

# HINO BUS

REAR ENGINE BUS SERIES  
EQUIPPED WITH W04D, W04C-T ENGINE

**RB**

*Hino*

**HINO MOTORS, LTD.**  
**OVERSEAS OPERATIONS**  
**TECHNICAL DIVISION**

7-17, NIHONBASHI 1-CHOME, CHUO-KU, TOKYO, 103 JAPAN

# FOREWORD

We thank you for the purchase of a Hino product.

This Handbook has been prepared to give you a thorough understanding on the operation of the Hino medium duty rear engine bus series, together with detailed methods for inspection and servicing that are required daily.

We recommend that this Handbook be read carefully, even by those of you who are familiar with buses, as it contains practical tips based on our many years experience of the automobile engineering.

This Handbook has been edited for the undermentioned models. Please note that this Handbook applies to all types of RB models and explains all equipment, including options (refer to "EQUIPMENTS" in page 81 to identify relevant accessories). Therefore, you may find some explanations for equipment not installed on your vehicle. If there are any points in doubt concerning the contents of this Handbook, please contact your nearest Hino dealer.

MARK OF BUS MODEL	BUS MODEL	ENGINE MODEL	TRANSMISSION SERIES NO.	REAR AXLE SERIES NO.
RB	RB115K	W04D	LG05S	SS12
	RB145K	W04C-T	LE05S	

Please ask about your bus type to your salesman.

- NOTE**
- This Handbook should be kept in your bus. If the bus is sold, who will need the information contained.
  - All information and specifications in this Handbook are based upon the latest product information available at the time of printing.
  - Hino motors reserves the right to make change at any time without prior notice.

GENERAL INTRODUCTION	GI
LAYOUT OF OPERATING DEVICES & INSTRUMENTS	LY
METERS & GAUGES	MG
SWITCHES & KNOBS	SW
FITTINGS & ACCESSORIES	FA
	TR
	TL
DAILY INSPECTION	DI
OPERATION	OP
IN AN EMERGENCY	EM
MAINTENANCE	MA
TROUBLE SHOOTING	TS
SPECIFICATIONS	SP
EQUIPMENTS	EQ

# GENERAL INTRODUCTION

SERIAL NUMBER .....	2
INSPECTION AND MAINTENANCE .....	3
NO GUARANTEE ON NON-HINO PARTS .....	3
NO GUARANTEE FOR CARELESS HANDLING ..	4
WARNING RELATED TO THE FUEL INJECTION PUMP .....	4
SYMBOL MARKS .....	5

## SERIAL NUMBER

These numbers are used for identification purposes when you have vehicle registered or inspected. Please quote these numbers when ordering spare parts or requesting repair work, as they will help your dealer to give you prompt service attention.

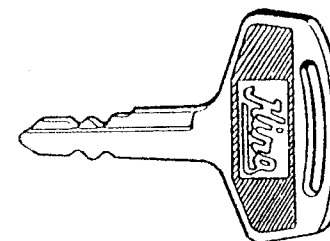
### ● Name Plate

The name plate is attached to the lower part of the side panel.



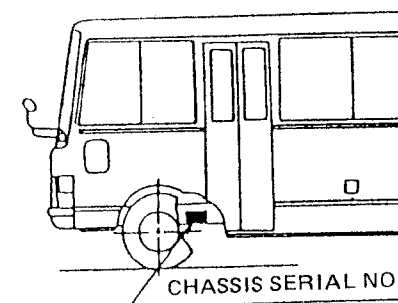
### ● Key No.

Record your key number and keep the number in a safe place. If you should lose your key, a duplicate can be made by your authorized Hino dealer using the key number.



### ● Chassis Serial No.

The chassis serial number is engraved on the left side frame near the front wheel.

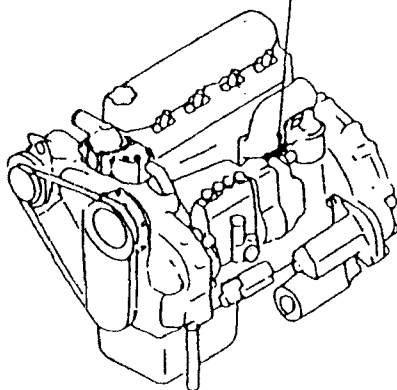


● Engine Serial No.

The engine serial number is engraved on the engine cylinder block.

(W04D, W04C-T)

ENGINE SERIAL No.



## INSPECTION AND MAINTENANCE

Be sure to take advantage of services offered by Hino dealer and service shop for periodic maintenance, and any other problems. The servicing personnel at these places are all well trained and experienced, and stand ready to give you expert service and advice.



Even though original parts are of the highest quality, lack of or incomplete inspection and maintenance will shorten their service life. Conduct maintenance as described under "INSPECTION & MAINTENANCE".

## NO GUARANTEE ON NON-HINO PARTS

GI

Be sure to use Hino's genuine products. No guarantee will be provided for any failure of accident caused by the use of non-Hino products, as a matter of course, and for any trouble of genuine parts concurred due to the use of such products.

HINO MOTOR

*Hino*

HINO MOTOR



*Hino*

## **NO GUARANTEE FOR CARELESS HANDLING**

---

No guarantee will be provided for any failure or accident caused by careless handling. In order to prevent such a thing from occurring you should understand the contents of this book and carry out strictly right handling and daily inspection. If anything should happen, consult out dealer at an earliest moment.

## **WARNING RELATED TO THE FUEL INJECTION PUMP**

---

The injection pump is adjusted and sealed to provide the vehicle and engine optimum performance.

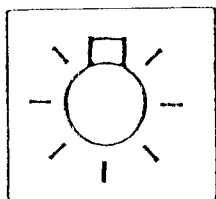
Breaking the seal and tampering with the standard adjustment can adversely effect engine performance and function, cause non-conformance with exhaust noise emission regulations, and result in engine damage. The Hino warranty does no cover failures caused by such above-mentioned tampering.

When adjustment of the injection pump is necessary, have your authorized Hino dealer to adjust it.

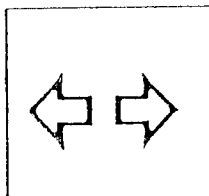
## SYMBOL MARKS

GI

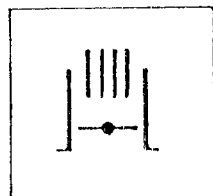
Some of the following symbols are used to identify controls and displays on these models.



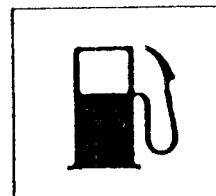
LIGHTING SWITCH



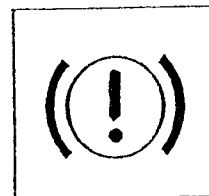
TURN SIGNAL



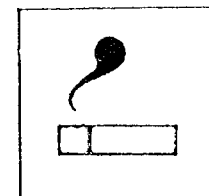
EXHAUST BRAKE



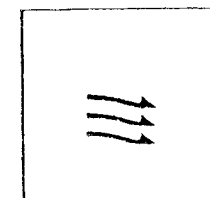
FUEL



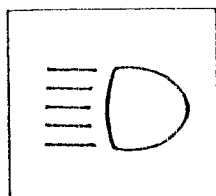
VACUUM/AIR  
WARNING



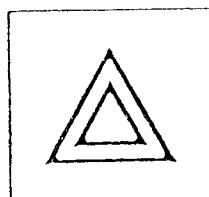
CIGARETTE  
LIGHTER



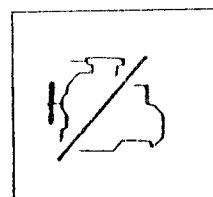
VENTILATING



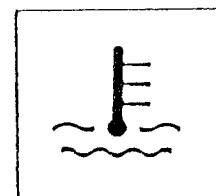
HIGH BEAM



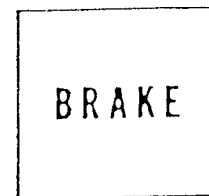
HAZARD LAMP



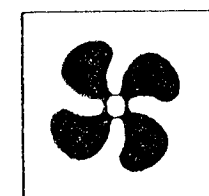
ENGINE STOP



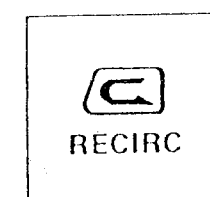
COOLANT  
TEMPERATURE



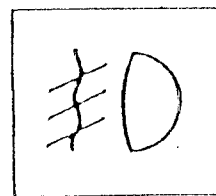
BRAKE FLUID  
LEVEL



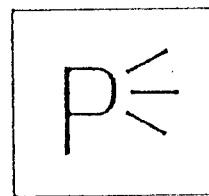
FAN BLOWER



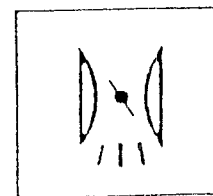
RECIRCULATING  
AIR



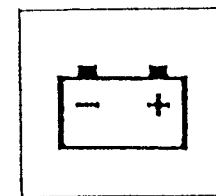
FOG LAMP SWITCH



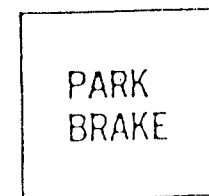
PARKING LAMP



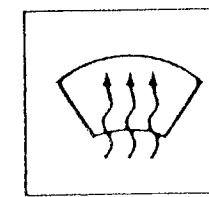
ENGINE THROTTLE



CHARGING  
CONDITION



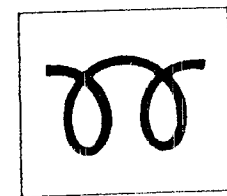
PARKING BRAKE



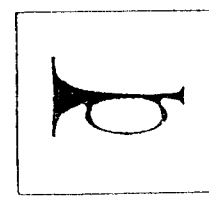
DEFROSTING



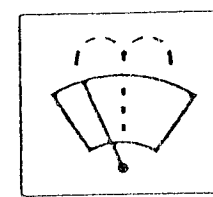
FRESH AIR



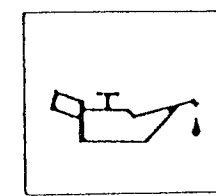
PRE-HEATER



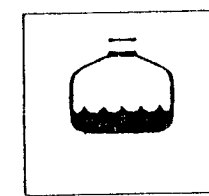
HORN



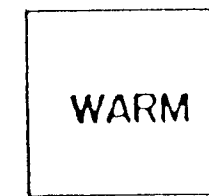
WINDSHIELD  
WIPER & WASHER



ENGINE OIL



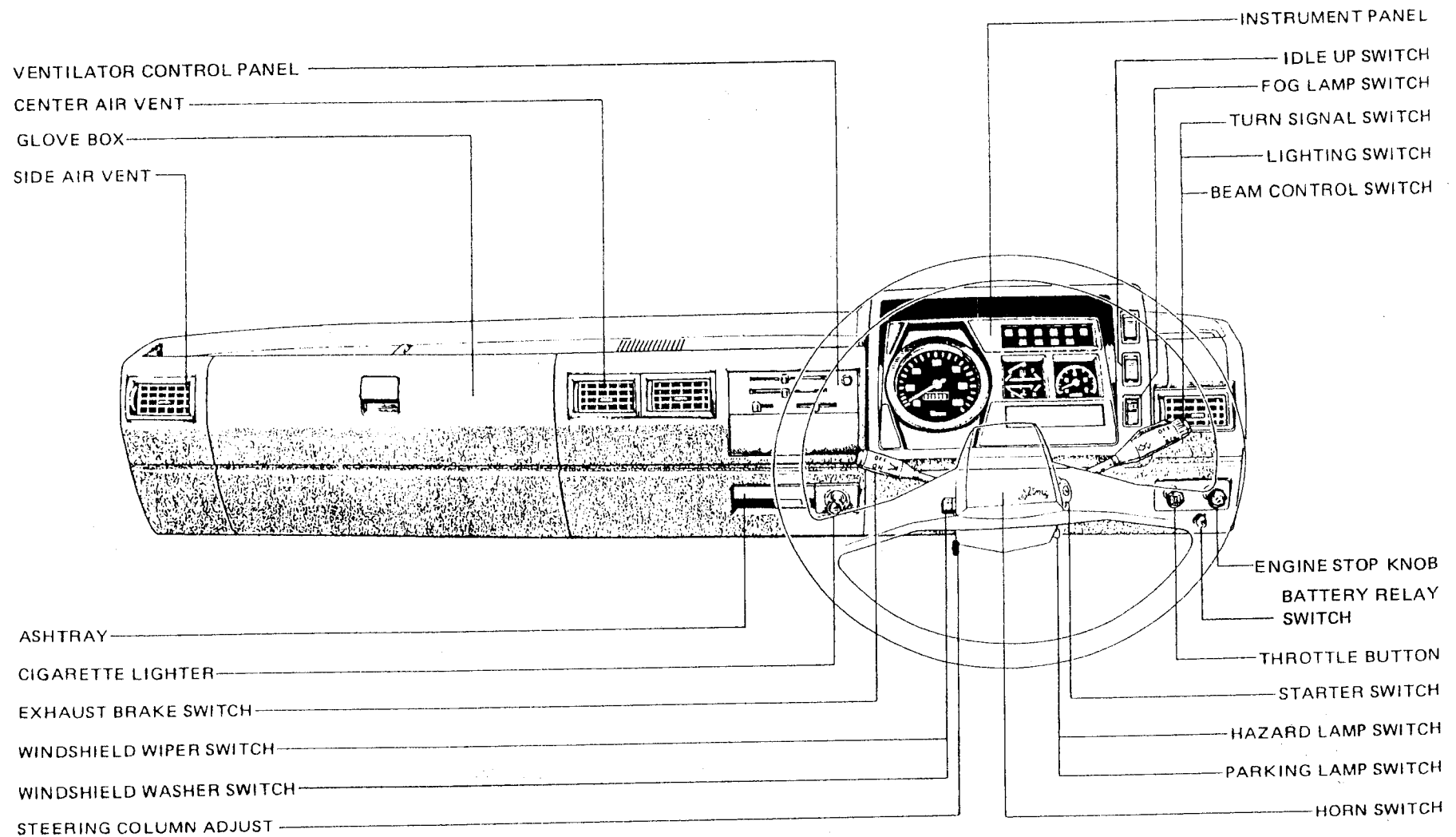
COOLANT LEVEL



HEATING

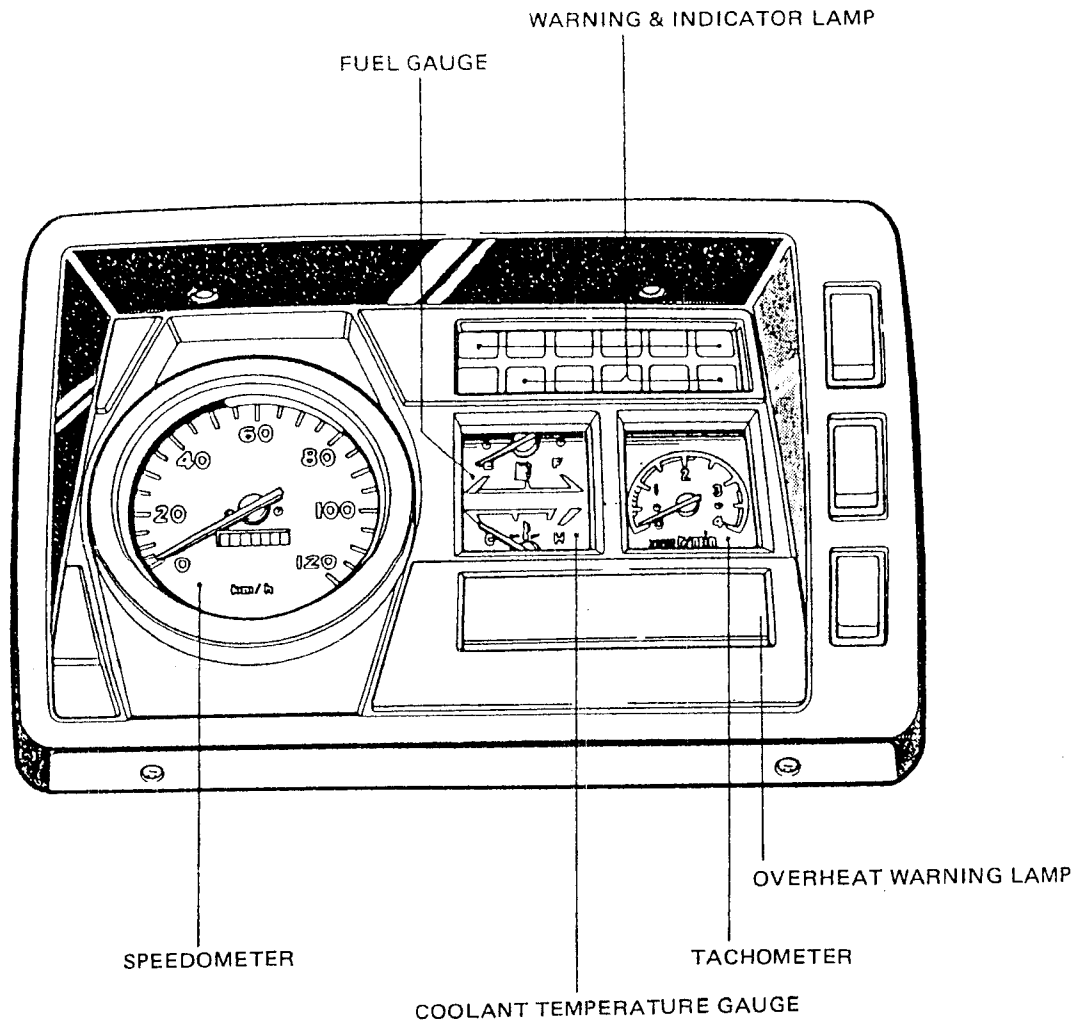
# LAYOUT OF OPERATING DEVICES & INSTRUMENTS

**NOTE:** This drawing applies to all types of RB models and explains all equipments on the instrument cluster, including options. Therefore, you may find some equipment not installed on your vehicle.

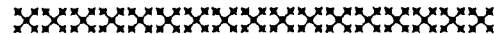




# INSTRUMENT PANEL

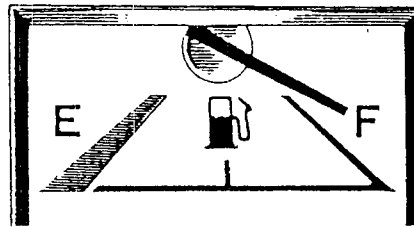


# METERS & GAUGES



FUEL GAUGE .....	8
COOLANT TEMPERATURE GAUGE .....	8
SPEEDOMETER .....	9
TACHOMETER .....	9
WARNING LAMPS .....	10
INDICATOR LAMPS .....	12

## FUEL GAUGE



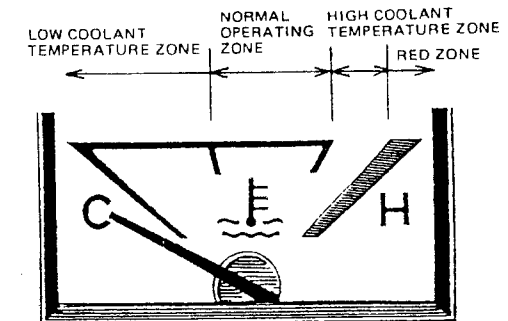
The fuel gauge indicates the approximate level of fuel in the fuel tank. It operates when the starter switch is in the "ON" positions. Check fuel supply when the vehicle is reasonably level; either standing still or moving steadily. Fill the tank with diesel fuel when the pointer gets near "E."

**NOTE** • Never use any fuel other than diesel fuel because other fuels will damage the engine.

After any repairs to the fuel system or in the event of driving until the fuel tank is completely empty, the air must be bled from system.

Air bleeding from fuel system  Page 48

## COOLANT TEMPERATURE GAUGE



This gauge operates when the starter switch is "ON" and indicates the engine coolant temperature.


"H" zone indicates the engine overheating.

### WARNING

- Drive in the normal operating zone.
- When the high coolant temperature zone is reached, stop the vehicle and run the engine at slightly increased idle speed for cooling. .  
(Do not stop the engine immediately).
- Never drive in the red zone.
- The life of the engine may be reduced by driving outside of the normal operating zone.

**NOTE** • When driving in the normal operating zone is not possible, check the coolant level, inspect for leaks, and check the V-belt.

Checking of coolant level  Page 30

Checking of V-belt tension  Page 31

- When the coolant temperature does not rise sufficiently in cold regions, install a radiator curtain etc.

When the normal operating coolant temperature is not obtained in spite of execution of the above countermeasures, contact your nearest Hino dealer.

## SPEEDOMETER

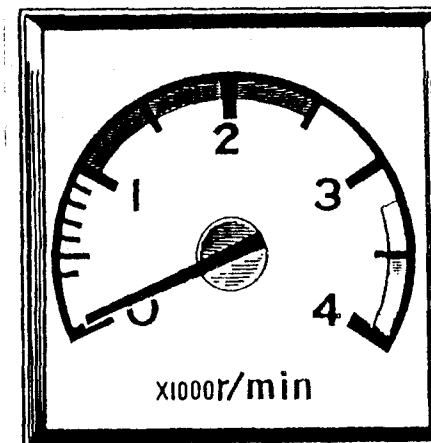


ODOMETER

The speedometer indicates the vehicle's forward speed in kilometers per hour (km/h).

The odometer records total mileage up to 999999.9 km. After that it returns to zero.

## TACHOMETER



The tachometer indicates the engine speed in revolutions per minute (rpm).

If the engine rotates more than the specified maximum "R.P.M." the indicator of the tachometer which is installed on the meter panel enters red zone, and also the engine over-running warning buzzer will sound. Do not continue in this condition as damage to the engine may result.

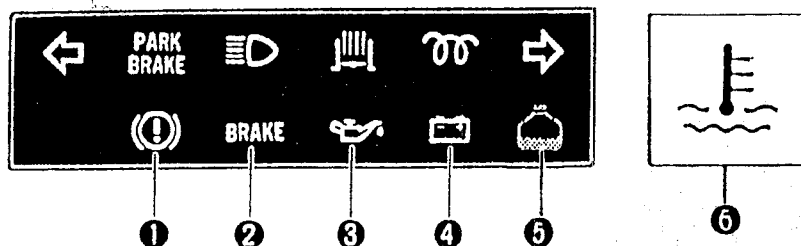
### WARNING

Never drive with the tachometer in the red zone. Overrevolving may cause severe engine and power train damage and can result in personal injury and/or property damage.

Maximum Permissible Engine Speed:

W04D	3,200 rpm
W04C-T	

## WARNING LAMPS



### WARNING

If the warning lamp comes on and/or the buzzer sounds while driving, pull off the road and stop your vehicle carefully. Have your authorized Hino dealer or qualified service shop check and correct.

#### ① Vacuum Warning Lamp

Vacuum warning lamp warns falling of the negative pressure in the vacuum tank. With the negative pressure in normal level, the vacuum warning lamp goes out and remains out when the engine is started.

If the negative pressure falls below 400 mmHg, it causes the warning lamp to turn on simultaneously bringing the buzzer into function. The buzzer alone may sound when the vacuum pump has gone wrong.

Checking of V-belt tension Page 31

### WARNING

If the warning lamp and/or buzzer come on while driving, stopping distance when braking may be longer and brake pedal effort may be greater. Have your authorized Hino dealer or qualified service shop check and correct the malfunction before driving again.

NOTE • But in any case of above the buzzer doesn't sound as long as parking brake is operating.

#### ② Brake Fluid Level Warning Lamp

The brake fluid level warning lamp indicates the low brake fluid level in the reservoir tank. If the warning lamp comes on and buzzer sounds, check the fluid level in the reservoir tank and oil leaks from the system.

Checking of brake oil level Page 33

NOTE • But in any case of above the buzzer doesn't sound as long as parking brake is operating.

#### ③ Oil Pressure Warning Lamp

The oil pressure warning lamp indicates the low engine oil pressure. When the starter switch is turned ON, the warning lamp comes on and buzzer sounds before the engine is started.

If the warning lamp comes on and buzzer sounds while engine is running, check the level of oil in the engine and lubricating system for failure.

Checking of engine oil level Page 30

NOTE • But in any case of above the buzzer doesn't sound as long as parking brake is operating.

#### ④ Charge Warning Lamp

The charge warning lamp warns the state of charging circuit. When the starter switch is turned "ON," it comes on and the lamp should not be "ON" while engine is at idle speed or above. If the charge warning lamp turns on while the engine is running, check the fan belt and other parts of the charging circuit.

Checking of V-belt tension Page 31



### ⑤ Coolant Level Warning Lamp

When the coolant level in the header tank falls below the specified level, the warning lamp will come on and buzzer will sound.

Checking of engine coolant level  Page 30

#### WARNING

If the warning lamp comes on and/or buzzer sounds while driving, pull off the road immediately and stop your vehicle carefully.

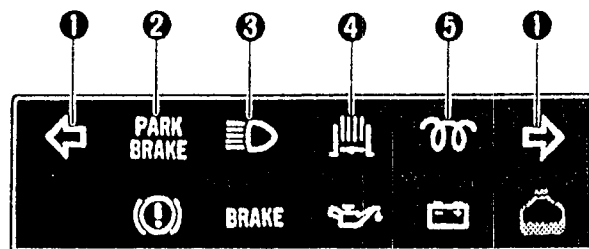
### ⑥ Overheat Warning Lamp

When the coolant temperature is too high, the lamp lights and the buzzer sounds to warn engine over-heating.


**NOTE** • When the lamp indicates “overheat” stop the vehicle and wait until the temperature of the engine coolant drops with the engine idling.

## INDICATOR LAMPS

---



### ① Turn Signal Indicator Lamps

The turn signal indicator lamp flashes when the turn signal lamps are operating or  marked hazard lamp switch is pulled out.

### ② Parking Brake Indicator Lamp

The parking brake indicator lamp turns on when the parking brake is applied. It goes out when the parking brake lever is released.

### ③ Headlamp Beam Indicator Lamp

The headlamp beam indicator lamps lights when the headlamp high beam is turned on or the passing switch lever is pulled up.

### ④ Exhaust Brake Indicator Lamp

The lamp lights when the exhaust brake switch is turned on.

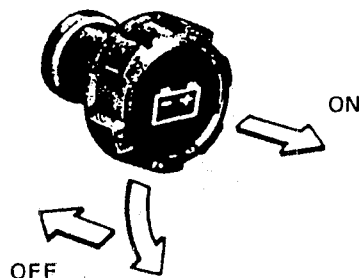
### ⑤ Pre-heater Indicator Lamp

Pre-heater indicator lamp turns on during engine pre-heating, and it goes out when engine pre-heating is completed. Light-up time of pre-heater indicator lamp changes according to engine temperature and glow plug temperature.

# SWITCHES & KNOBS

BATTERY RELAY SWITCH . . . . .	13
STARTER SWITCH . . . . .	13
PRE-HEATER SWITCH . . . . .	14
ENGINE STOP KNOB . . . . .	14
THROTTLE CONTROL KNOB . . . . .	15
LIGHTING SWITCH . . . . .	15
BEAM CONTROL SWITCH . . . . .	15
TURN SIGNAL SWITCH . . . . .	16
HAZARD LAMP SWITCH . . . . .	16
PARKING LAMP SWITCH . . . . .	16
FOG LAMP SWITCH . . . . .	17
EXHAUST BRAKE SWITCH . . . . .	17
WINDSHIELD WIPER SWITCH . . . . .	17
WINDSHIELD WASHER SWITCH . . . . .	18
HORN SWITCH . . . . .	18
IDLE UP SWITCH . . . . .	18
STARTER SAFETY SWITCH . . . . .	19

## BATTERY RELAY SWITCH



### 1 Pull (on position)

When the battery switch is pulled on, the battery circuit is closed.

The hazard lamp, parking lamp, and dome lamp circuits are always closed independently of the operation of battery switch.

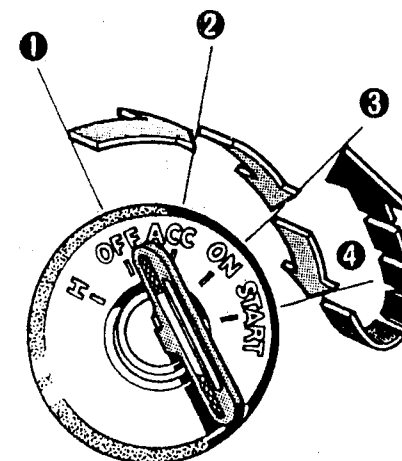
**NOTE** • Never try to push this switch straight in when it is at ON.

When not using the vehicle for a long period of time, sure to turn the switch to off.

### 2 Push (off position)

When the battery switch is pushed in the battery circuit is opened.

## STARTER SWITCH



### 1 OFF Position

The key can only be inserted or removed at this position. After the engine is stopped, always set the switch to OFF position.

**NOTE** • When the switch is left in the ON or ACC positions for a length of time with the engine stopped, the batteries will discharge and this can result in difficulty in starting the engine.

### 2 ACC (ACCESSORY) Position

Turning the key to the first position closes the accessory equipment circuit (such as the cigarette lighter and radio), but does not close the starter, warning device and charging circuits.



### ③ ON Position

Turning the key to the second position closes all electrical circuits except the starter, and lighting circuits.

#### WARNING

Leave the key in the ON position as long as the engine is running. Driving the vehicle with the key in the OFF or ACC positions is hazardous causing the following trouble which can result in personal injury and/or property damage.

- Warnings, indicator lamps, gauges, and horn will not operate.
- Since alternator is not generating, the batteries will be discharged.

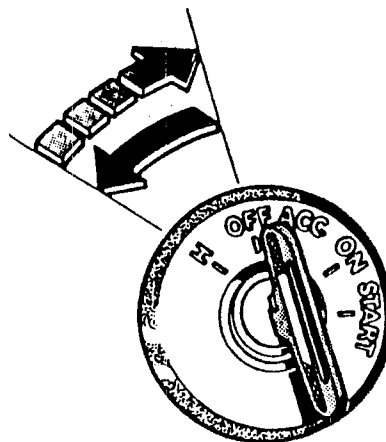
### ④ START Position

Turning the key to this position energizes the starter allowing the starter to crank the engine. The key automatically returns to the ON position when released.

#### WARNING

Do not turn the key to START position after the engine has started.  
This could cause damage to the starter pinion and ring gear.

### PRE-HEATER SWITCH IF SO FITTED



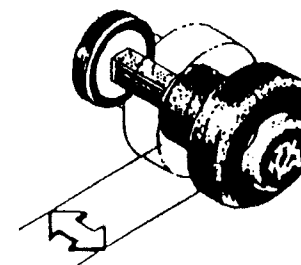
Turn the key counterclockwise from "OFF" to the first position.

This switch is used during cold weather to heat the intake air.

Turning the key to this position energizes the heater plug making starting easier. The key returns automatically to the "OFF" position when released.

At the time, pre-heater indicator lamp is brought into function and indicating the heating condition of the intake air.

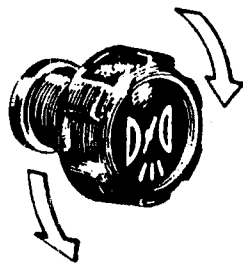
### ENGINE STOP KNOB



Pull out the knob to stop the engine when it is idling, and let it remain all the way out. When starting the engine, push the knob in all the way while pressing on the button on the knob.



## THROTTLE CONTROL KNOB



When the engine is started, set the engine idling speed by turning the throttle control knob in or out.

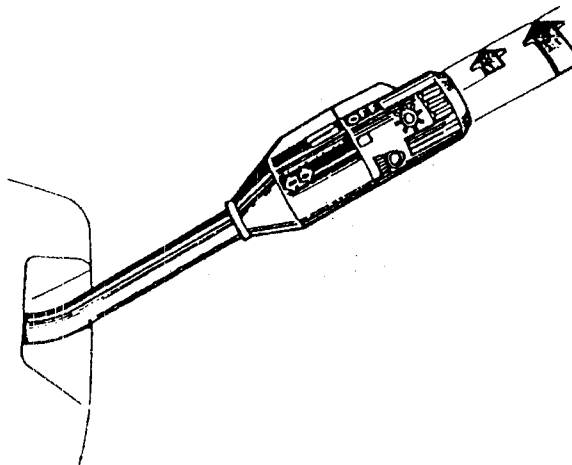
Engine Idling Speed:

W04D	600 – 650 rpm
W04C-T	

### WARNING

Do not use the throttle control button while driving, since this could affect adversely stopping ability of your vehicle resulting in personal danger and/or property damage.

## LIGHTING SWITCH



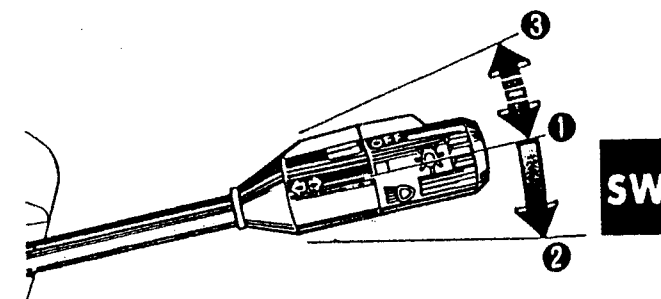
Turn the switch counter clockwise, the lighting switch operates in the following manner.

	1st STOP	2nd STOP
Switch position		
Instrument panel lamp	○	○
Clearance lamp	○	○
Tail lamp	○	○
Licence plate lamp	○	○
Head lamp	—	○

○ : light

— : not light

## BEAM CONTROL SWITCH



### ① Low Beam

The outer headlamps light at low beam when the lighting switch is turned to the 2nd stop.

### ② High Beam

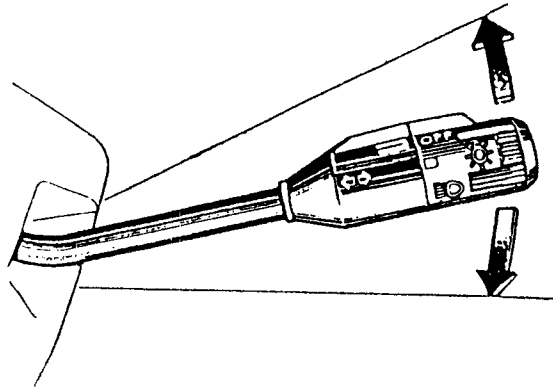
Push down the switch. The four headlamps light at high beam when the lighting switch is turned to the 2nd stop. The high beam indicator lamp lights while the high beam is used.

### ③ Passing

Pull up the switch. The four headlamps flash when the switch lever is held up, even if the lighting switch is "OFF." The high beam indicator lamp in the instrument panel will also light.

Switch lever returns automatically to the "Low Beam" position when the lever is released.

### TURN SIGNAL SWITCH



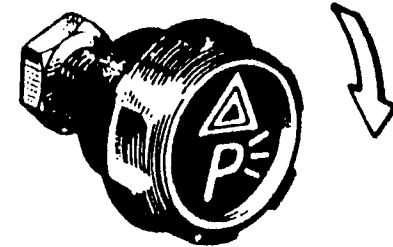
The turn signal switch is actuated by pulling the switch lever downward for a right turn, or pushing upward for a left turn, and the instrument panel indicator lamp will flash in the direction of the turn being signalled. The switch lever is of the self-cancelling type.

### HAZARD LAMP SWITCH



The hazard lamp switch controls the hazard lamps independently of the starter switch. The hazard lamp switch should be used to warn other drivers of your emergency stopping as all the turn signals will flash when the knob is pulled out. Always try to stop off the road if possible.

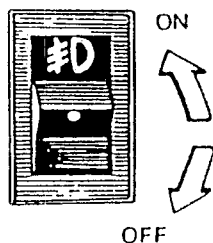
### PARKING LAMP SWITCH



Turn the switch knob to the right, the parking lamps are lit on.

**NOTE •** The turn signal lamp does not work when the hazard warning lamps are turned on.

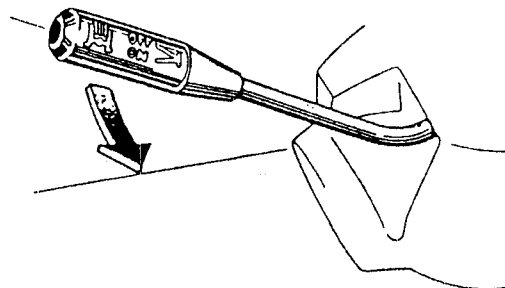
## FOG LAMP SWITCH



To operate the fog lamps, turn the lighting switch to the 1st stop and hold, then turn the fog lamp switch.

**NOTE** • Fog lamps operate only when the lighting switch is in 1st stop.

## EXHAUST BRAKE SWITCH



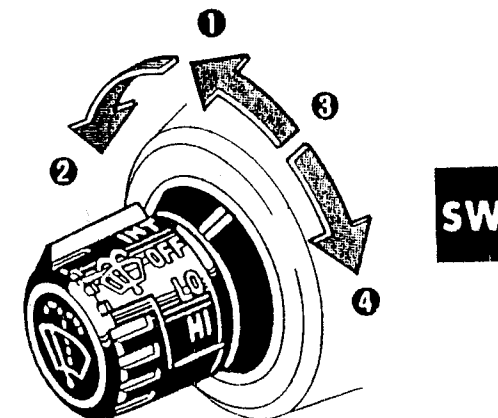
Pull the switch lever down to engage the exhaust brake (ON position).

The exhaust brake indicator lamp at the instrument panel will light up. The exhaust brake will function when the accelerator pedal is released and will stop functioning when the accelerator pedal is again pressed, allowing normal vehicle acceleration. When the clutch pedal is depressed, the exhaust brake does not function even if the accelerator pedal is released.

Push the switch lever up to disengage the exhaust brake (OFF position).

The exhaust brake indicator lamp will go out indicating that the exhaust brake system is no longer actuated.

## WINDSHIELD WIPER SWITCH



Select the switch position appropriate to the weather conditions.

### ① LO Position

Windshield wiper operates at low speed.

### ② HI Position

Windshield wiper operates at high speed.

### ③ OFF Position

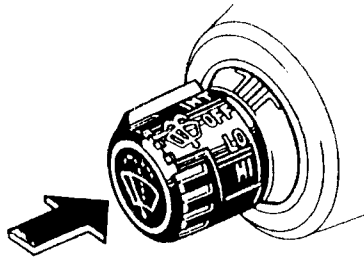
The wipers are automatically stopped at the home position when the switch is returned to OFF position.

**NOTE** • Do not operate the wipers if the windshield is dry. It may scratch the glass.

### ④ INT Position

Turned to the INT position, windshield wiper operates inter-mittently.

## WINDSHIELD WASHER SWITCH



To operate the washer, push in the knob. The washer fluid is sprayed on the windshield while the washer switch is pushed in.

If the washer does not work, check to see whether the washer fluid reservoir tank is empty.

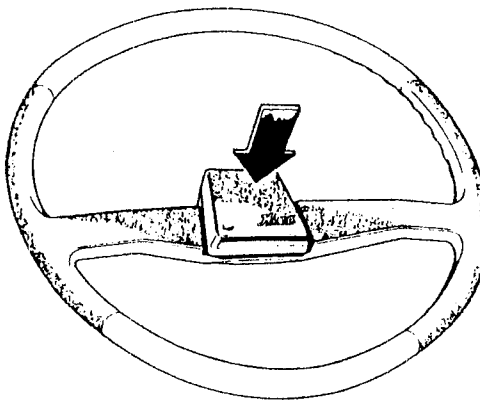
Adding washer fluid  Page 35

- NOTE**
- Do not operate the washer continuously for more than 15 seconds.
  - Select the appropriate concentration to protect against freezing according to the instructions on a washer fluid container.
  - Do not use antifreeze which may damage the painted surface on the vehicle.

### WARNING

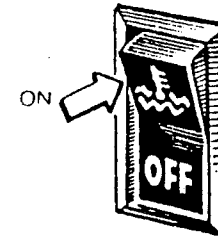
In cold weather, warm the windshield with the defroster before using the washer. This will help prevent icing, which could block your vision.

## HORN SWITCH



The horn switch is mounted in the center of the steering wheel. The horn blows by pressing on the center pad.

## IDLE UP SWITCH



This switch is used only for following cases to increase engine idling speed.

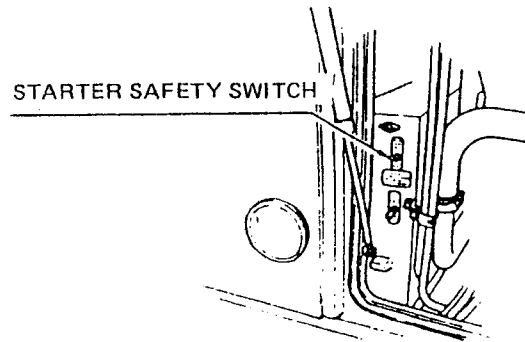
- For engine warming-up
- To obtain good heating condition by the cab-heater while vehicle is parking
- For quick heating efficiency of the cab-heater

To operate the idle-up system, turn the switch. Idle-up system can be actuated when the transmission gear shift lever is in neutral position, and clutch pedal is released. At the same time, the indicator lamp built-in the switch tumbler is turned on.

### WARNING

Don't operate this switch while vehicle is running.  
Don't operate this switch in a garage or enclosed area.

## STARTER SAFETY SWITCH



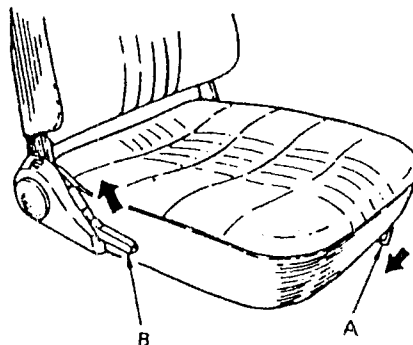
Before inspecting or repairing the engine in the engine compartment, turn this switch OFF. (This cut the starting circuit of the engine by the starter switch). After inspecting or repairing, always turn this switch ON.



# FITTINGS & ACCESSORIES

SEATS	20
SEAT BELT	20
ADJUSTABLE STEERING COLUMN	21
INSIDE REAR VIEW MIRROR	22
OUTSIDE REAR VIEW MIRROR	22
CIGARETTE LIGHTER	22
ASHTRAY	23
GLOVE COMPARTMENT	23
SUN VISOR	23
VENTILATOR CONTROL	
PANEL & AIR VENT	24
FAN-BLOWER VENTILATOR	25
CAB-HEATER	26
AIR CONDITIONER	27
REAR HEATER	28
TIRE CARRIER	28

## SEATS



### ● Fore and Aft

Move the lever A toward the left and while holding it, slide the seat forward or backward to the desired position.

Release the lever to lock.

After this adjustment, try to move the seat forward and backward to make sure that it is locked securely.

### ● Seat Back Angle

Pull the lever B beside the seat upward to release the lock and lean back or forward to the desired angle. Then release the lever to lock.

#### WARNING

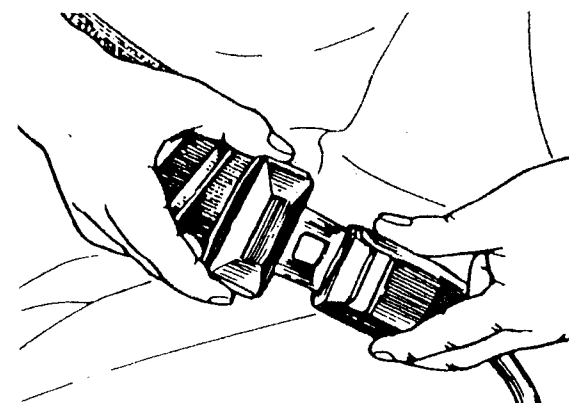
All seat adjustments must be made before driving the vehicle, and should never be made while the vehicle is moving. Any adjustment of the seats while driving can cause the driver to lose control, and result in personal injury and/or property damage.

## SEAT BELT

### WARNING

To help reduce the possibility and/or the severity of injury in accidents or sudden stops, Hino Motors recommends that the driver and passengers be properly restrained at all times, using the seat belts.

### ● Use of Seat Belt

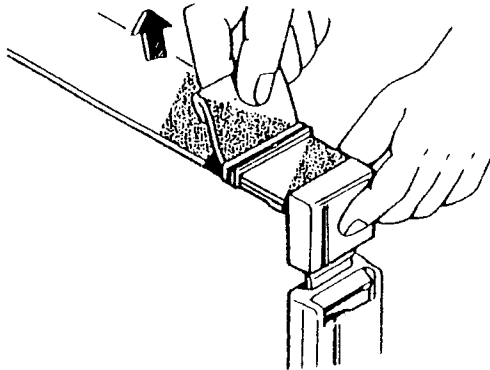


To fasten your seat belt, push the tongue into the buckle until you hear it a click.

Be sure that the belt is not twisted and that the connection is secure.

To unfasten the belt, push the "PRESS" button located on the buckle and then pull the tongue from the buckle.

### ● Adjustment of Seat Belt



To loosen the belt, hold the tongue at a right angle to the belt, as shown, and pull the tongue. To tighten the belt, pull the free end of the belt webbing and adjust it to fit your hips snugly (not your waist).

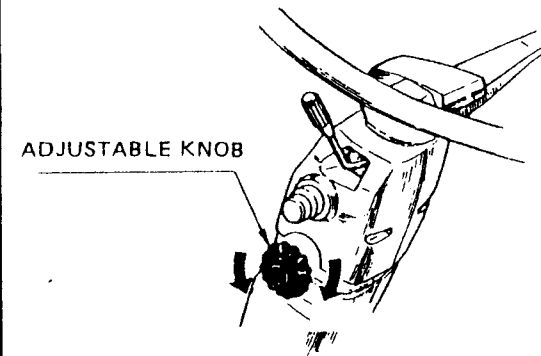
### ● Hints for Using Seat Belts

- To help reduce the possibility and/or the severity of injury in accidents or sudden stops, use the seat belts properly.
- Pregnant women:  
Hino believes that a seat belt should be worn, but recommends that any pregnant woman first consult her doctor for his or her advice before using a seat belt.
- Injured persons:  
First, ask your doctor for his/her advice. Hino recommends the use of the seat belt.

- Children:  
Children in vehicles should be restrained to help reduce the chance and/or severity of injury in accidents or sudden stops. For children who can sit on the seat by themselves, we recommend the use of the seat belt provided.
- Infants:  
Child safety restraint systems are available. Hino recommends the use of a type which is suitable to your vehicle. Be sure to read the manufacturer's instructions carefully before use.
- Never use a single belt for more than one adult or child at a time.
- Be careful not to damage the belt webbings and hardware by pinching them in the seats or doors.
- Check the seat belt system for damage periodically. Damaged parts should be replaced. Never modify the seat belt system.
- Keep the belts clean and dry. If they need to be cleaned, use a mild soap and lukewarm water solution. Do not bleach or dye the webbings, as this may weaken them considerably.
- Replace the belt assemblies if they have been subjected to severe impact during use in a collision.
- The driver and all passengers should wear their belts whenever the vehicle is moving.

### ADJUSTABLE STEERING COLUMN

IF SO  
FITTED



FA

The steering wheel position is adjustable in height and tilt.

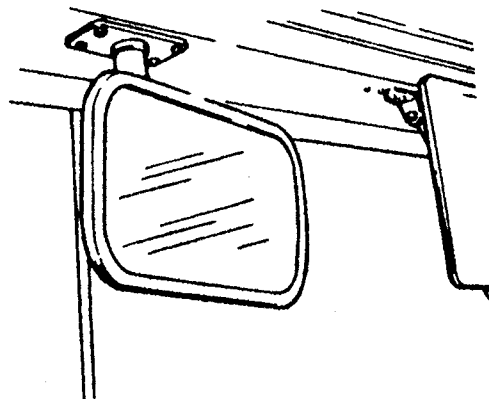
To adjust the steering wheel position:

Loosen the knob and move the steering wheel up or down as well as forward or backward to the desired position.

#### WARNING

Before moving the vehicle tighten the knob securely, and try to move the steering wheel up and down and forward and backward to make sure that it is locked securely. Never try to adjust the steering wheel position while the vehicle is moving. Any adjustment of the steering wheel while driving can cause the driver to lose control, and result in personal injury and/or property damage.

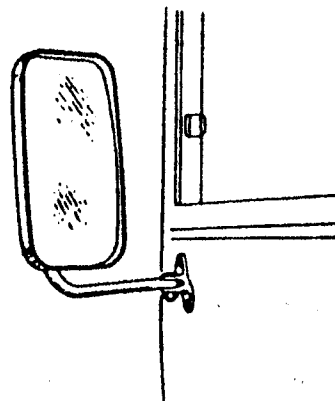
### INSIDE REAR VIEW MIRROR



Adjust the inside rear view mirror as necessary for optimum rear view when in your usual driving position. Keep the mirror clean at all the time.

To adjust, move the mirror up, down or sideways to obtain optimum rear view against the resistance from the ball and socket fitting at the rear of the mirror.

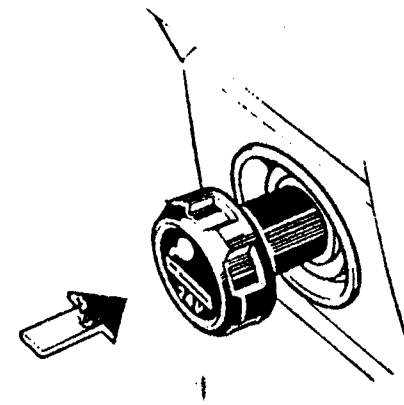
### OUTSIDE REAR VIEW MIRROR (SAMPLE)



With the door closed, adjust the outside rear view mirrors on both sides as necessary for optimum rear view when in your usual driving position. Keep the mirrors clean at all times.

To adjust, retract the stays on both sides to normal stay position until they are stopped with the resistance from spring-tensioned click. Then make mirror adjustments by turning the mirror.

### CIGARETTE LIGHTER



To operate the cigarette lighter, push the cigarette lighter in. When it gets heated in about 15 seconds, it will pop out ready for use. Always wait a few minutes before using the lighter again.

#### WARNING

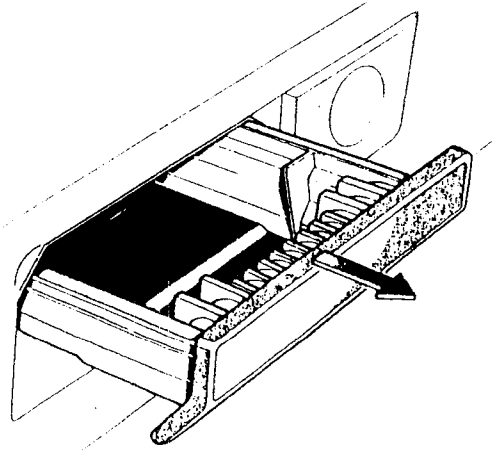
Never hold the cigarette lighter in. If the cigarette lighter does not pop out after 15 seconds has elapsed with the lighter pushed in, pull it out manually. Do not leave the vehicle with the lighter pushed in.

#### WARNING

An improper lighter could cause malfunction. Use genuine Hino cigarette lighters or equivalents as replacements.



## ASHTRAY



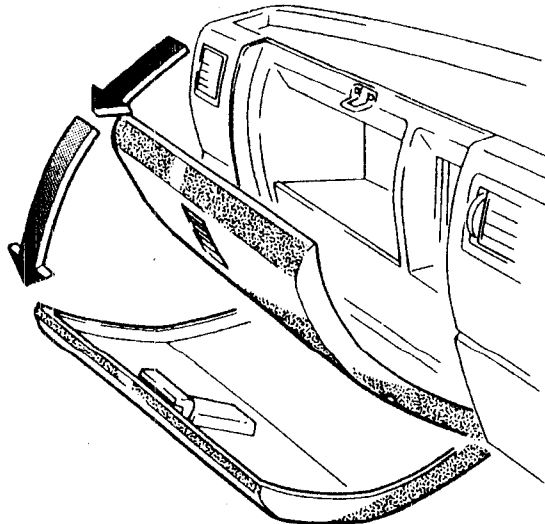
To open, pull out the cover. To remove the ashtray, pull out the cover and remove it by lightly pushing it downward.

### WARNING

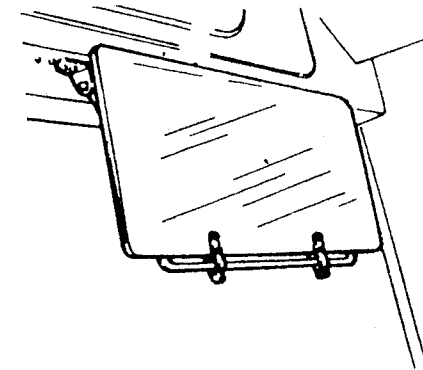
After using the ashtray or when leaving the vehicle, push the ashtray in completely to reduce fire might be caused by cigarette butts since this is hazardous and may result in personal injury and/or property damage. Do not put waste paper or other flammable into the ashtray.

## GLOVE COMPARTMENT

Glove compartment is located on the left side of dashboard. Pull the knob toward you to open the glove compartment lid. Inside pocket is located on the behind of the lid. Push the lid back to close the glove compartment lid.



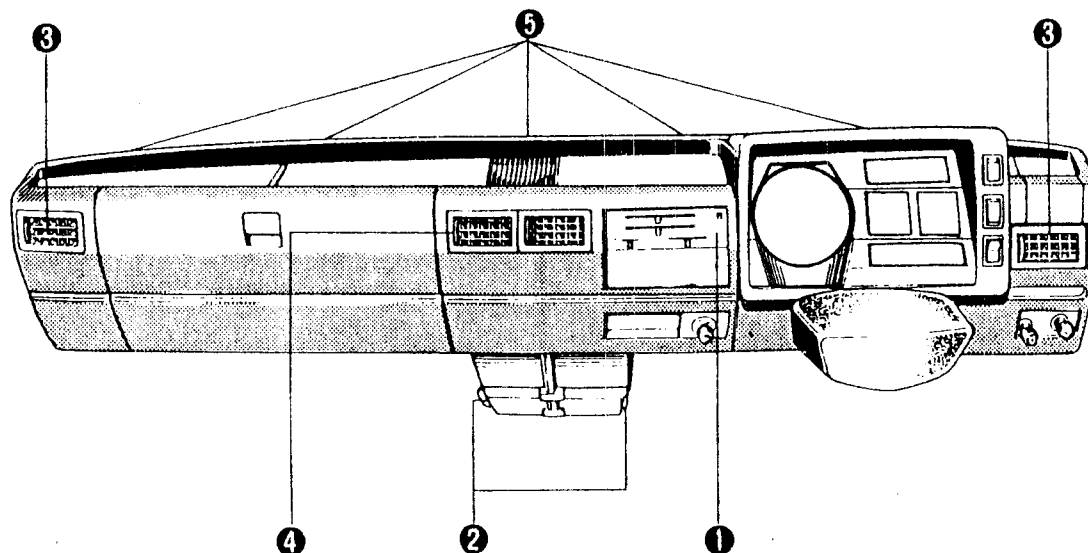
## SUN VISOR



Swing the sun visor down to prevent glare from the windshield.

FA

## VENTILATOR CONTROL PANEL & AIR VENTS (SAMPLE)



### ① Control Panel

The air flow in the cab can be controlled by operating the switch and levers of the control panel.

### ② Floor Air Vent

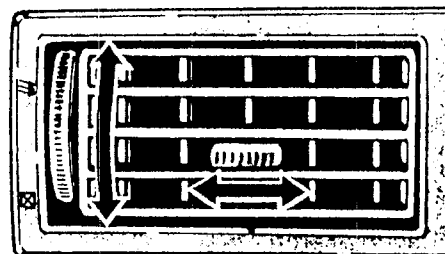
### ③ Side Air Vent

### ④ Center Air Vent

### ⑤ Defrosting Nozzle

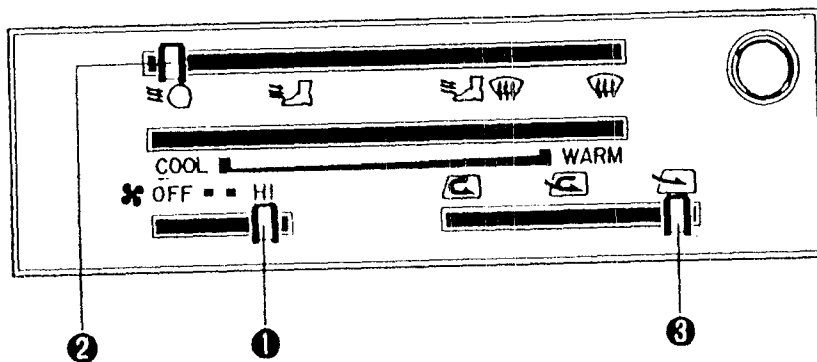
Five defrosting nozzles are provided on the instrument panel. From these nozzles, air is directed to the windshield glass to avoid misty screen.

### ● Use of Air Vent



Turn the sprocket up and down to adjust the volume of air flow. Slide the lever left and right to change the direction of air flow from the air vent.

## FAN-BLOWER VENTILATOR

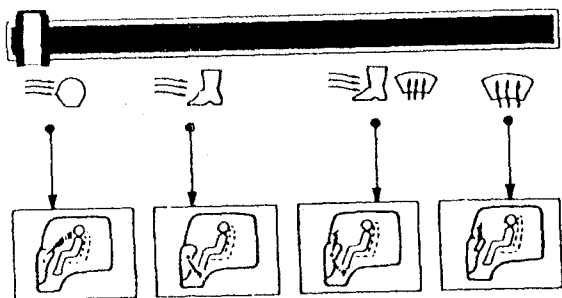


### 1 Fan Speed Control Lever

This lever has four positions, OFF, LOW, MEDIUM and HI (high) speeds.

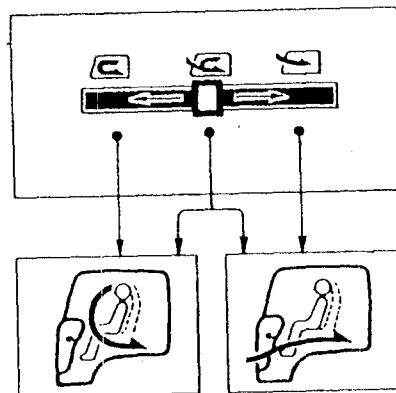
### 2 Air Flow Control Lever

This lever is used to select the direction of air flow, either to the floor, to the center vent and side vents on the instrument panel, or to the windshield.



### 3 Air Intake Control Lever

This lever is used to choose either fresh outside air or circulation of air inside cab.



### ● Ventilation

- With the air intake control lever at the "FRESH" and the fan speed lever to the desired speed.
- Move the air flow control lever to the "FLOOR". The air will flow out from the center air vent and the side air vents on the instrument panel.

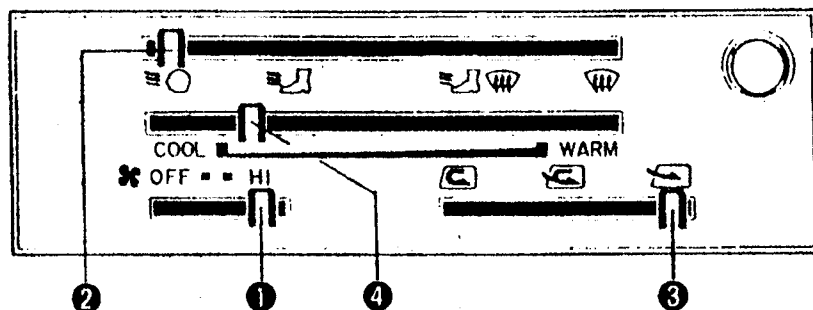
### ● Defrosting or Defogging

- Move the air flow control lever to the "WINDSHIELD" position. The air flow will then be directed towards the windshield. For defrosting or defogging on side windows, move the air flow control lever to the "FLOOR". Adjust the side air vents on the instrument panel to direct the air flow at the windows.
- Move the air intake control lever to the "FRESH" and the fan switch lever to "HI". After the windshield is cleared, adjust the fan speed lever to maintain clear windows.
- Move the air flow control lever to the "FLOOR" to distribute air to defroster, side air vents and floor air outlet.

**NOTE** • To prevent dust or exhaust gas from entering the cab, set the air intake control lever to the "RECIRC" position. Reset the air intake control lever to the "FRESH" to allow outside air to enter.

FA

## CAB-HEATER

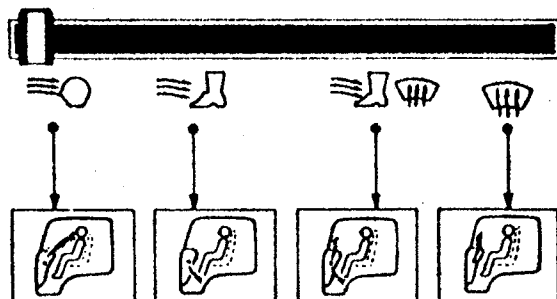


### ① Fan Speed Control Lever

This lever has four positions, OFF, LOW, MEDIUM and HI (high) speeds.

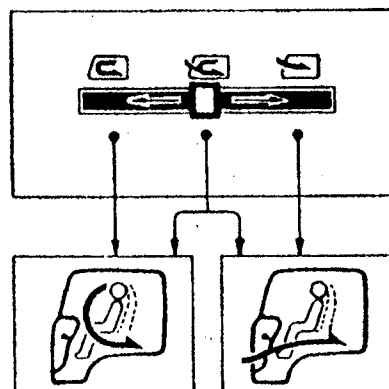
### ② Air Flow Control Lever

This lever is used to select the direction of air flow, either to the floor, to the center vent and side vents on the instrument panel, or to the windshield.



### ③ Air Intake Control Lever

This lever is used to choose either fresh outside air or circulation of air inside cab.



### ④ Temperature Control Lever

This lever is used to turn the heater on and off and to regulate the amount of heat.

**NOTE** • In this cab-heater, the air is heated by the engine coolant. Therefore, if the temperature of the coolant is not high, the outlet temperature will not be raised.

## ● Ventilation

Follow the same procedures as stated above under "FAN-BLOWER VENTILATOR".

## ● Heating

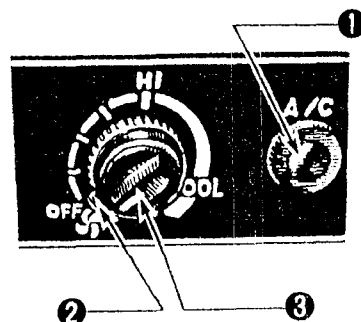
- Move the temperature control lever to the "WARM" position. This provides maximum heating.
- Move the air flow control lever to " " (center vent and side vents). This directs air to the floor outlets and side vents on the instrument panel. The direction of flow from the vents is adjustable. The vents can also be closed.
- Move the air intake control lever to " " for ordinary heating. For quick heating, set the lever in the " " position.

**NOTE** • With the lever in " " position, fogging on the inside of the windshield and windows can easily occur.

- Move the fan speed lever to the "HI" position. As the air warm up, adjust the fan speed lever and temperature control lever to the most comfortable temperature.

## ● Defrosting or Defogging with Heating

In addition to the same procedures as stated above under "FAN-BLOWER VENTILATOR", move the temperature control lever to the "WARM" position for quick defrosting and defogging.



### ① Fan Switch

This switch is used as the main switch for cooling and to control the air flow volume in the vehicle. The air flow volume vehicle be adjusted in 4 steps.

### ② Temperature Control Dial

This is used to control the temperature in the vehicle. Turning to the right lowers the set temperature. Set to the desired temperature.

### ③ Cooling Lamp (blue)

This lamp indicates operation of the cooler, and it is lit only when the compressor is ON. When the cooling lamp goes out during cooling operation, this indicates an abnormality of the cooling operation, this indicates an abnormality of the cooler system, and inspection and maintenance should be executed at the nearest sales shop.

### ● Cautions for Cooler Use

- At the start of the season, first confirm that the stop valve of the warm water heater has been closed before you use the cooler.
- Do not disconnect the cooler piping joints unnecessarily, and do not execute gas filling or valve operation in an incorrect way, as the cooler piping is filled with refrigerant under high pressure, and wrong handling can be dangerous.
- As far as possible, avoid parking at a place exposed to direct sunlight. If this should be unavoidable, first exchange the air in the car sufficiently before you start cooling operation.

### ● Operation Method

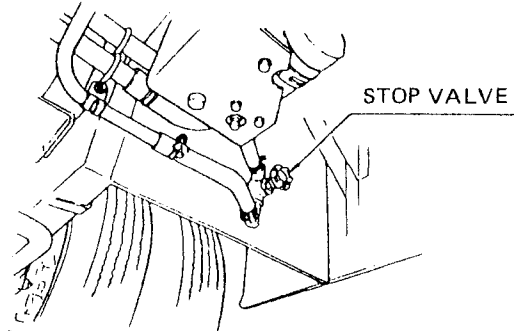
- Start
  - Fan switch ON  
(With the engine in idling condition)  
(The engine idling speed increases.)
  - The cooling lamp lights.
  - Set the desired air flow volume with the fan switch.
  - Set the temperature control dial to the desired position.
- Stop
  - Fan switch OFF  
The cooling lamp goes out (the cooling function is shut off).

**FA**

## REAR HEATER IF SO FITTED

### ● Stop the Valve

As a warm water heater is used for the rear heater, the stop valve at the center of the left of the vehicle should be opened at the start of the season.



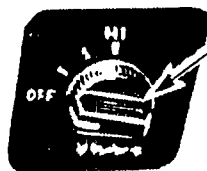
### ● Control Panel

Rear heater switch

This is the switch for operation of the rear heater fan, and the operation can be switched in three steps.

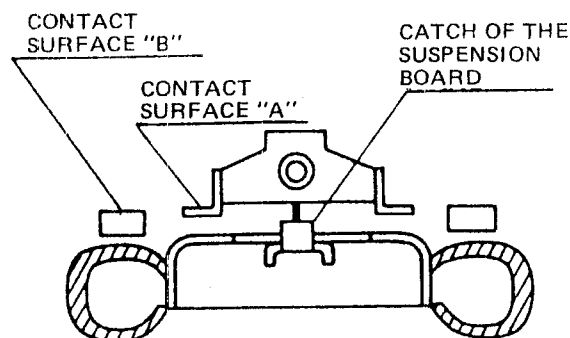
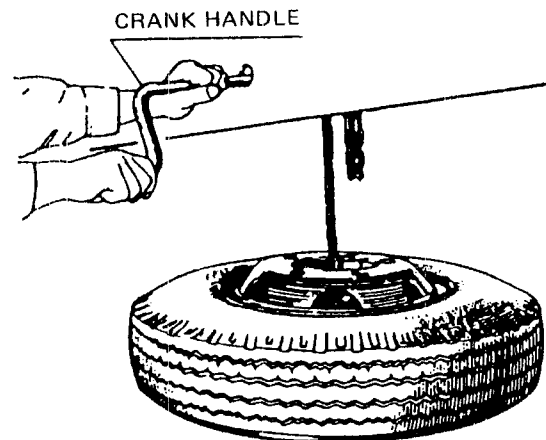
First step right: Weak  
 Second step right: Medium  
 Third step right: Strong

REAR HEATER SWITCH



## TIRE CARRIER

When mounting or dismounting the spare tire, crank the crank handle with its end engaged in the carrier.



### WARNING

- Fit the catch of the suspension board to the disc wheel properly.
- Do not wind up the chain when it is twisted.
- After cleaning the contact surfaces, wind the chain up completely by cranking the crank handle.  
Tighten the handle with a force of 30 to 40 kg (65 to 90 lbs) after the disc wheel makes contact with the surface of the chassis.
- After tightening, check that the suspension board catch does not interfere with the contact surface of the chassis. Remove the handle. In doing so, be sure not to loosen the chain.
- Due to vibration during driving, an insufficiently tightened chain will loosen, resulting in rattling and, perhaps, the spare tire dropping off.

# DAILY INSPECTION



DAILY INSPECTION PROCEDURE	29
ENGINE OIL LEVEL	30
ENGINE COOLANT LEVEL	30
V-BELT TENSION	31
TIRE CONDITION	31
LAMP'S OPERATION & LENS CONDITION	32
STEERING WHEEL PLAY	32
AIR CLEANER	33
CLUTCH & BRAKE FLUID LEVEL	33
CLUTCH PEDAL PLAY	34
BRAKE PEDAL PLAY & CLEARANCE	34
PARKING BRAKE LEVER STROKE	35
AMOUNT OF FUEL IN THE TANK	35
WINDSHIELD WASHER FLUID LEVEL	35
LEAKAGE FOR OIL, FUEL & WATER	36
BRAKE FUNCTION	36
STEERING WHEEL OPERATION AND VIBRATION	36
POWER STEERING FLUID LEVEL	37
WATER SEDIMENTER	37

## DAILY INSPECTION PROCEDURE

The daily inspection should be performed to assure efficient operation of the vehicle and remaining the responsibility of the operator. Please make it a habit to check following points every day before and after operation.

Please note that following list applies to all types of Hino models and explains all equipments, which needs daily inspection, including options.

### ① Inspection With Lid Opening

- Engine oil level
- V-belt tension and damage
- Coolant level
- Power steering fluid level

### ② Inspection From Outside

- Leakage for oil, fuel, and water
- Tire air pressure, wear, and damage
- Lamps' operation and lens condition
- License plate and reflector condition

### ③ Inspection At Cabine (Before Starting)

- Brake pedal play
- Parking brake lever stroke
- Clutch fluid level
- Clutch pedal play
- Fuel amount in fuel tank
- Horn function
- Wiper and windshield washer function

### ④ Inspection At Cabine (After Starting)

- Steering wheel play
- Accel pedal operation and engine idling condition
- Engine condition (startingbility, noise, and exhaust gas)
- Exhaust brake function

### ⑤ Inspection After Engine Warming-up

- Brake function (service and parking brake)
- Steering wheel operation and vibration

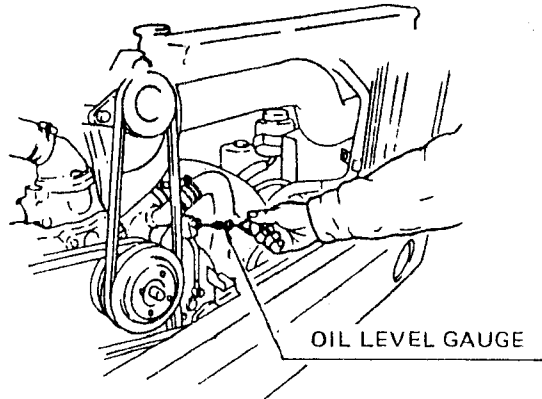
### ⑥ Inspection After Operation

- Chassis frame cracks and deformation

If any abnormal point was found and repaires during previous day, make sure that it was completely repaired.



## ENGINE OIL LEVEL



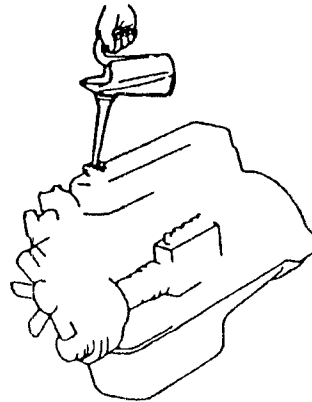
### ● Engine Oil Level Inspection

Check the level gauge for the engine oil with the vehicle parked on level ground.

Pull out the level gauge, wipe it with a clean cloth, and put it back all the way. Pull out the gauge again and check the level. The oil level should be kept between the MIN. and MAX. marks.

Do not operate the vehicle with the oil level below the MIN. mark.

**NOTE** ● Check the oil level of the engine before starting the engine or at least 10 minutes after the engine stops. Otherwise, oil will cling to the upper part and the actual level will not be indicated.



### ● Adding

When the engine is cold, added oil will not reach the oil pan fast enough to provide a true indication of oil level.

Be careful not to overfill. Otherwise increased oil consumption or deterioration of the exhaust emission can result.

#### WARNING

When adding oil, be careful not to spill oil. When the exhaust system is still hot, spilled oil on the hot exhaust system can cause personal injury and/or property damage due to fire. Do not spill oil on the electric system. If oil is spilled, carefully wipe it off with a cloth.

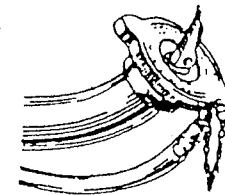
## ENGINE COOLANT LEVEL

### ● Inspection

Check the coolant level warning lamp for the coolant level. The warning lamp will light when the level is low.



### ● Filling



Raise the radiator cap lever which release cooling system pressure.

Since the filler cap is of the pressure type, it must be handled as instructed below.

- Do not stop the engine immediately but keep it idling until the temperature drops to a sufficient level.
- Raise up the lever of the radiator cap.
- Next, make sure that the overflow pipe has ceased to blow out hot water and steam then remove the filler cap.

Do not run the vehicle with the radiator cap lever in an erected position.



## V-BELT TENSION

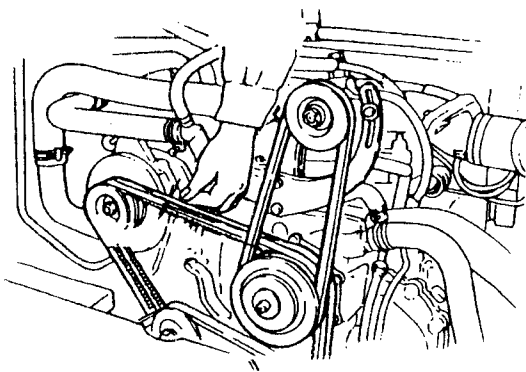
Check the V-belts for proper tension by applying a pressure of about 10 kg (22 lb) with your finger or special tool 09444-1210 midway between pulleys.

### V-belt tension

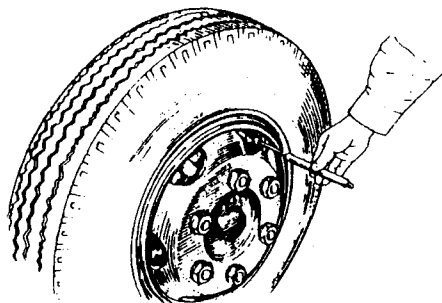
	Standard	Limit
W04D	10 – 15 mm (0.39 – 0.59 in)	—
W04C-T		

Adjust the tension moving the alternator or power steering pump by prying the bracket with a lever.

- NOTE**
- Do not tighten the V-belt excessively. This results in rapid wear of the V-belt and bearings for the coolant pump generator and power steering oil pump.
  - Conversely, a loosely fitting V-belt will cause slipping. This turn may result in a squeaking noise, an under-charged battery or engine overheating.



## TIRE CONDITION



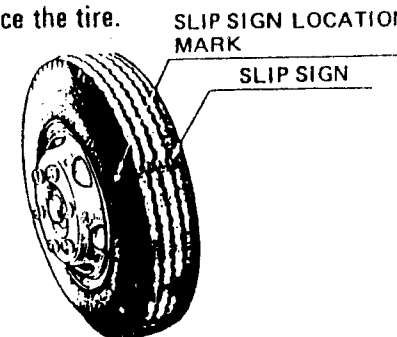
### ● Tire Pressure

Check or maintain the correct inflation pressure for each tire when tires are cool. Do not bleed if pressure rises during the day. The maximum allowable tire load should comply with the values recommended by the manufacturer of the tire used and the tire standards in your country. The followings are the maximum tire pressures recommend by JATMA (The Japan Automobile Tire Manufacturer's Association, Inc.).

Tire size	MAX. air pressure kg/cm <sup>2</sup> (lb/in <sup>2</sup> )
7.00-16-6	3.25 (46.2)
7.00-16-10	5.00 (71.1)
7.00R16-8	4.50 (64.0)
7.00R16-10	5.25 (74.7)

### ● Tire Wear & Damage

Check the tire tread wear (groove depth) and tire damage. If the slip sign on the tire tread comes out, replace the tire.

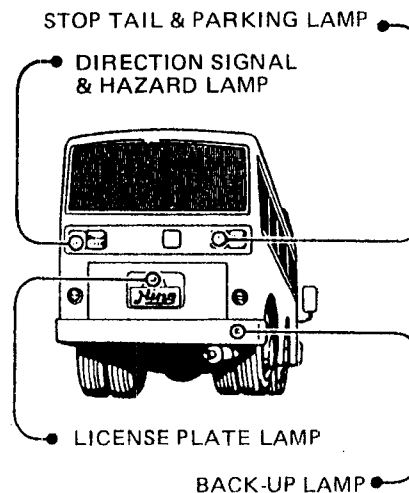
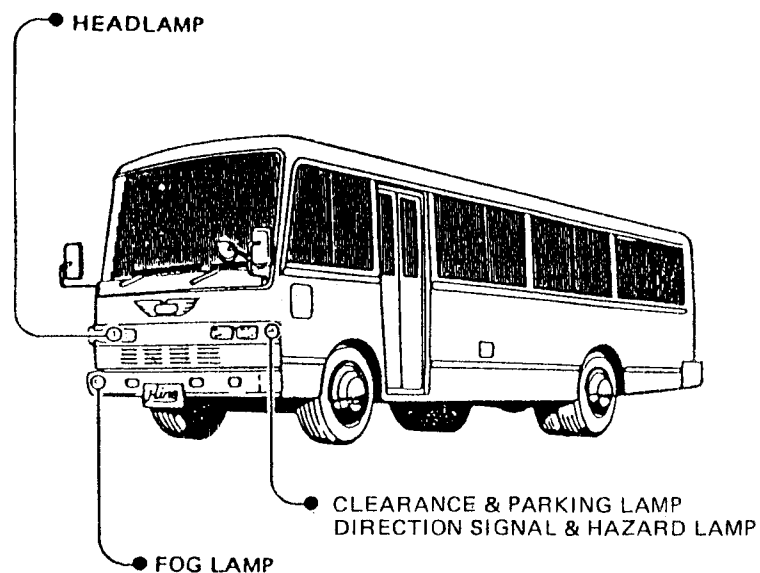


### WARNING

- Worn or damaged tires should be replaced as soon as possible. Tires with worn tread tend to slip when cornering and decrease brake effectiveness. These can result in personal injury and/or property damage.
- A tire and wheel assembly which is out of balance can cause uneven tread wear or vibration. In this case have your authorized Hino dealer or tire service shop check and correct it.
- When replacing tires, use tires of the same size, construction, load range, and tread design as the original tires of your vehicle. Otherwise vehicle handling, brake performance, and riding comfort can be adversely affected and may result in personal injury and/or property damage due to loss of control. When the tire specifications are not clear, contact your authorized Hino dealer or tire service shop.

DI

## LAMPS' OPERATION & LENS CONDITION



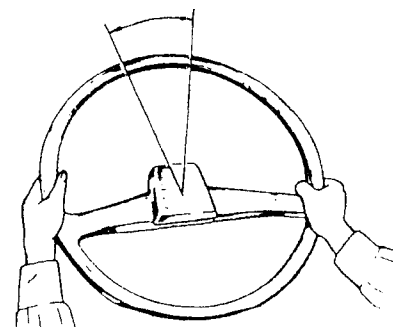
Make sure that all lamps (Head lights, Fog lamps, direction signal lamps, side marker lamps, tail lamps, license lamp, back-up lamp, parking lamps) are functioning properly.  
Check the lamp lens for damage and dirt.  
Replace or clean the lamp lens, if necessary.

## STEERING WHEEL PLAY

Check the steering wheel play with the front wheels pointing straight ahead, turn the steering wheel to the left and right until resistance is felt.

### Steering wheel play

	Standard	Limit
RB	15 – 35 mm (0.59 – 1.38 in)	50 mm (2.0 in)



Then shake the steering wheel back and forth, right and left and up and down to ascertain any play. If abnormally much play is existing, have it adjusted at Hino Service Shop.

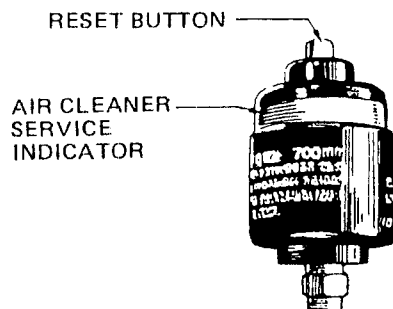
**NOTE** • In case of vehicle with power steering, it is required to check the steering wheel play under engine idling.

## AIR CLEANER

### ● Air cleaner dust indicator

Check dust indicator and clean the air cleaner element when indicator shows red signal.

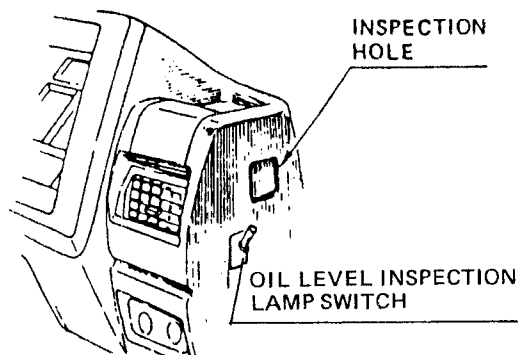
After cleaning the element, reset the dust indicator by depressing the button to yellow signal.



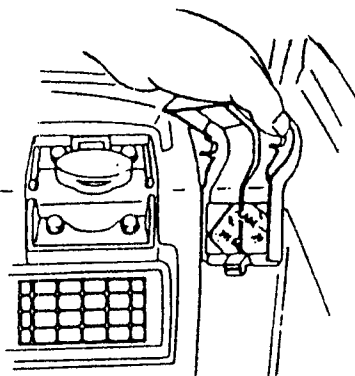
## CLUTCH & BRAKE FLUID LEVEL

### ● Inspection

The clutch fluid reservoir is integrated with the brake fluid reservoir which is built into the instrument panel. Check and keep the fluid reservoir filled to the MAX. level mark at all times.



**NOTE** • When the oil level inspection lamp has lit, remove the filling cover, and use the dip stick at the rear of the cover to check the oil level. The oil level should be between MIN and MAX.



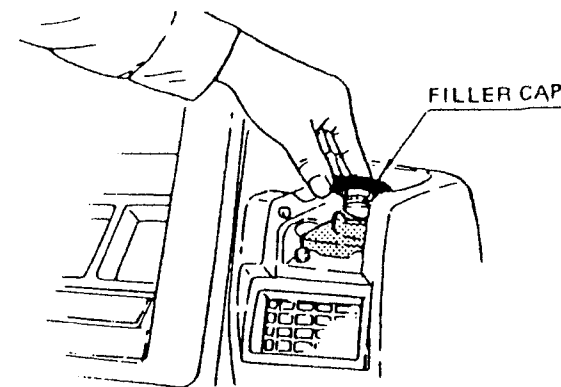
### ● Adding

If the level is low, add DOT 3 brake fluid to the brake and clutch reservoir.

**NOTE** • Do not mix the brake fluid with a different type.

Mixed fluid may cause lowering of the boiling point and corrosion of brake parts. As to the fluid brand originally used, ask your authorized Hino dealer.

If a brake fluid of the same brand and quality is not available for a refill, drain off the clutch or brake hydraulic circuits completely and refill with a brake fluid of recommendable quality. For recommended oil refer to Recommended Lubricants List No. 19.



### WARNING

Use caution in filling the reservoirs because brake fluid can harm your eyes and damage painted surfaces.

DI

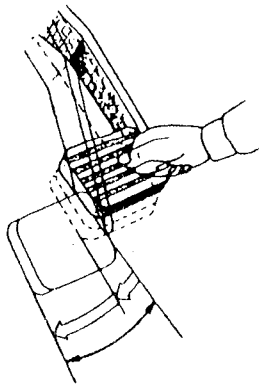
## CLUTCH PEDAL PLAY

The clutch pedal play is the distance in which the clutch pedal travel before it comes to a point where a resistance is felt as the pedal is depressed with hand.

However, this play will be reduced due to wear of clutch facing and it will become necessary to correct it.

### Pedal play

	Standard	Limit
RB	15 – 30 mm (0.59 – 1.18 in)	—



## BRAKE PEDAL PLAY & CLEARANCE

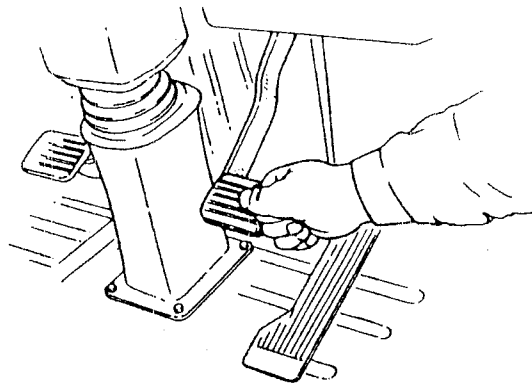
### ● Brake Pedal Play

Lightly and slowly press down on the brake pedal with your fingers and check the brake pedal play it moves before slight resistance is felt. Prior to check the brake pedal play, reduce the vacuum in the tank by depressing the brake pedal several times.

If the brake pedal play is more or less than specification, adjust the brake.

### Brake pedal play

	Standard	Limit
RB	5 – 10 mm (0.197 – 0.393 in)	—

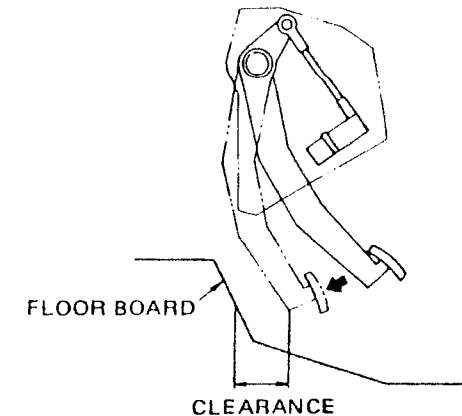


### ● Brake Pedal Clearance

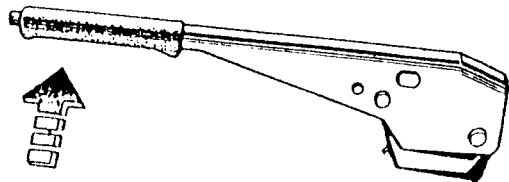
With the engine running, press the brake pedal several times and then press hard (approximately 50 kg or 110 lb of depressing force) on it. The clearance between the cab floor board and top surface of the brake pedal should be more than specified. If it is less than limit, adjust the brakes.

### Brake pedal clearance

	Standard	Limit
RB	85 mm (3.34 in)	55 mm (2.17 in)



## PARKING BRAKE LEVER STROKE



Slowly and firmly pull the parking brake lever, counting the number of clicks.

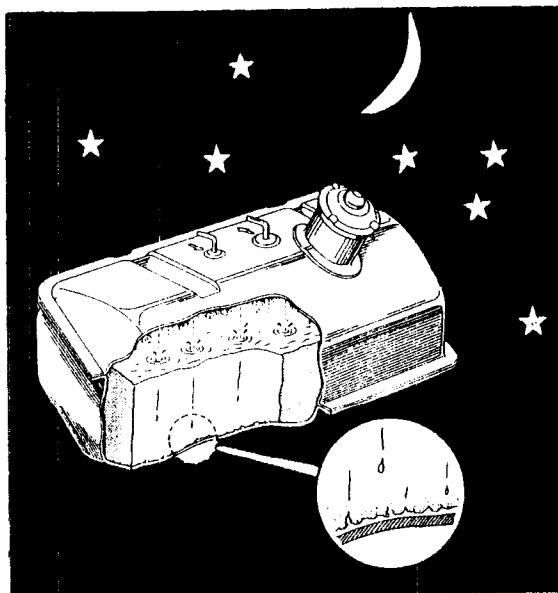
### Parking brake lever stroke

	Standard	Limit
RB	3 – 5 notches	7 notches

If the lever stroke is excessive, adjust the brake.

## AMOUNT OF FUEL IN THE TANK

Check the fuel lines for leaks and reading of the fuel gauge. If the tank level is low, remove the filler cap and add fuel. Fill the tank with fuel at the end of each work-day will reduce water condensation in the tank.

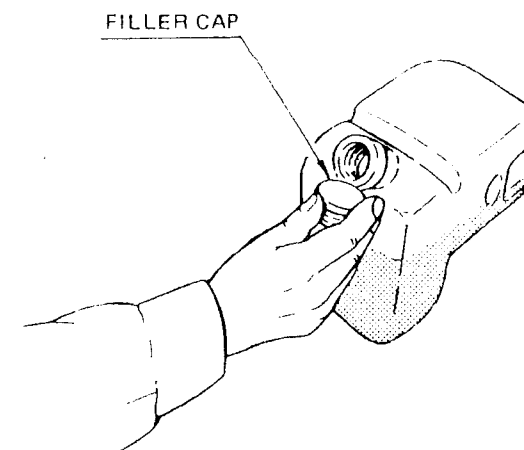


## WINDSHIELD WASHER FLUID LEVEL

Check the reservoir for fluid level. If the level is low or reservoir is empty, add washer fluid.

You may use plain water as washer fluid. However, in cold area where temperatures range below the freezing point, use washer fluid containing antifreeze. This product is available at most auto parts stores. Follow the manufacturer's directions for how much to mix with water.

**NOTE** • Do not use engine antifreeze or any other substitute because it may damage your vehicle's paint.



DI

## LEAKAGE FOR OIL, FUEL & WATER

---

Check the engine, transmission, rear axle, steering gear box, clutch control and brake lines, whether any sign of leakage of oil is found out or not.

Check the fuel lines for leakage of fuel.

Check the cooling system for leakage of water.

## BRAKE FUNCTION (Service and Parking)

---

### ● Service Brake

At a safe place, check that the service brake does not pull to one side and make sure that the brake is sufficiently effective on all wheels when brake is applied at a speed of 5 – 10 km/h (3 – 6 mph).

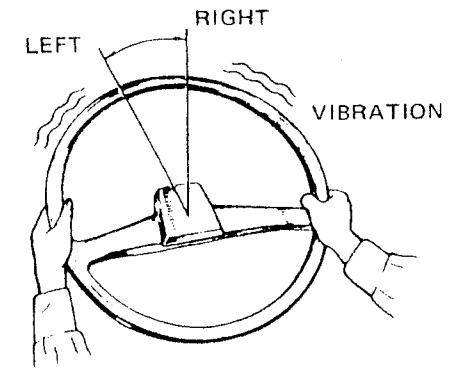
### ● Parking Brake

Check that your vehicle is held securely with only the parking brake applied.

## STEERING WHEEL OPERATION AND VIBRATION

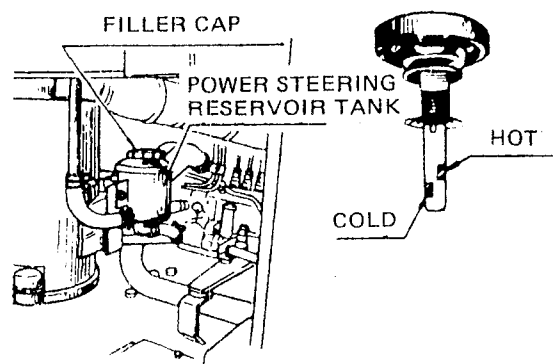
---

Attempt to move it up and down, left and right, forward and rearward. Make sure that there is no rattle. With the vehicle in operation, make sure that the steering wheel does not vibrate or pull one-side.



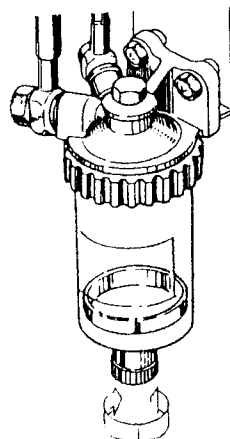
## POWER STEERING FLUID LEVEL

Check the fluid level in the reservoir. When the fluid level is low, add fluid of same quality until the "MAX" fluid level mark. For recommended fluid refer to **Recommended Lubricants List No. 5**.



## WATER SEDIMENTER

Water level in the sedimenter will be indicated by the float, thus whenever the float goes up, water as well as sediment must be drained.



# OPERATION

BEFORE OPERATION .....	38
STARTING THE ENGINE .....	38
ENGINE STOPPING .....	39
NEW VEHICLE HANDLING .....	40
PARKING BRAKE LEVER .....	40
OPERATION OF MANUAL TRANSMISSION .....	41
USING THE CLUTCH .....	41
BRAKING TIPS .....	42
MAXIMUM OPERATING SPEED & ENGINE OVERREVVING .....	42
HANDLING IN COLD WEATHER .....	43
STARTING THE ENGINE AFTER PROLONGED VEHICLE STORAGE .....	43

## BEFORE OPERATION

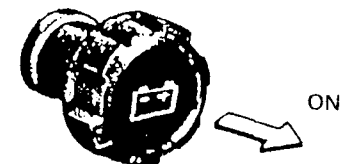
Perform the daily inspection before operation to assure efficient operation of the vehicle and remaining the responsibility of the operator. Refer to chapter "DAILY INSPECTION" for details.

## STARTING THE ENGINE

### ● Before Starting

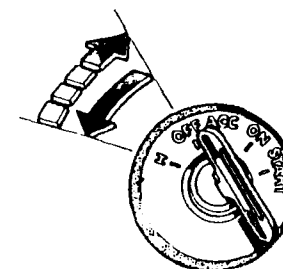
- Check the area around the vehicle before entering it.
- Apply the parking brake.
- Adjust the seat position, seatback angle and steering wheel position.
- Adjust the inside and outside rear view mirrors.
- Lock all the doors.
- Fasten seat belts.
- Turn off unnecessary lights and accessories.
- Place the transmission shift lever into "Neutral."

### ● Pull Out the Battery Relay Switch



### ● Engine Pre-heating (If so fitted)

To start the engine when the engine is cold, pre-heat the engine by turning the starter switch key to "PRE-HEAT" position until pre-heater indicator lamp goes off. This procedure must be repeated several times in cold weather.





### ● Engine Starting

Remember to check that the warning lamps function when turning the key to "ON", and check the fuel gauge to see that you have enough fuel.

Depress the clutch pedal and the accelerator pedal fully, and then turn the key to the "START" position.

- NOTE** • When engine does not start on the first attempt, wait approximate 30 seconds before trying again.
- Do not kept the starter engaged for more than 15 seconds at a time.

When the engine starts, make sure the transmission is still in "Neutral", and release the clutch pedal.

Check the oil pressure warning lamp. If the lamp is turned on, stop the engine to avoid serious engine damage.

- NOTE** • After the engine starts, do not turn the starter key to the "START" position. This could cause damage to the starter pinion and ring gear.

### ● Engine Warm-up

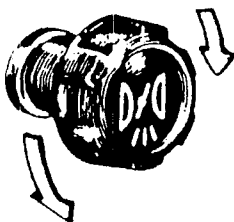
Adjust the throttle button to set engine speed at fast idle to warm-up the engine.

- NOTE** • Do not race the engine during the warm-up period since this can reduce the engine life.

- Do not rev up the engine forcefully or accelerate the vehicle rapidly right after starting the engine in a cold environment.

When the engine is warmed-up, the pointer of the coolant temperature gauge starts to swing from its home position, adjust the engine to normal idling speed.

- NOTE** • Avoid unnecessarily prolonged idling. Prolonged engine idling can cause the engine coolant temperature to drop below the operating range.
- Operation at a low coolant temperature can do harm to the function and life of the engine.

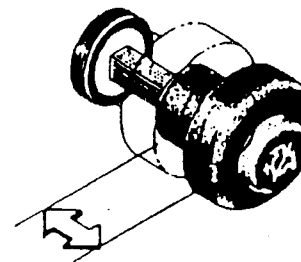


#### WARNING

- Never leave you vehicle while the engine is running.
- Do not run the engine in a garage or enclosed area except for the time needed to drive the vehicle in or out. The exhaust gases cannot escape, making this a particularly dangerous situation.

### ENGINE STOPPING

Before stop the engine, idle the engine for more than 5 minutes. When the engine seems to be overheated, stop it after the temperature of the engine coolant would drop properly. After engine stops, remember to turn the starter key to "OFF".



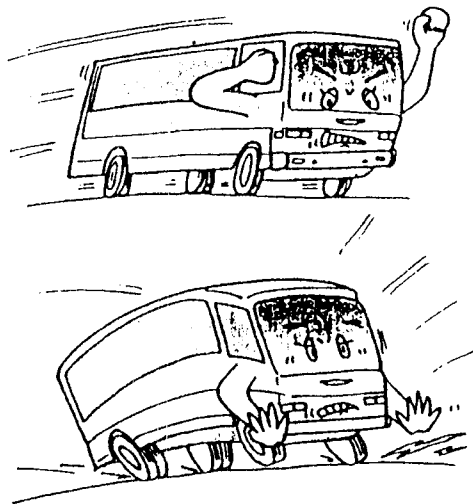
- NOTE** • Do not stop the engine suddenly after running at high speeds or after climbing inclines, especially if your vehicle is mounted with a turbocharged.
- When the vehicle is to be parked for a comparatively long time, open the battery relay switch.

OP

## NEW VEHICLE HANDLING

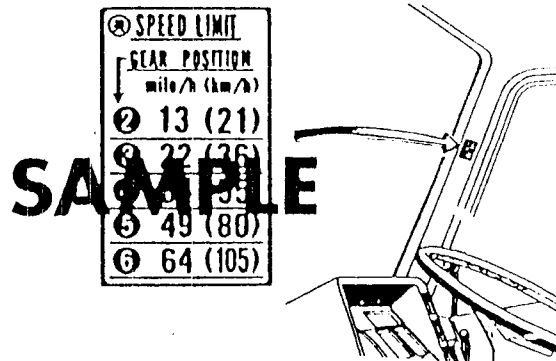
The service life and performance of a vehicle are determined largely by the way it is handled when new. Observe the following rules until the vehicle travels 1,000 km (600 miles).

- Drive gently and avoid high speed.
- Avoid driving at full acceleration.
- Try to avoid full or panic braking.
- Do not drive slowly with the transmission in a high gear, shift the transmission down into lower range.
- Do not drive for a long time at any single speed, either fast or slow.
- Do not race the engine.
- When you start a loaded vehicle, use 1st gear, when you go up-hill, use an appropriate lower gear.



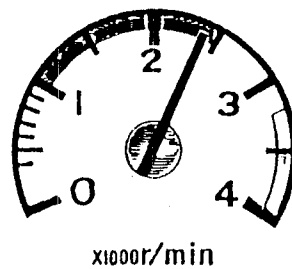
### Speed Limit Caution Plate

We recommend you to drive at a speed less than three quarters of operating speed limits, shown in the caution plate posted in the cab, for each transmission gear.

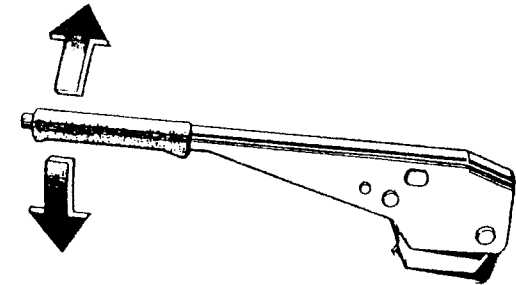


### Engine Tachometer

Limit the maximum permissible engine speed until the vehicle travels 1,000 km (600 miles) by observing the engine tachometer.



## PARKING BRAKE LEVER



To apply the parking brake, pull up the lever. The brake is applied to the transmission output shaft by way of wire and linkage.

To release the parking brake, depress the lever end knob with the lever pulled a little then fully release the lever.

Application of the parking brake while driving should be avoided except in an emergency.

### WARNING

- Apply the parking brake firmly before leaving your vehicle. Make sure that your vehicle holds in place.
- Place the transmission shift lever in "Neutral". Otherwise, unexpected movement of the vehicle could cause the engine to start.
- In parking on a slope, apply the parking brake firmly and block all the wheels.

**NOTE** • Release the parking brake completely before starting the vehicle. Make sure that parking brake indicator lamp is goes off.

## OPERATION OF MANUAL TRANSMISSION

The gear shift pattern is marked on the top of the gear shift lever knob. Press the clutch pedal down fully while shifting, and then release it slowly after shifting. Use the 1st gear for starting from standstill and select the proper speed gear according to running conditions. Upshifting too soon or downshifting too late will cause lugging and, possibly, pinging.

- NOTE** • To prevent damage from engine over-revving, the operating speed limits for each gear and/or maximum permissible engine speed should not be exceeded. Be especially careful when downshifting.
- Stop your vehicle completely before shifting into reverse gear from forward gear, or shifting into forward gear from reverse gear.

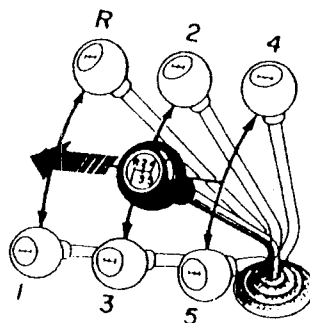
### WARNING

Never drive the vehicle with the transmission gear shift lever in neutral. This is very hazardous and can result in loss of necessary control of vehicle with resulting in personal injury and/or property damage.

### ● 5-Speed Transmission

Synchromesh is provided for 2nd, 3rd, 4th, and 5th gear. To engage without noise when changing down into 1st gear, use the double-clutching method.

The spring is installed in the reverse and 1st gear side for providing reliable shift feeling, push the gear shift lever against the spring tension when shifting into reverse or 1st gear.



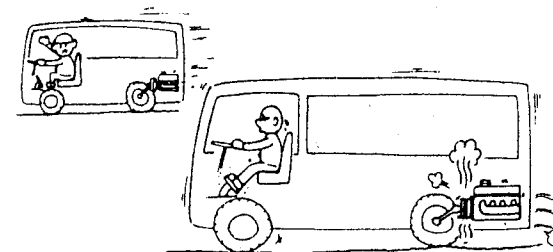
### ● Back-up Buzzer

When the gear shift lever is shifted to reverse, the back-up lamp lights and the buzzer sounds.

## USING THE CLUTCH

When starting the vehicle from a standstill or when shifting gears, sudden engagement of the clutch should be avoided. Also, clutch slippage can be caused by revving the engine excessively when starting the vehicle. These could cause damage to the power train.

- NOTE** • Do not drive with your foot riding on the clutch pedal. This can cause premature clutch wear or failure.



### WARNING

Never drive the vehicle with the clutch disengaged. This is very hazardous and can result in loss of necessary control of vehicle with resulting in personal injury and/or property damage for one or more following reasons.

OP

## BRAKING TIPS

Do not apply any more force to the pedal than necessary to stop the vehicle. Applying a heavy force will increase the wear on the tire and brake linings.

On this model, the brake booster uses a vacuum to power-assist the brakes. If the engine should quit while you are driving or the engine V-belt is broken, you can bring the vehicle to a stop with normal pedal pressure. There is enough reserve vacuum for one or two stops, but no more.

### WARNING

- If the power assisting vacuum is completely lost, you will have to press the brake pedal hard — much harder than normal. And your braking distance will be longer.
- “Fanning” (alternately applying and releasing) of the brake pedal will use up reserve, and result in decrease of braking power.
- Full braking should be avoided except in an emergency.  
Full or panic braking can result in loss of vehicle control caused by skidding. This is especially true when it is raining or the road is wet.

### ● Driving Downhill

Before going down a long or steep hill, make sure that the brakes work properly by lightly applying the brake pedal.

When descending a long hill, apply the brake with the engine.

### WARNING

Frequent or continuous application of the service brake causes overheat. And service brake will not work properly.

### ● Wet Brakes

Driving through deep water may get the wheel brakes wet. After driving through deep water, first make sure that there is no other vehicle around you and then apply the brakes lightly to see how they are working.

If the brakes do not work well, apply the brakes lightly while driving your vehicle very carefully. Repeat this until the brakes work normally.

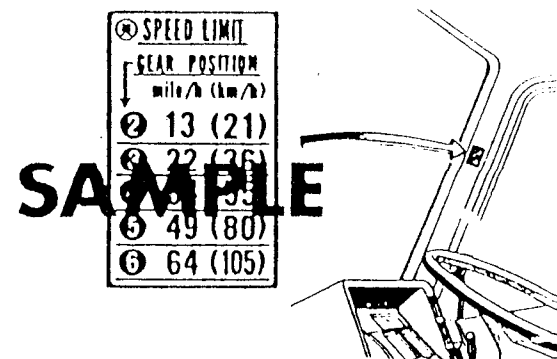
### WARNING

With wet brakes, the stopping distance of your vehicle will be greater than normal.

## MAXIMUM OPERATING SPEED & ENGINE OVERREVVING

Be careful not to exceed the maximum operating speed of the vehicle, or not to overrev the engine when downshifting and going on a downhill grade. When downshifting on a downhill grade, apply the exhaust brake, and wheel brakes to keep the vehicle speed within the maximum operating speed for each gear and not to exceed the engine revolution than specified engine speed.

Speed limit caution plate is displayed in the cab. Tachometer and overrevving warning buzzer is warning against the engine overrevving.



## HANDLING IN COLD WEATHER

### ● Engine Coolant

Adjust the concentration of the coolant according to the ambient temperature. It is the owner's responsibility to keep the freeze protection at a level commensurate with the temperatures which may occur in the area of vehicle operation.

Replacement of engine coolant  Page 62

### ● Battery Condition


Keep the battery as fully charged as possible. Cold temperature reduce the capacity of any battery, so it must be in top shape to provide enough power for cold weather starting.

### ● Lubricating Oil

Use a lubricating oil with low viscosity. Leaving a heavy oil for summer in the oil sump during winter may cause harder starting. If you are not sure about the oil to be used, consult your Hino dealer.

Replacement of engine oil  Page 62

Replacement of transmission oil  Page 65

Replacement of rear axle oil  Page 66

### ● Fuel in Tank

Keep the fuel tank full to avoid moisture accumulation. As the fuel is consumed, air is drawn through the vent and moisture may accumulate in the fuel tank.

### ● Windshield Washer Fluid

Warm the windshield glass with defroster before using the washer. This will help prevent icing which could obstruct your vision. Use washer fluid to prevent fluid from freezing and to help clean the windshield glass. However, do not use the type of washer fluid that damages paint or rubber. Follow the manufacturer's instructions for the proper concentration of washer fluid solution.

### ● Driving Icy and Snowy Road

Ice and snow built up under your fenders can make steering difficult. During driving on the icy and snowy road, stop and check under the fenders occasionally.

### ● Radiator Curtain (If so fitted)

The radiator curtain is installed on the front side of the radiator. It is especially effective when the atmospheric temperature is extremely low.

## STARTING THE ENGINE AFTER PROLONGED VEHICLE STORAGE

- Check the engine, transmission, rear axle housing, brake, clutch, power steering fluid reservoirs for proper oil levels. Check the coolant level. Add oil, fluid or coolant if required.
- Check that the batteries are properly charged. Charge the batteries, if necessary.
- Apply the parking brake firmly.
- Place the transmission shift lever in neutral.
- Depress the clutch pedal fully.
- Pull out the battery relay switch.
- Turn the starter key to the "START" position with the starter key in the "OFF" position, disconnect the connector of the wire harness to the magnetic valve in the engine room. Then turn the starter key to the "START" position and allow the engine to crank until the oil pressure warning lamp goes off.

**NOTE** ● Do not run the starter more than 10 seconds at a time.

- Connect the connector of the wire harness to the magnetic valve in the engine room. Then turn the starter key to the "START" position to start the engine.

**OP**

- Pre-heat the engine with engine pre-heater, when the engine is cold.
- When the engine starts, make sure the oil pressure warning lamp is off and then warm up the engine by running at low idle.

**NOTE** • If the oil pressure warning lamp does not go off, immediately stop the engine and have your authorized Hino dealer check and correct the situation.



# IN AN EMERGENCY



JUMP STARTING .....	45
IN CASE OF AN EMERGENCY .....	46
OVERHEATING .....	46
IF BRAKE HYDRAULIC LINE FAILS .....	46
FREEDING THE VEHICLE .....	47
TOWING .....	47
IF YOU RUN OUT OF FUEL .....	
WHILE DRIVING .....	48
IF YOU HAVE A FLAT TIRE .....	48
JACK-UP .....	49
REMOVAL AND INSTALLATION OF .....	
WHEELS .....	50
IF ANY LIGHT OR ELECTRICAL EQUIP- .....	
MENT DOES NOT WORK .....	51
REPLACING HEADLAMPS .....	51
REPLACING OTHER LAMPS .....	52

## JUMP STARTING

If your vehicle's batteries have discharged, you can start the engine by jump starting.

### WARNING

- Use proper jumper cables.
- This vehicle has a 24-volt, negative ground system. Make sure that the other vehicle used for jump starting also has a 24-volt, negative ground system. Do not attempt to jump start when you are not sure of the voltage or ground of the other vehicle.

1. Shut off the engine on the vehicle which has the well charged (booster) batteries.
2. Connect the jumper cables in the order as shown in the figure. First, firmly connect one end of the red booster cable to the positive (+) terminal of the discharged battery A, and then the other end to the positive (+) terminal of the booster battery B.

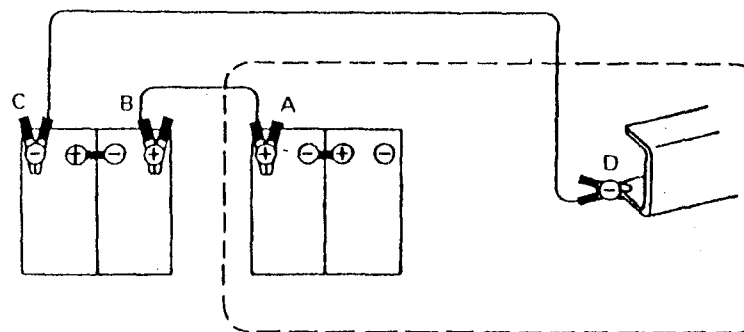
Next, connect one end of the black booster cable firmly to the negative (–) terminal of

the booster battery C. Finally, connect the other end to an engine ground well away from the discharged batteries D.

3. After completion of the connection, start the engine of the vehicle with the discharged batteries. If the engine is difficult to start in cold weather, first run the engine of the other vehicle for a while to fully charge its batteries. Then stop the engine of the other vehicle and start the engine of the vehicle with the discharged batteries.
4. After the engine has started carefully remove the booster cables in reverse order while the engine is idling.

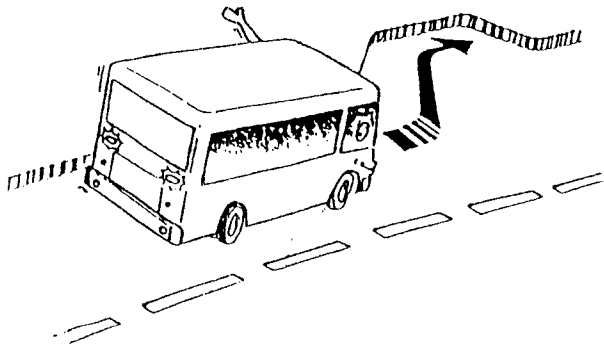
### WARNING

The engine should never be started by pushing or towing the vehicle. Since with the engine stopped the effectiveness of the service brake system is seriously reduced and the power steering is requires greater effort than in normal conditions.



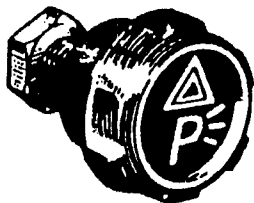
## IN CASE OF AN EMERGENCY

If the warning lamp comes on and/or the buzzer sounds while driving, or if you feel something abnormal in operation, pull off the road and stop your vehicle immediately with the hazard warning lamp on. Always use the hazard warning lamp at any time, day or night to warn other traffic, when your vehicle might be a traffic hazard.



To operate, pull out the switch knob. All the turning signal lamps will flash independently of the starter switch position and at the same time the indicator lamps will also flash.

To turn off the flashers, push the switch in.



## OVERHEATING

1. Pull off the road and stop the vehicle in a safe place. Apply the parking brake firmly and place the transmission shift lever in neutral.
2. Keep the engine running at idle speed, and check for the cause. If repair work is required, ask your authorized Hino dealer or qualified service shop for help.

**NOTE** • Don't stop the engine until the temperature returns to normal.

3. Check hoses and connections for cracks, loose clamps, or leaks. Check the fan for slippage of the fan belts. Check the radiator core for any clogging. Adjust, repair, or clean if necessary.
4. Check the coolant level of radiator and reservoir. Add coolant to the cooling system, if necessary.

### WARNING

The radiator cap should not be removed while the engine and cooling system are still hot. If the radiator cap is removed right after the engine is shut off, scalding fluid and steam blown out under pressure may cause personal injury.

## IF BRAKE HYDRAULIC LINE FAILS

If you encounter with brake failure due to an accidental brake line breakage during your vehicle is running, you should depress immediately the brake pedal fully. It can easily be sensed from a abrupt change in brake pedal stroke. Pull off the road and stop your vehicle carefully. The Hino split master cylinder brake system is a hydraulic system with two separate sub-systems. If either sub-system should fail, the other will still work. However, the brake pedal stroke and your stopping distance will be longer.

### WARNING

Do not rely on a single brake system. Have your brakes fixed immediately.



## FREEING THE VEHICLE

### WARNING

Do not spin wheels excessively. Excessive wheel spin may cause damage to the power train including the transmission, rear axle, and tires and can result in personal injury and/or property damage.

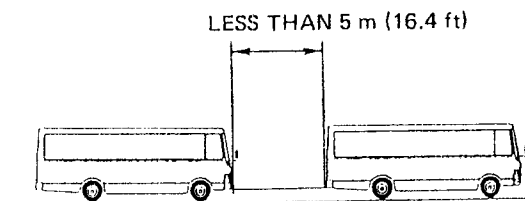
Wheel spin reduces the tractive force of the vehicle. When your vehicle gets stuck in loose sand, mud, snow or ice, wheel spin should be kept to a minimum without unnecessarily pressing down on the accelerator pedal.

For manual transmission models, shift the transmission lever alternately from "second" to "reverse" and rock your vehicle back and forth.

## TOWING

When the vehicle has to be towed due to a fault, proceed as follows:

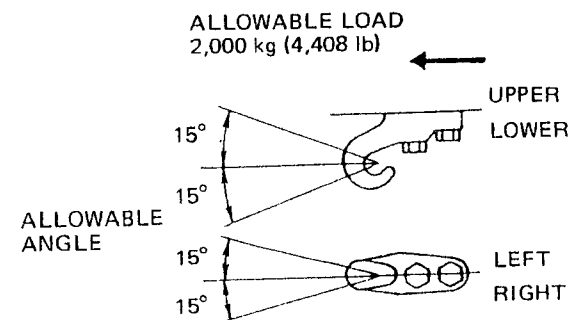
- Make sure that the propeller shaft of the vehicle to be towed is removed before it is towed.
- Use a strong rope in towing the vehicle.



Fasten the rope to the hook of the frame securely. Make a slow start to minimize the shock.

- The angle of the wire fastened to the towing hook must not exceed the range shown in illustration. Avoid using the hook in the way it is subjected to a sudden force (as in towing a vehicle trapped in a gutter), as it can be dangerous.

The specified angle applies when the vehicle is towed by a vehicle about the same size.



- The Towing shock should be used with the vehicle in unladen condition. If it is used in the way it is subjected to a sudden force or the allowable angle exceeded, damage to the hook might result.

- Make sure that the engine of the towed vehicle is kept running. If the engine is stationary, no compressed air will be available for the brakes. It can be dangerous, as the brake system does not function at all.

The power steering system does not function, either. The steering wheel, therefore, will become unusually hard to turn, making it impossible to control the vehicle properly.

EM

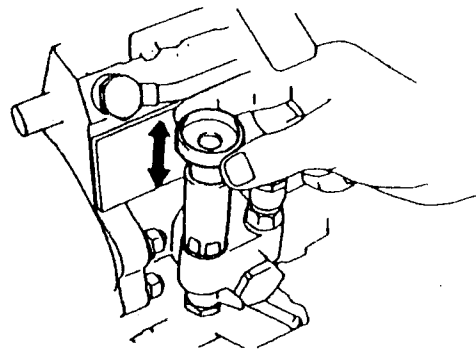
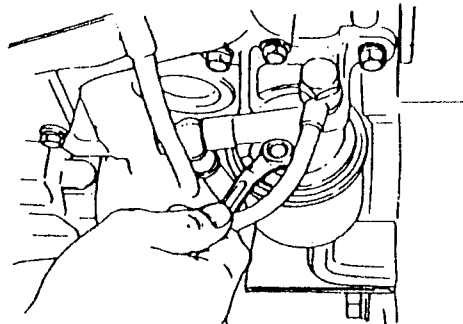
- Keep the gearshift lever in the neutral position.
- Make sure that the stater switch is kept at the "ON" position.
- If the engine of the towed vehicle is defective, make sure that the vehicle is towed by a vehicle designed for the purpose. Make sure that it is not towed by any other vehicle, as it can be very dangerous.
- When the differential gear or rear axle shaft is defective, remove both right and left rear axle shafts.
- Note that the engine brake, exhaust brake and parking brake can not be applied, as the propeller shaft is removed beforehand.
- Towing speed is less than 30 km/h (18.6 mile/h).

## IF YOU RUN OUT OF FUEL WHILE DRIVING

In the event of driving until the fuel tank is completely empty, the engine may not restart after refueling. In such case, operate the priming pump until air is bled from the system.

- Loosen the air bleeder screw from the fuel filter.
- Loosen the priming pump handle.
- Operate the priming pump handle up and down until there is no air emitted from the fuel filter.
- Tighten the fuel filter air bleeder screw.

**NOTE** • Be careful that fuel does not splash on the engine and exhaust system.



## IF YOU HAVE A FLAT TIRE

Cautiously stop your vehicle off the road paying attention to other traffic. Hold the steering wheel firmly and park the vehicle in a level and safe place. Apply the parking brake firmly, turn on the hazard warning lamp switch and stop the engine.

### WARNING

- Avoid full or panic braking if you have a flat tire while driving. Since this may cause loss of vehicle control.
- Don't continue to run the vehicle with punctured or damaged tire.

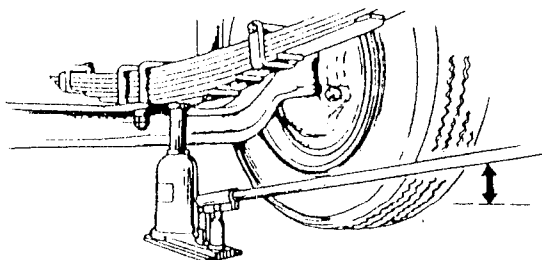
## JACK-UP

Refer to the caution plate on the jack for operating instruction.

### ● Jack-up Points of Front Axle

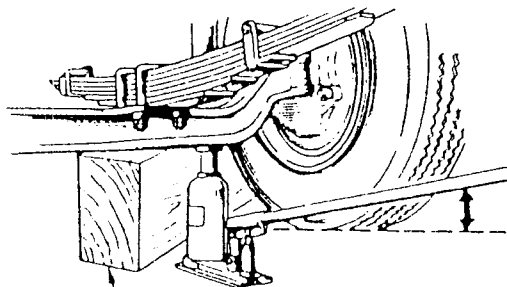
The front axle cannot be jacked up at the usual jackup points. Use square timber, for example, and jack it up as described below.

- Place blocks in front and back of the rear tires.
- Place the jack under the leaf in the forward part of the front axle, and jack up the axle. Make sure that the jack is as close to the axle as possible.



**NOTE** ● The underside of the leaf is curved. Exercise good care during jackup.

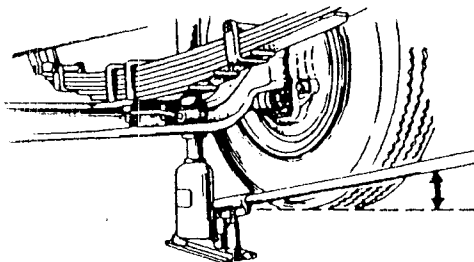
- Insert square timber, for example, under the front axle.
- Slightly lower the jack until the front axle is securely supported by the square timber, and then lower the jack.



SQUARE TIMBER

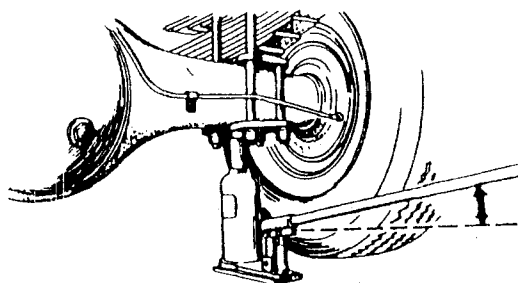
**NOTE** ● Use wide square timber to keep the car steady.

- Move the jack to the jackup point, and jack up the axle high enough to remove the tire.



### ● Jack-up Points of the Rear axle

Under the spring seat of the rear axle.



### WARNING

- Make sure that the jack is correctly placed under the jack-up point. Then raise the axle.
- Never get under the vehicle when it is supported only by a jack.
- Remove oil and grease, if any, before using the jack.
- Keep the engine out of operation during jackup because a running engine is dangerous.
- If it is necessary to keep the car jacked up for a long time, support the car with blocks, square timber, etc. for safety.

### ● Safety Usage Instructions

- The jack should be used on level firm ground wherever possible.
- It is recommended that the wheels of the vehicle be chocked, and that no person should remain in a vehicle that is being jacked.
- No person should get bodily under a vehicle that is supported only by a jack; Use suitable vehicle support stands.
- Do not overload this jack beyond its load capacity.
- This jack is designed for lifting purpose only.
- Ensure jack head is securely located on the chosen lifting point.



## REMOVAL AND INSTALLATION OF WHEELS


### WARNING

Removal of wheels from the vehicle should be performed on a level place and on a hard surface. The changing of the wheels on an incline or on the soft ground is hazardous and should not be performed, since this can result in personal injury and/or property damage.

### 1 Removal

Apply the parking brake firmly, and block the wheel which is diagonally opposite to the flat tire.

Dismount the spare tire from the spare tire carrier.

**Dismounting spare tire**  **Page 28**

Loosen the wheel nuts slightly by using a socket wrench.

**NOTE** • Wheel studs and nuts on the right side of the vehicle have right-hand threads, and wheel studs and nuts on the left side of the vehicle have left-hand threads.

Jack-up the axle so that the tire clears the ground.

**Jack-up the axle**  **Page 49**

Remove the wheel nuts and the tire. In the case of dual rear wheel removal, first remove the outer wheel nuts and the outer wheel. Then remove the inner wheel nuts and the inner wheel.

### 2 Installation

Before installation, clean the mounting surface of the disc wheel and the wheel hub, the wheel ball seats, and the hub bolts and nuts. A loose wheel mounting can result from these parts not being cleaned. Check the wheel studs and nuts for wear of the threads or damage and the wheel disc for any crack or bend. Replace the part if you find any of these conditions.

With the wheel studs aligned with the holes of the wheel, lift the wheel up with a tire lever and mount it over the studs.

Rotating the wheel, install the nuts and tighten manually. Make sure that the studs are centered in the holes.

Tighten all the nuts to their specified torque with a socket wrench.

#### Tightening Torque

RB	2,400 – 3,000 kg-cm (174 – 216 ft.lbs)
----	---

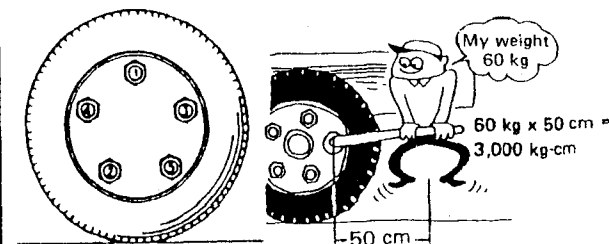
**NOTE** • When tightening the nuts, apply grease or engine oil to the threads of the studs and nuts.

- The proper tightening sequence is shown in the figure.

Go through the sequence three times, gradually and evenly increasing the torque on each pit each time until the specified torque is reached.

Be sure to use the criss-cross method as shown in the figure.

- 50 to 100 km after replacing a tire, retighten the wheel nuts with the specified tightening torque.



### 3 For Dual Rear Wheels

Install the inner wheel. Tighten all the inner nuts according to the above-mentioned procedures.

Then install the outer wheel and tighten all the outer nuts according to the above-mentioned procedures.

When only the outer wheel is replaced, first tighten all the inner nuts to the specified torque. Then mount the outer wheel and tighten all the outer nuts to the torque.

**NOTE** • Install dual rear wheels with their valve stems positioned 180 degrees apart to facilitate inflation.

## IF ANY LIGHT OR ELECTRICAL EQUIPMENT DOES NOT WORK

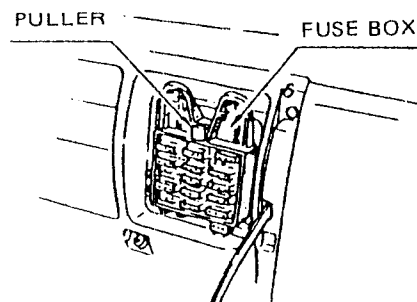
### ● Fuse

Turn the starter switch off and open the glove box lid. The fuse box is located in the glove box. If any light or electrical equipment does not work, your vehicle may have a blown fuse. Check which fuse may be causing the problem. The instruction plate of the electrical circuits for each fuse is posted on the back of the glove box lid.

10A	GAUGES	5A	HEAD MAIN LH	10A	SPARE TERMINAL
5A	POWER RELAY	5A	HEAD MAIN RH	10A	BACK L. HORN
10A	STOP LAMP	5A	HEAD DIM. LH	10A	WIPER
20A	ROOM LAMP	5A	HEAD DIM. RH	15A	HEATER
20A	POWER SUPPLY	10A	TAIL FOG LAMP	10A	RADIO

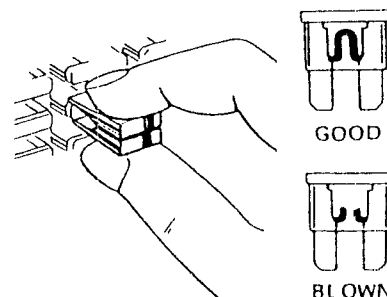
USE THE DESIGNATED FUSES ONLY

FUSE BLOCK TOP ↑



Pull the suspected fuse straight out with fuse puller and check it. If it has blown, push a new fuse into the clips.

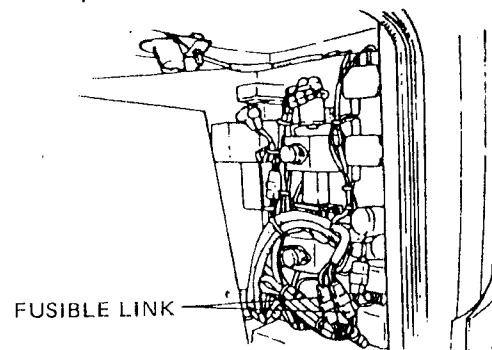
**NOTE** ● Never use a replacement wire or a fuse with a capacity other than that specified.



If the fuse immediately blows again, have your vehicle inspected and serviced by your Hino dealer.

### ● Fusible Link

If any light or electrical equipment does not work and the fuses are all right, check the fusible links. If any link is melted, it must be replaced.



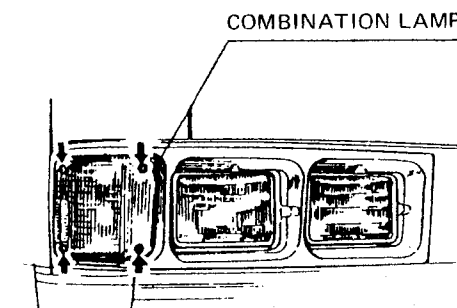
**NOTE** ● Always use a genuine fusible link for replacement. Even for a temporary use, never install a wire.

Before replacing the fusible links, the cause of electrical overload should always be checked and repaired by your Hino dealer.

## REPLACING HEADLAMPS

### ● Removal

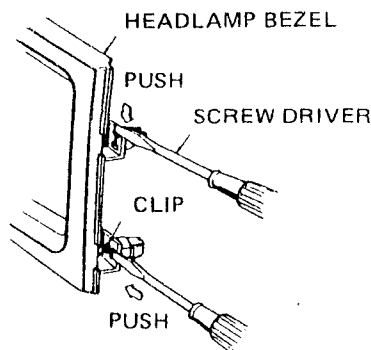
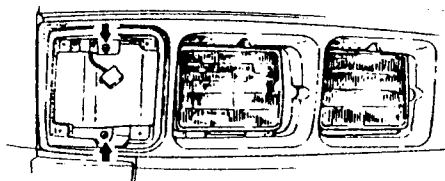
- First, remove the combination lamp mounting bolts, then remove the socket at the rear of the lamp, and finally remove the combination lamp.



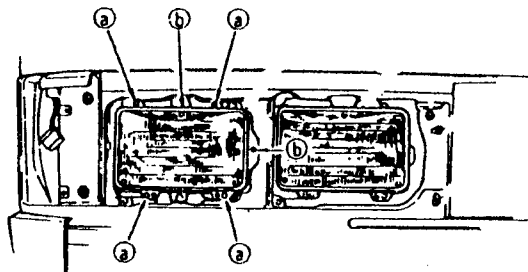
- When the two screws fixing the bezel of the combination lamp are removed and the holes of the clips (2 places) at the right side of the bezel are pushed up or down (upper clip) and left or right (lower clip) respectively, the bezel body can be removed by pulling it lightly to the front.

**NOTE** ● Care is required as the bezel clip part may be damaged when the bezel is pulled too strongly.

EM

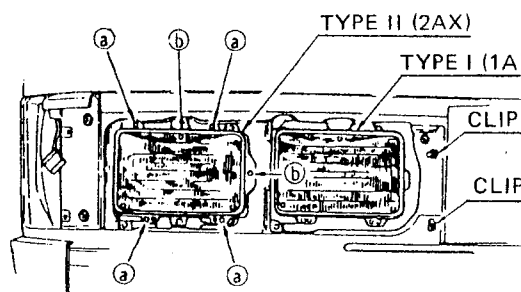


- Unscrew the four screws (a) in the vicinity of the lamp bulb, then remove the headlamp. Do not touch the two light axis adjusting screws (b) with the hand as this will cause the optical axis of the headlamp to change.



### ● Installation

- There are two light bulbs, type I and type II. The symbols "1A" and "2AX" are marked at the top of the respective lenses.
- When assembling the headlamp, be sure to install type I on the inside and type II on the outside.
- Tighten the four screws (a) evenly so that an unreasonable force is not applied to the lens.

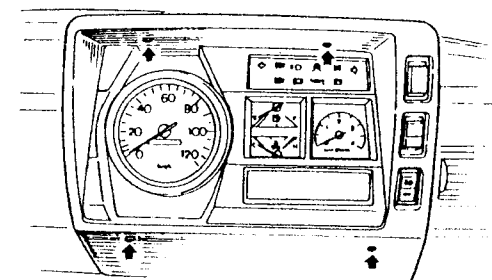


## REPLACING OTHER LAMPS

Unscrew the screws retaining the lens and rim or each lamp, then remove each lamp by turning it to the left while pushing it.

When installing the lens, place the packing tightly against its edge to prevent ingress of water.

The type of bulb used depends upon the type of lamp. If a bulb breaks, therefore, replace it with one of the same wattage.



Unscrew the four screws from the instrument panel. You can then replace the meter illumination lamps, warning lamps, and indicator lamps.

Before replacing a lamp, be sure to set the starter switch and other switches to the "OFF" position.

**NOTE** • Be sure to use lamps of the specified wattage. If you use lamps of non-specified wattage, the lens and case may become deformed and the wiring may overheat.



# MAINTENANCE



SCOPE OF PERIODIC MAINTENANCE .....	53
CAUTION IN PLACING ORDERS FOR SPARE PARTS .....	53
PERIODIC MAINTENANCE PROCEDURE .....	54
PERIODIC PARTS REPLACEMENT .....	54
INSPECTION ON A NEW VEHICLE OR AFTER MAJOR OVERHAUL .....	55
PERIODIC LUBRICATION .....	56
PERIODIC MAINTENANCE SERVICE .....	57
ENGINE OIL REPLACEMENT .....	62
REPLACEMENT OF OIL/FUEL FILTER ELEMENT (Spin-on type) .....	62
REPLACEMENT OF ENGINE COOLANT .....	62
CLEANING OF FUEL FEED PUMP STRAINER .....	65
CHECKING & REPLACEMENT OF TRANSMISSION GEAR OIL .....	65
CHECKING & REPLACEMENT OF DIFFERENTIAL GEAR OIL .....	66
BATTERY LIQUID LEVEL .....	67
BATTERY LIQUID SPECIFIC GRAVITY .....	67
CLEANING OF PAPER ELEMENT TYPE AIR CLEANER .....	68
CHECKING OF BRAKE LINING THICKNESS .....	69
TIRE ROTATION .....	70
GREASING POINT .....	71
RECOMMENDED LUBRICANT LIST .....	72

## SCOPE OF PERIODIC MAINTENANCE

The operations described here as "Maintenance" involve such service operations as inspection, lubrication, adjustment, and replacement which should be carried out at specified intervals: first 1,000 km (600 miles), every 1,000 km (600 miles), every 5,000 km (3,000 miles), etc. The importance of these regular service operations cannot be emphasized enough, for they have a close bearing on the performance and service life of your vehicle.

The intervals under which the various items are listed are intended to apply to vehicles engaged on normal main road transport. More frequent attention will be necessary to vehicles working under adverse conditions such as sand and gravel pit work, or under the severe terrain and adverse conditions existing in certain overseas countries. The periodic maintenance intervals, therefore, should be adjusted to suit the local conditions and the type of work being done.

## CAUTION IN PLACING ORDERS FOR SPARE PARTS

When you order the spare parts from your nearest Hino dealer, please be sure to give him the following information of your vehicle correctly.


- Model
- Engine number (For Engine parts)
- Chassis number (For Chassis parts)
- Body number (For body parts)

The chassis number and the body number are both inscribed on the respective identification plates in the driver's compartment, while the engine number is inscribed on the cylinder block.

MA

## PERIODIC MAINTENANCE PROCEDURE




- Under severe driving conditions, maintenance should be performed more frequently than listed in the table.
- Items indicated by \* should be performed only by your authorized Hino dealer or qualified service shop. Or else, refer to work-shop manual.

For items indicated by  , the maintenance procedures are given in the following pages of this chapter.

- Maintenance items directed with "Check". Check the parts for any malfunction. Adjust, repair or replace as required.
- Periodic maintenance is classified as follows.
  1. Periodic parts replacement.
  2. Inspection on a new vehicle or after major overhauling.
  3. Periodic lubrication.
  4. Periodic maintenance service

## PERIODIC PARTS REPLACEMENT






The following parts are apt to wear to become inferior, these must be replaced with new parts after a certain period even if abnormality is not found and complete functions must be always kept.

Parts To Be Replaced	Replacement Interval	Remark
Rubber hoses for hydraulic line	Every 1 year	*
Rubber parts for hydraulic cylinder (Master vac, slave cylinder, wheel cylinder, etc.)	Every 1 year	*
Rubber parts for exhaust brake cylinder	Every 1 year	*
Brake hose hanger spring	Every 2 years	*
Clutch and brake reservoir tank tube	Every 2 years	*
Vacuum pump hose	Every 2 years	*
Power steering rubber parts and hoses	Every 2 years	*
Rubber hoses for radiator and heater	Every 2 years	*
Fuel hoses	Every 3 years	*
Engine oil filter element	Every 10,000 km (6,000 miles)	 Page 62
Fuel filter element	Every 20,000 km (12,000 miles)	 Page 62
Air cleaner element	Every 30,000 km (18,000 miles)	 Page 68
Power steering oil filter element	Every 60,000 km (36,000 miles)	*



## INSPECTION ON A NEW VEHICLE OR AFTER MAJOR OVERHAULING

Perform the following first 1,000 km (600 miles) and first 5,000 km (3,000 miles) inspections for both new vehicle and after overhaul.

Inspection Item	Action	Remark
● First 1,000 km (600 miles)		
Valve clearance	Adjust	*
Fuel injection nozzle pressure	Adjust	*
Engine oil	Replace	 Page 62
Engine oil filter element	Clean	 Page 62
Fan mounting bolt	Retighten	*
Intake and exhaust manifold mounting nuts	Retighten	*
Each parts of turbo charger	Retighten	*
Air cleaner element	Clean	 Page 68
Transmission gear oil	Replace	 Page 65
Differential gear oil	Replace	 Page 66
Electric wiring and joint parts damage and tightness	Check	*

Inspection Item	Action	Remark
● First 5,000 km (3,000 miles)		
Power steering oil filter element	Replace	*
Power steering reservoir tank strainer	Clean	*
Power steering fluid	Replace	*



# PERIODIC LUBRICATION

Position	Lubricant	Capacity liters (US.gal/Imp.gal)	Grade	Viscosity Temperature Range Anticipated Before Next Oil Change	Replacement Interval	Remark
Engine	Engine oil	[W04D] 9.5 (2.5/2.1)	Class CC or Class CD	<div> <div>10 32 90 °F</div> <div>-12 0 32 °C</div> <div>SAE 40</div> </div>	First 1,000 km (600 miles) and every 10,000 km (6,000 miles)	👉 Page 62
		[W04C-T] 9.5 (2.5/2.1)	Class CD	<div> <div>SAE 20</div> <div>SAE 30</div> </div>	First 1,000 km (600 miles) and every 7,500 km (4,500 miles)	
Transmission	Gear oil	[LG05] 2.6 (0.69/0.57)	API GL-4	<div> <div>SAE 90</div> <div>SAE 140</div> </div>	First 1,000 km (600 miles) and every 30,000 km (18,000 miles)	👉 Page 65
		[LE05] 5.3 (1.40/1.17)				
Differential	Gear oil	[SS12] 3.5 (0.92/0.77)	API GL-4	<div> <div>SAE 90</div> <div>SAE 140</div> </div>	First 1,000 km (600 miles) and every 24,000 km (15,000 miles)	👉 Page 66
Power steering	Integral type power steering fluid	2.0 (0.52/0.44)	AFT DEXRON or DEXRON II	<div> <div>-43°F -45°C</div> <div>SAE 5W/20</div> <div>122°F 50°C</div> </div>	First 5,000 km (3,000 miles) and every 60,000 km (36,000 miles)	*
Clutch and brake	Brake/clutch fluid	0.26 (0.07/0.06)	DOT-3		Every 1 year	*
Wheel (Front & rear)	Wheel bearing grease	—	—		Every 60,000 km (36,000 miles)	*
Grease nipple	Lithuim base dissulfide molybdenum grease	—	—		Every 5,000 km (miles)	👉 Page 71

## PERIODIC MAINTENANCE SERVICE


**NOTE** • Maintenance interval beyond 60,000 kms (36,000 miles) should be continued at the same intervals as before except as noted.

MAINTENANCE INTERVAL	x 1000 miles	3	6	9	12	15	18	21	24	27	30	33	36	REMARKS
MAINTENANCE ITEM	x 1000 kms	5	10	15	20	25	30	35	40	45	50	55	60	
STEERING SYSTEM														
Check pitman arm and sector shaft													•	*
Check steering shaft spline sliding and rust		•	•	•	•	•	•	•	•	•	•	•	•	
Check tightness of jointed portion of knuckle, knuckle arm and tie rod arm		•	•	•	•	•	•	•	•	•	•	•	•	
Check tie rod and knuckle arm for rattle and damage													•	
Check tie rod and drag link ball joint dust cover for damage		•	•	•	•	•	•	•	•	•	•	•	•	
Check knuckle, knuckle arm and king pin for cracks and wear													•	*
Check clearance between knuckle and axle beam													•	*
Check wheel alignment													•	*
Check knuckle turning angle													•	*
Check power steering parts tightness		•	•	•	•	•	•	•	•	•	•	•	•	
Clean power steering reservoir tank strainer													•	*
Check power steering function													•	*
BRAKE SYSTEM														
Check leakage, damage and tightness			•		•		•		•		•		•	Or every 2 month
Check brake drum for wear and damage													○	*Every 1 year



# PERIODIC MAINTENANCE SERVICE

**NOTE** • Maintenance interval beyond 60,000 kms (36,000 miles) should be continued at the same intervals are before except as noted.

MAINTENANCE INTERVAL MAINTENANCE ITEM	x 1000 miles	3	6	9	12	15	18	21	24	27	30	33	36	REMARKS
	x 1000 kms	5	10	15	20	25	30	35	40	45	50	55	60	
Overhaul the wheel cylinder													○	*Every 1 year
Overhaul the wheel brake internal parts													○	*Every 1 year
Check brake back plate for wear and damage													○	*Every 1 year
Check master vac function													○	*Every 1 year
Check and adjust clearance between service brake drum and brake lining			●		●		●		●		●		●	*Or every 2 months
Check brake lining for remaining thickness				●			●			●			●	 Page 69
Check and adjust clearance between parking brake drum and brake lining													○	*Every 1 year
Check parking brake drum for wear and damage													○	*Every 1 year
Check ratchet wear and damage													●	*
Check control cable slack and damage					●				●				●	*
Tighten parking brake drum mounting nuts					●				●				●	*
<b>AXLE &amp; WHEEL</b>														
Check the front axle beam deformation and crack													●	*
Tighten the rear axle shaft mounting nuts or bolts		●	●	●	●	●	●	●	●	●	●	●	●	*
Clean rear axle housing breather							●						●	

## PERIODIC MAINTENANCE SERVICE

**NOTE** • Maintenance interval beyond 60,000 kms (36,000 miles) should be continued at the same intervals are before except as noted.

MAINTENANCE INTERVAL	x 1000 miles	3	6	9	12	15	18	21	24	27	30	33	36	REMARKS
MAINTENANCE ITEM	x 1000 kms	5	10	15	20	25	30	35	40	45	50	55	60	
Check rear axle housing crack deformation and damage													•	*
Check wheel bearing starting torque (front & rear)													•	*
Tighten wheel bearing lock nut (front & rear)													•	*
Tighten wheel hub and bearing outer race (front & rear)													•	*
Check wheel disc and rim side ring damage		•	•	•	•	•	•	•	•	•	•	•	•	
Rotate tire position		•	•	•	•	•	•	•	•	•	•	•	•	👉 Page 70
<b>SUSPENSION SYSTEM</b>														
Check the leaf springs for damage and deformation		•	•	•	•	•	•	•	•	•	•	•	•	
Tighten the U-bolt, and spring band		•	•	•	•	•	•	•	•	•	•	•	•	
Check the spring bracket for tightness							•						•	
Tighten shock absorber mounting				•			•			•			•	
Tighten spring pin fitting nut and lock nut		•	•	•	•	•	•	•	•	•	•	•	•	
Check shock absorber function and damage		•	•	•	•	•	•	•	•	•	•	•	•	
<b>POWER TRAIN</b>														
Tighten clutch housing and fly wheel bolts													•	*
Check clutch facing wear													○	*Every 1 year
Check transmission control linkage for play													•	
Check transmission lower cover breather							•						•	
Check transmission gear box oil level		•	•	•	•	•	•	•	•	•	•	•	•	👉 Page 65



# PERIODIC MAINTENANCE SERVICE

**NOTE •** Maintenance interval beyond 60,000 kms (36,000 miles) should be continued at the same intervals are before except as noted.

MAINTENANCE INTERVAL MAINTENANCE ITEM	x 1000 miles	3	6	9	12	15	18	21	24	27	30	33	36	REMARKS
	x 1000 kms	5	10	15	20	25	30	35	40	45	50	55	60	
Check propeller shaft universal joint and spline play							•						•	*
Check propeller shaft deflection							•						•	*
Check propeller shaft center bearing and support for damage													•	*
Check sliding spline damage													•	*
Check axle shaft twist and crack													•	*
Check differential gear box oil level		•	•	•	•	•	•	•	•	•	•	•	•	👉 Page 66
<b>ELECTRICAL SYSTEM</b>														
Check battery liquid level		•	•	•	•	•	•	•	•	•	•	•	•	👉 Page 67
Check battery liquid specific gravity and battery charging condition				•			•			•			•	👉 Page 67
Check pre-heater													○	*Every 1 year
Check wiring and joint parts for damage and tightness													•	*
Check starter and alternator brush length													•	*
Clean starter commutator and alternator slipring													•	*
Lubricate starter and alternator bearing grease													•	*
<b>ENGINE</b>														
Clean air cleaner element		Every 12,000 km (7,500 miles)												👉 Page 68
Tighten intake and exhaust manifold mounting nut													•	*
Adjust valve clearance					•				•				•	*

## PERIODIC MAINTENANCE SERVICE

**NOTE** • Maintenance interval beyond 60,000 kms (36,000 miles) should be continued at the same intervals are before except as noted.

MAINTENANCE INTERVAL MAINTENANCE ITEM	x 1000 miles	3	6	9	12	15	18	21	24	27	30	33	36	REMARKS
	x 1000 kms	5	10	15	20	25	30	35	40	45	50	55	60	
Check engine mounting													•	
Clean fuel feed pump strainer							•						•	👉 Page 65
Overhaul the injection pump		Every 120,000 km (72,000 miles)												*
Adjust fuel injection nozzle pressure													•	*
Check fuel injection timing				•			•			•			•	*
Inspect fuel feed pump function													•	*
Clean oil cooler													○	* On a engine overhauling
Tighten each parts of turbocharger													•	*
Check rotor operation of turbocharger													•	*
Clean fuel tank strainer							•						•	Or every 6 months
Inspect radiator cap function		•	•	•	•	•	•	•	•	•	•	•	•	*
Check fuel injection pump control lever return spring				•			•			•			•	
Clean cooling system													•	👉 Page 62
Clean radiator core (fin)				•			•			•			•	Or every 3 months
<b>OTHERS</b>														
Check exhaust muffler and pipe for mounting condition		•	•	•	•	•	•	•	•	•	•	•	•	
Check chassis frame deformation													•	
Check rivet tightness													•	



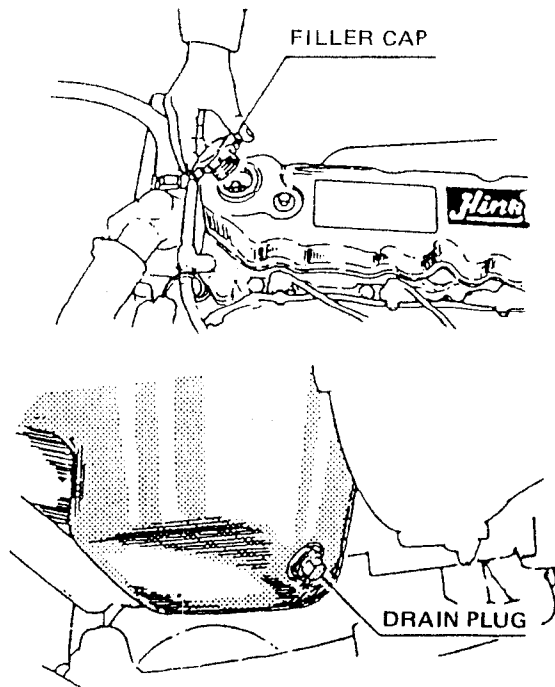
## ENGINE OIL REPLACEMENT

Warm up the engine for a few minutes and then turn it off. Remove the oil filler cap.

Remove the drain plug and allow the oil to drain fully.

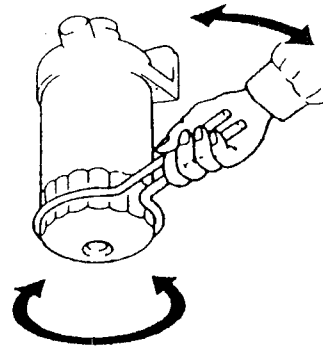
Add oil and install the filler cap. Start the engine and check for leaks at the filter or drain plug.

Check the oil level on the dipstick after engine stopping.



## REPLACEMENT OF OIL/FUEL FILTER ELEMENT (Spin-on type)

- Remove the filter by unscrewing it with filter wrench contained in the general tool set.
- Replace the filter with new one.
- Apply a slight amount of engine oil to the gasket of the new filter.
- Tighten the filter by hand until the gasket touches the filter cover, and then tighten another 3/4 to one full turn with a filter wrench.
- Operate the engine for a few minutes and check the oil or fuel leakage from the filter.



- When replacing engine oil filter, check the engine oil level after engine stopping.

## REPLACEMENT OF ENGINE COOLANT

Every 60,000 km (36,000 miles), drain, flush, and refill the cooling system with a new coolant. Before each winter and summer drain, flush and refill the cooling system with a new coolant. At the same time, adjust the concentration of antifreeze solution to provide required freezing and corrosion protecting, if necessary.

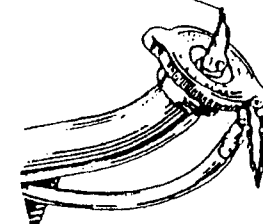
### WARNING

Do not remove the radiator cap while the engine, radiator are still hot. If the radiator cap is removed while the radiator is still hot, scalding water and steam under pressure can be blown out. This can result in personal injury.

### ● Draining

- Remove the radiator cap after the engine has cooled.
- Turn the cap gently counter-clockwise until it stops. Do not depress the cap while turning.
- Wait for the release of internal pressure. Turn the cap counter-clockwise while depressing the cap and remove it.

FILLER CAP LEVER



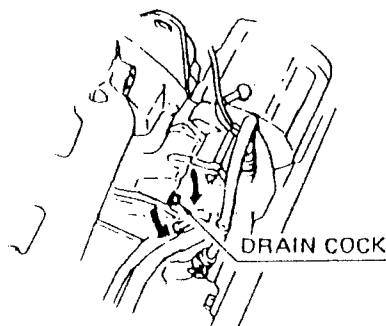
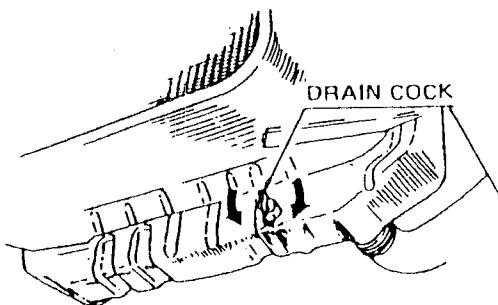


- Place the heater control lever in the "WARM" position.
- Start and run the engine with the cap removed until the upper radiator hose gets hot. This means that the thermostat is open and the coolant is circulating through the radiator.

#### WARNING

Do not loosen the drain plugs while the engine is still hot. If you do, scalding water can come out resulting in personal injury.

- Stop the engine. Loosen the radiator drain plug to drain the coolant. Drainage will improve if you also loosen the drain plug on the cylinder block.
- Tighten the radiator drain plug. Also tighten the drain plug on the cylinder block if it was loosened. Add water until the system is filled to the filler opening. Run the engine again until the upper radiator hose gets hot.
- Drain the complete system and tighten the radiator drain plug. Also tighten the drain plug on the cylinder block, if it is loosened.



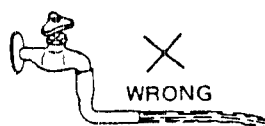
#### ● Refiling

- Slowly feed coolant (antifreeze or tap water) in to the radiator from the filler, until the radiator is full.

**NOTE** • When supplying coolant from a pail, pour it slowly to prevent air from mixing with the coolant.

- Tap water (see figure)  
Faucet half open:  
approx. 10 liter/minute (2.64 US.gal/minute) (2.20 Imp.gal/minute)  
Faucet fully open:  
approx. 20 liter/minute (5.28 US.gal/minute) (4.40 Imp.gal/minute)

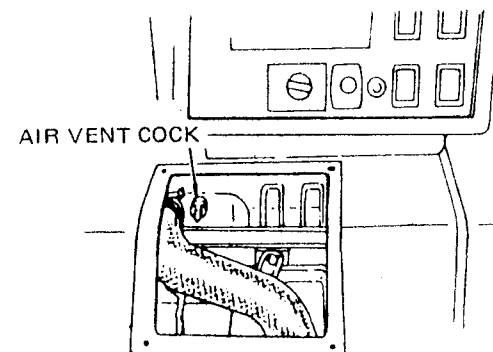
FAUCET FULLY OPEN



FAUCET HALF OPEN



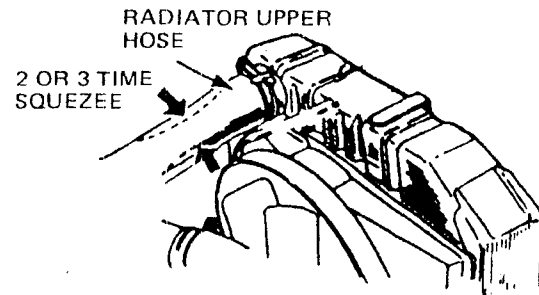
- Sudden water supply makes it rather difficult to discharge air from the cooling pipeline, and takes a longer time to fill with water. Discharge air from the cock on top of the radiator, and slowly pour water into the filler, making sure that the water will not overflow.



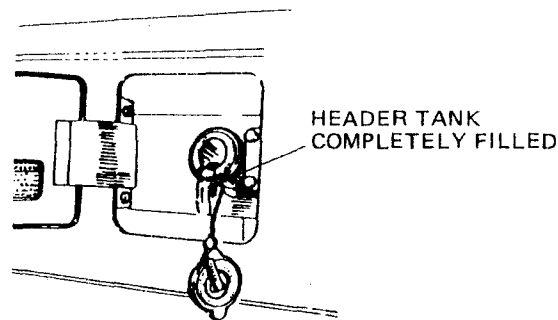
- If the cooling water overflows from the air vent cock, stop pouring water into the water filler, wait for a few minutes, check that the water level remains unchanged, and then tighten the air vent cock.



- When the level of the coolant reaches the filler, squeeze the upper radiator hose two or three times. This will cause air inside the hose to be expelled, and the level of the coolant will fall. Fill again and repeat this process until the radiator is completely filled.



- Properly close the radiator cap. Supply coolant until the header tank completely filled out.



- To ensure that the air in the engine and the piping is properly expelled, set the engine speed slightly higher than normal idling speed. Raise the water temperature to normal operating temperature zone, then continue to idle the engine for another 10 minutes.
- Stop the engine and, after the engine has cooled down sufficiently, check the coolant in the header tank. Add coolant to make up for any drop in the coolant level.

**NOTE** • If the engine is run up to maximum rpms, engine parts may become damaged. And service life may be reduced.

- Trapped air in the cooling system can cause overheating.

## ● Water

- Water for the cooling system should be clean, free from deposit and scale forming materials, and corrosive chemicals. Do not use pre-softened water. Use soft water (city water) only.

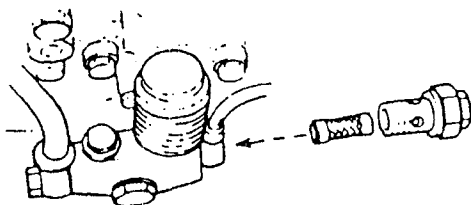
## ● Antifreeze

- Use ethylene glycol base antifreeze. Do not use methanol base, methoxypropanol base antifreeze, etc.
- The freezing point of the coolant varies with the concentration of the antifreeze. Select the appropriate concentration to protect against freezing according to the following table.

Safe temperature °C (°F)	Antifreeze %	Water %	Freezing temperature °C (°F)
-11 ( 12)	30	70	-16 ( 3)
-16 ( 3)	35	65	-20 (- 5)
-20 (- 4)	40	60	-25 (-13)
-26 (-15)	45	55	-31 (-24)
-33 (-27)	50	50	-37 (-36)
-40 (-40)	55	45	-45 (-49)
-48 (-54)	60	40	-53 (-63)

**NOTE** • Mix soft water (city water) only with the antifreeze.

## CLEANING OF FEED PUMP STRAINER

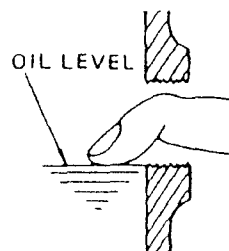


- Disconnect the line from the feed pump and take out the strainer. Clean the strainer with fuel.
- Reinstall the strainer with new gaskets. Be careful not to let dirt enter the fuel line. Then bleed air from fuel system.

## CHECKING & REPLACEMENT OF TRANSMISSION GEAR OIL

### ● Checking

- Park the vehicle on level ground
- Remove the filler plug and check the oil level.
- The oil level should be at the lower end of the filler hole.
- Add the gear oil, if necessary.
- Tighten the filler plug after adding the gear oil.

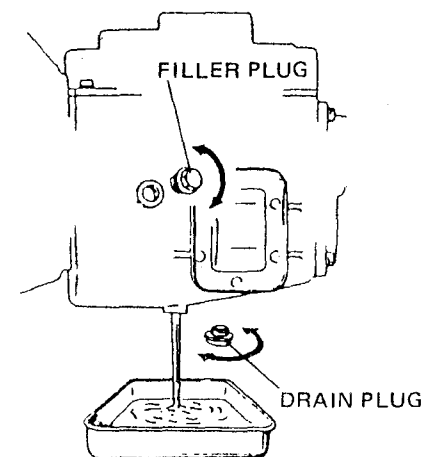


### ● Replacement

#### WARNING

Do not work on the transmission while it is still hot. This can result in personal injury.

- Park the vehicle on level ground.
- Clean around the drain and filler plugs.
- Unscrew the filler plug.
- Unscrew the drain plug and drain the gear oil. The used gear oil should be drained into a suitable container.
- Clean the drain plug, and tighten it with a new gasket.
- Add the gear oil up to the lower end of the filler plug hole.
- Clean the filler plug and tighten it with a new gasket.

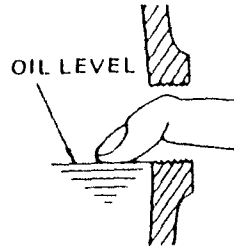


MA

## CHECKING & REPLACEMENT OF DIFFERENTIAL GEAR OIL

### ● Checking

- Park the vehicle on level ground
- Remove the filler plug and check the oil level.
- The oil level should be at the lower end of the filler hole.
- Add the gear oil, if necessary.
- Tighten the filler plug after adding the gear oil.

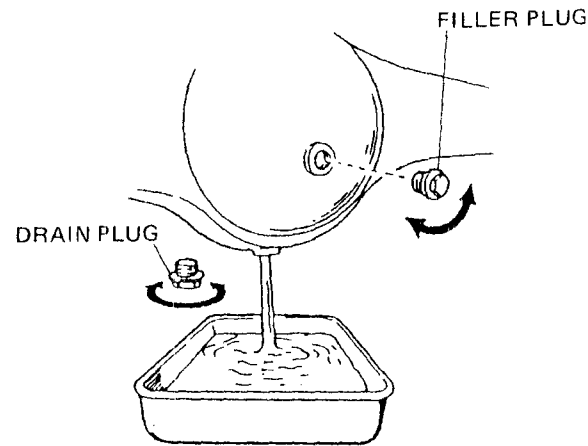


### ● Replacement

#### WARNING

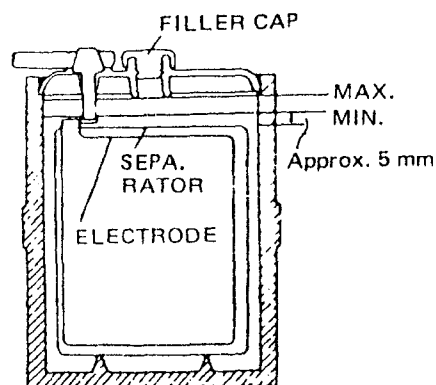
Do not work on the differential while it is still hot. This can result in personal injury.

- Park the vehicle on level ground
- Clean around the drain and filler plugs.
- Unscrew the filler plug.
- Unscrew the drain plug and drain the gear oil. The used gear oil should be drained into a suitable container.
- Clean the drain plug, and tighten it with a new gasket.
- Add the gear oil up to the lower end of the filler plug hole.
- Clean the filler plug and tighten it with a new gasket.



## BATTERY LIQUID LEVEL

Must be between the MAX and MIN marks. Use only distilled water to keep the specified level.



## BATTERY LIQUID SPECIFIC GRAVITY

Check the specific gravity by using the hydrometer.

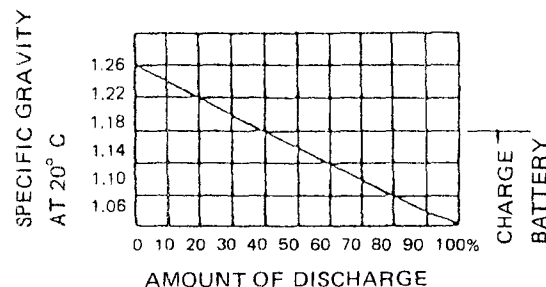
**Specific gravity . . . . . 1.25–1.27 (at 20°C)**

Specific gravity varies with the temperature. The 20°C (68°F) level is used as reference. Use the following equation for conversion:

$$S_{20} = S_t + 0.007 (t - 20)$$

$S_{20}$  : Effective specific gravity at 20°C (68°F)

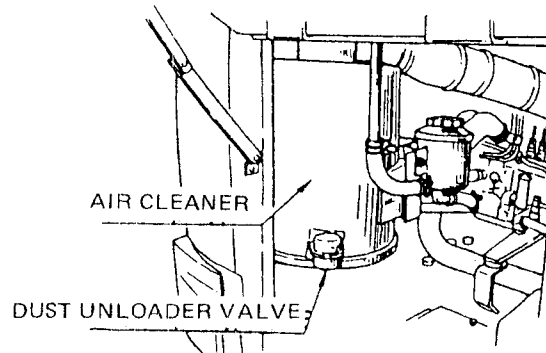
$S_t$  : Measured specific gravity at  $t^\circ\text{C}$



**NOTE •** Don't allow the temperature of battery liquid to raise above 45°C (113°F) when charging the battery.

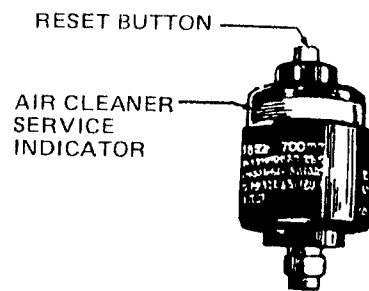
## CLEANING OF PAPER ELEMENT TYPE AIR CLEANER

### ● Dust Unloader Valve



A dust unloader valve has been installed on the lower part of the cleaner for automatic discharging of the dust accumulating in the dust pan.

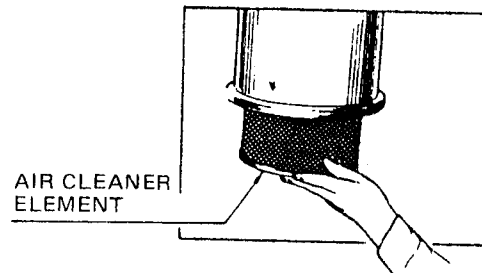
### ● Service Indicator



Check whether a red signal shows on the service indicator. When the red signal is shown, clean or wash the air cleaner element.

### ● Disassembly

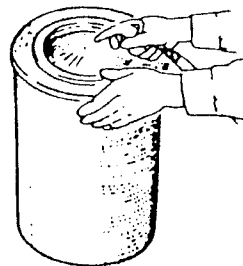
- Clean outside of the air cleaner.
- Remove the cover by loosening the wing nut.
- Remove the element by loosening the wing nut.



### ● Clean With Compressed Air.

Clean the element with clean, dry, compressed air directing the nozzle to the clean air side of element.

Air pressure: Less than 7 kg/cm<sup>2</sup> (100 psi)



### ● Washing For Soot & Oil Dust

Wash the element by soaking it in a non-sudsing detergent solution for about 30 minutes. Rinse it with clean water and air dry the element completely. Do not apply fire or compressed air.

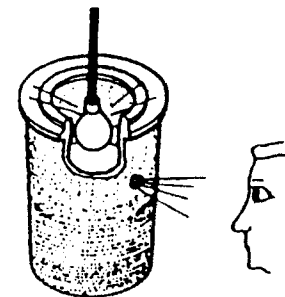
#### WARNING

Never use kerosene, gasoline or other solvents to clean element. Use of these can cause overrevving of the engine resulting in engine damage.



### ● Inspection

Check the element for rupture or pin holes by placing a light inside the element after cleaning. Check for a damaged gasket. Replace if necessary.

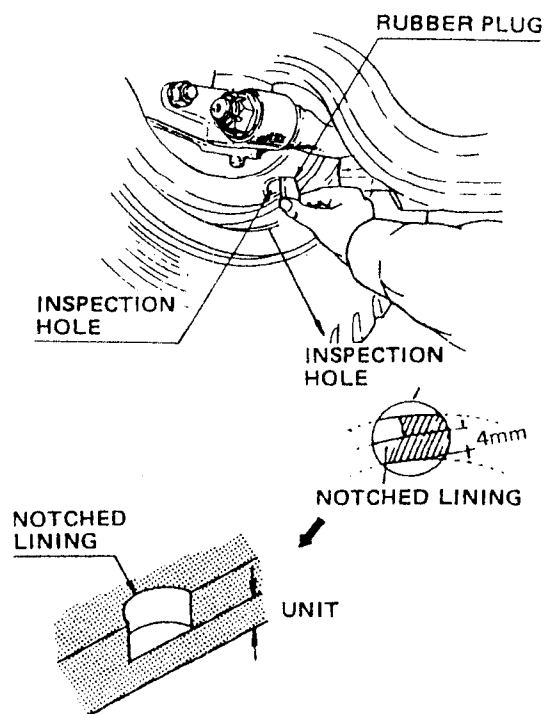


## CHECKING OF BRAKE LINING THICKNESS

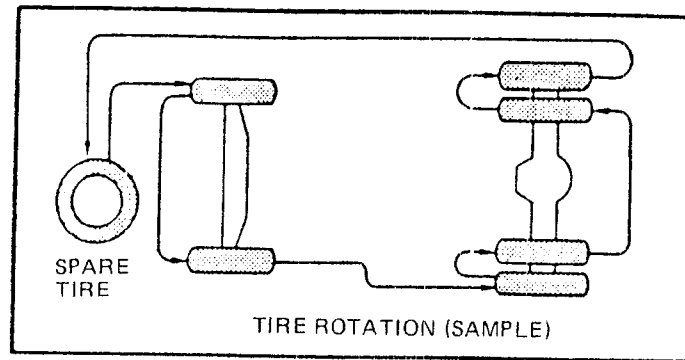
Check remaining thickness of lining through the inspection hole of the backing plate. If the lining has been worn to the limit marking or if it is foreseen that the lining will be worn to the limit by the time of next inspection, replace the lining.

### Brake lining thickness

Standard	Limit
8.0 mm (0.315 in)	4.0 mm (0.078 in)



## TIRE ROTATION



Tires wear differently depending upon the road conditions, vehicle load, and brake operation, etc. Also, spare tires will wear and undergo a change of properties if they are not used for a long period. Consequently, to make tire wear even and also to extend tire life, rotate the tires after every 5,000 km.

- **Precautions Regarding Tire Rotation**
- When rotating the tires, install them so that they rotate in the opposite direction to the previous direction of rotation.
- New tires are liable to generate heat and wear rapidly. Accordingly, install a pair of new tires on the front wheels which are subjected to a relatively small load.
- Use tires which are undamaged and wheel-balanced.

- Be sure to use the same type of tire on the same axle. If you use different types of tires on the same axle, the vehicle will drift left or right or the steering wheel may be pulled when you apply the brake, and so on.
- From time to time, change over the disks on the wheels, and also install the tires back to front.
- When installing double tires, ensure that the difference in the O.D. of the tires is within the allowable tolerance, and install the tire with the smaller O.D. on the inside.

### Difference between I.D. and O.D. of tires

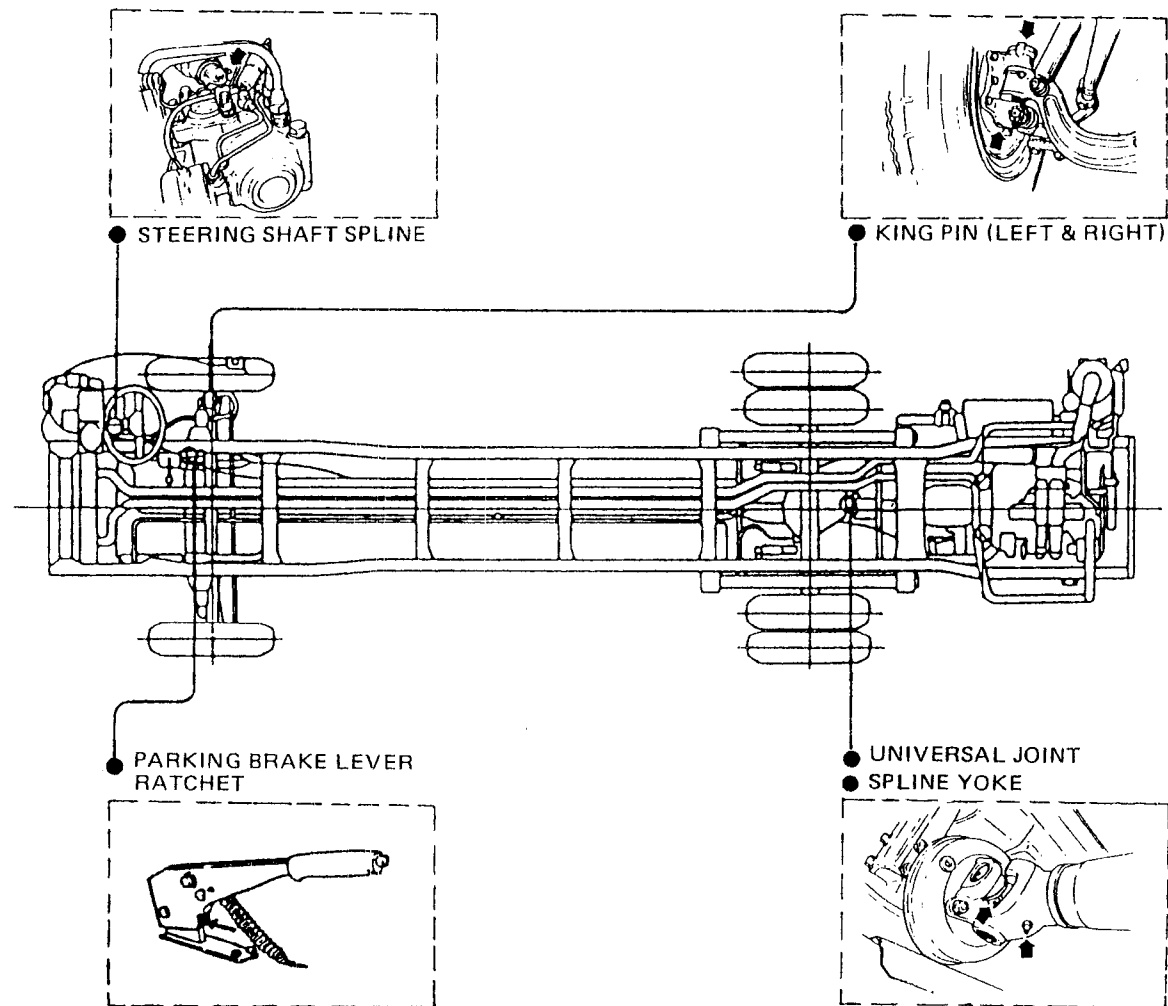
Bias tires (General purpose tires)	Radial tires
Within 8 mm (0.315 in)	Within 6 mm (0.237 in)

- NOTE**
- Do not mix tires of different construction (e.g. bias tires and radial tires). This is because there is a risk of the operability and stability of the vehicle being degraded.
  - 50 to 100 km after tire rotation, re-tighten the wheel nuts with the specified tightening torque.



## GREASING POINTS

- Every 5,000 km (3,000 miles)



- NOTE** ● This drawing shows the location of grease fittings to be lubricated.  
Refer to workshop manual for lubricating points when overhauling.  
● Refer to Recommended Lubricant List.

# RECOMMENDED LUBRICANT LIST

# RECOMMENDED LUBRICANTS FOR ALL HINO VEHICLES (1)

HINO MOTORS, LTD.  
OVERSEAS OPERATIONS  
TECHNICAL DIV.  
TOKYO, JAPAN

TOKYO, JAPAN												
No.	LUBRICANTS	POSITIONS	ATMOS- PHERIC TEMP.	S.A.E NO.	BP	CALTEX	CASTROL	ESSO	GULF	MOBIL	SHELL	TOTAL
1	ENGINE OIL (A.P.I. CD) Previous Classification (A.P.I. DS) (MIL L 2104C) (MIL L 45199B)	Cylinder Block Injection Pump Air Cleaner	Above 32°C (90°F)	40	Vanellus C-3 40	RPM DELO 400 OH SAE 40 or 15W/40 RPM DELO 300 OH SAE 40	Castrol or Deusol CRD 40, Turbomax Castrol or Deusol RX Super 40 15W/40	Essolube D-3 40 XD-3 40	Gulf Super Duty Motor Oil 40, 15W/40	Mobil Delvac 1340 Mobil Delvac Super 15W/40	Myrna Oil 40 20W/40 15W/40 Rimula X Oil 40 Rimula CT 40	TOTAL Rubea S 40 TOTAL Rubea TM 15W/40
			32° 0°C (90° 32°F)	30	Vanellus C-3 30	RPM DELO 400 OH SAE 30 or 15W/40 RPM DELO 300 OH SAE 30	Castrol or Deusol CRD 30 Castrol or Deusol RX Super 30 15W/40	Essolube D-3 30 XD 3 30	Gulf Super Duty Motor Oil 30 15W/40	Mobil Delvac 1330 Mobil Delvac Super 15W/40	Myrna Oil 30 20W/40 15W/40 Rimula X Oil 30 10W/30 Rimula CT30	TOTAL Rubea S 30 TOTAL Rubea TM 15W/40
			0° 12°C (32° 10°F)	20	Vanellus C-3 20W	RPM DELO 400 OH SAE 20/20W, 15W/40 RPM DELO 300 OH SAE 20/20W	Castrol or Deusol CRD 20W/20 Castrol or Deusol RX Super 20W/20 15W/40	Essolube D-3 20W XD 3 15W/40	Gulf Super Duty Motor Oil 20 15W/40	Mobil Delvac 1310 Mobil Delvac Super 15W/40	Myrna Oil 20 20W/40 15W/40 Rimula X Oil 20 Rimula CT20	TOTAL Rubea S 20 TOTAL Rubea TM 15W/40
	ENGINE OIL (A.P.I. CC) Previous Classification (A.P.I. DM) (MIL L 46152) (MIL L 2104B)		Above 32°C (90°F)	40	Vanellus M 40	RPM DELO 200 OH SAE 40 RPM DELO 100 OH SAE 40	Castrol or Deusol CRX 40 Castrol or Deusol RX Super 40 15W/40	Essolube HDX 40 HDX Plus 40	Gulflube Motor Oil XHD 40 15W/40	Mobil Delvac 1240 Mobil Delvac 1140	Rotella 1X40 20W/50 Rotella SX Oil 40 20W/40	TOTAL Rubea H 40
			32° 0°C (90° 32°F)	30	Vanellus M 30	RPM DELO 200 OH SAE 30 RPM DELO 100 OH SAE 30	Castrol or Deusol CRX 30 Castrol or Deusol RX Super 30 15W/40	Essolube HDX 30 HDX Plus 30	Gulflube Motor Oil XHD 30 15W/40	Mobil Delvac 1230 Mobil Delvac 1130	Rotella 1X30 20W/50 Rotella SX Oil 30 20W/40	TOTAL Rubea H 30
			0° 12°C (32° 10°F)	20	Vanellus M 20W	RPM DELO 200 OH SAE 20/20W RPM DELO 100 OH SAE 20/20W	Castrol or Deusol CRX 20W/20 Castrol or Deusol RX Super 20W/20 15W/40	Essolube HDX 20 HDX Plus 20W/20	Gulflube Motor Oil XHD 20 15W/40	Mobil Delvac 1220 Mobil Delvac 1120	Rotella 1X20 20W/50 Rotella SX Oil 20/20W 20W/40	TOTAL Rubea H 20
2	GEAR OIL (A.P.I. GL 4) (MIL L 2105)	Transmission Case P.T.O. Case Transfer Case Front & Rear Axle (Spiral bevel gear type)	Above 32°C (90°F)	140	Gear Oil 140EP	Universal Thuban 140	Castrol Hyspress 140	Esso Gear Oil GP 85W 140	Gulf Multi-Purpose Gear Lubricant 85W 140	Mobilube GX140	Spirax EP140	TOTAL EP 85W140
			32° 12°C (90° 10°F)	90	Gear Oil 90EP	Universal Thuban 90	Castrol Hypoy 90	Esso Gear Oil GP 85W 90	Gulf Multi-Purpose Gear Lubricant 80W 90	Mobilube GX90	Spirax EP90	TOTAL EP 85W90
		Steering Gear Case Winch Gear Case	Above 12°C (10°F)	90	Gear Oil 90EP	Universal Thuban 90	Castrol Hypoy 90	Esso Gear Oil GP 85W 90	Gulf Multi-Purpose Gear Lubricant 80W 90	Mobilube GX90	Spirax EP90	TOTAL EP 85W90
3	HYPOID GEAR OIL (A.P.I. GL 5) (MIL L 2105B)	Rear Axle (Hypoid gear type)	Above 32°C (90°F)	140	Hypogear 140EP	Multipurpose Thuban EP 140	Castrol Hypoy B140 CB5W 140	Esso Gear Oil GX 85W 140	Gulf Multi-Purpose Gear Lubricant 85W 140	Mobilube HD 140 85W 140	Spirax Heavy Duty 140 85W 140	TOTAL Transmission TM 85W140
			32° 12°C (90° 10°F)	90	Hypogear 90EP	Multipurpose Thuban EP 90	Castrol Hypoy B90 CB0W 90	Esso Gear Oil GX 85W 90	Gulf Multi-Purpose Gear Lubricant 80W 90	Mobilube HD90 80W 90	Spirax Heavy Duty 90 85W 140	TOTAL Transmission TM 80W90
4	BOOSTER TYPE POWER STEERING AND DUMP AND CRANE HOIST OIL (MIL L 15017A) (MIL L 17672B) (MIL-H 46001)	Power Steering, Booster Dump & Crane Hoist	Above 20°C (68°F)	20W	ENERGOL HLP46	Rando Oil 46 or 68	Hyspin AWS 46	Nuto H68	Gulf Harmony 46 AW	Mobil DTE 26	Tellus Oil 46 56 or 68	TOTAL AZOLLA 46
			10° 30°C (50° 86°F)	10W	ENERGOL HLP32	Rando Oil 32	Hyspin AWS 32	Nuto H32	Gulf Harmony 32 AW	Mobil DTE Oil Light Mobil DTE 24	Tellus Oil 32	TOTAL AZOLLA 32
			10° 30°C (50° 22°F)	5W	ENERGOL HLP15	Rando Oil HD A2 or Spindura Oil 15	Hyspin AWS 15	Nuto H15	Gulfspin 15	Mobil DTE 13	Tellus 1 Oil 15	TOTAL AZOLLA 15 or SCANDIS 15
5	INTEGRAL TYPE POWER STEERING OIL	Power Steering Gear Case	50° 45°C (122° 43°F)	20 5W	BP Autran GM MP	Tesamatic Fluid (Dexron II)	Castrol TO Dexron II	Esso Automatic Transmission Fluid Dexron II	Gulf Automatic Transmission Fluid Dexron II	Mobil ATF220	Shell Dexron II Shell Dexron	TOTAL DEXRON
6	TORQUE CONVERTER OIL	SCG Fluid Clutch SCG Gear Box Nigata Torque Converter	Above 30°C ( 22°F)		BP Autran GM MP	Tesamatic Fluid (Dexron III)	Castrol TO Dexron II	Esso Automatic Transmission Fluid Dexron II	Gulf Automatic Transmission Fluid Dexron II	Mobil ATF220	Shell Dexron II Shell Dexron	TOTAL DEXRON
7	SHOCK ABSORBER OIL	Shock Abs. linkage type			Shock Absorber Oil	Spindura Oil 10	Castrol Shockol	Nuto H15	Gulf SENECA 32	Mobil DTE 13	Donax A	TOTAL SCANDIS 15
8	AIR AND VACUUM CYLINDER OIL	Air Servo Cylinder Vacuum Servo Cylinder			Shock Absorber oil	Spindura Oil 10	Castrol Icematic 44 Castrol Shockol	Zenice 15	Gulf SENECA 32	Gargovir Arctic Oil Light	Donax A	TOTAL SCANDIS 15

# RECOMMENDED LUBRICANT LIST

## RECOMMENDED LUBRICANTS FOR ALL HINO VEHICLES (2) - Continued

No.	LUBRICANTS	POSITIONS	ATMOS- PHERIC TEMP.	S. A. E. NO.	BP	CALTEX	CASTROL	ESSO	GULF	MOBIL	SHELL	TOTAL
9	BUS COOLER COMPRESSOR OIL (IMIL-L-160168)	Cooler Compressor (Nippon Denso Make)			ENERGOL LP127	Capelle Oil WF32 88	Castrol Icamatic 788	Zenice R68	Gulf SENECA 32	Gargoyle Arctic Oil C	Clavus Oil 32 G37	—
		Cooler Compressor (Isuzu Make)			ENERGOL LP168	Capelle Oil WF32 88	Castrol Icamatic 89	Zenice R68	Gulf SENECA 77	Gargoyle Arctic Oil 300	Clavus Oil 88 88	—
10	CAB TILT OIL (IMIL-H-8806D)	Hydraulic Pump & Tilt Cylinder			ENERGOL SHF-LT116	RPM Aviation Hydraulic Fluid D or E	Castrol DB Hydraulic Fluid	—	—	Mobil Aero HFD	Aero Shell Fluid 41	—
11	CHASSIS GREASE (IMIL-G-1774D)	Chassis Grease Fitting			Energrease L 2	Marfak Multipurpose 2 or Marfak All Purpose 2	Castrol LM Grease	Esso Chassis Grease L	Gulflex Poly	Mobilgrease MP 77 MS	Retinax CD Retinax A	TOTAL MULTIS 2
12	WHEEL BEARING GREASE (IMIL-G-10924B 18709A)	Wheel Bearing Propeller Shaft Spider Propeller Shaft Center Bearing			Energrease L 2	Marfak Multipurpose 2 or Marfak All Purpose 2	Castrol LM Grease	Esso Multipurpose Grease	Gulflex Poly	Mobilgrease MP 77 532 MS 523	Retinax A Alvares Grease R3 EP2	TOTAL MULTIS 2
13	HEAT RESISTANCE GREASE (IMIL-G-27815 23649 21164)	Clutch Release Lever Pin T/M Main Drive Shaft Spine Brake Shoe Anchor Pin & Cam			Energrease B 2	Thermalex EP2 or RPM Grease SRI 2	Castrol BNS Grease	Unires N2	Gulflex Poly	Mobilgrease Special Super	Danna Grease 2, R2 Dolium Grease R	TOTAL Multis HT 2 TOTAL Multis HTM 2
14	COOLANT PUMP BEARING GREASE (IMIL-G-10924B)	Coolant Pump Bearing			Energrease L 2	Marfak Multipurpose 2 or Marfak All Purpose 2	Castrol LM Grease	Esso Multipurpose Grease	Gulflex Poly	Mobilgrease MP 77 MS	Retinax A Alvares Grease R2	TOTAL MULTIS 2
15	STARTER GREASE	Bushing Clutch Drive Shaft Pinion Shaft Lever & Reduction Gear			—	Molytex Grease EP2	—	—	—	Mobilgrease 29	Aero Shell Grease 17	—
16	GENERATOR & STARTER BEARING GREASE	Generator Bearing Starter Bearing			Energrease LT 2	RPM Grease SRI 2	—	—	—	Mobilgrease 28	Aero Shell Grease 7	—
17	INJECTION PUMP TIMER GREASE (IMIL-G-10924B)	Injection Pump Timer			Energrease L 2	Marfak Multipurpose 2 or Marfak All Purpose 2	Castrol LM Grease	Esso Multipurpose Grease	Gulflex Poly	Mobilgrease MP 77 MS	Retinax A Alvares Grease R2	TOTAL Multis EP 1
18	AUTO GREASER GREASE (IMIL-G-18709A 1774D)	Centralized Lubricator			Energrease LS EPI	Multifak EP 0	Castrol Impervia CL Light	Beacon EP1	Gulfcrown Grease E P No 0	Mobilplex 44	Alvares EP Grease R0 or Alvares R1	TOTAL Multis EP 1
19	BRAKE AND CLUTCH FLUID	Brake & Clutch			Brake Fluid	Heavy Duty Brake Fluid	Castrol Disc Brake Fluid Castrol Brake Fluid Crimson Castrol Gulsing Universal Brake Fluid	Esso Brake Fluid HD	Cruise Master Super Heavy Duty Dot 3 Motor Vehicle Brake Fluid	Mobil Super Heavy Duty Brake Fluid	Donax B or HB Shell Super Heavy Duty Brake Fluid	TOTAL Brake Fluid (TOTAL HBF)
20	ANTI FREEZE (IMIL-H-5559A)	Engine Radiator			Anti Frost	AF Engine Coolant	Castrol Anti-Freeze Castrol Long Life Coolant	Esso Anti-Freeze Coolant	Cruise Master Antifreeze And Summer Coolant	Mobil Permatone	Shellzonal U.S.A. 3 GlycoShell Plus (European Countries) Shellsafe Anti-Freeze P281 Coolguard	TOTAL ANTIFEL

No.	LUBRICANTS	POSITIONS		DOW CORNING (U. S. A.)	GENERAL ELECTRIC (U. S. A.)	WACKER CHEMIE (WEST GERMANY)					
21	SILICONE GREASE	Spring Brake Chamber		MOLYKOTE(R) 33 Grease Medium	Sikone Grease G 341M G 322L G 330M	Sikone Grease 300 Medium					
22	SILICONE GREASE (IMIL-L-15719A)	Valve (Brake, Relay, Spring Brake Control Spring Brake Release Control and LSV)		MOLYKOTE(R) 44 Grease Medium	Sikone Grease G-351M	Sikone Grease 400 Medium					
23	SILICONE OIL	Air Suspension Leveling Valve		Dow Corning 100 Fluid 1000 CS	Sikone Fluid SF-98-1000	Sikone Fluid AK 1000					

Note: Lubricants were amended according to new classification by A.P.I. (American Petroleum Institute)

82-17-200 IT S OKM



## TROUBLE SHOOTING

Faithful observance of daily inspection and maintenance procedures virtually eliminates troubles. Close attention should be paid any minor trouble, as prompt action keeps minor troubles from becoming major troubles. When any of the following problems appear, check and repair in accordance with the information given. If simple repair is not possible, have your Hino dealer or service shop perform and necessary work.

## TROUBLE SHOOTING

<u>Problem</u>	<u>Possible cause</u>	<u>Remedy</u>
Difficulty starting engine	Starter does not operate or operates slowly	<ul style="list-style-type: none"> <li>• Battery charge low. . . . . Check battery specific gravity, charge or replace battery</li> <li>• Disconnected, loose or corroded. . . . . Polish or retighten battery terminals</li> <li>• No ground. . . . . Clean and tighten ground terminal</li> <li>• Improper viscosity oil. . . . . Change oil</li> </ul>
	Starter operates	<ul style="list-style-type: none"> <li>• Improper pre-heat operation . . . . . Correct pre-heat</li> <li>• No fuel in tank . . . . . Supply fuel</li> <li>• Clogged fuel element . . . . . Clean or replace element</li> <li>• Fuel pipfroze . . . . . Warm up fuel pipe by hot water (Less than 60°C)</li> <li>• Clogged air cleaner element. . . . . Clean the element or replace the element</li> </ul>
Engine stalls at low speed	<ul style="list-style-type: none"> <li>• Idling speed too low. . . . . Adjust idling speed</li> <li>• No fuel in tank . . . . . Supply fuel</li> <li>• Clogged fuel filter . . . . . Replace element (or clean)</li> <li>• Clogged element . . . . . Clean the element or replace the element</li> </ul>	
Lack of power	<ul style="list-style-type: none"> <li>• Clogged fuel filter . . . . . Replace element (or clean)</li> <li>• Clogged air cleaner (dust indicator shows red signal) . . . . . Clean the element or replace the element</li> <li>• Use of poor fuel . . . . . Use good quality fuel</li> </ul>	

TS

## **TROUBLE SHOOTING**

<b><u>Problem</u></b>	<b><u>Possible cause</u></b>	<b><u>Remedy</u></b>
Engine OVER HEATING	<ul style="list-style-type: none"> <li>• Clogging radiator face. . . . .</li> <li>• In sufficient coolant. . . . .</li> <li>• Clogged radiator . . . . .</li> <li>• Thermostat faulty . . . . .</li> </ul>	<ul style="list-style-type: none"> <li>Clean the radiator core</li> <li>Add coolant. Check radiator cap and leakage of coolant</li> <li>Clean the cooling system with flushing agent</li> <li>Check thermostat</li> </ul>
Excessive black smoke	<ul style="list-style-type: none"> <li>• Clogged air cleaner. . . . . (Dust indicator shows red signal)</li> <li>• Crush of air intake hose . . . . .</li> </ul>	<ul style="list-style-type: none"> <li>Clean or replace element</li> <li>Replace the hoses</li> </ul>
Difficult gear engagement	<ul style="list-style-type: none"> <li>• Clutch will not release caused by . . . . . Low clutch fluid or fluid leakage</li> </ul>	<ul style="list-style-type: none"> <li>Add clutch fluid or tighten pipings and linkage</li> </ul>
Excessive fuel consumption	<ul style="list-style-type: none"> <li>• Fuel leakage. . . . .</li> <li>• Clogged air cleaner. . . . . (Dust indicator shows red signal)</li> <li>• Tires improperly inflated . . . . .</li> <li>• Clutch slipping . . . . .</li> <li>• Brakes dragging. . . . .</li> </ul>	<ul style="list-style-type: none"> <li>Tighten pipings and linkage</li> <li>Clean or replace element</li> <li>Inflate tires to proper pressure</li> <li>Adjust clearance</li> <li>Adjust clearance</li> </ul>

## TROUBLE SHOOTING

<u>Problem</u>	<u>Possible cause</u>	<u>Remedy</u>
Excessive engine oil consumption	<ul style="list-style-type: none"> <li>• Poor quality oil . . . . .</li> <li>• Oil level too high . . . . .</li> <li>• Engine oil leakage . . . . .</li> <li>• Omission of oil changing. . . . .</li> <li>• Clogged element . . . . .</li> <li>• Omission of engine warm-up . . . . .</li> </ul>	<ul style="list-style-type: none"> <li>Replace with proper engine oils</li> <li>Drain excess oil</li> <li>Tighten further or replace gasket</li> <li>Replace proper interbal</li> <li>Replace the element</li> <li>Warm-up properly</li> </ul>
Steering wheel return poor	<ul style="list-style-type: none"> <li>• Lack of lubrication in steering . . . . .</li> </ul>	<ul style="list-style-type: none"> <li>Lubricate linkage</li> </ul>
Steering wheel heavy	<ul style="list-style-type: none"> <li>• Load concentrated on front side. . . . .</li> <li>• Under inflated tires . . . . .</li> <li>• Lack of power steering oil. . . . .</li> </ul>	<ul style="list-style-type: none"> <li>Correct load</li> <li>Infrate tires to proper pressure</li> <li>Add oil</li> </ul>
Steering wheel shimmy	<ul style="list-style-type: none"> <li>• Loosened wheel nut. . . . .</li> <li>• Loose steering linkage connection. . . . .</li> <li>• Unbalanced tires and disc wheels . . . . .</li> <li>• Tires under-inflated or inflation . . . . .</li> <li>• Uneven tire wear . . . . .</li> <li>• Air in power steering circuit . . . . .</li> </ul>	<ul style="list-style-type: none"> <li>Tighten</li> <li>Tighten</li> <li>Balance tire</li> <li>Inflate tires to proper pressure pressure unequal</li> <li>Replace tire</li> <li>Bleed air</li> </ul>

## TROUBLE SHOOTING

---

<u>Problem</u>	<u>Possible cause</u>	<u>Remedy</u>
Not enough braking	<ul style="list-style-type: none"> <li>• Nonuniform brake chamber. . . . . Adjust rod stroke</li> <li>• Leakage of oil and air from brake. . . . . Tighten further or replace gasket system</li> <li>• Excessively worn lining. . . . . Replace</li> </ul>	
Brake drags	<ul style="list-style-type: none"> <li>• Nonuniform brake chamber rod . . . . . Adjust stroke</li> </ul>	
One-side braking action	<ul style="list-style-type: none"> <li>• Improper or unequal pneumatic . . . . . Inflate tires to proper pressure pressure of tire</li> <li>• One side load . . . . . Correct load</li> <li>• Uneven tires wear . . . . . Replace tire</li> </ul>	
Parking brake action poor	<ul style="list-style-type: none"> <li>• Excessively large drum-to-lining . . . . . Adjust clearance</li> </ul>	
Lack of compressed air	<ul style="list-style-type: none"> <li>• Leakage of compressed air from . . . . . Tighten further or replace gasket brake system</li> </ul>	
Battery readily discharges	<ul style="list-style-type: none"> <li>• Corroded, disconnected, or loosened. . . . . Polish or retighten battery terminals</li> <li>• Loose fan belt tension . . . . . Adjust or replace fan belt</li> <li>• Lack of battery liquid . . . . . Add battery liquid</li> <li>• Failure of battery . . . . . Replace battery</li> <li>• Switches to electrical equipment . . . . . Always set the switch to "OFF" let "ON"</li> <li>• Alternator faulty. . . . . Check charging system</li> </ul>	



## TROUBLE SHOOTING

<u>Problem</u>	<u>Possible cause</u>	<u>Remedy</u>
Inoperative lamps	<ul style="list-style-type: none"> <li>• Bulb burned out . . . . .</li> <li>• Fuse burnt out . . . . .</li> <li>• Poor grounding . . . . .</li> </ul>	<p>Replace bulb</p> <p>Replace fuse. If the fuse immediately blows again, have your vehicle inspected and serviced by your Hino dealer</p> <p>Polish or retighten</p>
Abnormal vibration when driving	<ul style="list-style-type: none"> <li>• Looseness of universal joint. . . . . yoke and flange tightening nuts</li> <li>• Excessive propeller shaft run out . . . . .</li> <li>• Worn or damaged universal joint. . . . . and center bearing of propeller shaft</li> </ul>	<p>Tighten the nuts</p> <p>Contact your nearest Hino dealer</p> <p>Contact your nearest Hino dealer</p>

# SPECIFICATIONS



			RB				
			RB115K	RB145K			
● MODEL & TYPE			Deluxe	Deluxe	Super Deluxe	Super Deluxe	Super Saloon
● ENGINE	Model		W04D	W04C-T			
	Type		Diesel 4-cyc. Direct injection 4-cyl. in-line				
	Bore mm (in)		104 (4.09)	104 (4.09)			
	Stroke mm (in)		118 (4.65)	113 (4.45)			
	Piston displacement liters (cu.in)		4.009 (244.7)	3.839 (151.1)			
● TRANSMISSION	Series No.		LG05S	LE05S			
	Type		Synchromesh 2nd – 5th 5-forward, 1-reverse				
	Gear ratios		5.602 – 0.736	7.134 – 1.000			
● REAR AXLE	Series No.		SS12				
	Type		Full-floating, Single-reduction, Single-speed				
	Gear ratios		5.857	4.100			
● SERVICE BRAKE	Type		Hydraulic system with two leading shoes for front and rear, acting on all wheels, Vacuum servo hydraulic, dual circuits				
● TIRE	Tire size	7.00–16	○				
		7.00R-16			○		

- NOTE**
- These specifications are based upon the latest product information available at the time of printing.
  - Hino motors reserves the right to make changes at any time without prior notice.



## EQUIPMENTS



- . . . . . Standard equipment  
● . . . . . Optional equipment  
x . . . . . Not available or not applicable yet

		RB				
		RB115K	RB145K			
		Deluxe	Deluxe	Super Deluxe	Super Deluxe	Super Saloon
Pre-heater		○	○	x	○	○
Radiator curtain		●	●	●	●	●
Air conditioner		x	x	x	○	○
Adjustable steering column		○	○	○	○	●
Tire (Tire Size)	7.00-16-6PR	○	○	x	x	x
	7.00-16-10PR	○	○	x	x	x
	7.00R-16-8PR	x	x	○	○	○
	7.00R-16-10PR	x	x	○	○	○
Indicator lamp	Pre-heater	○	○	x	○	○