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3. KNOW YOUR TRUCK

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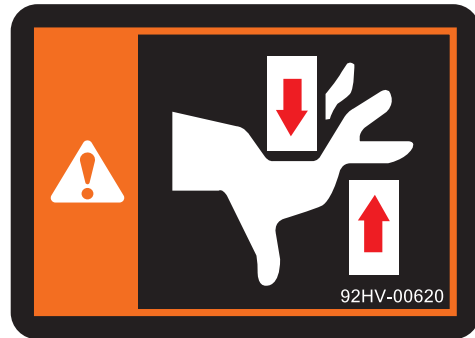
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4) HAND CAUTION (Item 7)

This warning label is positioned on the top side of mast.

- ▲ It warns of the danger of injury from movement between rails, chains, sheaves, fork carriage, and other parts of the mast assembly. Do not climb on or reach into the mast. Personal injury will result if any part of your body is put between moving parts of the mast.

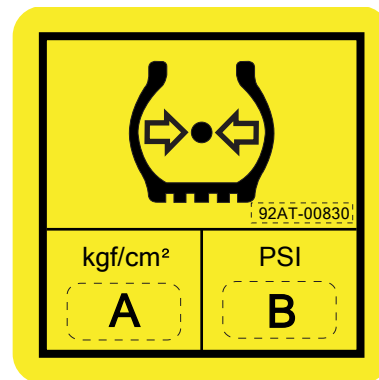


92HV-00620

5) TIRE (Item 8)

This label is positioned on near the rear fender. (2 places of left and right respectively)

- ▲ Tire pressure must be checked in accordance with planned maintenance intervals.
- ▲ Refer to page 5-3 for the regulated tire air pressure (A and B).



25L7A0OM08

6) Hook (Item 11)

This warning label is positioned on the lifting bracket of the upper counterweight (2 places respectively) and the top side of mast.

- ▲ Refer to page 5-34 for safe loading procedures.



180D7EOM102

7) Fan (Item 12)

This warning label is positioned on the top side of the radiator.

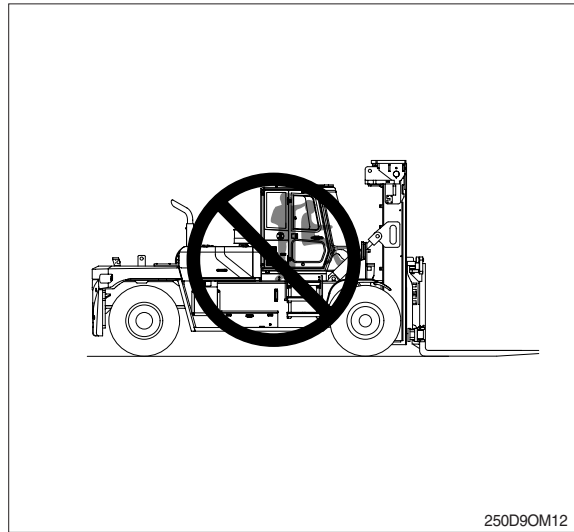
- ▲ It warns of the danger or injury from spinning fan blades when the engine is running. Be sure that you keep your hands, fingers, arms, and clothing away from a spinning fan. Don't stand in line with a spinning fan. Fan blades can break at excessively high RPM and be thrown out of the engine compartment.



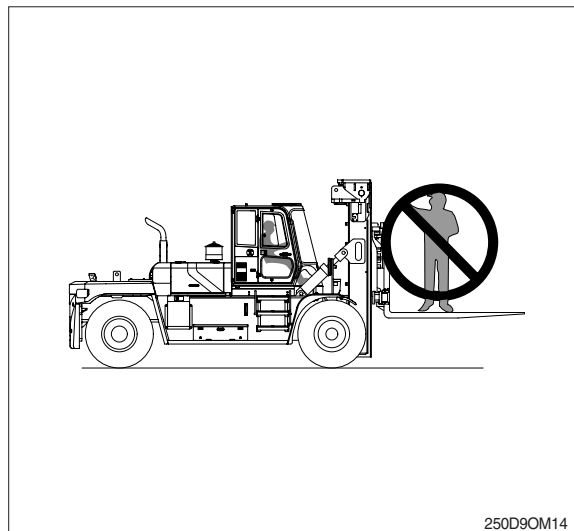
93HS-00120

4. NO RIDERS

- 1) The operator is the only one who should be on a truck.

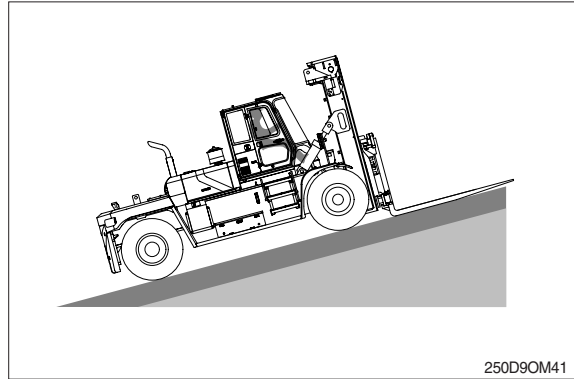


- 2) Never transport personnel on the forks of a lift truck.

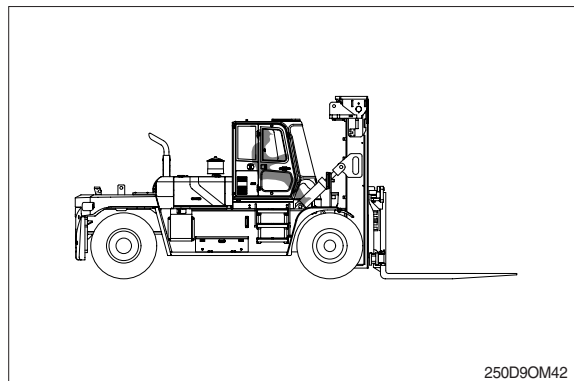


13. PARKING

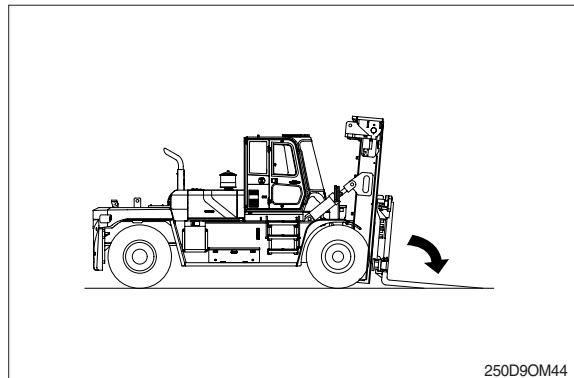
1) Never park on a grade.



2) Always come to a complete stop before leaving truck. Be sure travel control is in NEUTRAL.

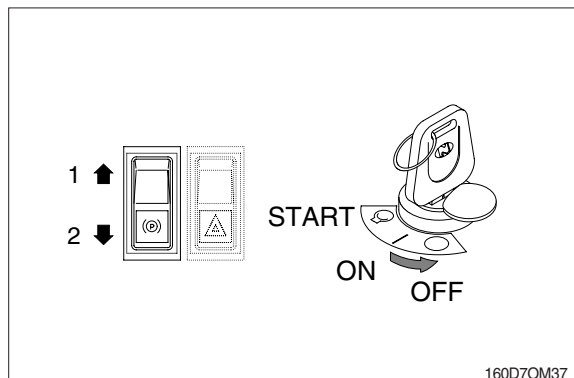


3) Lower forks fully to floor and tilt forward.



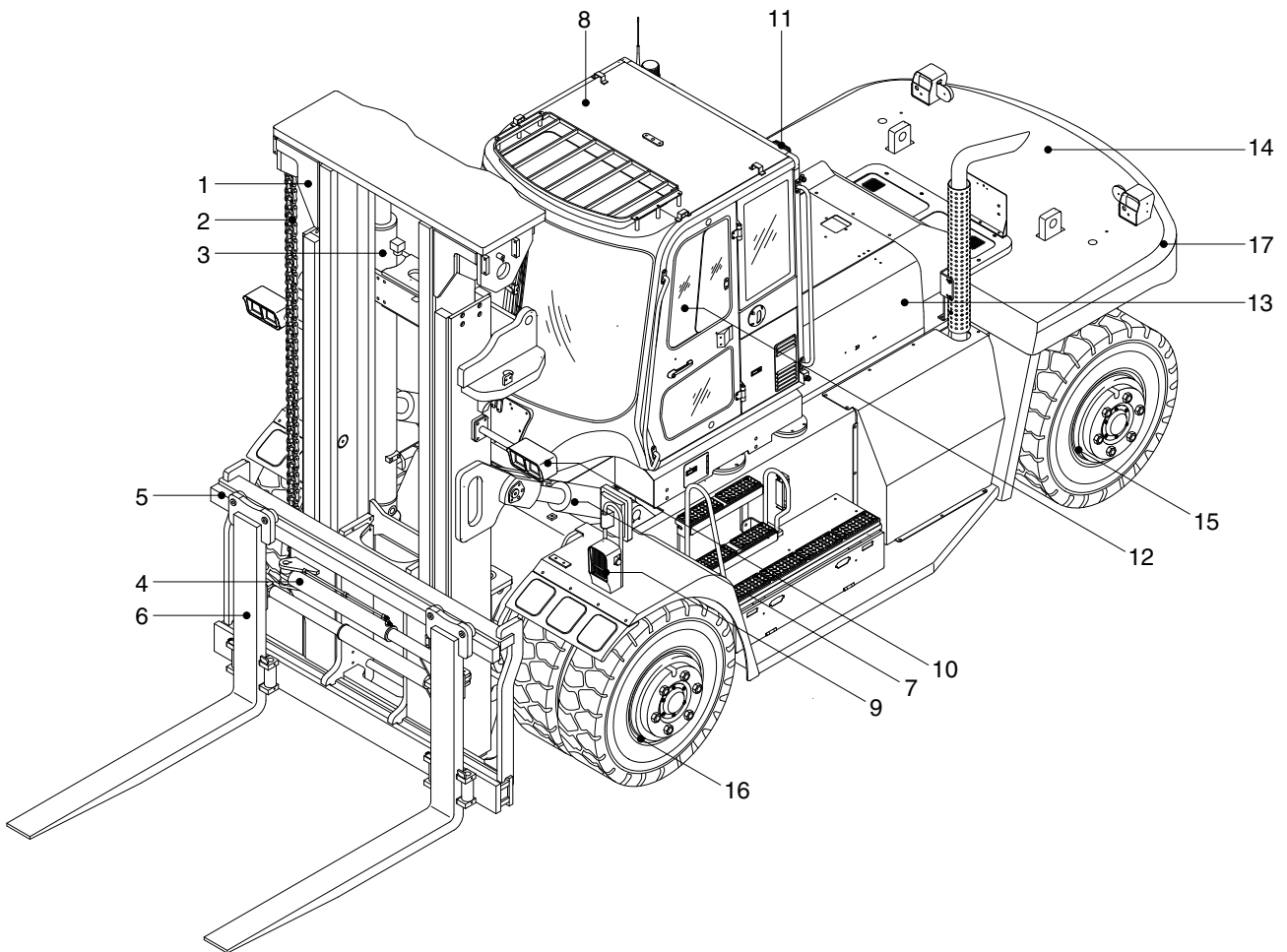
4) Set parking brake.
Position 1 : OFF (Release)
Position 2 : ON (Lock)

5) Turn key to OFF position.



3. KNOW YOUR TRUCK

1. GENERAL LOCATIONS



250D90M54

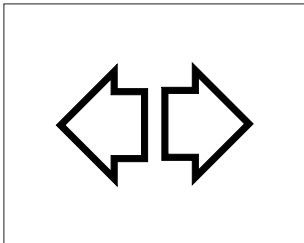
- | | | |
|----------------------------|-------------------------|--------------------------|
| 1 Mast | 7 Tilt cylinder | 13 Bonnet |
| 2 Lift chain | 8 Cabin | 14 Counterweight |
| 3 Lift cylinder | 9 Head light-fender | 15 Rear wheel |
| 4 Fork positioner cylinder | 10 Work lamp-mast | 16 Front wheel |
| 5 Carriage | 11 Work lamp-cabin rear | 17 Rear combination lamp |
| 6 Forks | 12 Operator's seat | |

4) PILOT LAMPS



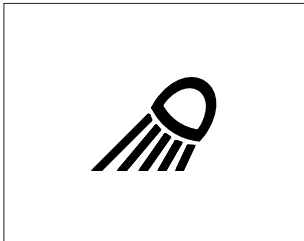
160D7ECD02-2

(1) Direction pilot lamp



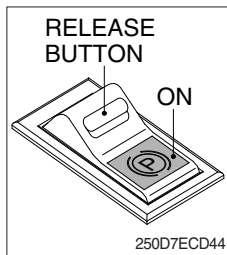
① This lamp flashes when the signal indicator lever is moved.

(2) Work lamp pilot lamp (rear)



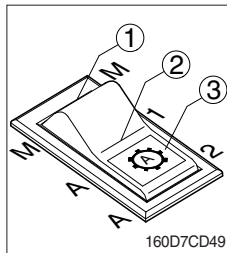
① This lamp lights ON when rear work lamp switch is pressed.

2) PARKING WITH LOCK SWITCH



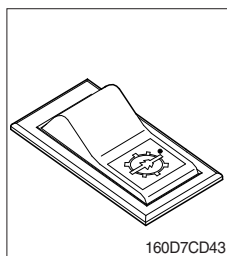
- (1) This switch is used to lock or release parking brake of the truck.
 - (2) If this switch is pressed, the parking brake is applied and the gauge panel warning lamp will come ON.
- ※ **When operating the gear selector lever, be sure to release the parking brake. If the truck is operated with the parking brake engaged, the brake will overheat and may cause the brake system to go out of order.**

3) AUTO/MANUAL SELECT SWITCH



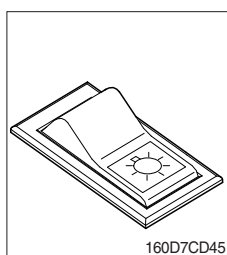
- (1) **Manual mode(①)**
Press the top of the switch for the manual mode of the autoshift function. The operator selects the desired speed and the desired direction in the manual mode with the gear selector lever.
- (2) **Automatic 1st mode(②)**
Place the switch in the middle position for the autoshift function changing from 1st to 3rd gear shift mode.
- (3) **Automatic 2nd mode(③)**
Press the bottom of the switch fully for the autoshift function changing from 2nd to 3rd gear shift mode.

4) INCHING SWITCH



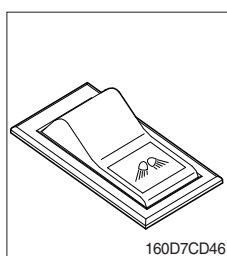
- (1) If this switch is pressed, inching operation is applied to inching pedal.
- (2) Also, inching lamp on the cluster is illuminated.

5) MAIN LIGHT SWITCH



- (1) This switch is used to operate the clearance lamp and head light by two steps.
 - First step : Clearance lamp and cluster illumination lamp comes ON. Also, all of the indicator lamps of switches come ON.
 - Second step : Head light comes ON.

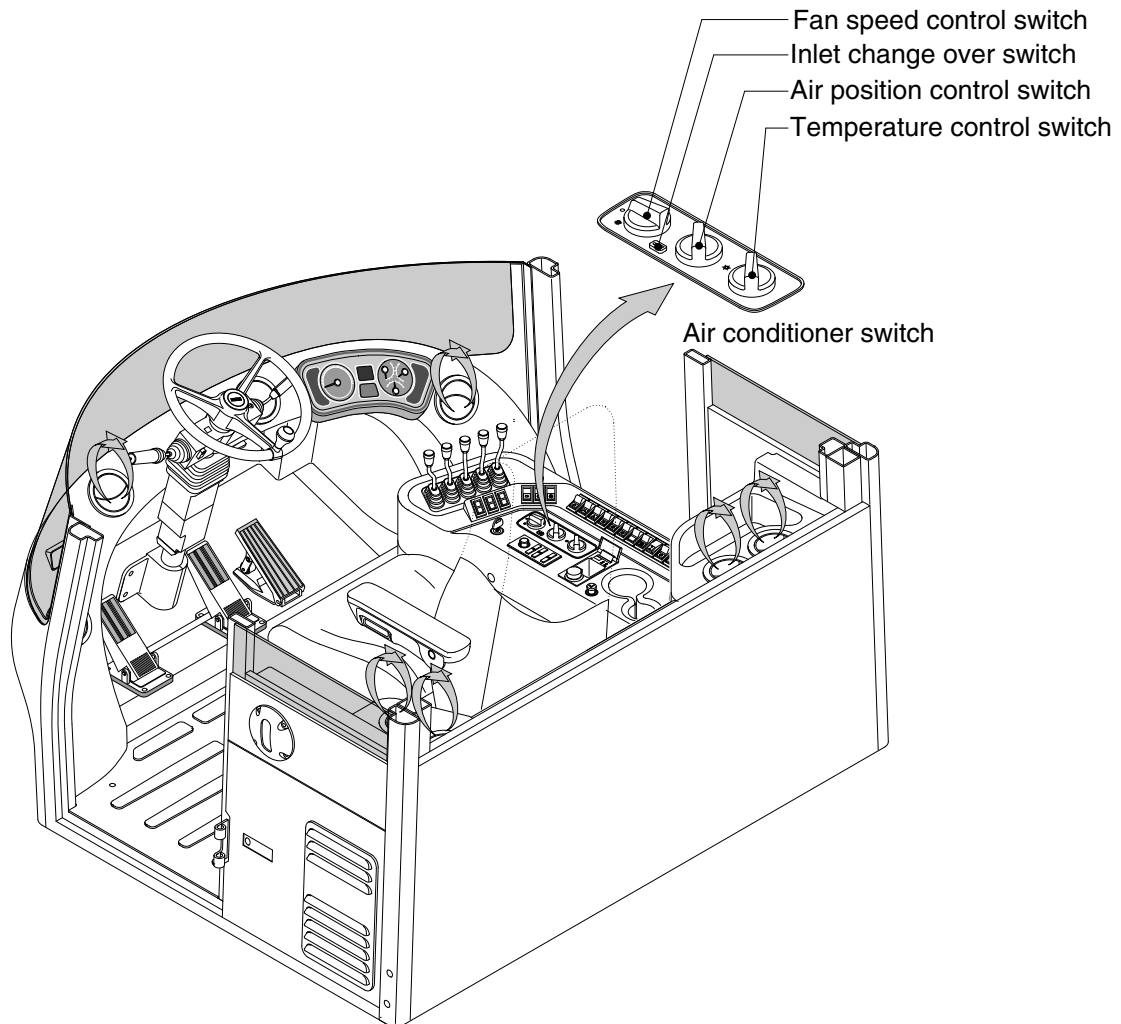
6) WORK LAMP SWITCH



- (1) This switch is used to operate the front and rear work lamps by two steps.
 - First step : Front work lamp comes ON.
 - Second step : Rear work lamp comes ON.

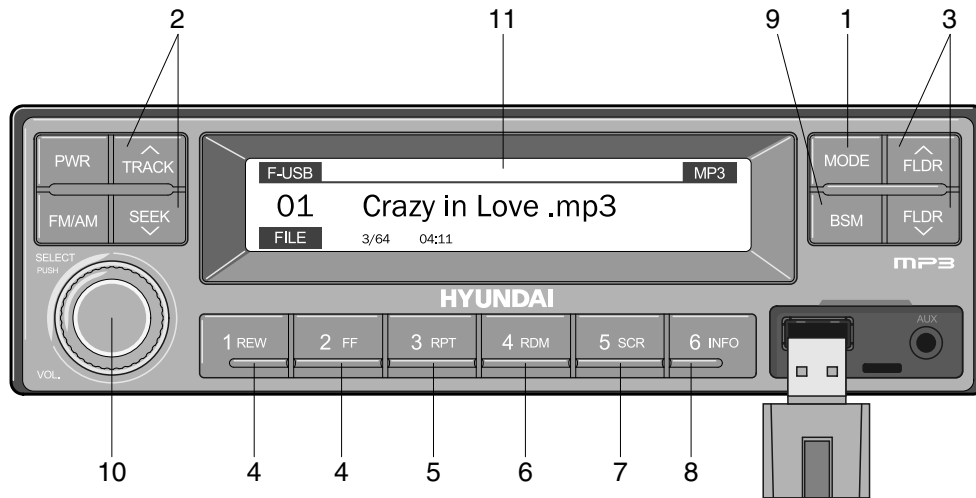
8. AIR CONDITIONER AND HEATER

Air conditioner and heater are equipped for pleasant operation against outside temperature and defrost on window glass.



250D9CD90

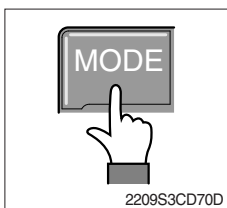
■ USB CONNECTION



2209S3CD72

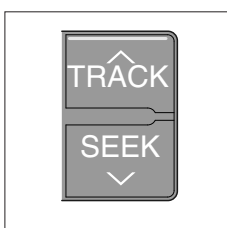
- Operates only when a USB is connected. Connecting a USB to the audio will automatically convert to USB mode.
- Connecting the USB when the starting switch is in ON state will turn the power on and automatically play the songs within the USB.

(1) USB selection button



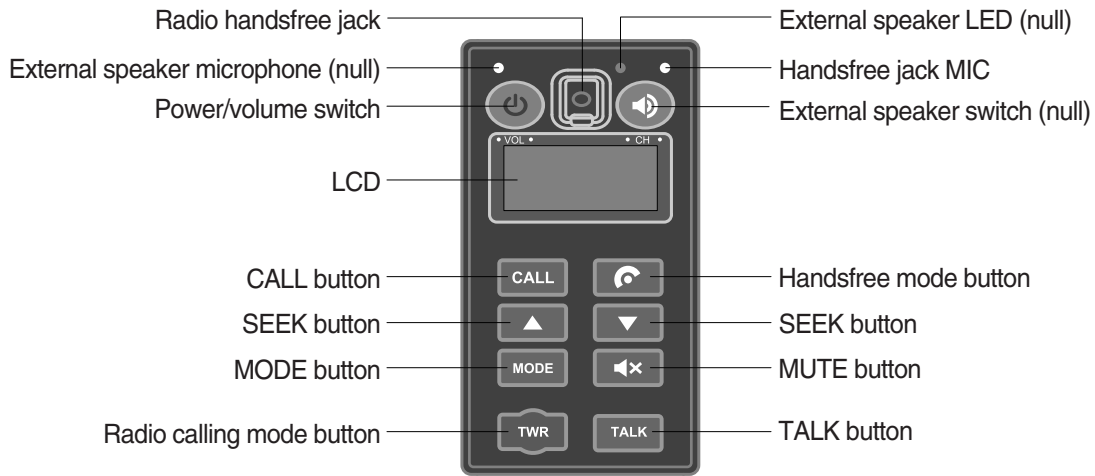
- ① While playing a different mode, press the MODE button to convert to USB mode. Connecting a USB to the audio will automatically convert to USB mode even if another mode is playing and automatically play the songs within the USB.
- ② If the USB is connected to both the front USB and handfree, then MODE is converted in the following order.
RADIO → USB(front) → USB(handfree)

(2) TRACK UP/SEEK DOWN button



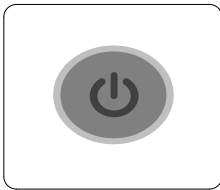
While playing USB, press the TRACK \wedge button to play the beginning of the next song.
Press the SEEK \vee button to return to the beginning of the current song. Press the button again to play the beginning of the previous song.

6) REMOTE CONTROLLER



5513CD31

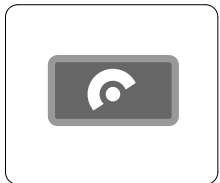
(1) Power and volume switch



5513CD31A

- ① This switch is used to turn the audio or handsfree ON or OFF.
 - ② This switch is turned to right, the handsfree volume is increased over 7 steps.
 - ③ If it is turned to left, volume will be decreased.
- ※ **This switch adjust the audio volume when selected audio mode.**

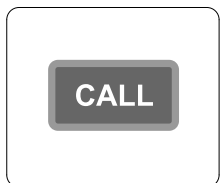
(2) Mode change button



5513CD31B

- ① This button is to select the handsfree mode or audio mode.
 - Lamp ON : Handsfree mode ("TEL MUTE" displayed ON audio LCD)
 - Lamp OFF : Audio mode

(3) Call button



- ① This button is used answer a call, last number radial, ring off.
 - ② For calling, press the button 0.5~1.5 seconds until the beep sounds.
- ※ **This can be used when the starting switch is ON.**

No	Name	Description
7	<p>Mode set up screen</p>	<p>3)Load indicator setting</p> <p>(1)MAST Select</p> <p>Equipment model selection varies depending on the mast.</p>
		<p>(2) Calibration</p> <p>Correct a fork-lift load indicator</p> <p>After input passwords, you must input *.</p> <p>※ Define password is : "00008282"</p> <p>① Tare</p> <p>In the unloaded from the around waiting 5 seconds after lift 30 cm</p> <p>Tare ON</p>

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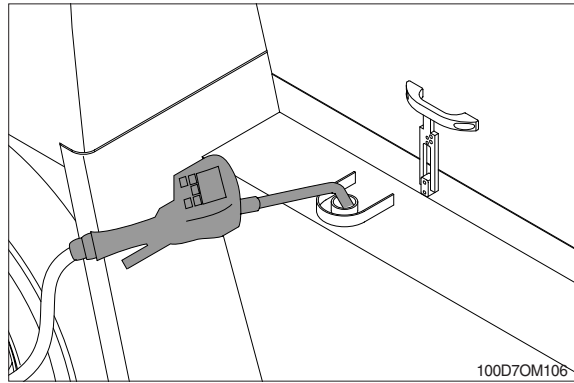


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3. FUEL SAFETY PRACTICES

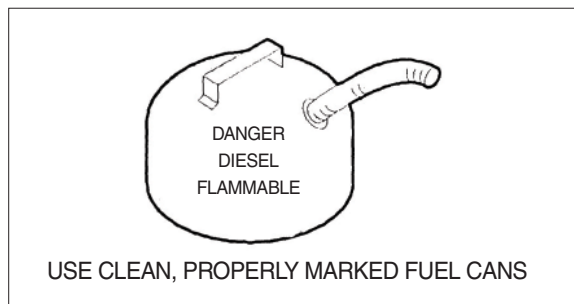
REFUELING DIESEL TRUCKS



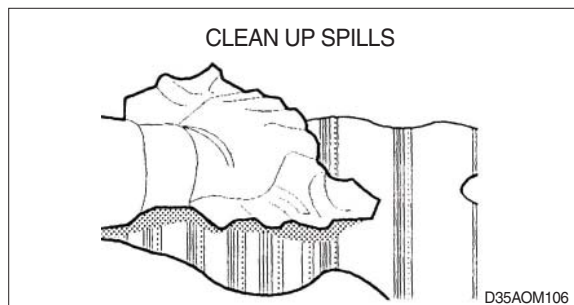
- ⚠ Stop the engine when refueling.
All lights and flames shall be kept at a safe distance while refueling.



- ⚠ Make sure that the fuel oil cans are kept cleaned and attached safety indication or letters on the can.



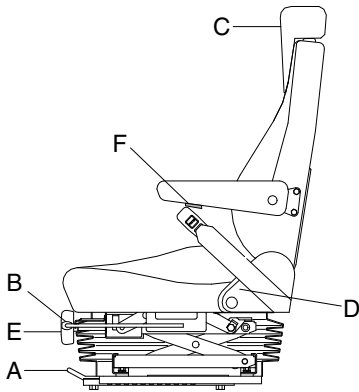
- ⚠ Wipe off the spilt fuel oil immediately.



4. SEAT ADJUSTMENT

1) SEAT ADJUSTMENT

The seat is adjustable to fit the contours of the operator's body. It will reduce operator fatigue due to long work hours and enhance work efficiency.



180D7ECD50

(1) Forward/Backward adjustment (slide adjustment)

- ① Pull lever (A) to adjust seat forward or backward.
- ② The seat can be moved forward and backward over 180 mm (7 in) in 9 steps.

(2) Upward/Downward adjustment (Lift adjustment)

- ① Push or pull the height adjuster lever (B) to adjust seat upward or downward.
- ② Forward or backward side adjustment only can be made, tilting to one side, by pushing or pulling the lever (B) respectively.
The seat can be adjusted 60 mm (4 steps) to upward at the frontside and rearside respectively.

(3) Reclining adjustment

Pull lever (D) to adjust seat backrest.

The recliner can be slanted until 12 degrees (2 degrees × 6 steps) to front side and 56 degrees (2 degrees × 28 steps) to backside.

(4) Armrest adjustment

This can be adjusted by turning the handle (F) to right and left.

The armrest can be adjusted until 55 degrees to upward and 15 degrees to downward without steps.

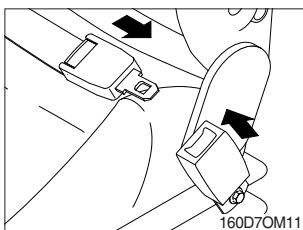
(5) Cushion adjustment (E)

Adjusting handle to the operator's weight.

(6) Shoulder rest (C)

The shoulder rest can be adjust until 170 mm (20 mm × 8 steps+10 mm) to upward.

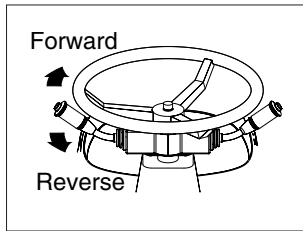
2) BUCKLING UP



- (1) Buckling up. Be sure that you put on the seat belt. Connect and adjust the seat belt strap to a snug, comfortable position.

**▲ Always wear your seat belt when operating a lift truck.
Failure to wear seat belt will result in injury or death in an event of an accident.**

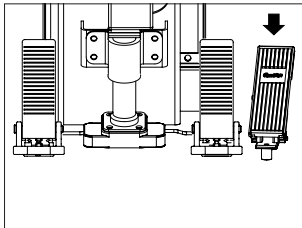
2) SELECTING DIRECTION OF TRAVEL



Push the direction control lever forward, center it , or pull it back for FORWARD, NEUTRAL, or REVERSE, respectively.
Traction is disabled in NEUTRAL.

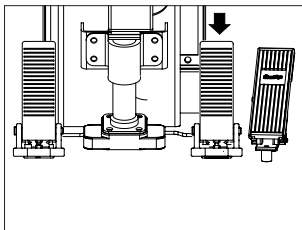
⚠ During traveling in forward or reverse direction, a sudden change of direction can cause to drop a load and damage to the machine.

3) USING THE ACCELERATOR PEDAL



With the parking brake released and the direction control in FORWARD or REVERSE, put your foot on the accelerator pedal and push down smoothly until the truck is moving at the desired speed.

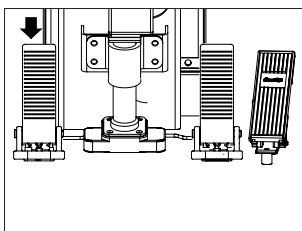
4) BRAKING PEDAL



To stop the truck, lift your foot from the accelerator pedal and put it on the brake pedal. Push down on the brake pedal in a smooth, firm motion until the truck is stopped.

**⚠ Stop the lift truck as gradually as practical. Hard braking and wheel sliding are dangerous, increase wear, and can cause you to loose a load and damage to the lift truck.
Can cause tip-over.**

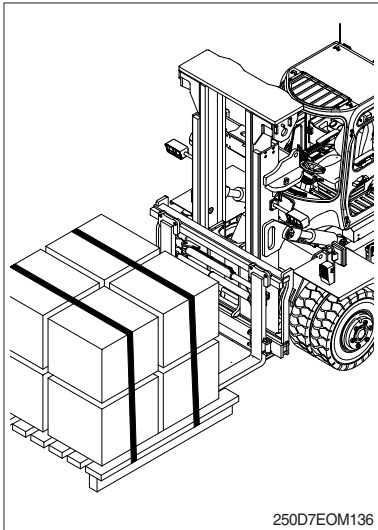
5) INCHING PEDAL



⚠ In case of slipping the clutch, it can be caused to happen heating problem in the system due to excessive friction of the discs, and reduced a durability or a lifetime of the components as result.

⚠ Pay particularly careful attention to do not press repeatedly the pedal and it is essential to cut off the power for travelling by pressing the pedal sufficiently to prevent from heating problem.

5) PICKING UP AND MOVING LOADS



When picking up a load from the ground, approach the load slowly and carefully align the truck square with the load. The forks should be adjusted to fit the load or pallet being handle and spread as wide as possible to provide good stability and balance. Before lifting, be sure the load is centered and the forks are fully under and supporting the load. Fork length should be at least 2/3 of load length. With the lift and tilt controls, adjust the forks to the correct height and angle for freely engaging the load pallet. Move forward until the forks are squarely and completely under the load.

▲ Be Sure that the forks do not extend beyond the load, causing damage or tipping of other adjacent loads or materials behind the load being moved.

If the forks are longer than the load, move the tips partially under the load without extending beyond the load. Raise the load to clear the ground. Back out several inches, or whatever distance is necessary, then set the load down and move forward until the load is positioned against the carriage.

Raise the load from the ground or stack by tilting the mast back just enough to lift the load from the surface. When stacking or tiering, use only enough backward tilt to stabilize the load.

Then raise the load to traveling height and tilt fully back to travel (Except for loads that must be transported as level as possible).

6) UNLOADING

To deposit a load on the floor after being moved into the correct position, tilt the mast forward to a vertical position and lower the load.

Adjust the fork height and tilt the mast forward slightly, as necessary, for smooth removal of the forks from the load (Pallet).

Carefully back away to clear the forks from the load.

Raise the forks to traveling height and tilt forks to a level position 150~200 mm (6~8 in) off the floor.

2. HOW TO USE BATTERY JUMPER CABLES

If your lift truck battery is discharged (dead), you can start your lift truck by Jumping it from another lift truck that has a 24V negative-ground electrical system. The "Booster" battery must be fully charged and in good condition. This section explains how to perform this procedure safely. To avoid damage to your lift truck and your battery or the possibility of harm to yourself, follow the instructions and warnings carefully. If you have any doubts, ask for help from an experienced mechanic.

If your truck has a battery with terminals on the side you will need a set of jumper cables with matching connector clamps or cable adapters for side mounted battery terminals.

△ Use only a 24V NEGATIVE GROUND SYSTEM to jump your truck. You can injure yourself and permanently damage your truck's 24V starting motor and ignition system by connecting it to a 24V power supply or to a positive ground system.

▲ BATTERIES CONTAIN SULFURIC ACID. Avoid acid contact with skin, eyes, or clothing. If acid contacts your eyes or skin, flush immediately with water and get medical assistance. Wear safety glasses when working near the battery to protect against possible splashing of the acid solution.

1) If the discharged battery has filler caps, check the fluid level. Do not use an open flame to check and do not smoke. If low, add distilled water to the correct level. Be sure to install the caps before jump starting.

2) Do not jump start, charge, or test a sealed type battery if the test indicator looks illuminated or has a bright color. Install a new battery.

▲ BATTERIES EMIT EXPLOSIVE GAS. Do not smoke or have open flames or sparks in battery charging areas or near batteries. An explosion can result and cause injury or death. Hydrogen gas is produced during normal battery operation. Hydrogen can explode if flames, sparks, or lighted tobacco are brought near the battery. When charging or using a battery in an enclosed space, always provide ventilation and shield your eyes. Wear safety glasses when working around batteries.

3) Put the truck with the booster battery as near to the other truck as necessary for the jumper cables to reach both batteries. Check and make sure that the trucks do not touch each other. Use particular care when connecting a booster battery to prevent sparks.

4) On both trucks:

Apply the parking brake.

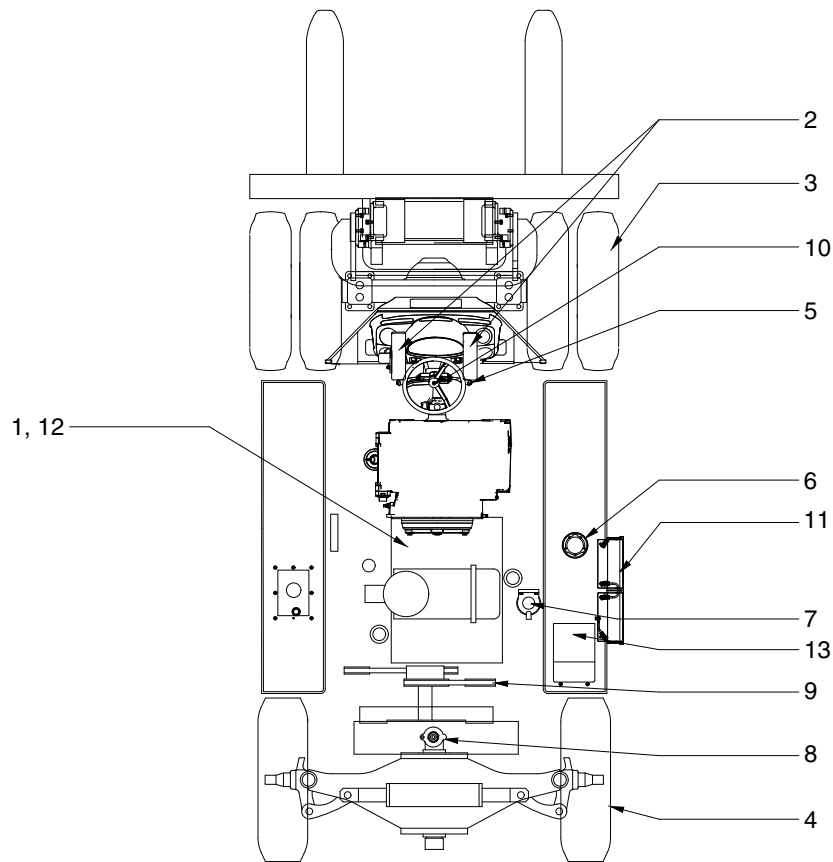
Put the directional control lever in the NEUTRAL position.

Turn the starting switch to the OFF position.

Turn all accessories to the OFF position and leave them off until after the engine has been started and the jumper cables have been removed.

▲ To avoid short circuits, remove all jewelry and do not permit any metal tools to make contact between the positive battery terminal and other metal on the truck. When you connect jumper cable clamps to the positive terminals of the two batteries, make sure that neither clamp contacts any other metal. Injury can occur from electrical shock or explosion.

2) SERVICE LOCATIONS

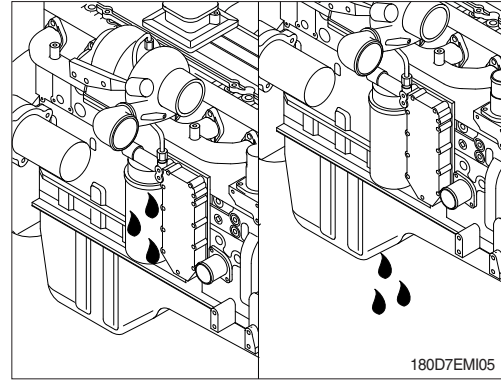


250D9MA011A

- ※ Service intervals are based on the hourmeter reading.
- ※ Stop the engine when servicing.
- ※ Do not open the cap or drain plug to avoid injury by unexpected spouting of high temperature fluid or gas.
- ※ Open the cap slowly to relieve pressure.
- ※ Always keep the surface of control & instrument panels clean in case of damage or malfunction detected in panel, replace it with a new one.
- ※ Depending on the ambient and operation conditions, the replacement cycle may be shortened.
 - All harsh working environment
 - Long term heavy load operation
 - High and low temperature working environment
 - Sudden change in temperature
 - Dusty or sandy working environment
 - Highly corrosive chemical working environment
 - Damp working environment
- ※ For other details, refer to the service manual.

- (10) Operate the engine at low idle and inspect for leaks at the filter and the drain plug.
Shut the engine off and check oil level with dipstick. Allow 15 minutes for oil to drain down before checking.

※ **Do not overfill the engine with oil.**

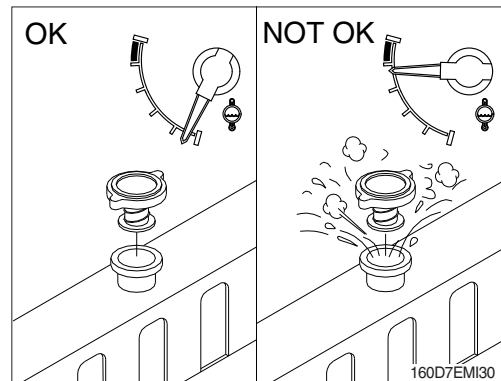
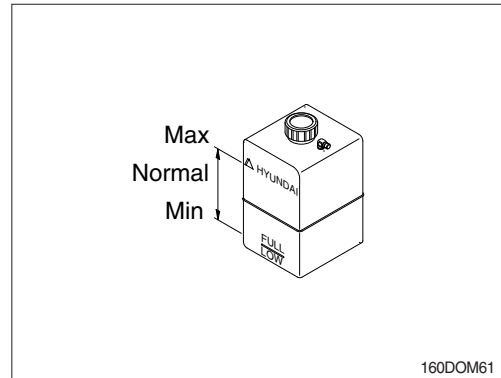


3) CHECK COOLANT LEVEL

- (1) Check the coolant level at reservoir tank.
- (2) Add the mixture of antifreeze and water after if coolant is not sufficient.
- (3) The coolant level should indicate the middle position.
- (4) Replace gasket of radiator cap when it is damaged.

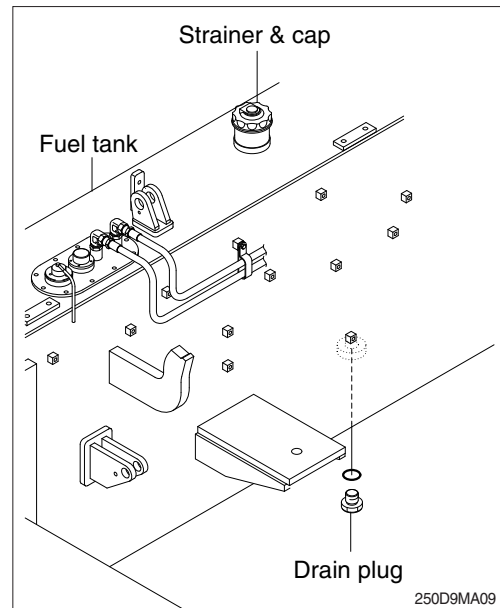
▲ **Do not remove the radiator cap from a hot engine. Wait until the coolant temperature is below 50°C (120°F) before removing the radiator cap. Heated coolant spray or steam can cause personal injury.**

※ **Do not add cold coolant to a hot engine ; engine castings can be damaged. Allow the engine to cool to below 50°C (120°F) before adding coolant.**



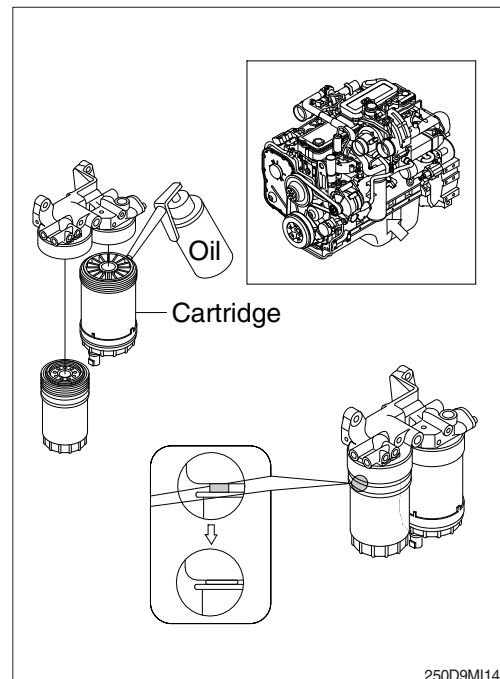
11) FUEL TANK

- (1) Fill fuel fully when system the operation to minimize water condensation, and check it with fuel gauge before starting the machine.
 - (2) Drain the water and sediment in the fuel tank by opening the plug.
- ※ **Be sure to LOCK the cap of fuel tank.**
 - ※ **Remove the strainer of the fuel tank and clean it if contaminated.**
 - ▲ **Stop the engine when refueling.**
All lights and flames shall be kept at a safe distance while refueling.



12) REPLACEMENT OF FUEL FILTER

- (1) Disconnect the wiring harness from water-in-fuel sensor.
Disconnect the wiring harness from the fuel heater, if equipped.
 - (2) Loosen and remove the fuel filter.
 - (3) Make sure the seal ring does not stick to the filter head. Remove the ring with an O-ring pick, if necessary.
- ※ **Mechanical overtightening can distort the threads as well as damage the filter element seal or filter canister.**
 - ※ **It will be necessary to fill the 10-micron water stripping (suction side) fuel filter with fuel.**
Do not fill the 2-micron (pressure side) fuel filter with fuel before installation; instead, prime the fuel system using the fuel lift pump.
 - ※ **Do not pre-fill an on-engine fuel filter with fuel.**
The system must be primed after the fuel filter is installed. Pre filling the fuel filter can result in debris entering the fuel system and damaging fuel system components.
- (4) Be sure the center seal ring is installed onto the filter spud.
 - (5) Install the filter and connect the water-in-fuel sensor and the fuel heater, if equipped.



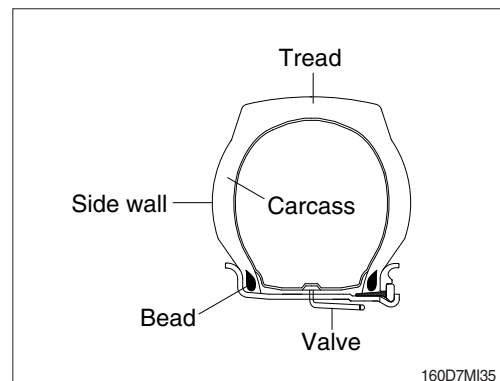
- ⚠ Do not use recycled wheel parts.
- ⚠ When removing lockering or inflating tire, use safety cable or chain to ensure safety.
Be sure to bleed air before removing lockering. Never inflate tires unless the lockering is assembled in its place.
- ※ Avoid the followings when traveling.
 - ① Rubbing tires against road bank or rack at cargo-unloading spot.
 - ② Tires slippage during working.
 - ③ Abrupt starting of machine.
 - ④ When oil, grease or gasoline smeared on tire, clean those. Otherwise it may cause of permanent deformation.

26) REPLACEMENT OF TIRE

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

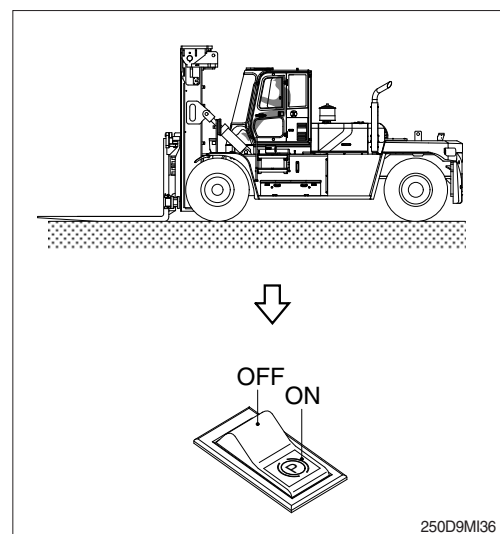
(1) Tires to be replaced

- ① Tires with broken or bent bead wires
- ② Tires exposed more than 1/4 of carcass fly.
- ③ Tires whose carcass is damaged more than 1/3 of the tire width.
- ④ Tires which show fly separation.
- ⑤ Tires which has a radial crack near the carcass.
- ⑥ Tires which are judged to be unsuitable for use because of deformation or damage.



(2) Separation of tire

- ① After moving the machine to flat ground, lower the fork to the ground and turn the parking brake switch ON.

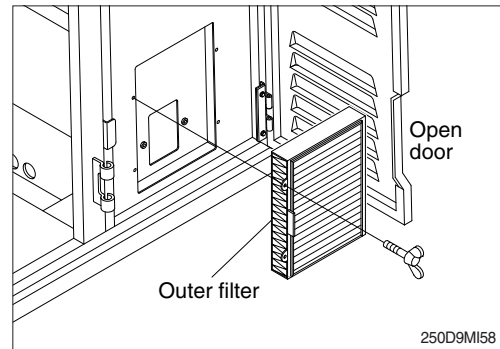


8. AIR CONDITIONER AND HEATER

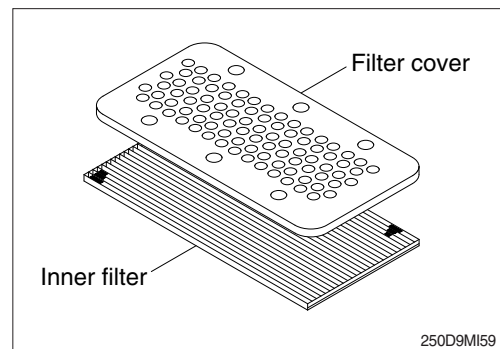
1) CLEANING AND REPLACING FILTER

※ Always stop the engine before servicing.

- (1) Open the door, loosen the wing bolt and remove the outer filter.



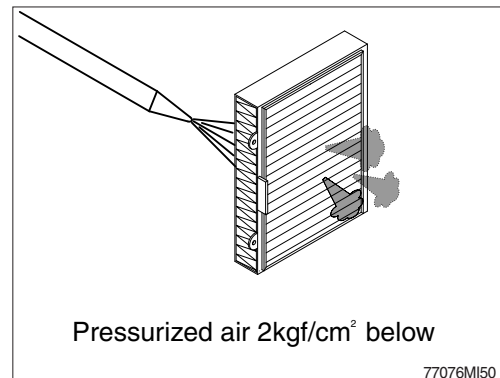
- (2) Open the cover of air conditioner and remove the inner filter.



- (3) Clean the recircular plenum using a pressurized air (Below 2 kgf/cm², 28 psi).

△ When using pressurized air, be sure to wear safety glasses.

- (4) Inspect the filter after cleaning. If it is damaged or badly contaminated, use a new filter.



2) PRECAUTIONS FOR USING AIR CONDITIONER

- (1) When using the air conditioner for a long time, open the window once every one hour.
- (2) Be careful not to overcool the cab.
- (3) The cab is properly cooled if the operator feels cool when entering there from outside (About 5°C lower than the outside temperature).
- (4) When cooling, change air occasionally.

3) CHECK DURING SEASON

Ask the service center for replenishment of refrigerant or other maintenance service so that the cooling performance is not damaged.

4) CHECK DURING OFF-SEASON

Operate the air conditioner 2 or 3 times a month (Each for a few minutes) to avoid loss of oil film in the compressor.

- 5) Refrigerant amount : 850 ± 50 g

11. COLD WEATHER OPERATION

1) PREPARATION FOR LOW TEMPERATURE

- (1) Replace lubrication oil with oil of the prescribed viscosity.
- (2) Fuel of low pour point must be used. ASTM D975 No.1 diesel fuel should be used at ambient temperature lower than -5°C.
- (3) When ambient temperatures are below use an anti-freeze mixture per the above table to prevent freezing of the cooling system.

Min ambient temperature (°C)	-5	-10	-15	-20	-25	-30	-50
Amount of antifreeze(%)	25	30	35	40	45	50	60
Amount of water(%)	75	70	65	60	55	50	40

- ▲ Use permanent type antifreeze.
- ▲ Use soft water (city water, etc.) as mixing water.
- ▲ Cooling system must be thoroughly flushed before filling with antifreeze mixture.
- ▲ When the climate becomes warmer and antifreeze is not needed, replace with soft water (city water, etc.) after thoroughly cleaning the cooling system.
- ▲ Do not expose antifreeze to flame. It is inflammable.
- ※ Dispose of old antifreeze mixture in locally approved manner.

2) BATTERY

As ambient temperature drops, battery capacity will drop and electrolyte may sometimes freeze if battery charge is low. Maintain battery at a charge level of over 75% and insulate it against cold temperature so that truck can be readily started the next morning.

- ※ When the electrolyte level is low, add distilled water in the morning before work instead of after the day's work. This is to prevent fluid from freezing at night.

3) CARE AFTER DAILY OPERATION

- (1) Drain water from fuel system to prevent freezing.
- (2) Fill the tank at the end of each day of operation to drive out moisture laden air to prevent condensation.

Do not fill the tank to top.

- ▲ Explosive fumes may be present during refueling.

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