CONTENTS

3) **RADIATOR & FAN** (item 8)

This warning label is positioned on the front left side of the cooling fan shroud of the radiator.

⚠ **It warns of the danger or injury from spinning fan blades and forbid so open the filler cap of the radiator because operator might get scalded due to spouting of hot water.**

⚠ **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.**

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

4) **HAND CAUTION** (item 3)

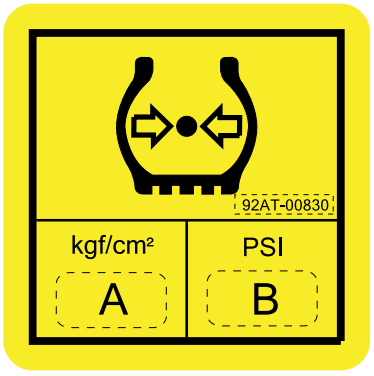
This label is positioned on the center side of the mast cross plate.

91B3-01220

⚠ **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.**

5) **TIRE AIR PRESSURE** (item 17, 18)

This label is positioned on the front top side of the left and right fender and the both rear side of the main frame.



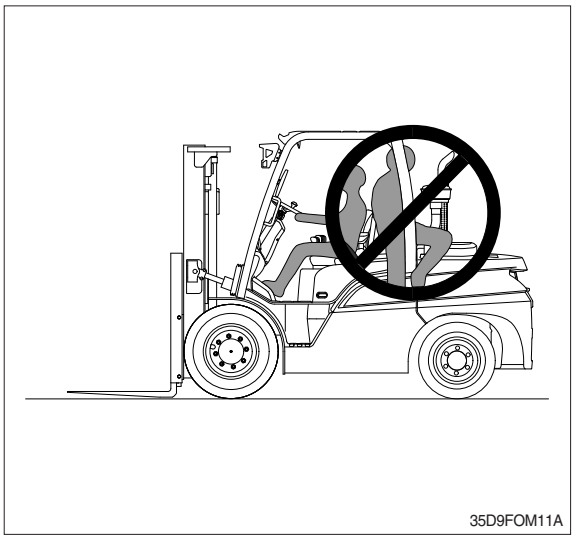
20DEOM104

⚠ **Tire pressure must be checked in accordance with planned maintenance intervals.**

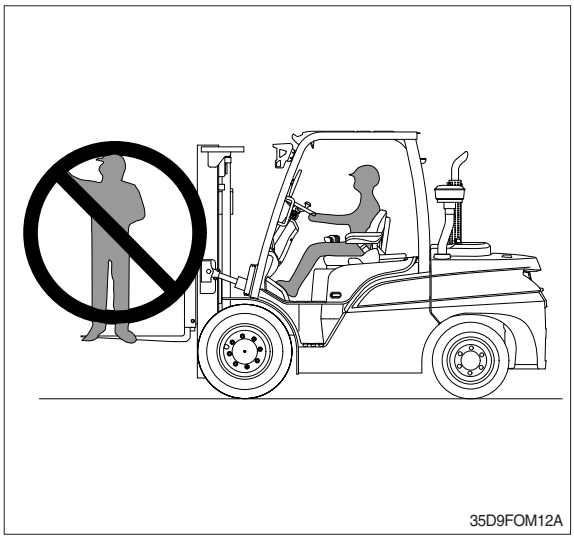
⚠ **Refer to page 5-3 for the regulated tire air pressure (A and B).**

4. NO RIDERS

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

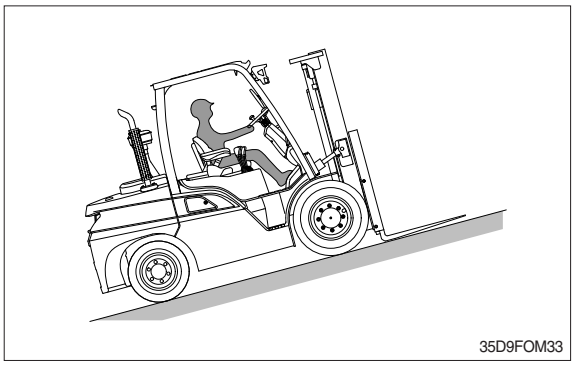


2) Never transport personnel on the forks of a lift truck.

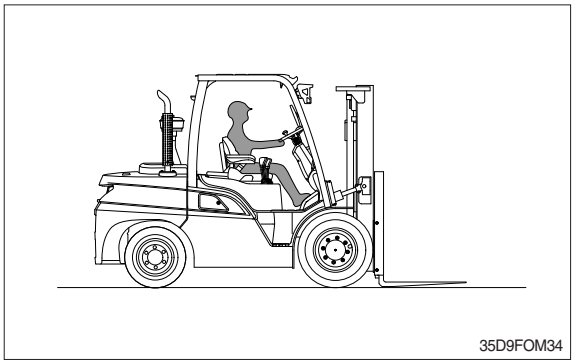


13. PARKING

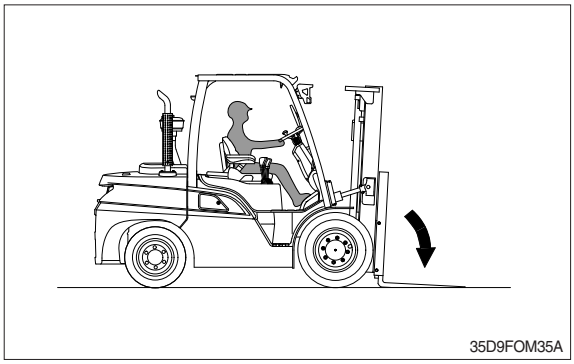
1) Never park on a grade.



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

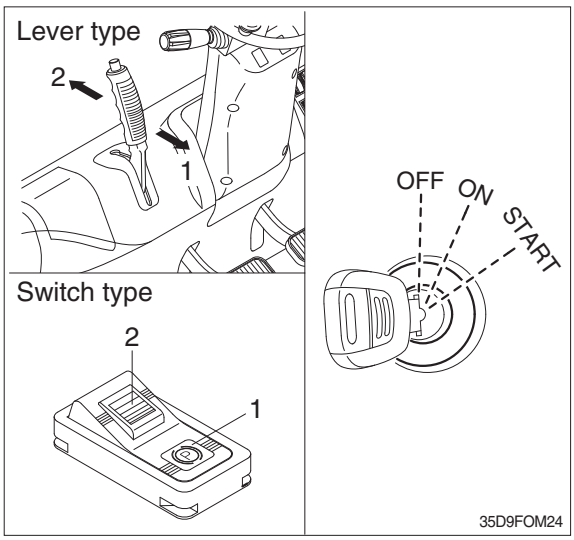


3) Lower forks fully to the floor and tilt forward.



4) Put the parking brake lever (or switch) in LOCK position.
   Position 1 : Lock
   Position 2 : Release

5) Turn start switch to OFF position.



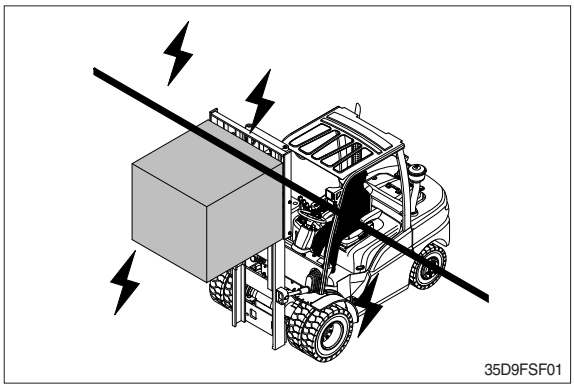
10. CAUTION FOR ELECTRICAL LINES

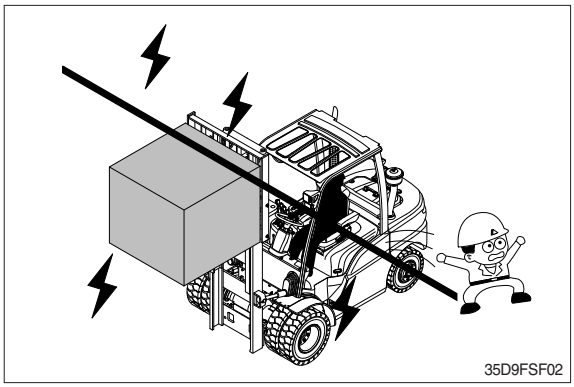
⚠ When moving the truck with the mast raised, watch out electrical lines over the truck.

⚠ The operating near the electrical lines is very dangerous.
Operate within safe working permitted as below.

Supply voltage	Min safe separation
6.6 kV	3 m (10 ft)
33.0 kV	4 m (13 ft)
66.0 kV	5 m (16 ft)
154.0 kV	8 m (26 ft)
275.0 kV	10 m (33 ft)

⚠ If the truck touches the electric power lines, keep sitting on the operator's seat and make sure the personnel on the ground not to touch the truck until turning off the electric current.
Jump off the truck without contacting the truck when you need to get off.


35D9FSF01


35D9FSF02

(3) Fuel gauge

35D9SCL004K

① Display the remains of fuel tank.

② If the gauge displays in the red zone, or warning lamp will be lit up in red, please refuel.

(4) Coolant temperature gauge

35D9SCL005K

① Display the coolant temperature.

- White zone : 40 ~ 120 ˚C (104~248 ˚F)
- Red zone : Over 120 ˚C (248 ˚F)
- Warning lamp on : Over 115 ˚C (239 ˚F)

② If the gauge displays in the red zone, or warning lamp is on, please stop the engine and inspect the coolant system.

(5) Clock

35D9SCL006K

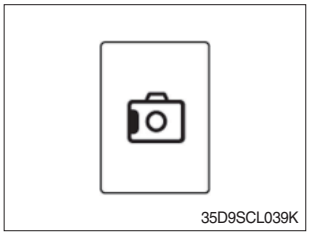
① Display current time.

② You can enter current time at display Set Up > Time Set Up menu.

6) BUTTONS

35D9SCL038K

(1) Camera

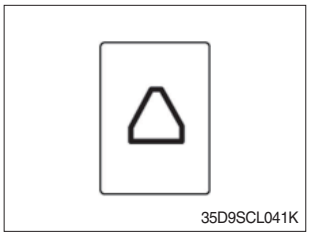


35D9SCL039K

① This switch displays rear camera images. (if the camera is mounted)

35D9SCL040K

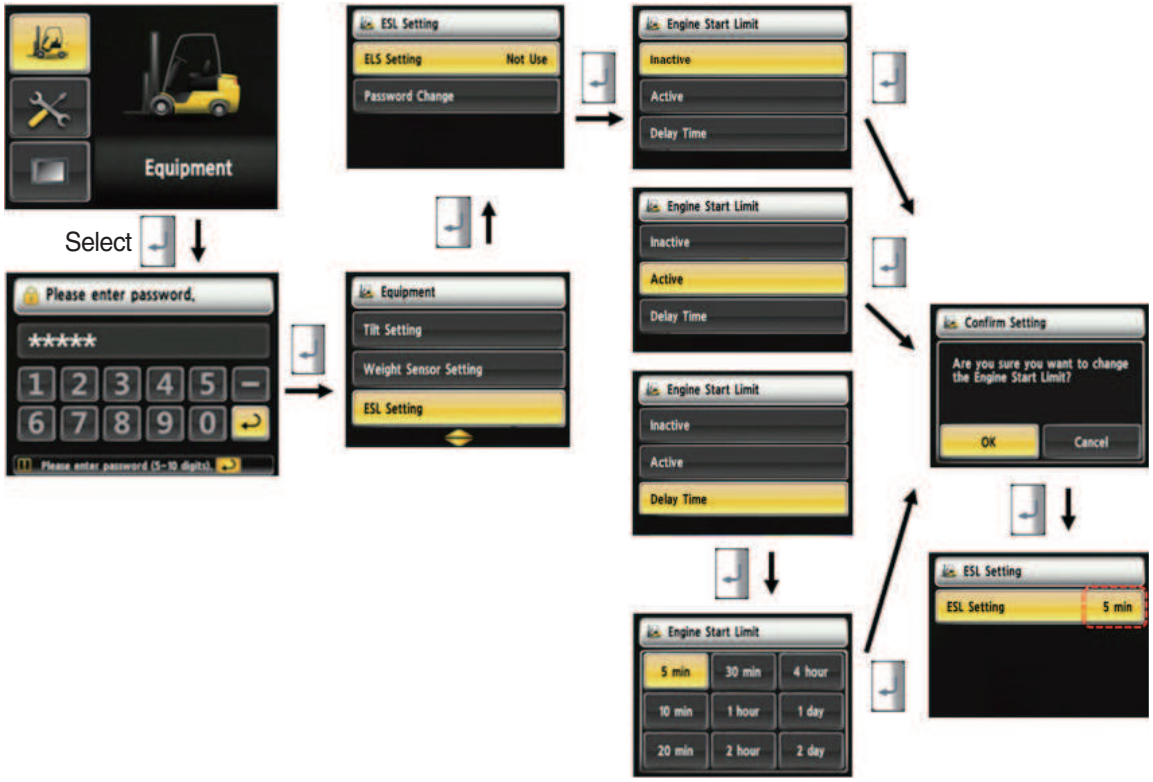
(2) UP/Left



35D9SCL041K

① This switch is used to move upward or leftward in menu or increase the value.

(6) Startup Control Setting (Standard) : Default is "Not Use"



35D9KCL054

· **How to set ESL setting**

1. Device Setup > ESL setting
2. Password request screen will be displayed if you select the menu. Default password is “00000”.
3. Password length must be 5~10 digits.
4. Next step is allowed only if password is authenticated.
5. Check functions

① Set the mode as active and start switch OFF.

② Upon start switch ON, the password screen pops up and starting is prohibited until the right password has been offered.
(But, driver still can start the vehicle if starts within 10 seconds from start switch OFF)

③ Set the mode as 5 min of delay time and start switch OFF.

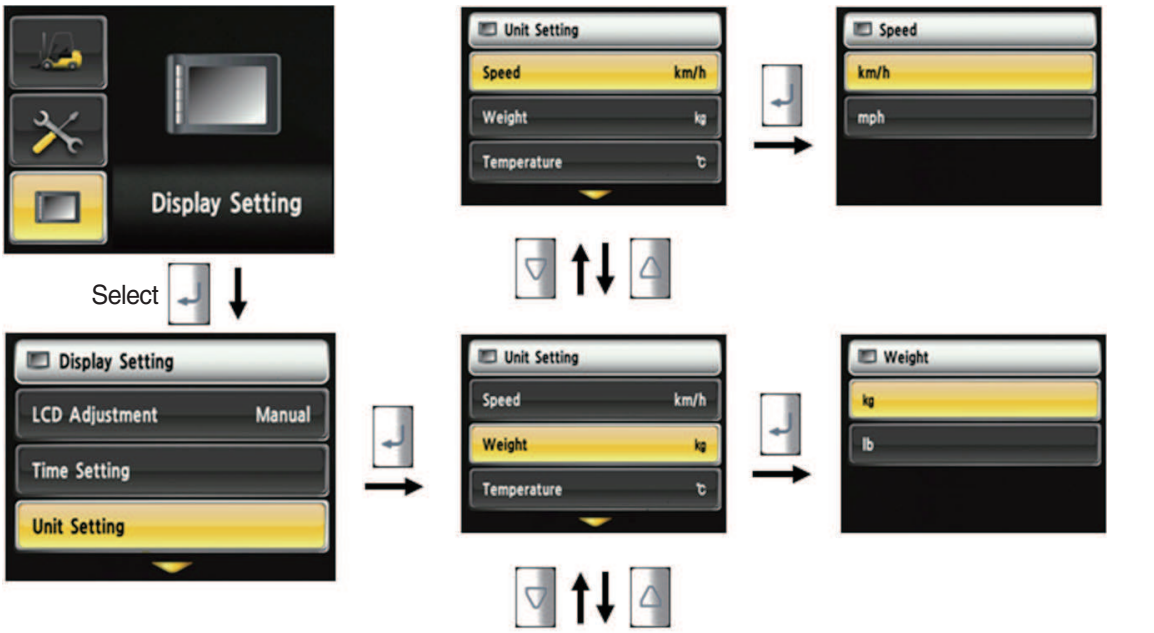
④ check if vehicle can start within 5 min and start switch OFF.

⑤ check if vehicle requests password after 5 min.

※ **Start switch ON screen (When startup control mode is ON)**

35D9KCL075

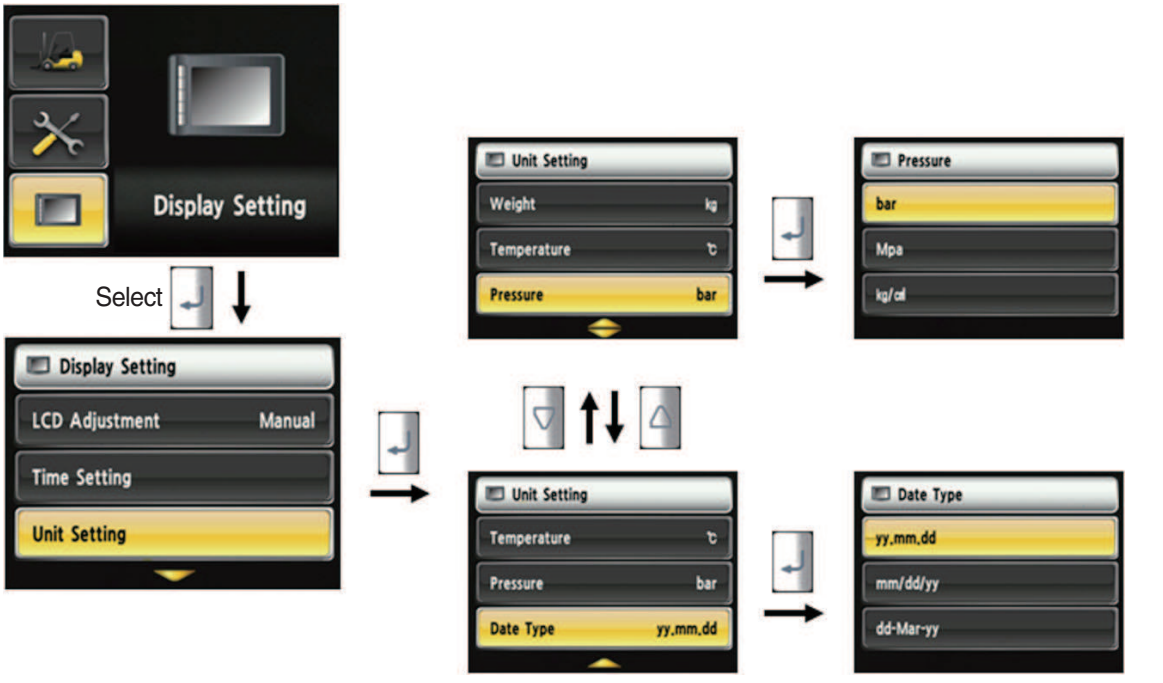
(18) Unit setup



· **Unit setup**

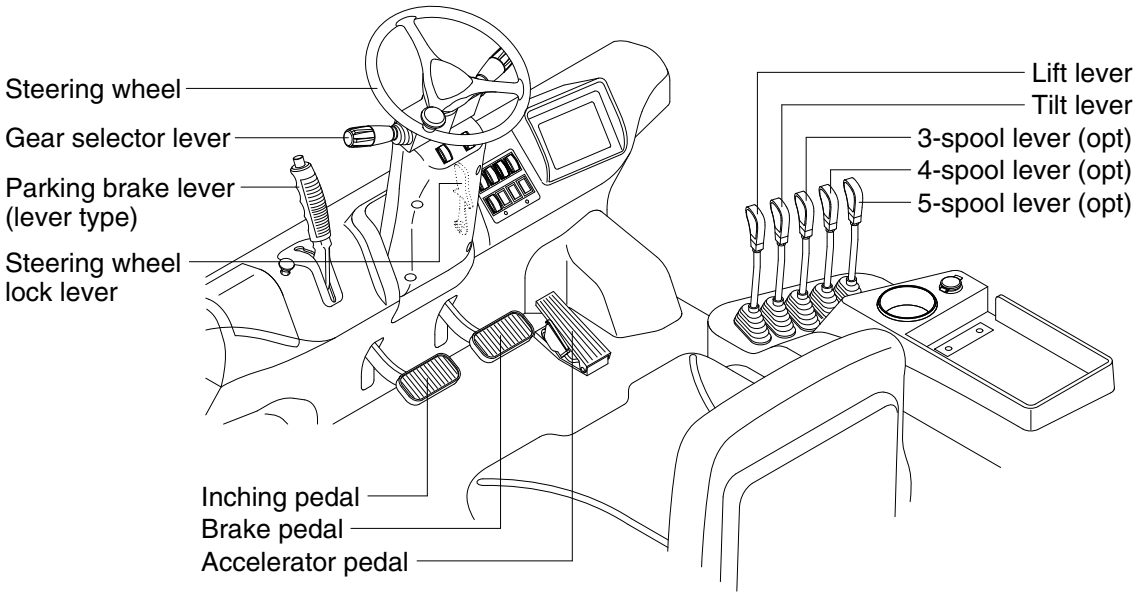
1. Display setup > Unit setup
2. Enable to set all unit values that displayed on screen.
3. It is displayed by calculating as setting unit.

35D9SCL066



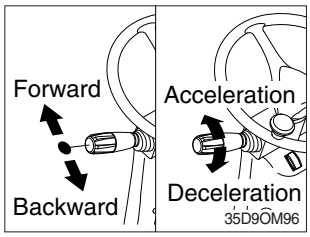
35D9SCL067

6. CONTROL DEVICE



35D9FCD08

1) GEAR SELECTOR LEVER

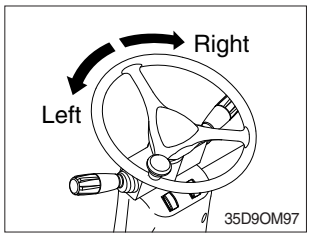


(1) This lever is used for gear selection, forward 2 stages and reverse 2 stages.

(2) If you push the gear selector lever, the truck moves forward, but pulling the gear selector lever, the truck moves backward.

(3) If you turn the gear selector lever forward, the truck increases the speed, but if you turn the gear selector lever backward, the truck reduces the speed.

2) STEERING WHEEL



(1) A steering cylinder in the center of the steering axle will operate the steering function.

(2) Turning the steering wheel left, the truck moves to the left side and turning it right, the truck moves to the right side.

2) FUNCTIONAL CHECKS

Check the operation of the truck as follows.

※ **Before performing these checks, familiarize yourself with the starting, operating, and shutdown procedures in Section 5 of this manual. Also, know the safety rules given in Section 1 of this manual.**

(1) Test warning devices, horn, light, and other safety equipment and accessories.

(2) Start the engine and be sure all controls and systems operate freely and return to neutral properly. Check the:

① Gauges, meters, and indicator lights
② Service brakes, inching pedal, and parking brake
③ Hydraulic controls: lift, tilt, and auxiliary (If installed)
④ Accelerator pedal
⑤ Gear selector lever
⑥ Steering system
⑦ Lift mechanism and any attachments.

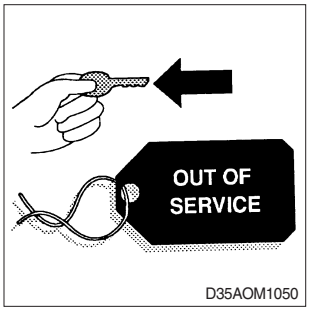
When the functional check are completed, follow the **standard shutdown procedures** given in Section 5, **Starting and operating procedures.**

3) CONCLUDING THE INSPECTION

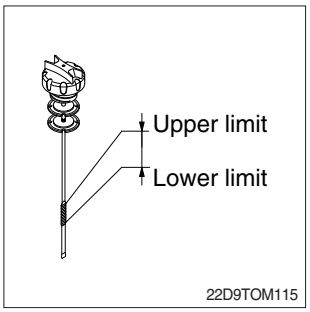
⚠ Do not operate a lift truck that has a maintenance problem or is not safe to operate.

(1) Instead, remove the key from the starting switch and put an **Out of service tag** on the truck.

(2) If all of the daily inspection checks were normal or satisfactory, the truck can be operated.



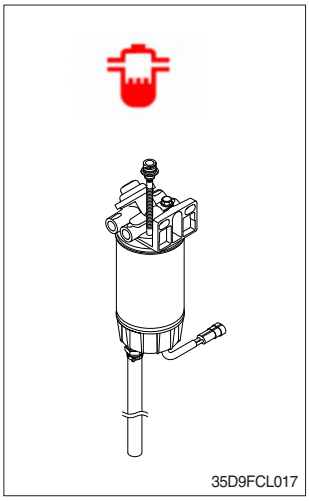
9) CHECK HYDRAULIC OIL LEVEL



(1) Rest fork on ground and stop the mast at upright vertical position and stop engine. Pull out dipstick and check oil level. If insufficient, add oil.

⚠ Hot oil and components can cause personal injury. Do not allow hot oil or components to contact skin.

10) CHECK GAUGES



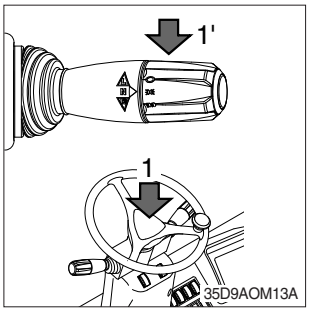
(1) Water in fuel warning lamp.
If the warning lamp stays on, drain the water from the water separator.

11) CHECK PARKING BRAKE (lever type)

Operating force	20~30 kg (44~66 lb)

(1) If the operating force is below 20-30 kg (44-66 lb), contact your HYUNDAI forklift distributor.

12) CHECK HORN AND LAMPS



(1) Check horn button and lamp switch if operate normally or not.
1 : Horn button
1' : Lamp switch

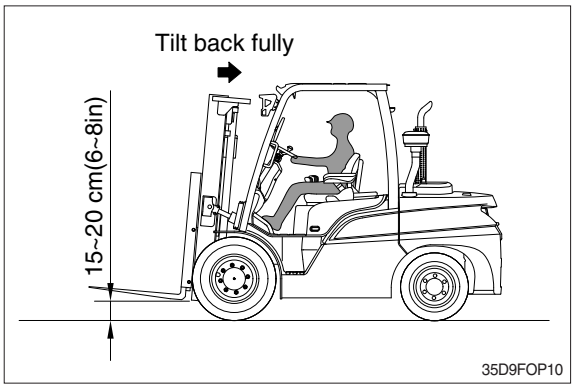
(2) If horn and lamp are malfunctioning, contact your HYUNDAI forklift distributor.

10. TRAVELING OF THE TRUCK

1) BASIC OPERATION

(1) Traveling posture

Lift the forks so that the forks are placed 15~20 ㎝ (6~8 in) above the ground and tilt back the mast fully.

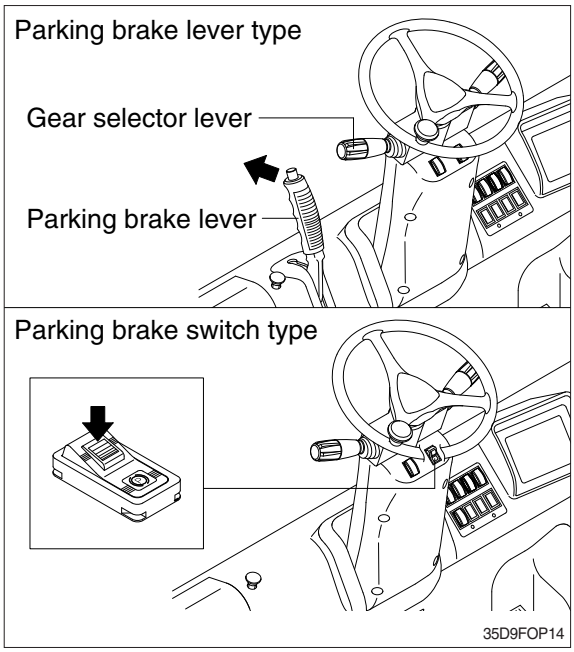


(2) Traveling operation

When warm-up operation is completed after the engine is started, move the truck according to the following procedures.

① Release the parking brake.

② Put the gear selector lever in the 1st stage of forward or backward direction and press gently the accelerator pedal to move the truck.



(3) Changing direction and speed

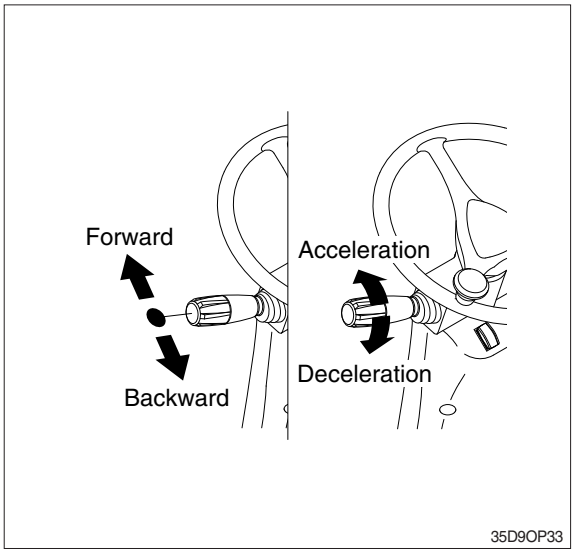
① The gear selector is designed for the mounting on the left side of the steering column.

② The positions (speeds) 1 to 2 are selected by a rotary motion, the driving direction Forward (F) - Neutral (N) - Reverse (R) by tilting the gear selector lever.

③ A neutral lock is installed as protection against inadvertent drive off.

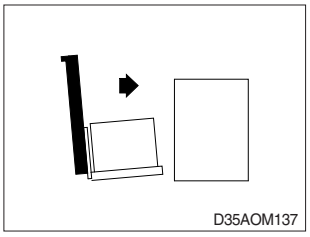
- Position N - Gear selector lever blocked in this position
- Position D - Driving

④ When doing work, run the truck in the 1st or 2nd speed.

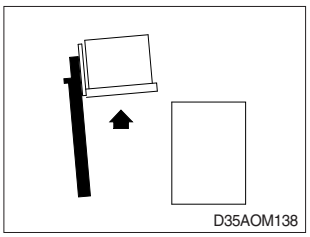


7) STACKING

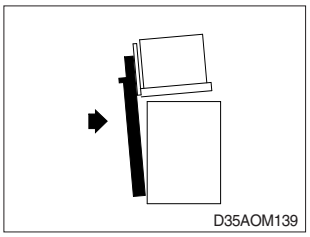
(1) To put a load on a stack



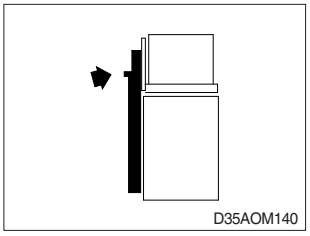
① Approach slowly and align the lift truck and load squarely with the stack.



② Raise the load as the lift truck nears the stack.

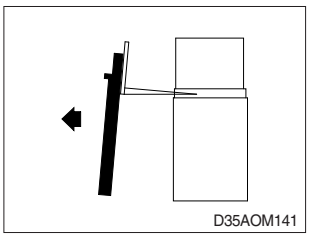


③ Move forward slowly until the load almost touches the stack. The leading edge and sides of the load pallet should line up exactly with the near edge and side of the load or rack on which you are stacking.

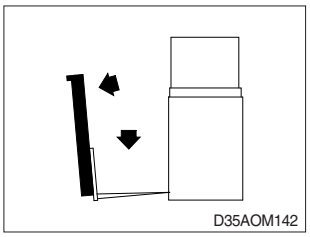


④ Stop close to the stack and further lift the load high enough to clear the top of the stack. Slowly move the load into position. Use care not to damage or move adjacent loads.

⑤ When the load is aligned with the stack beneath it, tilt the mast to the vertical position and carefully lower the load onto the top of the stack.



⑥ Lower the forks slightly to clear the load pallet. Tilt the forks forward slightly, if necessary.



⑦ Check your travel path, then carefully back away until the forks are clear of the stack. Stop and lower the forks to the travel position [150~200 mm (6~8 in) above the ground], then tilt back for travel.

7. PLANNED MAINTENANCE AND LUBRICATION

1. INTRODUCTION

ONLY TRAINED AND AUTHORIZED PERSONNEL should perform planned maintenance. Local HYUNDAI dealers are prepared to help customers put in place a planned maintenance program for checking and maintaining their lift trucks according to applicable safety regulations.

⚠ Powered industrial trucks may becomes hazardous if maintenance is neglected.

As outlined in section 4, operator maintenance and care, the operator should make a safety inspection of the lift truck before operating it. The purpose of this daily examination is to check for any obvious damage and maintenance problems, and to have minor adjustments and repairs made to correct any unsafe condition.

In addition to the operator's daily inspection, HYUNDAI recommends that the owner set up and follow a periodic planned maintenance (PM) and inspection program. The PM identifies needed adjustments, repairs, or replacements so they can be made before failure occurs. The specific schedule(frequency) for the PM inspections depends on the particular application and lift truck usage.

Planned maintenance is the normal maintenance necessary to provide proper and efficient machines operation. To protect your investment and prolong the service life of your machine, follow the scheduled maintenance check list.

This section recommends typical planned maintenance and lubrication schedules for items essential to the safety, life, and performance of the truck. It also outlines safe maintenance practices and gives brief procedures for inspections, operational checks, cleaning, lubrication, and minor adjustments.

Specifications for selected components, fuel, lubricants, critical bolt torques, refill capacities, and settings for the truck are found in section 8.

If you have needed for more information on the care and repair of your truck, see your HYUNDAI dealer.

4) PERIODICAL CHECK LIST

Service item		Oil Symbol	Service interval Hours								Initial Hours		
			50	250	500	1000	1500	2000	3000	4000	50i	100i	250i
Tightening (Mounting bolt)	Pump, MCV, steering unit, priority valve				T								T
	Tilt cylinder rod cover				T								T
	Lift, attachment, steering cylinder							T					
	Mast				T								
	Drive and steering axle				T								
	Drive and steering axle wheel		T										
	Counterweight, cabin		T										
	Engine, radiator, transmission		T										
	Hose, fitting, clamp (fuel, coolant, hydraulic)							T					
Lubrication	Tilt pin and mast roller	G			L								L
	Lift chain	EO			L								L
	Steering axle (linkage, kingpin, trunnion	G		L									
	Attachment cylinder rod and tube end			L									
	Pedal pivot				L								
	Drive shaft			L*1	L*2								
	Tilt cylinder rod	G		L*1	L*2								
	Tilt cylinder tube end	G			L								
	Steering unit spline (column shaft)	G						L					
Oli Leakage	Hydraulic tank				I								I
	Valve (MCV, priority, brake)				I								I
	Pump, steering unit				I								I
	Lift, tilt, steering cylinder			I*1	I*2								I
Function test	Steering wheel operation				I								I
	Natural drop and forward tilt							I					
	Fork load indicator (option)							I					
	Mast tilt angle measurement							M					
Periodic replacement parts	Engine oil	EO			R						R		
	Engine oil filter				R						R		
	Fuel filter				R								
	Water separator element				R								
	Air cleaner element			Clean			R						
	Transmission oil	MO			A	R						R	
	Transmission oil filter					R						R	
	Differential gear oil	GO			A	R						R	
	Brake oil	BF				R							
	Radiator coolant	C								R			
	Valve clearance					C							
	Injector tip						C						
	EGR cooler						C						
	EGR system								C				
	Oil separator element						R						
	Turbocharger								C				
	PCV valve						C						
	Fork condition and wear				C								
	Fan belt					R							
	Hydraulic oil tank air breather filter			R*1	R*2								
	Hydraulic oil return filter					R							
	Hydraulic oil suction strainer							Clean					
	Hydraulic oil	HO		A				R*3		R*4 (5000)			

*1 Harsh condition *2 Normal condition *3 Conventional hydraulic oil *4 Hyundai genuine long life hydraulic oil

A : Aid C : Checking L : Lubrication R : Replacement T : Retightening

I : Visual inspection (repair or replace if required) M : Measurement (adjust if required)

6) CLEAN RADIATOR AND OIL COOLER

Check, and if necessary, clean and dry outside of radiator and oil cooler. After working in a dusty place, clean radiator more frequently.

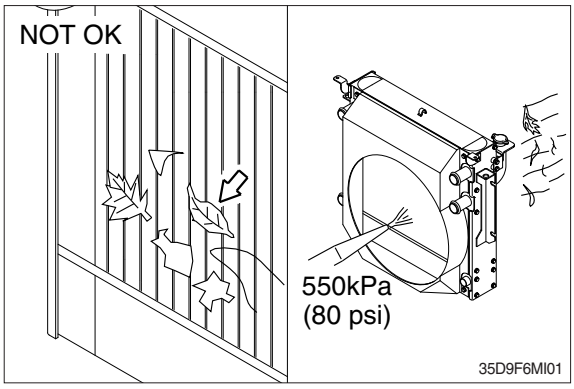
(1) Visually inspect the radiator for clogged radiator fins.

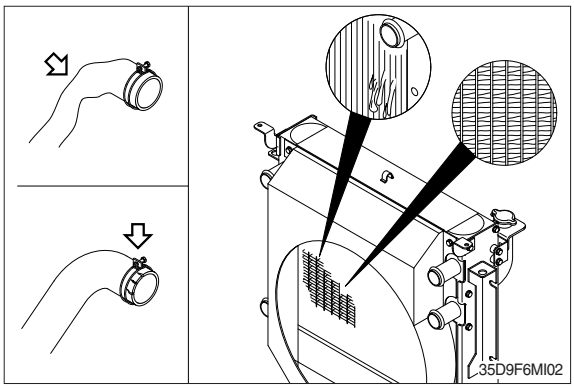
(2) Use 550 kPa (80 psi) air pressure to blow the dirt and debris from the fins.
Blow the air in the opposite direction of the fan air flow.

(3) Visually inspect the radiator for bent or broken fins.

※ **If the radiator must be replaced due to bent or broken fins which can cause the engine to overheat, refer to the manufacturer's replacement procedures.**

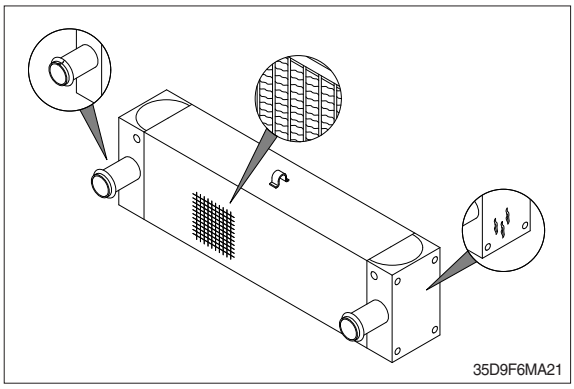
(4) Visually inspect the radiator for core leaks.



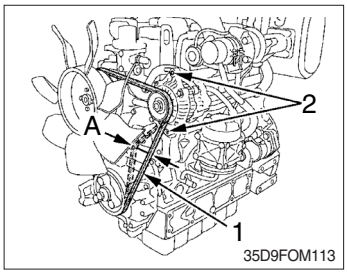


7) CHECK CHARGE AIR COOLER

Inspect the charge air cooler for dirt and debris blocking the fins. Check for cracks, holes, or other damage. If damage is found, please contact Hyundai distributor.



8) FAN BELT TENSION



1 Fan belt
2 Mounting bolt
A Deflection

(1) Stop the engine and remove the start switch.
(2) Apply moderate thumb pressure to belt between the pulleys.
(3) If tension is incorrect, loosen the alternator mounting bolts (2) and, using a lever placed between the alternator and the engine block, pull the alternator out until the deflection of the belt falls within acceptable limits.
(4) Replace fan belt if it is damaged or stretched beyond the acceptable limits.

※ **If belt is loosen or damaged and the fan is damaged, it could result in overheats or insufficient charging.**
Correct or replace belt.

· Specification (under load of 6~7 kgf (13.2~15.4 lbf))
A : 10~12 mm (0.39~0.47 in)

⚠ 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.

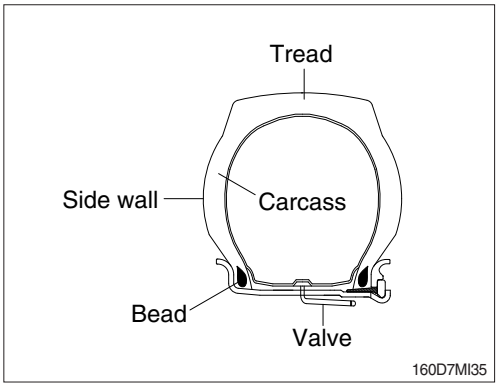
① Rubbing tires against road bank or rack at cargo-unloading spot.
② Tires slippage during working.
③ Abrupt starting of the truck.
④ When oil, grease or gasoline smeared on tire, clean those. Otherwise it may cause of permanent deformation.

25) REPLACEMENT OF TIRE

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

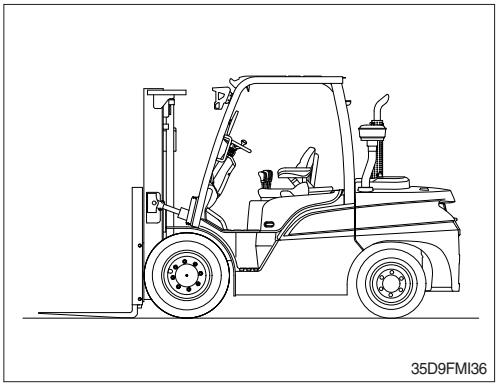
(1) Tires to be replaced

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 truck to flat ground, lower the fork to the ground and put the parking brake lever (or switch) to LOCK position.



4) COOLING SYSTEM

(1) Radiator fins cleaning

Remove dust between the radiator fins with compressed air. The steam or water may be used instead of compressed air. Air pressure should be less than 2 kgf/cm² kPa (30 psi). The nozzle of the cleaning device should be held about 50 mm (2 in) from the radiator fins. Also, check the rubber hose connected to the radiator. Replace if cracked or deteriorated. Check that the hose clamps are tight.

⚠ Be sure to keep the air or steam nozzle at right angles to the radiator. Wear the safety glasses and a face shield when using the compressed air.

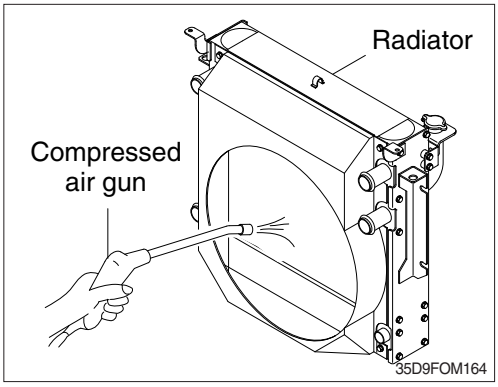
(2) Radiator cleaning

① Close the drain valves and add clean, soft water (city water, etc.) through the water filler. Add the radiator cleaner and run the engine at idling speed for 15 minutes.

② Stop the engine and drain water from the drain valves.

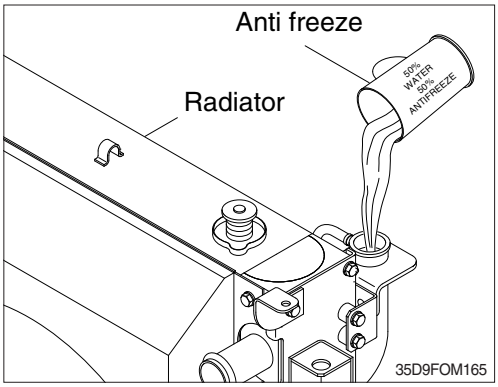
③ Add clean water and run at idling speed (5 to 10 minutes). Then stop the engine and drain water.

④ Close the drain valves and fill the radiator with clean water.



⚠ For low temperatures, add antifreeze. (see the cold weather operation for details). When not using antifreeze, add anticorrosive compound. Park the truck on level ground and clean the radiator.

※ Dispose of old antifreeze mixture in locally approved manner.



⚠ **Wear suitable eye protection and protective clothing when air cleaning. Never point the air nozzle at anyone.**

Air clean the mast assembly, drive axle, radiator- from both counterweight and engine side, engine and accessories, drive line and related components, and steering axle and cylinder.

12) CRITICAL FASTENER TORQUE CHECKS

Fasteners in highly loaded (critical) components can quickly fail if they become loosened. Also, loose fasteners can cause damage or failure of the component. For safety, it is important that the correct torque be maintained on all critical fasteners of the components that directly support, handle, or control the load and protect the operator. (SEE SECTION 8. SPECIFICATIONS)

Critical items include:

- Drive axle mounting
- Overhead guard or cabin
- Drive and steering wheel mounting
- Tilt cylinder mounting and yokes
- Counterweight mounting
- Mast mounting and components

13) LIFT CHAIN MAINTENANCE

The chain system on the mast was designed for safe, efficient, and reliable transmission of lifting force from hydraulic cylinder to the forks. Safe use of your truck with minimum down time depends on the correct care and maintenance of the lift chains. Most complaints of unacceptable chain performance are a result of poor maintenance. Chains need periodic maintenance to give maximum service life.

⚠ **Do not attempt to repair a worn chain. Replace worn or damaged chains with a set (LH & RH). Do not piece chains together.**

(1) Lift chain inspection and measurement

Inspect and lubricate the lift chains every 10 hours or daily and check tension every 250 hours or monthly. When operating in corrosive environments, inspect the chains every 50 hours. During the inspection, check for the following conditions:

- Rust and corrosion, cracked plates, raised or turned pins, tight joints, wear, and worn pins or holes.
- When the pins or holes become worn, the chain becomes longer. When a section of chain is 3% longer than a section of new chain, the chain is worn and must be discarded.
- Chain wear can be masured by using a chain scale or a steel tape measure. When checking chain wear, be sure to measure a segment of chain that moves over a sheave. Do not repair chains by cutting out the worn section and joining in a new piece. If part of a chain is worn, replace all the chains of both sides on a truck.

(2) Lift chain lubrication

Lift chain lubrication is an important part of your maintenance program. The lift chains operate under heavy loadings and function more safely and have longer life if they are regularly and correctly lubricated. HYUNDAI chain lubricant is recommended; it is easily sprayed on and provides superior lubrication. Heavy motor oil may also be used as a lubricant and corrosion inhibitor.

1. ENGINE SYSTEM

Trouble symptom	Probable cause	Remedy
When it is difficult to start the engine	· Fuel is thick and doesn't flow.	· Check the fuel tank, and remove water, dirt and other impurities. · Check the fuel filter cartridge and replace it if necessary.
	· Engine oil becomes thick in cold weather and engine cranks slow.	· Use oils of different viscosities, depending on ambient temperatures. (Use 10W-30 in winter season.)
	· Battery is discharged and the engine will not crank.	· Charge the battery.
When output is insufficient	· Fuel is insufficient.	· Refuel. · Check the fuel system. (Bleed the fuel system if necessary.)
	· Overheating of moving parts	· Consult your Hyundai dealer.
	· Air cleaner is dirty.	· Clean the element.
	· The output is limited because of a trouble.	· Check the engine warning lamp. (If a trouble occurs, it means that the ECU might be in the output limiting mode.)
When engine suddenly stops	· Lack of fuel.	· Refuel. · Check the fuel system. (Bleed the fuel system if necessary.)
	· Overheating of moving parts.	· Consult your Hyundai dealer.
	· Air cleaner is dirty.	· Clean the element.
	· Forced stop due to a trouble.	· Check the engine warning lamp. (If a serious trouble occurs, it means that the ECU might have forced the engine to a stop.)
When engine must be stopped immediately	· Engine revolution suddenly decreases or increases.	· Check the adjustments and the fuel system.
	· Unusual sound is heard.	· Check all moving parts carefully.
	· Oil lamp lights up during operation.	· Check the lubricating system. · Check to see if the engine bearing clearances are within factory specs. · Check the function of the relieve valve in the lubricating system. · Check pressure switch. · Check filter base gasket.
	· Engine warning lamp lights up.	· Consult your Hyundai dealer.
When engine overheats	· Engine oil insufficient.	· Check oil level. Replenish oil as required.
	· Fan belt broken or elongated.	· Change belt or adjust belt tension.
	· Coolant insufficient.	· Replenish coolant.
	· Excessive concentration of antifreeze.	· Add water only or change to coolant with the specified mixing ratio.
	· Radiator net or radiator fin clogged with dust.	· Clean net or fin carefully.
	· Inside of radiator or coolant flow route corroded	· Clean or replace radiator and parts.
	· Fan or radiator or radiator cap defective	· Replace defective parts.
	· Thermostat defective	· Check thermostat and replace if necessary.
	· Temperature gauge or sensor defective	· Check temperature with thermometer and replace if necessary.
	· Overload running	· Reduce load.
	· Head gasket defective or water leakage	· Replace parts.

※ If any of the sensors of common-rail engine malfunctions, the engine output and rotating speed drops during the run. In such case, contact your Hyundai dealer for repair.