FOREWORD

This manual has been prepared to acquaint you with the operation and maintenance of your vehicle, and to provide important safety information. We urge you do read it carefully and follow the recommendations to help assure the most enjoyable and trouble-free operation of your vehice

When it comes to service, remember that your dealer knows your vehicle best and is interested in your complete satisfaction.

Wewould like to take this opportunity to thank you for choosing a Turquoise and assure you of our continuing interest in your motoring pleasure and satisfaction.

This manual should be considered a permanent part of the vehicle, and must remain with the vehicle at time of resale.

Cautionary statements
1. Statements concerning the possibility of personal injury are titled “WARNING” and appear within a shaded block.
2. Statements concerning the possibility of mechanical damage to the vehicle are titled “CAUTION”.
3. Other information which needs to be emphasized but which does not concern the possibility of personal injury or mechanical damage is titled “NOTE”.

All information, illustrations and specifications contained in this manual are based on the latest product information available at the time of publication. The right is reserved to make changes at any time without notice.

Chassis No:
Engine No:

ANADOLU ISUZU OTOMOTIV SANAYI VE TIC. A.S.
Gebze / Kocaeli / TURKEY

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TURQUOISE BUS

SECTIONS

TURQUOISE BUS

1. IMPORTANT INFORMATION
2. CONTROLS AND INSTRUMENTS
3. BEFORE DRIVING
4. DRIVING
5. SERVICE AND MAINTENANCE
6. MAIN DATA AND SPECIFICATIONS

IMPORTANT INFORMATION

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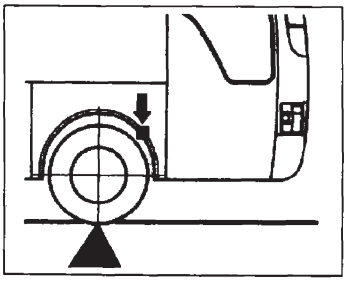
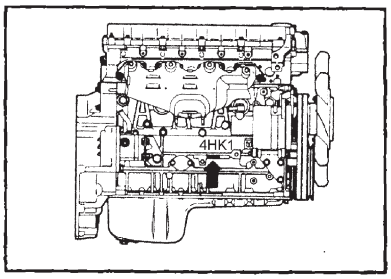


LOCATIONS OF CHASSIS NO. AND ENGINE NO

It is recommended to note Chassis No. and Engine No. of your vehicle as they are required when you contact your dealer for service.

Chassis No.:

Chassis No. is stamped on the front right side face of chassis side member.



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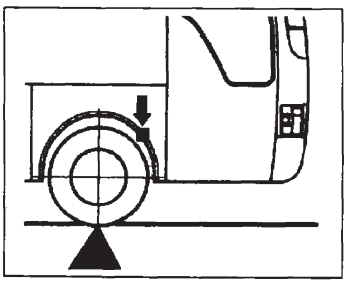

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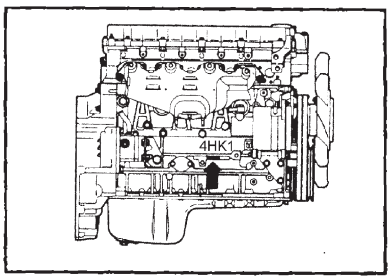

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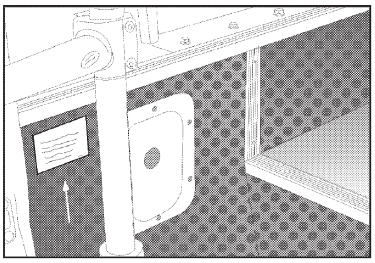
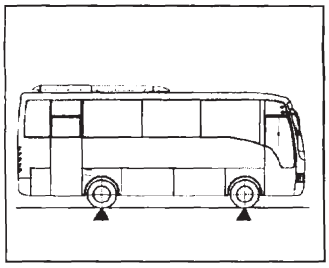


Vehicle identification plate:

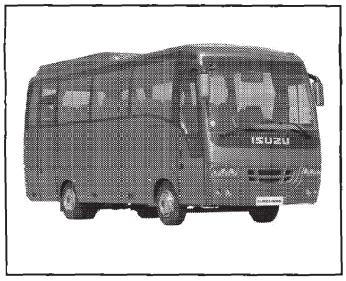
Identification plate is fixed on the left hand side of the front enterence



OVERLOADING

WARNING

Overloading may cause serious safety hazards, in addition to shortening useful service life of your vehicle. Therefore, never drive your vehicle overloaded to exceed specified permissible axle loads and payload. Refer to "MAIN DATA AND SPECIFICATIONS" for permissible loads.

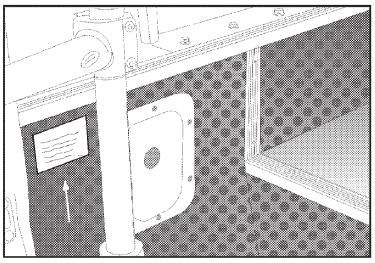


RUNNING IN

The future performance and the service life of your vehicle are under direct influence of the care and maintenance provided during the running in period. It is therefore recommended to observe the following simple measures during first 1,000 km mileage of your vehicle.

It is recommended not to exceed the engine speed over 2,300 rpm during first 1,000 km mileage.

IMPORTANT INFORMATION



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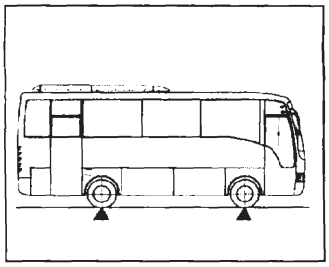

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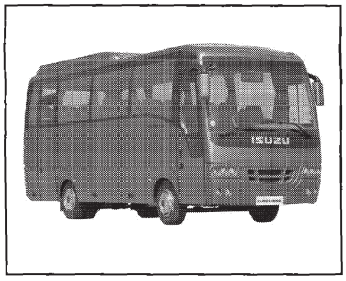

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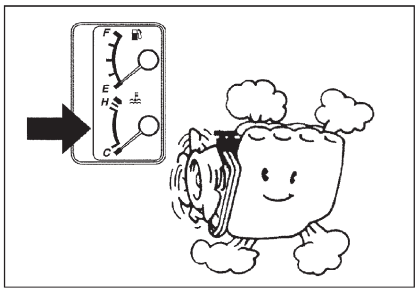
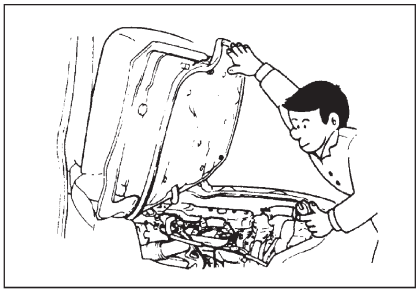


Avoid inducing heavy loads on engine, abrupt acceleration and unnecessary sudden braking.
Before starting, always let the engine idle until the normal operation temperature is reached.



OPERATION AND CARE OF VEHICLE

Every component and system of your vehicle should be checked with the aid of "CONTROLS AND INSTRUMENTS" and "DRIVING" sections in this manual.

MAINTENANCE

In order to maintain safe and dependable vehicle operation, inspection and adjustments should be performed as outlined in the "SERVICE AND MAINTENANCE" section. Your dealer is trained to perform regular maintenance operation on your vehicle.

DPD (Diesel Particulate Defuser)

The DPD is the system which purifies PM (Particulate Matter) in exhaust gas. This collects PM into the DPD filter and regenerates filter (burns PM) automatically. To prevent DPD failure, follow the next precautions.

CAUTION

- ***Exhaust gas from DPD, muffler, exhaust pipe and tailpipe is extremely hot when the engine is running, during regeneration (burning), or immediately after driving.***
  Nearby flammable materials such as dried grass and wastepaper may cause fire.
  Be very careful not to touch by accident. You may get burned.
  When you service the vehicle, stop the engine to prevent burns.
- ***Always use diesel fuel. Use of low quality fuel may adversely affect to the engine parts, and cause failure.***

CAUTION (Continued)

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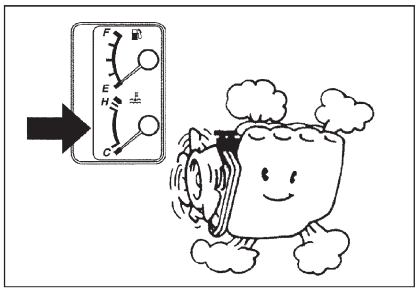

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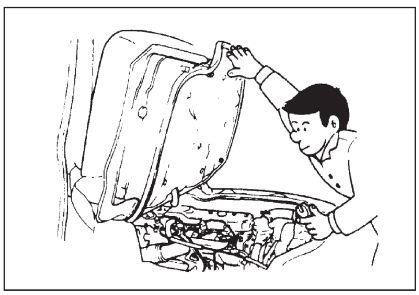

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CAUTION (Continued)

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- *Use of other than specified fuel may adversely affect to the engine or emission control system and cause failure. Especially for the common rail type engine, always use low sulfur diesel fuel (50 ppm or less of sulfur content).*
- *If other than specified diesel fuel is used on the vehicle with the DPD, the vehicle may not conform to specifications.*
- *Do not modify the DPD and exhaust pipe.*
  Modification of the direction, length or diameter of exhaust pipe will adversely affect to the exhaust gas purification system. If modification is needed because of equipment, contact authorized dealer.

NOTE

- *For engine oil, use designated oil that supports DPD. Use of other than designated that supports DPD may shorten the period to cleaning of DPD filter and lower fuel efficiency.*
- *The DPD automatically regenerates (burns) when a certain amount of PM (Particulate Matter) accumulates in the filter. However, this may not complete depending on driving conditions. In this situation, the DPD indicator will blink. Perform the manual regeneration according to the procedure. Besides, this is to restore the DPD function, not failure.*
- *A small amount of white smoke may be emitted from exhaust pipe with PM (Particulate Matter) burned during DPD regeneration. This is not failure. Also, do not perform the manual regeneration indoors with poor ventilation.*
- *White smoke may be emitted during the DPD regeneration after new vehicle runs for a certain distance. This is not failure. Besides, white smoke may not be emitted when the vehicle is new.*
- *Because of exhaust gas purification system, the gas from exhaust pipe smells differently from that of conventional diesel vehicle.*
- *With long continuous idling, the exhaust brake may be activated to prevent white smoke after a certain period of time.*
- *Use of low ash oil, however, lengthens the maintenance interval of the DPD filter.*

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DPD

When the DPD indicator light is flashing, press the DPD switch according to the operation procedure.

Driving is possible even if light flashes slowly. But if flashing rapidly, do the procedure soon.

① Stop and idle the vehicle in safe place.
② Put the gearshift lever into N, and pull the parking brake lever.
③ Press DPD switch.
④ After DPD light goes off, you can drive. (Process ends in about 20 min.)
Refer to Instruction or Cardboard for detail.

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The DPD (Diesel Particulate Defuser) is the system which purifies PM (Particulate Matter) in the exhaust gas. This collects PM into the DPD filter and regenerates the filter (burns PM) automatically.

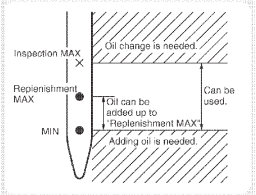
The DPD performs regeneration automatically when a certain quantity of PM accumulates in the filter. Depending upon the running conditions, however, the regeneration may sometimes not be completed. In this case, the DPD indicator light will flash, so promptly perform the manual regeneration according to the "Manual regeneration procedure" .
This operation is intended to restore the function of the DPD. It does not mean that a breakdown has occurred.

If you continue driving the vehicle while the light is flashing (about once a second), the flashing speed will change (to three times a second). If you continue driving the vehicle in this condition, the DPD is liable to break down, so stop the vehicle in the safe place immediately and perform the manual regeneration.

ENGINE OIL

The DPD performs regeneration automatically when a certain quantity of PM accumulates within the filter. To perform regeneration, post-injection (fuel injection after the main fuel injection period) is carried out. As a by-product, of post-injection, it is possible for fuel to gradually mix with the engine oil over a period of time which will eventually increase the engine oil level up to the "Inspection MAX" level mark on the oil level gauge rod (oil dipstick), once the oil level reaches the "Inspection MAX" level mark the engine oil must be replaced.

If you do not use the oil intended for the DPD in a vehicle fitted with a DPD, both the engine and the DPD may break down and fuel economy may decrease. Be sure, therefore, to use the oil intended for the DPD.



For the vehicle equipped with DPD, engine oil that supports DPD is recommended (low ash oil). Use of low ash oil lengthens the maintenance interval of the DPD filter.

Use CE or CD grade engine oil for diesel engine. For the vehicle equipped with DPD, CJ4, E6 grade engine oil for diesel engine. is recommended (Refer to "RECOMMENDED LUBRICANTS AND DIESEL FUELS.")

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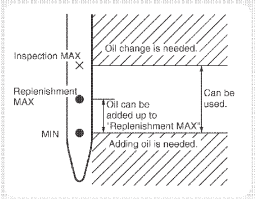

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Diesel Particulate Defuser (DPD)

DPD reduces particulate matter (PM) in the exhaust emissions. The DPD filter captures PM. When a certain amount of PM has accumulated in the DPD filter, the filter is automatically regenerated. (The PM is burned away.) To prevent a DPD failure, be sure to observe the following points:

⚠ WARNING

- The DPD and exhaust pipe are extremely hot while the engine is running, during DPD filter regeneration (PM combustion) and immediately after vehicle operation. Be careful not to inadvertently touch them. Otherwise, you could be burned.
- Any dry grass, paper waste or other flammable material near the vehicle could catch fire.
- Before doing maintenance work on the vehicle, shut down the engine and allow it to cool down. Otherwise, you could be burned.

ADVICE

- Use Isuzu genuine engine oil compatible with the DPD. Using oil other than Isuzu genuine engine oil compatible with the DPD would shorten the time between DPD filter cleaning and could increase fuel consumption.
- Be sure to use extra-low-sulfur diesel fuel (with sulfur content no higher than 10 ppm) or low-sulfur diesel fuel (with sulfur content no higher than 50ppm).
- If you fill the vehicle with poor-quality fuel, water-removing additive or other additive, gasoline, kerosene or alcohol-based fuel, it could harm the fuel filter, prevent proper movement of fuel-lubricated parts in the injectors and adversely affect engine components, possibly resulting in a breakdown.
- Do not modify the DPD or exhaust pipe. Changing the alignment, length or diameter of the exhaust pipe would adversely affect the exhaust system's exhaust emission reduction function. If any modification is necessary to install a component to the rear of the vehicle, consult your Isuzu Dealer.
- Although the DPD fillter automatically undergoes regeneration (burning of the accumulated PM) when a certain amount of PM has accumulated, driving conditions can prevent completion of regeneration.The DPD manual regenartion indicator light will flash at this time. Perform manual regeneration in accordance with the proper procedure. This is to restore DPD function and This is normal.

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NOTE

- If the vehicle is stationary with the engine idling during DPD regeneration, the exhaust brake or exhaust throttle operates. Operating sounds will be heard when the exhaust brake or exhaust throttle is activated or deactivated. The sounds do not indicate a fault.
- Combustion of PM during DPD regeneration can cause white smoke to be brie□y emitted from the exhaust pipe. The white smoke does not indicate a fault. Do not perform manual regeneration in any poorly ventilated indoor place.
- When a new vehicle has been driven a certain distance, it can emit white smoke during DPD regeneration. The white smoke does not indicate a fault. The vehicle may not emit white smoke during its initial operation when new.
- Owing to the exhaust emission reduction function, the exhaust gases emitted by the exhaust pipe smell different from those emitted by the exhaust pipes of earlier diesel vehicles.
- The exhaust brake may automatically be activated in order to prevent emission of white smoke if the engine idles continuously over an extended period of time.

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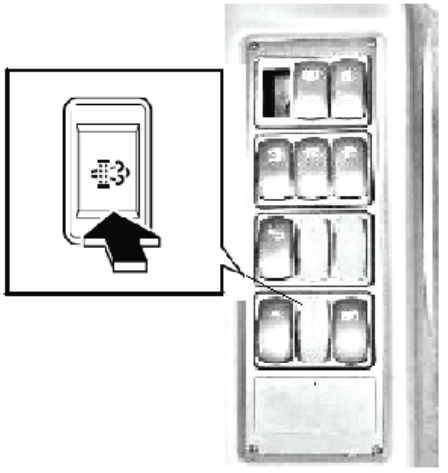
DPD Switch



The DPD switch is used to manually regenerate the DPD (combustion of PM). You should take the steps for manually regenerating the DPD when the DPD warning is flashing. Perform the manual regeneration of the DPD while parking the vehicle after the day's operation, for example, following the instructions under "DPD Manual Regeneration Procedure".

If you continue driving with the light flashing at about one-second intervals, the flashing intervals will change to shorter ones (about 1/3-second intervals). If you continue driving in this state too long, the DPD may fail. Stop the vehicle at a safe place as soon as possible and perform the manual regeneration.

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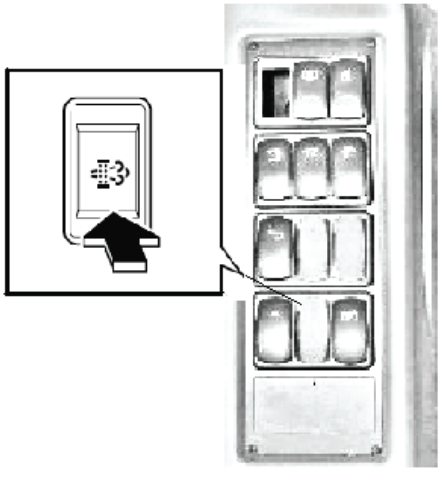

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DPD Manual Regeneration Procedure

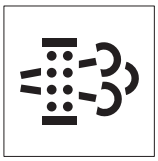
1. Stop the vehicle at a safe place free of flammable materials such as dead grass or wastepaper.

⚠ CAUTION

- To prevent a fire, make sure that there is no flammable material near muffler, DPD and exhaust the muffler, DPD and exhaust pipe. Remember that the temperature of exhaust gases is high enough to burn you.

2. In a manual transmission model, place the gearshift lever into the "N" position and firmly engage the parking brake.

3. Run the engine at idle. If your vehicle is equipped with an idling control knob, return it fully counterclockwise to decrease the engine speed when the engine speed has been increased using the idling control knob.



(Amber)

4 Press the DPD switch.

5 DPD manual regeneration indicator light(amber) will stop flashing and stay on, while the engine speed is automatically increased to start the regeneration.

6 Do not leave the vehicle during the regeneration. Regeneration normally finishes in 15 to 20 minutes.

7 When the DPD manual regeneration indicator light (amber) goes out, regeneration is finished. Normal driving is then possible.

DPD Manual Regeneration Procedure

1. Stop the vehicle at a safe place free of flammable materials such as dead grass or wastepaper.

⚠ CAUTION

- To prevent a fire, make sure that there is no flammable material near muffler, DPD and exhaust the muffler, DPD and exhaust pipe. Remember that the temperature of exhaust gases is high enough to burn you.

2. In a manual transmission model, place the gearshift lever into the "N" position and firmly engage the parking brake.

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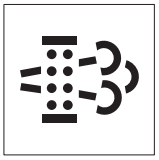

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7 When the DPD manual regeneration indicator light (amber) goes out, regeneration is finished. Normal driving is then possible.

⚠ WARNING

- White smoke may be produced during manual regeneration; do not perform manual regeneration in a poorly ventilated indoor place.

NOTE

- The time needed to complete regeneration differs depending on the outside temperature.
- The exhaust brake or exhaust throttle is activated during DPD regeneration. The exhaust brake or exhaust throttle starting to operate or being disengaged will procedure a sound, but this does not indicate a failure.
- During regeneration, white smoke may be temporarily produced from the exhaust pipe. This results from combustion of PM, it does not indicate a failure.
- Manual regeneration will finish earlier immediately after driving than when the engine is cold.
- The engine coolant temperature may rise during manual regeneration.

Interruption of Manual Regeneration

If you must restart driving for an unavoidable reason and interrupt regeneration, press the DPD switch again.

The DPD manual regeneration indicator light (amber) starts flashing indication. Then, you can drive the vehicle. If you interrupt regeneration, you need to perform regeneration again. Perform manual regeneration beginning with Step 1 as soon as possible.

⚠ WARNING

- White smoke may be produced during manual regeneration; do not perform manual regeneration in a poorly ventilated indoor place.

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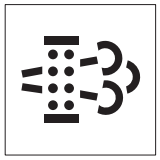


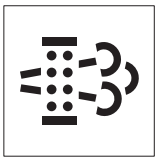
(Green, comes on)

The engine speed may increase and the exhaust brake may activate while the vehicle is stopped with the engine idling. When this occurs, the DPD is automatically regenerated. This does not indicate a failure. The automatic regeneration causes the DPD manual regeneration indicator light (green) to light in the instrument pannel

NOTE

- The engine speed may increase and the exhaust brake may activate while the vehicle is stopped with the engine idling. When this occurs, the DPD is automatically regenerated. This does not indicate a failure.
- The system generates a sound during the automatic regeneration and its cancellation. This does not indicate a failure.

Automatic Regeneration of DPD



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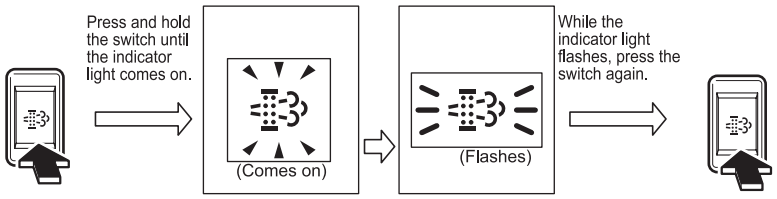
Procedure for Selectable Regeneration of DPD

Perform the selectable regeneration of the DPD when the engine (coolant temperature) and exhaust pipe are still warm such as when the day's operation is finished

⚠ CAUTION

- Perform the selectable regeneration until it is completed without interruption.
- Do not leave the vehicle during the regeneration.
- To prevent a fire, make sure that there are no flammables near the mufl er, DPD and exhaust pipe
- Remember that the temperature of exhaust gases is high enough to burn you.

1. Stop the vehicle at a safe place free of flammables such as dead grass or wastepapaer.
2. With the engine idling, ensure that the gearshift lever is placed in the "N" position for a manual transmission model. When the engine speed is increased by operating knop, return the engine speed to the normal idling state.



3. Press the DPD switch until the DPD manual regeneration indicator light (amber) comes on. on. The DPD manual regeneration indicator light (amber) will go from steadily on to flashing

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Perform the selectable regeneration of the DPD when the engine (coolant temperature) and exhaust pipe are still warm such as when the day's operation is finished

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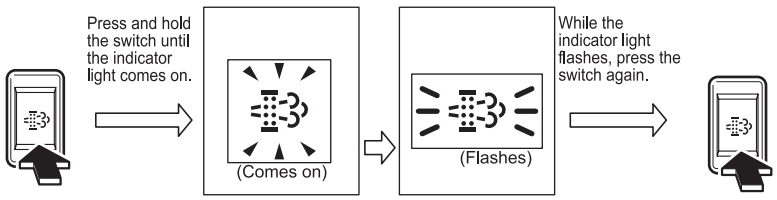

3. Press the DPD switch until the DPD manual regeneration indicator light (amber) comes on. on. The DPD manual regeneration indicator light (amber) will go from steadily on to flashing

4. Press the DPD switch again.
5. If your vehicle is not equipped with MID, the DPD manual regeneration indicator light(amber) stops flashing and then stays on, and the engine speed automatically increases to start regeneration.
6. Do not leave the vehicle during regeneration. Regeneration normally finishes in 15 to 20 minutes.
7. When the DPD manual regeneration indicator light (amber) goes out, regeneration is finished. Normal driving is then possible.

ADVICE

- Should the selectable regeneration be interrupted due to restart of driving, the DPD manual regeneration indicator light (amber) will start "□ashing" if your vehicle is not equipped with MID, or the "MANUAL REGEN." message (amber) changes to a "□ashing" "PUSH DPD SWITCH" message (amber) if your vehicle is equipped with MID. In this case, stop the vehicle safely as soon as possible, press the DPD switch again, and wait until the selectable regeneration is □nished. Do not continue driving or using the PTO, if the vehicle is so equipped, with the indicator light or the message □ashing.
- When the PM level in the DPD □lter is lower than the preset level, the DPD manual regeneration indicator light (amber) does not change from "steady illumination" to "□ashing" if your vehicle is not equipped with MID even if the DPD switch is kept pressed. Likewise, the "CHECKING PM LEVEL" message (amber) does not change to a "□ashing" "PUSH DPD SWITCH" message (amber) if your vehicle is equipped with MID. In either case, the DPD does not require regeneration, so it ignores the DPD switch operation.

WARNING

- White smoke may be produced during regeneration.Do not perform regeneration in a poorly ventilated indoor place.

4. Press the DPD switch again.
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WARNING

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NOTE

- The time needed to complete regeneration differs depending on the outside temperature.
- The exhaust brake or exhaust throttle is activated during DPD regeneration. The exhaust brake or exhaust throttle starting to operate or being disengaged will produce a sound, but this does not indicate a failure.
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IMPORTANT INFORMATION

BEFORE DRIVING

Do you use the specified fuel? (low sulfur diesel fuel only)

CAUTION

Always use diesel fuel.

Use of low quality fuel may adversely affect to the engine parts, and cause failure.

Use of other than specified fuel may adversely affect to the engine or emission control system and cause failure. Especially for the common rail type engine, always use low sulfur diesel fuel (50 ppm or less of sulfur content).

If other than specified diesel fuel is used on the vehicle with the DPD, the vehicle may not conform to specifications.

NOTE

The specification of fuel varies depending on seasons and regions.

Do not bring fuel containers, spray cans, etc. into the vehicle

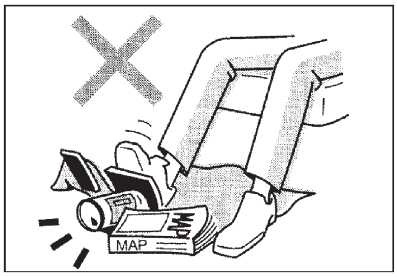
WARNING

It is dangerous that a fire or explosion may occur when the containers catch fire or get damaged.

Do not keep the engine running indoors

WARNING

In a place with poor ventilation, carbon monoxide poisoning may occur. Starting or warming-up the engine should be performed in a well-ventilated place. White smoke may be temporarily emitted due to PM combustion during the DPD manual regeneration. Do not perform it indoors with poor ventilation.



Clear the driver's footwell

WARNING

It is dangerous that you cannot operate the brake pedal when an object in the driver's footwell moves behind the pedal. To ensure operation of each pedal, place the floor mat properly.

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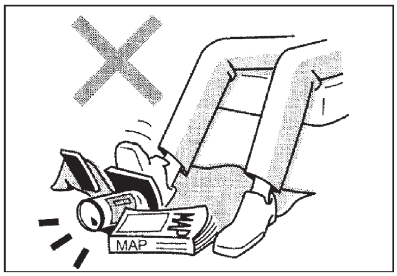

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CONTROLS AND INSTRUMENTS

1 . Front/rear door air warning light
2 . Hazard warning flasher switch
3 . Preheater control panel
4 . Front heater and defrost control panel
5 . A/C control panel
6 . Radio CD player
7 . Ampfilicator
8 . Tachograph
9 . Engine preheater switch
10 . Stewardess call light
11 . Rear door control button
12 . Rear door warning light
13 . Front door control button
14 . Front door warning light
15 . Retarder lever
16 . Front brake circuit pressure gauge (manometer)
17 . Rear brake circuit pressure gauge (manometer)
18 . Air duct
19 . Windshield wiper,washer switch and exhaust brake switch lever
20 . Lighter
21 . Meter and indicator light panel
22 . Steering wheel
23 . Combination switch lever
24 . Idling control knob
25 . Air duct
26 . Horn
27 Cruise control lever

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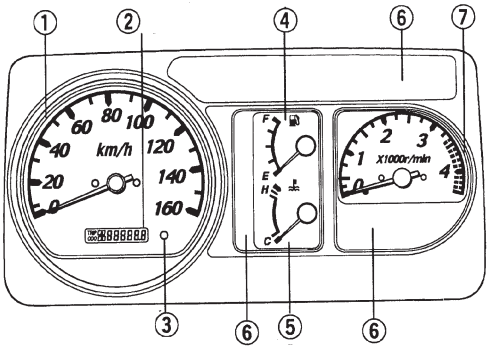
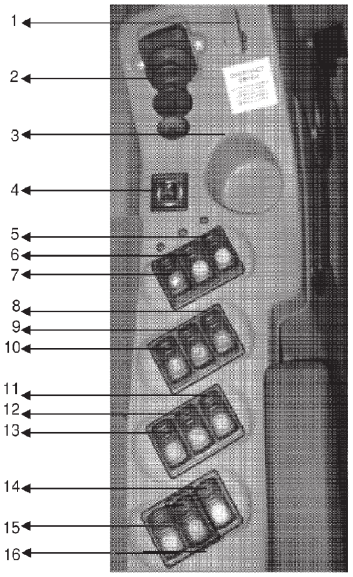
CONTROLS AND INSTRUMENTS

METERS AND INDICATOR LIGHTS

Instrument Panel



1 Tacograph
2 Odometer
3 Tripmeter reset button
4 Fuel gauge
5 Temperature gauge
6 Indicating and warning light panel
7 Tachometer



1. Emergency switch
2. Parking brake (hand brake) lever
3. Cup holder
4. Side mirror control switch
5. Mirror heating button
6. Window resistance button
7. Refrigerator & coffee machine button (OPT.)
8. Interior lighting button
9. Driver lighting button
10. Reading lamps button
11. Front fog lamp button
12. Luggage compartment lamps button
13. Aisle lamps button
14. Rear heating button
15. Air suspension leveling button
16. DPD button

CONTROLS AND INSTRUMENTS

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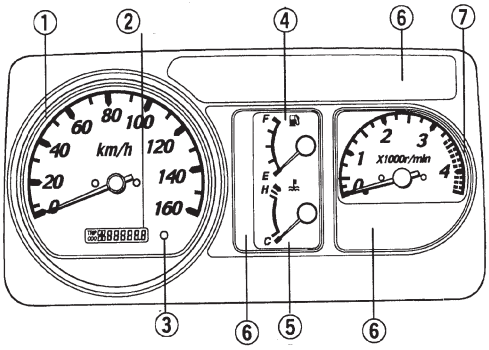

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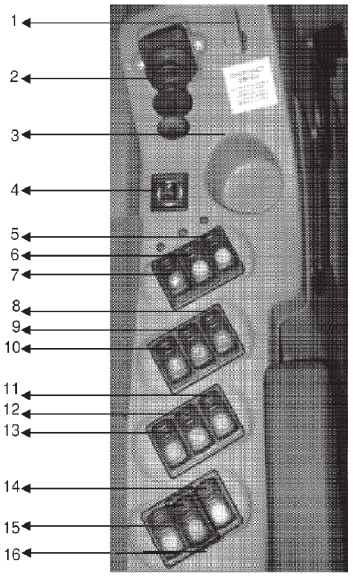

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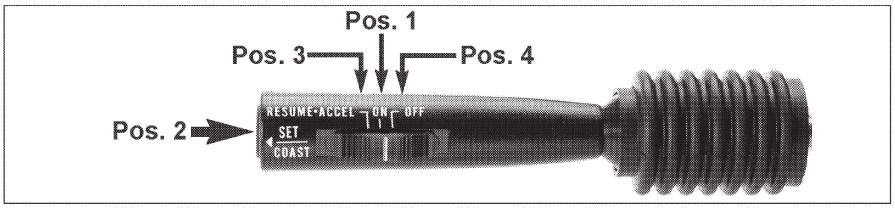
Selector Switch Function Overwiew



The Pedal Interface II cruise control function is intended for use as follows on flat or uphill roads, to regulate the vehicle speed (faster than approx. 30 km/h) to a value determined by the driver, without pushing the accelerator pedal.

On downhill roads the above function can be used as described only if the braking effect of the engine is sufficient to slow down the vehicle when the accelerator pedal is eased back.

Governed by various input signals, the variable road speed limit function influences the engine performance.

Using the variable road speed limit function, the driver may set an idividual speed limit (faster than 30 km/h) that cannot be overridden by pushing the accelerator pedal.

Use other than as intended can lead to injury to the driver or third parties or damage to property or the environment.
For this reason the product must be used only according to the intended purpose.

Hints For Use

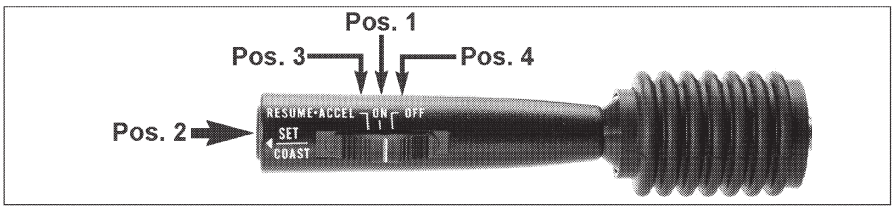
The VDO Pedal Interface II enables driving at constant speed (cruise control) without having to press the accelerator pedal. Also a programmable road speed limit (variable road speed limit) can be enabled with the driver pressing the pedal.
Both functions are useable at a speed faster than approx. 30 km/h..

Sudden changes in the traffic situation can give rise to danger. It is therefore essential to concentrate fully on driving the vehicle even when the cruise control function is selected. Always be ready to brake.
Use cruise control functions only when traffic and weather conditions permit. The cruise control functions should not be used in rain and snow conditions.

When operating the cruise control or the variable road speed limit function, the respective function is determined by the position of the selector switch after switching on. To switch between functions the current selected function must be switched off before the new function can be selected.

CONTROLS AND INSTRUMENTS

Selector Switch Function Overwiew



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CONTROLS AND INSTRUMENTS

Description of the Cruise Control Functions

Switching On the Cruise Control Function

Accelerate to the desired speed.
Push the selector switch towards described position and release.

Pedal Interface II stores the vehicle's current speed and maintains it without the accelerator pedal's being pressed.

Overriding the Set Speed by Means of the Throttle Pedal

Even when the cruise control function is active, the vehicle can be accelerated up to a higher speed by pressing the accelerator pedal..

When you override the cruis control by increasing the vehicle's speed with the accelerator pedal, there is a risk of forgetting that this function is still switched on. This applies especially if you maintain a higher speed with the accelerator pedal for a long time. For this reason, switch off the cruise control function if you wish to drive faster for an extended period.

Increasing or Reducing the Set Speed

By holding the control switch towards the described position the set speed will also be pemanently increased or decreased until the selector switch is released. The current speed at the time of the release is stored as set speed.

Increasing or Reducing the Desired Speed by 1 km/h (Tip-up / Tip-down Function)

Briefly tip the selector switch toward the described position and release. This procedure can be repeated as desired.

Switching Off the Cruise Control Function

Push the selector switch towards the described position and release, or: depress the brake pedal, or depress the clutch

Restoring the Last Stored Set Speed Stored Last after Switching Off by Brake Pedal or Clutch (Memo Function)

VDO Pedal Interface II stores the last set speed until this function is switched off by the selector switch (Off) or the ignition is switched off.

Calling up: Push the selector switch briefly toward the described position and release. VDO Pedal Interface II accelerates the vehicle in a controlled manner to the speed stored last and maintains this speed.

Risk of damage caused by the engine overspeeding! Select "memo" only in the gear in which you were driving with the previous set speed.

Description of the Variable Road Speed Limit Function

Switching On the Variable Road Speed Limit Function

Accelerate to the desired speed. Push the selector switch towards the descibed position and release.

Pedal Interface II stores the current speed and limits the engine preformance. The stored speed can not be overridden.

Increasing or Reducing the Speed Limit

By holding the control switch towards the described position the speed will also be pemanently increased or decreased until the selector switch is released. The current speed at the time of the release is stored as the new speed limit.

Increasing or Reducing the Desired Speed by 1 km/h (Tip-up/ Tip-down Function).

Briefly tip the selector switch toward the described position and release. This procedure can be repeated as desired.

Switching Off the Variable Road Speed Limit Function (Off Funktion)

Push the selector switch toward the described position and release.

CONTROLS AND INSTRUMENTS

Description of the Cruise Control Functions

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Increasing or Reducing the Desired Speed by 1 km/h (Tip-up / Tip-down Function)

Briefly tip the selector switch toward the described position and release. This procedure can be repeated as desired.

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Push the selector switch towards the described position and release, or: depress the brake pedal, or depress the clutch

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Increasing or Reducing the Speed Limit

By holding the control switch towards the described position the speed will also be pemanently increased or decreased until the selector switch is released. The current speed at the time of the release is stored as the new speed limit.

Increasing or Reducing the Desired Speed by 1 km/h (Tip-up/ Tip-down Function).

Briefly tip the selector switch toward the described position and release. This procedure can be repeated as desired.

Switching Off the Variable Road Speed Limit Function (Off Funktion)

Push the selector switch toward the described position and release.

Variable Road Speed Limit Functions

Function	*Stalk Switch*
Switching On Speed Limit	Pos. 1 + 3
Increasing Speed	Pos. 3
Decreasing Speed	Pos. 2
Tip up 1 km/h (increasing)	Pos. 3
Tip down 1 km/h (decreasing)	Pos. 2
Switching Off Speed Limit	Pos. 4

Cruise Control Functions

Function	*Stalk Switch*
Switching On Cruise Control	Pos. 1 + 2
Increasing Speed	Pos. 3
Decreasing Speed	Pos. 2
Tip up 1 km/h (increasing)	Pos. 3
Tip down 1 km/h (decreasing)	Pos. 2
Switching Off Cruise Control	Pos. 4
Memo Function (Resume)	Pos. 3

CONTROLS AND INSTRUMENTS

Variable Road Speed Limit Functions

Function	*Stalk Switch*
Switching On Speed Limit	Pos. 1 + 3
Increasing Speed	Pos. 3
Decreasing Speed	Pos. 2
Tip up 1 km/h (increasing)	Pos. 3
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Switching Off Speed Limit	Pos. 4

Cruise Control Functions

Function	*Stalk Switch*
Switching On Cruise Control	Pos. 1 + 2
Increasing Speed	Pos. 3
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CONTROLS AND INSTRUMENTS

Indicator and warning lights

 ..... Turn signal indicator light

 ..... High beam indicator light

 ..... Rear fog indicator light

 ..... Front fog indicator light

 ..... Fuel indicator light

 ..... Battery/Generator indicator light

 ..... Parking brake and low pressure indicator light

 ..... Glow plug indicator light

 ..... V SVS (Service vehicle soon) indicator light

 Green DPD automatic regeneration indicator light

 ..... Anti-lock brake system (ABS) malfunction warning light

 ..... Anti Spin Regulation (ASR) warning light

 ..... Oil pressure indicator light

 ..... Hazard indicator light

 ..... Service brake pressure indicator light

 ..... Retarder warning light

 ..... 4HK1-TC Check engine indicator light

 ..... DPD DPD indicator light

 Amber DPD manual regeneration indicator light

CONTROLS AND INSTRUMENTS

Indicator and warning lights

 ..... Turn signal indicator light

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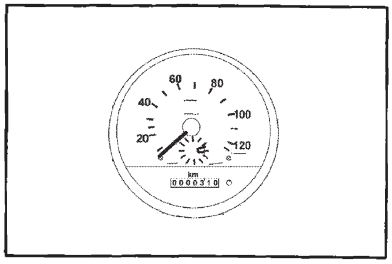
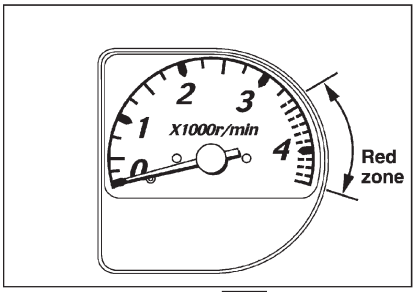


Tacograph
Tacograph indicates the vehicle speed in kilometer per hour (km/h).

Odometer:
Odometer registers the total mileage in kilometer.

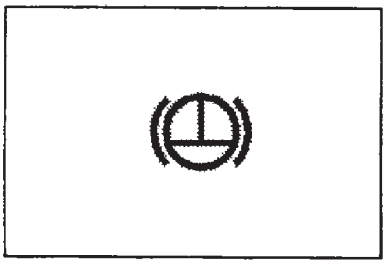


Engine tachometer V

The engine tachometer indicates the engine speed in rpm, the red zone represents over-running the engine.

CAUTION

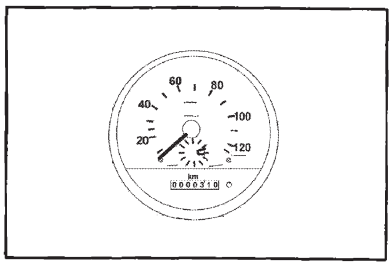
Never operate the vehicle with the tachometer needle in the red zone. Continued operation with the tachometer needle in the red zone can lead to serious engine damage.



Retarder warning light : (optional)
Retarder warning light illuminates when the retarder lever pulled down.

Also retarder warning light, may flash on slippery roads. In this case, please slow your speed down.

CONTROLS AND INSTRUMENTS



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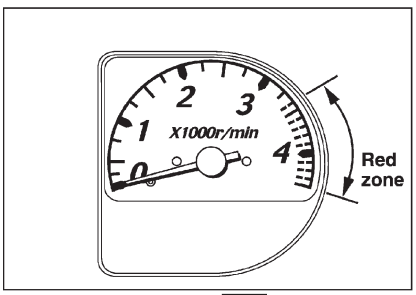

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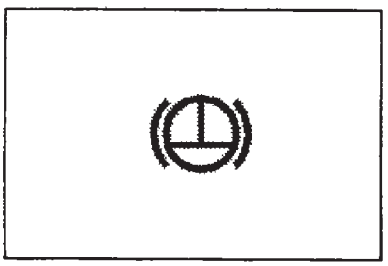

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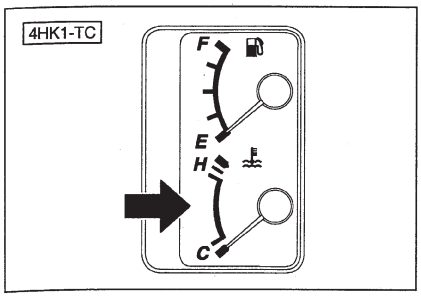
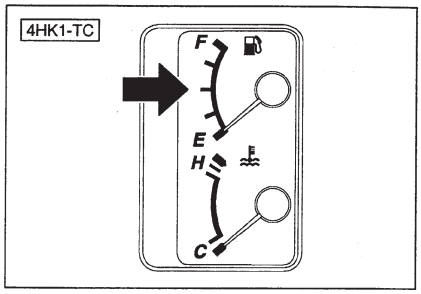


Temperature gauge:
Temperature gauge displays the temperature of the engine coolant when the ignition key is in "ON" position.
"C" and "H" on the dial stands for "cold" and "hot", respectively. Coolant temperature is normal when the needle is on the yellow region.

CAUTION

- **If the needle exceeds the red line, it indicates an engine overheating condition.**
  Stop your vehicle safely and observe the precautions given in "Engine Overheating"

Driving with your engine in an overheated condition can result in serious engine damage.



Fuel gauge:
Fuel gauge indicates the amount of fuel left in fuel tank. When the ignition key is turned to "LOCK", the needle returns to the E (empty) mark and does not remain at the fuel level.

"F" and "E" stands for "Full" and "Empty", respectively.

NOTE

Make a habit of refueling early and take care not to run short of fuel.

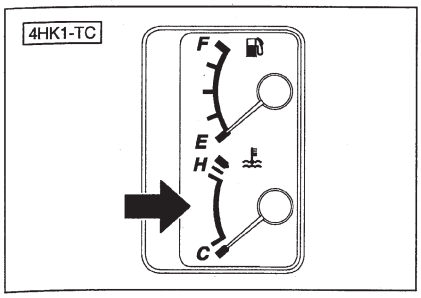
Water separator indicator light V

The indicator light comes on when the water level in the water separator on the fuel line is beyond the specified level.

NOTE

If the indicator light comes on while driving, stop the vehicle and drain the water immediately. Refer to the "DRIVING" section.

CONTROLS AND INSTRUMENTS



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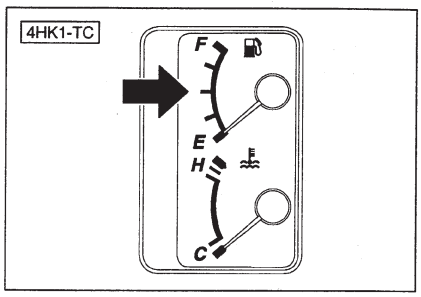

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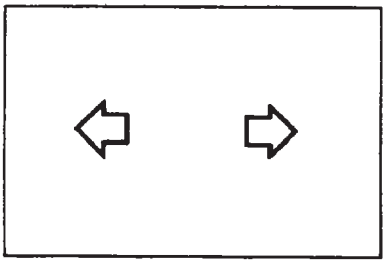
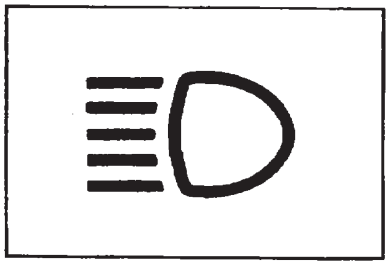
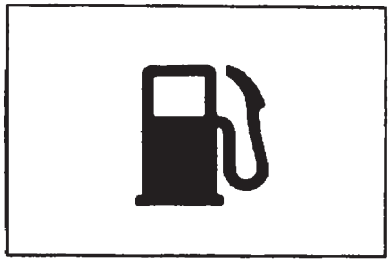


Turn signal indicator lights:
When either turn signal switch or hazard warning switch are turned on, turn signal indicator light blinks to indicate that either turn signal lamps or hazard warning lamps are illuminating.



Headlight high beam indicator light:
Headlight high beam indicator light illuminates when headlight high beam is switched on.

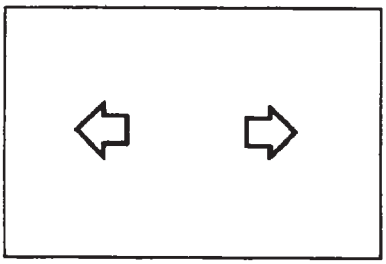


Fuel indicator light:
If the fuel is the tank in below from specified value (7 or 10 lt.), low fuel level indicator light illuminates.
Refill the fuel tank within shortest time intervals as possible.
When ignition key is turned to "ON", the indicator light illuminates and it normally goes off when engine is started.

NOTE

Fuel level indicator light may intermittently go on and off while driving along on the road with steep bends. This is normal.

CONTROLS AND INSTRUMENTS



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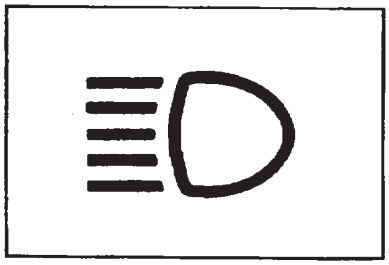

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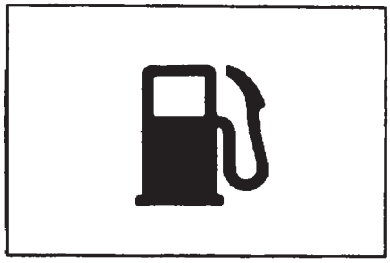

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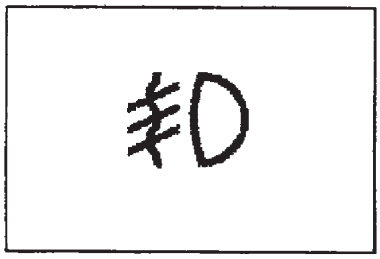
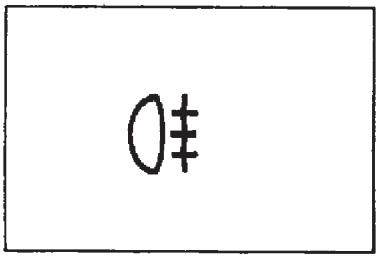
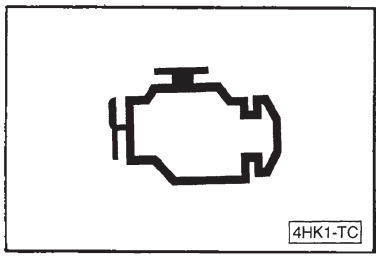


Front foglight switch :
Press on this switch to turn on fog lights, if your visibility is obstructed due to fog or heavy rain. The fog light can be turned on only if the headlight short beams are on. Indicator light on the switch illuminates when fog light switch is turned on. Press again on the switch to switch it off.

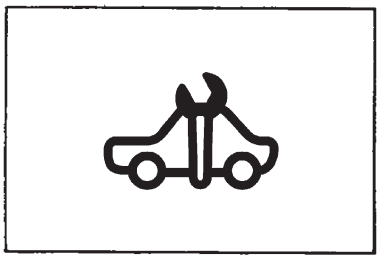


Rear fog light switch:
Turn the light control switch to turn on rear fog light



CHECK ENGINE indicator light
The "CHECK ENGINE" light on the instrument panel is designed to indicate the need for system service. It will come on when the starter switch is in the "ON" position, but before the engine started, to let you know the bulb is working. (The light will stay on a short time after the engine starts.) Have the system repaired if the "CHECK ENGINE" light does not come on when the starter switch is in the "ON" position, but before the engine is started.

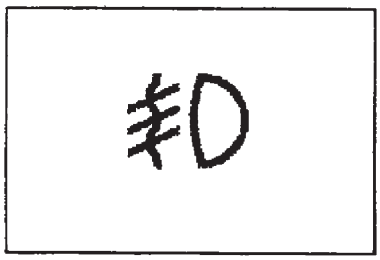
If the light comes on either intermittently or continuously while driving, service is required. Even if the vehicle is driveable, and does not require towing, see your Isuzu dealer as soon as possible for service of the system. Continued driving without having the system serviced could cause damage to the emission control system. It could also affect fuel economy and driveability.



SVS (Service Vehicle Soon) indicator light

The SVS indicator light will come on when the ignition switch is in the "ON" position and the engine is not started, to let you know the bulb is working.
The indicator light will go off after the engine starts.
If the indicator light comes on during operation, immediately contact your Isuzu dealer for inspection.

CONTROLS AND INSTRUMENTS



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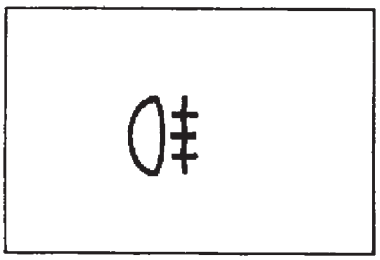
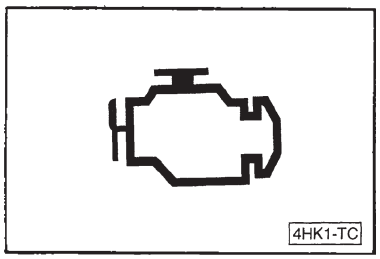


Rear fog light switch:
Turn the light control switch to turn on rear fog light



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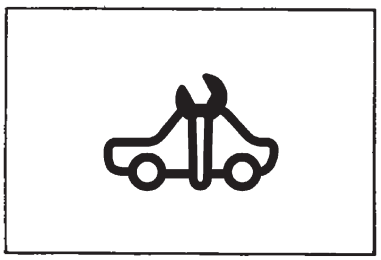
If the light comes on either intermittently or continuously while driving, service is required. Even if the vehicle is driveable, and does not require towing, see your Isuzu dealer as soon as possible for service of the system. Continued driving without having the system serviced could cause damage to the emission control system. It could also affect fuel economy and driveability.



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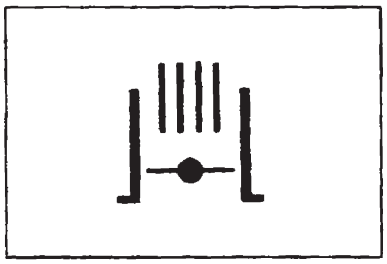
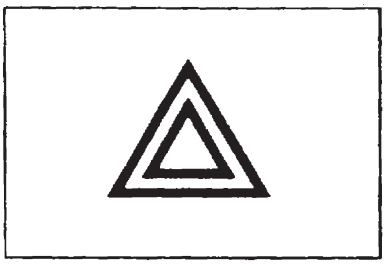


Exhaust brake indicator light:
The indicator light illuminates when exhaust brake switch is turned to ON position.

Not functional in vehicles with retarder



Hazard warning light:
Hazard warning light illuminates to show that turn signal lamps are illuminated when hazard warning switch is turned on.

WARNING

- If your vehicle becomes hazardous for the traffic driving day or night, switch on hazard warning switch to warn the other drivers.
- Avoid stopping your vehicle on the road, if possible.

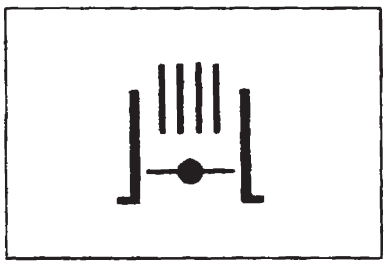
Parking brake and low pressure indicator light :

Parking brake indicator light illuminates when parking brake is applied with ignition key is ON position.
Then, it goes off, when the hand brake lever is released.

WARNING

If there is not sufficient supply pressure or air leakage on hand brake air circuit, the parking brakes can not be released and the indicator light comes on. If there is sufficient pressure on the service brake(more than 6 bar), release the parking brakes mechanically(please see for mechanically release on page (4-21) go to the service garage

CONTROLS AND INSTRUMENTS



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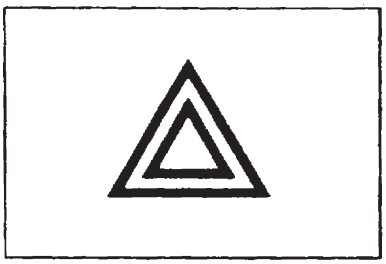

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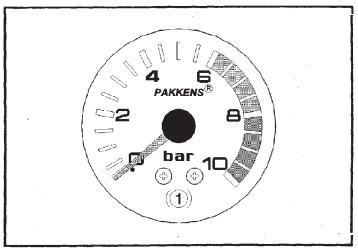
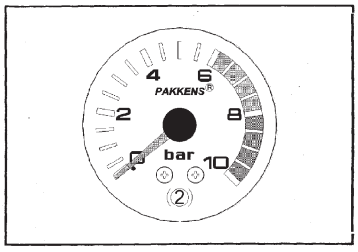
BRAKE BOOSTER





Brake booster indicator light :
(For service brake air circuits)

Brake booster indicator light comes on when the ignition key is turned to the "ON" position, and goes off when the engine is started. The buzzer remains silent while hand brake is applied.
In the case of low air pressure, brake booster indicator light goes on.
When the hand brake is released, the buzzer is sounded until air pressure reach to around 6 bar

CAUTION

Do not drive the vehicle if the light remains 'ON' after the engine started.
If the air pressure is not reach to 8 bar within around 5 minutes, consult a service garage.

Brake air pressure gauge
(For service brake air circuits)

Air pressure gauge (1) indicates the air pressure in the front brake circuit

CAUTION

While driving, if air pressure is lower than 6 bar, brake booster indicator light comes on.

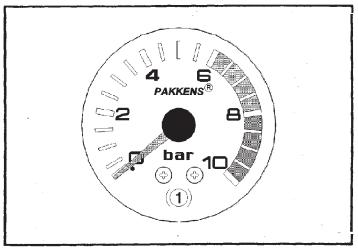
Air pressure gauge (2) indicates the air pressure in the rear brake circuit

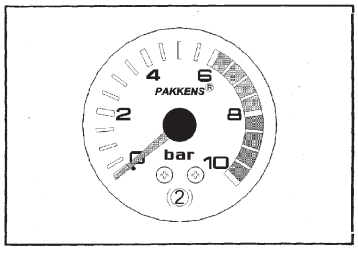
NOTE

If the light goes on during vehicle operation, move the vehicle to a safe spot which does not cause an obstruction to traffic.
Then call your nearest dealer.

CONTROLS AND INSTRUMENTS

BRAKE BOOSTER





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Brake air pressure gauge
(For service brake air circuits)

Air pressure gauge (1) indicates the air pressure in the front brake circuit

CAUTION

While driving, if air pressure is lower than 6 bar, brake booster indicator light comes on.

Air pressure gauge (2) indicates the air pressure in the rear brake circuit

NOTE

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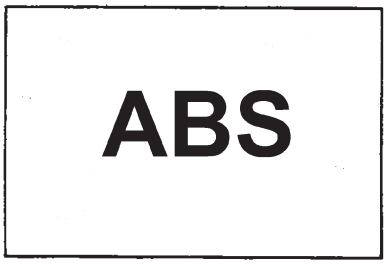


ANTI-LOCK BRAKE SYSTEM (ABS)
Malfunction Warning Light

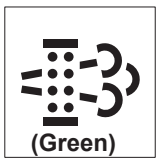
ABS warning light comes on when the ignition key switch is turned to the "on" position. The ABS warning light must go out in a few second.

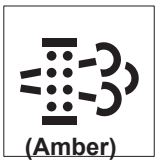
(1) Stop the engine.

(2) Restart engine.
-If the light goes on, and then goes out after a few second or,
-If the warning light goes out after moving approx. 10km/h
There is no problem on the ABS

If the light does not go out or goes on frequently, the braking response of the vehicle may change. Drive with particular care and please immediately control/repair the system to an authorized service.

When the ignition key is turned to ON position, the ASR warning lamp comes on and must go out after about 1 second.





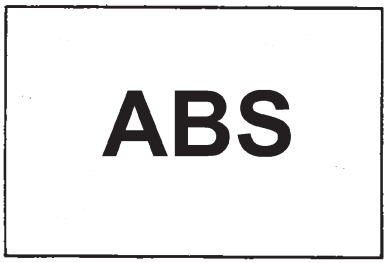
DPD automatic regeneration indicator light

The DPD automatic regeneration indicator light (green) comes on while the DPD is being automatically regenerated.

This indicator light comes on when the starter switch is turned to the "ON" position, and goes out when the engine is started.
This indicator light comes on when the starter switch is turned to the "ON" position, and goes out when the engine is started.

If the DPD manual regeneration indicator light comes on, manual regeneration (PM combustion) of the DPD needs to be performed.

CONTROLS AND INSTRUMENTS



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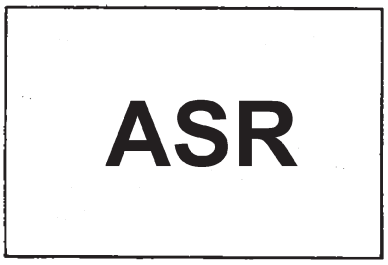

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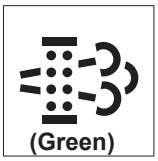

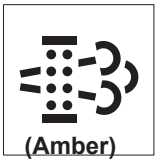

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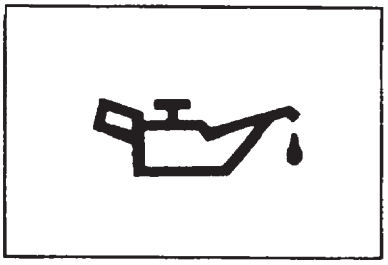
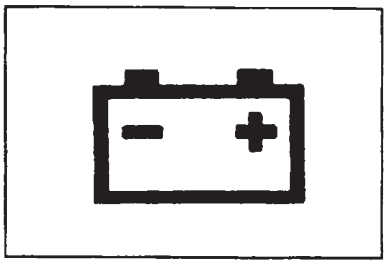


Oil pressure indicator light:
When ignition key is turned to ON position, indicator light illuminates and normally goes off when the engine is started.

CAUTION

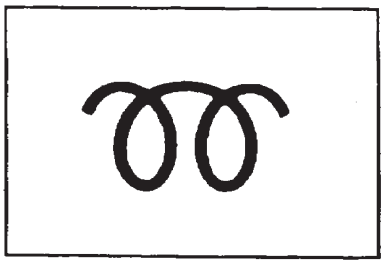
Illuminating of oil pressure indicator light while driving indicates that the oil pressure is dangerously low. Turn off the engine immediately and check the oil level in oil pan.
If the level is normal, then have your vehicle inspected in nearest Isuzu authorized dealer. Do not run the engine if oil pressure indicator light illuminates.



Charging indicator light:
When ignition key is turned to ON position, indicator light illuminates and normally goes off when the engine is started and the charging circuit assumes its normal functionality.

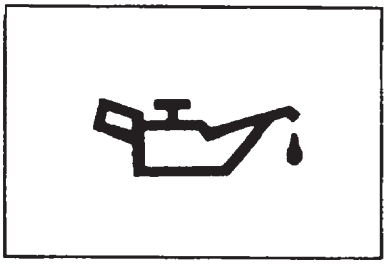
NOTE

If charging indicator light illuminates while driving, have your charging circuit inspected in the nearest authorized dealer.



Glow plug indicator light:
When ignition key is turned to ON position, glow plug indicator light illuminates and normally goes off when glow plugs are heated sufficiently.

CONTROLS AND INSTRUMENTS



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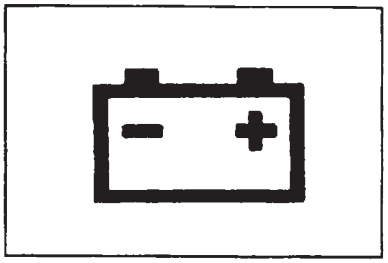

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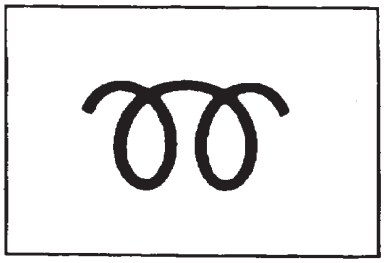

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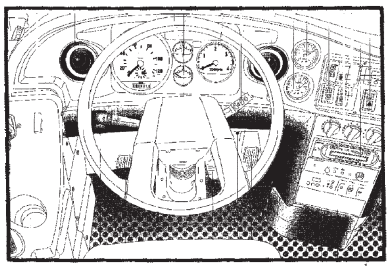
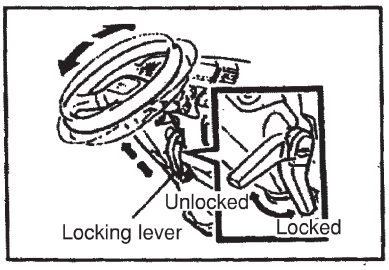


STEERING COLUMN CONTROLS

Steering wheel and horn:
The horn plate located on steering wheel operates the horn.

CAUTION

Avoid turning steering wheel while the vehicle is stationary.

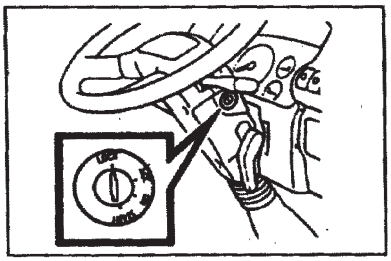


Adjustable steering wheel:
Steering wheel is adjustable in front and rear directions and in vertical direction.
For maximum drive comfort, steering wheel should be adjusted together with driver's seat.

CAUTION

After adjustment, set the locking lever to locked position. Always perform the adjustment while the vehicle is stationary. NEVER make steering wheel adjustment while the vehicle is moving.

Adjustment procedure:
1- Unlock the steering wheel by pulling locking lever up.
2- Move the steering wheel to front or back or up and/or down as desired.
3- After the desired position is obtained, lock the steering wheel by pushing locking lever downwards.

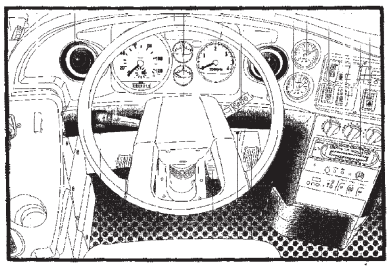


Ignition switch:
The ignition switch has four positions as it is shown in the figure.
LOCK: The ignition key can only be inserted or removed when the ignition switch is in this position. The steering wheel is unlocked when key is inserted. The steering wheel is locked when key is removed.

WARNING

NEVER turn ignition key to "LOCK" position while your vehicle is moving, otherwise the steering wheel may be locked.
ACC: All electric controls are enabled when ignition key is in this position.
ON: Turning ignition key to this position brings the engine in preheating phase automatically. Ignition key is in this position during operation of engine.
START: The engine is started if ignition key is turned to this position. Ignition key returns to ON position by itself when it is released.
During cranking, do not hold ignition key in this position for longer then 10 seconds.

CONTROLS AND INSTRUMENTS



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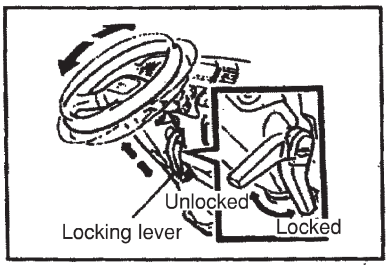

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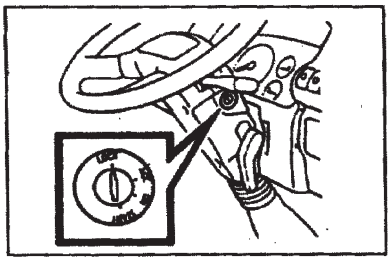

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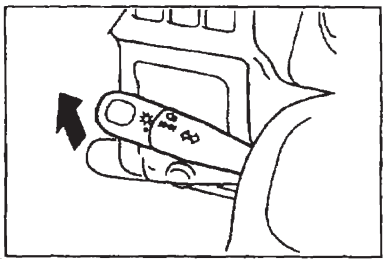


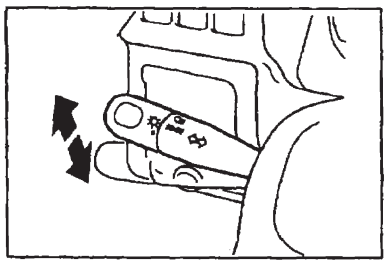
Headlight switch lever :
Headlight beam alternately switches from high to how or low to high each time the switch lever is raised. Headlight high beam indicator light in instrument panel illuminates when high beam is turned on.

The control switch operates in three steps to operate the following light:

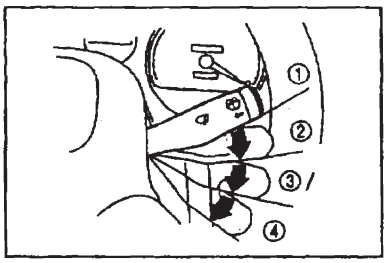
1st step : clearance light, tail light, license plate light and instrument cluster light.

2nd step : Headlights in addition to the above lights.

3rd step : Rear foglight in addition to the above lights.



Flashing switch lever:
Headlight high beam illuminates and goes off at each time the switch lever is risen or released when headlight switch lever is in "OFF" position or turned to its first position. In order to flash headlights, operate switch lever repeatedly so that the headlights go on and off in daylight or the long and short beams illuminate alternatively at night.



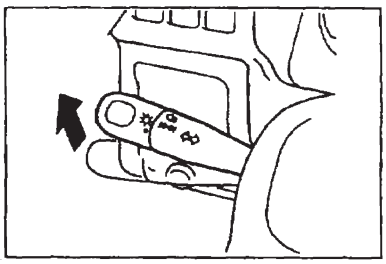
Windshield wiper lever:
Windshield wiper lever has 4 positions to control windshield wipers.

① Off ② Intermittent
③ Low speed ④ High speed

WARNING

Warm windshield with defrosters before washing windshield in cold weather. This will help prevent icing of windshield that might otherwise obscure the driver's visibility.

CONTROLS AND INSTRUMENTS



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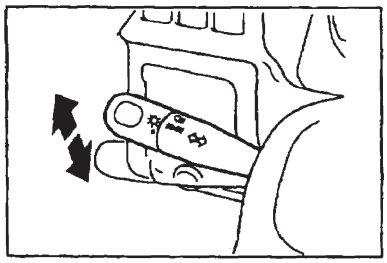

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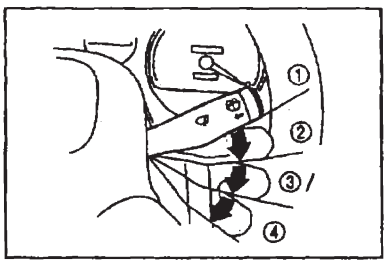

Windshield wiper lever:
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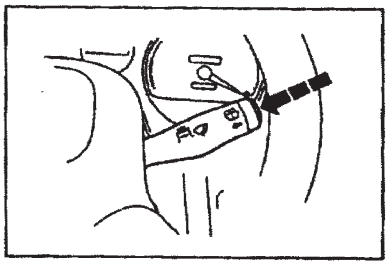
③ Low speed ④ High speed

WARNING

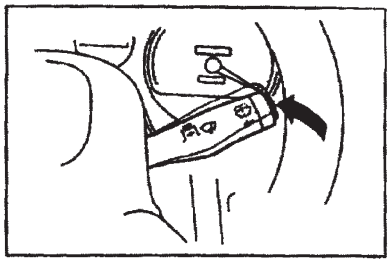
Warm windshield with defrosters before washing windshield in cold weather. This will help prevent icing of windshield that might otherwise obscure the driver's visibility.

CAUTION

Do not operate windshield wipers when windshield is dry. This might scratch windshield glass. Wipe off any icing or snow accumulated on wiper blades before operating windshield wiper. If windshield wiper blades are frozen on windshield surface, rise them from the surface carefully or remove the icing. Otherwise, the system might be damaged.



Windshield washer switch lever:
The washing solution is sprayed on windshield by pressing the button on top of the lever.



Exhaust brake switch lever :
Pull exhaust brake switch lever up while driving; exhaust brake indicator light in instrument panel illuminates and exhaust brake is activated. Exhaust brake automatically releases if either accelerator pedal or clutch pedal is depressed. However exhaust brake indicator light in instrument panel remains on until exhaust brake switch lever is positioned to home position.

Not functional in vehicles with retarder

CONTROLS AND INSTRUMENTS

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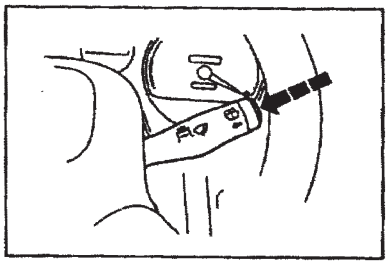

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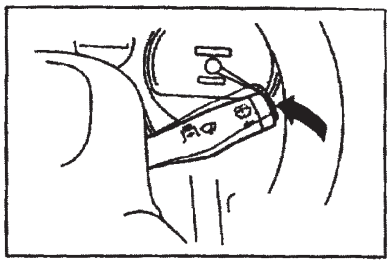

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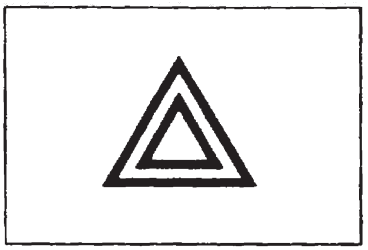
Not functional in vehicles with retarder

NOTE

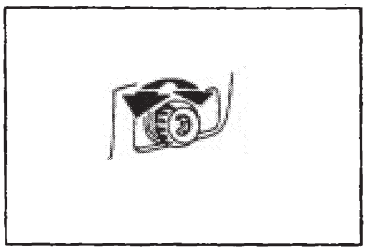
It is recommended that exhaust brake should be applied while driving downhill or in congested traffic with frequent starts and stops. Exhaust brake automatically releases if either accelerator pedal or clutch pedal is depressed, even if indicator light in instrument panel illuminates. Keep exhaust brake switch lever to "OFF" position during idling for purposes of bringing engine to its normal operating temperature, etc.



Hazard warning switch:
All turn signal lamps flash when this switch is pressed, regardless the position of turn signal switch. Press again on the switch to turn it off.

CAUTION

- **If your vehicle becomes hazardous for the traffic while driving in either day or night, turn hazard warning switch on to warn the other drivers.**
- **Avoid stopping on the road, if at all possible.**



Idling control knob:
Turn this knob clockwise (arrow), if the engine is started when it is cold,. This will increase the idling speed and thereby the engine will be brought to its normal operating temperature rapidly. Be sure to drive your vehicle with the knob turned to home position.

WARNING

Do not use idling control knob when the vehicle is moving. This will adversely effect the braking capability of your vehicle in an emergency, resulting in personal injury and/or damage of your vehicle.

Before the DPD manual regeneration, be sure to return the idling control knob all the way to the left. Refer to "Manual regeneration procedure".

CONTROLS AND INSTRUMENTS

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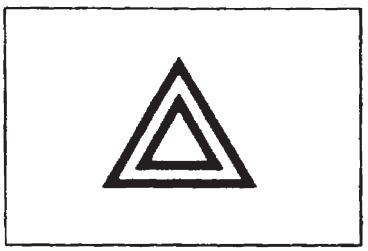
It is recommended that exhaust brake should be applied while driving downhill or in congested traffic with frequent starts and stops. Exhaust brake automatically releases if either accelerator pedal or clutch pedal is depressed, even if indicator light in instrument panel illuminates. Keep exhaust brake switch lever to "OFF" position during idling for purposes of bringing engine to its normal operating temperature, etc.



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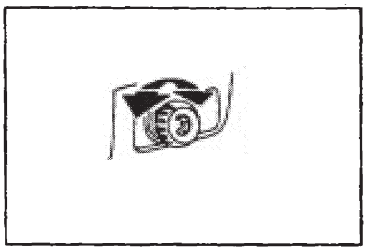

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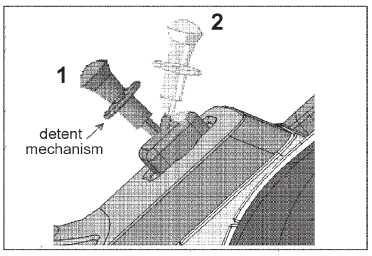


Parking brake (hand brake) lever

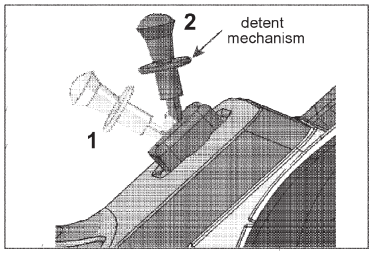
Positions of Parking Brake Valve Lever
1. Parking Position
2. Released (driving position)

Parking Brake (hand brake)
The system acts mechanically on the wheels of the rear axle by means of spring force when the spring – loaded brake cylinders are vented. The parking brake must always be applied when the vehicle is parked! Where necessary, use supplementary chocks to prevent the vehicle rolling.

Applying Parking Brake
When the parking brake valve lever is pulled downward (from released position (2) to parking position (1)) until it engages, the spring brake is actuated. The parking Brake indicator lamp comes on.

NOTE

If the hand brake lever cannot be moved upward without pulling the detent mechanism, it completely engaged.

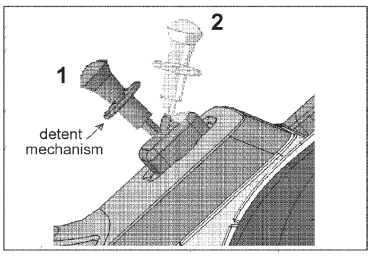


Releasing Parking Brake

To release the parking brake, when pull lever detent mechanism , hand brake lever automatically moves forwards into its released position(2). The parking brake indicator lamp goes out.
Air pressure of the parking brake system must be at least 5 bar to enable the parking brake to release properly. The parking brake indicator lamp will come on if the reservoir pressure in the parking brake circuit is any lower than 5 bar.

Do not move the vehicle until be sure that the parking brake released. If there is not sufficient pressure (below than 5 bar) or any air leakage on hand brake air circuit, the parking brakes can not be released and the indicator light comes on. If there is insufficient supply pressure in the compressed air system, the spring operated parking brake can be released mechanically (please see mechanically released page on 4-21

CONTROLS AND INSTRUMENTS



Parking brake (hand brake) lever

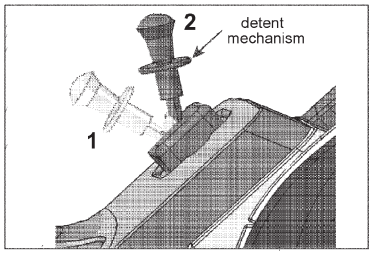
Positions of Parking Brake Valve Lever
1. Parking Position
2. Released (driving position)

Parking Brake (hand brake)
The system acts mechanically on the wheels of the rear axle by means of spring force when the spring – loaded brake cylinders are vented. The parking brake must always be applied when the vehicle is parked! Where necessary, use supplementary chocks to prevent the vehicle rolling.

Applying Parking Brake
When the parking brake valve lever is pulled downward (from released position (2) to parking position (1)) until it engages, the spring brake is actuated. The parking Brake indicator lamp comes on.

NOTE

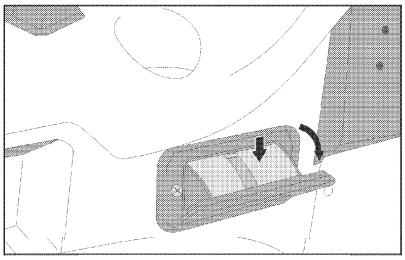
If the hand brake lever cannot be moved upward without pulling the detent mechanism, it completely engaged.



Releasing Parking Brake

To release the parking brake, when pull lever detent mechanism , hand brake lever automatically moves forwards into its released position(2). The parking brake indicator lamp goes out.
Air pressure of the parking brake system must be at least 5 bar to enable the parking brake to release properly. The parking brake indicator lamp will come on if the reservoir pressure in the parking brake circuit is any lower than 5 bar.

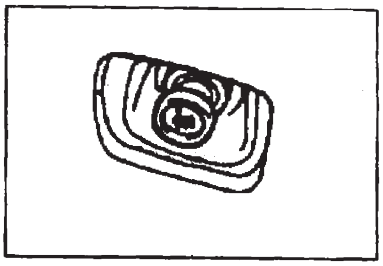
Do not move the vehicle until be sure that the parking brake released. If there is not sufficient pressure (below than 5 bar) or any air leakage on hand brake air circuit, the parking brakes can not be released and the indicator light comes on. If there is insufficient supply pressure in the compressed air system, the spring operated parking brake can be released mechanically (please see mechanically released page on 4-21



Ashtray:
To use, pull the astray towards you.
To clean, pull it off while pressing on the ashtray plate down.

WARNING

After using, push the astray all the way in. Otherwise, astray may catch fire due to butt of a burning cigarette.



Cigarette lighter:
To operate the lighter, push it in completely while ignition key is in "ACC" or "ON" position. Cigarette lighter will pop out within about 15 seconds when it is ready to be used. You can pull and use it.

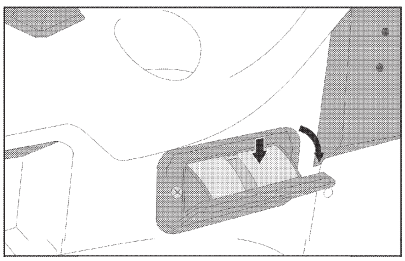
CAUTION

Avoid holding cigarette lighter with your hand while it gets heated, otherwise you may damage the heating element.

NOTE

If cigarette lighter does not pop out within 18 seconds, then it is faulty and therefore, it should be manually brought to its normal position. Deformed cigarette lighter will not pop out completely. Be sure always to replace it with genuine cigarette lighter.

CONTROLS AND INSTRUMENTS



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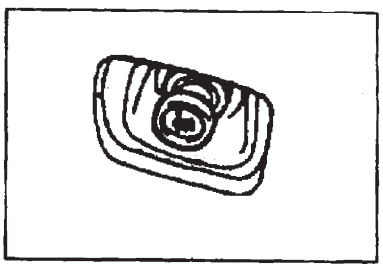

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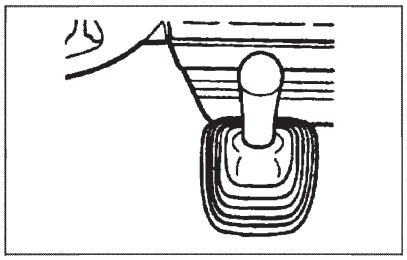
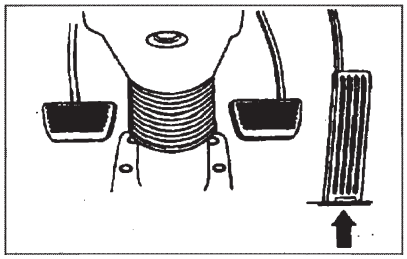
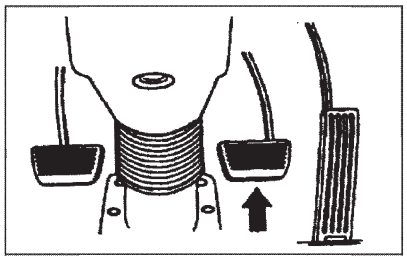






FLOOR CONTROLS

Shift lever:
Depress fully the clutch pedal during shifting. The shifting pattern is indicated on lever knob. Reversing lamps illuminate when reverse gear is selected with ignition key is ON position.

NOTE

Let the vehicle to come to complete stand still position before shifting to reverse gear.

Accelerator pedal:
Depress on accelerator pedal softly and reasonably to prevent unnecessary increase in fuel consumption.

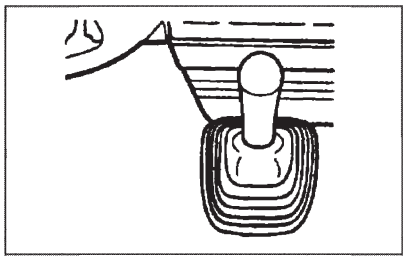
Brake pedal:
Avoid sudden braking , depress on brake pedal softly. When driving downhill, it is recommended to make use of engine brake and exhaust brake effect in combination with the service brake.

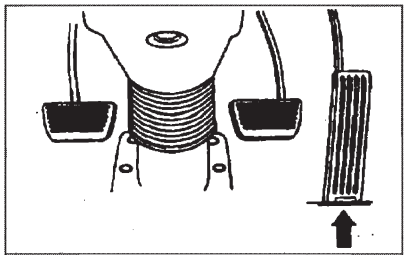
NOTE

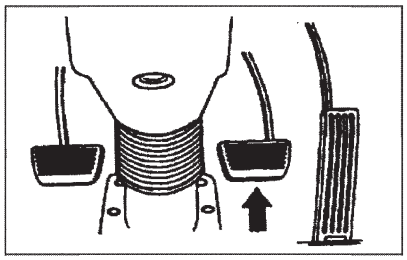
If air feed system is not working properly (engine malfunction, air compressor fault etc.) air pressure will be dropped in accordance to air requirement. In this case, breaking efficiency is decreased in a short time. Please move the vehicle to a safe spot and call an authorized service.

Please check that, nothing is obstructing the movement of the pedals. Always keep the driver's foot-house free of objects.

CONTROLS AND INSTRUMENTS







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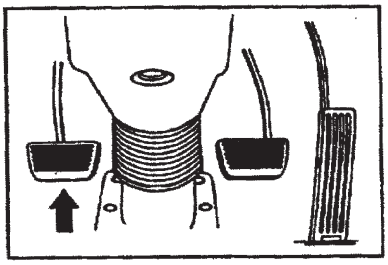
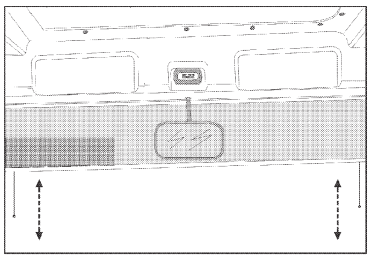


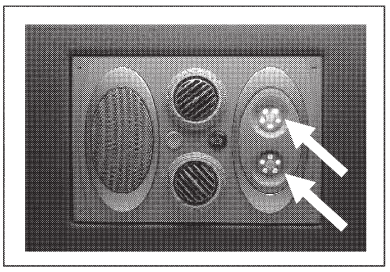
Clutch pedal:
Clutch pedal should be depressed fully all the way down during a gear shift. Otherwise, the gear tooth might be damaged.

NOTE

Do not rest your foot on clutch pedal when it is not in use.

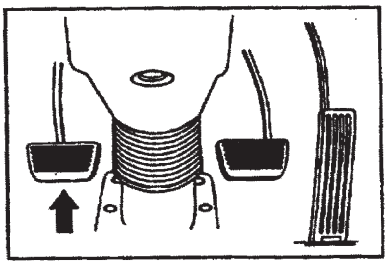


Sun visor :
Lower the sun visor when you are facing the sun



Spot lights:
Spot lights above passenger seats can be independently controlled by the passengers.

CONTROLS AND INSTRUMENTS



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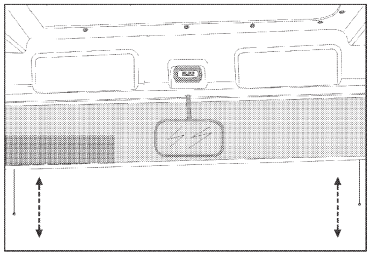

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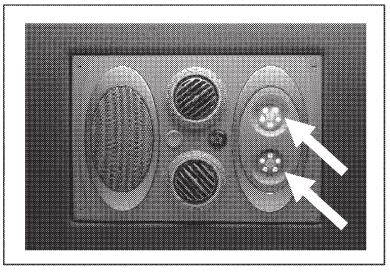

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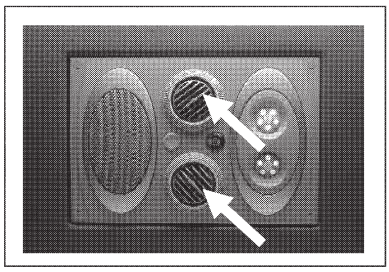
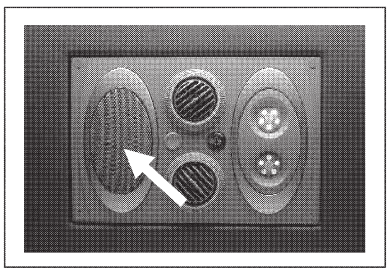
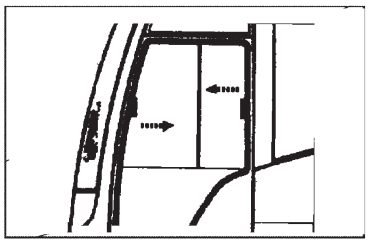


Air ventilation ducts

The air quantity and the direction can be independently controlled by the passengers.

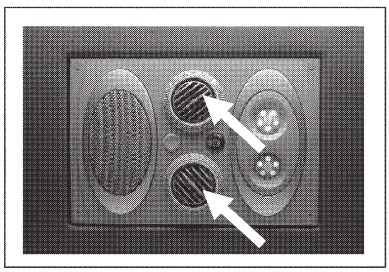


Loudspeakers:
Smooth voice distribution is obtained via the loudspeakers located beneath the main air gallery. They can be independently controlled by on-off switch located on top of them.



Sliding windows:
To open the sliding windows, rise the latch and pull the handle backwards or forwards.

CONTROLS AND INSTRUMENTS



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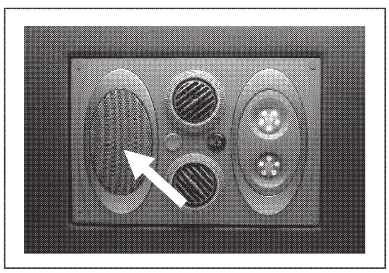

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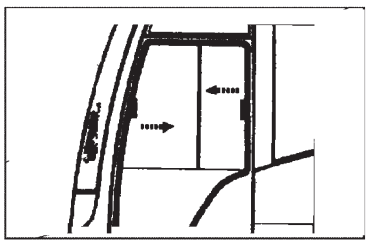

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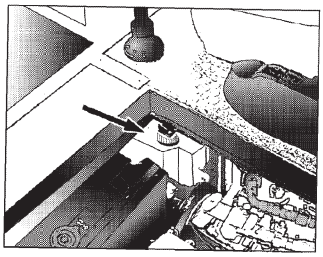
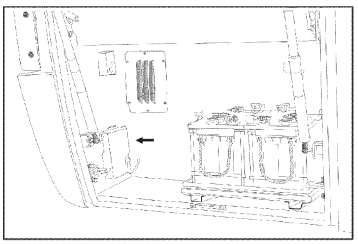


Radiator expansion tank:
Radiator expansion tank is located on right hand side of the engine.

WARNING

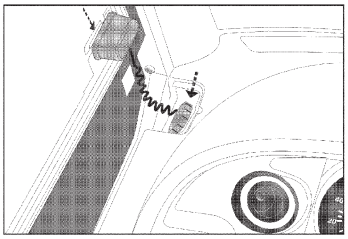
The coolant level inspection should be made on expansion tank and the radiator cap should not be opened unless required. For further information, see "SERVICE AND MAINTENANCE".



Windshield washing fluid container:
It is located in the front left hand side battery compartment.

WARNING

Warm windshield with defroster before washing windshield during cold weather. This will help prevent icing of windshield that might otherwise obscure the driver's visibility.

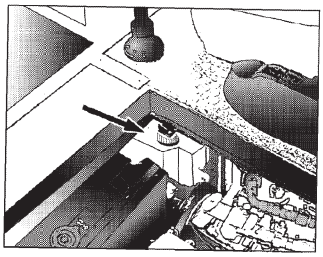


Clutch fluid container:
Fluid container is located underneath the driver side dashboard.

CAUTION

- **Do not add anti-freeze solution into windshield washer solution, otherwise the paint might be deteriorated if it spills.**
- **Wipe off any icing or snow accumulated on wiper blades before operating windshield wiper.**

CONTROLS AND INSTRUMENTS



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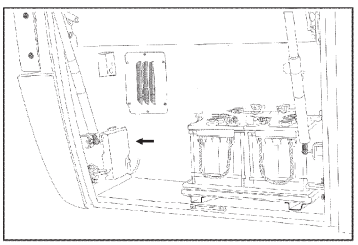

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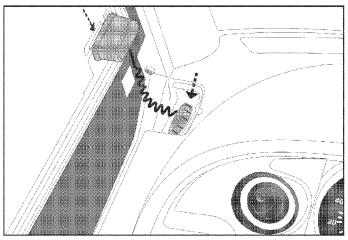

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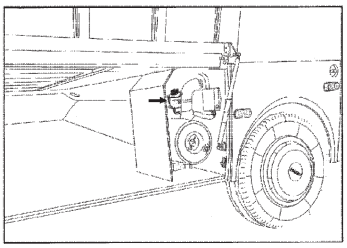
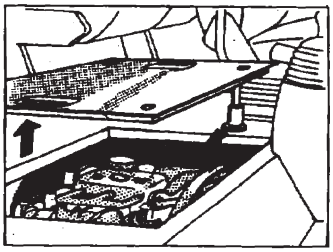
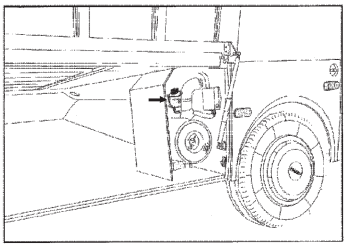


Power steering fluid container:
Power steering fluid container, together with its plastic enclosure, is located in side luggage compartment behind front right wheel.



Engine maintenance cover:
Open the cover to access to the engine.

CONTROLS AND INSTRUMENTS



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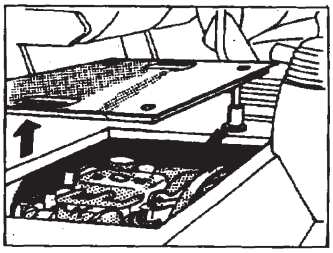

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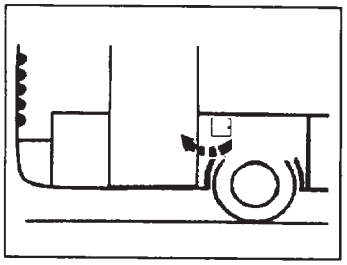
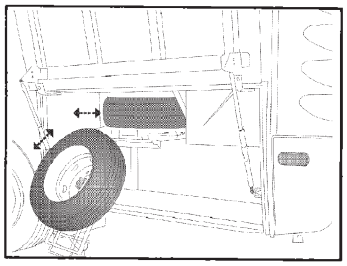


Fuel tank lid:
To open fuel tank lid, turn the key counterclockwise. To open fuel tank cap, turn it counterclockwise.

WARNING

Use genuine Isuzu fuel tank cap, if it is to be replaced.
Use of improper fuel tank cap might give rise to spilling of fuel during an accident. Besides, fuel system and emission control system might be adversely effected.

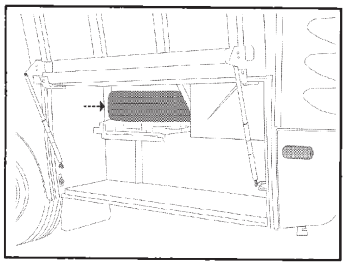


Spare wheel hanger:

Spare wheel is fixed in the left hand side rear luggage compartments.

To remove the spare wheel:

1. pull the lock lever upward
2. pull the spare wheel slide outward
3. loose the center bolt counter clockwise



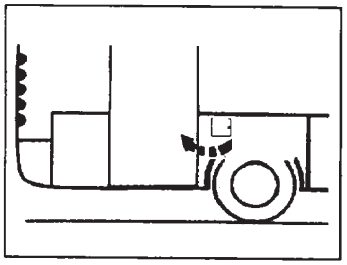
To rise the spare wheel,

1. Tighten the center bolt
2. Pick up the silide
3. Insert the spare wheel into the its place
4. Make sure the click noise

WARNING

Bu sure to fix spare wheel completely to prevent it to be hazardous during a sudden braking or an accident.

CONTROLS AND INSTRUMENTS



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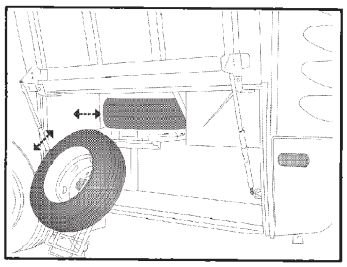

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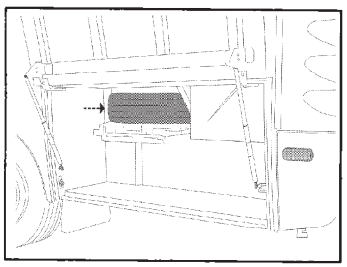

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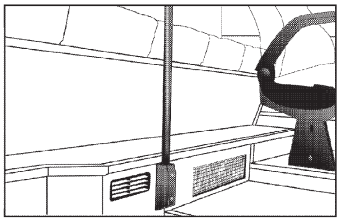
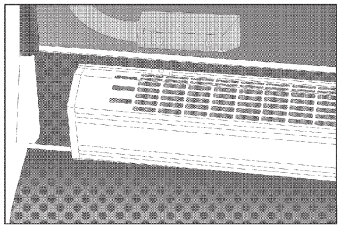
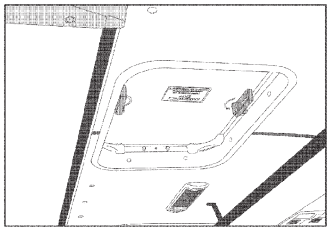


Rear heater:
Rear heater that operates with engine coolant is controlled by rear heater switch located dashboard



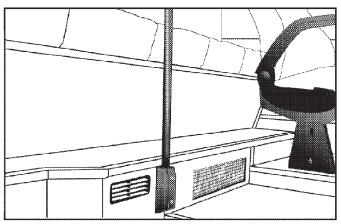
Panel radiators are located on both sides of the vehicle



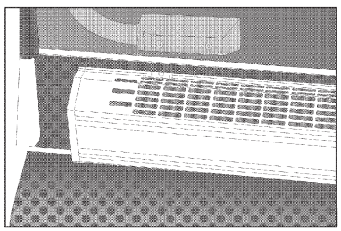
Emergency exit
Multi-directional ventilation is obtained by the roof ventilating cover that is opened by pushing upwards.

In the case of emergency, turn handle to arrow direction.

CONTROLS AND INSTRUMENTS



Rear heater:
Rear heater that operates with engine coolant is controlled by rear heater switch located dashboard



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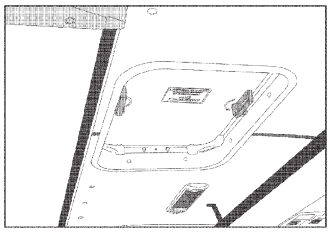

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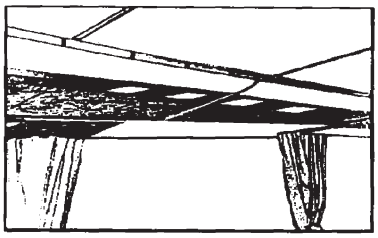
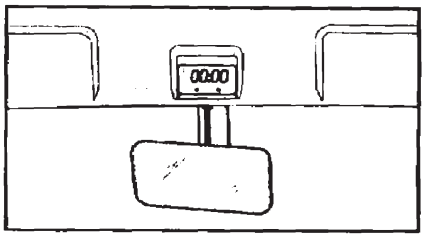
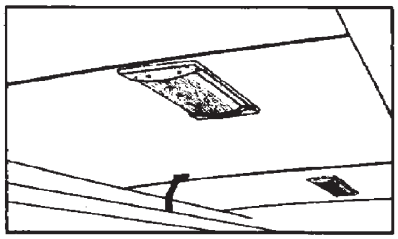


Overhead luggage compartment:
Overhead luggage compartment is provided above the passenger seats for storing personal belongings.

Storing heavy and sharp objects in overhead luggage compartment is detrimental to the passenger safety.

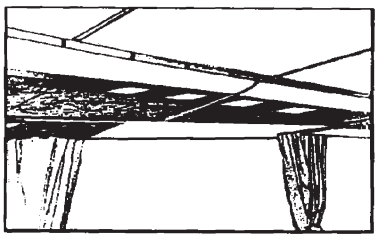


Digital clock:
Digital clock is set by pressing buttons that are located at bottom.



Illuminating lamps:
They are controlled by the switches located on dashboard.

CONTROLS AND INSTRUMENTS



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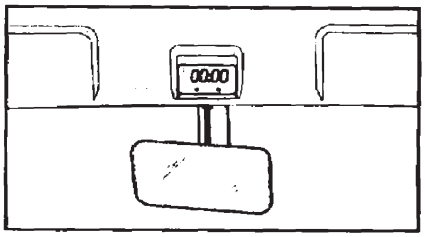

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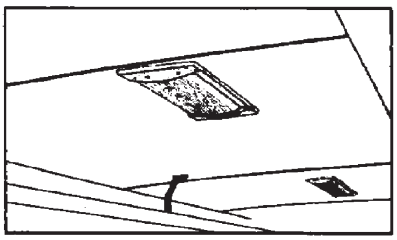

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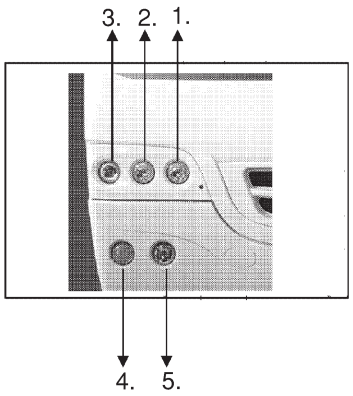
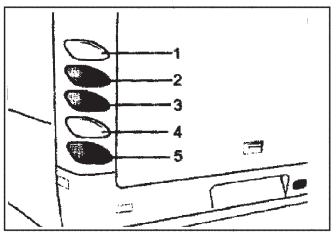




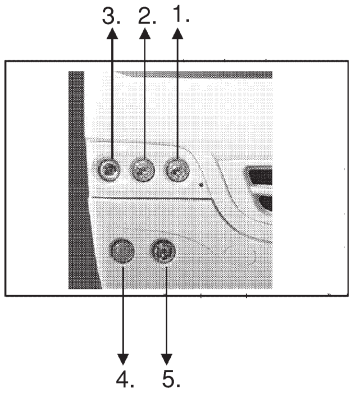
External lamps:
Front:

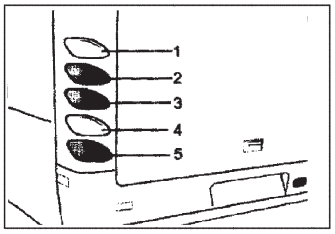
1. Head light (high beam) (driving beam)
2. Head light (high beam) (driving beam) / clearance light
3. Head light (Low beam) (dipped beam)
4. Turn signal light
5. Fog light

Rear:

1. Turn signal light
2. Stop light
3. Side light
4. Reverse light
5. Fog light

CONTROLS AND INSTRUMENTS





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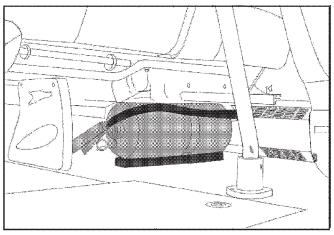
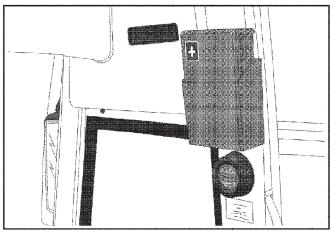
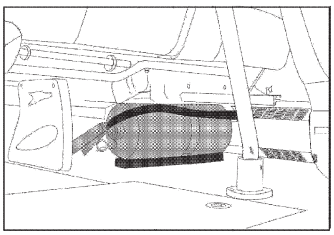


Fire extinguishers are located under the first and last passenger seats on the left hand side of the aisle



First aid box is located near side of the front door

CONTROLS AND INSTRUMENTS



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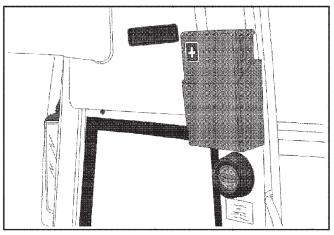

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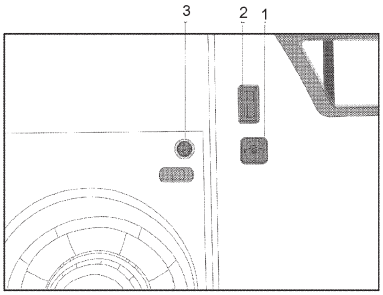
BEFORE DRIVING

Proper maintenance and driving improves fuel and oil economy in addition to increasing the service life of your vehicle. Be sure to drive your vehicle carefully and defensively.



USE OF MAIN EQUIPMENT

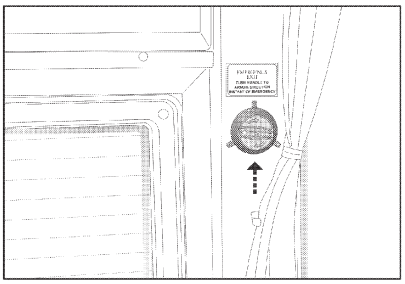
Door operation :

Doors are operated by pressurized air. When the key is turned to clockwise direction, door would be locked.

Please close the doors before driving.

1. Door lock
2. Door handle
3. Emergency valve

A reverse switch is installed into the door piston mechanism. In the case of a resistance force that is more than 15 kg, door would be reopen to prevent any injury.



In the case of emergency :

To open the door inside:

Turn the handle to arrow direction. Pressurized air would be released. Then, door would be open manually.

Unlock the door manually :

If the door is locked, turn the handle that is located on the inder side of the door to arrow direction. Door would be unlocked.

Do not forget the door lock mechanism at this position. Lock lids may cause damage on the body while closing the door.

BEFORE DRIVING YOUR VEHICLE

BEFORE DRIVING

se of main equipment.....3-1
river's daily inspections.....3-17

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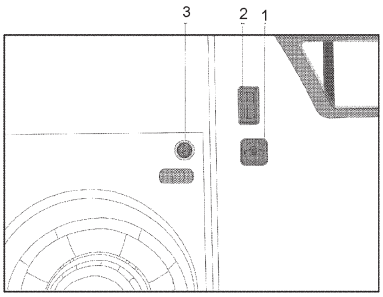

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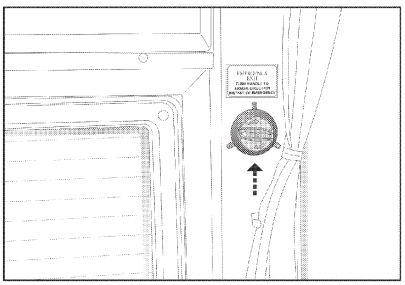

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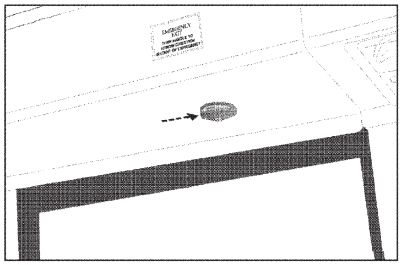
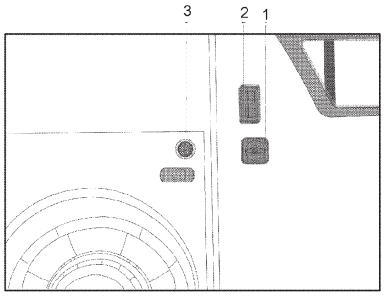
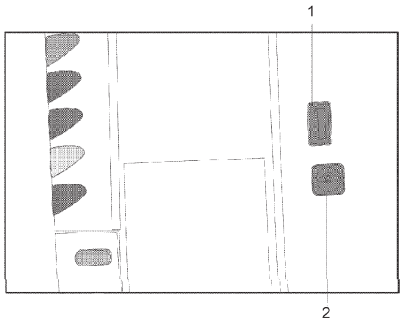






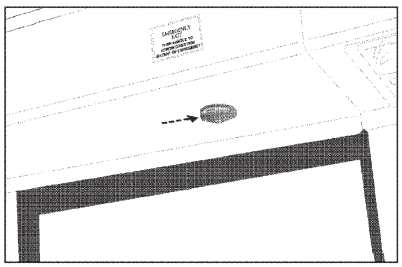
To open the door outside :

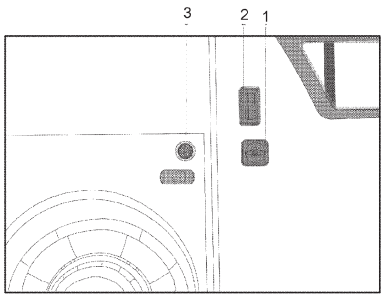
Turn the handle to arrow direction.
Pressurized air would be released.
Then, door would be open manually.

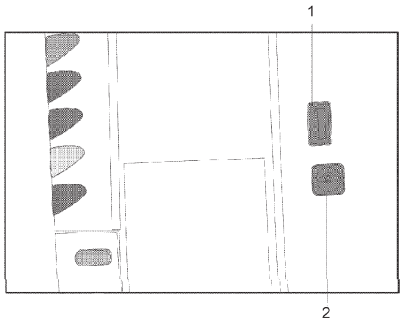
Do not forget to turn back the handle after using.

1. Door handle
2. Door lock

BEFORE DRIVING YOUR VEHICLE







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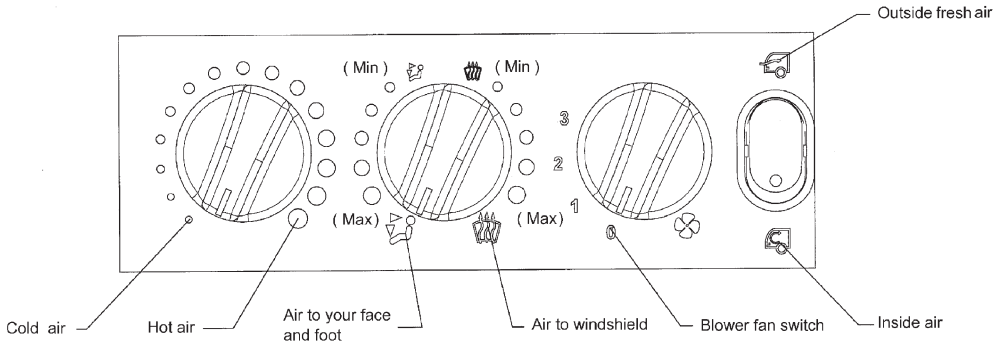
Air outlet control panel



BEFORE DRIVING YOUR VEHICLE

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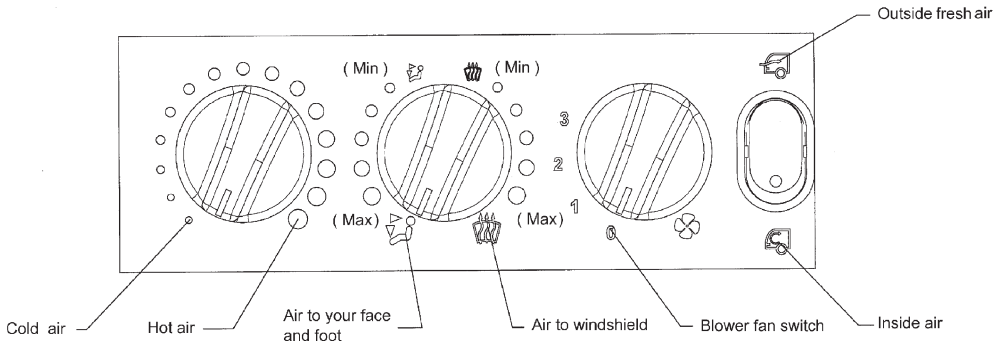

2.4 SF-360 CONTROL PANEL OPERATION MODES

FUNCTIONS OF BUTTONS

The functions of the buttons are listed below by display and duties;

1. **On/Off button:** 

The system is engaged by pressing this button. When the system is on, the last set mode and values are shown on the display and the system is activated.

In order to turn the system off, pres this buton for 3 sec.

When the ignition switch is off, the system and therefore the control panel is not operating.

As seen in figure 3; when the system has been turned on, the display will show the preset values; temperature 22°C, fan at 3rd speed, and the system seems at automatic cooling mode.

After the set temperature is shown 5 sec. On the display, information as seen in figure 4 will be seen.

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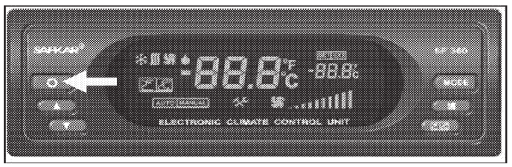

Figure 3

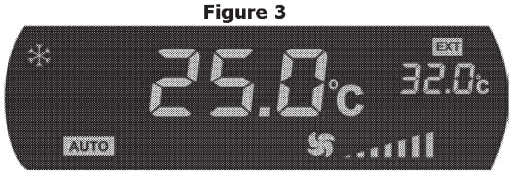

Figure 4

BEFORE DRIVING YOUR VEHICLE

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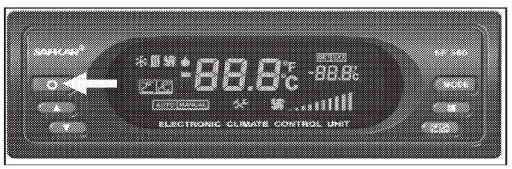

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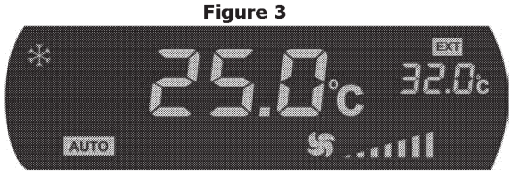

Figure 4

2. Increment Button: 

The increment button is used to increase the set values.

When first pressed to the button, the SET icon lights on and the last adjusted temperature set value is shown (Figure 5).

After that at every pressing, the set value will increase one by one (Figure 6).

If reached to the required temperature value and the button is released, the selected value will flash for 3 seconds on the display, at the end of 3 seconds, the selected value begins to continually flash and as a result the new temperature values is set.

The new set values are shown for 5 seconds on the display, then the exterior temperature is shown by lighting the EXT icon on (Figure 7).

Figure 5

Figure 6

Figure 7

BEFORE DRIVING YOUR VEHICLE

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Figure 5

Figure 6

Figure 7

3. Decrement Button: 

It is used in decreasing temperature and parameter set values.

When first pressed to the button, the SET icon lights on and the last adjusted temperature set value is shown.

After that at every pressing, the set value will decrease one by one.

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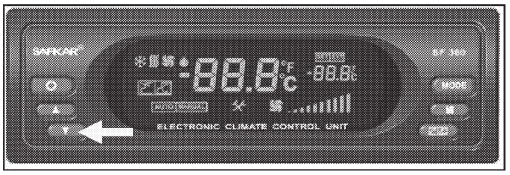

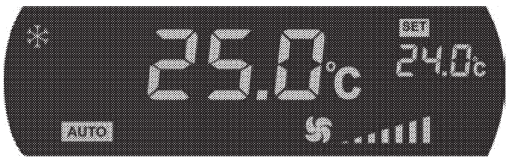

Figure 8

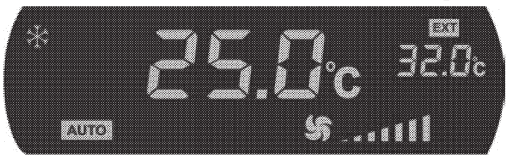

Figure 9

BEFORE DRIVING YOUR VEHICLE

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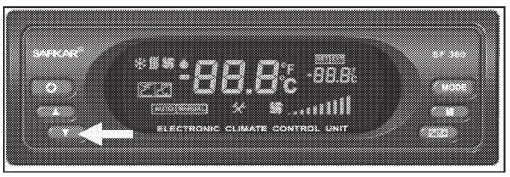


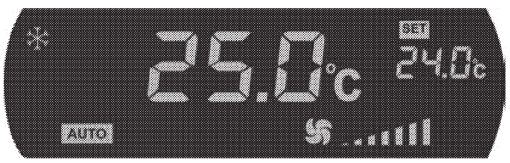


Figure 8

Figure 9

4. Fresh Air Clack Button:

It is used to state where the air that is used by the fans will be taken (interior – exterior environment) in order to replace the adjusted environment air with fresh air or to return the air which has flown through the cooling/heating system to the same environment.

There are two options which are “circulation” and “fresh air control”. When first pressed on the button, the icon related to the operating mode lights on (Figure 10).

If the button is pressed again, the operating mode will be changed and the other icon will light on.

If the clack button is pressed for 2 seconds, the automatic clack mode will be activated. Passing to this mode, the clack icon will flash at first and the next one minute. In this mode, the clack is held open and close for a specific time.

When the clack button is pressed again, the system will close the automatic clack mode.

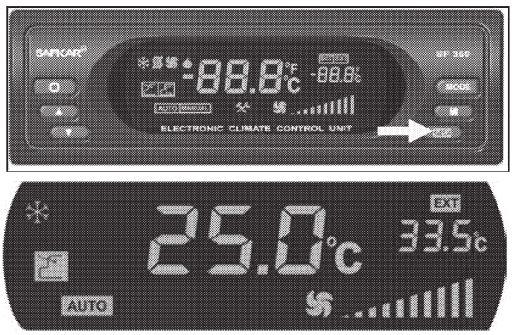
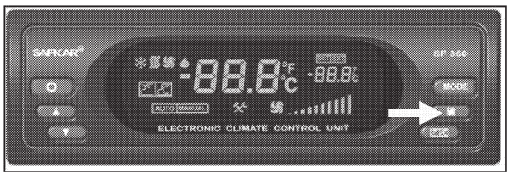


Figure 10

Figure 11



BEFORE DRIVING YOUR VEHICLE

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There are two options which are “circulation” and “fresh air control”. When first pressed on the button, the icon related to the operating mode lights on (Figure 10).

If the button is pressed again, the operating mode will be changed and the other icon will light on.

If the clack button is pressed for 2 seconds, the automatic clack mode will be activated. Passing to this mode, the clack icon will flash at first and the next one minute. In this mode, the clack is held open and close for a specific time.

When the clack button is pressed again, the system will close the automatic clack mode.

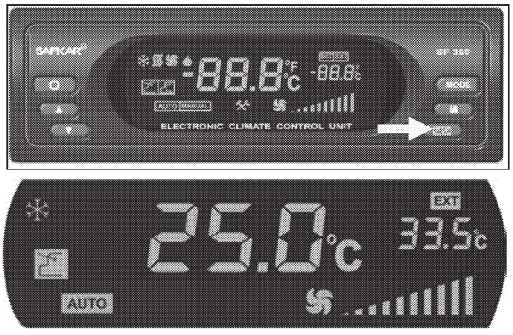
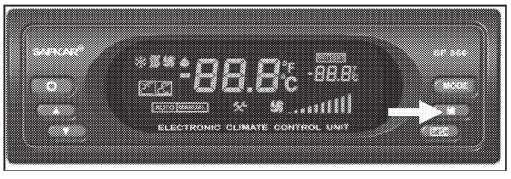
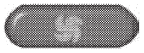


Figure 10

Figure 11



5. Fan Speed Selection Button: 

It is used to change fan speed. The fan speed will increase every time the button is pressed and the fan speed level will be shown on the display (Figure 12).

When the fan speed reaches its maximum level, pressing again the button will result the fan speed to become 0 and then a later pressing will start from the minimum value (Figure 13).

Fan speed cannot be changed in automatic mode.

When the fan speed is 0, heating/cooling process is stopped (Figure 14).

NOTE: The heating process will not stop when the fan speed is 0 in models not having roof heating option.

If the fan speed is increased, the system will continue to operate.

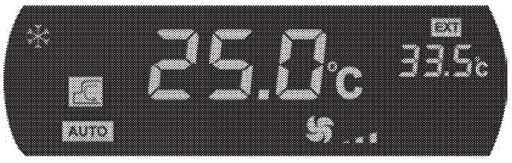


Figure 12

Figure 13

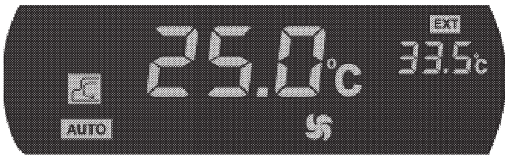
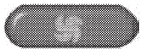


Figure 14

BEFORE DRIVING YOUR VEHICLE

5. Fan Speed Selection Button: 

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If the fan speed is increased, the system will continue to operate.

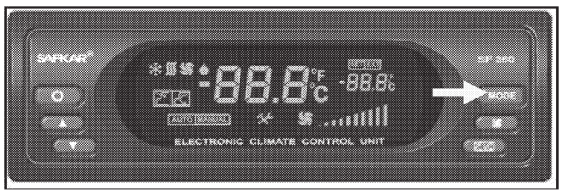
Figure 12

Figure 13

Figure 14

6. Mode Selection Button: MODE

When pressed, modes will be shown in the following priority seen below. These modes are;



- Heating and cooling (AUTO)*
- Cooling
- Heating**
- Fan
- Moisture absorption

*Is active in vehicles with automatic heater system. In vehicles without automatic heater system, only cooling mode will be active and automatic heating mode will not be mentioned.

**Is active in vehicles with automatic heater system.

When reaching to the required mode, the icon related with the mode will flash for 4 seconds, if not pressed to the button and after 4 seconds, the related mode will be activated and the icon will light on continually.

Specifications about the modes are listed below.

AUTOMATIC (Heating and cooling): In this mode all processes are operated automatically. The set temperature can be changed by using increment and decrement buttons.

When the automatic mode is selected, the icon seen below will light on indicating the selected mode.

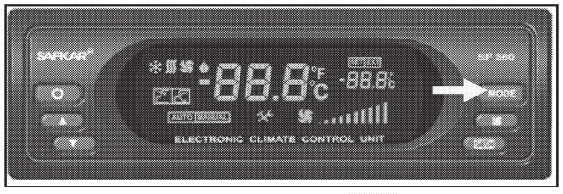
AUTO

In the automatic mode, the fan speed level will be controlled automatically and can not be adjusted. The system will make heating and cooling according to the adjusted temperature.

BEFORE DRIVING YOUR VEHICLE

6. Mode Selection Button: MODE

When pressed, modes will be shown in the following priority seen below. These modes are;



- Heating and cooling (AUTO)*
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AUTOMATIC (Heating and cooling): In this mode all processes are operated automatically. The set temperature can be changed by using increment and decrement buttons.

When the automatic mode is selected, the icon seen below will light on indicating the selected mode.

AUTO

In the automatic mode, the fan speed level will be controlled automatically and can not be adjusted. The system will make heating and cooling according to the adjusted temperature.

MANUAL:

When the manual mode is selected, the icon above will appear continually on the display.

In the manual mode, functions will be like below.

 **COOLING:** Manual cooling will be made in this mode. The temperature can be adjusted by changing the set temperatures. The fan speed can be changed. When the required temperature is reached, cooling process will stop, fan will continue to work.

When the fan speed is set to **0**, cooling will stop.

 **HEATING:** Manual heating will be made in this mode. The temperature can be adjusted by changing the set temperatures. The fan speed can be changed. When the required temperature is reached, heating process will stop, fan will continue to work.

When the fan speed is set to **0**, heating will stop*.

* In models without roof heating option, heating will not stop when the fan speed is set to 0.

 **FAN (Ventilation):** Heating and cooling is not performed in this mode, only air is ventilated.

Fan speed can be adjusted by the fan selection button.

 **MOISTURE ABSORPTION:** By operating heater and air conditioner at the same time, ventilation at the maximum fan speed is made.

Ventilation time is 3 minutes.

At the end of the ventilation period, the air conditioner continues to operate in the previous position.

NOTE: Vehicles without automatic heater system, the heater button must be switched on at maximum level during absorption mode.

BEFORE DRIVING YOUR VEHICLE

MANUAL:

When the manual mode is selected, the icon above will appear continually on the display.

In the manual mode, functions will be like below.

COOLING: Manual cooling will be made in this mode. The temperature can be adjusted by changing the set temperatures. The fan speed can be changed. When the required temperature is reached, cooling process will stop, fan will continue to work.

When the fan speed is set to **0**, cooling will stop.

HEATING: Manual heating will be made in this mode. The temperature can be adjusted by changing the set temperatures. The fan speed can be changed. When the required temperature is reached, heating process will stop, fan will continue to work.

When the fan speed is set to **0**, heating will stop*.

* In models without roof heating option, heating will not stop when the fan speed is set to 0.

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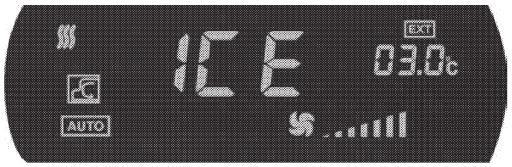
Ventilation time is 3 minutes.

At the end of the ventilation period, the air conditioner continues to operate in the previous position.

NOTE: Vehicles without automatic heater system, the heater button must be switched on at maximum level during absorption mode.

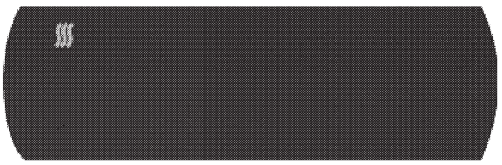
OTHER SPECIFICATIONS

1) ICE FORMATION WARNING: When the exterior environment temperature decreases below 3°C or lower, warning light ICE will flash for 10 seconds warning the driver from ice formation danger (Figure 15).



Şekil 15

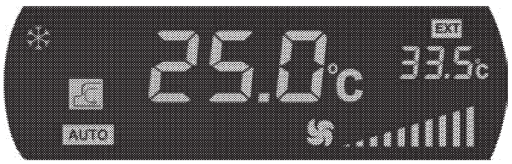
2) COMBINE OPERATION WITH PREHEATER: If the preheater of the vehicle is pre-programmed to a specific hour, the heater system will automatically activated by the control panel as soon as the preheater starts to operate and heating symbol will be shown on the display of the control panel (Figure 16).



Şekil 16

3) FAILURE INDICATION: When a failure happens in the air conditioning system, the failure indication will be seen on the display, the fans will continue to work but the cooling operation will stop.

If this symbol is seen, contact the nearest **SAFKAR** authorized service (Figure 17).



Şekil 17

BEFORE DRIVING YOUR VEHICLE

OTHER SPECIFICATIONS

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Şekil 15

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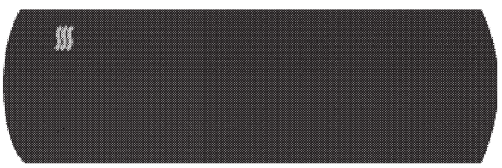

Şekil 16

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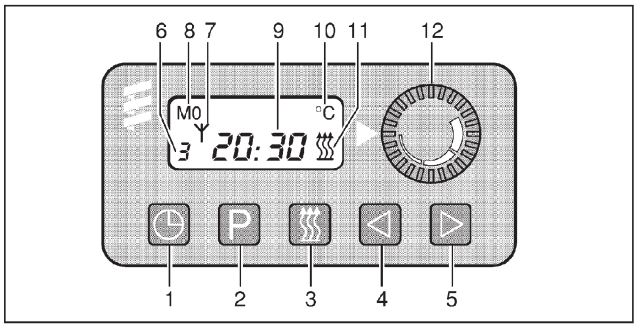
Şekil 17

(GB) Operating Instructions

Valid for heaters versions:

Air heater	**Water heater**
Order number heating timer	
Display	Display
(D) 22 1000 30 38 00	(D) 22 1000 30 34 00
(GB) 22 1000 30 40 00	(GB) 22 1000 30 36 00



1 Actual time
2 Preset
3 Heat
4 Setting backwards
5 Setting forwards
6 Memory display
7 Symbol for radio remote control
8 Weekday or preset day
9 Current time or preset time
10 Temperature display
11 Operating display
12 Temperature preselection – Range 10 to 30 °C (Air heater only)

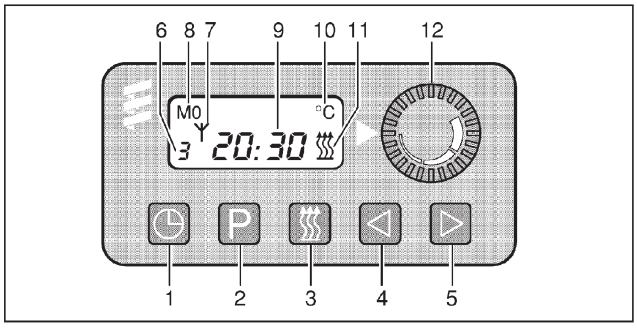
All signals will start to flash on the display when the module clock is connected to the power supply.
The switching clock must be entirely set. The heater cannot be switched on when the clock is in this state.

BEFORE DRIVING YOUR VEHICLE

(GB) Operating Instructions

Valid for heaters versions:

Air heater	**Water heater**
Order number heating timer	
Display	Display
(D) 22 1000 30 38 00	(D) 22 1000 30 34 00
(GB) 22 1000 30 40 00	(GB) 22 1000 30 36 00



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12 Temperature preselection – Range 10 to 30 °C (Air heater only)

All signals will start to flash on the display when the module clock is connected to the power supply.
The switching clock must be entirely set. The heater cannot be switched on when the clock is in this state.

Setting the time and weekday for the first time

Briefly press . Time display flashes 12:00.
Set the current time with or .
The time is stored as soon as it stops flashing.
The weekday will then flash. Set the current weekday with or .
The weekday is stored as soon as it stops flashing. The display is retained with ignition "ON"; the display is turned off after 10 seconds with ignition "OFF".

Changing the time and weekday

Keep depressed until the time flashes.
Then proceed as described on the left-hand side.
If only the time is to be reset, then press twice after the time has been reset to skip flashing and weekday setting.
After the weekday has been reset press to shorten the duration of weekday flashing.

Heater operation without preselection in ignition "OFF" state
Heating symbol = observe operating display.

Switching on the heater

Briefly press .
Operating display and display of heating duration: The heating duration is works adjusted to 120 minutes. It can be changed for a single heating period or permanently changed.

Changing the heating duration for a single heating period
After switch-on:
Shorten heating duration (down to minimum 1 minute):
Press .
Lengthen heating duration (up to maximum 120 minutes):
Press .

Changing the heating duration permanently
Do not switch on .
Press and hold down (approx. 3 seconds) until the display appears and flashes. Release. Now set the heating duration (from 10 to 120 minutes) with or . The new heating duration has been stored when the display disappears.

Turning off the heating
Briefly press . The operating display disappears.
The fan continues to run to cool down the heater.

Heater operation without preselection in ignition "ON" state
Heating symbol = observe operating display.

Switching on the heater

Briefly press .
Operating display as well as time and weekday.
The heater will continue to operate for as long as the ignition remains switched on.
A residual heating time of 15 minutes continues after the ignition has been switched off. This can be lengthened to maximum 120 minutes by pressing , or shortened down to a minimum of 1 minute) by pressing .

Switching off the heater
Briefly press . The operating display disappears.
The fan automatically continues to run to cool down the heater.

External switch "Heater ON / OFF"
 If an additional switch has been mounted, then the heater can be turned off from a remote point in the manner described above.

BEFORE DRIVING YOUR VEHICLE

Setting the time and weekday for the first time

Briefly press . Time display flashes 12:00.
Set the current time with or .
The time is stored as soon as it stops flashing.
The weekday will then flash. Set the current weekday with or .
The weekday is stored as soon as it stops flashing. The display is retained with ignition "ON"; the display is turned off after 10 seconds with ignition "OFF".

Changing the time and weekday

Keep depressed until the time flashes.
Then proceed as described on the left-hand side.
If only the time is to be reset, then press twice after the time has been reset to skip flashing and weekday setting.
After the weekday has been reset press to shorten the duration of weekday flashing.

Heater operation without preselection in ignition "OFF" state
Heating symbol = observe operating display.

Switching on the heater

Briefly press .
Operating display and display of heating duration: The heating duration is works adjusted to 120 minutes. It can be changed for a single heating period or permanently changed.

Changing the heating duration for a single heating period
After switch-on:
Shorten heating duration (down to minimum 1 minute):
Press .
Lengthen heating duration (up to maximum 120 minutes):
Press .

Changing the heating duration permanently
Do not switch on .
Press and hold down (approx. 3 seconds) until the display appears and flashes. Release. Now set the heating duration (from 10 to 120 minutes) with or . The new heating duration has been stored when the display disappears.

Turning off the heating
Briefly press . The operating display disappears.
The fan continues to run to cool down the heater.

Heater operation without preselection in ignition "ON" state
Heating symbol = observe operating display.

Switching on the heater

Briefly press .
Operating display as well as time and weekday.
The heater will continue to operate for as long as the ignition remains switched on.
A residual heating time of 15 minutes continues after the ignition has been switched off. This can be lengthened to maximum 120 minutes by pressing , or shortened down to a minimum of 1 minute) by pressing .

Switching off the heater
Briefly press . The operating display disappears.
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External switch "Heater ON / OFF"
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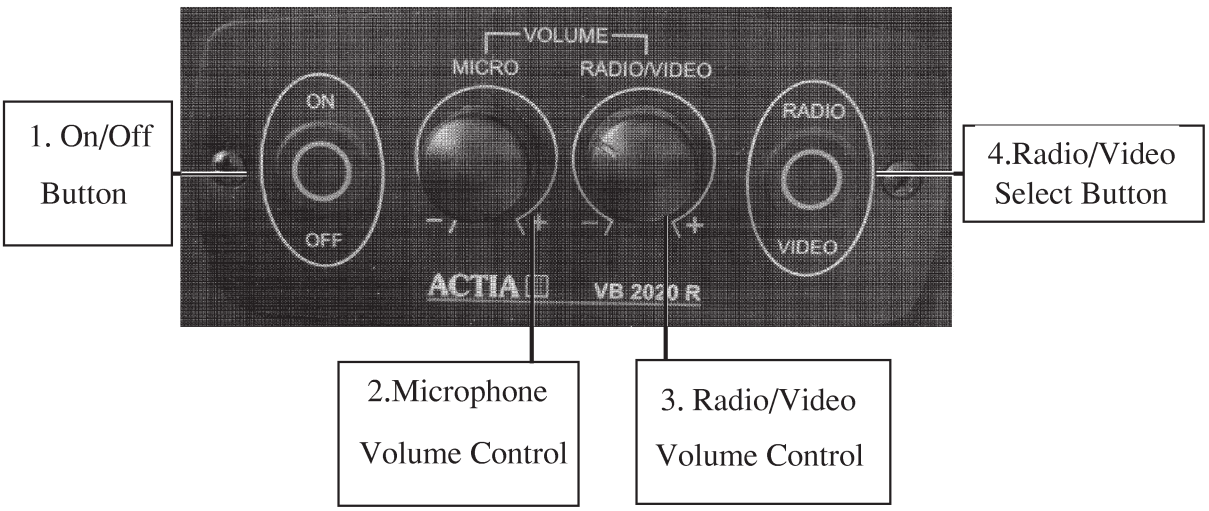
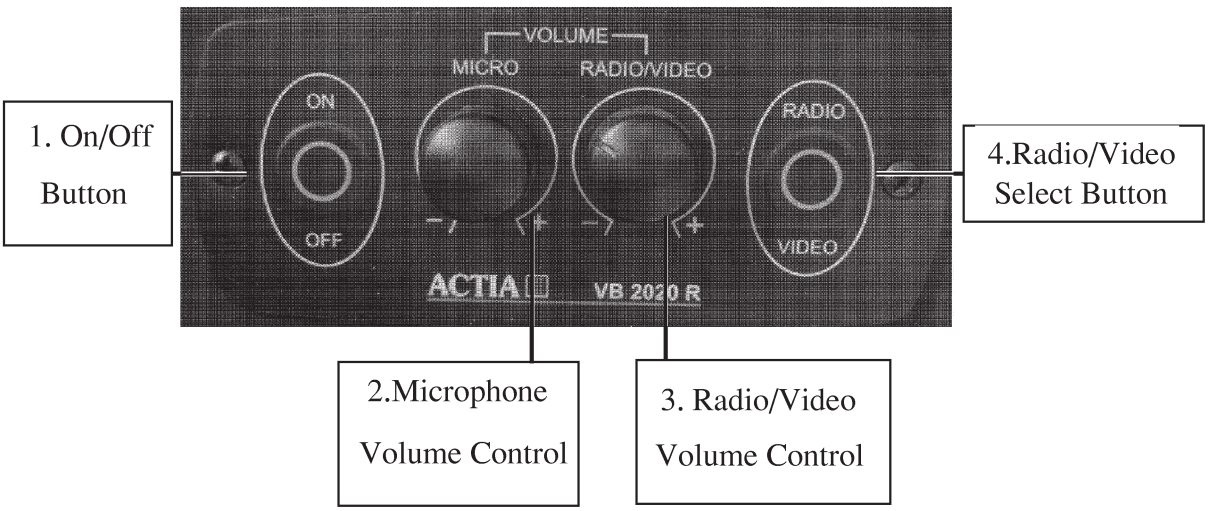


BEFORE DRIVING YOUR VEHICLE



Turn ON/OFF:

1. Amplifier is turned on and off from button number 1.

Volume Level Control :

1. You may adjust microphone volume level by using amplifier's button number 2,turning it to + or – positions.

2. You may adjust radio and video volume level by using amplifier's button number 3,turning it + or – positions.

Radio Mode:

1. Before listening to the radio, set the amplifier to "Radio" position by pressing button number 4.

Video Mode:

Microphone:

1. When you set your microphone to "ON" position, the amplifier gives the microphone's voice directly to the speakers. After you set your microphone to "OFF" position, it will get back to video or radio mode in a short while.

CONTROLS AND INSTRUMENTS

Turn ON/OFF:

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Volume Level Control :

1. You may adjust microphone volume level by using amplifier's button number 2,turning it to + or – positions.

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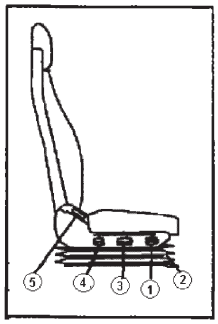
Video Mode:

1. Before watching video, set the amplifier to "Video" position by pressing button number 4.

Microphone:

1. When you set your microphone to "ON" position, the amplifier gives the microphone's voice directly to the speakers. After you set your microphone to "OFF" position, it will get back to video or radio mode in a short while.



Driver seat

1. **Seat inclination adjustment:** The angle of seat is adjustable between 2º to 12º.

2. **Forward and backward adjustment:** The seat can be shifted back and forth within up to 160 mm with 10 mm increments. To do this, pull the handle up.

3. **Continuous height adjustment:** The height adjustment is possible within 100 mm range either upward by pulling the knob up or downward by pushing the knob down.

4. **Quick lowering function:** It provides ease of accessing or leaving the seat. When the knob is pushed down after you get seated, the seat resumes to normal driving position. When you pull the knob up before you leave the seat, it lowers down, providing space for convenient leave.

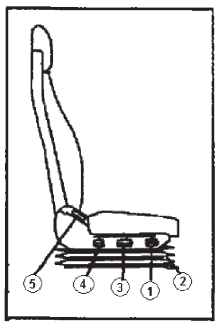
5. **Seatback inclination adjustment:** Pull the handle up. Release it when the desired position of the seatback is obtained.

WARNING

• After adjusting manually an adjusted seat, use your body weight to move the seat forward or backward to be sure the seat adjusters are properly latched. Movement of the seat indicates that, at least, a latch is not properly seated. This could increase the possibility of injury and/or degree of injury during an accident. If you find that the seat adjusters do not latch, contact to Isuzu authorized dealer.

• Do not attempt to adjust the driver's seat while the vehicle is in motion. Otherwise, you may loose the control of your vehicle in case of sudden movement of the seat.

BEFORE DRIVING YOUR VEHICLE



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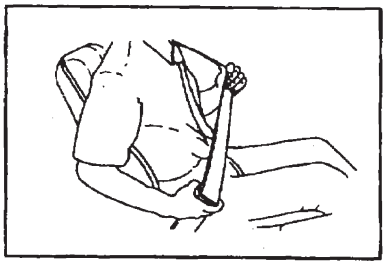
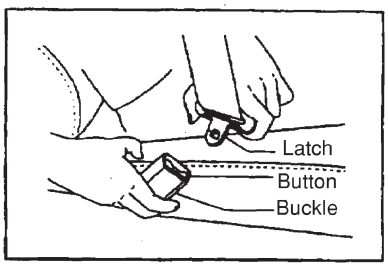
• Do not attempt to adjust the driver's seat while the vehicle is in motion. Otherwise, you may loose the control of your vehicle in case of sudden movement of the seat.

- Never fasten a seatbelt with a twisted strap.
- Care should be taken not to damage the seatbelt strap or buckle by pinching them between the seats or doors, etc.
- Excessively loose seat-belt may increase the degree of a possible injury, since it cannot properly restrain you in an accident.





Seatbelt (3-point)

1. Adjust your seat as required, lean well back and straight up. Hold the latch and follow the procedure given below:
   - Pull the seat-belt as far as it will reach across your lap.
   - Hold the latch at an angle to the webbing and slide it further (toward the front of the vehicle).
   - Then pull it slowly across your lap and push it into the buckle until it clicks. If the retractor locks before latch reaches the buckle, let the belt retract slightly, then withdraw it slower than before.
2. To reduce the risk of sliding under the belt during a collision, position the seatbelt across your lap as low on your thighs as possible and adjust it to a snug fit by pulling the "shoulder" portion toward through the latch. Lap-shoulder belt is designed to lock during a sudden stop or impact. In normal conditions, it should move freely.

CAUTION

To help reduce the risk of personal injury in an accident, move the child towards the center, away from the shoulder strap, if it is on or close to the child's face.

BEFORE DRIVING YOUR VEHICLE

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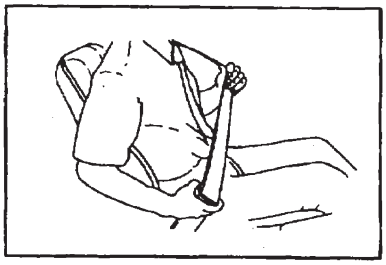

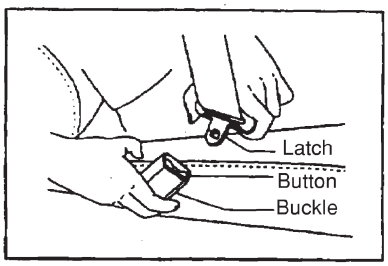

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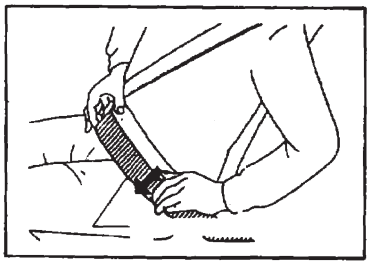


3. To unfasten the belt, push the button on the buckle. The belt should retract when the buckle is unlatched but hold the latch plate as it does so, to keep it from hitting people or nearby objects. To help prevent damage to the safety belt and interior trim, before closing the door be sure the belt is fully retracted and the latch plate is out of the way.

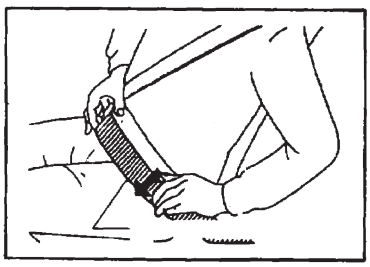
Seat belt inspection and care:

- Periodically inspect belts, buckles, latch plates, retractors, and anchors for damage that could lessen the effectiveness of the restraint system.
- Keep sharp edges and damaging objects away from belts.
- Replace belts if cut, weakened frayed, or subjected to collision loads.
- Check that anchor mounting bolts are tight to the floor.
- Have questionable parts replaced.
- Keep seat belts clean and dry.
- Clean only with mild soap solution and lukewarm water.
- Do not bleach or dye belts since this may weaken belts.
- Care should be taken to avoid contamination of the webbing with polishes; oils and chemicals, and particularly battery electrolyte.
- No modifications or additions should be made by the user, that will affect its function.

CAUTION

It is important that you understand how to correctly wear a seat belt. You should also ensure that all occupants wear a properly adjusted seat belt whenever the vehicle is moving.

BEFORE DRIVING YOUR VEHICLE



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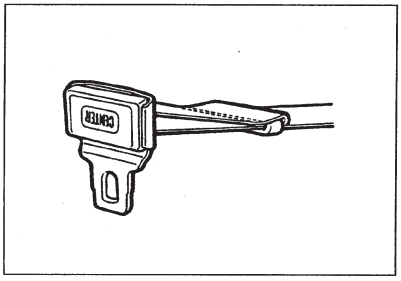
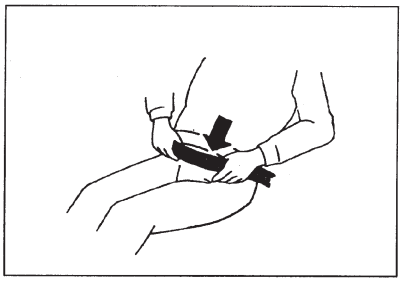
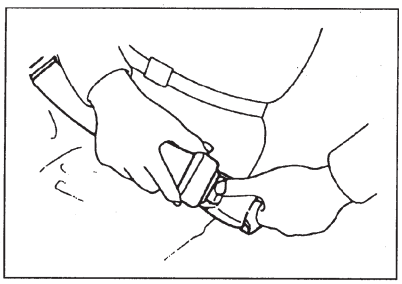


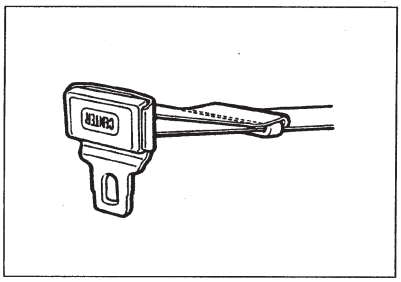


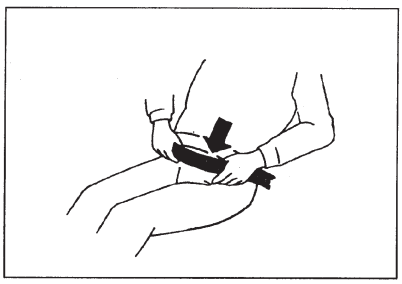


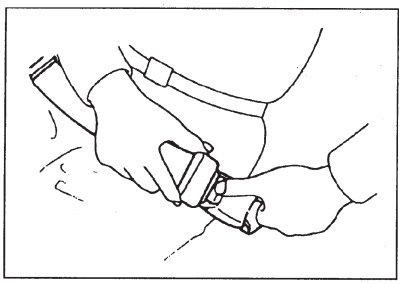
Seat belt (2-points)

1. Sit up straight and well back in the seat.
2. Take hold of the latch plate at an angle to the strap and slide it toward the front of the vehicle.
   Then pull it slowly across your lap and push the latch plate into the buckle until it clicks.
3. Position the lap belt across the lap as low on the hips as possible. Then, adjust to a snug fit by holding the free end of the strap and pulling it through the latch plate until the lap belt is snug across the lap. This reduces the risk of sliding under the belt during an accident.
4. To unfasten the belt, push in the button on the buckle.

BEFORE DRIVING YOUR VEHICLE







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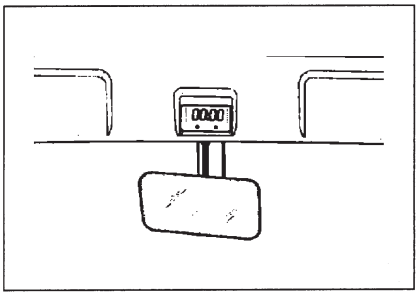

WARNING

- *A snug fit with the lap belt positioned low on the hips is necessary to lessen the chance of injury and/or a degree of injury in an accident. This spreads the force of the lap belt over the hip bone instead of across the abdomen.*
- *Never use the same seat belt for more than one person at a time. A seat belt worn by more than one person will not provide adequate protection in the event of a collision.*
- *Never wear twisted seat belts.*

Mirrors:
Internal rear view mirror:
To adjust, push the mirror to right, left or up or down.

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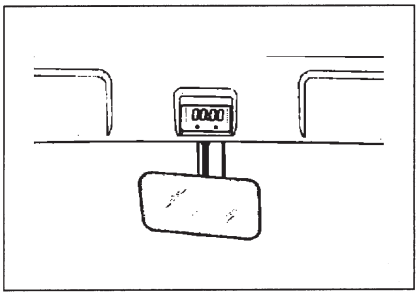

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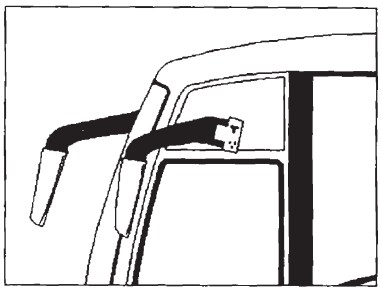

External rear view mirrors:
Adjust external rear view mirrors to see both sides of your vehicle, in addition to both sides of the road behind. This helps you to determine the location of your vehicle with respect to the objects behind your vehicle.

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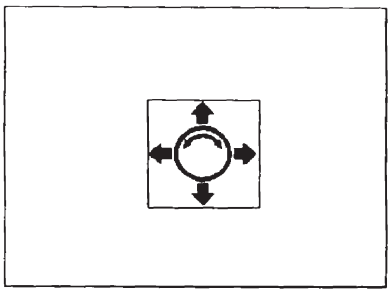
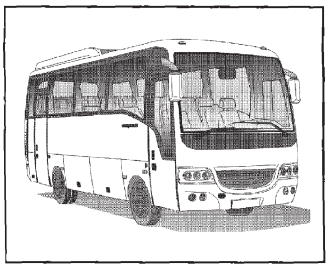
Do not adjust external rear view mirror while the vehicle is in motion.



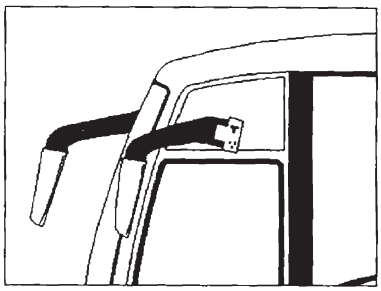
External rear view mirrors are automatically adjustable. To adjust rear view mirror, turn the ignition key to "ON" position. Then, adjust the desired rear view mirror by turning the knob to right or left. External rear view mirrors together with windshield and side windows contain heating element. The heating elements are controlled by the dedicated buttons.



DRIVER'S DAILY INSPECTIONS

The following inspection should be performed, maintain safe and reliable operation (Refer to "Maintenance Guide" for proper inspection procedures,)

BEFORE DRIVING YOUR VEHICLE



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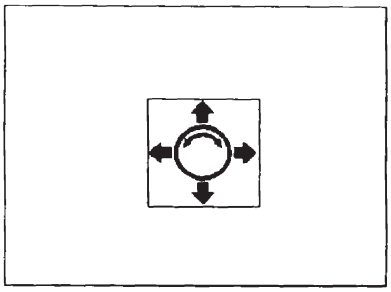

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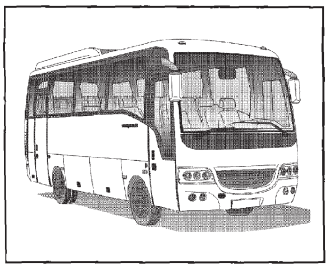

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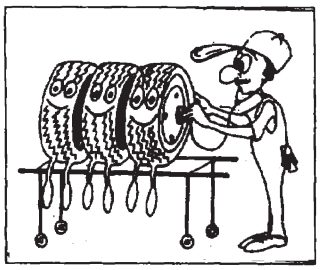
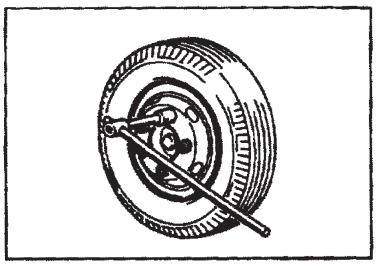
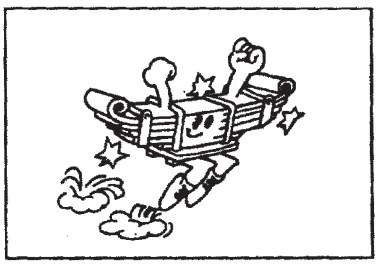


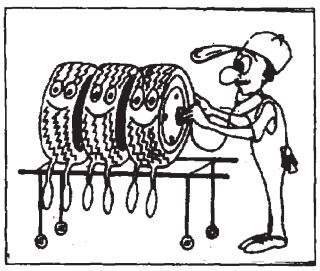


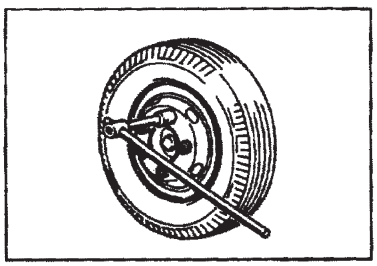


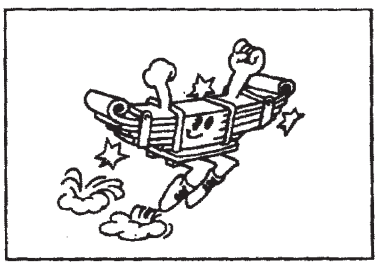
Exterior:

1. Check tires for inflation pressures and general conditions.
2. Check to see whether or not wheel nuts are tight.
3. Check to see whether or not the leaf springs are damaged.

BEFORE DRIVING YOUR VEHICLE







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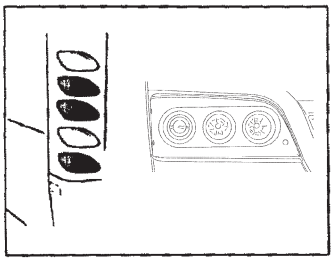
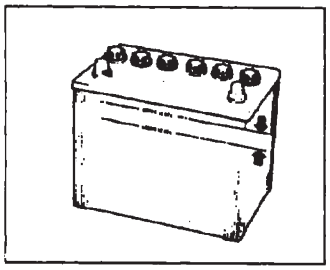
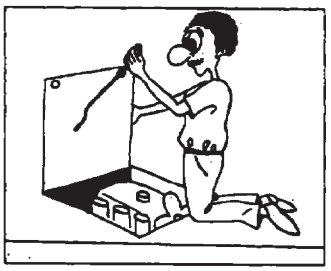


4. Check the operation of the lamps.

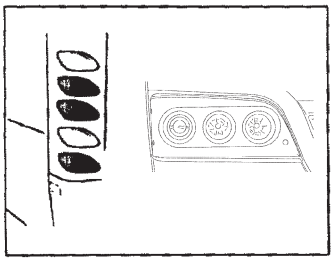


5. Check level of electrolyte in each cell of battery (batteries).



6. Check for any oil, water and fuel leakage

BEFORE DRIVING YOUR VEHICLE



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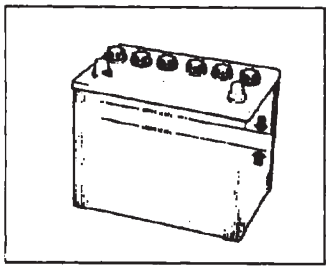

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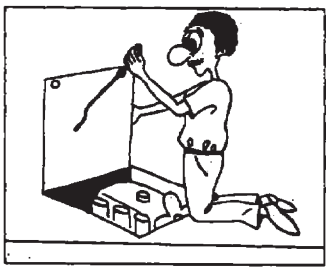

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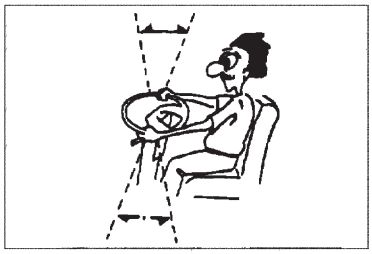
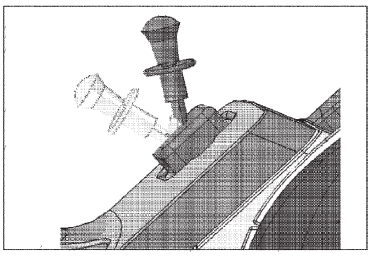
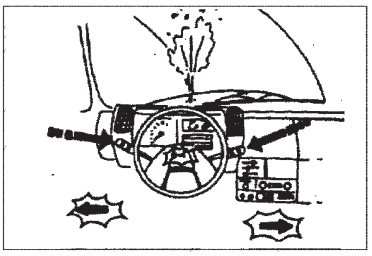


Within cab

1. Check for steering wheel free play and looseness in mount.
   If the vehicle is equipped with a power steering unit, the wheel free play should be checked with the engine running.

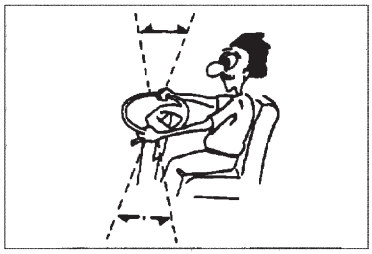


2. Check parking brake lever



3. Check operation of horns, windshield wipers and turn signals.

BEFORE DRIVING YOUR VEHICLE



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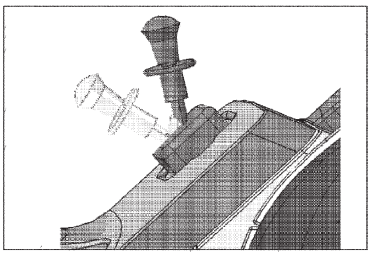

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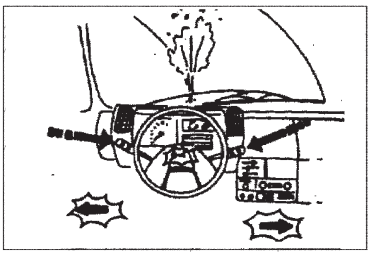
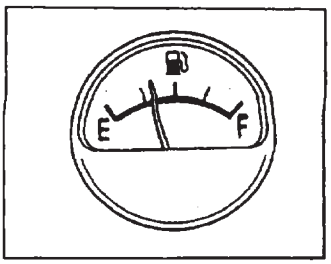
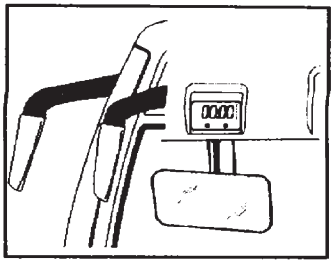


3. Check operation of horns, windshield wipers and turn signals.

4. Check operation of instruments and indicator lights.



5. Check level of fuel in tank against fuel gauge.



6. Check setting angle of rear view mirrors.

BEFORE DRIVING YOUR VEHICLE

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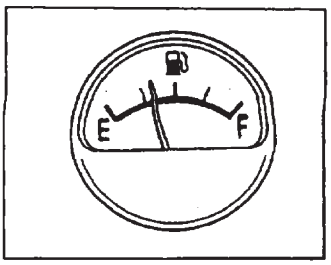

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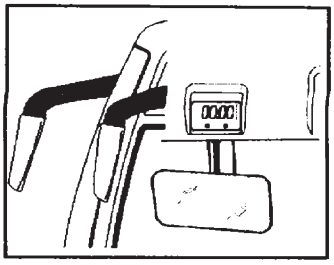

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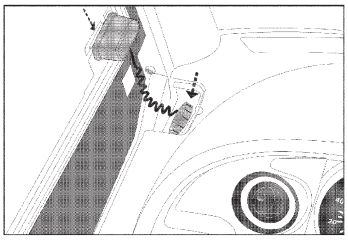
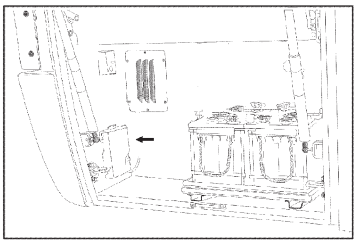
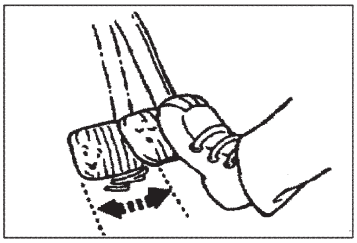


7. Check level of clutch fluid in reservoir.

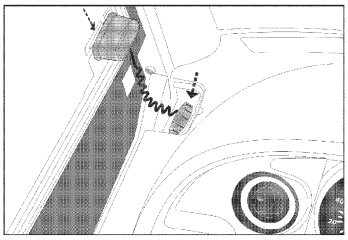


8. Check level of windshield washer solution in washer tank.



9. Check clutch pedal free play, and function.

BEFORE DRIVING YOUR VEHICLE



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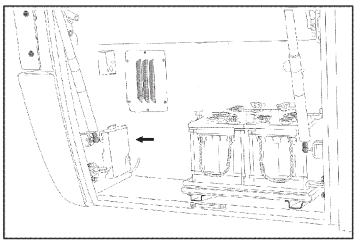

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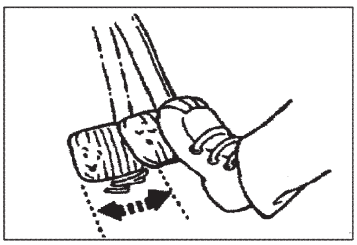

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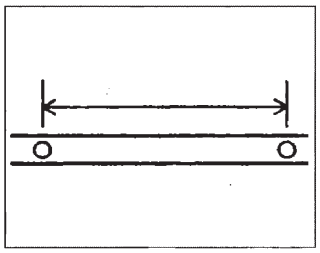
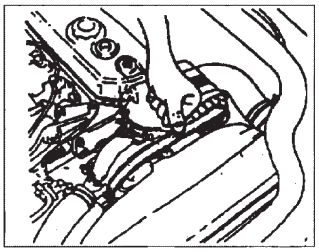
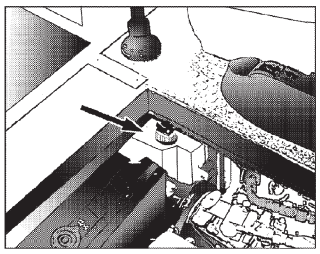


Within engine compartment
1. Check engine oil level.

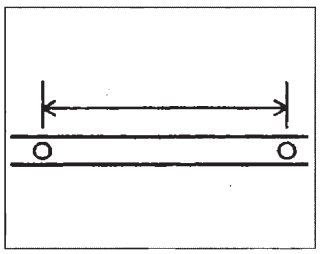


2. Check fan belt tension.

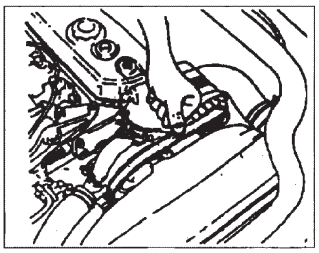


3. Check engine coolant level and radiator cap for looseness.

BEFORE DRIVING YOUR VEHICLE



Within engine compartment
1. Check engine oil level.



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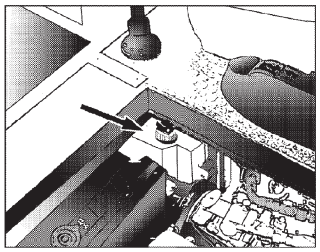

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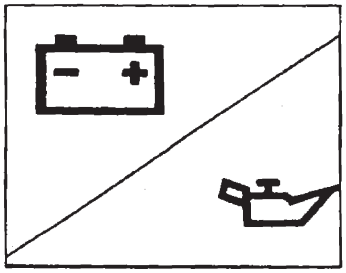
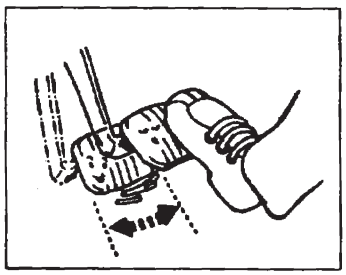
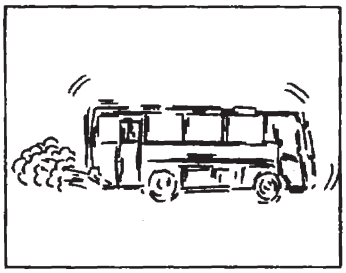


After starting engine

1. With the engine running, check that generator indicator light and oil pressure indicator light go off and remain off.



2. Check brake pedal free play, and function.



3. Check for engine abnormal noise and color of exhaust gases.

NOTE

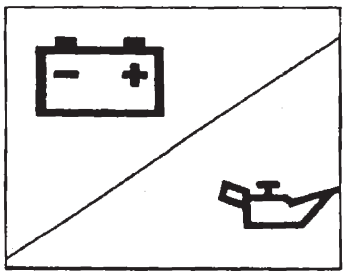
A small amount of white smoke may be emitted from exhaust pipe with PM (Particulate Matter) burned during DPD regeneration. This is not failure. Also, do not perform the manual regeneration indoors with poor ventilation.

White smoke may be emitted during the DPD regeneration after new vehicle runs for a certain distance. This is not failure. Besides, white smoke may not be emitted when the vehicle is new.

Because of exhaust gas purification system, the gas from exhaust pipe smells differently from that of conventional diesel vehicle.

With long continuous idling, the exhaust brake may be activated to prevent white smoke after a certain period of time.

BEFORE DRIVING YOUR VEHICLE



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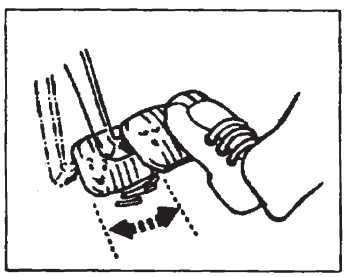

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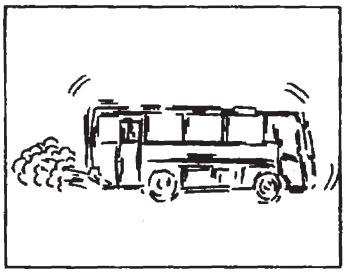

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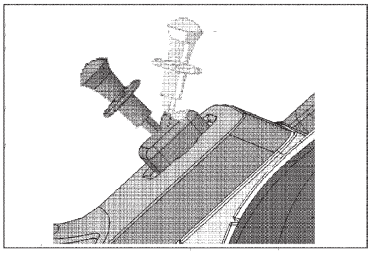
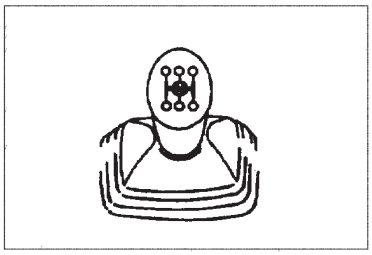
DRIVING

Proper maintenance and driving improves fuel and oil economy, in addition to increasing the useful service life of your vehicle.



PREPARATION STARTING ENGINE

1. Apply the parking brake.



2. Set the transmission in neutral position.

DRIVING

DRIVING

- Preparation starting engine 4-1
- Starting engine 4-2
- Stopping engine 4-3
- Before driving off 4-3
- Parking 4-5
- Driving precautions 4-6
- Driving economy 4-10
- Driving on ice or snow 4-13
- In case of emergency 4-17

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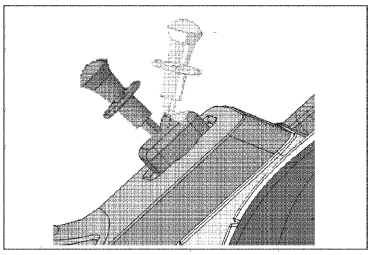

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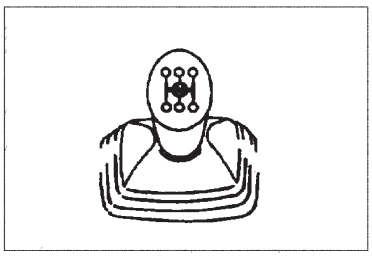

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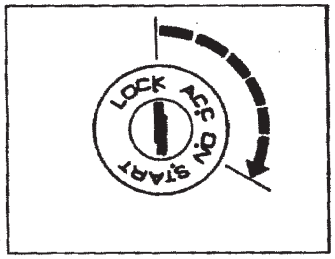
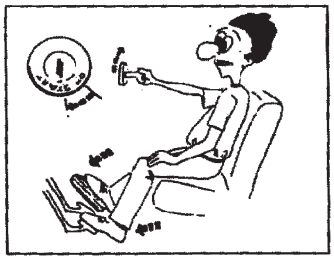
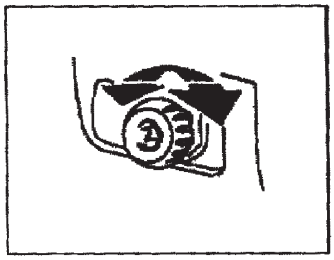






STARTING ENGINE

1. When ignition key is turned to ON position, glow plug indicating light illuminates and goes off after about 0.5 second (with warm engine) to about 4.0 seconds (with cold engine).

CAUTION

Do not depress accelerator pedal before ignition key is turned to ON position. Otherwise, INITIAL FUEL ENRICH may not function well. This, in turn, gives rise to difficulty in starting the engine.

2. Depress fully the accelerator and clutch pedals and turn the ignition key to "START" position right after glow plug indicating light extinguishes.

CAUTION

Do not operate the starter longer than 10 seconds at a time, otherwise the starter and the battery will be adversely effected. If the engine does not start, try cranking the engine after 1-minute break.

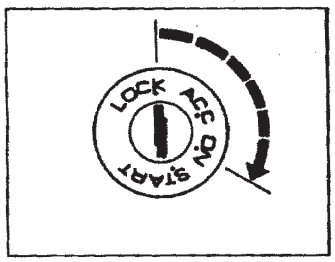
3. Turn idling control knob as much as needed to achieve a smooth idling.

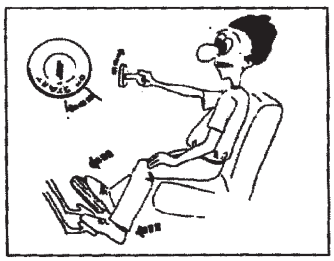
CAUTION

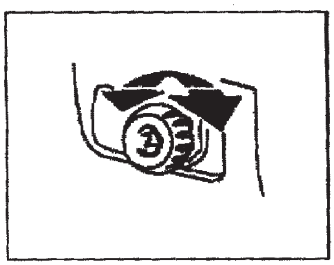
Meanwhile, do not leave the vehicle.

4. After normal operation temperature is achieved, turn the idling control knob to home position.

DRIVING







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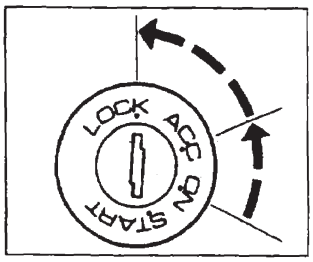
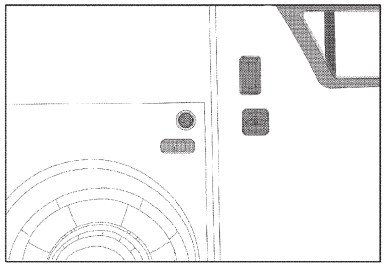


STOPPING ENGINE

1. Turn ignition key to “ACC” or “LOCK” position.

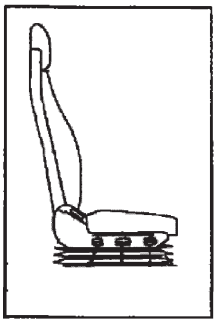
NOTE

If the engine is overheated, do not switch it off immediately; keep the engine running at fast idle for a while.



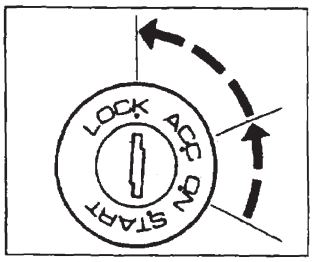
BEFORE DRIVING OFF

1. Lock all doors.



2. Adjust your seat.

DRIVING



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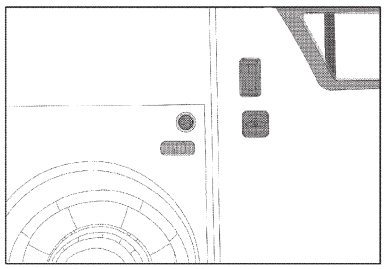

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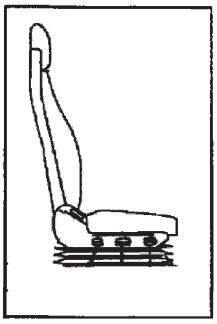
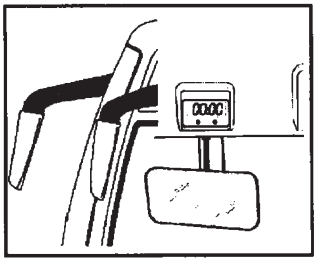
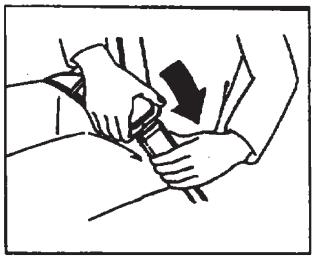


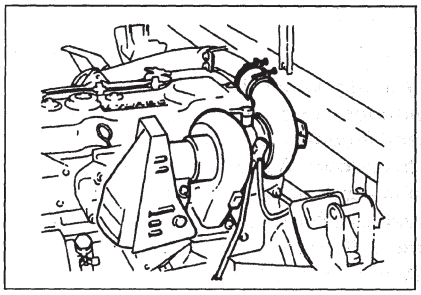
2. Adjust your seat.



3. Adjust the inside and outside mirrors.



4. Fasten the seat belt.

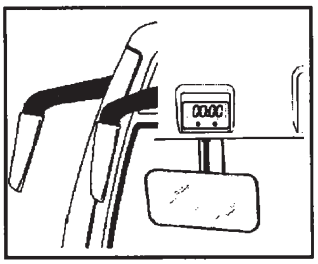


OPERATING PRECAUTIONS FOR TURBOCHARGED ENGINE

STARTING ENGINE

Be sure the bearings of turbocharger turbine and the turning parts are sufficiently lubricated. Do not drive your vehicle before the engine is not reached to normal operating temperature.

DRIVING



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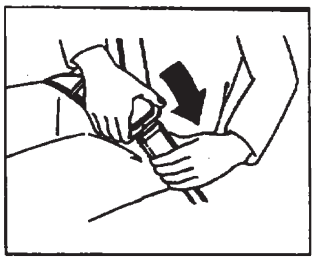

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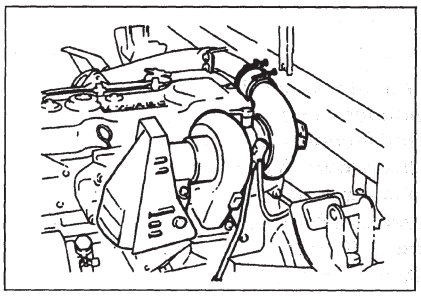

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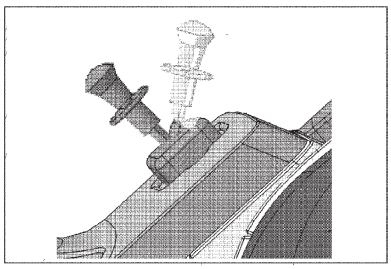


PARKING

Before leaving your vehicle:

1. Apply the parking brake.
2. Parking your vehicle uphill, place the shift lever to 1st gear. Parking your vehicle downhill, place the shift lever to reverse gear.
3. Turn ignition key to “LOCK” position.
4. Remove the ignition key.
5. Close all windows and lock all doors.
6. Check to see the lamps are off.
7. If the vehicle is parked on a grade, place V-blocks underneath the wheels.

STOPPING ENGINE

CAUTION

Let the engine idle for at least three minutes till it cools down after a long journey. This enables the speed of the turbocharger turbine decrease down to engine idling speed. In this case, the oil pressure becomes suitable to provide adequate lubrication and thus, the useful service life of turbocharger turbine bearings increases.

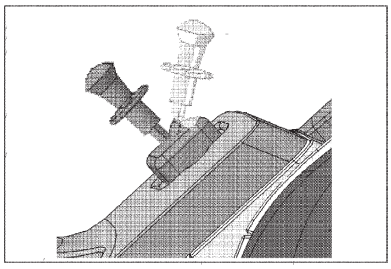
WARNING

- Never leave a child alone or unattended in the vehicle. The child could activate the vehicle controls, resulting in an accident.
- Do not drive through, idle or park your vehicle over combustible materials, such as dry grass or leaves. They could come contact to hot exhaust components and ignite.

While filing the air tanks which have been emptied for some reason (front and rear brakes is, emergency brake's and other thank) stay in he driver seat. Other wise, system parts which have been activated before but cannot function due to lack of air, may become activated lite releasing of emergency brake,opening of the doors or raising of the suspansion system.

- Do not leave your vehicle unattended with the engine running. If the engine should overheat, you would not be there to reach to the temperature warning light or gauge. This could result in costly damage to your vehicle and its contents.

DRIVING



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DPD (DIESEL PARTICULATE DEFUSER)

The DPD (Diesel Particulate Defuser) is the system which purifies PM (Particulate Matter) in the exhaust gas. This collects PM into the DPD filter and regenerates the filter (burns PM) automatically.
Always use diesel fuel. Use of low quality fuel may adversely affect to the engine parts, and cause failure. Use of other than specified fuel may adversely affect to the engine or emission control system and cause failure. Especially for the common rail type engine, always use low sulfur diesel fuel (50 ppm or less of sulfur content).
If other than specified diesel fuel is used on the vehicle with the DPD, the vehicle may not conform to emmision regulation.
Do not modify the DPD and exhaust pipe. Modification of the direction, length or diameter of exhaust pipe will adversely affect to exhaust gas purification system. If modification is needed because of equipment, contact Isuzu dealer. The DPD automatically regenerates (burns) when a certain amount of PM (Particulate Matter) accumulates in the filter. However, this may not complete depending on driving conditions. In this situation, the DPD indicator will blink. Perform the manual regeneration according to the procedure. Besides, this is to restore the DPD function, not failure.

Automatic regeneration

The DPD automatically collects PM from exhaust gas in the filter, and regenerates the filter when a certain amount of that accumulates.

WARNING

To prevent fire, ensure that there is no combustible material near the muffler, the DPD or the exhaust pipe. Also, be careful not to burn yourself by the hot exhaust gas.

NOTE

Operating noise is emitted during automatic regeneration and also when it is deactivated; this does not mean that a breakdown has occurred.

Depending upon the driving conditions, the regeneration of PM collected in the filter may not be completed. If the DPD indicator light in the meter flashes, perform the manual regeneration according to the "Manual regeneration procedure".

During the DPD automatic regeneration, the engine speed may increase and exhaust brake may be activated when the vehicle is stopped with idling. This is not failure.

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DPD Switch DPD

This switch is to start the manual regeneration.
When the DPD indicator light in the meter is flashing (about once per second), the manual regeneration is required as soon as possible. When parking the vehicle at the completion of operation, for example, perform the manual regeneration according to the "Manual regeneration procedure".
If you continue driving the vehicle while the light is flashing (about once a second), the flashing speed will change (to three times a second). If you continue driving the vehicle in this condition, the DPD is liable to break down, so stop the vehicle in the safe place immediately and perform the manual regeneration.

CAUTION

If you continue driving the vehicle without performing the manual regeneration, check engine indicator light will light to indicate that you must contact your dealer to have the DPD repaired.

For the vehicle equipped with DPD, Isuzu recommends engine oil that supports DPD (low ash oil). Use of low ash oil lengthens the maintenance interval of the DPD filter.

NOTE

The DPD performs regeneration automatically when a certain quantity of PM accumulates in the filter. Depending upon the running conditions, however, the regeneration may sometimes not be completed. In this case, the DPD indicator light will flash, so promptly perform the manual regeneration according to the "Manual regeneration procedure".

This operation is intended to restore the function of the DPD. It does not mean that a breakdown has occurred.

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For the vehicle equipped with DPD, Isuzu recommends engine oil that supports DPD (low ash oil). Use of low ash oil lengthens the maintenance interval of the DPD filter.

NOTE

The DPD performs regeneration automatically when a certain quantity of PM accumulates in the filter. Depending upon the running conditions, however, the regeneration may sometimes not be completed. In this case, the DPD indicator light will flash, so promptly perform the manual regeneration according to the "Manual regeneration procedure".

This operation is intended to restore the function of the DPD. It does not mean that a breakdown has occurred.

Manual regeneration procedure

1. Stop the vehicle in a safe place where there are no dead leaves, scraps of paper or other substances that readily burn.

WARNING

To prevent fire, ensure that there is no combustible material near the muffler, the DPD or the exhaust pipe. Also, be careful not to burn yourself by the hot exhaust gas.

2. Put the gearshift lever in the "N" position, and pull the parking brake lever firmly.
3. Idle the engine.
   If you used the idling control knob to increase the engine speed, return it all the way to the left to reduce the engine speed.
4. Press the DPD switch.
   The flashing of the DPD indicator light changes to a steady indication, the engine speed automatically increases and the regeneration starts. Stay near the vehicle during the regeneration. The regeneration is normally completed in about 20 minutes. When the DPD indicator light goes off, the regeneration is complete, and the vehicle can be run normally.

WARNING

During manual regeneration, white smoke may be emitted, so do not perform the manual regeneration in a poorly ventilated room.

NOTE

- ***The time it takes for the manual regeneration to complete differs depending upon the external temperature.***
- ***During DPD regeneration, the exhaust throttle is in operation. Operating noise is emitted while the exhaust throttle is operating and also when it is deactivated; this does not mean that a breakdown has occurred.***
- ***During the manual regeneration, the engine speed may temporarily return to its initial speed, causing the exhaust throttle to be deactivated. However, while the DPD indicator light is lit, regeneration is still taking place, so continue to perform regeneration until the light goes off.***
- ***White smoke may sometimes be emitted from the exhaust pipe for a short period depending on PM (Particulate Matter) combustion during regeneration; this does not mean that a breakdown has occurred.***
- ***Manual regeneration is completed more quickly after the vehicle has stopped driving, compared to when the engine is cold.***
- ***During manual regeneration, the coolant temperature may sometimes rise.***

DRIVING

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Interrupting manual regeneration

If you want to interrupt manual regeneration, press the DPD switch once again.
The DPD indicator light will changed to flashing, that the vehicle can be driven. In this case, it is necessary to perform manual regeneration once again. Repeat manual regeneration procedure from step 1 as quickly as possible.

NOTE

Manual regeneration will be interrupted in the following operation.

- ***Accelerator is ON.***
- ***Gear-in (with Smoother)***
- ***Vehicle speed is ON.***

Operation noise caused by interruption is bigger when depressing the accelerator pedal than other operation. This is not failure.

Free manual regeneration procedure

Manual regeneration can be performed when the engine (coolant) and exhaust pipe are warm after transport.

WARNING

To prevent fire, ensure that there is no combustible material near the DPD, exhaust pipe or muffler.

Be careful not to burn yourself on the hot exhaust gas.

CAUTION

- ***Perform free manual regeneration to completion without interruption.***
- ***Stay near the vehicle during the regeneration.***

1. Stop the vehicle in a safe place where there are no dead leaves, scraps of paper or other substances that readily burn.
2. Idle the engine, then move the shift lever to the "N" position, and pull the parking brake lever firmly.

NOTE

If you used the idling control knob to increase the engine speed, turn it all the way to the left to reduce the speed to normal idling condition, and then perform the DPD regeneration.

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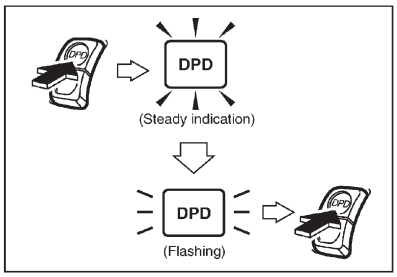

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NOTE

Until a certain quantity of PM has accumulated in the DPD filter, the DPD indicator light will not change from a steady indication to a flashing indication, even if you continue to press the DPD switch. In this case, there is no need to perform DPD regeneration, so regeneration will not start even if you press the DPD switch.

4. The DPD indicator light changes to a steady indication, the engine speed automatically increases, and DPD regeneration starts. Regeneration is normally completed in about 20 minutes.
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WARNING

During manual regeneration, white smoke may be emitted, so do not perform the manual regeneration in a poorly ventilated room.

CAUTION

In the event that free manual regeneration is interrupted due to the vehicle starting to move, for example, the DPD indicator light will change to a flashing indication. In this case, promptly stop the vehicle, press the DPD switch again, and wait until the completion of free manual regeneration. Do not continue to drive the vehicle while the light is flashing.

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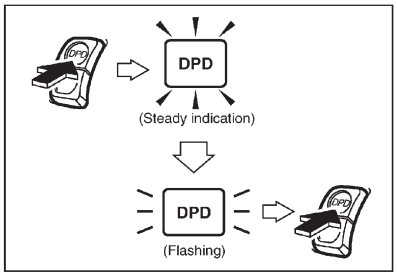

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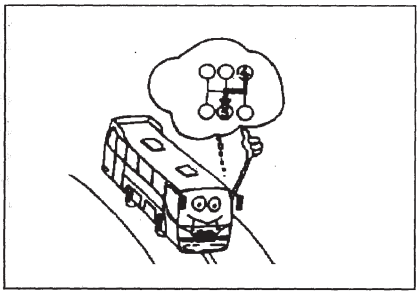
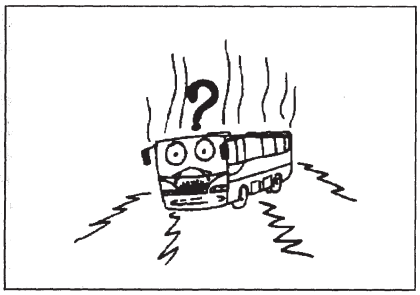
- Do not leave your vehicle unattended with the engine running. If the engine should overheat, you would not be there to reach to the temperature warning light or gauge. This could result in costly damage to your vehicle and its contents.



DRIVING PRECAUTIONS

1. Do not allow racing of the engine excessively and pay attention to place the shift lever to lower gears while driving downhill.



2. If abnormal noise is heard or smell is felt while driving, stop the engine and check to locate the cause of trouble.

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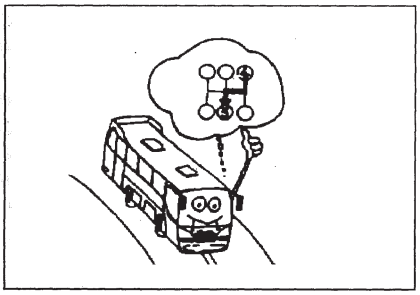

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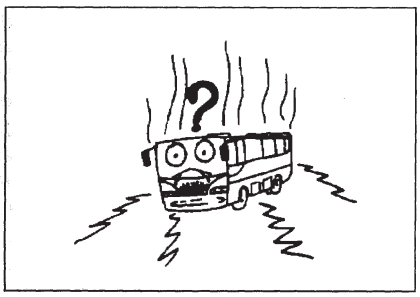

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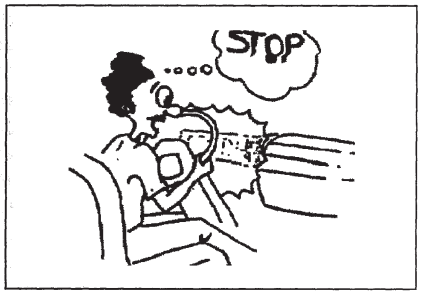

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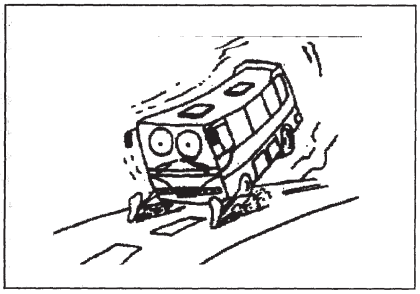

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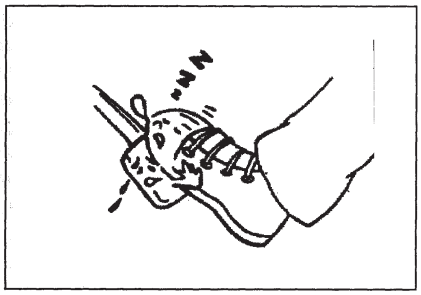
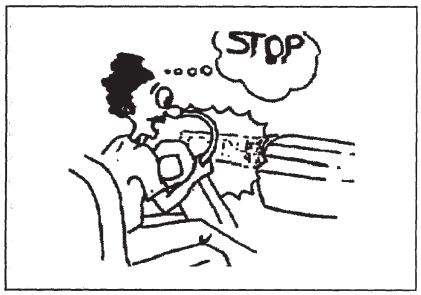


5. Do not drive with your foot resting on the clutch pedal as it produces a partly disengaged condition, causing premature wear of clutch facing.

DRIVING



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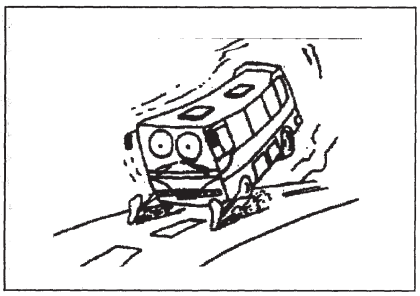

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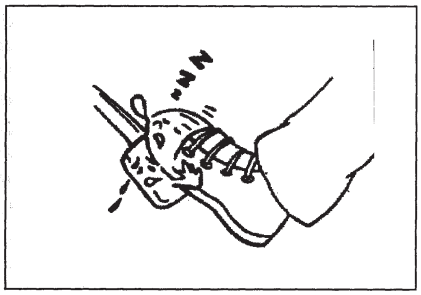

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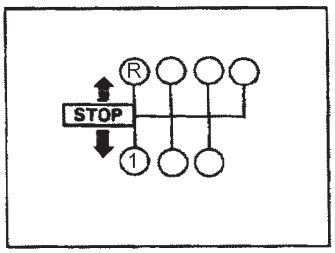
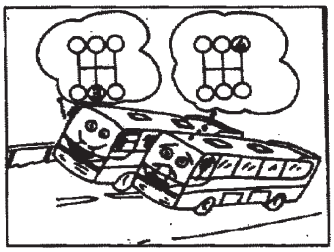
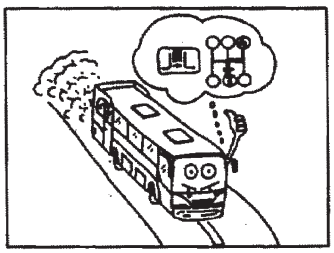


6. The vehicle should be completely stopped before shifting from forward gear to reverse or from reverse to forward.



7. When climbing a slope, shift to lower gear to relieve the engine from overload before the engine begins to lug.



8. When descending a slope, shift into lower gear to gain retardation effect of the engine.
   Use the exhaust brake when decending a slope

   Do not switch on the exhaust brake when driving on slippery road otherwise wheels may lock.

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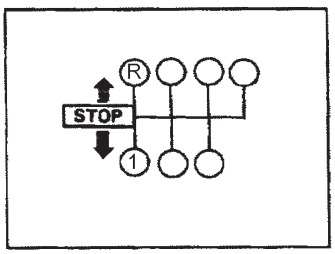

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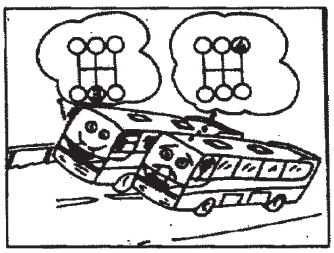

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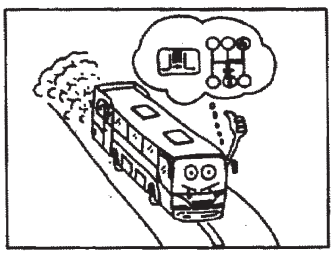

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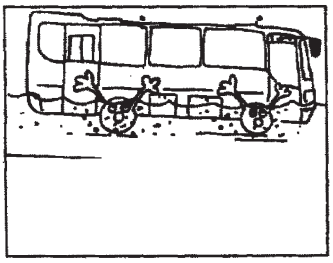
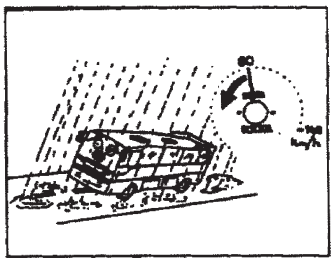
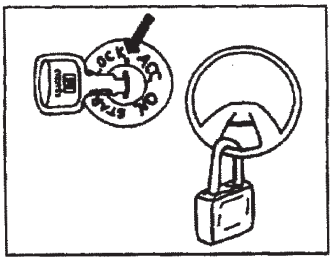


9. If the road is flooded, slow down your vehicle to prevent any damage on the engine or other mechanical components. In case of any ingress of water in differential case or transmission case, replace the oils.

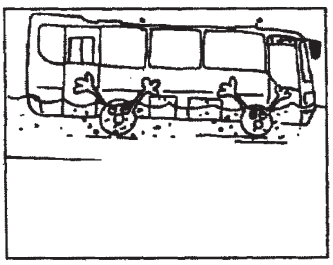


10. Drive carefully after running under heavy rain or driving over flooded road, since the braking efficiency is reduced if the brake linings are wetted.



11. Never turn ignition key off while driving. Otherwise, the brake booster does not operate and the brake efficiency would be reduced. It is very dangerous to turn ignition key to "LOCK" position while driving because of locking the steering wheel.

DRIVING



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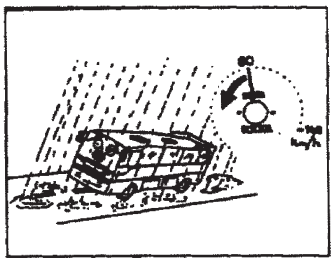

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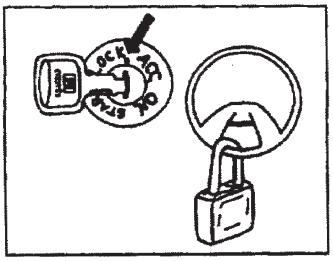

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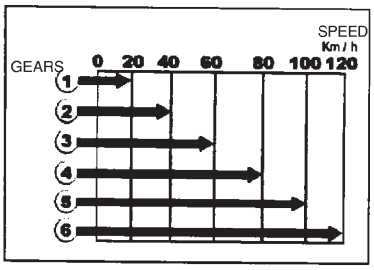
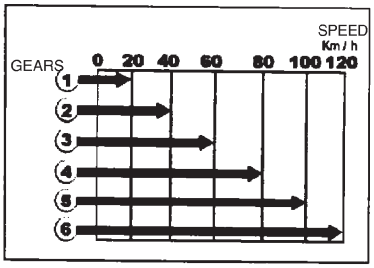


DRIVING FOR ECONOMY

1. Driving your vehicle with excessive speed and driving with low gears will cause increased fuel consumption.
2. After acceleration, shift to a higher gear and release the clutch pedal slowly.

DRIVING



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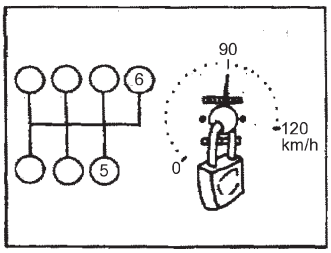
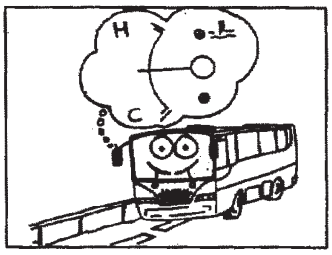
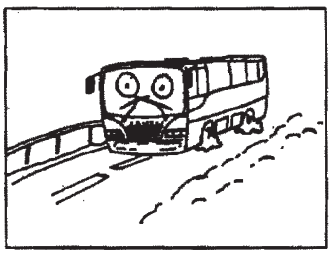


3. It is highly recommended to keep your speed as constant as possible after shifting into 5th and 6th gears.

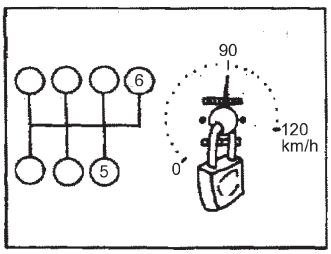


4. Always drive your vehicle to have coolant temperature kept within normal level as much as possible.



5. Insufficiently inflated tires cause increased fuel consumption.

DRIVING



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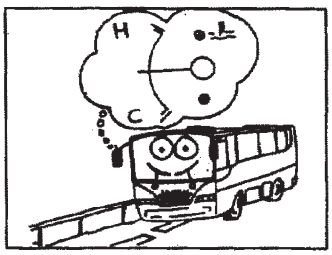

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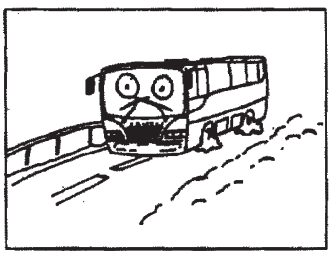

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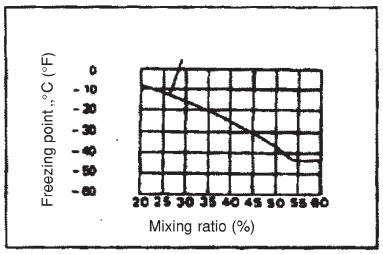
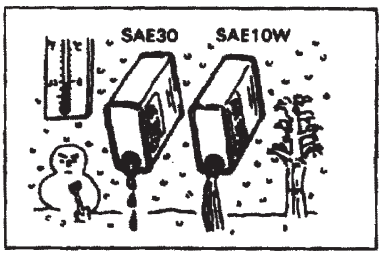
OPERATION AND CARE IN WINTER

Use of anti-freeze (extended coolant: ethylene giycol based)

When the cold seasons are coming or vehicle is placed to cold areas, you should make sure that engine coolant is protected against freezing.



Proper mixing ratio can be determined according to refering to the chart.
It is the owner's responsibility to make the freeze protection, at a level, commensurate with the temperatures which may occur in the area of vehicle operation.



Engine oil

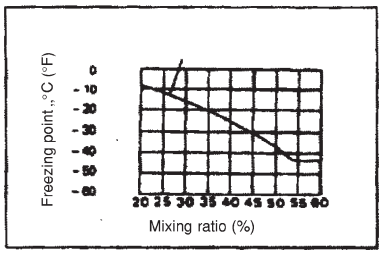
The engine oil tends to harden with lowering the temperature. Use engine oil with viscosity selected to suit the ambient temperature.

DRIVING

OPERATION AND CARE IN WINTER

Use of anti-freeze (extended coolant: ethylene giycol based)

When the cold seasons are coming or vehicle is placed to cold areas, you should make sure that engine coolant is protected against freezing.



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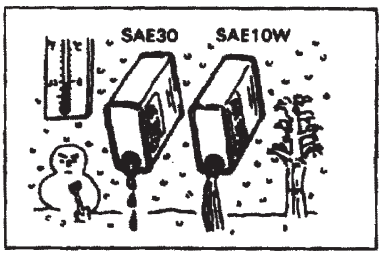

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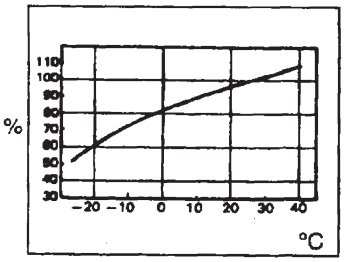

Batteries:
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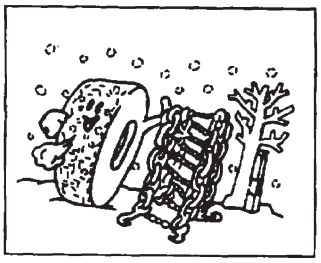


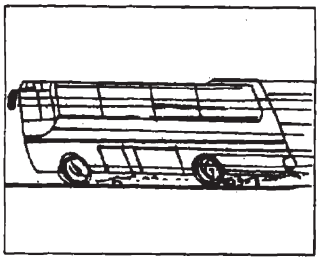
DRIVING ON SNOW OR ICE

1. The use of chain or snow tires is recommended.

   You may use rear suspension lifting process to make tire chain installation easier.

WARNING

Immediately after the engine has stopped running, the exhaust pipe and the muffler are hot, so be careful not to touch these parts. Also do not perform work on a vehicle fitted with a DPD unit while manual regeneration is taking place as the temperature of the exhaust gas will be high.

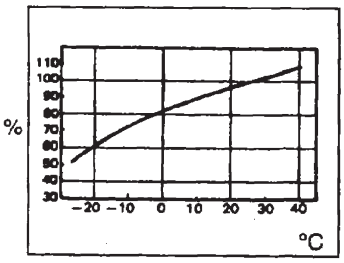


2. Avoid high speed, hard acceleration, abrupt braking and sharp steering. Engine oil thickens as the engine oil temperature decreases. Be sure using engine oil selected in accordance with the ambient conditions.

CAUTION

Some components are located under the vehicle.
While driving on snowy or muddy road, these components might be clogged by ice, snow or mud and it may adversary effect proper operation of this components. Please keep clean these parts from contamination

DRIVING



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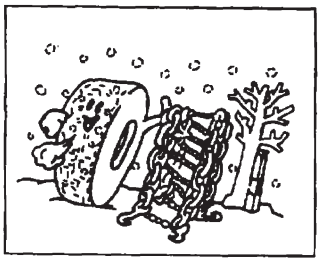

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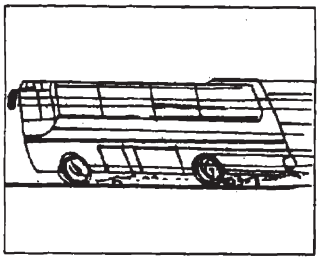

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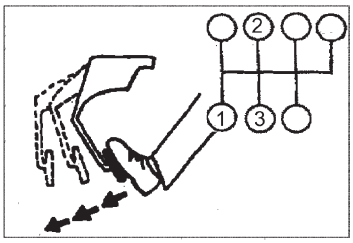
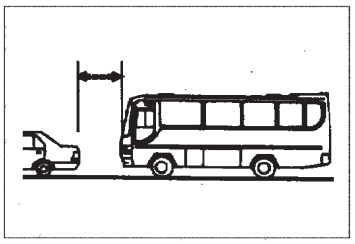
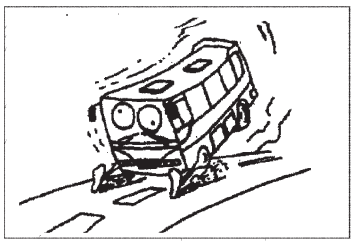


3. Select lower gears to make use of retardation effect of the engine. Depress the brake pedal sparingly.



4. Drive with a sufficient distance between you and the vehicle ahead.



ANTILOCK BRAKE SYSTEM (ABS)

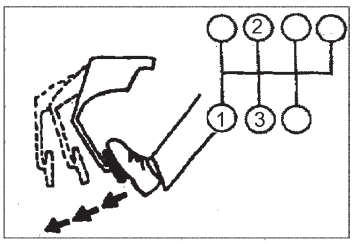
"ABS" warning light will come on when you start the engine, and must go out in a few second.

If the light stays on, or comes on while the driving, a problem may have occurred with your anti-lock brake system. Please contact your dealer for inspection and repair.

The antilock brake system is designed to prevent lock-up of the wheels

This occurs only during braking which would have caused one or more wheels to lock.

DRIVING



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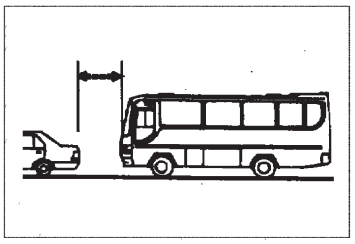

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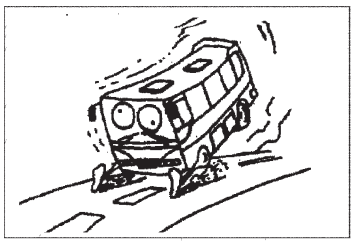

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ABS improves the vehicle active safety but can not extend physical limits, e.g. please keep a safety distance from vehicle in front, unsuitable speed or excessively fast cornering can not be compensated for by ABS.
When turn the ignition key to ON position, some signals can be heard which is normal system check of ABS operation. While ABS working, a slight ticking or propping noise may be heard from the brake system. It means that ABS applied automatically. To use ABS, don't pump your brakes. Just hold the brake pedal down and let ABS work for you.
ABS control does not operate at low speeds(below approx.10km/h).

WARNING

In case of faults the driver has to drive carefully. In exraordinary circumstances the brake performance can be reduced. The residual brake function is guaranteed. Faults have to be maintained soon in order to lower the probability of additional faults and their possible consequences.
Use tires of the specified size of the same brand and with the same groove patterns (including snow or other winter tires) for all four tires.
Using different types of tires will result in a a longer stopping distance and reduced stability.
Maintenance has been done by authorised service.

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ASR(Anti Spin Regulator)

In addition to the ABS control, the vehicle is equipped with an ASR (resp. ATC-Automatic Traction Control-different names for identical function). The ASR function avoids respectively reduces the amount of spinning wheels (drive slip) in a range suitable for good traction and stability.
Turn the starter key to ON position. The ASR warning light comes on and normally goes off when the engine is started.
-If one driven wheel begins to spin, ASR begins operate automatically and indicator comes on.
-While you drive the vehicle, if ASR indicator comes on, please decrease the vehicle speed.

If the driving wheels are slippery and the vehicle does not move, please do not push accelerator pedal fully.

WARNING

ECU (Electronic Control Unit) of ABS/ASR which is located in left front luggage compartment; water penetration must be avoided.

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EMERGENCY CASES

Emergency stops:
In case of unavoidable stop on the road, try to pull your vehicle over to the right side of the road as far as possible.

Apply the parking brake and be sure putting hazard warning lamps using reflectors during either day or night.

Engine overheating:
The following are the signs of an engine overheating:

- The pointer of coolant temperature gauge enters in “H” region.
- Engine knock will be heard excessively.
- Engine will loose traction.
- Vapor or boiling water will squirt out of radiator.

If you notice that the engine is overheating..

- Stop the vehicle, but do not open the engine inspection cover if you see or hear the vapor or hot engine coolant is coming out of engine compartment. Wait until no vapor or hot engine coolant that is coming out is seen or heard before opening the engine inspection cover. Then, open the engine inspection cover to provide proper ventilation.
- Let the engine idle with a speed slightly higher than idling speed (about 1500 rpm). If engine coolant is leaking, stop the engine immediately.
- Let the engine and radiator cool down.
- Remove the radiator cap carefully.

• When the engine is cold, check the engine coolant level in the radiator. Add coolant to the radiator and coolant container up the indicated level mark, if necessary.

WARNING

- To prevent scalding, DO NOT remove the radiator cap while the engine and radiator are still hot. Vapor or hot coolant may gush out under pressure, if the cap is removed too early.
- Ethylene glycol in engine coolant is combustible under certain conditions. Care should be observed not to spill engine coolant on exhaust system or engine components when adding.

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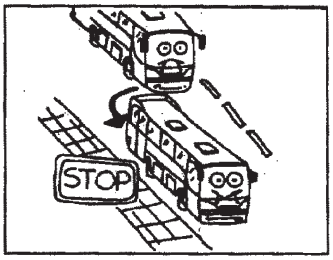

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1. If you must stop your vehicle on the road during an emergency, try to pull your vehicle over to the right side of the road as far as possible and do not park your vehicle on the lane.
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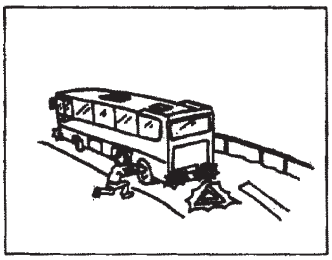

Emergency switch

The emergency switch which is located on the left hand side of the driver side
Is used to immediately interrupt the connection between the battery and the vehicle.

Electrical system in an emergency. Only the tachograph, door, hazard warning lights remain operational.

-Never actuate the emergency switch when the vehicle is being driven!

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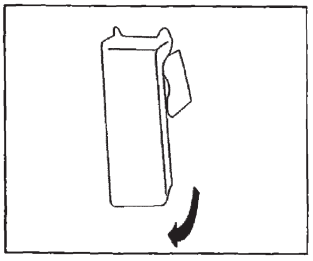

Switching off

-Bring the vehicle to a standstill
-Apply the parking brake
-Turn the ignition key counter clock-wise up two the stop (position '0')
-Open the red safety flap
-Flick the toggle switch upwards

The engine stops. The connection between the battery and the vehicle
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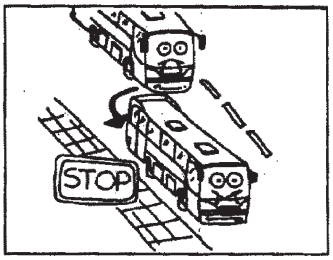
Switching on

Close the red safety flap and make sure you hear it clip in the emergency
off switch is switched on automatically

DRIVING



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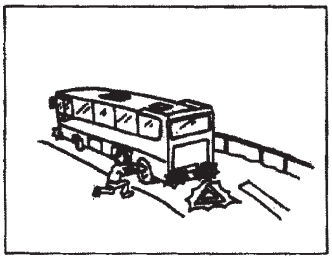

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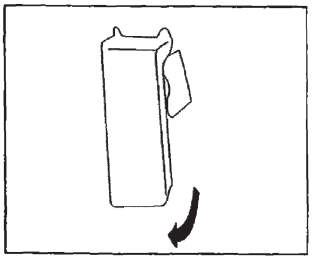

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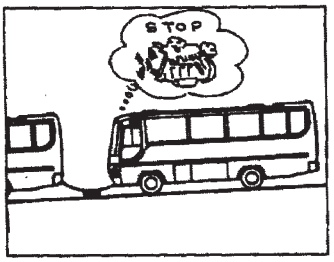
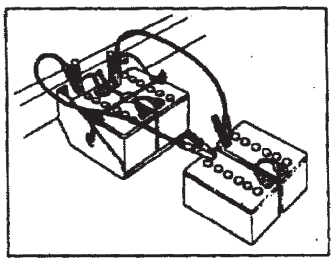


Emergency starting:

WARNING

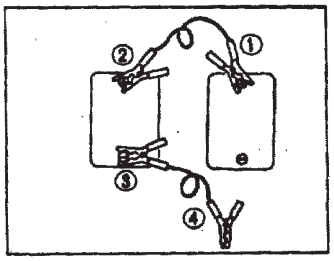
Never tow the vehicle for starting the engine, otherwise the forward surge when the engine starts may give rise to collision with tow vehicle. Besides, such operation may be also harmful to the engine or other mechanical components.



To start the engine when the battery is discharged, use another battery of the same nominal voltage, i.e., 24 volts, as the discharged battery.

WARNING

Observe extreme care when handling battery to avoid serious personal injury and damage to your vehicle, which might result from battery explosions, acid burns, electric burns or damaged electric components.



Connecting procedures:
The engine can be started with the battery of another vehicle using jumper cables.

1. Use a booster battery with the same nominal voltage rating, i.e., 24 volts.
2. Connect the jumper cables to the terminals of the batteries in the following sequence:
   - ① To positive terminal of the discharged battery
   - ② To positive terminal of the booster battery
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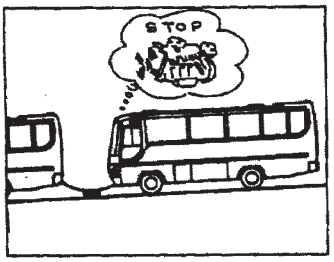
DRIVING



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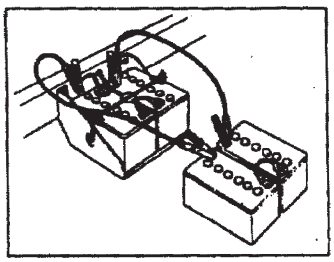

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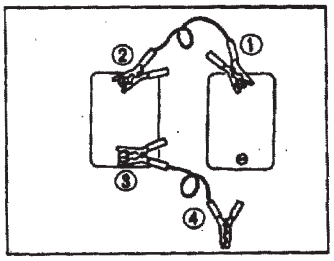

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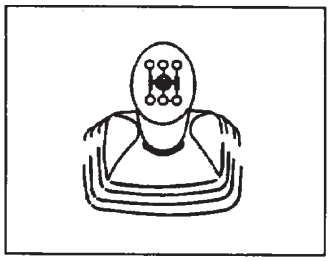
3. After connecting the cables, start the engine of the booster battery's vehicle.
4. Raise the engine speed of the booster battery's vehicle slightly, then start the engine of the dead battery's vehicle.
5. After the engine is started, disconnec the cables in the reverse sequence of connection.

CAUTION

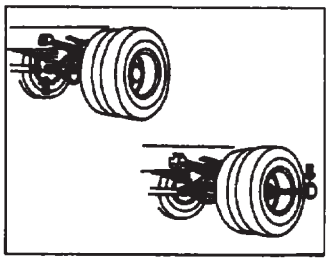
Never connect the cable between the positive and negative terminals. Do not remove the battery cables from the terminals while the engine is running. It may result in troubles in the electrical system.



Towing

The following points should be noted when towing a disabled vehicle.

1. If the transmission is in normal working condition, shift into neutral position.



2. If the transmission is found to be out of order, disconnect the propeller shaft at the rear axle flange and fasten the end to the chassis frame.
3. Release the parking brake by hand brake lever or mechanically

(see page 4 - 21)

CAUTION

Then, connect a towing rope (safety chains or cables) between towing hooks equipped on the tow vehicle and broken vehicle.
Tow the vehicle for a distance 80 km or less with a speed of 40 km/h or less.

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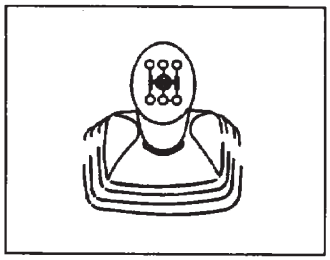

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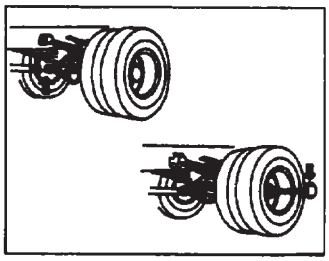
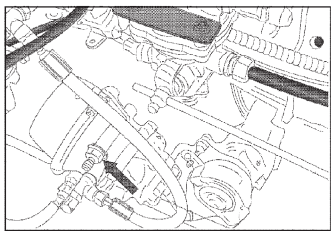


2. If the transmission is found to be out of order, disconnect the propeller shaft at the rear axle flange and fasten the end to the chassis frame.
3. Release the parking brake by hand brake lever or mechanically

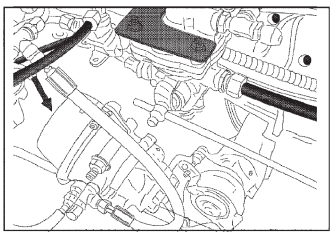
(see page 4 - 21)

CAUTION

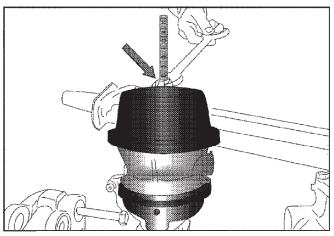
Then, connect a towing rope (safety chains or cables) between towing hooks equipped on the tow vehicle and broken vehicle.
Tow the vehicle for a distance 80 km or less with a speed of 40 km/h or less.



a



b



c

Mechanically Releasing of the spring loaded diaphragm cylinders(parking brake cylinders)

In the case of low hand brake (parking brake) air pressure, parking brake indicator light comes on. If air pressure level is lower than 5 bar, parking brakes attempt to slow down the vehicle. Consequently rear wheels are locked and vehicle stopped.

Parking brake diaphragm cylinders can be released mechanically as follows:

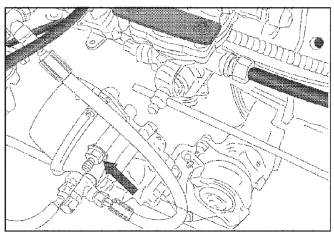
Caution

Before releasing process, protect the vehicle to move by placing chocks against the wheels.

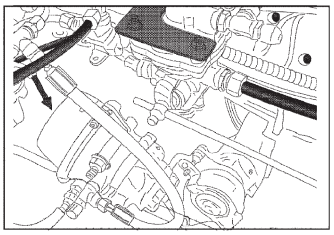
1) Move the parking brake lever to the parking position.
2) Remove the stud and nut from their housing (figure a)
3) Insert the stud to the rear end of the cylinder (figure b)
4) Make sure that stud is correctly placed
5) Turn the stud clockwise about 90° for locking
6) Install the washer and nut onto the stud and turn it clockwise drection by means of a wrench (figure c)
7) Diaphragm spring will be loaded and parking brake will be released
8) To fully release the parking brake, stud should be inserted about 40 mm
9) This process must be repeated both cylinders

please pay attention that parking brake of your vehicle is out of order now.

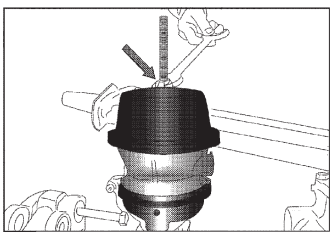
DRIVING



a



b



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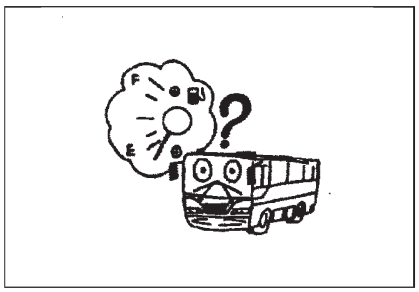
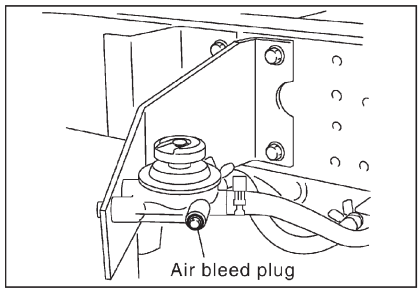
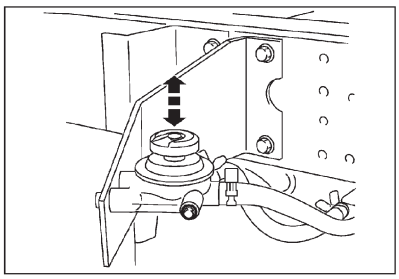






Bleeding of the fuel system

If the fuel tank has gone empty, there is a chance that air has been allowed into the fuel system. With air in the fuel system, smooth flow of fuel into the engine is interrupted. To prevent this, bleeding of the fuel system should be performed.

CAUTION

BLEEDING OF FUEL SYSTEM

If you have run out of gas, air has got into the fuel system. This makes it hard to start the engine. Bleed air from the fuel system by using the air bleed plug on the side of the priming pump.

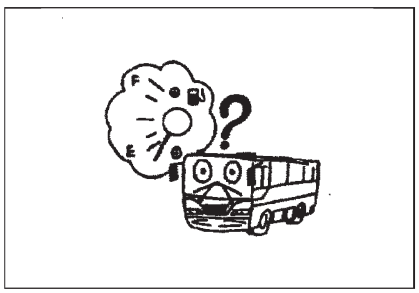
Before starting engine

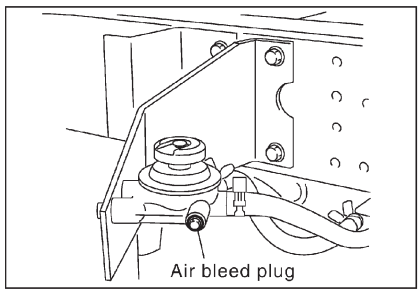
1. *Put a tray to catch fuel under the air bleed plug on the side of priming pump, and then loosen the plug sufficiently.*
2. *Operate the priming pump up and down 20 times or more until no fuel that contains air comes out from the air bleed plug. (The number of times is the reference value.)*
3. *Tighten the plug securely, and wipe off fuel around the plug completely.*
4. *Operate the priming pump up and down another 10 times or more to feed air from the fuel system to the fuel injection pump.*
5. *Turn the starter to start the engine.*

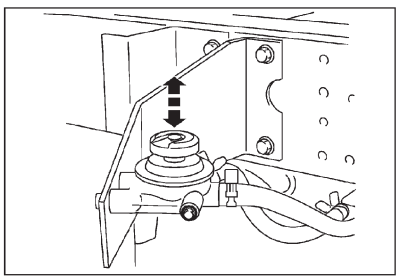
After starting engine

1. *Without depressing the accelerator pedal, turn the starter to start the engine.*

DRIVING







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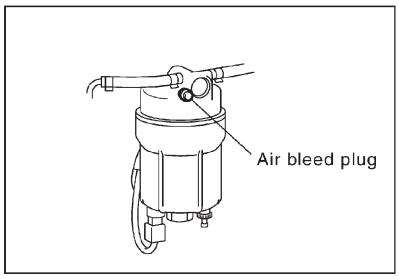
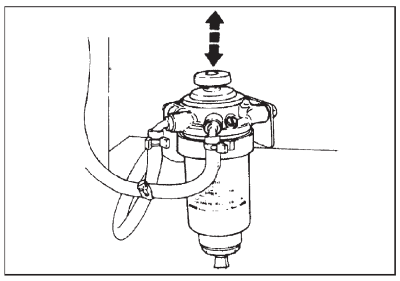


2. ***After the engine start-up, keep idling for five seconds.***
3. ***Slowly turn the idling control knob fully clockwise, and hold it for three minutes.***
4. ***Fully depress the accelerator pedal to rev up to the maximum speed. (Repeat this operation several times.)***
5. ***Turn the idling control knob counter clockwise to return to the idle speed.***

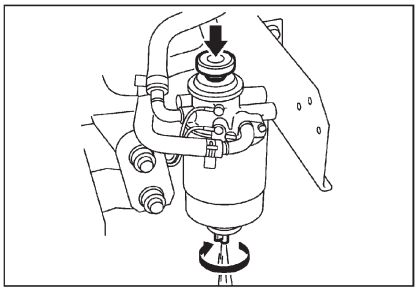
Insufficient air bleeding may cause engine malfunction. Be sure to perform this procedure after starting the engine.



Draining of the water separator

If the fuel filter warning light lights up, drain the water accumulated in the fuel filter.
If use is continued with the warning light on, there is danger of damage to the fuel injection system. To protect the engine when replacing elements, be sure to use a pure filter.

1. Find a safe place to park the vehicle.
2. Open the engine inspection cover and place a container (approximately 0.2 liters capacity) beneath the drain plug on the separator.

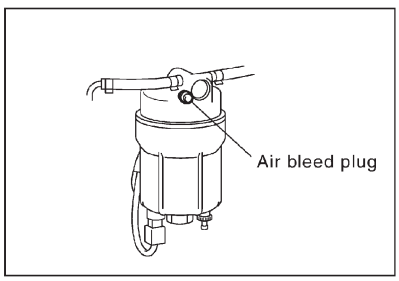


3. Loosen the drain plug by turning it counterclockwise and push the priming pump down about ten times until the water is drained.
4. After draining, securely tighten the drain plug by turning it clockwise and push the priming pump up and down several times.
5. After starting the engine, check to see that there are no fuel leaks from the drain plug. Also check that the water separator indicator has turned off.

CAUTION

If the water separator requires frequent draining, have the fuel tank drained at your nearest Isuzu dealer.

DRIVING



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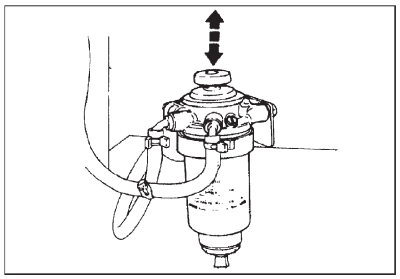

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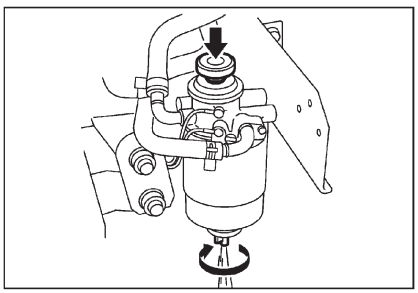

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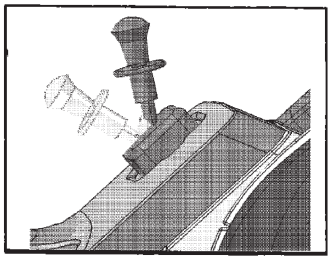
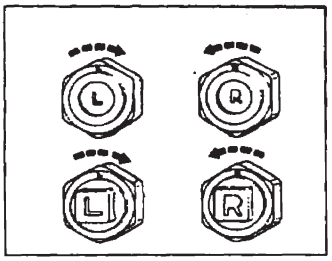


Jacking instructions and changing a flat tire.

WARNING

To help avoid personal injury:
- Follow all lifting and stowage instructions.
- Use the jack only for lifting this vehicle during a wheel change.
- Never get beneath the vehicle when using the jack.
- Always securely restow the spare tire (or a flat tire), and all jacking equipment.
- Do not start or run the engine while vehicle is on the jack.
- Make sure the jack is positioned on a level and solid surface.

Preparations:
1. Park on a level surface and set the parking brake firmly.
2. Set the transmission in “REVERSE”.
3 Activate the hazard warning.
4. Block the wheel diagonally opposite the jacking position.

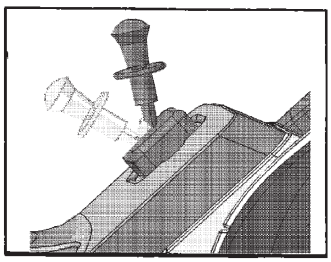


5. Slightly loosen but do not remove wheel nuts.

NOTE

The wheel nuts on the right side wheels hove right hand threads and the wheel nuts on the left side wheels have left hand threads.

DRIVING



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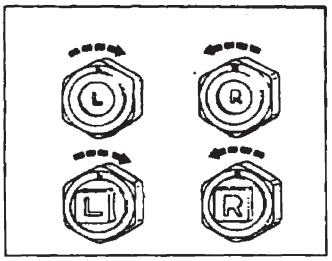

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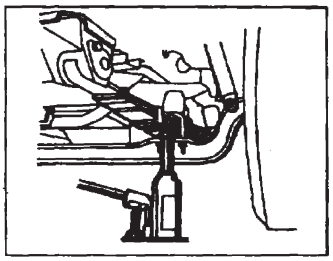
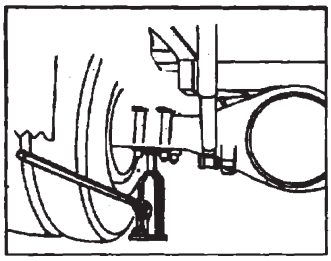


6. Place the jack at recommended jacking point.

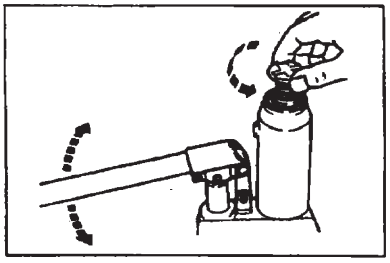
CAUTION

- **Never position the jack at points other than those specified.**

Front wheel:
Place the jack under the leaf spring.

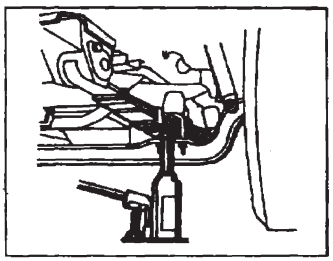


Rear wheel
Set the jack as shown in the figure



Usage of jack
To jack up:
If the jack up point is high, extend the jack head by turning it counter clockwise.
Insert the jack bar as shown in the figure and move it up and down.

DRIVING



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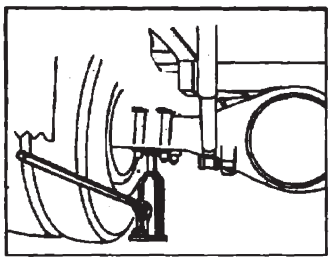

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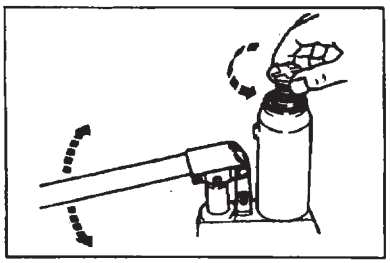

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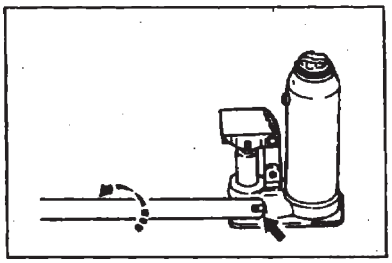
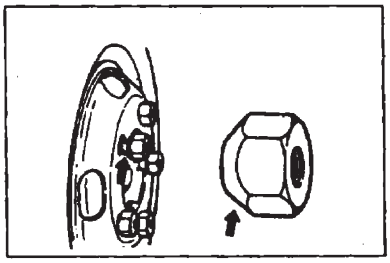
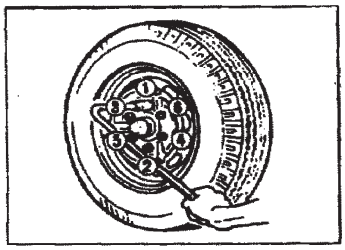


To lower:
Slowly turn the bleeder screw counter clockwise with the jack bar as shown in the figure.

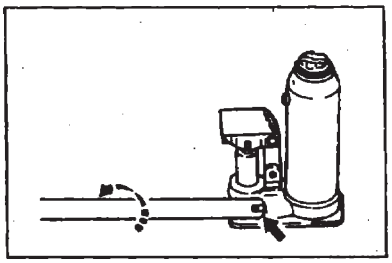


Wheel replacement:
1. Jack up the vehicle so the tire just clears the surface, remove the wheel nuts and wheel, then install the spare wheel.
2. Install the wheel nuts with cone shaped end toward the wheel, then semi-tighten each nut with the wheel wrench.
   The wheel nut be seated on the hub. Lower the vehicle by turning by the bleeder screw counter clockwise to the ground.



Wheel not tightening torque:
FRONT-REAR
50 kg.m

DRIVING



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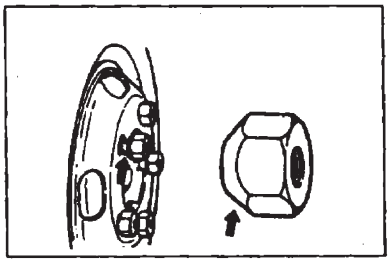

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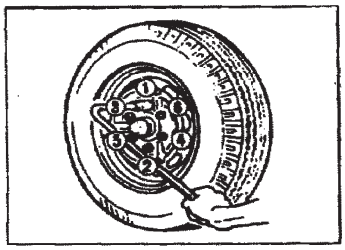

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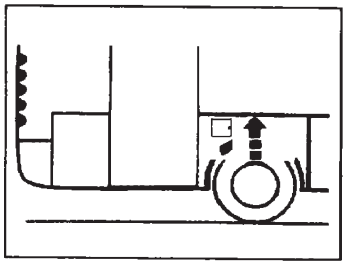


RISING REAR END OF THE VEHICLE

Rear end rising system is provided to prevent hitting the rear end of the vehicle to the ground while driving on steep slopes. The system is switched on by the control switch on driver's side dashboard.

NOTE: rising of the vehicle takes 10 seconds, lowering of the vehicle takes 5 seconds.

WARNING: The vehicle must not be driven with rear end is in risen position. The normal operation mode must be resumed again after driving on steep slope.

Retarder (TELMA) (Optional)

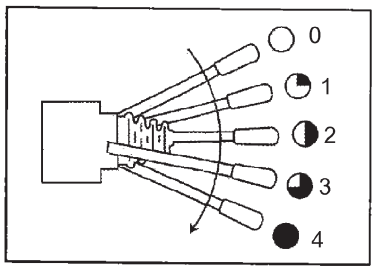
To activate the retarder, pull the control lever down.

Control positions:
0 : off
1 - 4 : braking

NOTE

To protect the retarder from damage due to overheating during continuous operation, the braking effect of the retarder is automatically reduced in dependence of the operating temperature. Adapt your driving style accordingly, particulary on long downhill gradiens.

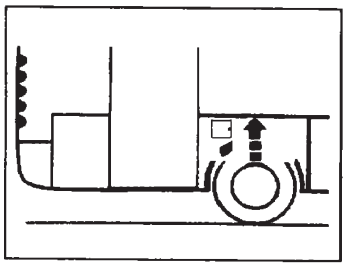
Do not switch on the retarder when driving on slippery road surfaces as the wheels may lock.
The retarder should be switched off when the engine is idling and when the vehicle is stationary to avoid discharging the batteries.



WARNING

Do not operate the retarder while ABS is out of order.

DRIVING



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Retarder (TELMA) (Optional)

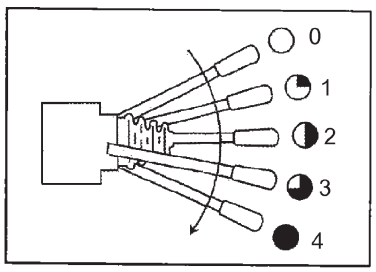
To activate the retarder, pull the control lever down.

Control positions:
0 : off
1 - 4 : braking

NOTE

To protect the retarder from damage due to overheating during continuous operation, the braking effect of the retarder is automatically reduced in dependence of the operating temperature. Adapt your driving style accordingly, particulary on long downhill gradiens.

Do not switch on the retarder when driving on slippery road surfaces as the wheels may lock.
The retarder should be switched off when the engine is idling and when the vehicle is stationary to avoid discharging the batteries.



WARNING

Do not operate the retarder while ABS is out of order.

DPD (DIESEL PARTICULATE DEFUSER)

The DPD (Diesel Particulate Defuser) is the system which purifies PM (Particulate Matter) in the exhaust gas. This collects PM into the DPD filter and regenerates the filter (burns PM) automatically.
Always use diesel fuel. Use of low quality fuel may adversely affect to the engine parts, and cause failure. Use of other than specified fuel may adversely affect to the engine or emission control system and cause failure. Especially for the common rail type engine, always use low sulfur diesel fuel (50 ppm or less of sulfur content).
If other than specified diesel fuel is used on the vehicle with the DPD, the vehicle may not conform to emmision regulation.
Do not modify the DPD and exhaust pipe. Modification of the direction, length or diameter of exhaust pipe will adversely affect to exhaust gas purification system.
If modification is needed because of equipment, contact Isuzu dealer. The DPD automatically regenerates (burns) when a certain amount of PM (Particulate Matter) accumulates in the filter.
However, this may not complete depending on driving conditions. In this situation, the DPD indicator will blink. Perform the manual regeneration according to the procedure. Besides, this is to restore the DPD function, not failure.

Automatic regeneration

The DPD automatically collects PM from exhaust gas in the filter, and regenerates the filter when a certain amount of that accumulates.

WARNING

To prevent fire, ensure that there is no combustible material near the muffler, the DPD or the exhaust pipe. Also, be careful not to burn yourself by the hot exhaust gas.

NOTE

Operating noise is emitted during automatic regeneration and also when it is deactivated; this does not mean that a breakdown has occurred.

Depending upon the driving conditions, the regeneration of PM collected in the filter may not be completed. If the DPD indicator light in the meter flashes, perform the manual regeneration according to the "Manual regeneration procedure".

During the DPD automatic regeneration, the engine speed may increase and exhaust brake may be activated when the vehicle is stopped with idling. This is not failure.

DRIVING

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Depending upon the driving conditions, the regeneration of PM collected in the filter may not be completed. If the DPD indicator light in the meter flashes, perform the manual regeneration according to the "Manual regeneration procedure".

During the DPD automatic regeneration, the engine speed may increase and exhaust brake may be activated when the vehicle is stopped with idling. This is not failure.

DPD Switch DPD

This switch is to start the manual regeneration.
When the DPD indicator light in the meter is flashing (about once per second), the manual regeneration is required as soon as possible. When parking the vehicle at the completion of operation, for example, perform the manual regeneration according to the "Manual regeneration procedure".
If you continue driving the vehicle while the light is flashing (about once a second), the flashing speed will change (to three times a second). If you continue driving the vehicle in this condition, the DPD is liable to break down, so stop the vehicle in the safe place immediately and perform the manual regeneration.

CAUTION

If you continue driving the vehicle without performing the manual regeneration, check engine indicator light will light to indicate that you must contact Isuzu dealer to have the DPD repaired.

For the vehicle equipped with DPD, Isuzu recommends engine oil that supports DPD (low ash oil). Use of low ash oil lengthens the maintenance interval of the DPD filter.

NOTE

The DPD performs regeneration automatically when a certain quantity of PM accumulates in the filter. Depending upon the running conditions, however, the regeneration may sometimes not be completed. In this case, the DPD indicator light will flash, so promptly perform the manual regeneration according to the "Manual regeneration procedure".

This operation is intended to restore the function of the DPD. It does not mean that a breakdown has occurred.

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This operation is intended to restore the function of the DPD. It does not mean that a breakdown has occurred.

Manual regeneration procedure

1. Stop the vehicle in a safe place where there are no dead leaves, scraps of paper or other substances that readily burn.

WARNING

To prevent fire, ensure that there is no combustible material near the muffler, the DPD or the exhaust pipe. Also, be careful not to burn yourself by the hot exhaust gas.

2. Put the gearshift lever in the "N" position, and pull the parking brake lever firmly.
3. Idle the engine.
   If you used the idling control knob to increase the engine speed, return it all the way to the left to reduce the engine speed.
4. In the case of a vehicle fitted with a PTO unit, stop operation of the PTO. Return the PTO switch and the external acceleration control to their initial positions.
5. Press the DPD switch.
   The flashing of the DPD indicator light changes to a steady indication, the engine speed automatically increases and the regeneration starts. Stay near the vehicle during the regeneration. The regeneration is normally completed in about 20 minutes. When the DPD indicator light goes off, the regeneration is complete, and the vehicle can be run normally.

WARNING

During manual regeneration, white smoke may be emitted, so do not perform the manual regeneration in a poorly ventilated room.

CAUTION

When you wish to operate the PTO on a vehicle fitted with a PTO unit for a long period, confirm that the DPD indicator light is not flashing.

NOTE

- ***The time it takes for the manual regeneration to complete differs depending upon the external temperature.***
- ***During DPD regeneration, the exhaust throttle is in operation. Operating noise is emitted while the exhaust throttle is operating and also when it is deactivated; this does not mean that a breakdown has occurred.***
- ***During the manual regeneration, the engine speed may temporarily return to its initial speed, causing the exhaust throttle to be deactivated. However, while the DPD indicator light is lit, regeneration is still taking place, so continue to perform regeneration until the light goes off.***

NOTE (Continued)

DRIVING

Manual regeneration procedure

1. Stop the vehicle in a safe place where there are no dead leaves, scraps of paper or other substances that readily burn.

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To prevent fire, ensure that there is no combustible material near the muffler, the DPD or the exhaust pipe. Also, be careful not to burn yourself by the hot exhaust gas.

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NOTE (Continued)

NOTE (Continued)

- ***White smoke may sometimes be emitted from the exhaust pipe for a short period depending on PM (Particulate Matter) combustion during regeneration; this does not mean that a breakdown has occurred.***
- ***Manual regeneration is completed more quickly after the vehicle has stopped driving, compared to when the engine is cold.***
- ***During manual regeneration, the coolant temperature may sometimes rise.***

Interrupting manual regeneration

If you want to interrupt manual regeneration, press the DPD switch once again.
The DPD indicator light will changed to flashing, that the vehicle can be driven. In this case, it is necessary to perform manual regeneration once again. Repeat manual regeneration procedure from step 1 as quickly as possible.

NOTE

Manual regeneration will be interrupted in the following operation.

- ***Accelerator is ON.***
- ***Gear-in (with Smoother)***
- ***Vehicle speed is ON.***

Operation noise caused by interruption is bigger when depressing the accelerator pedal than other operation. This is not failure.

Free manual regeneration procedure

Manual regeneration can be performed when the engine (coolant) and exhaust pipe are warm after transport.

WARNING

To prevent fire, ensure that there is no combustible material near the DPD, exhaust pipe or muffler.

Be careful not to burn yourself on the hot exhaust gas.

CAUTION

- ***Perform free manual regeneration to completion without interruption.***
- ***Stay near the vehicle during the regeneration.***

DRIVING

NOTE (Continued)

- ***White smoke may sometimes be emitted from the exhaust pipe for a short period depending on PM (Particulate Matter) combustion during regeneration; this does not mean that a breakdown has occurred.***
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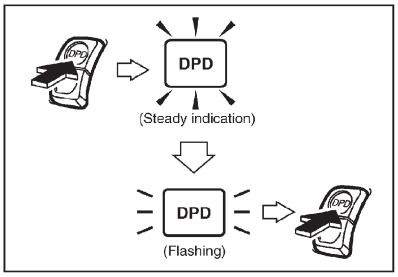
CAUTION

- ***Perform free manual regeneration to completion without interruption.***
- ***Stay near the vehicle during the regeneration.***

1. Stop the vehicle in a safe place where there are no dead leaves, scraps of paper or other substances that readily burn.
2. Idle the engine, then move the shift lever to the "N" position, and pull the parking brake lever firmly. In the case of a vehicle fitted with PTO unit, confirm that operation of the PTO has stopped.

NOTE

If you used the idling control knob to increase the engine speed, turn it all the way to the left to reduce the speed to normal idling condition, and then perform the DPD regeneration.



3. Keep the DPD switch pressed until the DPD indicator light produces a steady indication. When the DPD indicator light starts flashing, press the DPD switch once again.

NOTE

Until a certain quantity of PM has accumulated in the DPD filter, the DPD indicator light will not change from a steady indication to a flashing indication, even if you continue to press the DPD switch. In this case, there is no need to perform DPD regeneration, so regeneration will not start even if you press the DPD switch.

4. The DPD indicator light changes to a steady indication, the engine speed automatically increases, and DPD regeneration starts. Regeneration is normally completed in about 20 minutes.
5. When the DPD indicator light goes off, the regeneration is completed, and the vehicle can be run normally.

WARNING

During manual regeneration, white smoke may be emitted, so do not perform the manual regeneration in a poorly ventilated room.

CAUTION

In the event that free manual regeneration is interrupted due to the vehicle starting to move, for example, the DPD indicator light will change to a flashing indication. In this case, promptly stop the vehicle, press the DPD switch again, and wait until the completion of free manual regeneration. Do not continue to drive the vehicle while the light is flashing.

DRIVING

1. Stop the vehicle in a safe place where there are no dead leaves, scraps of paper or other substances that readily burn.
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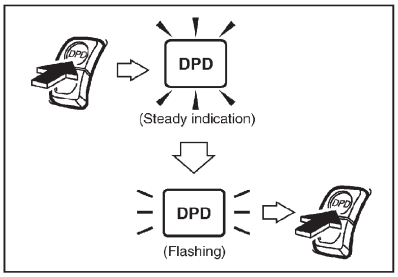

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- *The time it takes for the regeneration to complete differs depending upon the external temperature.*
- *During DPD regeneration, the exhaust throttle operates. Operating noise is emitted while the exhaust throttle is operating and also when it is deactivated; this does not mean that a breakdown has occurred.*
- *White smoke may sometimes be emitted from the exhaust pipe for a short period depending on PM combustion during regeneration; this does not mean that a breakdown has occurred.*
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SERVICE AND MAINTENANCE

In order to maintain driving safety and oil and fuel economy, regular periodical maintenance and inspection should be conducted in conformity with recommendations summarized in this section.

MAINTENANCE SCHEDULE

To obtain driving safety and maximum operational economy, the periodic inspections and maintenance should be conducted by authorized dealer in conformity with the maintenance schedule. For service operations involving any removal or use of special tools, contact your dealer.

Maintenance operations:

I: Inspect, clean, correct or replace as required
A: Adjust
R: Replace
T: Tighten to specified torque
L: lubricate

When performing checks on the following items, regular periodic maintenance inspections should also be conducted.

Items marked with * : Requires more frequent maintenance under severe driving conditions. See, "Maintenance schedule under severe driving conditions"

SERVICE AND MAINTENANCE

SERVICE AND MAINTENANCE

- Maintenance schedule 5-1
- Maintenance guide 5-10
- Lubrication 5-35
- Recommended lubricants and diesel fuels 5-36

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SERVICE AND MAINTENANCE

	interval (kilometers) x1000	1	10	20	30	40	50	60	70	80	90	100	Service intervals Months
No	Item												
	ENGINE												
1	* Engine oil	I	-	R	-	R	-	R	-	R	-	R	or every 12 months
2	* Oil filter	-	-	R	-	R	-	R	-	R	-	R	or every 12 months
3	Fuel filter: Main fuel filter	-	-	-	R		-	R	-		R	-	or every 12 months
4	* Air cleaner element	-	I	I	I	R	I	I	I	R	I	I	or every 24 months
5	Idiling speed and acceleration	-	-	I	-	I	-	I	-	I	-	I	or every 12 months
6	Valve clearance	I	-	-	-	A	-	-	-	A	-	-	or every 24 months
7	Fuel tank cap & fuel pipes for loose connections or damage	-	-	-	-	I	-	-	-	I	-	-	or every 24 months

(I) Inspect, clean and correct or replace as necessary (A): Adjust (R): Replace or change (T): Tighten to specified torque (L): Lubricate

SERVICE AND MAINTENANCE

	interval (kilometers) x1000	1	10	20	30	40	50	60	70	80	90	100	Service intervals Months
No	Item												
	ENGINE												
1	* Engine oil	I	-	R	-	R	-	R	-	R	-	R	or every 12 months
2	* Oil filter	-	-	R	-	R	-	R	-	R	-	R	or every 12 months
3	Fuel filter: Main fuel filter	-	-	-	R		-	R	-		R	-	or every 12 months
4	* Air cleaner element	-	I	I	I	R	I	I	I	R	I	I	or every 24 months
5	Idiling speed and acceleration	-	-	I	-	I	-	I	-	I	-	I	or every 12 months
6	Valve clearance	I	-	-	-	A	-	-	-	A	-	-	or every 24 months
7	Fuel tank cap & fuel pipes for loose connections or damage	-	-	-	-	I	-	-	-	I	-	-	or every 24 months

(I) Inspect, clean and correct or replace as necessary (A): Adjust (R): Replace or change (T): Tighten to specified torque (L): Lubricate

	interval (kilometers) x1000	1	10	20	30	40	50	60	70	80	90	100	Service intervals Months
8	Drive belt tension and damage	I	I	I	I	I	I	I	I	I	I	I	or every 12 months
9	Radiator coolant(ethylene glycol anti-freeze	-	-	-	-	I	-	-	-	R	-	-	or every 48 months
10	*Exhaust pipes and mounting damage or looseness	-	-	I	-	I	-	I	-	I	-	I	or every 24 months
11	Cooling system	-	-	I	-	I	-	I	-	I	-	I	or every 24 months
12	Engine operation condition		I	I	I	I	I	I	I	I	I	I	or every 12 months
	CLUTCH												
1	Clutch fluid		I	I	I	R	I	I	I	R	I	I	or every 24 months
2	Clutch pedal travel and free play		I	I	I	I	I	I	I	I	I	I	or every 6 months
	TRANSMISSION												
1	*Manual transmission oil		I	I	I	R	I	I	I	R	I	I	or every 24 months
2	Gear control mechanism for looseness	-	-	-	-	I	-	-	-	I	-	-	or every 24 months
3	Gear control cable	-	-	A	-	A	-	-	-	A	-	-	or every 24 months

(I) Inspect, clean and correct or replace as necessary (A): Adjust (R): Replace or change (T): Tighten to specified torque (L): Lubricate

SERVICE AND MAINTENANCE

	interval (kilometers) x1000	1	10	20	30	40	50	60	70	80	90	100	Service intervals Months
8	Drive belt tension and damage	I	I	I	I	I	I	I	I	I	I	I	or every 12 months
9	Radiator coolant(ethylene glycol anti-freeze	-	-	-	-	I	-	-	-	R	-	-	or every 48 months
10	*Exhaust pipes and mounting damage or looseness	-	-	I	-	I	-	I	-	I	-	I	or every 24 months
11	Cooling system	-	-	I	-	I	-	I	-	I	-	I	or every 24 months
12	Engine operation condition		I	I	I	I	I	I	I	I	I	I	or every 12 months
	CLUTCH												
1	Clutch fluid		I	I	I	R	I	I	I	R	I	I	or every 24 months
2	Clutch pedal travel and free play		I	I	I	I	I	I	I	I	I	I	or every 6 months
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1	*Manual transmission oil		I	I	I	R	I	I	I	R	I	I	or every 24 months
2	Gear control mechanism for looseness	-	-	-	-	I	-	-	-	I	-	-	or every 24 months
3	Gear control cable	-	-	A	-	A	-	-	-	A	-	-	or every 24 months

(I) Inspect, clean and correct or replace as necessary (A): Adjust (R): Replace or change (T): Tighten to specified torque (L): Lubricate

	interval (kilometers) x1000	1	10	20	30	40	50	60	70	80	90	100	Service intervals Months
	PROPELLER SHAFT												
1	*Universal joints and sliding sleeve	–	–	L	–	L	–	L	–	L	–	L	or every 12 months
2	Loose connection	–	I	I	I	I	I	I	I	I	I	I	or every 6 months
3	Splines for excessive wear	–	–	–	–	I	–	–	–	I	–	–	or every 24 months
4	Bearings and related parts for looseness	–	–	–	–	I	–	–	–	I	–	–	or every 24 months
5	Center bearing	–	–	L	–	L	–	L	–	L	–	L	or every 12 months

(I) Inspect, clean and correct or replace as necessary (A): Adjust (R): Replace or change (T): Tighten to specified torque (L): Lubricate

SERVICE AND MAINTENANCE

	interval (kilometers) x1000	1	10	20	30	40	50	60	70	80	90	100	Service intervals Months
	PROPELLER SHAFT												
1	*Universal joints and sliding sleeve	–	–	L	–	L	–	L	–	L	–	L	or every 12 months
2	Loose connection	–	I	I	I	I	I	I	I	I	I	I	or every 6 months
3	Splines for excessive wear	–	–	–	–	I	–	–	–	I	–	–	or every 24 months
4	Bearings and related parts for looseness	–	–	–	–	I	–	–	–	I	–	–	or every 24 months
5	Center bearing	–	–	L	–	L	–	L	–	L	–	L	or every 12 months

(I) Inspect, clean and correct or replace as necessary (A): Adjust (R): Replace or change (T): Tighten to specified torque (L): Lubricate

	interval (kilometers) x1000	1	10	20	30	40	50	60	70	80	90	100	Service intervals Months
	REAR AXLE												
1	Differential gear oil	I	I	I	I	R	I	I	I	R	I	I	or every 24 months
	FRONT AXLE												
1	*King pin		L	L	L	L	L	L	L	L	L	L	or every 6 months
	STEERING												
1	Power steering system oil leakage		I	I	I	I	I	I	I	I	I	I	or every 6 months
2	Power steering fluid	I	–	–	–	R	–	–	–	R	–	–	or every 24 months
3	*Power steering system for looseness and damage		I	I	I	I	I	I	I	I	I	I	or every 6 months
4	Fitting of knuckles and front axle for looseness		I	I	I	I	I	I	I	I	I	I	or every 6 months
5	Steering mechanism for looseness or damage	–	–	–	–	I	–	–	–	I	–	–	or every 24 months
6	Steering wheel play		I	I	I	I	I	I	I	I	I	I	or every 6 months

Inspect, clean and correct or replace as necessary (A): Adjust (R): Replace or change (T): Tighten to specified torque (L): Lubricate

SERVICE AND MAINTENANCE

	interval (kilometers) x1000	1	10	20	30	40	50	60	70	80	90	100	Service intervals Months
	REAR AXLE												
1	Differential gear oil	I	I	I	I	R	I	I	I	R	I	I	or every 24 months
	FRONT AXLE												
1	*King pin		L	L	L	L	L	L	L	L	L	L	or every 6 months
	STEERING												
1	Power steering system oil leakage		I	I	I	I	I	I	I	I	I	I	or every 6 months
2	Power steering fluid	I	–	–	–	R	–	–	–	R	–	–	or every 24 months
3	*Power steering system for looseness and damage		I	I	I	I	I	I	I	I	I	I	or every 6 months
4	Fitting of knuckles and front axle for looseness		I	I	I	I	I	I	I	I	I	I	or every 6 months
5	Steering mechanism for looseness or damage	–	–	–	–	I	–	–	–	I	–	–	or every 24 months
6	Steering wheel play		I	I	I	I	I	I	I	I	I	I	or every 6 months

Inspect, clean and correct or replace as necessary (A): Adjust (R): Replace or change (T): Tighten to specified torque (L): Lubricate

	interval (kilometers) x1000	1	10	20	30	40	50	60	70	80	90	100	Service intervals Months
7	Steering function		I	I	I	I	I	I	I	I	I	I	or every 6 months
8	Wheel alignment	-	-	-	-	I	-	-	-	I	-	-	or every 24 months
9	Power steering hose	-	-	-	-	-	-	-	-	R	-	-	or every 24 months
	SERVICE BRAKES												
1	*Brake lining and drum for wear (rear)	-	-	I	-	I	-	I	-	I	-	I	or every 12 months
2	*Disc brake pads and discs for wear (front)	-	I	I	I	I	I	I	I	I	I	I	or every 6 months
3	Pipes and hoses for loose connections or damage		I	I	I	I	I	I	I	I	I	I	or every 6 months
4	Air dryer	-	-	I	-	I	-	I	-	I	-	I	or every 12 months

(I) Inspect, clean and correct or replace as necessary (A): Adjust (R): Replace or change (T): Tighten to specified torque (L): Lubricate

SERVICE AND MAINTENANCE

	interval (kilometers) x1000	1	10	20	30	40	50	60	70	80	90	100	Service intervals Months
7	Steering function		I	I	I	I	I	I	I	I	I	I	or every 6 months
8	Wheel alignment	-	-	-	-	I	-	-	-	I	-	-	or every 24 months
9	Power steering hose	-	-	-	-	-	-	-	-	R	-	-	or every 24 months
	SERVICE BRAKES												
1	*Brake lining and drum for wear (rear)	-	-	I	-	I	-	I	-	I	-	I	or every 12 months
2	*Disc brake pads and discs for wear (front)	-	I	I	I	I	I	I	I	I	I	I	or every 6 months
3	Pipes and hoses for loose connections or damage		I	I	I	I	I	I	I	I	I	I	or every 6 months
4	Air dryer	-	-	I	-	I	-	I	-	I	-	I	or every 12 months

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	interval (kilometers) x1000	1	10	20	30	40	50	60	70	80	90	100	Service intervals Months
	PARKING BRAKE												
1	Parking brake valve and hoses	I	I	I	I	I	I	I	I	I	I	I	or every 6 months
2	Parking brake function	I	I	I	I	I	I	I	I	I	I	I	or every 6 months
	SUSPENSION												
1	Spring leaves for damage	–	I	I	I	I	I	I	I	I	I	I	or every 12 months
2	Mount for looseness or damage	–	I	I	I	I	I	I	I	I	I	I	or every 12 months
3	Shock absorbers for oil leakage	–	I	I	I	I	I	I	I	I	I	I	or every 6 months
4	Shock absorbers mount for looseness	–	I	I	I	I	I	I	I	I	I	I	or every 12 months

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SERVICE AND MAINTENANCE

	interval (kilometers) x1000	1	10	20	30	40	50	60	70	80	90	100	Service intervals Months
	PARKING BRAKE												
1	Parking brake valve and hoses	I	I	I	I	I	I	I	I	I	I	I	or every 6 months
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	SUSPENSION												
1	Spring leaves for damage	–	I	I	I	I	I	I	I	I	I	I	or every 12 months
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SERVICE AND MAINTENANCE

	interval (kilometers) x1000	1	10	20	30	40	50	60	70	80	90	100	Service intervals Months
	WHEELS												
1	Wheel pins and nuts	T	-	T	-	T	-	T	-	T	-	T	or every 12 months
2	Hub bearing grease	-	-	-	-	R	-	-	-	R	-	-	or every 12 months
3	Tire pressure and damage		I	I	I	I	I	I	I	I	I	I	or every 6 months
	ELECTRICAL EQUIPMENT												
1	Specific gravity of battery electrolyte		I	I	I	I	I	I	I	I	I	I	or every 6 months
	DPD												
	Check exhaust pressure or clean filter							I					or every 12 months
	Pressure difference sensor 0 point adjustment											A	or every 12 months
	Pressure difference sensor rubber					R				R			or every 12 months
	OTHERS												
1	Ligths, horn, windshield, wiper and washer		I	I	I	I	I	I	I	I	I	I	or every 6 months
2	Bolts and nuts on chasis and body					I				I			or every24 months
3	A/C Conditioner			I		I		I		I		I	or every 3 months
4	Retarder bearing			I		I		L		I		I	or every 6 months

(I) Inspect, clean and correct or replace as necessary (A): Adjust (R): Replace or change (T): Tighten to specified torque (L): Lubricate

SERVICE AND MAINTENANCE

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Maintenance schedule under severe driving conditions

Severe driving conditions

A: Repeated short trips

B: Driving on rough roads

C: Driving on dusty road

D: Driving in exremely cold weather and/or on salted roads

Item	Interval	Condition				
		A	B	C	D	A+D
Exhaust pipes and mounting	Inspect every 12,500 km	●	●		●	
Air cleaner element	Replace every 20000km			●		
Steering system for looseness or damage	Inspect every 12,500km		●			
Universal joints and sliding sleeve grease	Lubricate every 12,500km		●			
Manual transmission	Change every 25,000km		●			
Engine oil	Change every 5000km			●		●
Engine oil filter	Change every 5000km			●		●
Differential gear oil	Change every 25000km		●			

SERVICE AND MAINTENANCE

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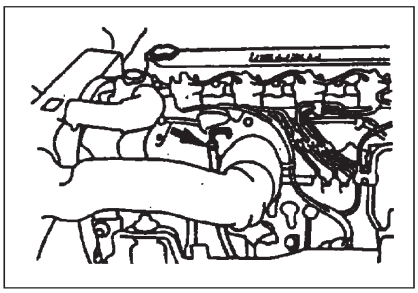
Manual transmission	Change every 25,000km		●			
Engine oil	Change every 5000km			●		●
Engine oil filter	Change every 5000km			●		●
Differential gear oil	Change every 25000km		●			



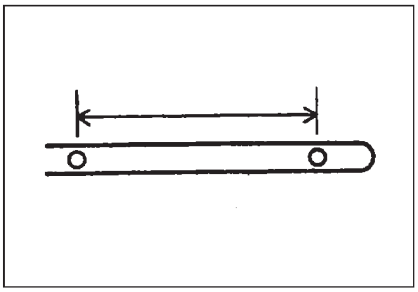
MAINTENANCE GUIDE

REGULAR INSPECTIONS

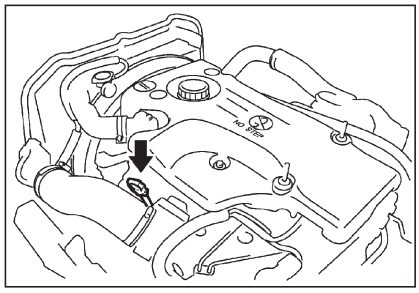
Engine oil level
Pull out the oil level gauge rod (oil dipstick), wipe clean and reinsert it. Again, pull it out and check that oil level is within high and low level marks. Also, check oil on the gauge rod for contamination. Also, check the oil on oil dipstick to see whether or not it is contaminated.

NOTE

Engine oil level should be checked with the vehicle parked on a level ground and with the engine stationary.



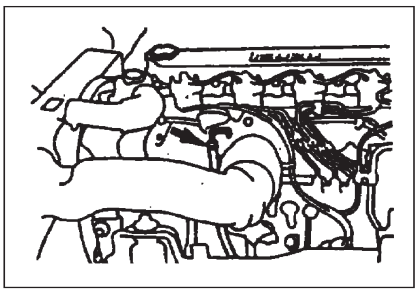
If the engine has been operated, allow 5 minutes for oil to settle down before checking the oil level.



Engine oil level DPD

The DPD performs regeneration automatically when a certain quantity of PM accumulates within the filter. To perform regeneration, post-injection (fuel injection after the main fuel injection period) is carried out. As a by-product, of post-injection, it is possible for fuel to gradually mix with the engine oil over a period of time which will eventually increase the engine oil level up to the "Inspection MAX" level mark on the oil level gauge rod (oil dipstick), once the oil level reaches the "Inspection MAX" level mark the engine oil must be replaced.

SERVICE AND MAINTENANCE



MAINTENANCE GUIDE

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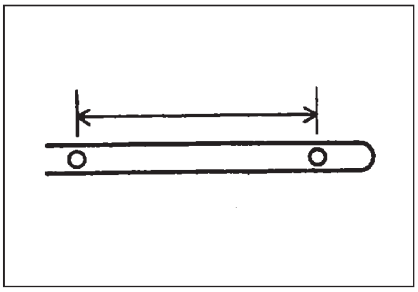

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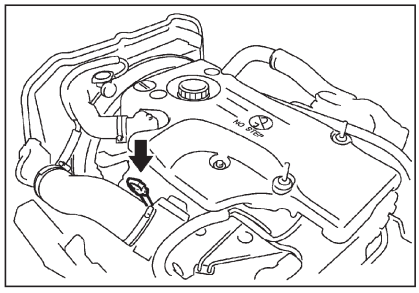

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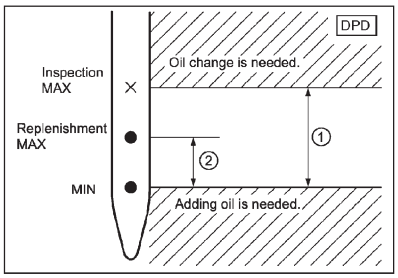


Check procedure

CAUTION

If the engine has been running. Wait at least 20 ~ 30 minutes before checking.

NOTE

Engine oil level must be checked with the vehicle parked on level ground.

1. Remove the oil level gauge rod (oil dipstick) and wipe clean with lint free cloth.
2. Insert the oil level gauge fully, and then remove to verify the indicated level. The oil level must be between "Inspection MAX" and "MIN" level marks. (①)
3. If the oil quantity is insufficient, add oil of the correct grade and quality up to the "Replenishment MAX" level mark only. If the oil level exceeds the "Inspection MAX" level mark, ensure the engine oil is drained and replaced with oil of the correct grade and quality. (②)
4. After reconfirming oil level, re-insert the oil level gauge fully.

CAUTION

- ***If the engine oil level is higher than the "Inspection MAX" mark on the oil level gauge, there is a possibility engine damage may occur. If the oil level exceeds the "Inspection MAX" level, the engine oil must be drained and refilled with oil of the correct grade and quality.***
- ***It is possible for fuel to gradually mix with the engine oil, over a period of time, which will eventually increase the engine oil level up to the "Inspection MAX" level mark on the oil level gauge rod (oil dipstick).***

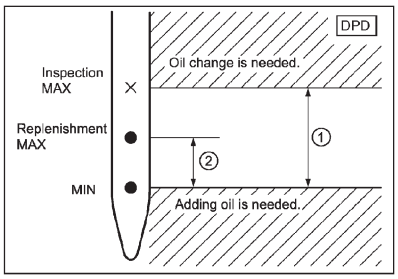
Ensure the engine oil is replaced at specified intervals with engine oil of the correct grade and quality.

- ***After engine running, wait between 20 and 30 minutes after stopping the engine before measuring the engine oil level.***

NOTE

Engine oil level must be checked with the vehicle parked on level ground.

SERVICE AND MAINTENANCE



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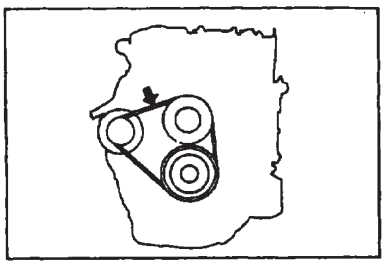
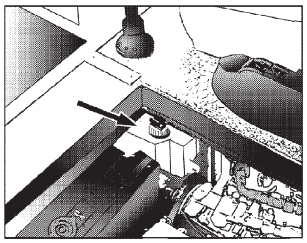


Fan belt:
Check that the fan belt deflects approximately 8 to 12 mm when a force of 10 kg is applied at the middle of the fan belt. Also, check the belt for cracks and damage.

CAUTION

Insufficient tension will result in battery charged or engine overheating, whereas excessive tension could cause damage to the alternator or V-belt.



Coolant level

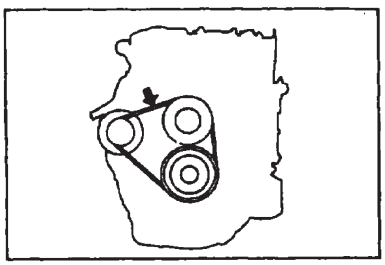
Overheating may result in engine damage or breakdown. To avoid it, be sure to check the amount of coolant periodically.
Check the level of coolant when the engine is cold and replenish as necessary at the radiator surge tank. When the level of coolant within the surge tank is found, to be lower than "MIN" line of its capacity, check the cooling system for leaks, then replenish to bring the level up to the "MAX" line.

CAUTION

- **Do not overfill the surge tank.**
- **The radiator filler cap must not be removed unless when absolutely necessary.**
- **The coolant level should be checked while the engine is cold.**
- **Supplement inhibitors or additives claiming to provide increases cooling capability that have not been specifically approved by Isuzu are not recommended for addition to the cooling system.**
- **It is the owner's responsibility to keep the freeze protection at a level commensurate with the**

CAUTION (Continued)

SERVICE AND MAINTENANCE



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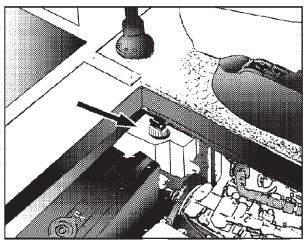

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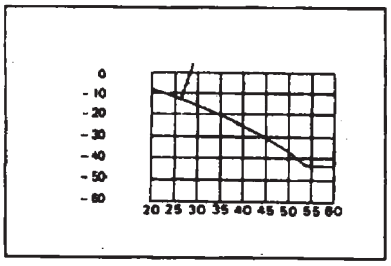


CAUTION (Continued)

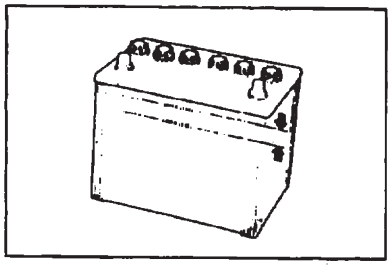
- temperatures which may occur in the area of vehicle operation.
- When supplying or replacing coolant, do not use water of well or river, but be sure to use tap water.
- It is strongly recommended to use Isuzu genuine engine coolant for addition or replacement. Coolants from other brands often do not contain anti-corrosive, so the use of such products could result in corrosion of the engine and radiator.
- If the density of Isuzu genuine engine coolant exceeds 60% the reduced specific heat characteristic

CAUTION (Continued)

CAUTION (Continued)

of the coolant could result in overheating. If the density is below 20%, the anti-corrosion characteristic may degrade. Adjust the coolant density in the range from 20% to 60 % according to the situation.

- Do not step on the radiator cap.
- Be sure to put the radiator cap cover on the radiator cap.



Level of battery electrolyte

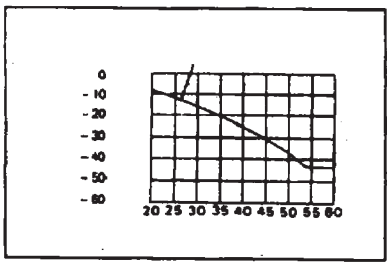
The levels of battery electrolyte are normal if they are flush with the ellipse hole in the filler port. If the level is too low, replenish with distilled water. The battery is located in the battery compartment at the center portion of left side chass frame.

WARNING

The fluid in the battery is sulfuric acid. It is dangerous. Do not spill it on your skin or clothing. Be especially careful not to get it in your eyes. If battery acid should get into your eyes,

WARNING (Continued)

SERVICE AND MAINTENANCE



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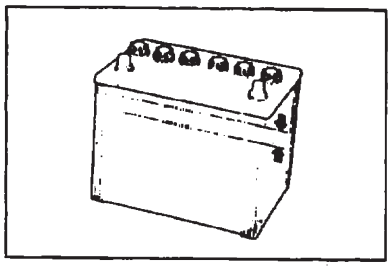

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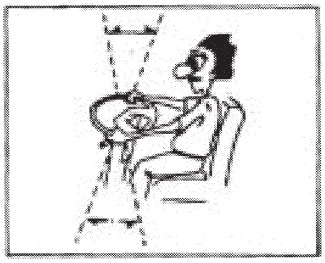
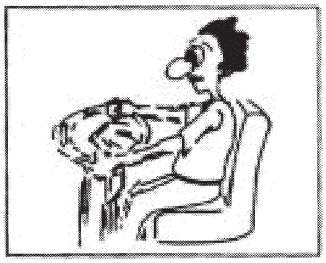




Steering wheel

Check the amount of the steering wheel play by turning the wheel in both directions until the tires begin to move. The standard free play of steering wheel at the periphery of the wheel, when checked with the front wheels are straight-ahead should be as follows:
Power steering: between 10 to 50 mm

NOTE

Steering wheel play should be checked when the engine is running.

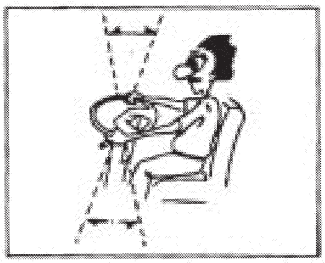
Also, check the steering wheel for play and looseness in mount by moving it back and forth and sideways.
Check for hard-steering, steering shimmy and tendency of steering to pull one side while driving.

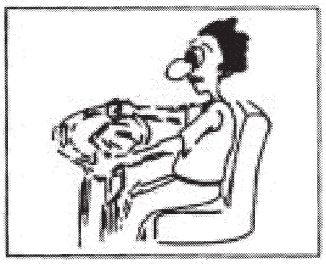
CAUTION

If the steering parts have an excess play or looseness or if any abnormal condition is noted, have your dealer check the steering system immediately.

SERVICE AND MAINTENANCE

clean fresh water and immediately seek proper medical treatment.





Steering wheel

Check the amount of the steering wheel play by turning the wheel in both directions until the tires begin to move. The standard free play of steering wheel at the periphery of the wheel, when checked with the front wheels are straight-ahead should be as follows:
Power steering: between 10 to 50 mm

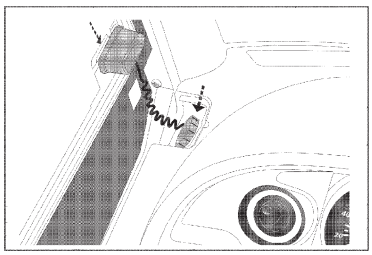
NOTE

Steering wheel play should be checked when the engine is running.

Also, check the steering wheel for play and looseness in mount by moving it back and forth and sideways.
Check for hard-steering, steering shimmy and tendency of steering to pull one side while driving.

CAUTION

If the steering parts have an excess play or looseness or if any abnormal condition is noted, have your dealer check the steering system immediately.



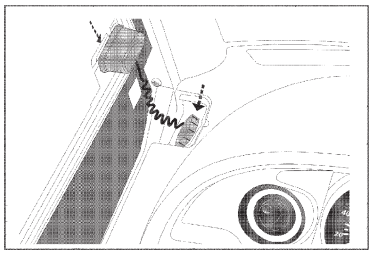
Clutch fluid level

Check the clutch fluid level to see whether they are between “MAX” and “ADD” marks on the respective fluid containers.
The levels should be between “MAX” and “ADD” marks. If the level is lower than ADD mark, add recommended clutch fluid up to “MAX” mark.

WARNING

The brake indicator light does not indicate the brake performance. When applying the parking brake, pull the parking brake valve

SERVICE AND MAINTENANCE



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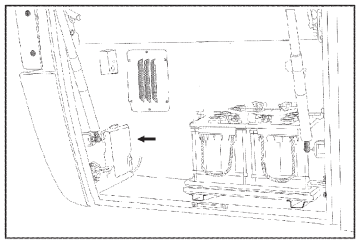
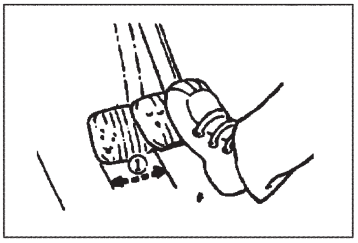
WARNING

Do not continue to operate the vehicle when the brake indicator light is on. There may be serious trouble in the brake system. Vehicle operation under this condition is extremely dangerous and can lead to an accident.



Windshield washer solution level

Check that the washer tank is filled sufficiently with solution. Also check operating condition of the windshield washer.



Clutch pedal play

Standard value:
① Free play
15 to 25 mm

SERVICE AND MAINTENANCE

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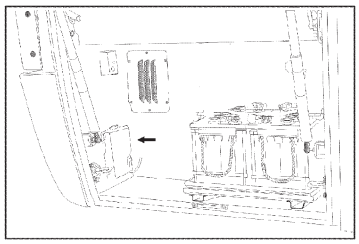

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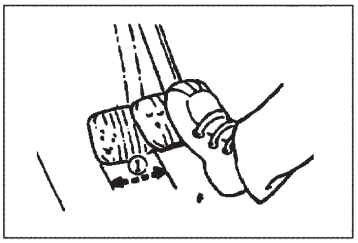

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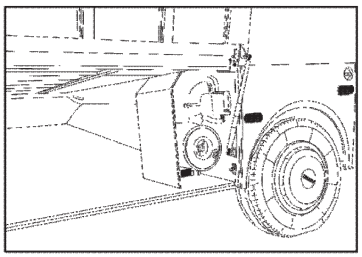


PERIODICAL MAINTENANCE

Air cleaner
The air cleaner is located in the right hand side luggage compartment

Use of fouled air cleaner element not only cause a deterioration in the engine output, but also give raise in fuel consumption and dark exhaust smoke. The air cleaner element should be serviced in the following manner.

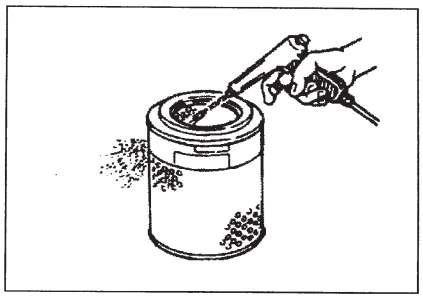
NOTE

For replacement, it is strongly advisable to use genuine air cleaner element.

Removal of element
1. Loosen the wing nut and remove the exterior cover.
2. Remove the wing nut retaining the element and remove the element.

CAUTION

Be careful not to damage the element.



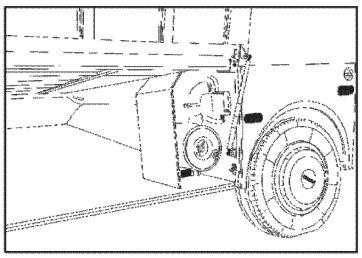
Cleaning element:
To clean the element, apply one of the following methods according to the condition of the element:

If the element is fouled with dust but dry:
Apply compressed air to the element from inside while turning the element with hand. Pressure of compressed air should not exceed 7 kg/cm^2.

CAUTION

Do not apply compressed air to the outer face of the element as it causes the dust to push into the inner face (clean side).

SERVICE AND MAINTENANCE



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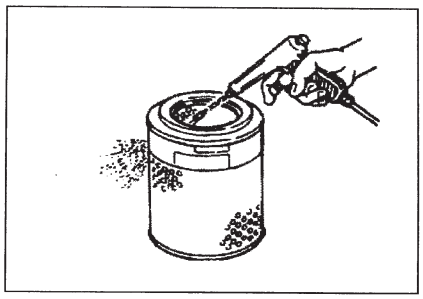

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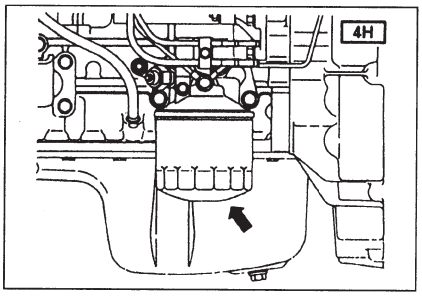
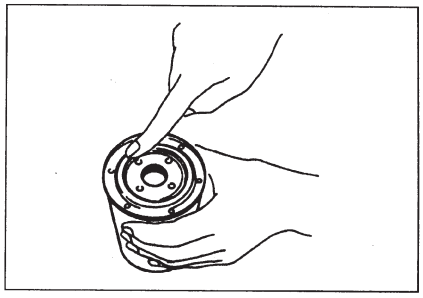




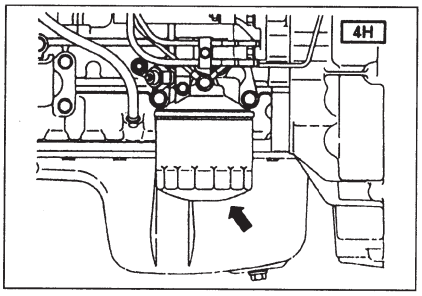
Oil filter

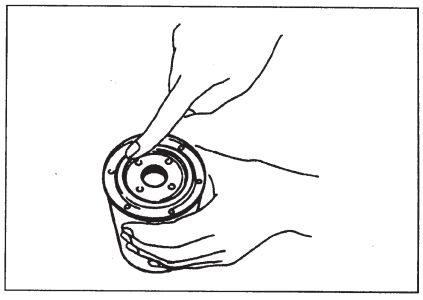
1. Loosen the oil filter by turning it counterclockwise with a filter wrench.
2. With a rag wipe clean the fitting face of the oil filter so that the new oil filter can be seated properly.
3. Lightly oil the O-ring and screw in the oil filter until the sealing face is fitted against the O-ring. Using the filter wrench, tighten the filter:

CAUTION

Check the level of the oil in the engine and replenish it to the specified level as necessary. Start the engine and check for leaks at the oil filter.
It is strongly advisable to use genuine oil filter assembly for replacement.

SERVICE AND MAINTENANCE





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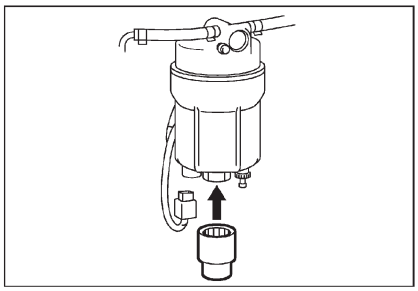
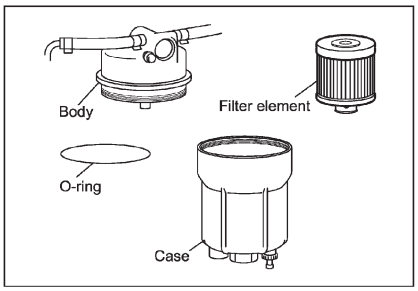




Fuel filter 4JJ1-TC / 4HK1-TC DPD

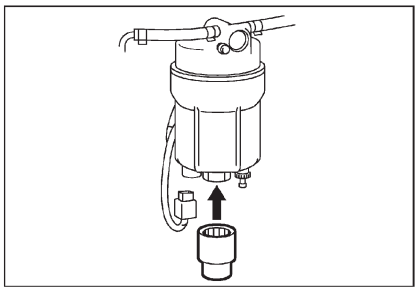
1. Drain fuel from the element case.
   a. Loosen the drain plug (cock) on the bottom of the element case.
   b. Loosen the air bleeder on the aluminum body to drain fuel from the drain cock.
2. Remove the harness of water warning switch.
3. Using a socket wrench (29 mm) or a filter wrench, loosen the element case counterclockwise to remove it from the aluminum body. At this time, make sure that the float at the bottom inside the removed case moves up and down smoothly. In addition, clean the bottom if foreign matter or sludge accumulates on it.
4. Pull out the element downward, and remove the O-ring at the aluminum body.
5. If foreign matter accumulates on the inner circumference of the body, wipe it with a clean cloth.

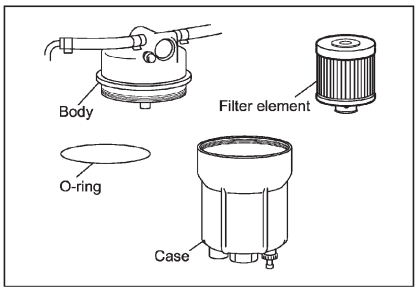
CAUTION

To remove foreign matter, be sure to wipe it with a cloth. Do not use an air blower etc.

If blown foreign matter gets into the clean-side passage, the supply pump will malfunction.

SERVICE AND MAINTENANCE





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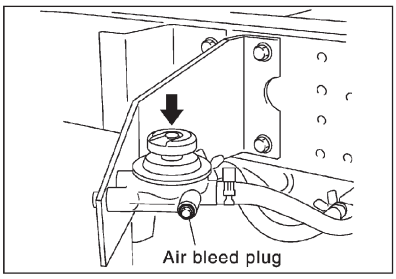
6. Insert the O-ring that the element comes with into the groove on the outer circumference of the aluminum body. Be careful not to damage the O-ring by the threaded portion of the body side.
7. Apply new diesel fuel lightly to the packing inside and outside the element, and then insert the element until it contacts.

CAUTION

Be careful not to let foreign matter get into the four holes (clean-side) adjacent to the inside packing.

8. Apply new diesel fuel lightly to the inner circumference of the element case (or to the O-ring on the body side), and rotate the case clockwise until it contacts the aluminum body, taking care not to let the O-ring bitten. If the case does not contact, this means the element is not inserted sufficiently. Push into the case again while rotating the element.
9. Tighten the element case using a torque wrench.
   Tightening torque; 33.0±3.0 Nm (3.4±0.3kgf•m / 24.3±2.2 lbf•ft)
10. Tighten the drain plug on the element case, and connect the connector of the water warning switch again.
11. Make sure that there is no looseness on each part after starting the engine.



CAUTION

BLEEDING OF FUEL SYSTEM

If the fuel filter has been replaced, air has got into the fuel system. This makes it hard to start the engine. Bleed air from the fuel system by using the air bleed plug on the side of the fuel filter.

1. ***Before starting engine***
   a. ***Loosen the air bleed plug on the side of the fuel filter sufficiently, and attach a vinyl hose to prevent fuel from splattering.***

CAUTION (Continued)

SERVICE AND MAINTENANCE

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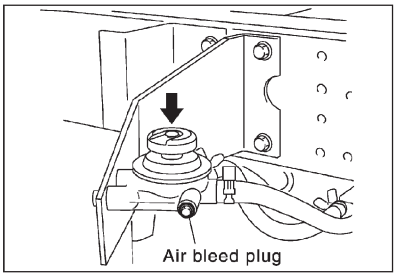

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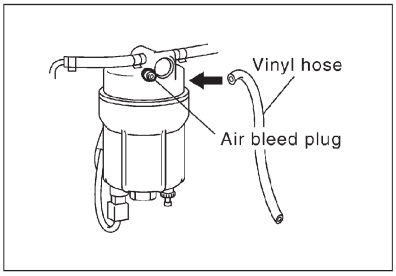


CAUTION (Continued)

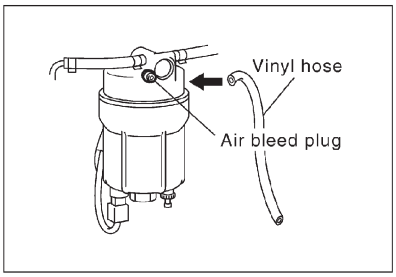
b. Operate the priming pump up and down 90 times or more until no fuel that contains air comes out from the air bleed plug on the side of the fuel filter. (The number of times is the reference value.)
c. Tighten the plug securely, and wipe off fuel around the plug completely.
d. Operate the priming pump up and down another 20 times or more to feed air from the fuel system to the fuel injection pump.
e. Turn the starter to start the engine.

2. After starting engine
a. Without depressing the accelerator pedal, turn the starter to start the engine.
b. After the engine start-up, keep idling for five seconds.
c. Slowly turn the idling control knob fully clockwise, and hold it for three minutes.
d. Fully depress the accelerator pedal to rev up to the maximum speed. (Repeat this operation several times.)
e. Turn the idling control knob counterclockwise to return to the idle speed.

CAUTION

- *Insufficient air bleeding may cause engine malfunction. Be sure to perform this procedure after starting the engine.*
- *It is strongly advisable to use an Isuzu genuine fuel filter assembly for replacement.*

SERVICE AND MAINTENANCE



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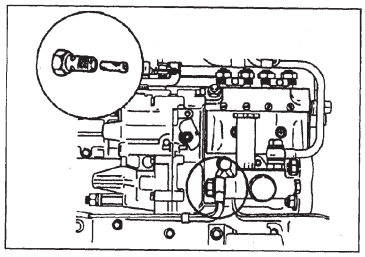
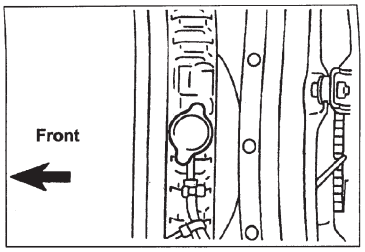


Feed pump strainer

Remove the joint bolt on the intake side of the feed pump, then screw out the strainer counterclockwise and clean it. Then, push the priming pump on the injection pump to bleed the fuel system.



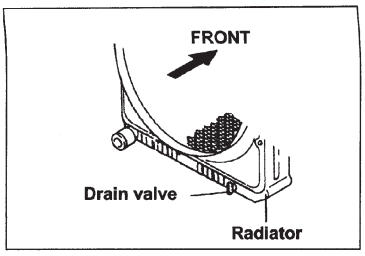
Engine coolant

1. To change engine coolant, make sure that the engine is cool.

WARNING

When the coolant is heated to a high temperature, be sure not to loosen or remove the radiator cap. Otherwise you might get scalded by hot vapor or boiling water. To open the radiator cap, put a piece of thick cloth on the cap and loosen the cap slowly to reduce the pressure when the coolant has become cooler.

2. Open radiator cap and drain the cooling system by loosening the drain valve on the radiator and on the cylinder body.



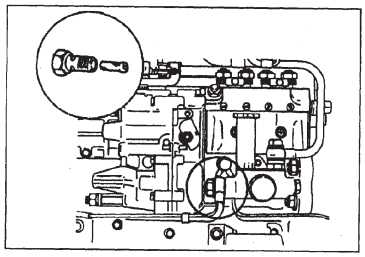
NOTE

For best results it is suggested that the engine cooling system be flushed at least once a year. It is advisable to flush the interior of the cooling system including the radiator before using anti-freeze (ethylene-glycol based).

Replace damaged rubber hoses as the engine anti-freeze coolant is liable to leak out of even minor cracks.

It is recommended to use genuine anti-freeze (ethylene/glycol based) or equivalent, for the cooling system and not add any inhibitors or additives.

SERVICE AND MAINTENANCE



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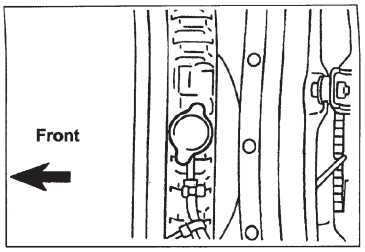

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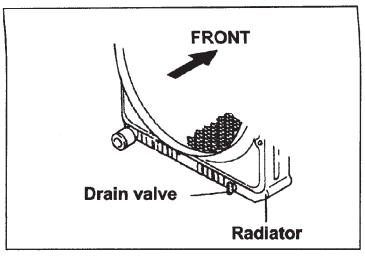

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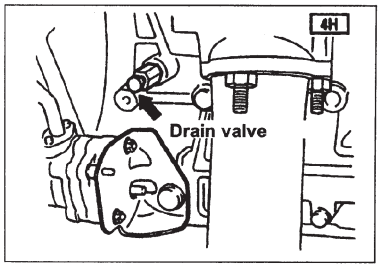
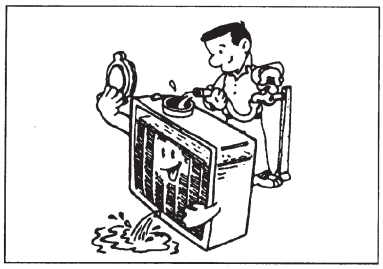
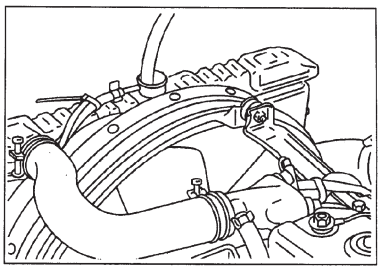






Washing the coolant passage

1. Top up the radiator with water to the filler neck.
2. Check and clean the radiator cap. Replace the cap if it is faulty.
3. Install the radiator cap securely.
4. Fill with water up to the "MAX" line of the reservoir tank.
5. Tighten the reservoir tank cap.
6. Start the engine and idle it for 20 minutes, then stop the engine. After the water cools down, drain it.

   (Refer to "Engine coolant" Draining.)

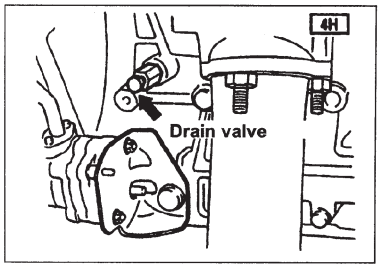
CAUTION

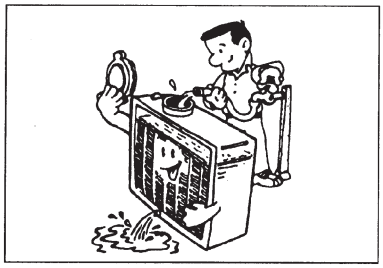
A failure to correctly fill the engine cooling system in changing or topping up coolant may sometimes cause the coolant to overflow from the filler neck even before the engine and radiator are completely full.

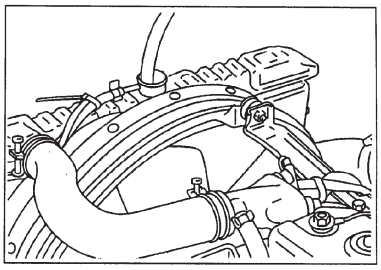
If the engine runs under this condition, the shortage of coolant may possibly result in engine overheating. To avoid such trouble, the following precautions should be taken in filling the system.

3. To refill engine coolant, pour coolant up to filler neck using a filling hose which is smaller in outside diameter of the filler neck. Otherwise air between the filler neck and the filling hose will block entry, preventing the system from completely filling up.
4. Keep a filling rate of 9 liters/min. or less. Filling over this maximum rate may force air inside the engine and radiator.
   And also, the coolant overflow will increase, making it difficult to determine whether or not the system is completely full.

SERVICE AND MAINTENANCE







Washing the coolant passage

1. Top up the radiator with water to the filler neck.
2. Check and clean the radiator cap. Replace the cap if it is faulty.
3. Install the radiator cap securely.
4. Fill with water up to the "MAX" line of the reservoir tank.
5. Tighten the reservoir tank cap.
6. Start the engine and idle it for 20 minutes, then stop the engine. After the water cools down, drain it.

   (Refer to "Engine coolant" Draining.)

CAUTION

A failure to correctly fill the engine cooling system in changing or topping up coolant may sometimes cause the coolant to overflow from the filler neck even before the engine and radiator are completely full.

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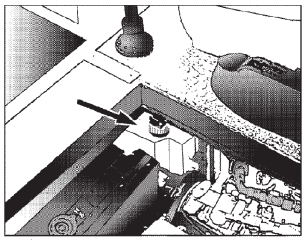
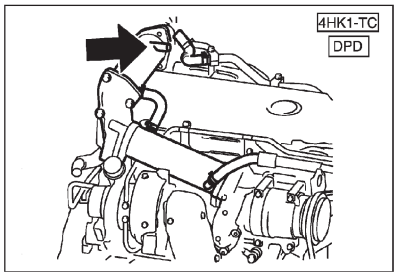


5. After filling the system to the full, pull out the filling hose and check to see if air trapped in the system is dislodged and the coolant level goes down. Should the coolant level go down, repeat topping-up until there is no more drop in the coolant level.
6. Bleeding air from the EGR cooler (4HK1-TC with DPD model only)
   - Disconnect the OUT side hose (located at the top of the EGR on the head cover) of the 2nd EGR cooler to let air come out. Then, reconnect the hose back to the original position.
   - In doing so, if air in the EGR comes out and the coolant level goes down, add the coolant to the original level.



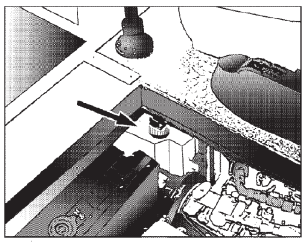
7. After directly filling the radiator, fill the reservoir to the maximum level. Install and tighten radiator cap and start the engine. After idling for 2 to 3 minutes, stop the engine and reopen radiator cap. If the water level is lower, replenish.

WARNING

When the coolant is heated to a high temperature, be sure not to loosen or remove the radiator cap. Otherwise you might get scalded by hot vapor or boiling water. To open the radiator cap, put a piece of thick cloth on the cap and loosen the cap slowly to reduce the pressure when the coolant has become cooler.

8. After tightening the radiator cap, warm up the engine at about 2,000 rpm. Set heater adjustment to the highest temperature position, and let the coolant circulate also into the heater water system.
9. Check to see that the thermostat has opened through the needle position of the water, conduct a 5 minute idling again and stop the engine.

SERVICE AND MAINTENANCE



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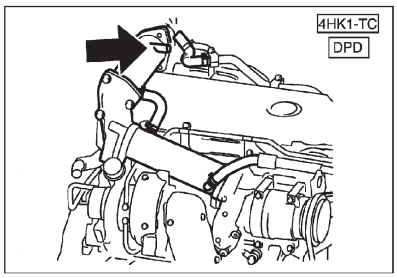

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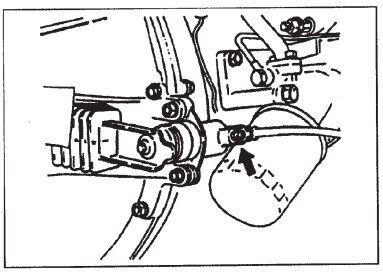
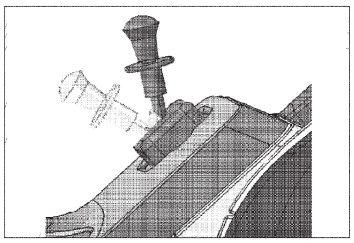
10. When the engine has been cooled, check filler neck for water level and replenish if required. Should extreme shortage of coolant be found, check the coolant system and reservoir tank hose for leakage.
11. Fill the coolant in the reservoir tank up to "MAX" line.



Bleeding of clutch hydraulic circuits

If air enters the clutch circuit, it will cause clutch dragging. Therefore, bleeding operation should be performed if the clutch fluid reservoir has been emptied due to failure or if the hydraulic circuit has been disassembled. Bleeding operation calls for the cooperative action of the two men.



To bleed, proceed as follows:

1. Set the parking brake.

SERVICE AND MAINTENANCE

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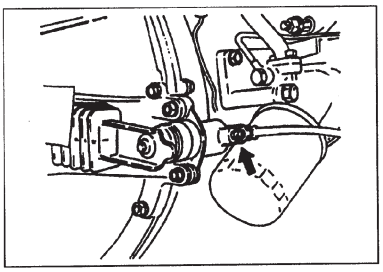

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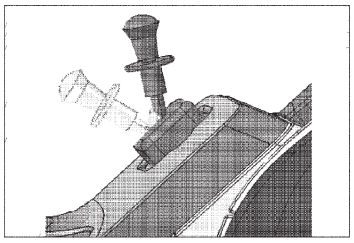

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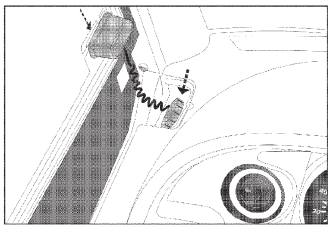
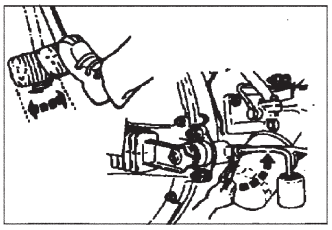
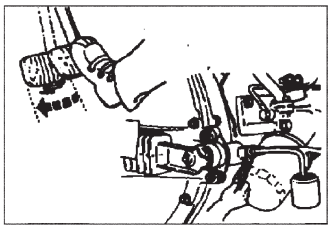


2. Check the level of clutch fluid in the reservoir and replenish if necessary.

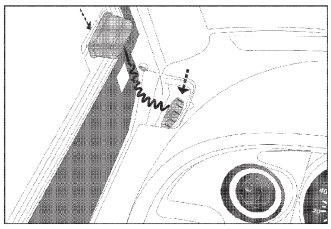


3. Remove the rubber cap from the bleeder screw and wipe clean the bleeder screw. Connect a vinyl tube to the bleeder screw and insert the other end of the vinyl tube into a transparent container.
4. Pump the clutch pedal repeatedly and hold it depressed.



5. Loosen the bleeder screw on the clutch slave cylinder to release clutch fluid with air bubbles into the container and tighten the bleeder screw immediately.
6. Release the clutch pedal carefully. Repeat the above operation until air bubbles disappear from the clutch fluid being pumped out into the container. During the bleeding operation, keep the clutch fluid reservoir filled to the specified level. Reinstall the rubber cap.

SERVICE AND MAINTENANCE



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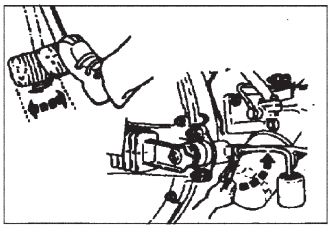

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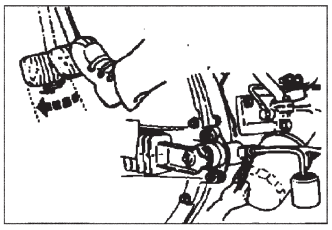

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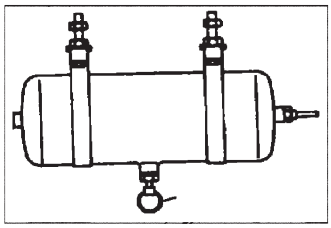
V-belt tension adjustment:
(bus with pneumatic doors)
Check the tension of V-belt time to time and tighten, if necessary.
Use tension bolt for idler gear underneath the compressor bracket.



Draining of condensed water in air reservoir:
The water might be condensed in air reservoir of compressed air system.
To drain the condensed water, a plug is placed just below the reservoir.
User should drain the water once in a day by pushing the plug upwards.

Pull or push drain valve.If condensation flows out, have the compressed air dryer checked in service

SERVICE AND MAINTENANCE

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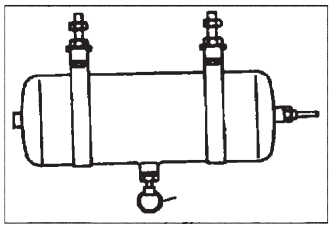

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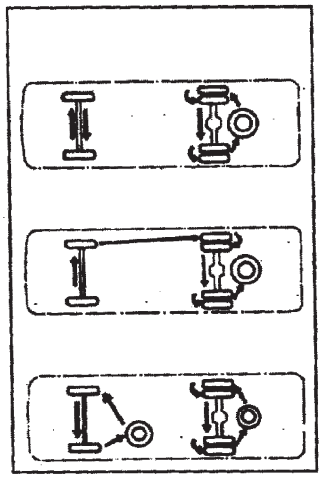
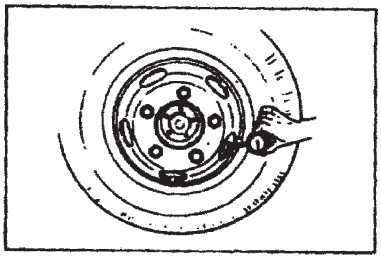


Tire rotation

To allow the tires to wear evenly and to prolong their life, exchange the front and rear tire locations as shown in the figure.



Tire inflation pressure:

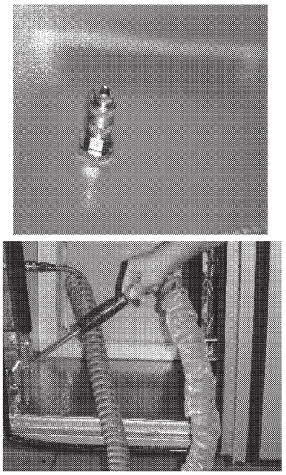
Standart inflation pressures for tires are listed below:

NOTE

Check tire pressure when the tires are cold (After the vehicle has been inoperative for more than 3 hours or driven less than 1,6 km).

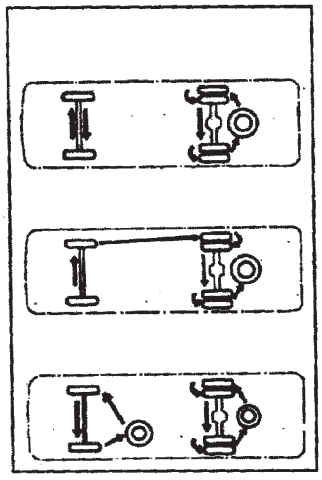
Tire Inflation Pressure, kg/cm² (psi)

Tire Size	Inflation Pressure
225/75 R 17.5	6.74 (95)



The inflation valve in the rear right luggage compartment can be used for inflating tyres

SERVICE AND MAINTENANCE



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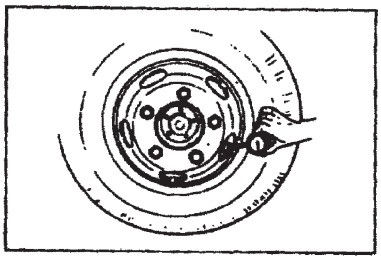

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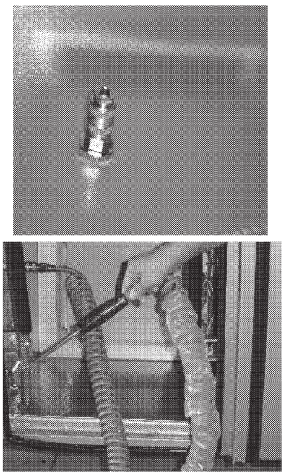

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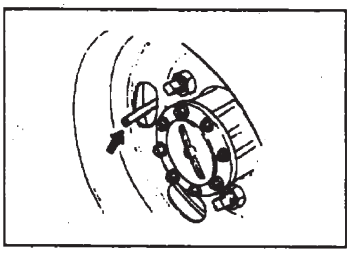


To mesure the rear inner tire air pressure on the rear dual tire vehicle, use the valve cap wrench in the general hand tools.

WARNING

- Never drive the vehicle unless the tires are properly inflated and in safe condition.
- Over-inflation or under-inflation can affect vehicle handling and result in loss of control as well as excessive tire wear and tire damage.

DPD inspection and cleaning

Have the DPD inspected at your Isuzu dealer. Depending upon the results of the inspection, it may be necessary to clean the filter with the special ash removal equipment. If it is not possible to inspect the DPD, clean the filter every 100,000 km (60,000miles); 4HK1-TC/ 105,000 km (63,000miles); 4JJ1-TC/ 101,250 km (63,000miles); 4HK1-TC for EU with the special ash removal equipment.

NOTE

Contact your Isuzu dealer. For the detail of the special ash removal equipment.

NOTE

Pressure Difference Sensor 0 point Adjustment

Every year perform 0 point adjustment for the differential pressure sensor that detects clogging in the DPD.

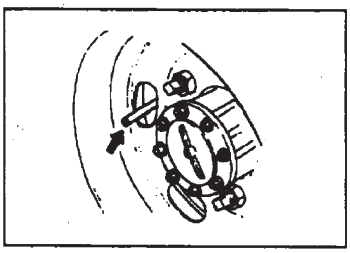
After DPD inspection or DPD filter cleaning, always perform the differential pressure sensor adjustment according to the following procedure.

1. ***Turn the ignition switch to the "ON" position, and leave it for a while. (Do not start the engine.)***
2. ***Make sure that the DPD lamp comes on.***
3. ***Make sure that the DPD lamp goes off in 30 seconds.***
4. ***Turn the ignition switch to the "OFF" position, and leave it for 15 seconds or more.***

CAUTION

- ***If you fail to check the exhaust pressure or clean the filter, the DPD and the engine may break down or fuel economy may deteriorate.***
- ***Contact your nearest Isuzu dealer for how to check the exhaust pressure and clean the filter.***

SERVICE AND MAINTENANCE



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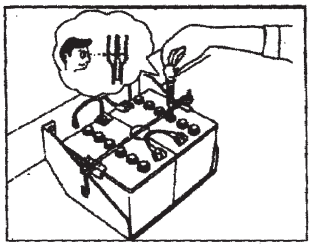
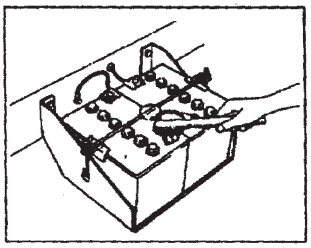
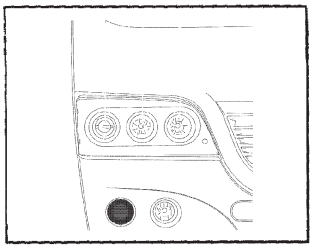


Battery electrolyte specific gravity:
The battery is in fully charged state, if hydrometer reading of specific gravity is 1.26 at 20ºC.
If the specific gravity is lower than 1.23, the battery is in need of charging.

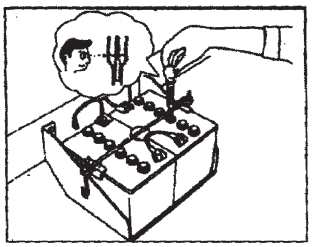


Battery cleaning:
If the external surface of the battery is fouled, clean with lukewarm water. Apply a thin film of Vaseline or grease to the battery terminals to prevent corrosion.



Headlights:
Correct aiming of the headlights ensures proper illumination and eliminates the dazzling of the incoming driver's eyes. When aiming is necessary, contact an authorized dealer who is equipped with device for this purpose.

SERVICE AND MAINTENANCE



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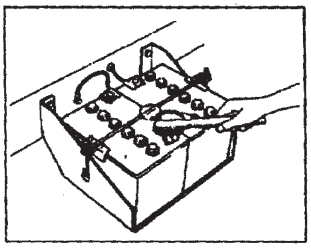

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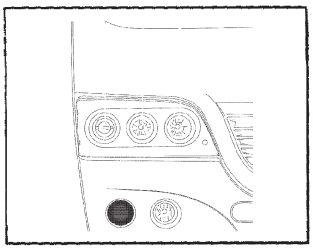

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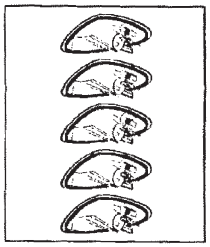
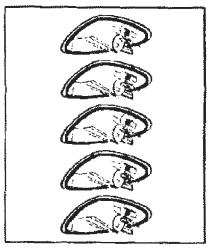


Replacing light bulbs
The figure above snows how to gain access to the bulbs.
When replacing a bulb, make sure the illumination switch is off. Use only bulb with the same wattage rating. The standard bulb wattage ratings are given below:

LIGHTING	24 VOLT SYSTEM		Qty.
DIPPED BEAM HEADLAMPS	70	W	2
DRIVING LAMPS	70	W	4
FRONT PARK LAMP	4	W	2
FRONT FOG LAMP	70	W	2
FRONT SIGNAL LAMP	21	W	2
FRONT CLEARENCE LAMP	5	W	2
LICENCE PLATE LAMP	5	W	2
INTERIOR LAMP	8	W	4
SLEEPING LAMPS	LED		
STEP LAMPS	5	W	
AISLE LAMPS	5	W	14
LUGGAGE LAMPS	5	W	
REAR COMBINATION LAMPS			
BRAKE	21	W	2
PARK	5	W	2
TURN SIGNAL LAMPS	21	W	2
REAR GEAR	21	W	2
REAR FOG LAMP	21	W	2
SIDE MARKER	5	W	4
REAR CLEARENCE LAMP	1,8	W	2
SAFETY BRAKE LIGHT FLUSH-FITTING	LED		1
REAR TURN SIGNAL TOP	21	W	2

SERVICE AND MAINTENANCE



Replacing light bulbs
The figure above snows how to gain access to the bulbs.
When replacing a bulb, make sure the illumination switch is off. Use only bulb with the same wattage rating. The standard bulb wattage ratings are given below:

LIGHTING	24 VOLT SYSTEM		Qty.
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INTERIOR LAMP	8	W	4
SLEEPING LAMPS	LED		
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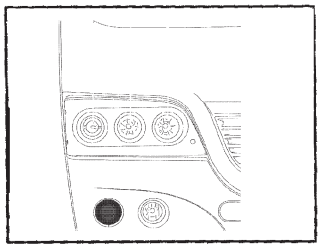
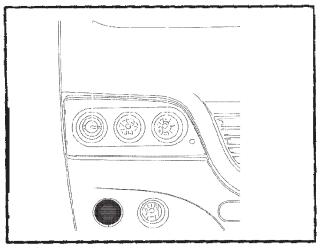
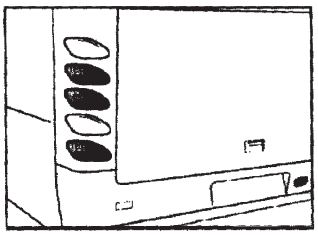


Front combination lamps
Remove the headlamp frame then replace the light bulbs.

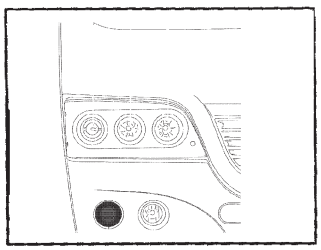


Fog lamps:
It is possible to remove the fog lamp bulbs behind the front bumper.



Rear combination lamps:
Open the rear luggage compartment. Remove the guard at right and left-hand side of the compartment and remove the lamp screws.

SERVICE AND MAINTENANCE



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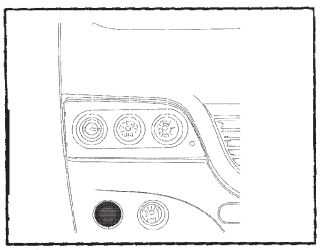

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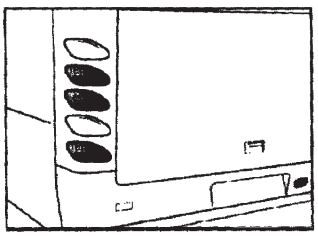

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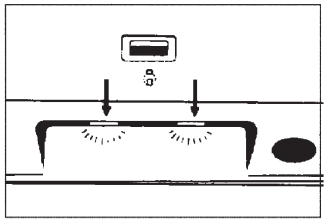
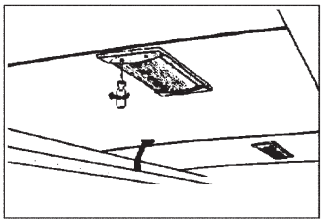
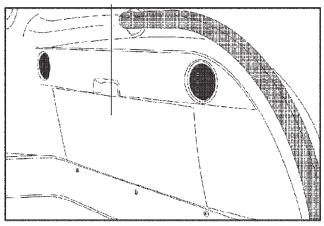


License plate light
Remove screws retaining the lens and remove the lens.



Dome light
The lens can be pulled out easily with a screwdriver.

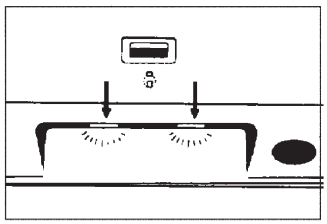


Fuse junction block
The fuse box is located on the dashboard. Open the glove box cover to check and replace the fuse.
The cover can be easily pulled out manually.
The specified amperages and circuit names of the fuses are described on the inside of the cover.
To replace the fuse, use the provided fuse puller.

NOTE

If a fuse has been burnt out, check to locate the cause of trouble and give necessary service attention before replacing the fuse.

SERVICE AND MAINTENANCE



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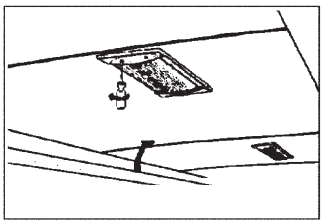

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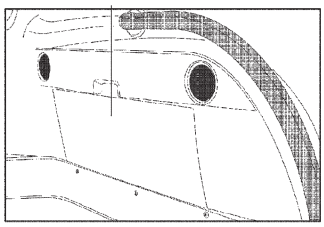

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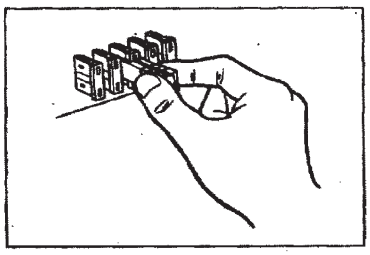
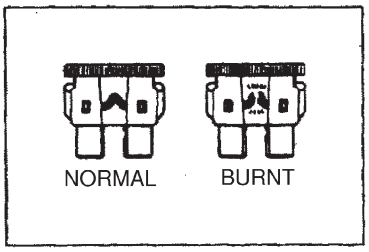
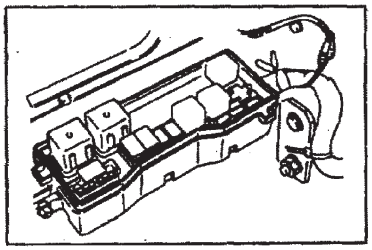






NOTE (Continued)

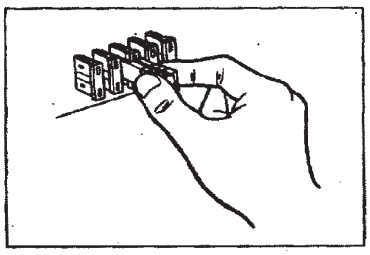
When replacing the fuse, turn the key switch to "LOCK" position and use a cartridge of the same amperage.

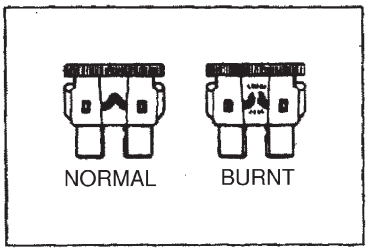
Fusible link
If the headlights or other electrical components do not work and the fuses are O.K. check the fusible link.
If a fusible link is burnt out, it must be replaced with a cartridge of the same amperage.

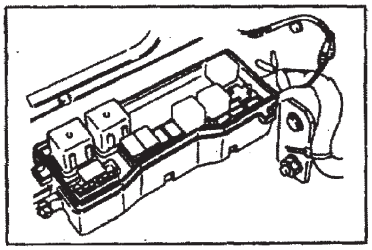
WARNING

Always use Isuzu genuine fusible link for replacement.
Never install a wire, even if it is for a temporary fix, it may cause extensive damage and possibly a fire.

SERVICE AND MAINTENANCE







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If there is an overload in the circuits from the battery, the fusible links are designed to burn out before the entire wiring harness is damaged.

WARNING

The cause of electrical overload should always be determined before replacing the fusible link.

WARNING

Do not forget to remove the battery cables before making any welding process on the vehicle.
Electronic equipments migbt be adversely affected.

SERVICE AND MAINTENANCE

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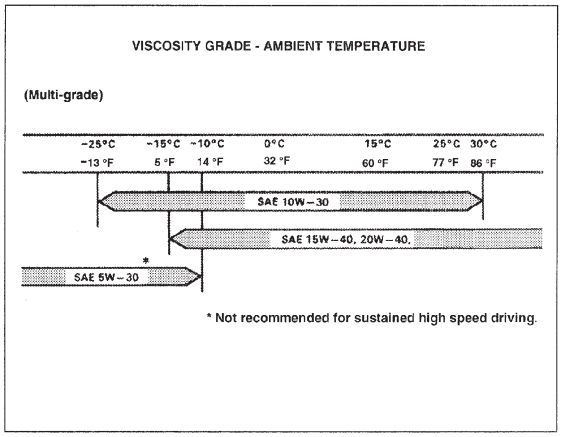
LUBRICATION

Lubricants should be carefully selected according to the lubrication chart. It is also important to select viscosity of lubricants according to the ambient temperature by referring to the following table.

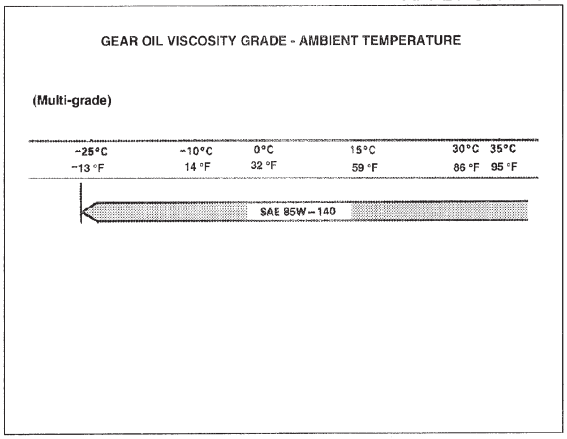
Oil viscosity chart for diesel engines and transmission cases

APPLY DIESEL ENGINE OIL



Oil viscosity chart for rear axle

APPLY GEAR OIL



SERVICE AND MAINTENANCE

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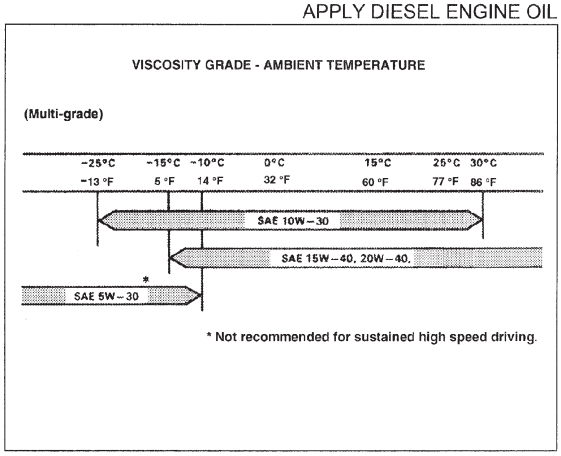

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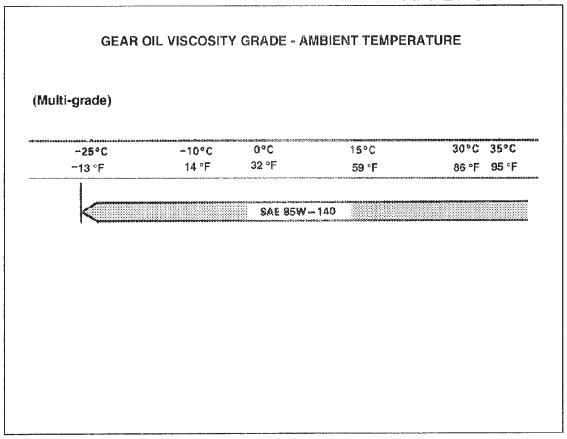

RECOMMENDED LUBRICANTS AND DIESEL FUELS

To obtain maximum performance and longest service life from your vehicle, it is very important to use lubricants and diesel fuels selected and listed in the chart. The lubrication intervals in the maintenance schedule and the validity of new vehicle warranty are based on the use of recommended lubricants as given in the chart that serves as a guide for selecting lubricants of proper grade.

Lubricants

LUBRICATION	TYPES OF LUBRICANTS
Diesel engine *	Diesel engine oil ACEA E6 SAE 10W-40
Transmission case	Diesel engine oil ACEA E3/ E5 SAE 15W-40 5W-30
Differential case	Differential gear oil GL-5 grade
Power steering system	Automatic transmission fluid Dexron – IID
clutch system	clutch fluid SAE J1703, FMVSS 116 DOT 4 grade
Engine cooling system	extended life coolant (ethylene-glycol based)
Wheel bearing	Wheel bearing type or multipurpose type grease NLGI No. 2 or 3
Propeller shaft universal joints	Grease containing MoS_2
Grease fitting	Multipurpose type grease NLGI No.1 or 2
Retarder bearing	Super Telmaco3

* Engine oil that supports DPD (low ash oil) should be used.

SERVICE AND MAINTENANCE

RECOMMENDED LUBRICANTS AND DIESEL FUELS

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Diesel fuels:

DIESEL FUEL/APPLICABLE STANDARD	
JIS (JAPANESE INDUSTRIAL STANDARD)	Based on K2204 Diesel Fuel
DIN (DEUTSCHE INDUSTRIE NORMEN)	Based on EN590: 1997
SAE (SOCIETY OF AUTOMOTIVE ENGINEERS)	Based on SAE J-313C
BS (BRITISH STANDARD)	Based on BS EN590: 1997

DIESEL FUEL/APPLICABLE STANDARD (Sulfur content below 50ppm)	
JIS (JAPANESE INDUSTRIAL STANDARD)	Based on K2204 Diesel Fuel
DIN (DEUTSCHE INDUSTRIE NORMEN)	Based on EN590: 2004
ASTM (AMERICAN SOCIETY FOR TESTING and MATERIALS)	Based on D975-04c NO.1-D S15 or NO.2-D S15 (below 15 ppm)
BS (BRITISH STANDARD)	Based on EN590: 2004

NOTE:
Use the applicable standard or equivalent for diesel fuels.

SERVICE AND MAINTENANCE

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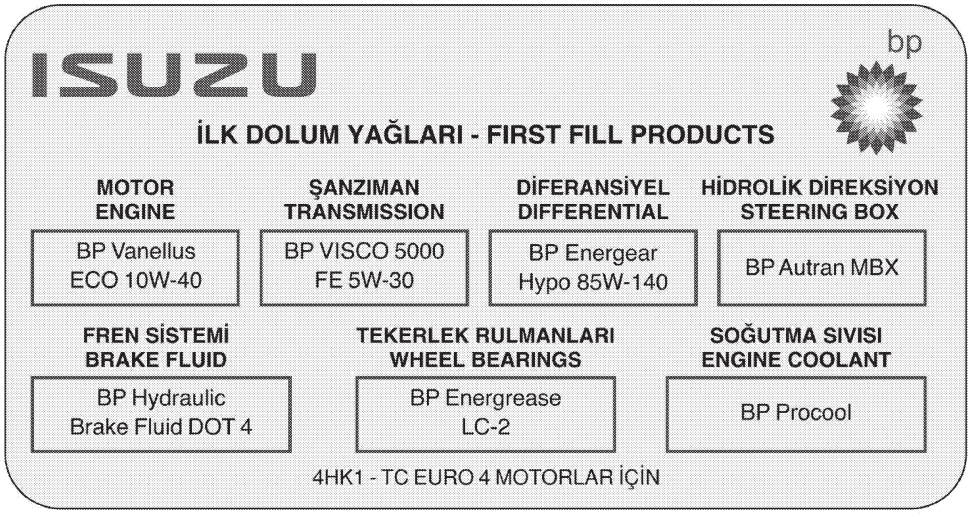
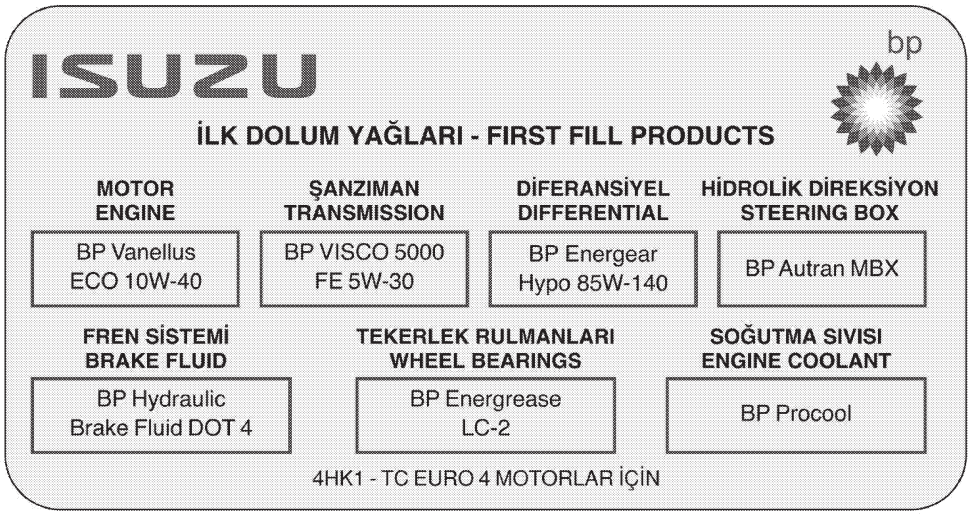
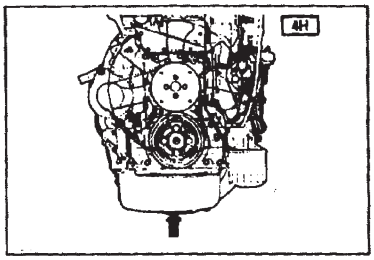
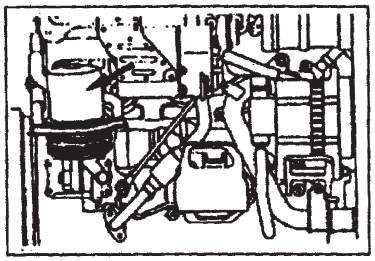
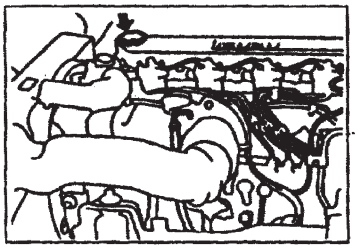


SERVICE AND MAINTENANCE









LUBRICATION GUIDE

Changing engine oil:
Drain used engine oil completely by removing drain plug on the lower part of the oil pan and oil filter.

WARNING

Hot engine oil can cause severe skin burns. Allow the engine to cool before draining the engine oil.

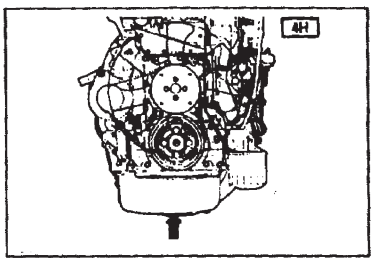
When the oil pan and oil filter are drained completely, install the draining plug.

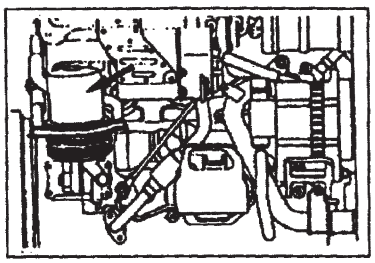
CAUTION

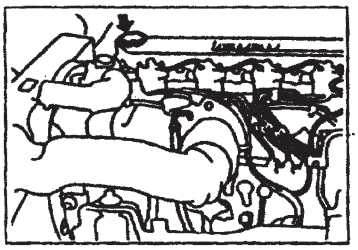
If you do not use the oil intended for the DPD in a vehicle fitted with a DPD, both the engine and the DPD may break down and fuel economy may decrease. Be sure, therefore, to use the oil intended for the DPD.

Then fill engine oil with a new engine oil with specified grade from the filler port.

SERVICE AND MAINTENANCE







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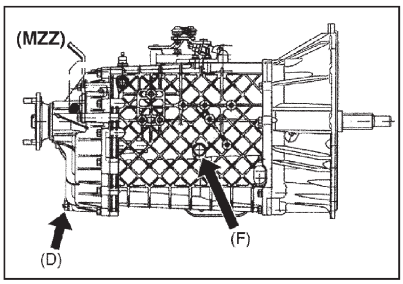
Then fill engine oil with a new engine oil with specified grade from the filler port.

NOTE

For diesel engine, use ACEA E4/E5 engine oil
(Refer to "RECOMMENDED LUBRICANTS AND DIESEL FUELS").

When the engine oil is filled up to the high level mark on the oil dipstick, start the engine and let it idle for a few minutes. Then, stop the engine and recheck the oil level and replenish, as necessary.



Changing transmission oil
Drain the transmission case by removing the drain plug (D) on the lower face of the transmission case. Fill the transmission case to the filler plug (F) with the specified engine oil through the filler plug hole.

SERVICE AND MAINTENANCE

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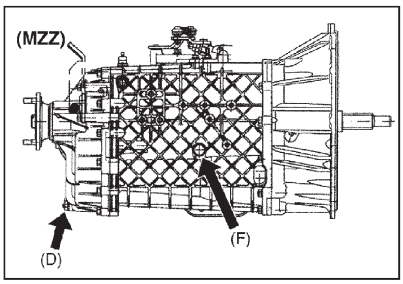

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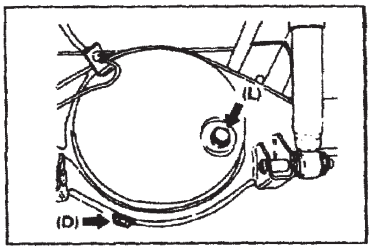
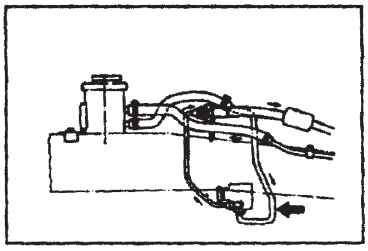
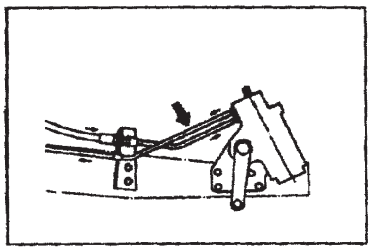


Changing differential oil:
Drain the rear axle housing by removing the drain plug (D) on the lower part of the housing. Fill the rear axle housing to the level plug (L) with the specified transmission oil through level plug hole.



Power steering fluid:
Draining:
1. Jack up the front wheels until they are clear off the ground.
2. Remove the fluid lines between the steering gear box and the fluid reservoir and the fluid reservoir and the pump unit.
3. When draining is completed, turn the steering wheel between stop to stop in both directions several times to drain the remaining fluid in the power steering system.

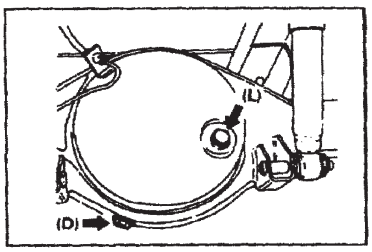


Refilling:
1. Install the fluid lines and hoses securely and fill the fluid reservoir with specified automatic transmission fluid.
2. Allow 2 to 3 minutes after the fluid reservoir is filled to specified level.

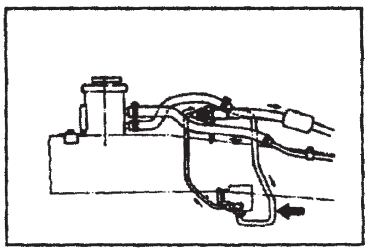
NOTE

Keep fluid reservoir replenished as necessary during refilling to prevent air from entering into the system.

SERVICE AND MAINTENANCE



Changing differential oil:
Drain the rear axle housing by removing the drain plug (D) on the lower part of the housing. Fill the rear axle housing to the level plug (L) with the specified transmission oil through level plug hole.



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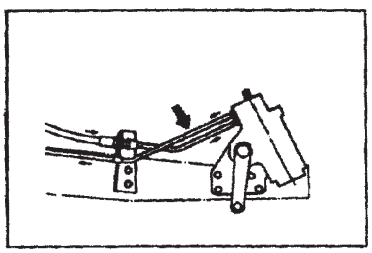

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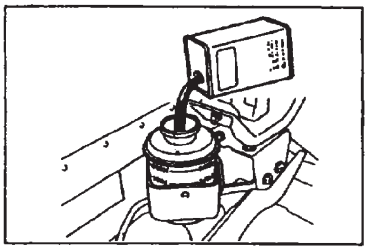
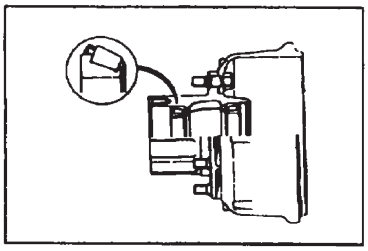


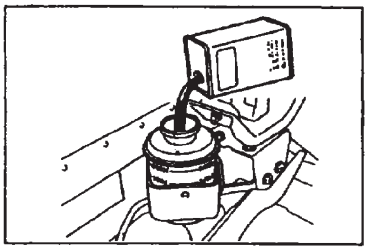


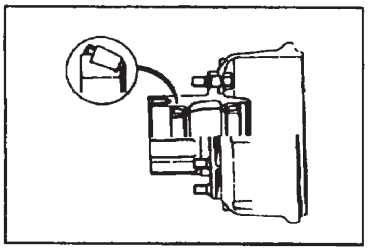
3. Lower the front wheels to the ground. Start and let the engine idle speed for a few minutes.
   Recheck the fluid level and replenish if necessary.

Repacking front and rear hub bearing with grease.

It is suggested that the vehicle is brought into your dealer when the above operation becomes necessary as the operation calls for disassembly and reassembly operation.

SERVICE AND MAINTENANCE





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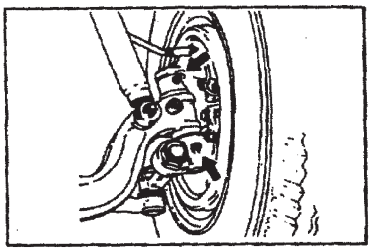
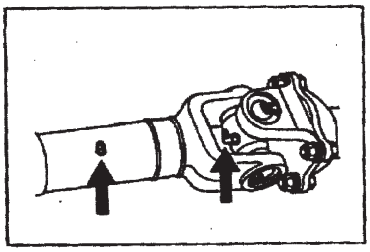
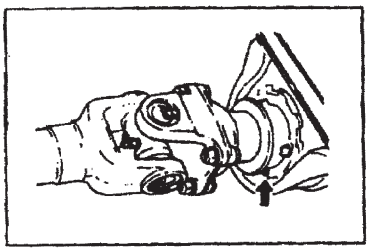


Greasing points

Lubricate the following points with multipurpose type grease.
King pin (4 points).

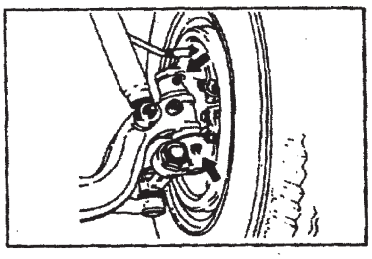


Lubricate the following points with MoS_2 contained type grease.
Universal joints and sliding sleeve.



Lubricate the following points with wheel bearing grease.
Center bearing.

SERVICE AND MAINTENANCE



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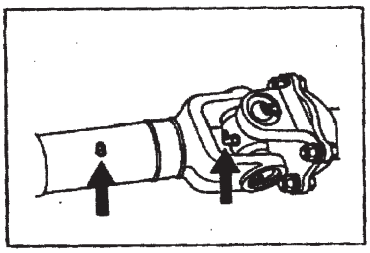

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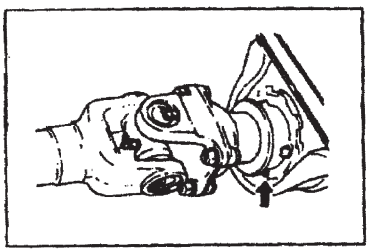

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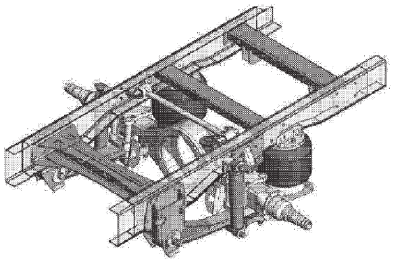
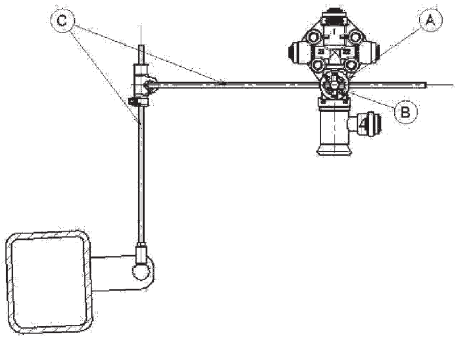




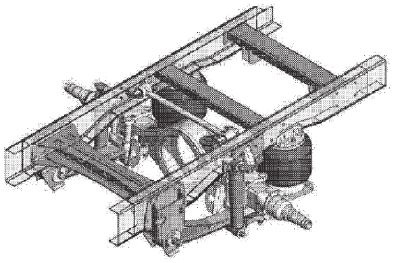
PRECAUTIONS FOR AIR SUSPENSION

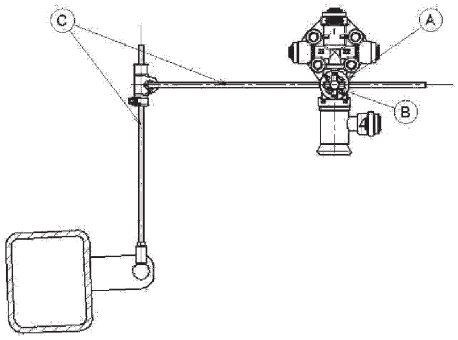
1. Avoid tampering the original setting of level adjusting valve.
2. Air cushions should be properly protected when welding operation is performed nearby the rear suspensions due to any reason whatsoever.
3. The air bellows do not deflate if the air cylinders are discharged due to the air leakage (if the leakage did not take place within the suspension system). In such case, contact to nearest authorized dealer and the vehicle speed of 30 km/h should not be exceeded.

In case of a failure in charging the air cylinders properly due to any air leakage in the air piping in a location far from the nearest authorized dealer even if the engine is running, the vehicle must be driven to the dealer with a maximum speed of 50 km/h after fixing the position of level adjustment valve and disconnecting its connection to the rear axle.
A area is fixed by wrapping band.
B bolt is loosened.
C rods are removed.

4. If air bellows are deflated, the vehicle should be parked safely and contacted with authorized dealer.
   Never drive vehicle with the bellows deflated.

SERVICE AND MAINTENANCE





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MAIN DATA AND SPECIFICATIONS

4HK1 TC MODEL ENGINE	
Model and type	4HK1 TC diesel engine,common rail,four cycle,four cylinder,overhead camshaft,water cooled,direct injection,turbocharger,intercooler
Compression ratio (to 1)	17,5
Piston displacement (cc)	5193
Valve clearance:	
Intake mm	0.4
Exhaust mm	0.4
Firing order	1-3-4-2
Fan belt tension mm	8 - 12
Idling speed / rpm	650
Engine oil capacity liters	12.2
Coolant capacity liters	20
Oil pan drain plug tightening torque kgm.	8,5

TRANMISSION GEAR RATIO AND OIL CAPACITY							
Gear ratios MZZ 6U :	1.	2.	3.	4.	5.	6.	Reverse
	6.369	3.767	2.234	1.442	1.000	0.782	6.369
Oil capacity liters	4.0						

SERVICE AND MAINTENANCE

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Vehicle Model		TURQUOISE
DIMENSIONS		
Wheel base	mm	3815
Track width		
front	mm	1880
rear	mm	1650
WEIGHTS		
Gross Vehicle Mass	kg	9775
Curb weight	kg	7004
Axle capacity		
front	kg	3700
rear	kg	6400

Vehicle Model		TURQUOISE
ENGINE Model and type		4HK1 TC diesel engine,common rail,four cycle,four cylinder,overhead camshaft,water cooled,direct injection,turbocharger ,intercooler
CLUTCH Type		Hydraulic controlled, diaphragm spring single dry plate
Diameter	mm	325
Pedal free play	mm	12-22
TRANSMISSION Model		MZZ 6U :
Number of gears		6 Forward, 1 reverse
REAR AXLE Type		Hypoid gear 120 WW
Gear ratio	(to 1)	4.777
Oil capacity	liters	4.4

SERVICE AND MAINTENANCE

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MAIN DATA AND SPECIFICATIONS

Vehicle Model		TURQUOISE
FUEL TANK		
Capacity	liters	200
STEERING		
Type		Power Steering
Steering wheel free play	mm	10 - 50
Oil Capacity	liters	1.02
Wheel alignment		
Toe-in	mm	0 +2
Camber		0^0 15' ∓ 45'
Caster		$2^0$45' ∓ 1^0
King pin angle		12^0
SERVICE BRAKE		Full air brake system with dual circuit with ABS & ASR
Type		Vacuum assisted exhaust brake (Not functional in vehicles with retarder)
Auxiliary		
PARKING BRAKE		
Type		Spring brake operated fitted on rear axle wheels

Vehicle Model		TURQUOISE
SUSPENSION		
Type	Front	Semi-elliptical,alloy steel leaf spring with hydraulic double acting telescopic shock absorbers.
	Rear	Air bellows with hydraulic telescopic shock absorbers.
WHEELS		
Tire size		225 / 75 R 17,5 tubeless
Tire inflation pressure	kg/cm^2(psi)	6.74 (95)
ELECTRICAL		
Type		24 V system with negative polarity ground
Battery	volt / ah	12V x 2 / 128
Starter	volt / kw	24 / 4,5
AC generator	volt / ah	24 / 80

SERVICE AND MAINTENANCE

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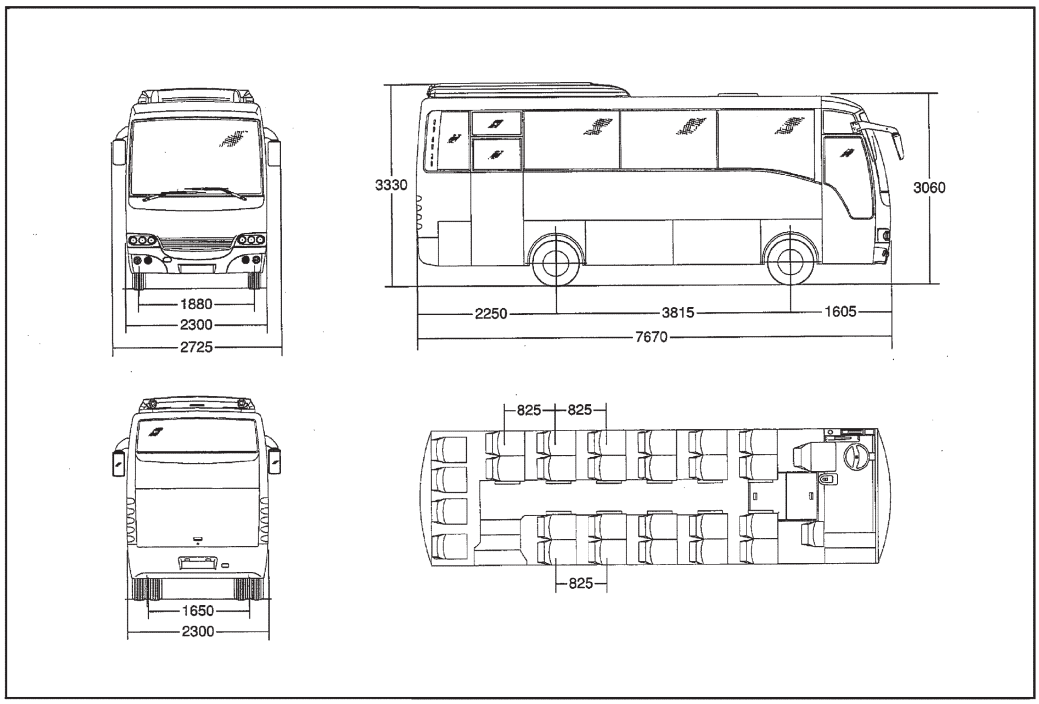
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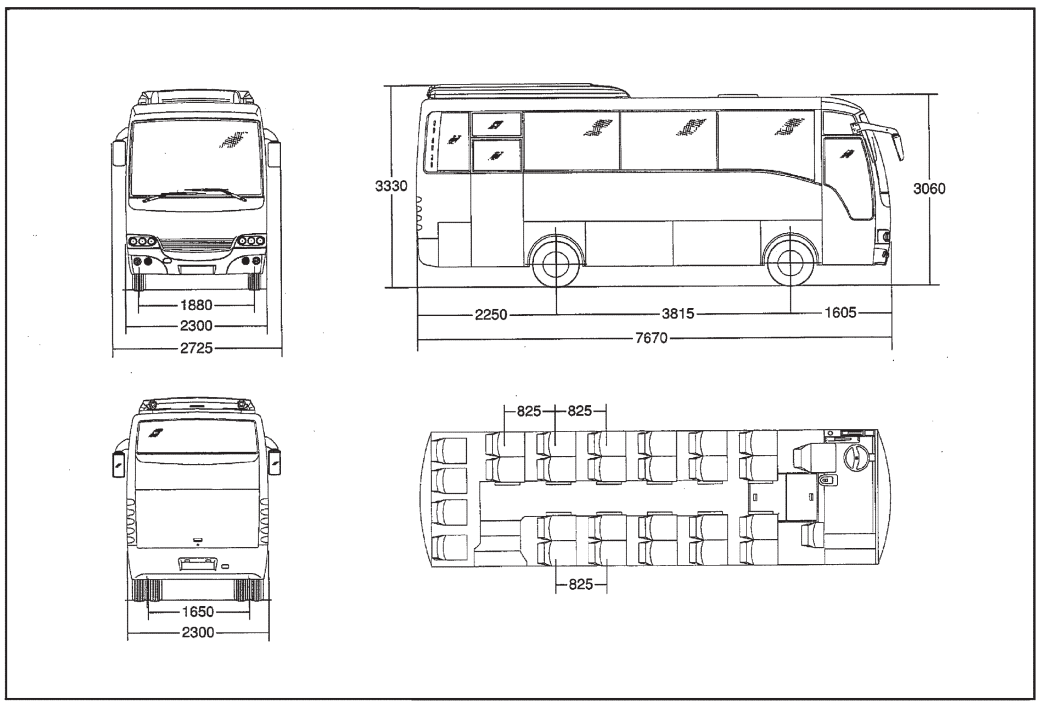
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