

# **VISIGO INTERURBAN**

## **USER'S MANUAL**

**ANADOLU  
ISUZU**

Revision No : 01

## FOREWORD

This user's manual is prepared to give general information about the efficient and most economical use of **E6 Visigo HP Interurban** vehicle. We strongly recommend you to read the information carefully and to abide by all warnings. We would like to inform you that our company will not be responsible for any financial, spiritual problems and losses that you may suffer unless you follow the instructions.

You may apply to authorized dealers and authorized services when you need more detailed information about your vehicle.

Keep the user's manual in the vehicle continuously.

There may be modifications in the shape, equipment and technical specifications as a result of our continuous efforts to improve our vehicles. The information, pictures and technical specifications here are based on the last product information available at the publication of the user's manual and Anadolu Isuzu A.Ş. reserves the right to change without any prior notification.

Thank you for choosing this product.

We wish you a nice drive.

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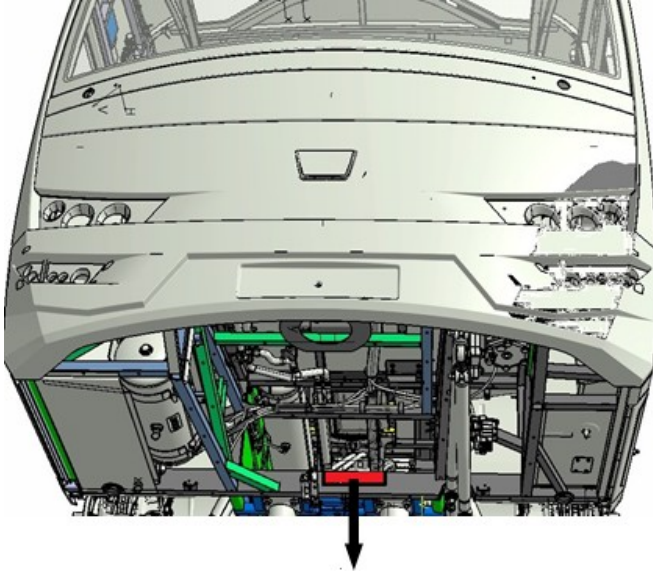
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# **1.INTRODUCTION**



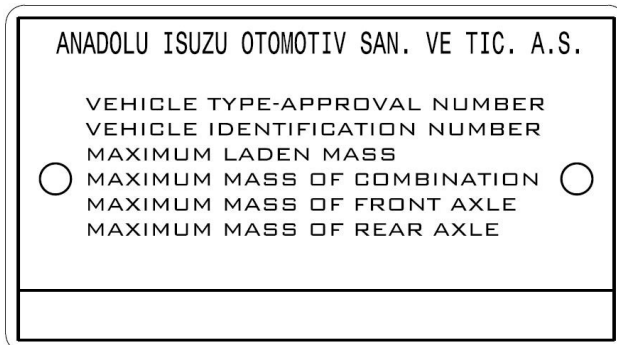
This is a symbolic photo of Visigo Interurban E6 vehicle.

## CHASSIS NUMBER



Chassis number is located in the front part of the vehicle, as shown in the picture.

## IDENTIFICATION PLATE



Identification plate is at the front door entry, at the step level. There are VIN number, sum of maximum axle load, maximum front axle load, and maximum rear axle load on the identification plate.

VIN number includes the vehicle's chassis number info along with vehicle model, maximum loaded weight, engine type, driving system, wheel base, and production place codes.

A detailed description of the composition of the VIN																
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
N	N	A	M	0	2	P	L	S	0	2	0	0	0	0	0	1
(SAMPLE)																
1 - 3	INTERNATIONAL WMI NO:					NNA:	(AIOS) ANADOLU ISUZU OTOMOTIV SANAYI VE TICARET ANONIM SİRKETİ									
4	MODEL LINE					M:	BUS GROUP									
5	GVW OR CAPACITY RATING					N:	14 PASSENGER SEATS									
						H:	17 PASSENGER SEATS									
						8:	18 PASSENGER SEATS									
						F:	19 PASSENGER SEATS									
						G:	20 PASSENGER SEATS									
						L:	21 PASSENGER SEATS									
						B:	22 PASSENGER SEATS									
						C:	23 PASSENGER SEATS									
						4:	24 PASSENGER SEATS									
						E:	25 PASSENGER SEATS									
						M:	26 PASSENGER SEATS									
						D:	27 PASSENGER SEATS									
						R:	28 PASSENGER SEATS									
						P:	29 PASSENGER SEATS									
						I:	30 PASSENGER SEATS									
						K:	31 PASSENGER SEATS									
						S:	32 PASSENGER SEATS									
						U:	33 PASSENGER SEATS									
						V:	34 PASSENGER SEATS									
						5:	35 PASSENGER SEATS									
						6:	36 PASSENGER SEATS									
						7:	37 PASSENGER SEATS									
						Z:	38 PASSENGER SEATS									
						9:	39 PASSENGER SEATS									
						A:	43 PASSENGER SEATS									
						0:	INDEPENDENT FROM SEAT NUMBER									
6	MODEL EXTENSION					S:	STANDARD TYPE									
						A:	DELUXE TYPE WITH AIR SUSPENSION									
						Z:	DELUXE TYPE WITH AIR SUSPENSION (EURO EXPORT)									
						L:	DELUXE TYPE WITH MECHANICAL SPRINGS									
						B:	PUBLIC TRANSPORT TYPE									
						H:	STANDARD TYPE WITH ACTUATED DOORS									
						E:	PUBLIC TRANSPORT (ALGERIAN EXPORT TYPE)									
						2:	INTERURBAN TYPE									
7	ENGINE MODEL					9:	ISUZU - 4BD1									
						1:	ISUZU - 4HF1									
						2:	ISUZU - 4HF1-DE-RATED									
						3:	ISUZU - 4HE1-I									
						4:	ISUZU - 4HE1-XS									
						5:	ISUZU - 4HG1-I									
						7:	ISUZU - 4HK1-XS									
						A:	ISUZU - 4HK1E4C									
						S:	ISUZU - 4HK1E4S									
						N:	ISUZU - 4HK1E4N									
						I:	ISUZU - 4HK1E5C									
						U:	ISUZU - 4HK1E5S									
						V:	ISUZU - 4HK1E5N									
						B:	ISUZU - 4HK1-1CC EURO2 175HP									
						P:	CUMMINS - ISB6.7E6C320									
						6:	CUMMINS - ISB6.7E6250B									
						8:	CUMMINS - ISB6.7E6C250B									
8	DRIVING SYSTEM					L:	LEFT HAND DRIVE									
						R:	RIGHT HAND DRIVE									
9	WHEEL BASE					G:	2765mm									
						L:	3365mm									
						M:	3065mm									
						E:	3815mm									
						F:	4150mm									
						N:	3385mm									
10-11	MANUFACTURING PLANT					S:	4660mm									
						01:	AIOS KARTAL PLANT									
12-17	PRODUCTION SEQUENCE NO					02:	AIOS GEBZE PLANT									



## ENGINE NUMBER

Engine number is stated on two places on the engine.



On engine introduction tag located on rocker cover



On oil cooler body located on engine block

## VEHICLE GUARANTEE

Vehicle's warranty term and conditions are stated in the "Warranty Certificate" provided along with the vehicle. Please see info provided in "Warranty Certificate" for warranty conditions and details of operations not covered by warranty.

## OPTIONS

Options indicated below may be applied upon request apart from the standard features of vehicle.

- Trailer towing system
- Ski box and extra luggage
- Central locking system
- Cooler on the dashboard
- Hydraulic disabled lift
- Rim caps
- Microphone&amplifier
- Reclining seats
- Footrest
- Armrest (window side) for passenger seats (if requested, seats will be of narrow type)
- Seat back magazine holder
- Seat back tray
- LCD
- Indirect rear view camera
- WC
- Engine room automatic fire extinguisher system
- GPS antenna
- TV tuner

## RECOMMENDATIONS / WARNINGS

- For spare keys or lost keys, the serial number on ignition key is required to notify Isuzu Service, so please note the serial number.
- Only use the fuel (EN 590 compatible sulphur rate max 10 ppm) with the stated characteristics for your vehicle.
- Diesel exhaust emission liquid must be compatible with ISO 22241-1 or DIN 70070 standards. These two standards are equivalent of each other.
- Do not load your vehicle over the passenger capacity, do not change the seat places. Our factory is not responsible for possible problems that may arise from change of load balance in the vehicle.
- Inspect the exhaust pipe occasionally. If you see any damage (for example, a damaged connection component or hole or crack caused by wear), have your vehicle checked and maintained at the closest Isuzu Service.
- Check the tyre pressures frequently and always make sure that they are at accurate level.
- Check the main and dipped beam adjustments, do not travel at night with faulty lights.
- Frequently check brake, parking and plate lamps. Do not travel with faulty or muddy brake, parking and plate lamps.
- Be careful to have your vehicle maintained timely and regularly at Isuzu Services to ensure maximum performance.
- When liquids such as waste oil, brake hydraulic or antifreeze, waste filters and scrap batteries that you used in your vehicle are disposed randomly, they damage the environment to a great extent. Be careful for such hazardous wastes to be disposed in accordance with environmental regulations.
- It is very hazardous to have rolling empty boxes, empty bottles or other goods on the floor, pay particular attention to keep the floor around driver's seat neat and tidy.
- Make sure that there are no inflammable materials under or around the vehicle before you start the engine. Such materials may start fire if they are around.
- Before driving, make sure that you adjusted the seat, steering wheel and mirrors to the positions which provide the correct driving position for you.
- Always fasten your seat belt.
- Make sure that front window and side windows are clean. Keep the shades in a way not to prevent your view and driving.
- Do not increase the engine speed before it is heated enough.
- Drive your vehicle paying attention to traffic rules and road conditions.
- If you feel any abnormality in relation to the tyres when driving, stop at a safe place immediately. If you continue driving with a deflated tyre, this may lead to the breaking of the bolts and to the dislocation of the tyre due to excessive force on the wheel studs.

- Please drive with a constant speed as much as possible. Warming the engine longer than it is necessary and revving up the engine to high speeds lead to fuel wastage.
- If a warning lamp works or lights, please do not disregard it and do not keep on driving. Remember that you must conduct corrective actions by referring to the description of the counters, warning lamps and indicator lights.
- Start hazard flasher system and pull over to a safe place that will not prevent traffic if your vehicle malfunctions when driving. Place warning triangles to let other vehicles know about your presence. Let the other passengers get off and keep them waiting in a safe place. Inform the closest Isuzu Service.
- Field of vision is reduced under adverse weather conditions and the slippery road surfaces increase the braking distances. Drive at a lower speed than your speed under fair weather conditions. Moreover, do not turn the steering wheel suddenly and do not brake abruptly. Use tyre chain and winter tyres on snowy and icy roads.

## **2. GENERAL INFORMATION**

## ENGINE START

Set the main switch "ON" and transmission "N". Set ignition key "M", turn the ignition key and press the starter ("D" position).



Do not run the starter for longer than 30 sec and do not step on the accelerator pedal when starting. Wait for two minutes between each starting trial.



If engine oil warning lamp has not been deflated within 15 sec, stop the engine in order to prevent it from damage. Contact Isuzu service.



Run the engine in idle mode for 3-5 minutes once you have started it. Gradually increase the engine speed. Do not run the engine in a way to exceed maximum engine speed, it may seriously damage the engine.

## Starting the Engine in Cold Weather

Set the main switch "ON" and transmission "N". Set ignition key "M", turn the ignition key and press the starter ("D" position) when ignition light goes off.



If the vehicle is to be parked for a long time (more than 1 days), turn off the main switch.

## ENGINE STOP

Set the ignition key "St" and stop the engine.



Do not turn off the main switch before 70 sec have passed when ignition key is open and after it has been closed.

## OPENING AND CLOSING DOORS

Front door is opened/closed through remote control from outside.



There are door opening/closing switches on front control panel to open/close the doors from the inside. Front and rear doors are automatically closed when the vehicle speed exceeds 5 km/h.

### Opening the Doors in Emergencies



There are air cocks on the upper side of doors for emergencies. Turn the tap clockwise to discharge the air and push the door towards outside to open.



There are also air cocks on sides of the doors to open from outside when necessary. Turn the tap clockwise and pull the door towards outside to open the door.



There is a red lock opening/closing control on the door, to open the door if there is any passenger in the vehicle when it is locked from the outside with the key. Control is turned in the arrow's direction when necessary and air is discharged by turning the air cock on the upper side of the door, door is pushed towards outside to open.

## EMERGENCY EXITS

Emergency exit is enabled by breaking the window on the right and left side of the vehicle and window on the trapdoor using the emergency hammer.



## STEERING WHEEL ADJUSTMENT



Steering wheel is adjustable upwards, downwards, frontwards and backwards according to the driver's position of easy driving. The lever located below the steering wheel on the right side is pulled upwards for this adjustment. Lever is pushed back when the desired position is reached.

## HONK

Honk sounds when pressed the center of steering wheel.

### **3. CONTROLLERS AND INDICATORS**



## FRONT CONTROL PANEL

### Hillholder switch



System is switched on by pressing the lower edge of the switch. Brake system is kept activated to prevent the vehicle from slipping backwards on a hill. It locks the system when removed foot from the brake pedal. Brake system is turned on when stepped on the accelerator pedal. System is turned off when pressed the upper edge of the switch.

### Spot light switch (driver side)



Spot light on the upper driver's compartment is turned on when pressed the lower edge of the switch. The light is turned off when pressed the upper edge of the switch.

### Trunk lid switch



Lights in the trunk are turned on when pressed the lower edge of the switch. Lights go off when pressed the upper edge of the switch.

### Front fog lamp switch



When ignition key and park lamps are turned on, front fog lamps are activated when pressed the lower edge of the switch. It is deactivated when pressed once more. When ignition key is turned off, fog lamps are deactivated.

### Driver side window resistance switch



Driver's side window is activated when pressed the lower edge of the switch. It is deactivated when pressed for the second time. If heater is not turned off by the driver, it is automatically deactivated after 20 minutes.

### Outside mirror resistance switch



Outside mirror heater is activated when pressed the lower edge of the switch. It is deactivated when pressed for the second time. If the heater is not turned off by the driver, it is automatically deactivated after 20 minutes.

### Exhaust system cleaning switch



Regeneration is started by pressing the switch, warning light appears on the indicator.

### Wiper lever



Wiper lever works in 3 levels.

**Level intermittent:** it works by turning the lever towards the front window. Wiper levers work automatically at certain time intervals.

**Level normal speed:** It is turned towards the front door again after the 1<sup>st</sup> level, wiper levers continuously work at normal speed.

**Level high speed:** It is turned towards the front door again after the 2<sup>nd</sup> level, wiper levers continuously work at high speed.

When pressed the button on the right side of wiper lever, sprinkler works. When sprinkler operates, wiper levers are automatically activated and then stop after a while.

## Signal Lever



The lever gives signal to the right when it is directed upwards and to the left when directed downwards.

Park lamps are turned on when it is turned for the first time and dipped beams are turned on when it is turned for the second time. If the lever is pushed downwards when dipped beams are on, main beams are continuously on.

**Selector:** Main beams are on as long as the lever is pulled if the signal lever is pulled upwards. It goes off when it is released.



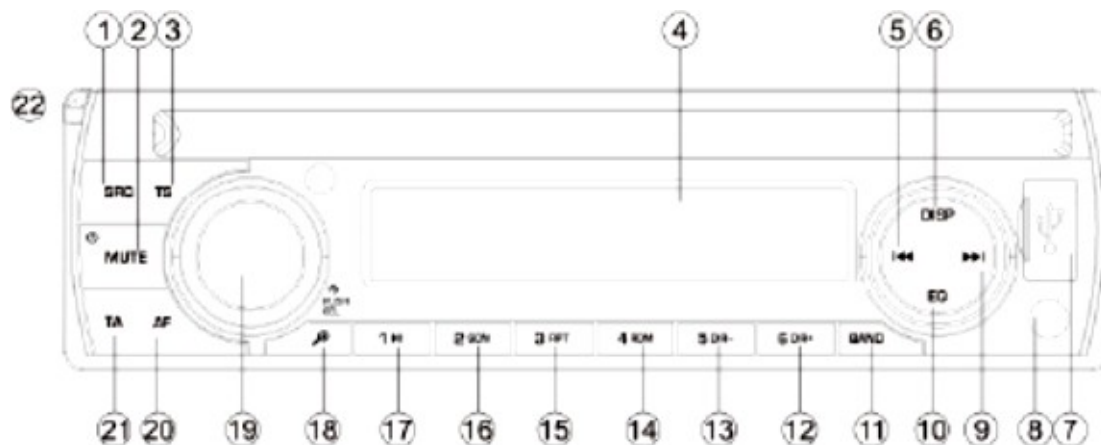
**Roof light switch :** Roof lights turn on when pressed the lower edge of the switch. Roof lights turn off when pressed the upper edge of the switch.



**Spot light switch :** Spot light on the front door is turned on when pressed the lower edge of the switch. The light is turned off when pressed the upper edge of the switch.



## RADIO/USB/SD CARD



1. SRC (source) button.

Select memory bank or audio source

2. / MUTE" Power ON/OFF button.

3. TS (travel store) button.

4. LCD display.

5. (SEEK DOWN) button.

6. DISP button.

7. USB port

8. AUX IN jack.

9. (SEEK UP) button.

In the menu: Change menu level

Radio mode: Adjust the stations

Other operating modes: Track selection

10. EQ/LOUD button.

11. BAND button.

12. 6 DIR+ (directory) button.

13. 5 DIR- (directory) button.

14. 4 RDM (random) button

15. 3 RPT (repeat) button.

16. 2 SCN (scan) button.

17. 1 (play/pause) button.

18. (MP3 search) button

19. VOL/SEL/ENT button.

In the menu: Select menu item, change setting

20. AF button.

21. TA button.

22. (panel release) button.

23. RESET button.

Access only with detached control panel

24. SD card slot.

Access only with detached control panel



**Front Door Control Switch** : Front door is opened/closed when pressed the lower edge of the switch. The switch does not get activated when the vehicle speed exceeds 5 km.



**Back Door Control Switch** : Back door is opened/closed when pressed the lower edge of the switch. The switch does not get activated when the vehicle speed exceeds 5 km.

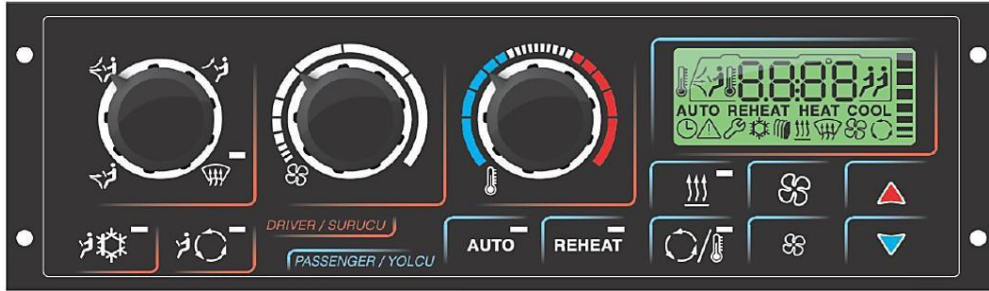


**Flasher Switch** : Flasher is opened when pressed the lower edge of the switch. Flasher is closed when pressed the upper edge of the switch. When flasher is open, signal warning lamps on the instrument panel and function lamp on the switch flash and give audio warning along with all signal lamps of the vehicle.



**Suspension Control Switch** : This switch is used for a higher driving level than the normal one. When pressed the lower edge of the switch, the vehicle gets a higher level and when pressed the higher edge of the switch, the vehicles gets the normal driving level. When the switch is turned on, intermittent warning sound is activated.

## HEATING and COOLING SYSTEM CONTROL PANEL



Driver's side air direction is checked. Rightmost position is defrosting function for windshield, alternator must run for this function.



Driver's side fan speed is adjusted. While alternator is not running, only minimum fan speed can be run.





Driver's side temperature adjustment is made.



Cooling of driver side is activated. Passenger side cooling must be active in order for this function to run.





Short pressing driver side fresh air choke flap is opened and closed. Double click closes driver and passenger fresh air valve for 10 minutes. Button combination  +  (5 sec.) Driver's side temperature is displayed on the screen.



Short pressing automatic mode ON/OFF  
Double click AUTO/HEAT/COOL functions are chosen.



Passenger side dehumidification function is activated.



Short pressing passenger side fresh air choke flap is opened and closed.  
Double click Time/room temperature/outside temperature display is selected on the screen.



Preheater is activated.



Passenger side fan speed is increased.(7 grade)



Passenger side fan speed is decreased (7 grade).



It increases passenger side SET temperature. When 6x is pressed once maximum temperature value is reached, MAX HEATING becomes active.





It decreases passenger side SET temperature. When 6x is pressed once minimum temperature value is reached, MAX COOLING becomes active.

## Special Functions

Special functions are activated with the button combinations below.

### Smog Activation



When fresh air button is double clicked, driver and passenger fresh air valves get closed for 10 minutes.

### Mod Function



When AUTO button is double clicked, AUTO / HEAT / COOL / AUTO functions are selected.

FUNCTION	HEATING	VENTILATION	COOLING
AUTO	X	X	X
HEAT	X	X	-
COOL	-	X	X


### Display



When driver side valve button is double clicked, displayed TIME/ROOM TEMPERATURE / OUTSIDE TEMPERATURE display is selected.

## Channel Temperature

5 sec +

When pressed the  fan level decreasing key for 5 seconds, channel temperature is indicated on the display.

## Frontbox Temperature



Frontbox temperature is displayed on the screen when keys are pressed for 5 seconds.

## Keylock



Keylock is activated and “Loc” appears on the screen when keys are pressed for 10 seconds. Passenger side fan and temperature adjustment are locked with key lock.

## Adjusting Time Setting








-Time setting can be adjusted when IGNITION is off.

-Time setting is entered by pressing   keys together. By using the  or  key, time setting is adjusted.

After time setting is completed, you return main display when you do not press any key for 5 seconds.

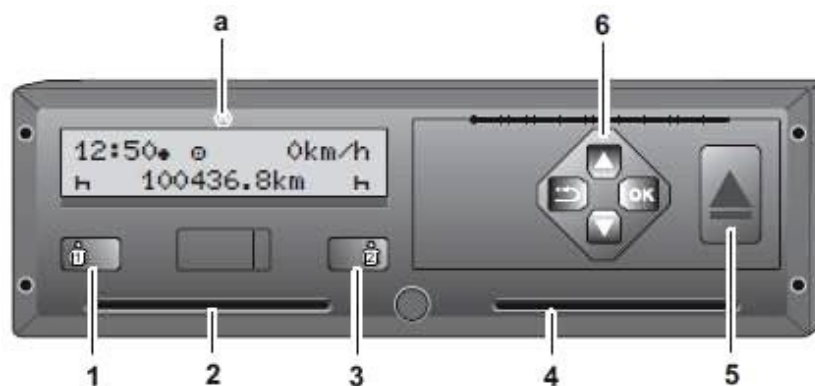
## Error Messages Display



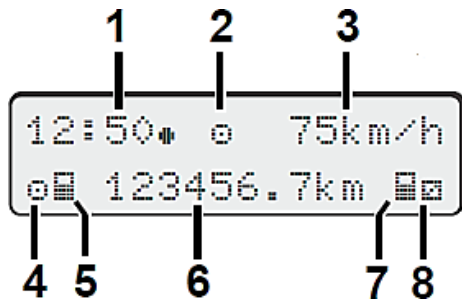
- Current error codes are shown on the display by pressing  +  keys together.
- Error message may be deleted using  key.
- Other error codes may be viewed using   keys.
- If there is no error in the system, “---” is shown on the display.

## TACHOGRAPH

Tachograph records vehicle speeds, time, distance travelled and other information. It can be useful in achieving economic driving and optimum management of operations.



1 Driver 1	Activity button and ejection button
2 Card slot 1	
3 Driver 2	Activity button and ejection button
4 Card slot 2	
5 Unlock button	
6 Menu buttons	<p>▲/▼ Select desired function</p> <p>OK Acknowledge function or confirm actions</p> <p>← Leave menu</p>



1	Time
2	Operating mode
3	Speed
4	Driver 1 active
5	Driver 1 card symbol
6	Total kilometer
7	Driver 2 card symbol
8	Driver 2 active

## **SIDE CONTROL PANEL**

### **Lighter**



Lighter is pushed towards the heat element inside and it goes out automatically when heated.

### **Route indicator switch(Optional)**



Route indicator is activated when pressed the lower edge of the switch, it is deactivated when pressed the upper edge of the switch.

### **Cruise control on/off switch**



Cruise control is turned on when pressed the lower edge of the switch. Cruise control is turned off when pressed the upper edge of the switch.

### **Cruise control fixing and speed increasing switch**



After turning cruise control on, press the lower edge of the switch to fix the vehicle at the current speed. Vehicle speed increases as one presses the upper edge. Turn off the on/off switch or step on the brake pedal or pulls the intarder lever to cancel the system. When cruise control is activated, a green warning light appears on the instrument panel and constant speed value is shown on the information screen.

## Mirror control switch



This switch is used for the driver to adjust the directions of rear view mirror according to himself. Mirror is turned towards the desired direction by turning the arrow mark on the switch towards the mirror to be adjusted and directing the switch (right, left, upwards, downwards).

## Emergency Switch



Red security cap is opened by moving upwards to use the emergency switch. Electricity in the system is cut off, engine stops, all inner lighting and flasher are turned on and door switches become activated when it is pushed forward. System becomes normal when it is pulled back

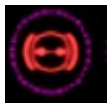
## Hand brake



Hand brake system is air-driven and spring wound. Hand brake lever is on the left side control panel. When the vehicle is stopped, hand brake is pulled backwards and lever must be locked at the lower position. Lock latch on the lower part of the lever is slightly pulled upwards and lever is released frontwards to disengage the brake. There is a warning light on the instrument panel to indicate whether hand brake system is enabled. For driving (vehicle activated), if brake air is insufficient when hand brake is disengaged (below 6 bars), warning light turns red. One must wait for this light to go off before moving.

NOTE : Switch places may vary according to vehicles.

## INSTRUMENT AND WARNING LIGHTS PANEL



**Brake System Pressure Warning:** Red and audio warning light is on when brake system pressure falls below 6 bars.



**Battery Warning:** Red warning light is on when ignition switch is on and is off when engine is started and passes idle speed. It indicates a malfunction in charging system if it is on when driving.



**Transmission Malfunction Warning:** Yellow warning light indicates a malfunction in transmission



**Engine Coolant Temperature Warning:** Red warning light is on when engine coolant temperature is 113 °C.



**Lining Wear Warning:** Red warning light is on when lining thickness percentage falls below 10%.



**Driver Warning:** Yellow warning light is on for the driver to identify the problems on NOx control system and their causes.

Driver warning is on;

- If diesel exhaust emission fluid level is below warning level,
- If diesel exhaust emission fluid of incompatible quality is used,
- If diesel exhaust emission fluid of incompatible amount is used,
- When diesel exhaust emission fluid is sprayed in an intermittent way,
- When EGR valve or system sensors do not work compatibly.



**Engine STOP Warning:** Red warning light is on when ignition switch is on and goes off when engine is started. If warning is on when engine is on, vehicle must be stopped safely to stop the engine.

Motor STOP warning will be on ;

- If there is an important error in the vehicle,
- If automatic engine will be protected and stopped,
- If there is a malfunction in SCR system,
- If there is diagnostic error code in the system.



**Engine Oil Warning:** Red warning light is on when there is an error detection in engine grease system.

Engine must be stopped when warning light is on ;

- If oil level is low,
- If viscosity of oil is not compatible,
- If oil filter is blocked,
- If oil pressure sensor is faulty,
- If oil pump is faulty.



**Malfunction Indication Warning:** Yellow warning light is on in the case of a malfunction related to emission control system. When the warning is on, the vehicle must be taken to the closest Isuzu Service.



**Engine Warning:** When an error, which does not prevent the vehicle from moving and is not active or critical, is identified, yellow warning light is on. If warning light is on when the engine is running, the vehicle must be taken to the closest Isuzu Service.

Engine warning light is on;

- If it will be closed in the idle mode,
- If it flashes when the ignition is turned on,
- If there are maintenance errors and a diagnostic error code on the system,



**DPF Warning:** Yellow warning light is on when DPF (diesel particle filter) is full. Warning light is constantly on when the filter is full, regeneration must be started. When the particle amount reaches the critical level, warning flashes, at the same time malfunction indicating warning light is also on and engine power decreases.



The vehicle must be parked to start regeneration. Red engine warning light is on if regeneration is not conducted, the vehicle must be stopped in a safe way and you must contact Isuzu Service.



**Exhaust System High Temperature Warning:** When active regeneration starts in the vehicle or exhaust temperature exceeds a programmable limit, yellow warning light is on. When exhaust temperature decreases to suitable temperatures, warning light goes off. There must not be any inflammable materials at the exit of exhaust pipe when warning light is on while the vehicle is parked.



**Diesel Exhaust Emission Fluid Low Level Warning:** Yellow warning light is on when the diesel exhaust emission fluid level is low.



**Signal Warnings:** Green audio warnings that flash when hazard flasher switch or signal lever on the steering wheel indicating turns to the left and right are used.



**Cruise Control Warning:** Green warning light is on when cruise control is active.



**Front Fog Warning:** Green warning light is on when front fog lamps are used.



**Glow Plug Warning :** Yellow warning light is on when the ignition is turned on and goes off after a while. You need to wait for the lamp to go off to press the starter.



**Warning for Water in Fuel System :** Yellow warning light is on when there is water in the fuel. Fuel quality control must be made if the warning light is constantly on.



**Fuel Level Warning:** Yellow warning light is on when fuel level decreases. The vehicle may go 50 km more after the warning light is on.



**Main Beam Warning:** Blue warning light is on when main beams are used or headlights are flashed.



**Speed Unit:** Unit of the value in the speed indicator.

## Engine Speed Indicator



Engine speed indicator measures the engine speed per minute. It starts working when the engine is started.

## Speed (km/h) Indicator



It shows the vehicle speed as km/h, it starts working after the vehicle has started.

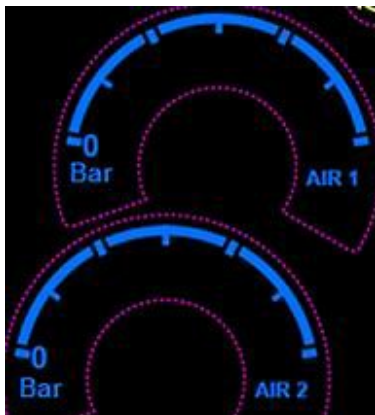
## Fuel Indicator



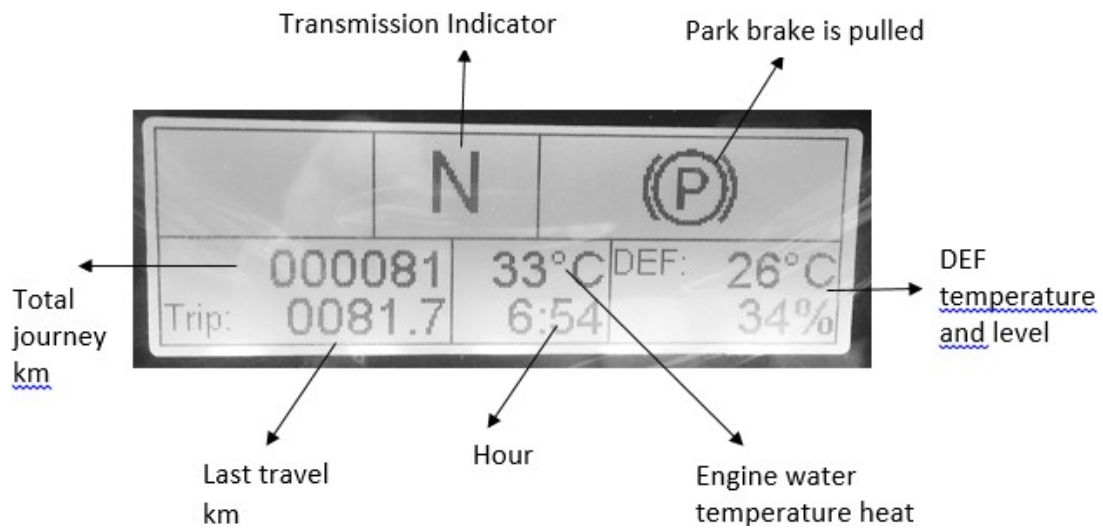
Fuel indicator shows fuel level in fuel tank. When pointer gets close to “E”, yellow light at the bottom right part of the indicator is on, this means that fuel has decreased. Fuel must be added before the fuel in the tank is completely used up, or else the system draws air.

## Brake Pressure Indicators

It shows air pressure values of front brake and rear brake .



## Information Screen



Sub-menus may be displayed using the MODE and TRIP keys on the indicator.

When MODE key is pressed;

Driving info,

Vehicle info,

Alarms/warnings,

Settings menus are displayed.

Sub-menus are displayed when MODE key is pressed on the selected title.

### **DRIVING INFO:**

Range

Average Fuel Consumption

Instant Fuel

Average Speed

### **VEHICLE INFO:**

Engine time hour

Engine Speed

Heat

Oil Pressure

Air Pressure 1

Air Pressure 2

Total Journey

Last Travel km

Brake Lining Status

**ALARMS/WARNINGS**

Engine Error Codes

Transmission Error Codes

**SETTINGS**

Date / Hour

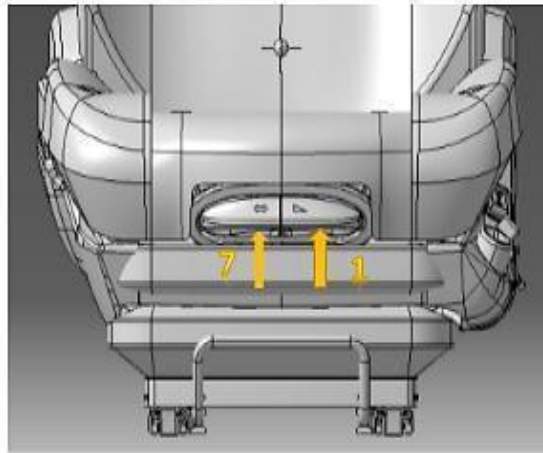
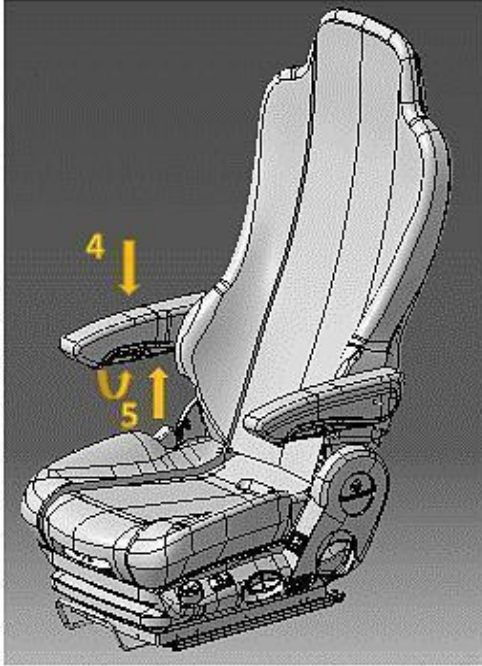
Language

Screen

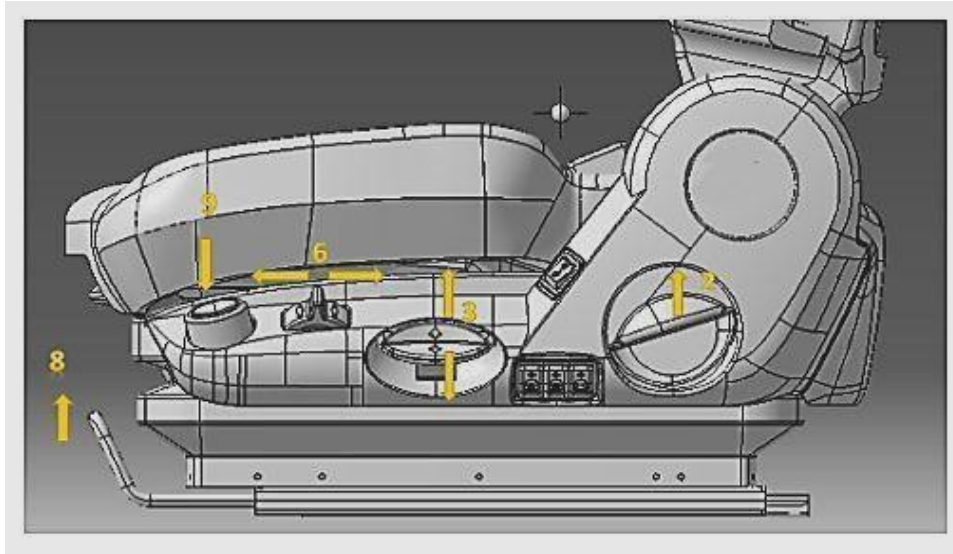
Press MODE and TRIP keys at a time to go back to the main screen.

## **4. VEHICLE EQUIPMENT**

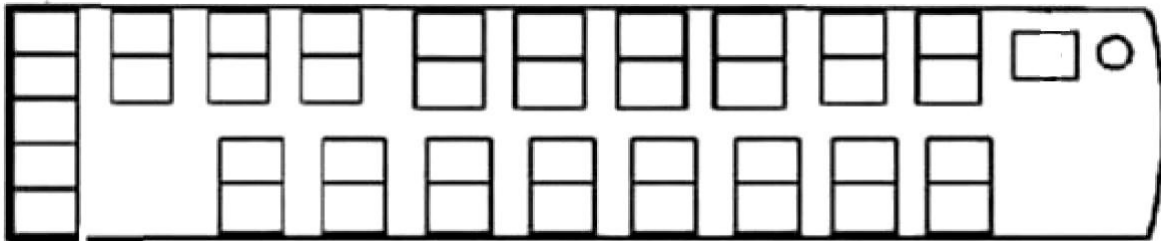
## DRIVER SEAT



1. **Seat inclination adjustment** : Button on the left is pulled upwards to adjust the inclination of the seat. The seat inclination is brought to the desired position by giving the weight frontwards or backwards.
2. **Backrest inclination adjustment** : It is adjusted by unlocking the backrest (lock lever is lifted up) and backrest is laid by pressing backwards.
3. **Height adjustment** : Seat height is changed by lifting or pressing down the adjustment latch.
4. **Armrest** : There are armrests, which can be lifted up and down, on two sides of the seat.
5. **Armrest inclination adjustment** : Armrest inclination can be changed by turning the button.
6. **Shock absorber rigidity adjustment** : Flexibility rigidity of seat can be adjusted as 3 levels.
7. **Seat depth adjustment** : Button on the right is pulled upwards to adjust the width of seat to come frontwards. At the same time, seat is pulled frontwards and backwards to adjust the desired position.
8. **Forward and backward adjustment** : Seat lock lever is pulled to move frontwards or backwards.
9. **Quick lift down** : Seat may be lifted down to the bottom by pressing the button to fix. Seat rises to the driving position when button is pressed again.



## PASSENGER SEATS



Passenger seats are covered in cloth. Leather upholstery is offered as an option. Right and left double seats have armrests by the aisle. 4 seats which are close to the middle door can be mounted and demounted by hand easily. The front right and left double seats and middle seat of the back five seats have 3 points seat belt while the other passenger seats have 2 points seat belt.

## RESISTANCE DRIVER SIDE WINDOW

It is placed on the left of driver. It may be actuated by electrical engine and controlled by the driver through a switch on the front control panel.

When the moving glass is broken or electrical engine malfunctions, apply to Isuzu service.

## SERVICE SET



There are service sets on the overhead of seats. There are two air discharge nozzles, one speaker and speaker on/off button, one hostess button and buttons to activate reading lamps on service sets. Nozzles are opened by pressing the wings on air discharge nozzles to enable air discharge. Wings may be moved backwards and forwards to adjust the amount of air. The direction may be changed by turning.

## DIAGNOSTIC SOCKET

Diagnostic sockets are used to load and change parameters on engine control unit and fault diagnosis. Diagnostic socket for engine is in the cabinet on the front- right side. Diagnostic socket for transmission is on the gear selector.

## PASSENGER INFORMATION PANEL



This image may be different in your vehicle according to the number of seats.

There is passenger information panel at the top of front window. There are seat belt warning, inner and outer ambient temperature, watch and sitting passenger capacity information on the information panel. Also if there is toilet (optional) in the vehicle, it may be viewed on the passenger information panel that it is occupied.

## AMPLIFIER (OPTIONAL)



Amplifier enables one to turn the volume of speaker and microphone up/down.

## MIRRORS



There is one inside mirror in the vehicle.

There are two outside mirrors, one each on right and left. Formation of vapor and ice on the outside mirrors are prevented with resistance heater and outside mirror view may be controlled by the driver.





**RIGHT OUTSIDE MIRROR**



**LEFT OUTSIDE MIRROR**

### **LCD (OPTIONAL)**



There is 19" LCD screen under the passenger information panel.

### **STOP BUTTONS**

Standard



For disabled passengers



Passengers who want to get out of the vehicle inform the driver by pressing these buttons.

### **TRAPDOOR**



There is a manually opened/closed trapdoor in the middle of the vehicle. Trapdoor is designed in a way to allow use for emergency exit in addition to use for ventilation purposes. Exit is possible by breaking the glass with the emergency hammer in the cover. There is a tag on the side indicating what to do in emergencies.

## DISABLED LIFT



Disabled lift is under the middle door on the right side of the bus.

To get on the bus;

Disabled passengers press the button



and



lights on the driver

control panel , also audible warning activates. In this case,

- Stop the bus
- Get off the bus and open the middle door
- Demount 4 seats which are close to the middle door
- Open the cap where the lift is located in
- Take the remote control.



Always stand clear of the platform area.

Lift hazards can result in crushing or falling.

Keep hands and feet clear of pinch points and moving parts.

If riding the lift, make sure the load is stable, and your footing is solid.



Always board platform slowly and cautiously.

Lift and lowerwheelchair passengers facing outward.

On the platform, wheel brakes should be engaged.



In case of electrical failure or any unsafe condition exists or unusual noises or movements are noticed, do not use the lift and contact an authorized service for repair.

Close the cap and middle door, after disabled passenger gets on the bus.

When the cap is closed , light  on the warning lens panel goes off.

### **Stop Button for Disabled Passengers**



Disabled passengers who want to get off the bus, inform the driver by pressing on this button.



Then, lights on the driver control panel and also audible warning activates.

Help the disabled passengers to get off by using the lift in the same way.

## REAR - VIEW SYSTEM (OPTIONAL)



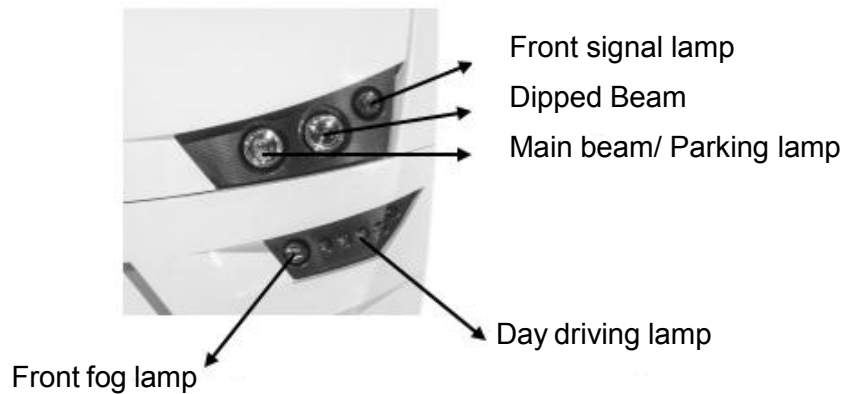
There is a closed circuit camera system to display the area behind the vehicle when vehicle is parked or reversed. Image in the camera is displayed on the multimedia set screen on the front control panel.

When the vehicle is reversed, the screen is turned on automatically and image is reflected on the screen.

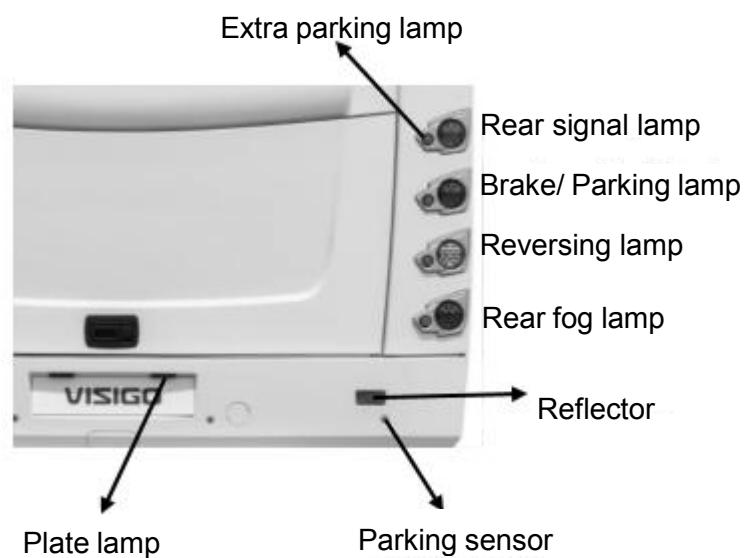
## OUTSIDE WARNING AND ILLUMINATION LAMPS

Lamps	Number on the vehicle
Main beam/park	2 items
Dipped Beam	2 items
Front fog lamp	2 items
Front signal lamp (LED)	2 items
Front positioning lamp ( LED)	2 items
Side signal lamp (LED)	2 items
Sidemarkers (LED)	6 items
Rear signal lamp (LED)	2 items
Brake/parking lamp (LED)	2 items
Extra parking lamp (LED)	8 items
Reverse gear lamp (LED)	2 items
Rear fog lamp (LED)	2 items
Rear plate lamp	2 items
Rear positioning lamp ( LED)	2 items
Day driving lamp (LED)	1 set
Reflector	2 items
3. Security brake lamp (LED)	1 item
Engine illumination lamp (LED)	2 items

## Front Headlights Group



## Rear Lamp Group

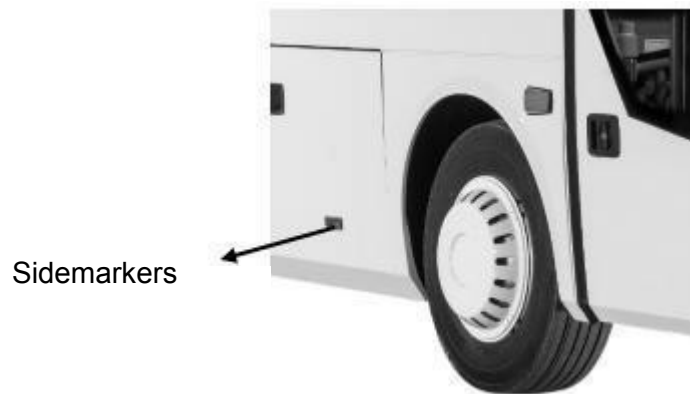


## Side Signal Lamps

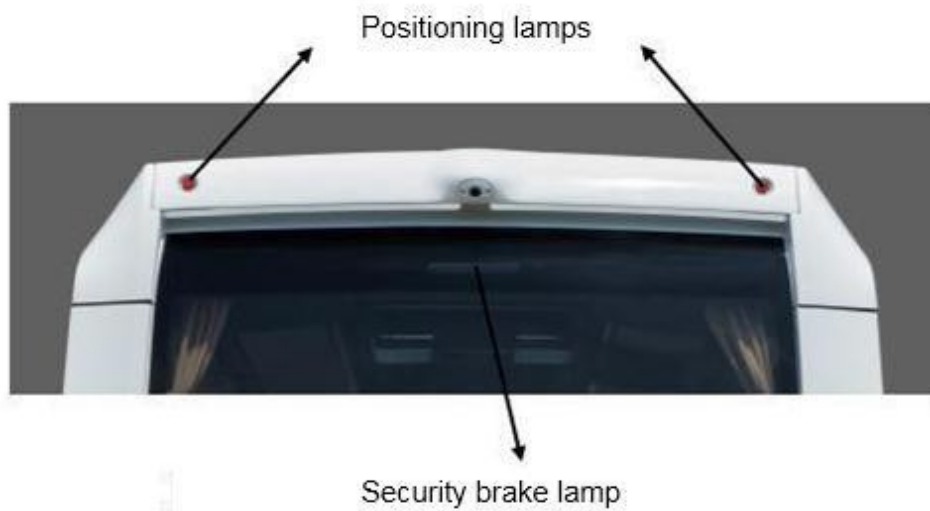


There are 2 side signal lamps on the right and left of the vehicle. Front and rear signal lamps work together.

## Sidemarkers and Positioning Lamps

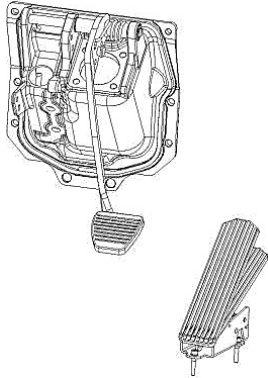


There are 4 positioning lamps, 2 on the top front and 2 on the top back of the vehicle. There are also 6 sidemarkers, 3 each on the right and left.



## PEDALS

### Brake Pedal



Pedal on the left (hanging type) is the brake pedal, which is a part of electronic braking system (EBS). Electrical signal is sent to the central control unit and air is distributed to brake elements once the brake pedal is stepped on.

Intarder activates automatically when the brake pedal is applied. It is integrated into the vehicle braking system and will function as the brake pedal is depressed.

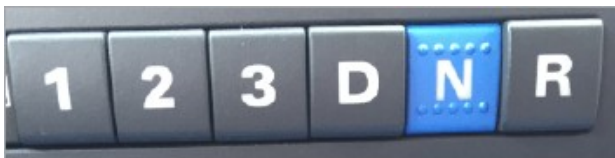
Slight pressure on the brake pedal gradually applies the intarder. Intarder activates before the service brakes are applied.

### Accelerator Pedal

Pedal on the right is the accelerator pedal. Electronic signal sent by the position sensor tied to accelerator pedal is assessed by ECU (Electronic Control Unit) and the amount of fuel going to the engine is adjusted. There is a switch (kickdown) at the end of accelerator pedal to increase the acceleration.

Off - throttle control allows the intarder to be automatically engaged when the driver lets off the accelerator pedal. Intarder control lever can be used to select the number of intarder stages that will activate when the accelerator pedal is released.

## TRANSMISSION



There is a gear selector with 6 buttons in the vehicle. These buttons are:

**1, 2, 3 buttons** : They are used for limiting the maximum gear value that the transmission can raise.

**D button** : Automatically Forward

**N button** : Idle Gear

**R button** : Reverse Gear

The transmission should be at “N” position while the engine was running. When the ignition switch is turned on first of all all the buttons light for 1 - 2 seconds, then only the selected button lights. If the selected button flashes, it means that the selected gear was not accepted by the transmission control unit since the suitable conditions could not be provided for the shift of the gear. If all the lights are flashing, it means that the gear selector was malfunctioning or there is a problem in the wirings of the vehicle data communication system (CAN). When pressed on more than one button by fault, the transmission performs the lowest gear selected. For example when it is pressed on D and 3 buttons at the same time, the transmission shall consider the 3 button.

### **While shifting the gear;**

- Do not press on the gas pedal
- The speed of the engine should be less than 900 rpm
- The vehicle must be in stop position
- It should be pressed on the brake pedal
- It should be pressed on the gear which shall be selected

The transmission does not allow to select the gear in the following cases and its light flashes when pressed on the button.

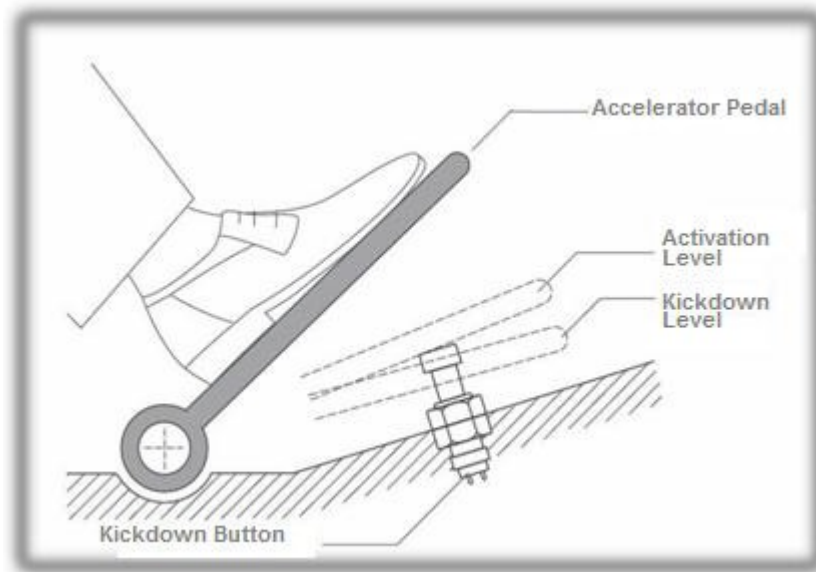
- If pressed on the gas pedal
- If the engine speed is over 900 rpm
- If the vehicle is moving at the speed of more than 3 km/h and if it is moving in the opposite direction of the desired
- If the transmission oil heat is less than - 20 °C

Pull your foot from the brake pedal after 1- 2 seconds of gear selection, the vehicle shall move. When the foot is pulled from the brake pedal while the vehicle is uphill, the transmission brakes so as to prevent the vehicle from rolling back.

### **Downhill**

While driving downhill, in order to limit the gear when needed it is to be limited the gear increase by selecting 1, 2 or 3 numbered gears.





### **Kickdown Specification**

When high engine power is needed, the gear is reduced with the specification of kickdown. To do so, it is to be pressed on the gas pedal until passing the kickdown activation point. The usage of kickdown specification increases the fuel consumption.

### **Intarder Specification**

Intarder is the hydrodynamic brake specification of transmission which is used for extending the life of service brakes. It works at three stages with lever and/or brake pedal. Intarder works at 1<sup>st</sup> stage when pressed on the brake pedal first, when the pedal is being pressed it raises up to 3<sup>rd</sup> stage and by this way it increases the brake torque. If it is pressed on the pedal much more, service brakes activate, too. When the transmission oil exceeds the critical temperature, the performance of the intarder decreases or the transmission closes its intarder specification. When the transmission heat excessively increases, warning lights on the indicator.

## FUEL TANK AND CAP

Fuel tank cap is on the left side of the vehicle on the front wheel. Fuel tank is on the front axle. Tank capacity is 250 lt.

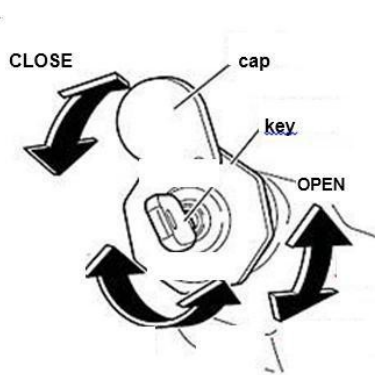
Open the protective cap before reaching the fuel tank cap. Cap is opened with fuel tank key. After filling, tank cap is locked by turning clockwise.

Below the front axle of the vehicle and just above the casing structure is the fuel tank's discharge cork. Cork is turned open and residues in the fuel tank are discharged.



Fuel must not be delivered when the engine runs. Do not smoke when fuel is being delivered. Or else, a fire may start in the fire. Fuel tank filler cap must be tightly closed after the fuel delivery. If not, fuel leakage may start a fire when driving.

### Opening and Closing the Fuel Tank



- Before opening the fuel tank filler cap, get rid of the static electricity on your body.
- Open the cap and insert the key fully and turn it to the “OPEN” position.
- Turn the cap counter clockwise in order to open it.
- Fill the tank.
- Fix the fuel tank filler cap on the fuel tank safely.
- Turn the key to the “CLOSE” position in order to lock the fuel tank filler cap.
- Pull and remove the key and then, make sure that the fuel tank filler cap is closed safely.

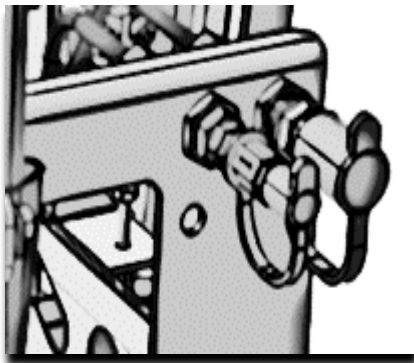
## BATTERY



Batteries are located in the cabinet on the backside of the left rear wheel and positioned on sliding rails in a way to allow easy mounting and dismounting. There are 2 batteries on the vehicle. Each battery is 12 V and 150 Ah.

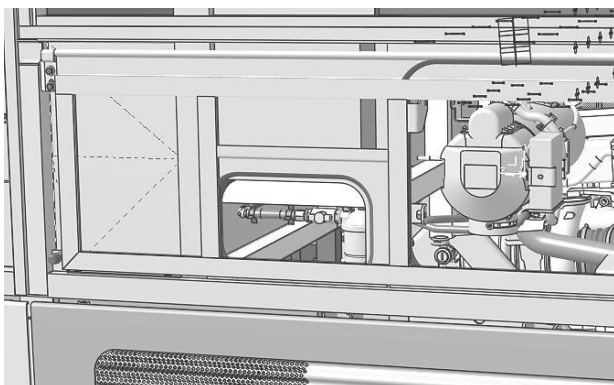
## TYRE INFLATION SET

If the air pressure in vehicle tyres are low, tyre inflation set among the tools are used to adjust tyre pressures. In order to do that:

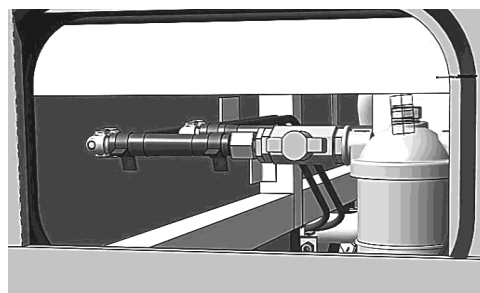


- Park the vehicle in a way not to block the traffic.
- Pull the parking brake and shift the gear neutral and start the engine.
- Take the tyre inflation set.
- Attach one end of the hose to the tyre valve to be inflated and the other end to the air discharge end on the right in the rear engine inspection hatch.
- Complete tyre inflation by accelerating the engine.

## PREHEATER








Preheater is behind the upper inspection hatch at the left rear section of the vehicle. Filter valve must be open when preheater is run. Filter must be cleaned through periodical maintenances.



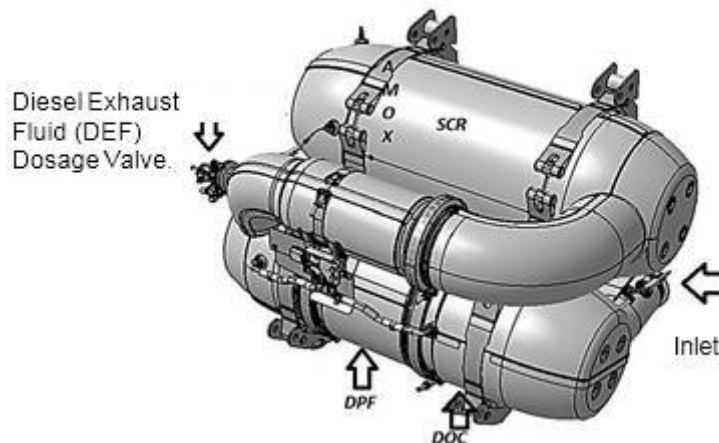
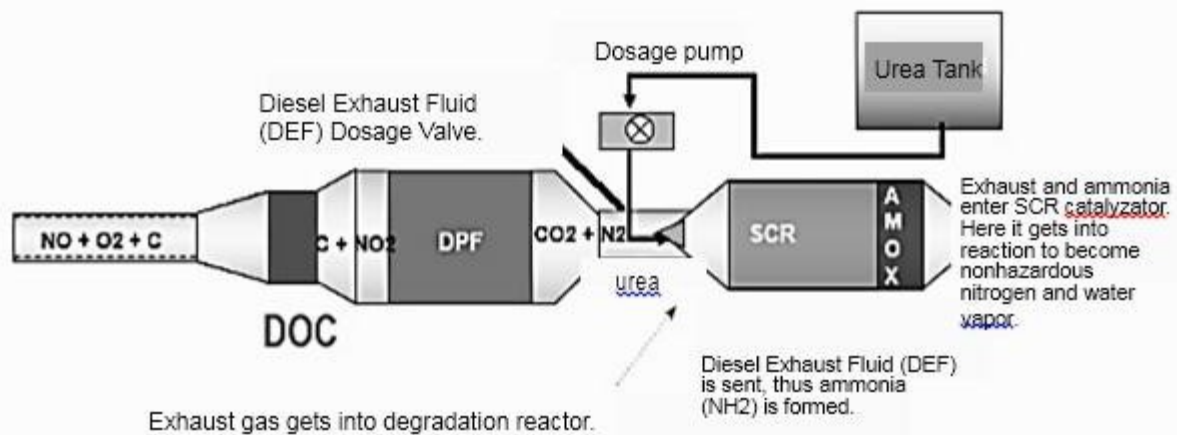
## Preheater Starting Time Adjustment



- Preheater start time adjustment is entered by pressing   keys together.
- Using  or  key, preheater start time is adjusted.
- Heater may be started manually with  key.
- After preheater start time is completed, you return main display when you do not press any key for 5 seconds.

## EXHAUST EMISSION SYSTEM

There is EGR (Exhaust Gas Treatment Unit) system in the vehicle for the engine to allow Euro 6 emission. EGR system allows NOx level to decrease by cooling burnt exhaust gases and sending them back to the system, consequently reducing combustion temperatures. Because this is not sufficient on its own in Euro 6 applications, there is exhaust gas treatment unit in the features below.



Diesel exhaust emission fluid is solution of urea at the rate of 32,5% in demineralized water. It is a fluid consumed to decrease the engine emission rates. Diesel exhaust emission fluid is sprayed into the exhaust gases by dosage pump. It gets into reaction with nitrogen-oxide gases formed when burning and discharged to make such gases pure nitrogen and water. This process is called "Selective Catalytic Reduction" (SCR).

Diesel exhaust emission fluid tank filler cap is located behind the left rear wheel. Diesel exhaust emission fluid tank's capacity is 19 lt. Fluid level on the tank is continuously controlled, if the level falls below a certain value, warning light on the indicator becomes yellow. In such case, it is necessary to complete the fluid level in the shortest time. There must be minimum 18% fluid in the tank all the time for the vehicle to run properly. Engine will turn on the warning light under it. Engine gives malfunction code and cuts off the power when diesel exhaust emission fluid level falls below 6% value. For SCR system to run efficiently and be durable, it must be certificated that the purchased diesel exhaust emission fluid is compatible with DIN 70700 or ISO 22241-1 standards. Compatibility to these standards guarantees the fluid having the appropriate purity and concentration (32.5%). No addition agent must be added in the diesel exhaust emission fluid.

## REGENERATION

Regeneration is the burning process of particles, accumulated in the DPF (diesel particle filter) system in the exhaust treatment system, carried out by the system according to blocking amount or a certain time interval. System may conduct passive and active regeneration.

**Passive regeneration:** The particle burning process when exhaust gases reach high temperatures under normal use conditions.

**Active regeneration:** The particle burning process conducted by increasing the exhaust temperature by spraying fuel into the system.

Temperature reaches 550-700°C. If the system does not reach regeneration temperatures, DPF warning light on the instrument panel is turned on according to the blocking level. 2 different types of regeneration must be started when DPF warning light is on.

1. Drive the vehicle at a high speed (for example on highway) for minimum 20 minutes to increase exhaust temperatures. If the light is not off or there are no road conditions to increase the vehicle to a high speed,
2. Conduct stable regeneration on the system. For stable regeneration:
  - Stop the vehicle in a suitable place, do not pass before the exhaust stack because exhaust gas temperatures will rise to very high levels and stay away from inflammable materials.
  - Switch the gear to neutral and step on the brake.
  - Do not step on the accelerator pedal.
  - There must not be an engine fault in the vehicle.
  - Press the exhaust system cleaning switch for regeneration.

When system blocking level reaches upper points, DPF warning will start to flash and engine warning light is on, in which case stable regeneration must be conducted. If regeneration is not conducted, the vehicle starts power take-off. If the blocking continues, engine stop warning and fault indication warning light becomes on in the instrument panel. The engine will not exceed 1200 rpm cycle. The vehicle must be taken to Isuzu Service as soon as possible.

## DIESEL EXHAUST EMISSION FLUID HEATING SYSTEM

Diesel exhaust emission fluid used in the vehicle starts to freeze at -11°C. Engine starts spraying urea to the exhaust system when the temperature rises. If the fluid in the tank has remained frozen when the engine heated, engine will have power turn-off because urea will not be sprayed. So the engine heats the diesel exhaust emission fluid tank with hot water and diesel exhaust emission fluid line going from tank to injector with electrical heater in cold climate conditions (-7°C and below).

## **ELECTRONIC BRAKING SYSTEM (EBS)**

Electronic braking system has an infrastructure both electronic and pneumatic. Brake system is controlled electronically in normal conditions. Brake request from the driver is treated by the control unit and the most suitable braking is created in that condition. This system has a higher performance than conventional systems. In the case of electronic fault, the system does not shut down itself, it keeps running pneumatically. EBS system includes the functions below:

- 1) **ABS (Anti Blockage Brake System):** It prevents the vehicle from slipping by preventing the wheels from locking when braking. It ensures steering wheel stability in sudden braking.
- 2) **ASR (Anti Skating System):** ASR becomes activated and increases driving safety by minimizing skating when drive wheels skate on ramps, slippery grounds and when accelerating.
- 3) **Drift Torque Control (DTC):** Wheels may get locked due to inertia of transmission organs on slippery grounds, this system gets activated and increase engine torque and tries to ensure road handling.)
- 4) **Electronic Brake Equalising (EBD):** It distributes the brake force necessary according to the load status and lining wear to the wheels.
- 5) Lining wear is controllable, lining thickness is continuously followed on the instrument panel.
- 6) **Hillholder:** It prevents the vehicle from slipping backwards when setting off by keeping the vehicle stable for 3 seconds when the vehicle stopped on a ramp starts to move. It is controlled with a switch on the driver control panel. Switch is turned on, one steps on the brake on the ramp, in the meantime brakes get activated to keep the vehicle waiting on the ramp, the system gives driver time until he steps on the accelerator pedal from the brake pedal. Brakes get deactivated when accelerator pedal is stepped on or time is exceeded.
- 7) **Intarder Integration:** System is in a continuous interaction with intarder. Intarder gets activated in slight brakes to prevent the linings from wearing. It also reinforces the braking system under normal conditions. Intarder system is deactivated when ABS function operates.

Safety functions do not operate, brake performance decreases in the case of an electronic fault. The driver must contact the closest Isuzu Service carefully in such case. Safety functions such as ABS, ASR and DTC are effective to decrease accident risk; however the actual important issue is to drive the vehicle in a way suitable for traffic and road conditions.

## EVSC (Electronic Vehicle Stability Control)

It is possible to intervene in the wheel brakes independently in sudden maneuverings in vehicles which carry load and passengers with electronic control. The purpose is to prevent possible accidents such as vehicle skidding or rolling over. So a more determined driving dynamic is guaranteed.

### Angular acceleration sensor



Acceleration sensor is positioned on the floor casing in the trunk space close to the center of gravity of vehicle. Axial deviation in the vehicle is perceived as instant angular acceleration and conveyed to braking system control unit as electronic signal. It is controlled how much the vehicle has deviated from the route in a critical state. It gives information about how stability control functions must be activated.

### Steering Wheel angle sensor



Angle sensor passes through steering wheel column and positioned below the signal group. It conveys the maneuvering request of the driver to the braking system control unit according to the rotation amount of steering wheel. Conveyed information is sent as electronic signal. Calibration is performed when the system is first installed to match the signals from sensor and direction angle of the vehicle.



EVSC system will be faulty in the event that steering wheel is dismantled and mounted, changed or renewed in front alignment adjustment. In such cases, installation must be made in Isuzu Service.

## ENGINE ROOM FIRE DETECTION SYSTEM

A system which gives red light and audio warning in warning lens panel



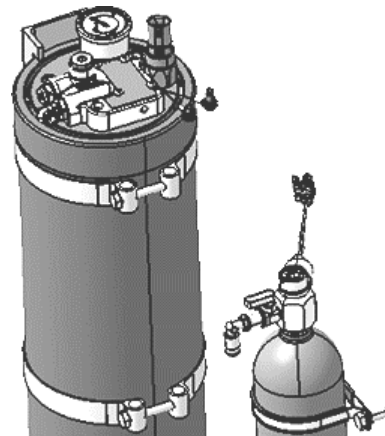
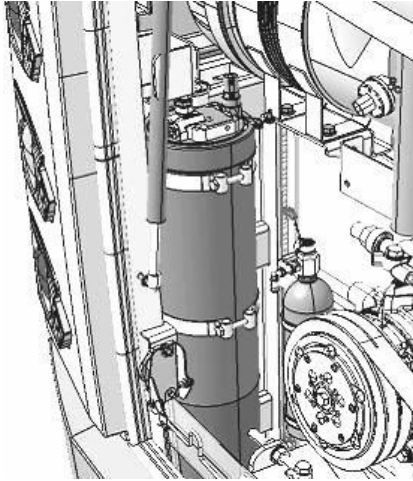
when

the engine room temperature exceeds 120 °C .



## ENGINE ROOM AUTOMATIC FIRE EXTINGUISHER SYSTEM (OPTIONAL)

A system consisting of pressurized fire detection hose and fire spray nozzle passing through areas in which fire may start in engine room. There are 2 tanks in the system, one of which is the nitrogen tank that enables fire detection, and other is extinguishing tank in which there is fire extinguishing fluid. These two tanks may be reached by opening rear engine inspection hatch. Light and audio warning lights give warning during fire detection.



Fire extinguishing material is sprayed from the nozzles which reduces the temperature and turns it into smoke clouds of column form that stops contact with air when extinguishing.

Fire extinguishing material is fundamentally antifreeze water based.

Extinguishing time is normally between 3-5 seconds and active time is 50-75 seconds.

In the case of fire:

- Stop the engine.
- Empty the vehicle.
- Turn off the current.
- Keep the engine bonnet for minimum 5 minutes.
- Use a portable fire extinguisher if necessary.
- Contact Isuzu Service.



Processes below must be applied when the fire extinguishing system becomes active for any reason other than fire and tanks get empty:

- Wash all component surfaces with water to prevent from corrosion the parts in the engine room that system affects.
- Wash the nozzles and inside the pipes by giving water to the fire extinguishing pipe system. If it is too late for this process, dismount the nozzles and clean with water along with pipes. Change the nozzles if necessary.
- Place protective caps on nozzles again.
- Mount the full tanks to reactivate the system.

## **5. SERVICE AND MAINTENANCE**

## CLEANING THE VEHICLE

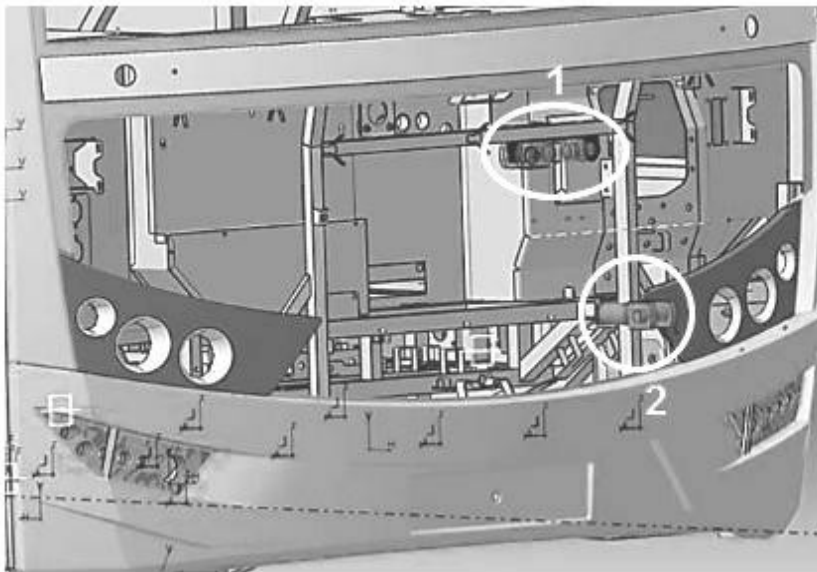
### Outside Cleaning

- Do not clean your vehicle with detergent and chemical materials, do not wipe with gas.
- Use pressurized water for vehicle cleaning (except for engine area), do not leave the extra water on the vehicle after cleaning, remove the extra water with a cloth or washleather.
- Do not wash your vehicle under hot sunlight.
- Keep the inside of mudguards clean during winter.
- Use only soap and water to clean the air bellows on the vehicle.

### Inside Cleaning

Clean the instrument panel with wet cloth, do not use substances such as alcohol and thinner. Clean the seats with wet cloth or foamy vinylex cleaners. Wipe the passenger floor with wet mop and then dry the floor.

## PULLING THE VEHICLE



- Open the front inspection hatch.
- Take the hitch hook from the casing behind the front inspection hatch (1)
- Screw the hitch hook to the hole on the casing and make sure that it fits (2)
- Bring the front inspection hatch to a half-open position.

## ENGINE MAINTENANCE

It is possible to reach the vehicle engine from 4 parts.

It is possible to reach the engine behind, sides and inside and under the vehicle.

### Rear cap



It is possible to reach alternators, A/C compressor, V belts, circulation pump, fuel water separator, hydraulic fan oil tank, oil level stick, steering wheel tank, hydraulic fan engine and pump, fire extinguishing tubes (optional), expansion tank by opening the rear cap.

### Right side cap



It is possible to reach water radiator, intercooler radiator and hydraulic cooling system radiator by opening the right side cap.



### **Left side front cap (1)**

It is possible to reach diesel exhaust emission fluid tank, dosage pump, batteries, fuse box, dosage pump water valve by opening the left side front cap.

### **Left side rear cap (2)**

It is possible to reach exhaust gas treatment unit, temperature and NOX sensor on exhaust gas treatment unit, urea injector by opening the left side rear cap.

### **Left side filter cap (3)**

It is possible to reach air filter, preheater, pumps, cocks, valves of cabin heater by opening the left side filter cap.

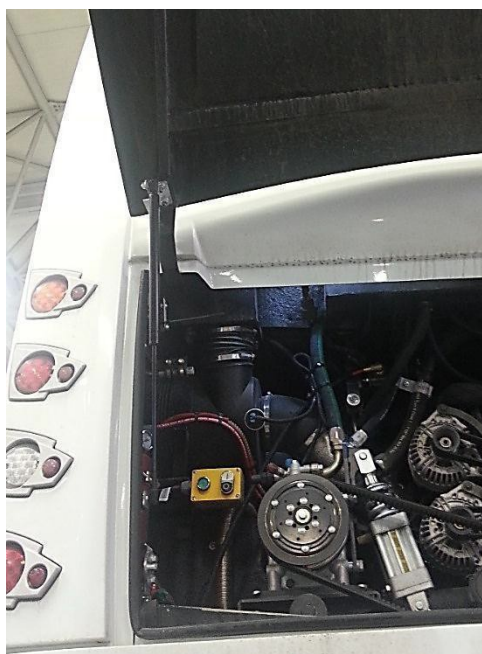
## **Caps inside the vehicle**

It is possible to reach air compressor, turbo, rocker cap, transmission oil filling and level measurement channel by opening the 2 caps on the floor in front of the back five seats.

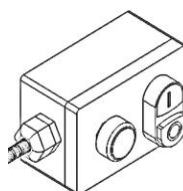
## **Bottom cap**

It is possible to reach crankcase, ECM (Electronic Control Module), fuel filter by opening the cap under the vehicle.

## **Start / Stop Button Group**



If it is required to start the engine during a maintenance and repair activity related to engine, vehicle's rear cap is open to use the start/stop button group here.





In order to start the engine: hand brake is pulled, ignition key is on, gear is shifted to "N" position and this button is pressed.



This button is pressed to stop the engine.

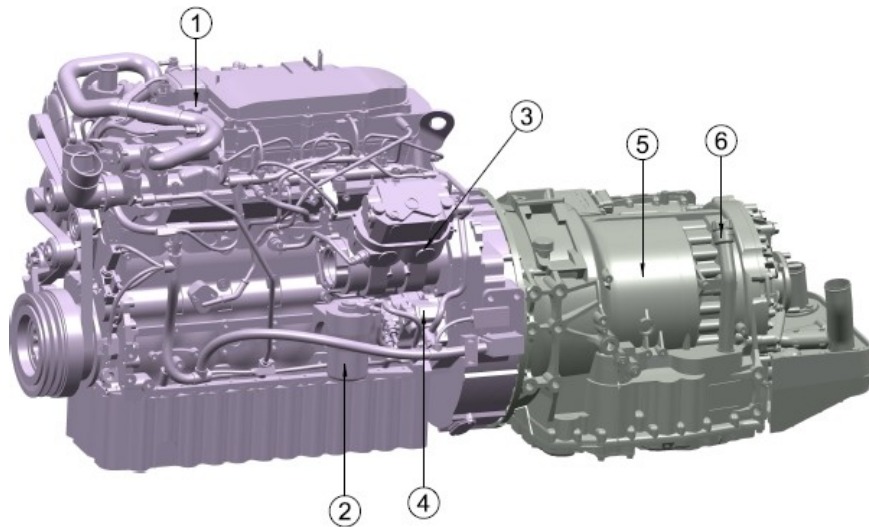


This (green) button is pressed to illuminate the engine.

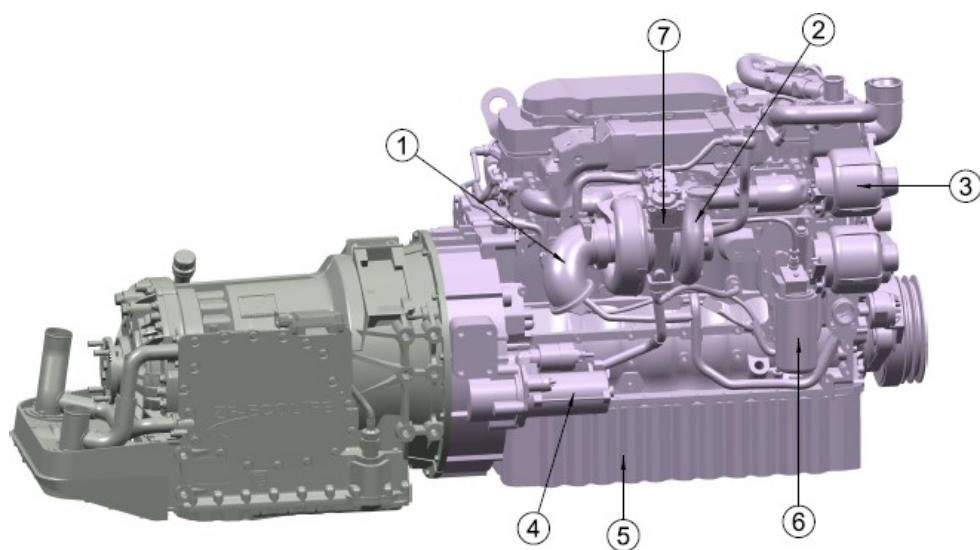


When the rear cap is open, there is a safety switch to prevent starting the engine from the driver area

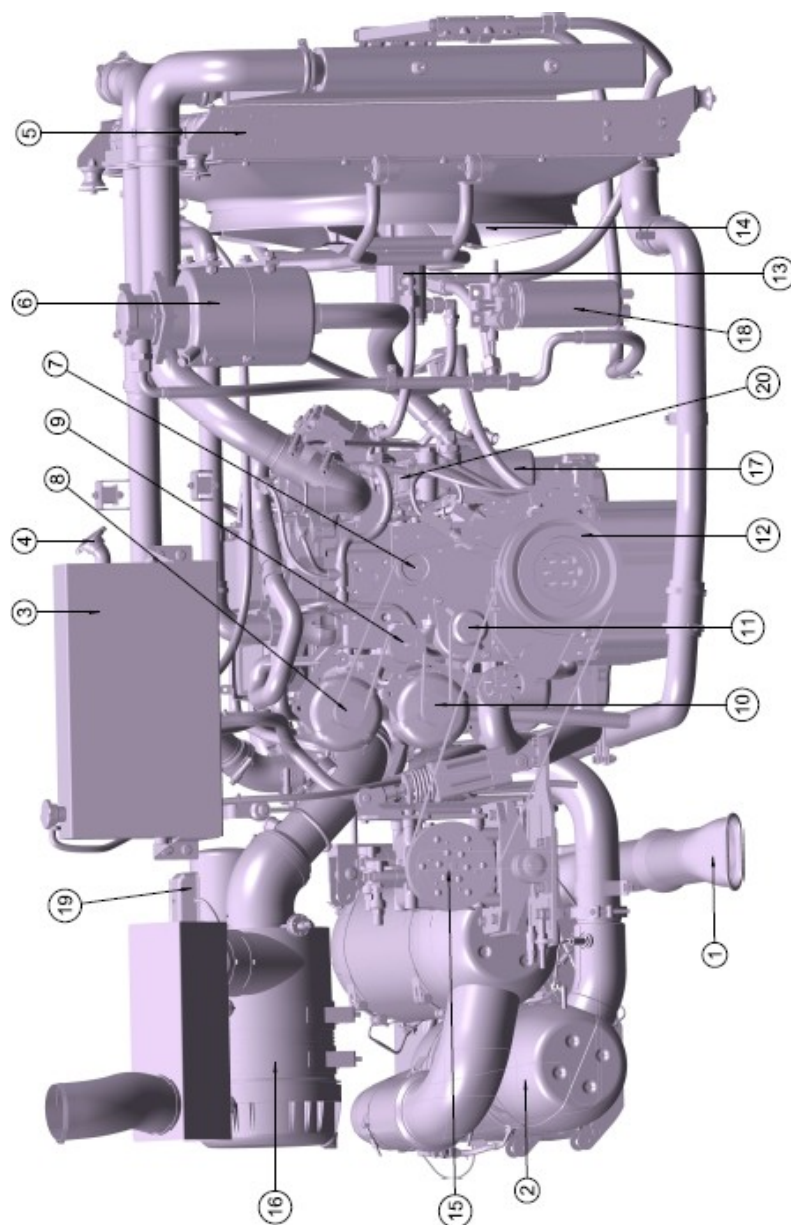
## ENGINE



1. Engine Oil Filter Cap
2. Fuel Filter
3. Air Compressor
4. Fuel Pump
5. Transmission
6. Transmission Oil Filler Cap



- 1. Exhaust Manifold
- 2. Air Intake
- 3. Alternator
- 4. Starter
- 5. Crankcase
- 6. Oil filter
- 7. Turbo Unit



- |                           |                                 |
|---------------------------|---------------------------------|
| 1. Tail Pipe              | 11. Circulation Pump            |
| 2. Aftertreatment         | 12. Crankshaft Pulley           |
| 3. Expansion Tank         | 13. Hydrofan Engine             |
| 4. Water Filler Cap       | 14. Fan Propeller               |
| 5. Cooling Unit           | 15. A/C Compressor              |
| 6. Hydrofan Oil Reservoir | 16. Air Filter                  |
| 7. Idle Pulley            | 17. Fuel Filter                 |
| 8. Alternator             | 18. Fuel Water Separator Filter |
| 9. Idle Pulley            | 19. Preheater                   |
| 10. Alternator            | 20. Fan Pump                    |



## **ENGINE COOLING SYSTEM**

Engine cooling system keeps the engine temperature in the suitable temperature range, which lets the engine run efficiently and prevents the engine parts from wearing by preserving the suitable oil viscosity.

System also cools the transmission. It also covers the hot water need of cabin heater system and heats the diesel exhaust emission fluid tank in very low temperatures. Cooling fluid used in the cooling system is a mixture of 50% water and 50% antifreeze. Antifreeze must be compatible with ASTM D6210 standards. This mixture has a freezing point of -36 °C and boiling point of +108 °C. No additional agents must be used in the cooling fluid.

## **ENGINE COOLING, CABIN HEATER and A/C SYSTEMS LINE FILLING AND AIR RELIEF**

1. Position the vehicle on a flat ground.
2. When there is a situation in which it is not necessary to run the cabin heater and A/C system, service maintenance is required, and the vehicle must be transferred to a place to start immediately, processes stated in the 12<sup>th</sup> and following articles must be applied.
3. Open the manual valves and air relief valves on the waterlines tied to cabin heater and A/C units (in the engine water Inlet and outlet).
4. Open the top and side caps of expansion tank.
5. Start filling the engine cooling system fluid with the mixture of 50% antifreeze and 50% diluted water from the cap on the side surface of expansion tank.
6. When the expansion tank is full, stop filling. Wait for 1-2 minutes before starting the engine to make sure that air which entered in the system from natural ways is discharged and cooling fluid level is balanced. Then add water to the tank again.
7. Start the engine and open the entire heating system in the maximum position. Take the controller to manual maximum heating mode, quickly press the degree increasing key on the control panel to take to shocking mode and make sure that electronic three way valve is open. System pump and heated A/C pump will be operating thus and there will be an "operating" signal on the A/C controller screen.
8. As the vehicle runs, keep adding engine cooling system fluid up to the maximum level of the expansion tank.

9. After starting cold engine, gradually increase the engine speed to make sure that sufficient amount of oil goes to engine bearings and oil pressure is balanced.
10. For air relief, start the engine in high idle speed and release the air from air relief valves on the cabin heaters (System's air must also be relieved from the air relief valves on the heated cabin heater)
11. Check whether the cabin heater temperatures have risen. Total air relief for cabin heater and A/C system lasts for about 15 minutes. Make sure that air relief is completed.
12. Close the manual valves on the waterlines tied to cabin heater and A/C units (engine water inlet and outlet).
13. Restart the engine and run the engine at high idle speed until cooling water temperature has reached the thermostat opening temperature values. Radiator frille may be covered with a cloth (linoleum etc.) to reach the high temperature quicker.
14. It must be continued to run the engine at high idle speed for 5 minutes, by keeping the engine cooling water thermostat opening temperature (90-95°C) range once these temperatures have been reached.
15. Run the engine in low idle speed for 1 minute before shutting off, which enables components such as piston,cylinder,bearings and turbocharge to cool adequately.
16. Shut off the engine and keep adding cooling fluid up to the maximum level of the expansion tank.
17. Restart the engine at high idling speed and increase the engine cooling water temperatures to thermostat opening temperature values 90 - 95°C range and keep this temperature level for 1 minute.
18. Run the engine in low idle for 1 minute before shutting off, which enables components such as piston,cylinder,bearings and turbocharge to cool adequately.
19. Shut off the engine and fill the cooling fluid if it is possible to fill from expansion tank. If 1 lt or more cooling fluid can be added to the system, repeat the operations from the 17th article.
20. Check whether there is cooling fluid leakage in layout and main components during filling and air relief processes.
21. It is the customer's responsibility to daily check the cooling fluid level and fill if required.

## CHANGING ENGINE OIL AND OIL FILTER

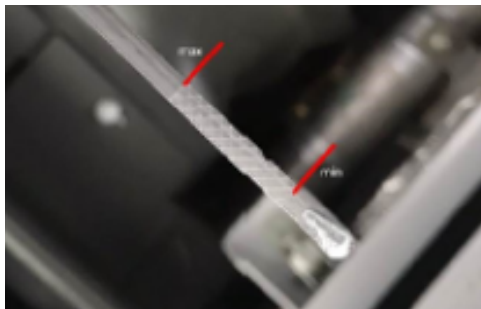
To change engine oil and oil filter:

- Run the engine until engine water temperature reaches 60 °C
- Shut off the engine
- Remove the crankcase plug, pour the oil to oil collection tank.
- Clean the oil filter head and dismount the filter using filter dismounting tool.
- Fill the new filter with clean engine oil.
- Lay a thin layer of engine oil to oil filter o-ring.
- Tighten the oil filter by hand until the rubber contacts with the gasket surface, and then tighten the filter with filter tool for another round.
- Mount the crankcase plug with a new seal washer and tighten with 24 Nm torque.
- Fill the engine oil until H level.
- Start the engine in idle and check for leakage.
- After waiting for the oil to percolate for 5 minutes, remeasure the engine oil level and refill until H level if it has decreased.



Use engine oil compatible with the fluid specifications.

## Oil Level Control



You may reach the oil level control stick by opening the rear engine cap. For oil level control.

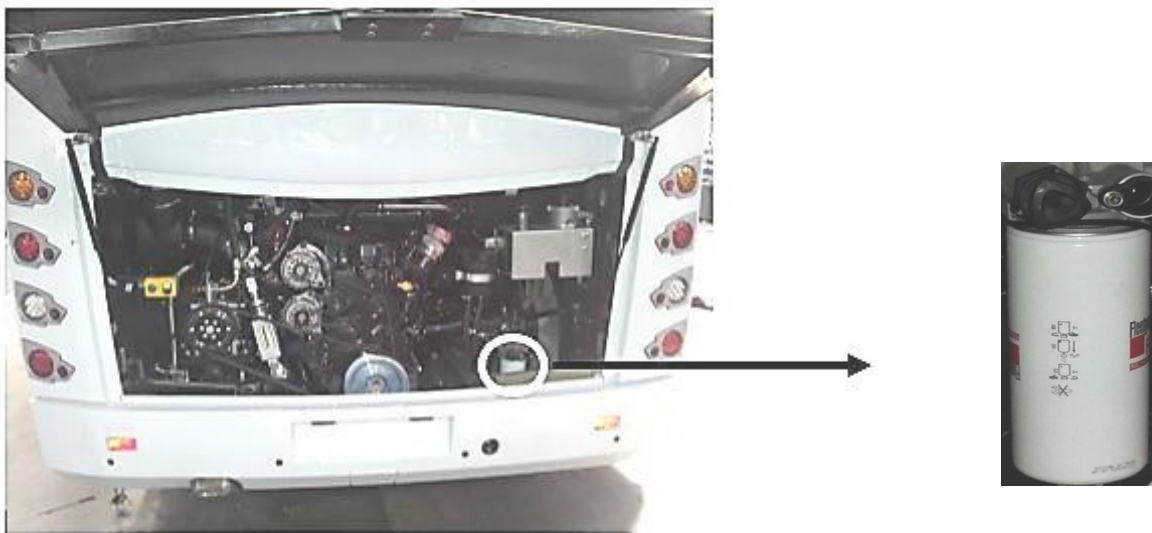
- Pull the oil level stick
- Wipe with a clean cloth
- Mount the stick and then pull again
- Check the oil level.
- Fill until H level.

## CHANGING FUEL FILTER

It is possible to reach fuel filter under the vehicle and from the rear cap. For fuel filter change:

- Dismount the fuel filter
- Remove the paper filter element in the filter.
- Remove the o-ring in the filter.
- Properly mount the new filter element in the filter.
- Mount the new o-ring to the filter.
- Oil the fuel filter o-ring with clean lubrication oil.
- Fill the fuel filter with fuel.
- Mount the oil filter to fuel filter hear in a way to allow one gear to hold.
- Tighten the filter with 32 Nm torque.

## FUEL WATER SEPARATOR



Fuel water separator is mounted on the body on the right side when rear cap is opened. Its function is to ensure that fuel is efficiently used by distilling the water in the fuel.

### Changing the Fuel Water Separator Filter :

It is possible to reach the fuel water separator filter from vehicle's rear cap. For fuel water separator filter change:

- Remove the connecting cable of fuel water control indicator.
- Dismount the fuel filter
- Empty the fuel filter, dismount the fuel water control indicator from the fuel filter.
- Check whether there is any damage or crack on the indicator.
- Mount the fuel water control indicator to the new filter
- Oil the fuel filter o-ring with clean engine oil.
- Mount the filter.

## CONTROL OF BRAKE DISC AND LININGS



Lining indicator must be regularly controlled. When lining indicator value is 10%, contact Isuzu Service to change it.

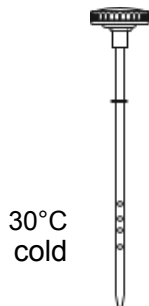
Left and right brake linings on the same axle must be changed together. Original brake part defined by the vehicle manufacturer must be used. Brake discs must be controlled when changing linings and they must also be changed if necessary. Or else brake performance may be affected negatively.

## TRANSMISSION MAINTENANCE

The transmission contains 38 lt oil at first filling. While replacing the oil, it has to be waited approximately 10 minutes for the oil to discharge and then 24 lt oil must be added.

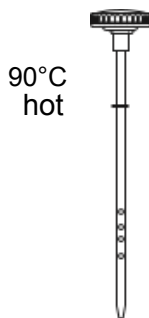
### Oil Level Control

Oil level control when the transmission is cold (30°C):



- Park the vehicle on a flat area
- Bring the transmission to “N” position
- Operate the engine at 1200–1500 rpm for 10-20 seconds
- Take the engine to idle
- Oil level should be 30 °C (cold) level on the oil dipstick.

Oil level control when the transmission is hot (90 °C)



- Park the vehicle on a flat area
- Bring the transmission to “N” position
- Operate the engine at 1200–1500 rpm for 10-20 seconds
- Take the engine to idle
- Oil level should be 90 °C (hot) level on the oil dipstick.

### Oil Replacing Interval

The transmission oil should be replaced at every **180000 km**. The transmission pressure filter should also be replaced in every oil replacement.

### Discharging Oil

- Discharge the transmission oil during 10 minutes when the transmission was hot
- Stop the engine
- Remove the oil plug
- Discharge the oil in filter chamber by removing the plug on the filter cap
- Remove the filter cap
- Replace the cartridge filter (pressure filter) and o-ring on the filter cap plug.

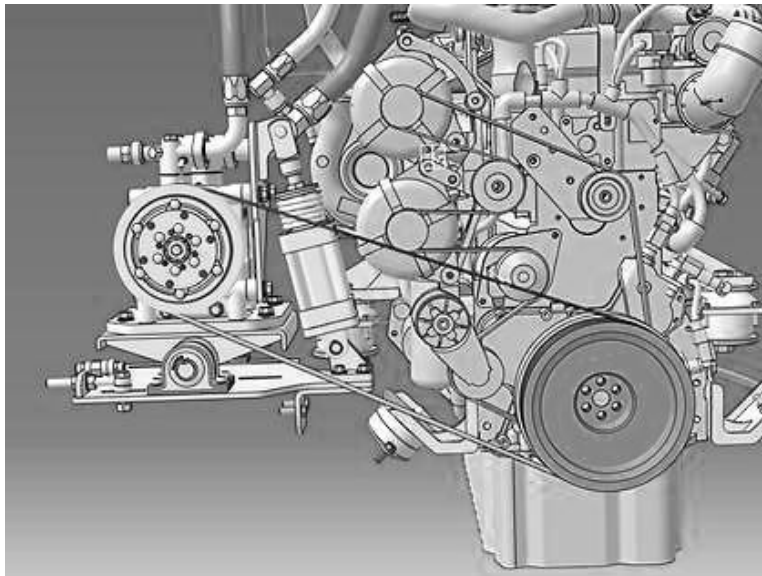
### Filling Oil

- Tighten the bolts with 29 Nm torque while inserting the filter cap, take care of the bolt lengths
- Insert the plug on the the filter cap (tightening torque is 25 Nm)
- Tighten the oil plug with 35 Nm torque
- Supply oil from oil filling collar
- Control the oil level with dipstick.

## DIFFERENTIAL OIL CHANGE

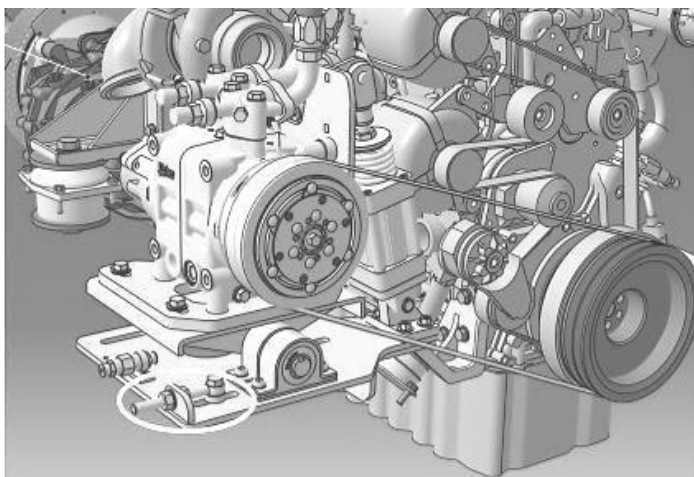
- Put oil discharge tank under the differential cage for oil discharge.
- Dismount the oil discharge plug under the cage and pour the oil into the tank.
- Mount the oil discharge plug again after discharging and tighten with 54 ~ 81 Nm torque.
- Dismount the filler plug and fill the oil (differential oil capacity 9.5 lt)
- Wait 15 minutes after filling for oil to spread on axles.
- Mount the filler plug back and tighten with 54 ~ 81 Nm torque.

## AIR CONDITIONER COMPRESSOR BELT



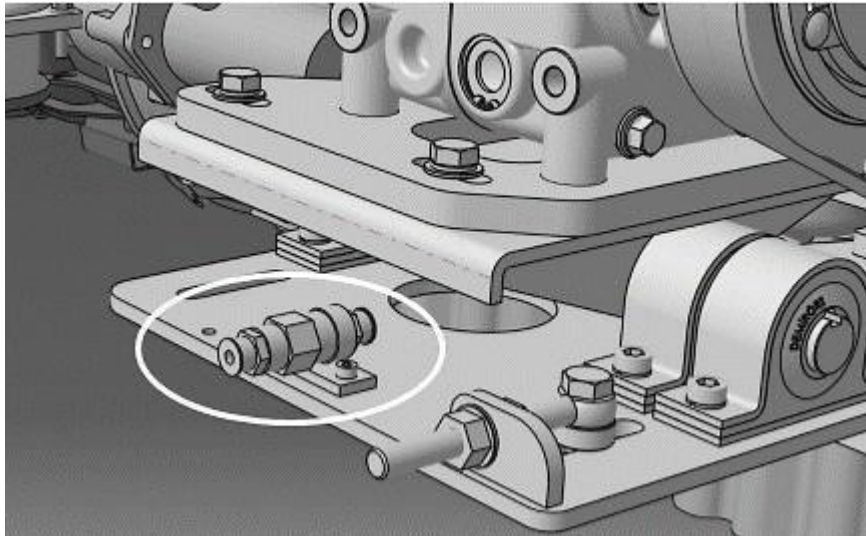
A/C compressor belt is banded 17 V belt. Codes on the belt are indicated below.  
Contact Isuzu service to change the belt when it get damaged or severed .

BANDO RPF-J 2-5750P 2X17X1870



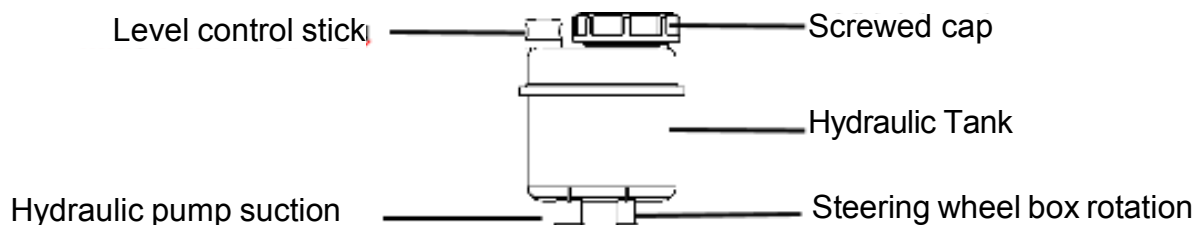
Compressor belt must be stretched by tightening the ring nuts on the indicated point (must be performed by an Isuzu service)

Also stretching system always stretches the belt actively with a pneumatic piston. It must be checked whether air cock below is open before the first start. Air cock must be open. It stretches the compressor along with 6 bar pneumatic piston.



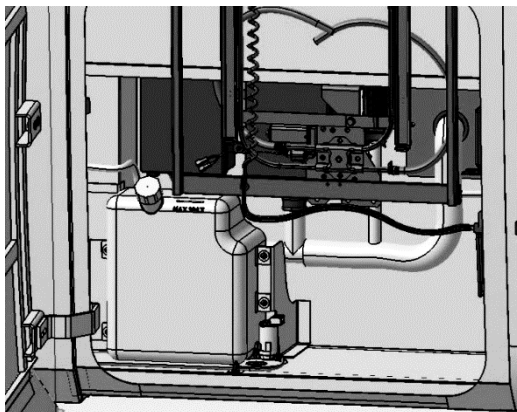
If the cock is closed, do not start the engine. There is a risk of darting and snapping because the belt is not tight. Do not come close and do not touch the belt when the engine runs and belt rotates.

## STEERING WHEEL HYDRAULIC TANK



It is located on the right side of engine when the engine rear inspection hatch is opened. There is a screwed cap and oil level control stick on the tank. Oil level control must be performed once in every 3000 km. Level stick of tank is dismantled for oil level control, there is minimum and maximum line on the stick, oil level must be between these two lines. For hydraulic steering wheel and pump to run problem-free, the oil defined by the vehicle manufacturer must be used. Vehicle must not be started if there is not sufficient oil in the steering wheel system, steering wheel may get damaged. If oil has decreased, oil is filled until the maximum line of stick.

## WINDOW SPRINKLER WATER TANK

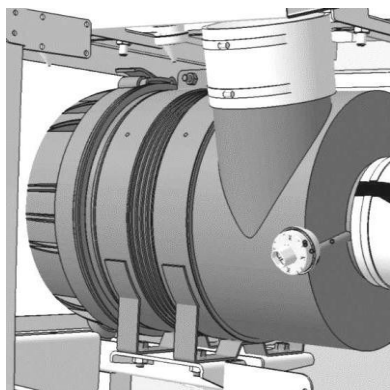


It is possible to reach window sprinkler water tank by opening front trunk cap. Window washing water up to maximum 10 It may be filled to the tank after the cap has been opened.



Antifreeze glass water must be used to prevent the water from freezing in cold weather.

## AIR FILTER



It is possible to reach air filter by opening the rear left side filter cap. In order to clean the air filter, rubber dust valve in the bottom part is tightened from the edges to empty the accumulated dust.

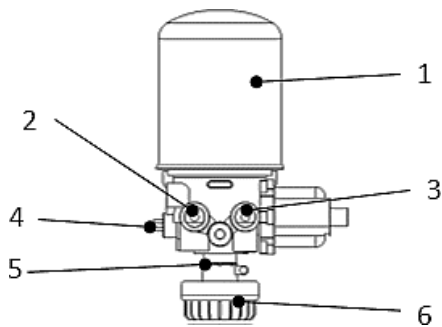
Air filter element

Air filter element change must be made in every 30000 km. Follow the steps below to change:

1. Unlock the lock on the cover
2. Turn the cover counterclockwise
3. Remove the cover from the housing
4. Remove primary filter, secondary filter is replaced at each third replacement of primary filter
5. Clean the housing and cover from dust
6. Install secondary filter (if replaced) and then primary filter
7. Install the cover; dust ejection valve on the cover must be on the bottom position when cover locked.



## AIR DRYER

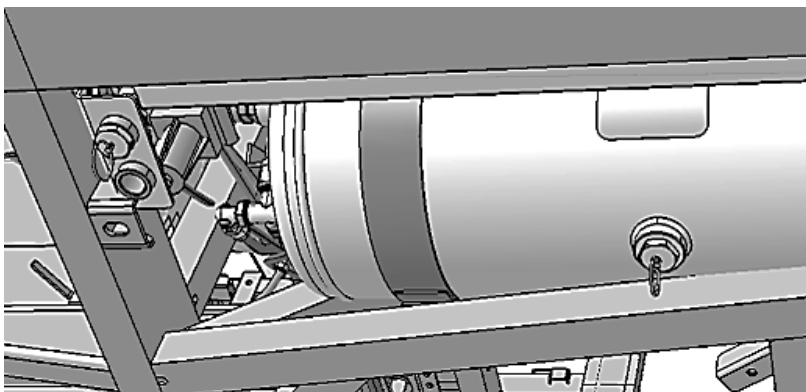


1. Cartridge
2. Compressor connection
3. Four-way valve connection
4. Heater
5. Air discharge
6. Muffler

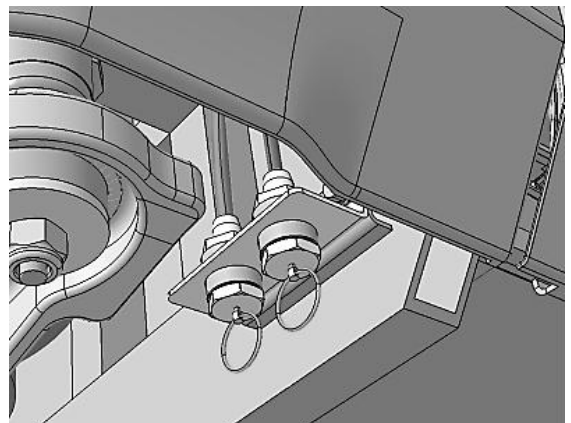
Air dryer is under the rear door step. Function of air dryer is to adjust the air system pressure and decrease the moisture and air in the air pressed from the compressor. Dryer has a heater that prevents freezing in cold weather, which is activated in low temperatures in particular and deactivated in high temperatures. Air dryer fills air into the system until the circuit cutting discharge at 9.3 bar. When filling is completed, dryer discharges the water and oil accumulated from the muffler in the bottom part with pressure, thus cleaning itself.

## DRAINING WATER IN AIR TANKS

There are 2 air tank drain valves (one of them is under the air tank) under front stair and 2 air tank drain valves in the lower part, at front region of right rear wheel.



Drain water in air tanks daily, by pressing on the valves.



## CHANGING WINDSCREEN WIPERS

There are 2 outside wiper arms, right and left.

To change wiper blade, the bolt and ring nut in the center of blade are dismantled (Image 1 and Image 2)

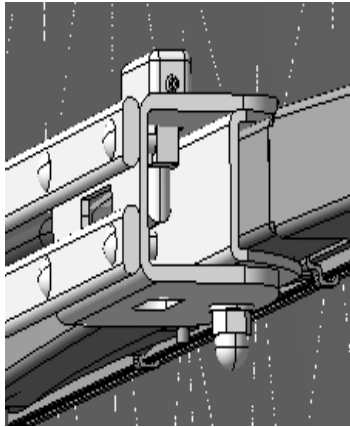


Image 1

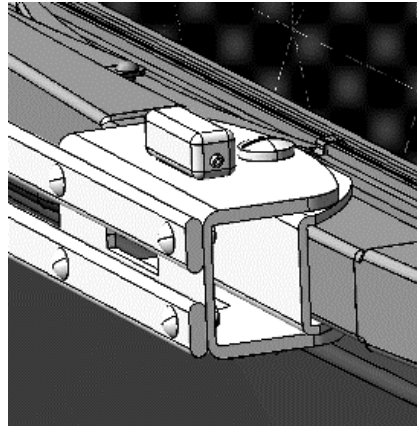


Image 2

For complete change of outside wiper arm, plastic cap at the point where it is connected to the vehicle body is open, ring nut here is dismantled to remove the wiper arm (Image 3). When removing the wiper arm, sprinkler hose connected to the arm must be pulled and removed from the point where it is connected to the vehicle body.

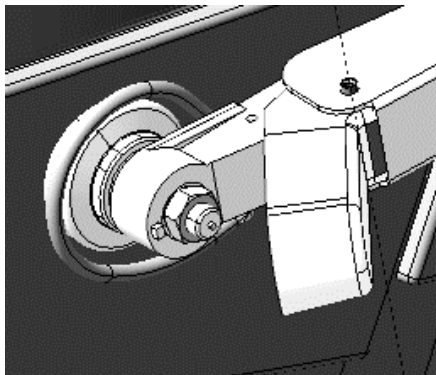


Image 3

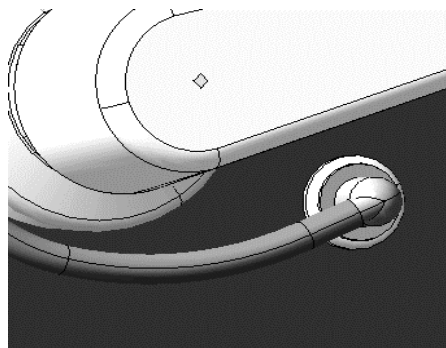


Image 4



Wiper blades must be controlled definitely and renewed if necessary during winter. Change of inner mechanism of wipers must be performed by Isuzu service.

## **FUSES / RELAYS**

Board of fuses and relays is in a cabinet on the front left side of the vehicle. Fuses and relays are in a closed box and fuse location and values are in the fuse tag under the cap. Fuses used in the vehicle are blade type. Relevant fuse trips as open circuit to protect electrical components when a short circuit or fault current occurs in the system. Fuse is replaced with a fuse of the same ampere equivalence once the electrical fault has been removed.

## **CHANGING THE LAMPS**

### **Changing Dipped Beam Bulb**

- Open the front bonnet.
- Pull and remove the rubber protector behind the light unit.
- Press the wired clips towards inside and remove the bulb.
- Change with an equivalent bulb.
- Mount in a way to allow rubber protector water hole to look downwards.

### **Changing Main Beam / Parking Bulb**

Changing main beam bulb

- Open the front bonnet.
- Pull and remove the rubber protector behind the light unit.
- Press the wired clips towards inside and remove the bulb.
- Change with an equivalent bulb.
- Mount in a way to allow rubber protector water hole to look downwards.

Changing parking bulb

- Open the front bonnet.
- Pull the socket which has a bulb on the edge and is located under the light unit.
- Change with an equivalent bulb.
- Mount the socket back.

### **Changing Half Signal Lamps**

- Remove the lens from the case
- Screw off the case and pull the lamp towards outside.
- Remove the socket
- Change with an equivalent lamp
- Fit the lens by screwing the case on its place.

### **Changing Rear Signal, Rear Brake/Park, Reverse Gear, Rear Fog Lamps**

- Screw off and remove the lamp
- Remove from the socket
- Change with an equivalent lamp
- Screw and mount the lamp.

### **Changing the Additional Parking Lamp**

- Dismount the lamp
- Pull towards the outside and remove from the socket
- Change with an equivalent lamp
- Mount the lamp with gasket

### **Changing the Front Signal Lamp**

- Open the front bonnet.
- Dismount the complete headlamp cover.
- Screw off and remove the front signal lamp
- Remove from the socket
- Change with an equivalent lamp
- Screw and mount the front signal lamp

### **Changing the Day Driving Lamp**

- Open the bonnet
- Dismount the headlamp cover
- Screw off and remove the brackets on the cover that prevents lamps from displacing
- Remove the lamps from their holes
- Dismount the adaptor (driver)
- Change with an equivalent lamp set
- Screw the brackets and mount the headlamp cover
- Screw and mount the adaptor (driver)

### **Changing the Front Fog Lamp Bulb**

- Pull and remove the rubber protector behind the light unit.
- Press the wired clips towards inside and remove the bulb.
- Change with an equivalent bulb.
- Mount in a way to allow rubber protector water hole to look downwards.

### **Changing Roof Illumination Leds**

Roof illumination is ensured through leds in the aluminum by the aisle side of air channel. To change leds, remove the polycarbonate lens on the aluminum body and replace new leds.

### **Changing the Rear Reflector**

- Remove the rear reflector
- Clean the glue residuals on the bumper.
- Separate the glue protector on the rear reflector
- Attach the rear reflector to its place.

### **Changing Front and Rear Positioning Lamps**

- Dismount the lamp
- Pull towards the outside and remove from the socket
- Change with an equivalent lamp
- Mount the lamp with gasket

### **Changing Sidemarker Lamp**

- Screw off and remove the sidemarker lamp
- Pull the lamp towards outside and remove from the socket
- Change with an equivalent lamp
- Screw the lamp with rubber gaskets and mount.

### **Changing Engine Illumination Lamp**

- Open the engine hood
- Screw off and remove the engine illumination lamp
- Remove from the socket
- Change with an equivalent lamp
- Screw and mount the engine illumination lamp.

### **Changing Rear Plate Lamp**

- Screw off and remove the lamp
- Remove from the socket
- Change with an equivalent lamp
- Screw and mount the lamp.

### **Changing the 3. Security Brake Lamp**

- Screw off and remove the lamp
- Remove from the socket
- Change with an equivalent lamp
- Screw and mount the lamp.

## USING JACK AND CHANGING TYRES

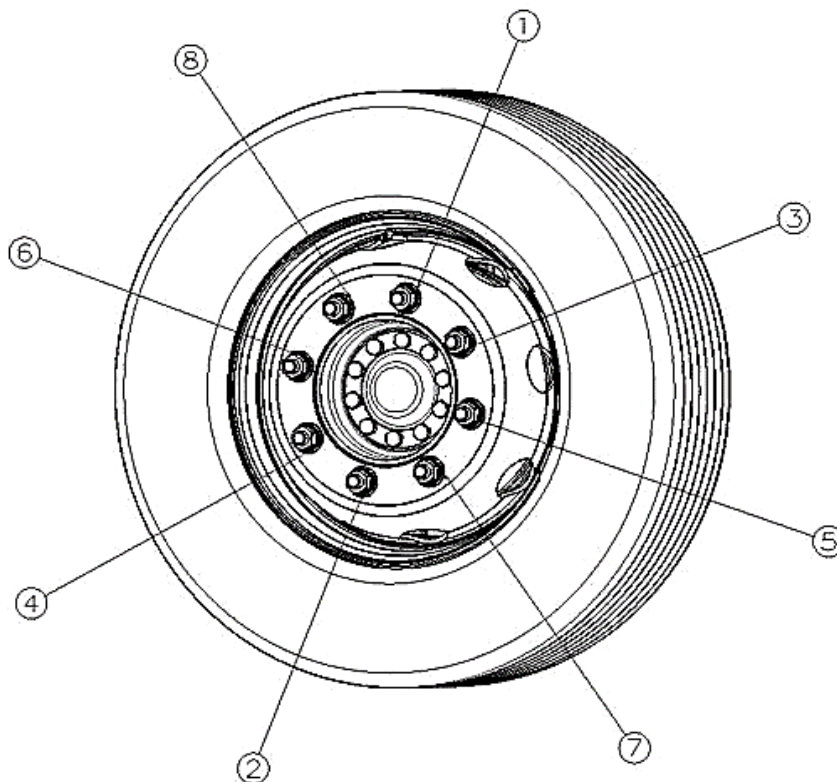
Jack points of the vehicle are located behind the front and rear wheels on the body.

### Using jack

- Make sure relief screw is tight
- Use its own jack lever to lift the jack.
- Rotate the relief screw two rounds to the left to lower the jack.

### Changing tyres

- Place a wedge to the wheel which is diagonally opposite of the wheel you are jacking up
- Loosen but do not remove the wheel nuts by the tyre to be changed.
- Lift the vehicle with jack until the tyre is completely lifted off the ground from the jack point behind the tyre to be changed.
- Dismount the wheel nuts, remove the tyre
- Mount the spare tyre
- Take the space of wheel nuts to make sure that the tyre fits
- Tighten the wheel nuts in diagonal opposite and in three phases with 385 ~ 430 Nm torque



- Slightly loosen the relief screw of the jack to lift down the vehicle.



Make sure that the jack is placed on a flat and firm ground. Do not start the engine when the vehicle is on the jack. Do not enter the vehicle when using the jack. Let the passengers get off during tyre change. Make sure that gear is in the parking position, pull the hand brake and turn on the hazard flashers.

**NOTE :** If tyre pressure is continuously decreasing, there may be an object sticking into the tyre. Check whether there is air leak from the wheel or valve.

## **PERIODICAL MAINTENANCE**

### **DAILY MAINTENANCE**

- Check the tyres
- Check the brakes operation
- Check the engine cooling water level
- Check engine oil level
- Discharge the water which condenses in air tanks particularly during winter
- Check diesel exhaust emission fluid level
- Check the outside illumination lamps operation compatible with safe driving
- Check the air suction hoses, exhaust pipes, and belts
- Check whether there is a hydraulic leakage in fan system
- Discharge the water accumulated in fuel water separator
- Check bus accident and original parts situation.
- Check corrosion chassis and parts of body

### **WEEKLY MAINTENANCE**

- Check the tyre pressures with air watch
- Check the level of direction hydraulic tank
- Check the air suspension bellows (holes, damage etc.) when the engine is running
- Check the dirtiness of air filter
- Check the window cleaning water level
- Check washing the entire bus weekly, making sure to remove all road chemicals
- Check corrosion chassis and parts of body

### **CAUTION**

- Should not use water jet cleaning machine inside of the bus
- Should not use corrosive material on the bus surface
- Should not use wash the vehicle with car wash brush
- Informing the authorized service in case of accident
- Regular maintenance in authorized service

### **Maintenance Schedule**

Main periodical maintenance range of the vehicle is 20000 km. Transactions to be performed in every 20000 km are in the periodical maintenance table.

I : Inspect then clean, repair or replace as necessary

R : Replace

A : Adjust

L : Lubricate

Maintenance Range(*1000 km)	20	40	60	80	100	120	140	160	180	200	220	240	260
Diagnostic Control of Engine Faults	I	I	I	I	I	I	I	I	I	I	I	I	I
Engine Oil	I	R (or 6 months)	I	R (or 6 months)	I	R (or 6 months)	I	R (or 6 months)	I	R (or 6 months)	I	R (or 6 months)	I
Valve space adjustment				A				A				A (or 4 years)	
Oil filter	I	R	I	R	I	R	I	R	I	R	I	R	I
Fuel filter	I	R	I	R	I	R	I	R	I	R	I	R	I
Fuel water separator filter	I	R	I	R	I	R	I	R	I	R	I	R	I
Fuel Water separator filter water discharge	daily												
Air filter element	I	R	I	R	I	R	I	R	I	R	I	R	I
Fuel pipes and hoses	I	I	I	I	I	I	I	I	I	I	I	I	I
Cooling system leakage	I	I	I	I	I	I	I	I	I	I	I	I	I
Hydrostatic fan drive system oil	I	I	I	I	I	R (or 1 year)	I	I	I	I	I	I	I
Hydrostatic fan drive system oil filter (with oil change)						R							
Hydrostatic, fan drive oil level, leakage and function control	I	I	I	I	I	I	I	I	I	I	I	I	I
DEF system leakage	I	I	I	I	I	I	I	I	I	I	I	I	I
Exhaust treatment – Particle filter cleaning	I: 300000 km												
Urea pump filter	R: 300000 km												
Outside cleaning of radiator (cooling liquid, air and oil) cores		I		I		I		I		I		I	
Cooling water change	I	I	I	I	R	I	I	I	I	R	I	I	I
Crankcase ventilation filter						R						R	
Crankcase ventilation hoses and radiator pressure cap			I			I			I			I	
Belt tightness and damage	I	I	I	I	R	I	I	I	I	R	I	I	I
Intercooler, Pipes and Air Compressor	I	I	I	I	I	I	I	I	I	I	I	I	I
Vibration Dumper					I					I			
Transmission oil and filter									R (or 3 years)				



Maintenance Range(* 1000 km)	20	40	60	80	100	120	140	160	180	200	220	240	260
Cleaning transmission ventilation valve	I	I	I	I	I	I	I	I	I	I	I	I	I
Transmission oilleakage control	I	I	I	I	I	I	I	I	I	I	I	I	I
Transmission connecting boltstorque control	I	I	I	I	I	I	I	I	I	I	I	I	I
Front axle pinsand bushes	I	I	I	I	I	I	I	I	I	I	I	I	I
Differential oil	R (65000 km or 1 year)												
Rear axle andbrake caliper connecting bolts	I	I	I	I	I	I	I	I	I	I	I	I	I
Hydraulic steeringwheel oil	I	I	I	I	I	I	I	R (or 2 years)	I	I	I	I	I
Fluid leakage at power steeringssystem	I	I	I	I	I	I	I	I	I	I	I	I	I
Hydraulic powersteering connections	I	I	I	I	I	I	I	I	I	I	I	I	I
Power steeringhose	I	I	I	I	I	I	I	I	I	I	I	I	I
Wheel nuts	I	I	I	I	I	I	I	I	I	I	I	I	I
Tyre air pressure	I	I	I	I	I	I	I	I	I	I	I	I	I
Wheel hub bearing	I	I	I	I	I	I	I	I	I	I	I	I	I
Brake pipe and hoses, leakages	I	I	I	I	I	I	I	I	I	I	I	I	I
Brake lining and discvisual inspection	I	I	I	I	I	I	I	I	I	I	I	I	I
Draining of condensation tank			I			I			I			I	
Air dryer filter				R (or 1 year)				R (or 1 year)				R (or 1 year)	
Looseness in shockabsorber and connection elements	I	I	I	I	I	I	I	I	I	I	I	I	I
Leveling valves	I	I	I	I	I	I	I	I	I	I	I	I	I
Air bellows	I	I	I	I	I	I	I	I	I	I	I	I	I

Maintenance Range(* 1000 km)	20	40	60	80	100	120	140	160	180	200	220	240	260
Cable terminations and tightening torques	I	I	I	I	I	I	I	I	I	I	I	I	I
Function control of brake, signal, parking, fog and brake lamps	I	I	I	I	I	I	I	I	I	I	I	I	I
Inside illumination control	I	I	I	I	I	I	I	I	I	I	I	I	I
Windshield wiper and washing system function	I	I	I	I	I	I	I	I	I	I	I	I	I
General control of fuse panel electric cable and sockets	I	I	I	I	I	I	I	I	I	I	I	I	I
Gas, brake and clutch pedal control	I	I	I	I	I	I	I	I	I	I	I	I	I
Battery connecting cables	I	I	I	I	I	I	I	I	I	I	I	I	I
Battery electrolyte density	I	I	I	I	I	I	I	I	I	I	I	I	I
Starter electric connections			I			I			I			I	
Air door adjustment	I	I	I	I	I	I	I	I	I	I	I	I	I
Function control of safety installation of all doors	I	I	I	I	I	I	I	I	I	I	I	I	I
Air leakage, damage tightness of door elements and door function	I	I	I	I	I	I	I	I	I	I	I	I	I
Rear mirrors (including mirror heating system ) connectors	I	I	I	I	I	I	I	I	I	I	I	I	I
Corrosion control of chassis and body parts			I			I			I			I	
Changing extra heater fuel filter (change earlier when necessary)		R		R		R		R		R		R	
Hoses of closed crankcase ventilation			I			I			I			I	
Filter of crankcase ventilation						R						R	
DEF pump filter	R: 300000 km												
Underbody wax checking and repairing	I: weekly												
Washing the entire bus, making sure to remove all road chemicals	I: weekly												
Check bus accident and original parts situation.	I: daily												
Greasing splined joint							L (or 2 years)						
Cardan shaft			I (or 1 year)			I (or 1 year)			I (or 1 year)			I (or 1 year)	
Greasing pinion shaft			L (or 6 months)			L (or 6 months)			L (or 6 months)			L (or 6 months)	

- A/C compressor oil and A/C gas and oil must be controlled once every 2 years and replaced if decreased.
- A/C air suction filters must be cleaned with air once every 6 months and replaced with a new filter once a year.
- For fire extinguishing system; extinguishing fluid must be replaced every 5 years, tanks must be replaced every 10 years.
- Real time clock battery must be replaced every 2 years.

Periodical maintenance range is for 260000 km. Maintenances after 260000 km are the same as maintenance ranges which continue again starting from 20000 km.

## **6. TECHNICAL INFORMATION**

<b>Dimensions (mm)</b>	
Maximum length	9560
Maximum width	2454
Maximum height	3368 (including A/C unit)
Wheelbase	4660
Front overhang	1890
Rear overhang	3010
Front track width	2012
Rear track width	1751
Inner height	max. 1950
<b>Masses (kg)</b>	
Gross vehicle mass	13500
Empty mass	Max 9600 (including full tank, driver and assistant)
Front axle capacity	4500
Rear axle capacity	9000
<b>Engine</b>	
Model	CUMMINS B6.7E6D320C EURO VI
Type	Commonrail Turbo Diesel Intercooler
Number of cylinders	6
Engine volume (cm3)	6700
Maximum power (HP/rpm)	320 / 2100
Maximum torque (Nm/rpm)	1200 / 2300
Exhaust gas emission class	Euro VI
<b>Clutch</b>	dry type
<b>Gearbox</b>	Automated
Model	ZF ECOLIFE 6AP1200
Number of gears, type	6 forward, 1 reverse, overdrive
Final gear ratio	4,1
Steering system	Hydraulic
<b>Tyres</b>	265/70 R19,5
<b>Minimum turning radius (mm)</b>	7100
<b>Gradeability % (at GVW)</b>	45,50%
<b>Suspensions</b>	
Front	Air suspension - 2 bellows Independent suspension
Rear	Air suspension - 4 bellows
<b>Brake system</b>	
Front / Rear	Disc / Disc
Brake Structure	EBS - electronic brake system
Service	full air system dual circuit electronical actuated
Parking brake	acting on rear axle spring actuated
Auxiliary brake	Intarder
<b>Fuel tank (lt)</b>	250
Diesel exhaust fluid tank (lt)	19
<b>Luggage compartment</b>	
Volume (m3)	4
<b>Generator</b>	28V-90A X 2
Nominal voltage	24V
Battery	24V (2X12V) -150 Ah
Starter motor	24V - 5,0 kW

PRESSURE VALUES		
Four Way Protective Valve	Static Closing Pressure	> 5,5 Bar
Air Dryer	Minimum Opening Pressure	8,1 Bar
Air Dryer	Maximum Closing Pressure	10,45 Bar
Tyres	Cold Inflation Pressure	7,75 bar / 112 psi

FLUID SPECIFICATIONS			
DEFINITION	CAPACITY	NORM	CLASS
Engine Oil	27 lt	SAE 15W 40	CES-20086, API CK-4 or CES-20081, ACEA E-9
Transmission oil and Filter	24 lt (38 liters in the first filling)	TE-ML20.105	20G according to TE-ML20.105
Differential oil & Rear axle	9,5 lt		API GL5
Power Steering Fluid	5,5 lt	GM Dexron-III	AUTRAN DX III
Hydrostatic fan oil	8 lt	GM Dexron-III	AUTRAN DX III
A/C compressor oil	1050 cc	Viscosity ISO 46	ZXL 100PG POE oil
Antifreeze(50%) + Water(50%)	46 lt	ASTM D6210	CUMMINS FLEETGUARD COMPLEAT
A/C gas	6,5 kg	1,1,1,2-Tetrafluoretan (Cooler gas R134a)	LINDE
Shaft grease	0,8 kg	ASTM 4950 SAE J306 NLGI LB-GC	NLGI 2 – High Performance Lithium Complex Grease

## **7. LIST OF FOREIGN DISTRIBUTORS**

COUNTRY	STORE NAME	STORE ADDRESS	CONTACT NUMBER
ALGERIA	Spa Elsecom	Rue Baha H'med, BP 200 Bab Ezzouar - Alger	+213 (0)23 85 30 86
AZERBAIJAN	AZ Auto LLC	2207 Nobel avenue AZ1006 - Bakū	+(994) 124964598
BOSNIA	Sejari d.o.o. Sarajevo	Blažuj 78, 71215 Blažuj - Sarajevo	+387 33 770 306
BULGARIA	Isubus Ltd.	Botevgradsko Shose Blvd. 1839 Sofia	+(359) 28182929
CROATIA	Presečki grupa d.o.o.	Frana Galoviča 15 49 000Krapina	+385 (0)49 328 000
CZECH REPUBLIC	Turancar CZ. s.r.o.	Bavorská 856/14 155 00 Praha 5	+420 776 111 113
FRANCE	Fast Concept Car	Z.I La Ribotiere 85170 Le Poire Sur Vie	+33 25 13 41 034
GERMANY	Omnicar Fahrzeughandel GmbH	Weinbrennerstrasse 10 77815 BÜHL	+49 (0)7223 8061930
GREECE	Petros Petropoulos S.A.	96-104 Iera Odos 122 10 Athens	+(30) 210349 92 00
HUNGARY	Anadolu Rom Hungary	1135 Budapest Robert Karoly Ket. 96-98	+36 703730637
ISRAEL	Universal Trucks Israel Ltd.	Industrial Area Segula, P.O. Box 4599 Petach-Tikva 49145	+972-3-9120010
ITALY	Midi Europe SRL	Via Crosaron, s.n. 37053 Cerea VR	+39 0442 328 212
LITHUANIA	UAB Saločiai Ir Partneriai	Mokyklos str. 1B, Bukiskės LT-14182 Vilniaus raj.	+370 5 2793000
MOROCCO	Maroc SDAMA	Route principale de Rabat 1, km 6,3 Ain Sebaa - Casablanca	+212 (0) 529 029 300
POLAND	Busimport PL Sp. z.o.o.	Gierłatowo 10A 62-330 Nekla Wielkopolskie	+48 61 43 86 905
ROMANIA	Anadolu Automobil Rom. Srl	Soseaua Bucuresti- Ploiesti Nr. 110 Comuna CiolPani	+4021-266 8300
SERBIA	Auto Cacak Komerc Doo	Bore Stankovica 16 11 030 Belgrade, Makiš	+381 32 376 228
SLOVAKIA	Turancar	Bratislavská 29 94901 Nitra	+421 37 6555 777

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