable fluids or flammable material. Empty and purge the lines and tanks. Then clean the lines and tanks with a nonflammable solvent prior to welding or flame cutting. Ensure that the components are properly grounded in order to avoid unwanted arcs.

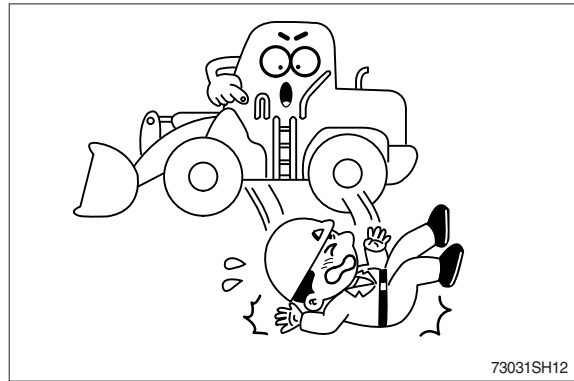
Dust that is generated from repairing nonmetallic hoods or fenders may be flammable and/or explosive. Repair such components in a ventilated area away from open flames or sparks. Use suitable Personal Protection Equipment (PPE).

Inspect all lines and hoses for wear or deterioration. Replace damaged lines and hoses. The lines and the hoses should have adequate support and secure clamps. Tighten all connections to the recommended torque. Damage to the protective cover or insulation may provide fuel for fires.

## 2. DURING OPERATING THE MACHINE

Use the handle and footstep when getting on or off the machine.

Do not jump on or off the machine.

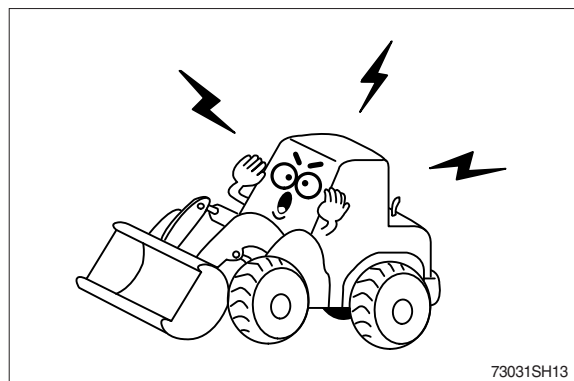


Sound the horn to warn nearby personnel before operating the machine.

### KEEP RIDERS OFF MACHINE

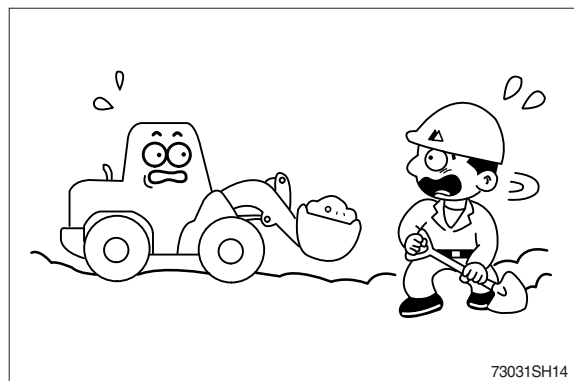
Riders on a machine are subject to injury such as being struck objects and being thrown off the machine.

Only allow the operator on the machine. Keep riders off.

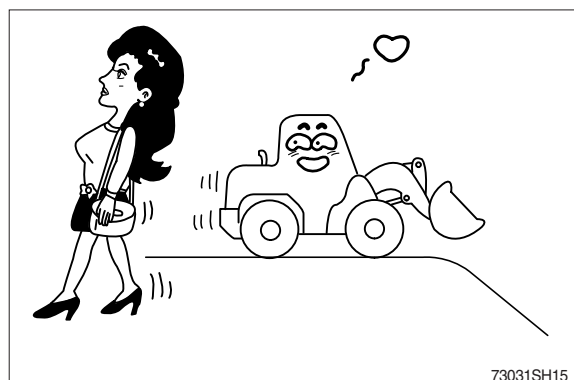


Operate carefully to make sure all personnel or obstacles are clear within the working range of the machine.

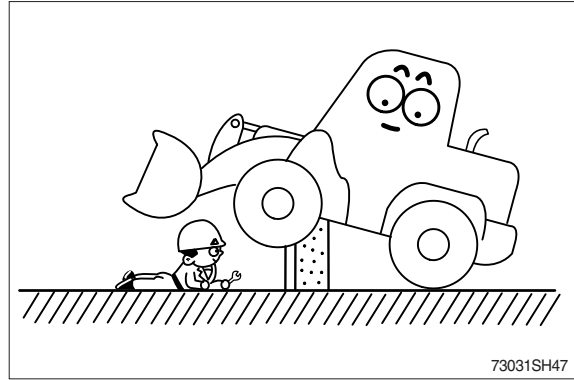
Place safety guards if necessary.



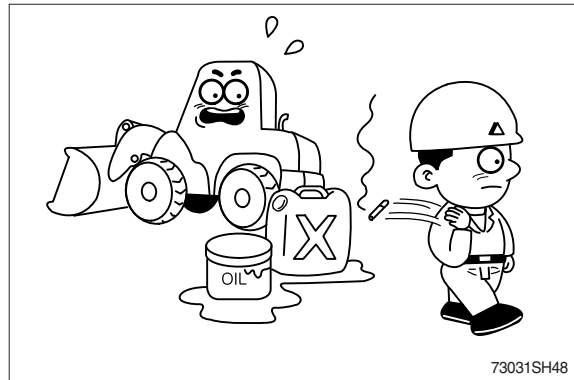
When using the work equipment, pay attention to jobsite.



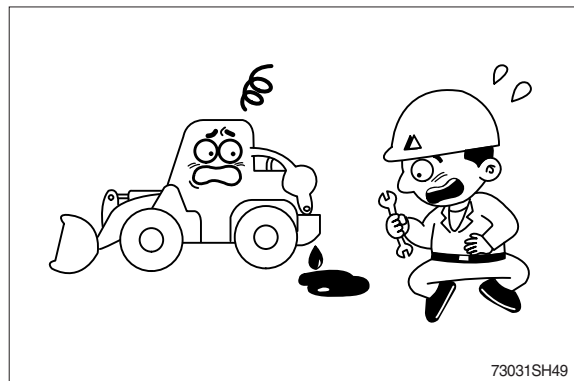
Do not work below the machine.  
When working under or around the bucket or linkage, with the bucket raised, proper support must be provided for the bucket and / or the linkage.



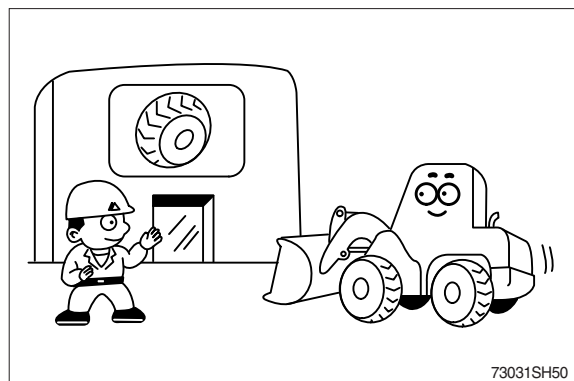
There is the danger of fire in fuel and oil.  
Store in cool dry area, away from any open flames.  
Do not refuel the machine while smoking or when near open flame or sparks.  
Always stop engine before refueling machine.



Spilled grease and oil are dangerous to safety.  
Keep your machine always clean and dry.



Disassembly, reassembly and repair of tire requires special skills and equipment.  
Contact a tire repair shop.

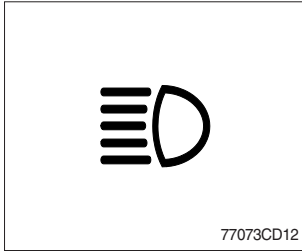


## 4. SPECIFICATION FOR MAJOR COMPONENTS

### 1) ENGINE

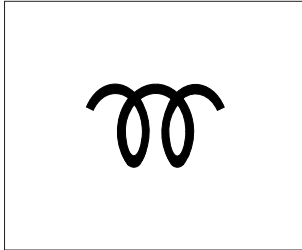
Item	Specification
Model	Cummins QSB6.7 / HYUNDAI HE6.7
Type	4-cycle turbocharged and charge air-cooled diesel engine
Control type	Electronic control
Cooling method	Water cooling
Number of cylinders and arrangement	6 cylinders, in-line
Firing order	1-5-3-6-2-4
Combustion chamber type	Direct injection type
Cylinder bore × stroke	107 × 124 mm (4.2" × 4.9")
Piston displacement	6730 cc (410cu in)
Compression ratio	17.2 : 1
Rated horse power (Net)	170 hp at 2100 rpm
Maximum torque at 1400 rpm (Net)	82 kgf · m (593 lbf · ft)
Engine oil quantity	18 l (4.8 U.S. gal)
Wet weight	485 kg(1069 lb)
High idling speed	2230 ± 50 rpm
Low idling speed	800 ± 25 rpm
Rated fuel consumption	252 g/kW · hr
Starting motor	Nippondenso 228000-7902 (24V-3.7kW)
Alternator	Delco Remy 24SI (24V-70Amp)
Battery	2 × 12V × 160Ah

(4) High beam pilot lamp



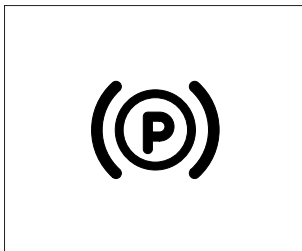
- ① This lamp works when the illuminating direction is upward.
- ② This lamp comes ON when the dimmer switch is operated, e.g., when passing another vehicle.

(5) Preheat pilot lamp



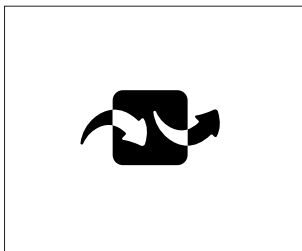
Refer to page 4-5.

(6) Parking brake pilot lamp

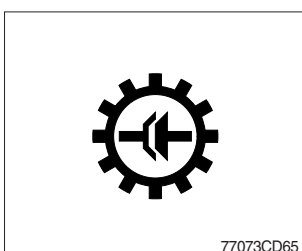


- ① When the parking brake is actuated, the lamp lights ON.
- ※ Check the lamp is OFF before driving.

(7) Maintenance pilot lamp

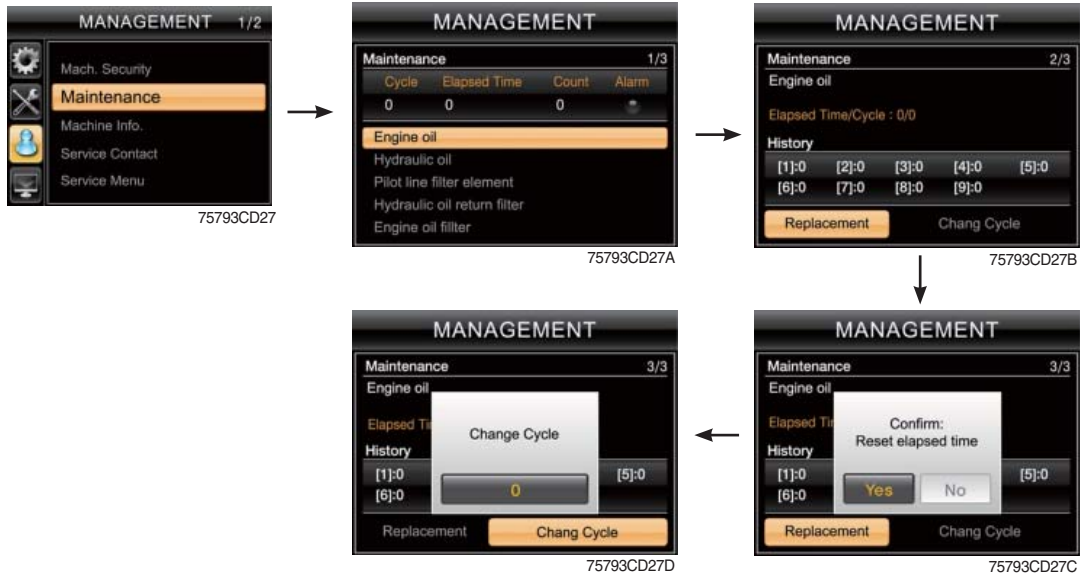


(8) Clutch cut off pilot lamp



Refer to page 3-26.

## ② Maintenance



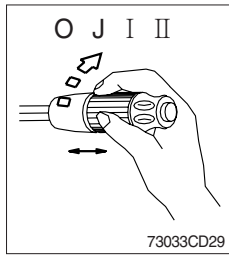
- Alarm (⚙️) : Warning  
Replacement : The elapsed time will be reset to zero.  
Change cycle : The change or replace cycle can be changed in the unit of 50 hours.
- To change cycle, press ◀ or ▶/⏹.
- **Change or replace interval**

No	Item	Interval
1	Engine oil	500
2	Hydraulic oil	★ <sup>1</sup> 2000 ★ <sup>2</sup> 5000
3	Pilot line filter element	250
4	Hydraulic oil return filter	250
5	Engine oil filter	500
6	Fuel filter element	500
7	Fuel pre-filter	500
8	Hydraulic tank air breather	250
9	Radiator coolant	2000
10	Transmission oil and filter	1000
11	Axle oil (front and rear)	1500

★<sup>1</sup> : Conventional hydraulic oil

★<sup>2</sup> : Hyundai genuine long life hydraulic oil

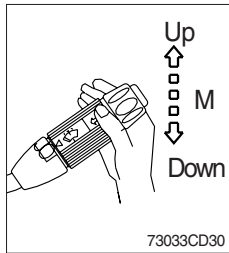
## 19) MULTI FUNCTION SWITCH



### (1) Front wiper and washer switch

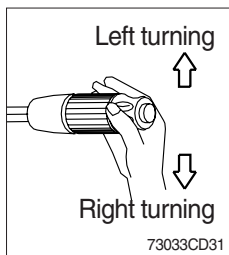
- ① When the switch is in J position, the wiper moves intermittently.
- ② When placed in I or II position, the wiper moves continuously.
- ③ If you push the grip of the lever, washer liquid will be sprayed and the wiper will be activated 2-3 times.

※ **Check the quantity of washer liquid in the tank. If the level of the washer liquid is LOW, add the washer liquid (in cold, winter days) or water. The capacity of the tank is 1 liter.**



### (2) Dimmer switch

- ① This switch is used to turn the head lights direction.
- ② Switch positions
  - Up : To flash for passing
  - Middle : Head lights low beam ON
  - Down : Head lights high beam ON
- ③ If you release the switch when it's in up position, the switch will return to middle.



### (3) Turning switch

- ① This switch is used to warn or signal the turning direction of the machine to other vehicles or equipment.
- ② Push the lever up for turning left, pull the lever down for turning right.



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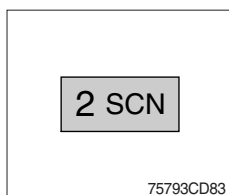
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### (5) File scan (SCN)



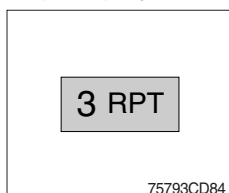
- ① During USB play, press SCN button to play the first 10 seconds of each file on the whole file on the USB (SCN mark will appear on the LCD display).

When a desired file is reached, press the SCN button again to cancel the function.

The unit will then play the selected file.

- ※ In case of playing MP3 file, when the SCN (scan) button is pressed and held for longer than 2 seconds, the SCN mark will blink on the LCD display and all files in the selected directory will be introduced until the file scan mode is cancelled by pressing the SCN button again or by activating the random or repeat functions.

### (6) Repeat play selector (RPT)

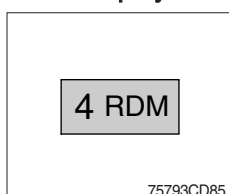


- ① During USB play, press RPT button to play the selected file repeatedly (RPT will appear on the LCD display).

Play of the file will continue to repeat until this button is pressed again and the RPT disappears from the LCD display.

- ※ In case of playing MP3 file, when the RPT button is pressed and held longer than 2 seconds, the RPT mark will blink on the LCD display and play all files in the selected directory and will be repeated until the directory repeat mode is cancelled by pressing the repeat button again or by activating the scan or random functions (RPT mark will disappear from LCD display).

### (7) Random play selector (RDM)

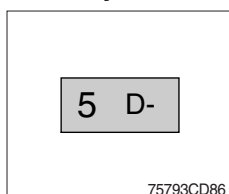


- ① During USB play, press RDM button to play the files on the USB in a random shuffled order (RDM will appear on the LCD display). The file select function will also select file in the random order instead of the normal process.

The random play mode can be cancelled by this button again.

- ※ In case of MP3 file, when the random button is pressed and held longer than 2 seconds, the RDM mark will blink on the LCD display and play all files in directory randomly until the directory random mode is cancelled by pressing the random button again or by activating the scan or repeat functions (RDM mark will disappear from LCD display).

### (8) Directory down



- ① Press D- button briefly while playing MP3. The previous directory is located each time you press this button.

## ■ GENERAL

### (1) Power and volume button



#### ① Power ON / OFF button

Press power button (1) to turn the unit on or off.

#### ② Volume UP/DOWN control knob

Turn VOL knob (1) right to increase the volume level.

Turn VOL knob (1) left to decrease the volume.

After 5 seconds the display will return to the previous display mode.

#### ③ Initial volume level set up

I-VOL is the volume level the unit will play at when next turned on.

To adjust the I-VOL level, press and hold VOL button (1) for longer than 2 seconds. The current volume level displays on the display panel.

Then turn button (1) right or left to set the volume level as the I-VOL level.

#### ④ Clock ON/OFF control

The CLOCK was default at off status. To turn CLOCK ON, press and hold VOL button (1) for longer than 2 seconds to display I-VOL, then short press VOL again, turn VOL knob while CLOCK OFF display, then the CLOCK ON will be displayed.

※ **Due to time tolerance, the clock display on the Audio unit might have little difference.**

#### ⑤ Clock adjustment

With CLOCK ON selected, press VOL knob again after CLOCK ON display, the hour will blink, turn VOL knob right or left to adjust hour.

Simply press VOL again, the minute will blink, turn VOL knob to adjust minute. Then press VOL again to confirm the clock once finished.

#### 4) Bluetooth connection and disconnection

- (1) When established bluetooth connection between this audio unit and the cellular phone, bluetooth icon on the display appears and then the display shows HF/AV CONN when handsfree & AV profile connected.



- (2) To disconnect bluetooth link  
Press and hold CALL END button (4) for 2 seconds, it shows DIS CON and disappears bluetooth icon on the display.



- (3) To disconnect bluetooth link  
Press CALL button (3) briefly, it blinks bluetooth icon on the display while bluetooth is being connected. If the connection is completed, it appears bluetooth icon on the display.

- ※ When your cellular phone battery is at low charge, the bluetooth connection may occasionally be lost. To maintain good connectivity ensure that your phone battery is adequately charged.
- ※ In case of failure of bluetooth pairing :
  - Delete item in paired list on your phone.
  - Reset both phone by power off/on and the audio unit by ACC off/on.
- ※ Connecting priority of handsfree profile is higher than headset profile.
- ※ The headset mode does not support caller ID, reject call and call Transfer.

#### 5) Using the audio unit as a handsfree device

- (1) When the audio unit is ringing, it shows CALL and follows with the phone number \*\*\*\*\* on the display.



- (2) To accept call  
Press CALL button (4), it appears ANSWER CALL and follows TALKING on the display.

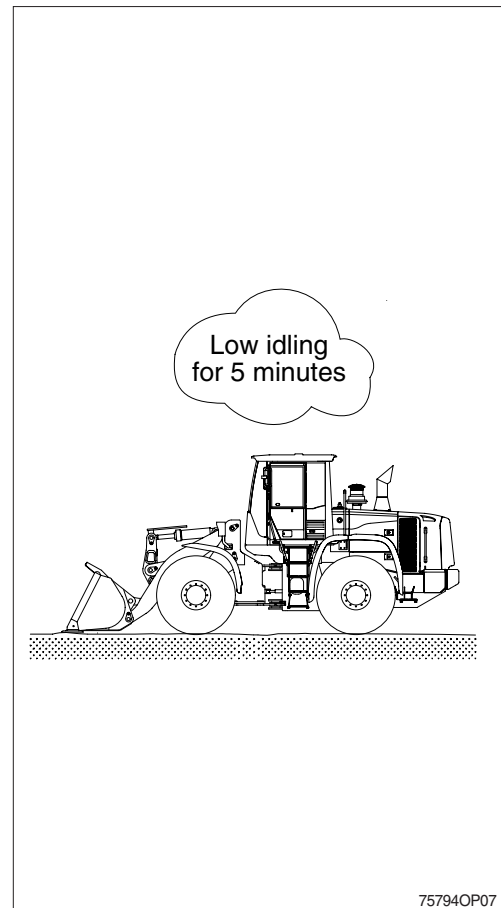
- (3) To end call  
To end call, press CALL END button (5), it appears REJECT on the display.

- ※ If reject call is activated in your phone, then your cellular phone does not support reject call function.

## 6) TO STOP THE ENGINE

- ※ If the engine is abruptly stopped before it has cooled down, engine life may be greatly shortened. Consequently, do not abruptly stop the engine apart from an emergency.
- ※ In particular if the engine has overheated, do not abruptly stop it but run it at medium speed to allow it to cool gradually, then stop it.

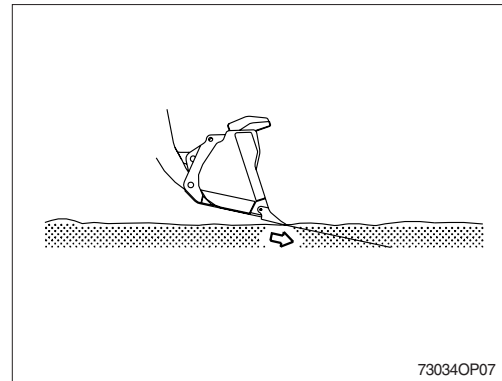
- (1) Place the gear selector lever in neutral.
- (2) Push the parking brake switch to the ON position.
- (3) Run the engine for five minutes at low idle with no load.
- (4) Return the key of starting switch to the OFF position.
- (5) Remove the key to prevent other people using the machine.
- (6) Turn the hydraulic safety lever in the lock position.
- (7) Lock the cab door.



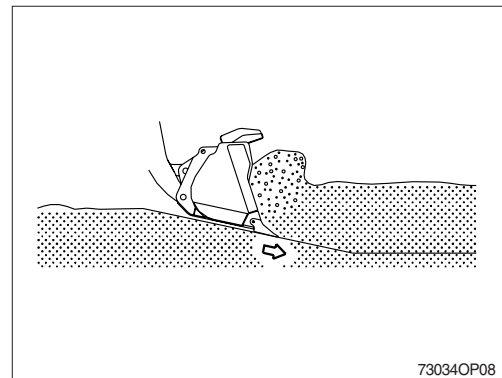
## (2) Excavation on level ground

Advance the machine with the bucket lowered slightly and make sure that the bucket is evenly loaded on both sides.

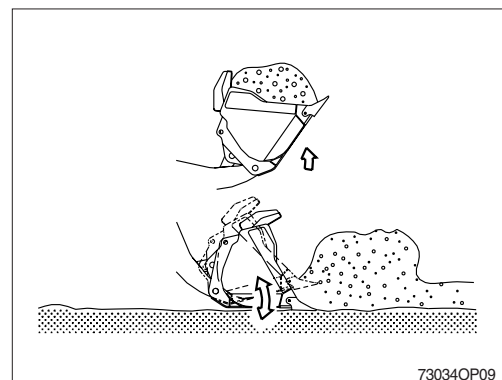
- ① Lower the bucket edge slightly.



- ② Advance the machine and lift the bucket using the bucket control lever to dig out the soil.



- ③ Advance the machine while controlling the depth of digging with the control lever.
  - ※ Do not press the bucket heavily into the ground. It may damage its driving force.
  - ※ Use the bucket suitable to the working condition.
  - ※ When excavating, prevent the excavation force from applying only one side of the bucket.



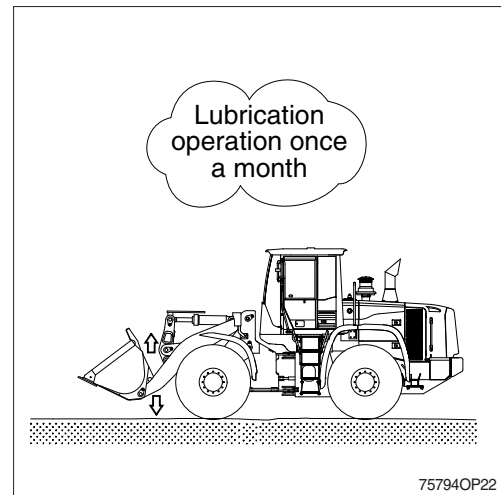
## 6) DURING STORAGE

Start engine and move the machine and working equipment once a month and apply lubrication to each part.

- ※ Check the level of engine oil and coolant and fill if required when starting engine.
- ※ Clean the anticorrosive on the piston rod of cylinder.
- ※ Operate the machine such as traveling, turning, and work equipment operation to make sure enough lubrication of all functional components.

### ※ BATTERY

- ① Once a month, start the engine for 15 minutes (or use a charger) to charge the battery.
- ② Every 2 months, check the battery voltage and keep battery voltage over 25.08V.
- ③ If the machine stock period is over 6 months, disconnect the battery negative (-) terminal.



## 1. INSTRUCTIONS

### 1) INTERVAL OF MAINTENANCE

- (1) You may inspect and service the machine by the period as described at page 6-10 based on service meter of monitor.
- (2) Shorten the interval of inspect and service depending on site condition. (Such as dusty area, quarry, sea shore and etc.)
- (3) Practice the entire related details at the same time when the service interval is doubled.  
For example, in case of 250 hours, carry out all the maintenance 「each 250 hours, each 100 hours and daily service」 at the same time.



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### 2) PRECAUTION

- (1) Start maintenance after you have the full knowledge of machine.
- (2) The cluster and monitor installed on this machine do not entirely guarantee the condition of the machine.  
Daily inspection should be performed according to chapter 6, Maintenance.
- (3) Engine and hydraulic components have been preset in the factory.  
Do not allow unauthorized personnel to reset them.
- (4) Ask to your local dealer or Hyundai for maintenance advise if unknown.
- (5) Drain the used oil and coolant in a container and handle according to the method of handling for industrial waste to meet with regulations of each province or country.

#### 4) EVERY 250 HOURS SERVICE

Check items	Service	Page
Wheel nuts	Check, Tight	6-30, 31
Fuel tank (water, sediment)	Drain	6-23
Brake line filter (strainer)	Check, Clean	6-28
Battery (voltage)	Check	6-41, 42
Hydraulic oil return filter (-#0286)	Replace	6-27
Pilot line filter element	Replace	6-27
Hydraulic tank air breather element	Replace	6-27
Air conditioner and heater outer filter	Check, Clean	6-44

#### 5) EVERY 500 HOURS SERVICE

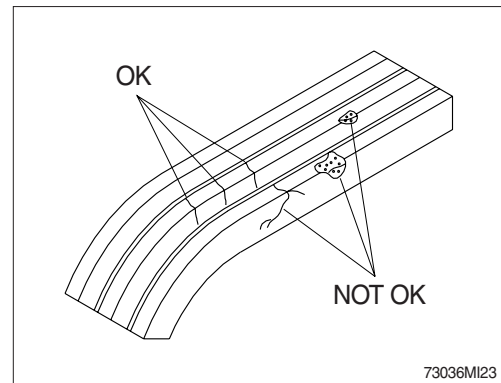
Check items	Service	Page
Engine oil	Change	6-15, 16, 17
Engine oil filter	Replace	6-15, 16, 17
Fuel filter element	Replace	6-24
Fuel pre-filter	Replace	6-24
Radiator, oil cooler, change air cooler	Check, Clean	6-20
Air cleaner element (primary)	Clean	6-23

#### 6) EVERY 1000 HOURS SERVICE

Check items	Service	Page
Hydraulic oil return filter (#0287-)	Replace	6-27
Center pivot pin	Lubricate	6-36
Transmission oil	Change	6-32, 33
Transmission oil filter	Replace	6-32, 33
Aircon and heater outer filter	Replace	6-44

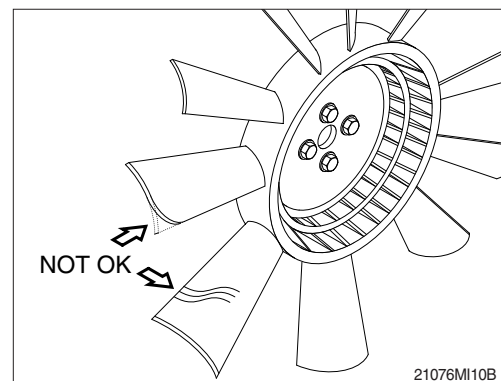
## 7) DRIVE BELT

- (1) Inspect the belts daily. Check the belts for intersecting cracks. Transverse (across the belt width) cracks are acceptable. Longitudinal (direction of belt length) cracks that intersect the transverse cracks are not acceptable. Replace a belt if it is frayed or has pieces of material missing.



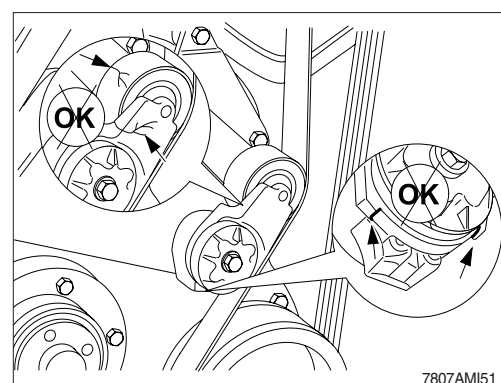
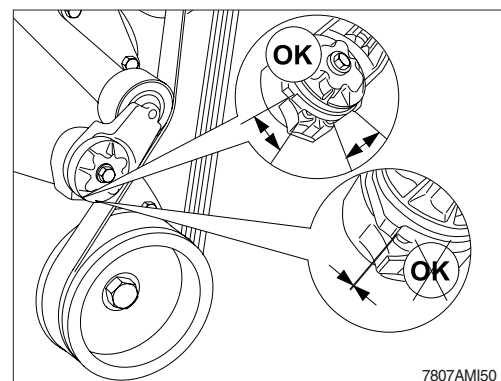
## 8) INSPECTION OF COOLING FAN

- ⚠ Personal injury can result from a fan blade failure. Never pull or pry on the fan. This can damage the fan blade and cause fan failure.**
- Rotate the crankshaft by using the engine barring gear.
- A visual inspection of the cooling fan is required daily.
- Check for cracks, loose rivets, and bent or loose blades.
- Check the fan to make sure it is securely mounted. Tighten the capscrews if necessary.
- Replace any fan that is damaged.



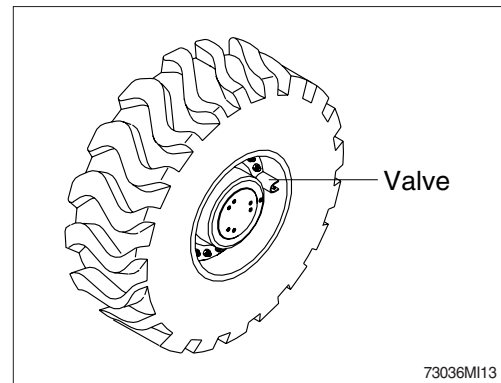
## 9) BELT TENSIONER, AUTOMATIC ADJUSTMENT

- (1) Every 1000 hours, or 1 year, whichever occurs first, inspect the automatic belt tensioner. With the engine turned off, check that neither the top nor bottom tensioner arm stop is touching the cast boss on the tensioner body. If either of the stops is touching a boss, the alternator belt must be replaced. Check to make sure the correct belt part number is being used if either condition exists.
- (2) Check the tensioner pulley and body for cracks. If any cracks are noticed, the tensioner must be replaced. Refer to a Cummins Authorized Repair facility. Check the tensioner for dirt buildup. If this condition exists, the tensioner must be removed and steam-cleaned.



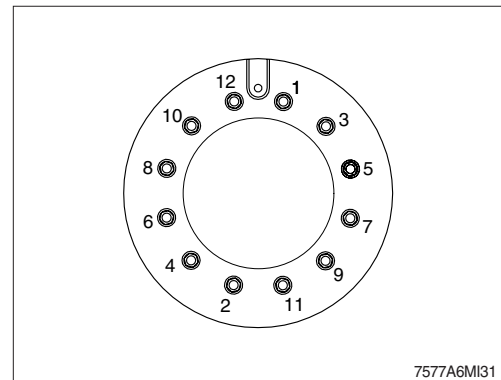
### (3) Direction of tire to be installed

- ① Be careful that the valve should be facing the outside.



### (4) Mounting of tire

- ① Lightly tighten nuts as shown in the illustration.
- ② Lower the jack after tire is replaced.
- ③ Tighten nuts according to the specified tighten torque.
  - Tightening torque :  $79 \pm 2.5 \text{ kgf} \cdot \text{m}$   
( $571 \pm 18 \text{ lbf} \cdot \text{ft}$ )

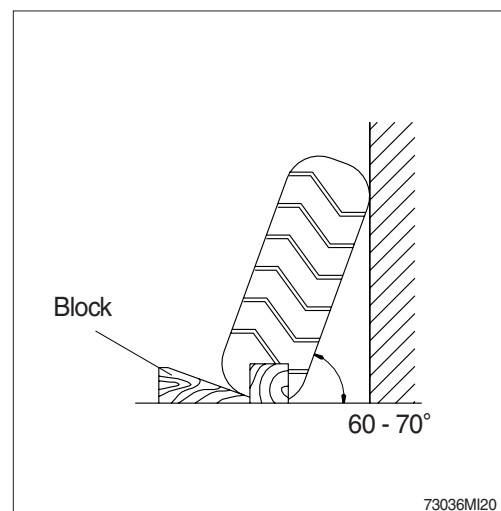


### 26) STORING TIRES AFTER REMOVAL

As a basic rule, store the tires in a warehouse which unauthorized persons cannot enter. If the tire are stored outside, always erect a fence around the tires and put up "No Entry" and other warning signs that even young children can understand.

Stand the tire on level ground, and block it securely so that it cannot roll or fall over.

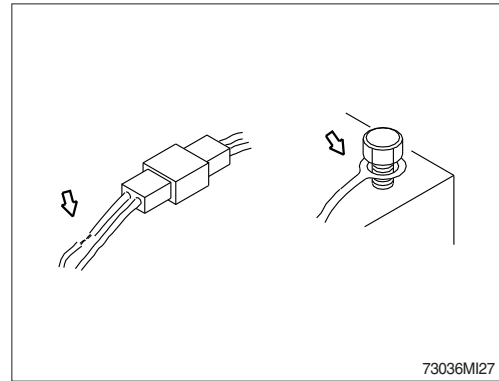
If the tire should fall over, get out of the way quickly. The tires for construction equipment are extremely heavy, so trying to hold the tire may lead to serious injury.



## 7. ELECTRICAL SYSTEM

### 1) WIRING, GAUGES

Check regularly and repair loose or malfunctioning gauges when found.



### 2) BATTERY

#### (1) Clean

① Wash the terminal with hot water if it is contaminated, and apply grease to the terminals after washing.

⚠ Battery gas can explode. Keep sparks and flames away from batteries.

⚠ Always wear protective glasses when working with batteries.

⚠ Do not stain clothes or skin with electrolyte as it is acid.

Be careful not to get the electrolyte in eyes.

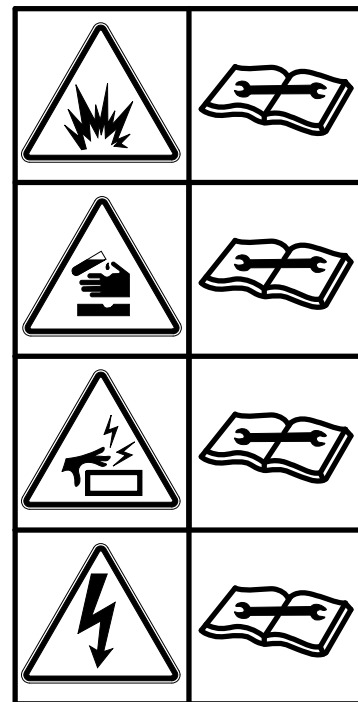
Wash with clean water and go to the doctor if it enters the eyes.

⚠ Avoid short-circuiting the battery terminals through accidental contact with metallic objects, such as tools, across the terminals.

⚠ Do not store tools, bucket tooth and other flammable things in battery box. They could cause a fire.

⚠ Tighten the battery terminals securely. Loosened terminals can generate sparks and lead to explosion.

⚠ Make sure that the battery terminal's caps always are installed.



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