

NOVO

USER'S MANUAL

ANADOLU ISUZU

Revision No: 00



It is a symbolic photograph of NOVO vehicle.

FOREWORD

This user's manual is prepared to give general information about the efficient and most economical use of **E6 Novo** 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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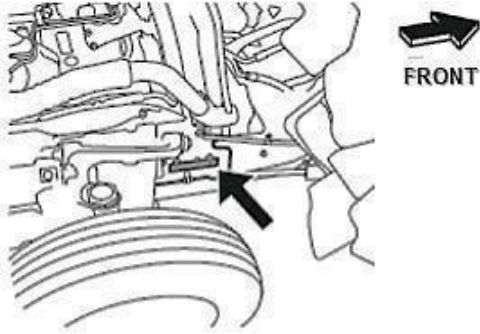
TABLE OF CONTENTS

	PAGE
1. INTRODUCTION	1
Chassis Number	2
Identification Plate	2
Engine Number	3
Vehicle Warranty	4
Options	4
Recommendations / Warnings	5
2. GENERAL INFORMATION	6
Engine Start	7
Engine Stop	7
Opening and Closing The Doors	7
Emergency Exits	8
3. CONTROLS AND INDICATORS	9
Front Control Panel	10
Air Conditioner Control	15
Radio&MP3 Player	16
Heater Control	17
Tachograph	18
Side Control Panel	20
Preheater (Optional)	21
Instrument and Warning Lights Panel	22
4. VEHICLE EQUIPMENT	28
Driver Seat	29
Passenger Seats	31
Driver Side Window	32
Roller Blind	32
Digital Clock	32
Mirrors	33
Amplifier	34
Lane Departure Warning System (LDWS)	34
Trapdoor	35
Service Set	35
Disabled Lift (Optional)	36

Pedals	39
Steering Wheel Adjustment	39
Horn	39
Transmission	40
Engine	40
Retarder (Optional)	41
Fuel Tank	42
Battery	43
Tyre Inflation Set	43
Anti-Lock Brake System (ABS)	43
Advanced Emergency Braking Switch (AEBS)	44
Anti-Slip Regulator (ASR)	47
Diesel Exhaust Emission Fluid Heating	48
System Diesel Particulate Defuser (DPD)	49
Engine Chamber Fire Detection System	52
Engine Chamber Fire Extinguishing System	52
Engine Chamber Fire Detection System And Control Unit (Firetürk- option 2)	54
Engine Chamber Fire Detection System And Control Unit (Firecom – Option 3)	56
 5. SERVICE AND MAINTENANCE	 60
Cleaning Vehicle	61
Towing Vehicle	61
Engine Oil	62
Engine Coolant	63
Transmission Oil	69
Rear Axle Differential Gear Oil	69
Power Steering Fluid	70
Fuel Filter	72
Urea Selective Catalytic Reduction (SCR)	75
Control of Brake Disc and Linings	76
Fan Belt	77
Air Cleaner	78
Air Dryer	84
Battery Handling Precautions	84
Windshield Wipers Change	87
Wheels and Tyres	88
Maintenance Schedule	93
 6. TECHNICAL INFORMATION	 97
 7. LIST OF FOREIGN DISTRIBUTORS	 102

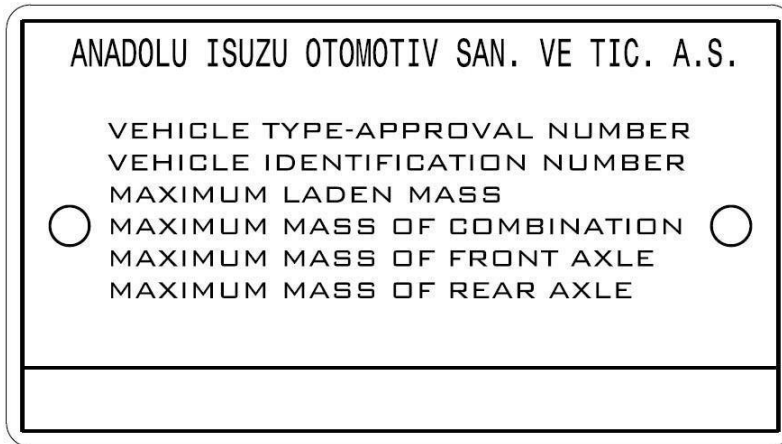
1.INTRODUCTION

CHASSIS NUMBER



The chassis number is stamped on the right-side front part of the frame.

IDENTIFICATION PLATE

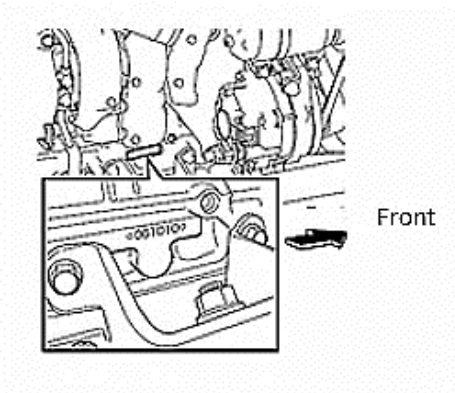


Identification plate is at the front door entry, at the step level on the left. There are VIN number, maximum axle load sum, maximum front axle load and maximum rear axle load on the identification plate.

VIN number includes the datum of vehicle model, maximum loaded weight, type of engine, drive system, wheelbase, production location codes and the chassis number of the vehicle.

BUS VIN SYSTEM																
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
N	N	A	M	0	L	8	L	N	0	2	0	0	0	0	0	1
(SAMPLE)																
1 - 3	INTERNATIONAL WMI NO:					NNA:	(AIOS) ANADOLU ISUZU OTOMOTIV SANAYI VE TICARET ANONIM Sirketi									
4	MODEL LINE					M:	BUS GROUP									
5	GVW OR CAPACITY RATING					0	INDEPENDENT FROM SEAT NUMBER									
6	MODEL EXTENSION					A:	DELUXE TYPE WITH AIR SUSPENSION									
						L:	DELUXE TYPE WITH MECHANICAL SPRINGS									
						B:	PUBLIC TRANSPORT TYPE									
7	ENGINE MODEL					8:	ISUZU - 4HK1E6 EURO6-C									
8	DRIVING SYSTEM					L:	LEFT HAND DRIVE									
						R:	RIGHT HAND DRIVE									
9	WHEEL BASE					N:	3385mm									
10-11	MANUFACTURING PLANT					01:	AIOS KARTAL PLANT									
						02:	AIOS GEBZE PLANT									
12-17	PRODUCTION SEQUENCE NO															

ENGINE NUMBER



The engine number is stamped on the left-side rear part of the engine block.

VEHICLE WARRANTY

Warranty terms and conditions are specified in the “Warranty Certificate” given with the vehicle. You can find the detailed information about warranty procedure in “Warranty Certificate”.

OPTIONS

Apart from the standard features of the vehicle, the following options may be applied to the vehicle when requested.

NOVO EURO6 OPTIONS
Carpet cover inside
Cruise control
Preheater
Parking Sensor
Retarder
Fire extinguisher
Engine room fire sensor
Electrically controlled mirrors
Double glazing
Crew seat
Armrests (window side) for passenger seats
Mahogany coating for armrests
Leather
Lateral sliding
Foot rest
Seat back tray
3 points safety belts for all seats
Carpet
Disabled Lift
Refrigerator (front or rear)
Tea coffee machine
Microphone & Amplifier
Monitor / LCD

RECOMMENDATIONS / WARNINGS

- Do not load your vehicle over its passenger capacity and do not change the places of the seats. Our factory is not responsible for the problems arising as a result of a change in the load balance of the vehicle.
- Only use the fuel (DIN EN 590 compatible Sulphur rate max 10 ppm) with the stated characteristics for your vehicle.
- Examine exhaust pipe from time to time. If you see a damage (for example, a damaged connecting member caused by abrasion or a hole or a crack, corrosion and leaks in pipes ports), take it to the nearest Authorized Service for control and maintenance.
- Control the wheel pressures frequently and be sure that they are always at the right value.
- Control the main and dipped beam settings, do not drive with defective headlights.
- Control brake, parking and plate lamps frequently, do not drive with defective or mud covered brake, parking and plate lamps.
- Take care of the maintenance of your vehicle to be done in Authorized Services in time and regularly in order to provide maximum performance in your vehicle.
- When the fluids such as waste oil, brake fluid and antifreeze you use in your vehicle and scrap batteries are thrown away indiscriminately, this gives great damage to the environment. Take care of eliminating such hazardous wastes in accordance with environmental regulations.
- Empty cans, bottles or other articles rolling on the floor, are extremely dangerous, be sure that especially the floor around the driver's seat is clean and tidy.
- Be sure that there are no combustible materials under or around the vehicle before starting it. The existence of such materials may cause fire.
- Be sure that you had trimmed the seat, steering wheel and the mirrors suitable for your correct driving position before the drive.
- Always wear your seat belt.
- Take care of front and side windows to be clean, keep the blinds not hindering your visibility and driving.
- Do not raise the speed of the engine before it was heated enough.
- Drive your vehicle carefully by complying with traffic rules and the road condition.
- If you realize an abnormality in a wheel during the drive, stop immediately in a safe place.
- If you go on your way with a deflated tire, this may cause the breaking of the bolts and the remove of the wheel by applying too much force to the wheel studs.
- Drive at a constant speed to the utmost. It is the waste of fuel to heat the engine overmuch and to make the engine high-speed.
- Do not go on driving when a warning light turns on. Do not forget that you have to get the corrective action by applying the instructions of counters, warning lights and indicator lights.
- When the vehicle malfunctions during the drive, turn on the hazard warning flashers and take the vehicle to a safe place not to block traffic. In order to inform the other vehicles that you were there, insert the triangle reflectors. Provide other passengers to get off the vehicle and wait in a safe place. Notify the nearest Authorized Service.
- Under bad weather conditions, visual angle reduces and slippery road surfaces increase the stopping distances. Drive slower than in good weather conditions. Additionally do not rotate the steering wheel suddenly and do not apply the brakes. Use tire chains and winter tires in snow-covered or icy roads.

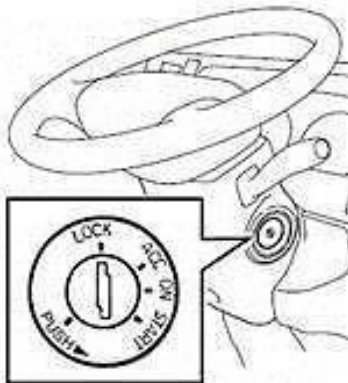
2. GENERAL INFORMATION

ENGINE START



Make sure that the handbrake lever is pulled safely. Before operating the engine, gear lever must be in "N" position. Keep the clutch pedal fully depressed.

Ignition Key



LOCK : In this position the key can be inserted and removed. Remove the key and turn the steering wheel until it is locked.

ACC : In this position audio system and other accessories can be used when the engine is closed.

ON : The engine is automatically pre-warmed. After the engine starts, the key stays in this position.

START : The engine is started in this position. The key returns to "ON" position when released.

ENGINE STOP

Pull handbrake lever, turn the ignition key to "ACC" or "LOCK" position.



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

OPENING AND CLOSING THE DOORS



There are door opening/closing switches on front control panel to open/close the doors from the inside.

Opening 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 the doors 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 it if there is any passenger in the vehicle when it is locked from the outside with the key. Turn it in clockwise 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 windows on the right and left side of the vehicle and window on the trapdoor using the emergency hammer.

3. CONTROLS AND INDICATORS

FRONT CONTROL PANEL

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.

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 1st level, wiper levers continuously work at normal speed.

Level high speed: It is turned towards the front door again after the 2nd 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.

Lighter



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

Idling Control Knob



This knob is used to warm up the engine.

You can increase the engine speed by turning the knob clockwise without the need to use the accelerator pedal.

Turn the knob back fully counterclockwise after you have used it for engine warm-up and keep it in this position.

Retarder Control Lever (Optional)

Retarder control lever is used for mountainous applications where retarder activation on long downgrades independent of the brake pedal is desired. To activate the retarder, simply move the hand lever to one of the four powered positions:

Position 0 : Retarder Power OFF

Position 1 : 25% Retarder Power

Position 2 : 50% Retarder Power

Position 3 : 75% Retarder Power

Position 4 : 100% Retarder Power



The retarder control does not automatically turn off at low speeds. Do not forget to reset the lever to Position 0 when the vehicle is stationary or when the retarder is no longer required.



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.



AEBS Switch: This switch is used to deactivate the AEBS system. When the switch is pressed, AEBS light appears in the warning lens panel. Pressing the switch again activates the AEBS system. The AEBS light also appears when there is a failure in the system.



Front Door Control Switch: Front door is opened/closed when pressed the lower edge of the switch.



Back Door Control Switch: Back door is opened/closed when pressed the lower edge of the switch.



Ceiling Light Button: Pressing the lower part of the button turns on the dome lamps. Pressing the upper part of the button turns the dome lamps off.



Reading Lamp Button: The button has two levels. If the reading lamp button on the service kit is switched on by the passenger, pressing the lower part of the button turns the lamp on at the first level. If it is switched off, it goes out. When the lower part of the button is pressed a second time, the reading lamps are switched on at the second level, this level cannot be controlled by the passenger.



Tailgate Button: When the lower part of the button is pressed, the lamps in the trunk light up. When the upper part of the button is pressed, the light turns off.



LDWS Button: You can turn off the system for a period of 10 minutes to prevent false alarms on roads without clear lane markings.



Front Fog Lamp Button: When the lower part of the button is pressed with the ignition switch and parking lights on, the front fog lamps come on. Press once more and they switch off. The fog lamps are switched off when the ignition is switched off..

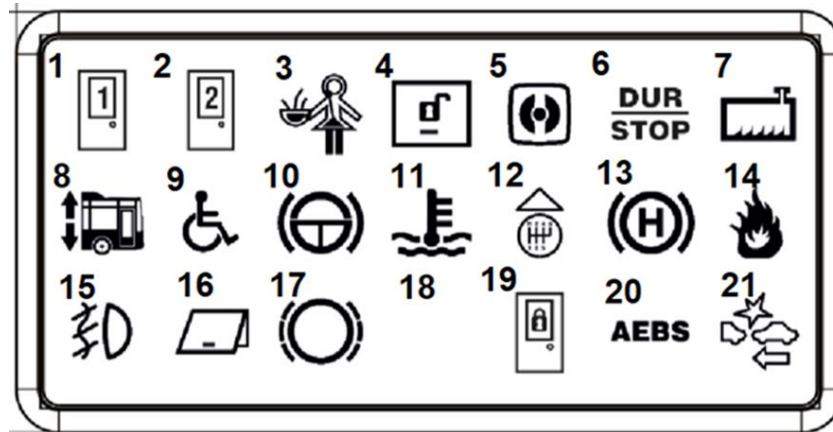


Outside Mirror Heating Button: When the lower part of the button is pressed, the outside mirror heater is activated. It deactivates when pressed a second time. If the heater is not turned off by the driver, it will automatically deactivate after 20 minutes.



Driver Side Window Resistance Button: When the lower part of the button is pressed, the driver's side window resistance is activated. It deactivates when pressed a second time. If the heater is not turned off by the driver, it will automatically deactivate after 20 minutes.

Warning Lens Panel: It indicates the status in which functions or malfunctions are active.



Warnings

1	Front door is open
2	Rear door is open
3	Passenger calls the hostess
4	Trunk lid unlocked (optional)
5	Door emergency exit tap is open
6	Passenger presses the stop button
7	Cooling water level is low
8	Rear suspension is not at the normal level
9	Disabled passenger wants to get on
10	Retarder activated
11	Engine overheat
12	Up-Shift indicator
13	Bus stop activated (optional)
14	Fire warning (optional)
15	Front fog lamp is on
16	Trunk lid is open (optional)
17	Pads ended warning
18	Not active (optional)
19	All Doors locked
20	AEBS (optional)
21	Crush warning

Retarder Control Lever (Optional)

Retarder control lever is used for mountainous applications where retarder activation on long downgrades independent of the brake pedal is desired. To activate the retarder, simply move the hand lever to one of the four powered positions:

- Position 0 : Retarder Power OFF
- Position 1 : 25% Retarder Power
- Position 2 : 50% Retarder Power
- Position 3 : 75% Retarder Power
- Position 4 : 100% Retarder Power



The retarder control does not automatically turn off at low speeds. Do not forget to reset the lever to Position “0” when the vehicle is stationary or when the retarder is no longer required.

Lighter



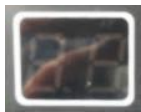
Lighter is pushed towards the heat element inside and it goes out automatically when heated.

Idling Control Knob



This knob is used to warm up the engine. You can increase the engine speed by turning the knob clockwise without the need to use the accelerator pedal. Turn the knob back fully counterclockwise after you have used it for engine warm-up and keep it in this position.

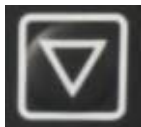
AIR CONDITIONER CONTROL



It shows internal temperature value as two digits. Temperature can be adjusted up - down.



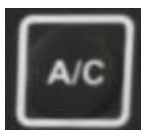
When pressed (the air conditioner is on), set temperature increases 1°C. Temperature may increase up to maximum 30 °C.



When pressed (the air conditioner is on), set temperature decreases 1°C. Temperature may decrease to at least 18°C.



Each pressing the fan button, speed level increases.



The last set value is automatically activated when pressed and led lights. If internal temperature value is greater than the set value, air conditioner cooling function is activated.

RADIO & MP3 PLAYER



There is a radio & MP3 player with USB and AUX input in the vehicle.

DVD(OPTIONAL)



The vehicle has one DVD, USB and AUX input.

HEATER CONTROL



No.	Name
1	Driver Fan Level Setting
2	Driver Inlet Air Suction
3	Foot-Face Position
4	Driver Heater
5	Defrost Position
6	Mix Position
7	Passenger Heater Step Key



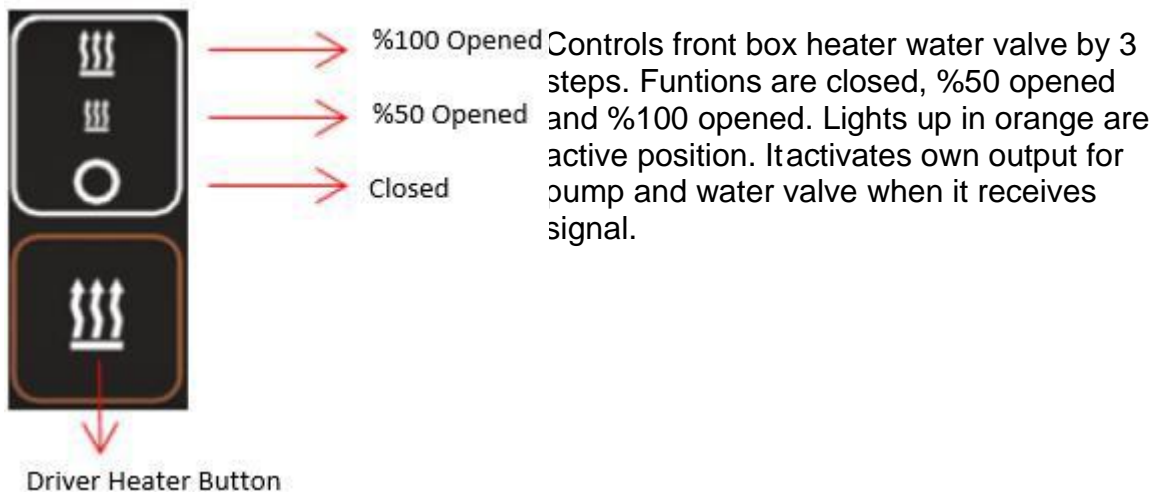
FUNCTIONS OF THE BUTTONS

Driver Blowing Section

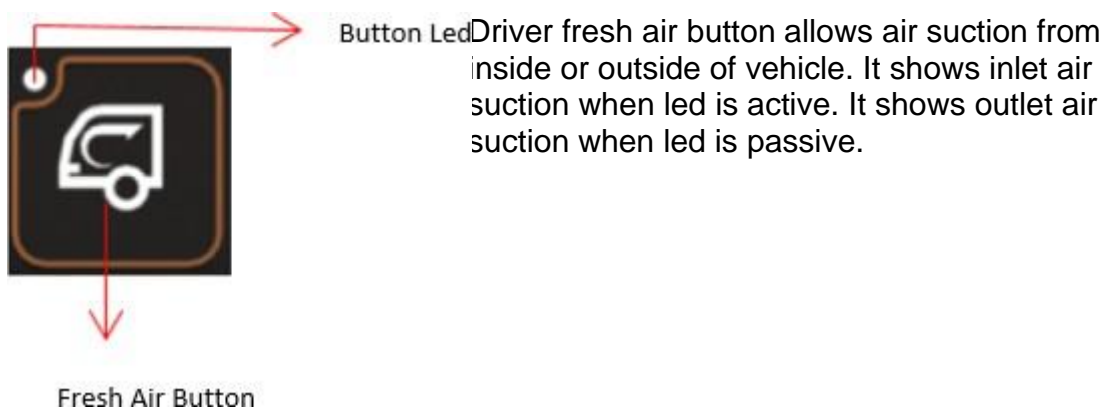


The ventilation control of the driver's area is provided by the buttons on the side. These buttons consist of driver heating, fresh air, driver fan, air direction buttons.

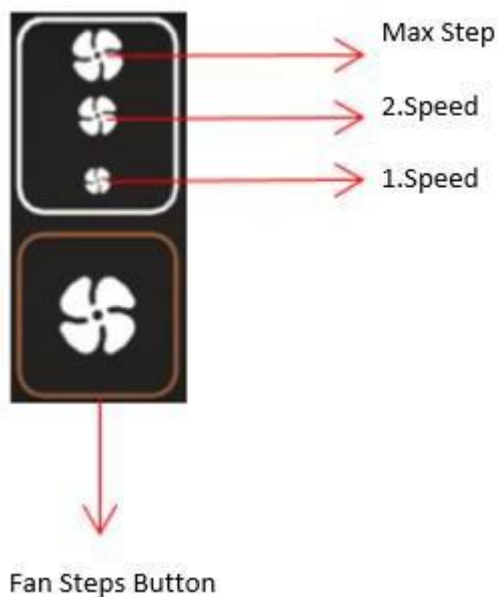
Driver Heater Button



Driver Fresh Air Button

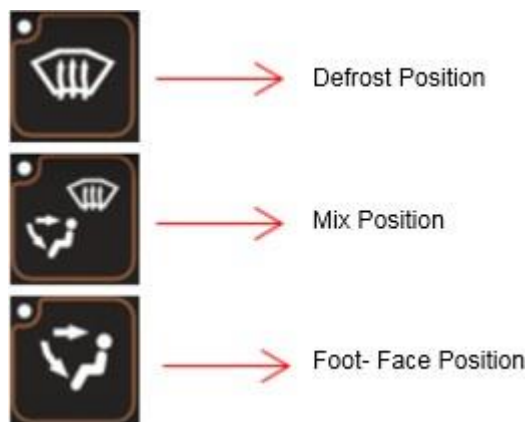


Driver Fan Level Setting



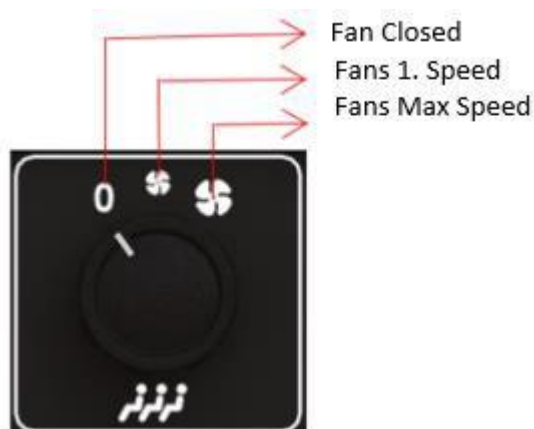
Driver fan level setting button allows fan setting of front box heater to regulate as a three level. Levels are %40 %70 and %100.

Driver Air Flow Direction Selector



Driver air flow direction button regulates position of front heater air flap. The positions are defrost, mix and foot-face ventilation. Active position is illuminated with light.

Paseenger Heater Fan Step Key




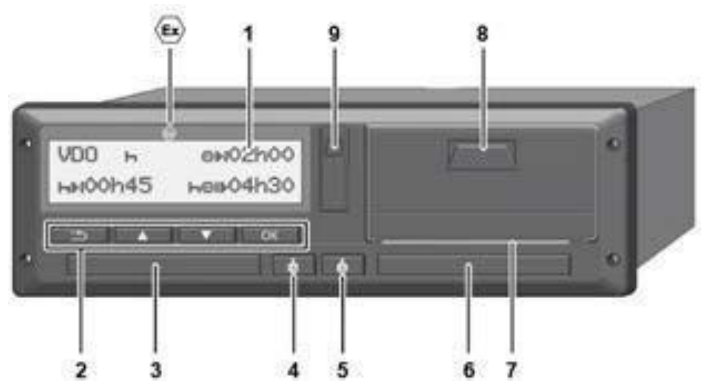
Passenger fans level setting button allows fan setting of passenger heaters to regulate as a two level. Levels are %50 and %100.

TACHOGRAPH

The analog tachograph records vehicle speeds, time, distance traveled and other information. The tachograph can be useful in achieving economic driving and optimum management of operations.



No.	Name
1	Display
2	Menu buttons
3	Card drawer 1 with cover
4	Combination button driver-1
5	Combination key driver 2
6	Card drawer 2 with cover
7	Tear-off edge printer
8	Printer drawer
9	Front interface
	Label for ADR version (ex version – option)





Led Display

Contrast and brightness of the display cannot be changed.


Menu buttons

Please use the following buttons to enter, display or print data;

 /  Press the button of the desired direction several times: Scroll through the menu level to the desired function.

Keep the button pressed: Scroll automatically.

 Press the button briefly: Confirm the function/selection.

 Press the button briefly: Return to the previous entry field, abort the country entry or exit the menu levels step by step.

Card drawer 1 with cover

The driver 1 who will drive the vehicle inserts his driver card into the card drawer 1.

Combination button driver-1

Press the button briefly: Change activity.

Keep the button pressed: (at least 2 seconds): Open the card drawer.

Combination key driver 2

Press the button briefly: Change activity.

Keep the button pressed: (at least 2 seconds): Open the card drawer.

Card drawer 2 with cover

Driver 2, who is not driving the vehicle at this moment in time, inserts his driver card into drawer 2 (crew operation).

Tear-off edge printer

You can tear off the paper printout of the printer at the tear-off edge.

Printer drawer

Printer drawer for inserting the paper roll.

Front interface

The download of the data and the parametrization is done through the front interface (workshop). The front interface is located under a cover.

The access rights to the functions of this interface depend on the inserted tachograph card.

SIDE CONTROL PANEL



Handbrake: Handbrake system is air-driven and spring wound. Handbrake lever is on the left side control panel. When the vehicle is stopped, handbrake 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 handbrake system is enabled. For driving (vehicle activated), if brake air is insufficient when handbrake is disengaged (below 6 bars), warning light turns red. Wait for this light to go off before moving.



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.



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.



DPD Switch : The DPD switch is used to manually regenerate the DPD.



Warm-up Switch : This switch is used to allow engine coolant to warm up faster at low temperatures to increase the efficiency of the heater or to increase the efficiency of the heater while the vehicle is parked. Start the engine and press the lower edge of the switch. After the engine has warmed up, press the upper edge of the switch to turn it off.



Front Fog Lamp Switch : When keyswitch and park lamps are turned on and pressed the lower edge of the switch, front fog lamps are activated. They are deactivated when pressed once more. When keyswitch is turned off, fog lamps are deactivated.



Engine Heating Button: It is activated when the lower part of the button is pressed and deactivated when the upper part of the button is pressed.



LCD Display Button: Pressing the lower part of the button turns the LCD screen on. When the upper part of the button is pressed, the LCD screen turns off.



Boiler/Water Heater Switch: It has two stages. Pressing the lower end of the switch once energizes the boiler and pressing it once more energizes the water heater. Pressing the upper end of the switch de-energizes.



Automatic Transmission Emergency Switch: Used when there is a fault in the transmission and the vehicle is in gear, etc. to downshift to neutral.



Clutch-Transmission Adjustment Switch: It is used for the transmission to react fast or slow in gear shifts.



Mirror Control Switch (Optional): It is used for the driver to adjust the rearview mirror according to himself/herself. By rotating the arrows on the button, the mirror is adjusted in the desired direction (right, left, up, down).




Central lock key (Optional): If the vehicle is equipped with a central trunk lock, this is used to lock/unlock the trunk. Pressing the top of the button locks the trunk.


Preheater (Optional)








Heating

Heating immediately with longpress

Press the  Longpress button for longer than 2 seconds. Heater On.




Display On, the Heating menu item is displayed. Press the  Longpress button for longer than 2 seconds. Heater Off.


Heating with shortpress

Press the  Shortpress button for less than 2 seconds. Use the  or  button to set the temperature setpoint. Press the  button to confirm the temperature setpoint. Press the  Shortpress button for less than 2 seconds. Heater Off.






Settings

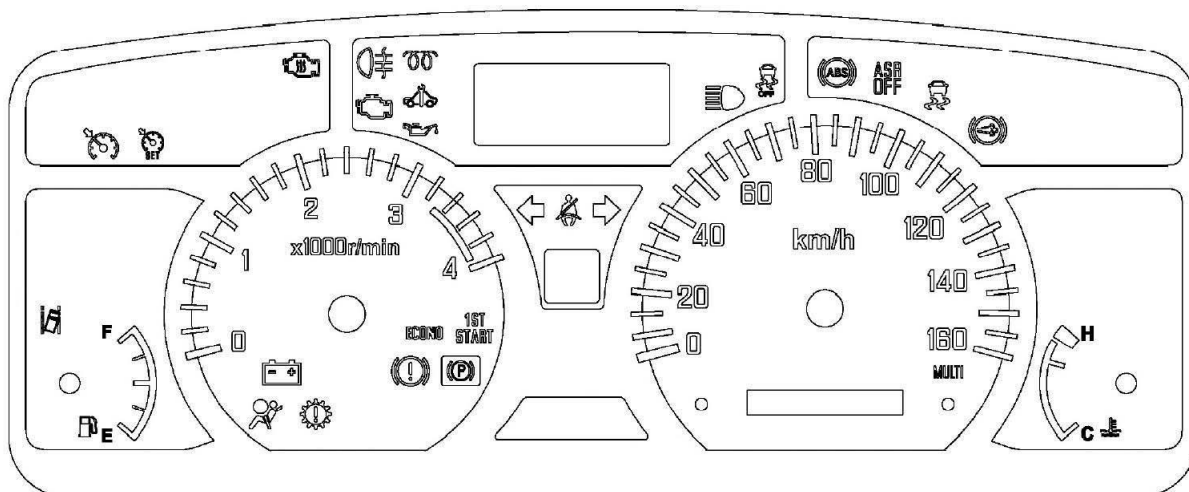
Use the  or  button to select the  symbol in the Menu bar.



Confirm the Settings menu item by pressing the  button.



















Use the  or  button for choosing the symbols to set the time format, time and weekday. Then confirm it by pressing the  button.






INSTRUMENT and WARNING LIGHTS PANEL










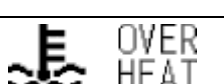





	ASR OFF indicator light
	ESC OFF indicator light















	Check engine warning light
	Rear fog light indicator light
	Glow plug indicator light
	SVS indicator light
	Engine oil pressure warning light
	High beam indicator light
	ABS warning light (yellow)
	Exhaust brake indicator light







	Cruise control MAIN indicator light
	Cruise control SET indicator light
	LDWS warning light
	Warm-up system indicator light
	SRS airbag warning light
	Generator warning light
	Smoother warning light
	ESC warning light







	Hydraulic warning light
	Parking brake warning light
ECONO	ECONO mode indicator light
1ST START	1st start mode indicator light
	Turn signal and hazard warning flasher indicator light – left
	Turn signal and hazard warning flasher indicator light – right
	Seat belt warning light

Multi – Information Display Warning Lights

	Normal voltage
	Abnormal voltage low
	Abnormal voltage high
	Speed limit
	Engine torque reduction
	Incorrect AdBlue
	Critical emission fail
	Overheat
	Can system error
	AdBlue refill
	AdBlue level low
	Check engine oil level
	AdBlue injection system

	AdBlue DOS malfunction
	PM level being checked for selectable DPD regeneration
	Manual regeneration of DPD in progress
	Air cleaner
	Push DPD switch
	Automatic regeneration of DPD
	DPD PM accumulation level
	Low fuel
	Total fuel economy
	Per trip fuel economy
	Instantaneous fuel economy
	Progress of DPD regeneration
	Engine oil and filter
	Transmission oil

	Clutch oil
	Fuel filter
	Power steering fluid
	Tire rotation
	Hour meter
	Speed warning

	Nighttime dimmer
	ASR is active
	Over speed
	Water separator (fuel filter)
	ASR failure
	Error

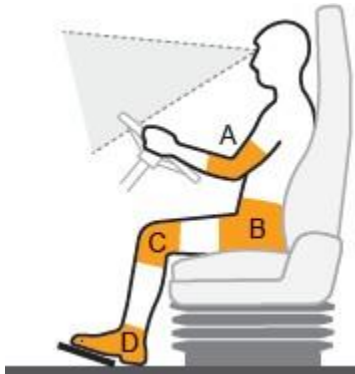
4. VEHICLE EQUIPMENT

DRIVER SEAT

NOTE

- The location of the seat functions may vary depending on the vehicle.

Ergonomic Position



Before you start driving, the seat must be adjusted to an optimal position for your body and the correct seating posture must be taken, particularly when switching vehicles.

Attention to detail is imperative to adjust the seat to an optimal position for your body. An incorrectly set seat or a wrong seating posture may have a negative impact on the ergonomics, driver's body, and operating capacity the vehicle.

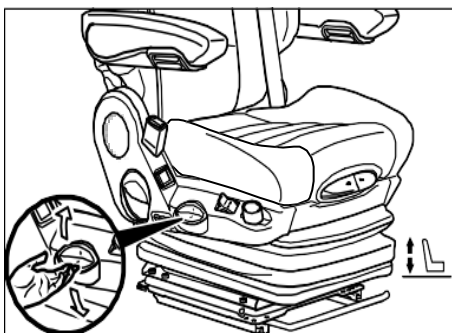
An improperly adjusted seat may affect the ability to operate the vehicle properly in a safe manner. Proper settings prevent accidents which may cause serious or fatal injuries.

A	Angle of elbow joints	95° - 135°
B	Angle of hip joint	100° - 115°
C	Angle of knee joint	110° - 120°
D	Angle of feet joint	90°

WARNING

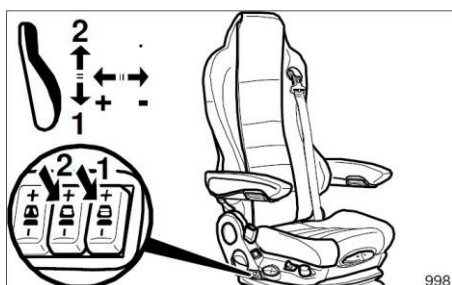
- Adjust the seat only before you start driving. Adjusting the seat while the vehicle is in motion must be avoided not only because the unlocked seat will move back and forth unstably, preventing you from taking the correct position, but might also cause you to lose control of the vehicle, possibly resulting in an accident.
- Try to move the seat without unlatching it after making adjustments to check that it is completely locked. A loosely locked seat may move unexpectedly and your position might then become unstable; this could lead to an accident. Take the vehicle to your Isuzu Dealer for service if you find that your seat adjusters do not latch.
- Driving with the seat excessively reclined could be very dangerous in a collision or sudden stop. Raise the seatback, and wear the seat belt correctly while sitting well back and straight up in the seat.
- Do not place a cushion or similar object between your back and the seatback. Doing so not only affects the stability of your driving position but also prevents the seat belt from working effectively in the event of a collision.
- Do not place any objects under the seat. If there are any objects under the seat, the seat could be locked in an improper position.
- Before making adjustments, check that the seat rails are free of anything that could obstruct the locking of the seat. Be careful that your hand or foot does not become trapped in the seat or rails when adjusting the seat.

Height Adjustment



The height can be adjusted in 8 steps. Pull or push the handle for height adjustment to move the seat upwards or downwards by one step. Before adjusting the height upwards or downwards again to the next step, the handle must be released.

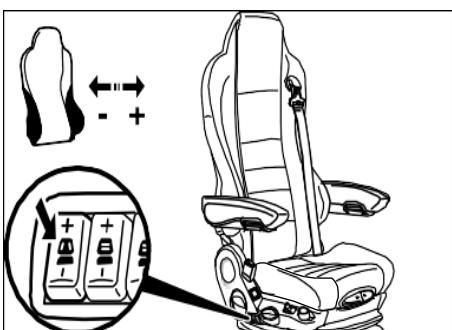
Lumbar Support



With the front (1) and back (2) switch the curvature in the upper and lower area of the backrest upholstery can be adjusted individually.

The air compartments will be filled by setting the respective switch to „+“ and emptied by setting it to „-“.

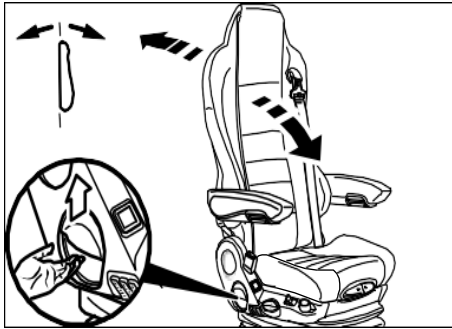
Lateral Support Adjustment



By actuating the switch, the curvature of the lateral guide right and left of the backrest can be adjusted individually by means of compressed air.

By setting the switch to "+", the air compartments will be filled. By setting it to "-", they will be emptied.

Backrest Adjustment

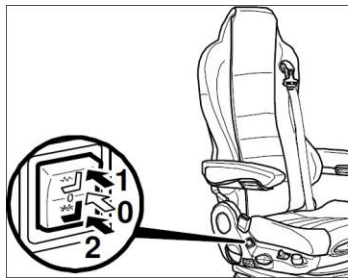


Pull up the locking lever to release the backrest catch. When releasing the backrest catch, do not apply load to the backrest by pressing against it.

By exerting pressure on or off the front or rear part of the seat pan it can be moved to the desired position. Release the locking lever to lock the backrest.

It should not be possible to move the backrest into another position after it has been locked.

Seat Heater



By operating the seat heater switch, the heating mats in backrest and seat cushion can be heated in two heating steps.

0 = heater OFF

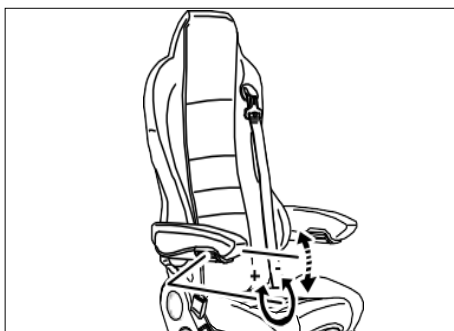
1 = heater ON (heating step 1)
2 = heater ON (heating step 2)

Armrests



The armrests can be folded up if required.

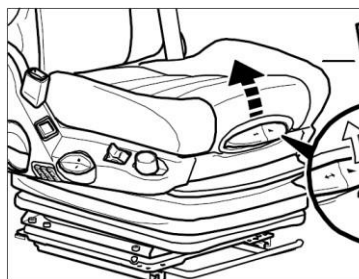
Armrest Adjustment



The inclination of the armrests can be modified by turning the adjustment knob.

When turning the knob to the outside (+) the front part of the armrest will be lifted, when turning the knob to inside (-) it will be lowered.

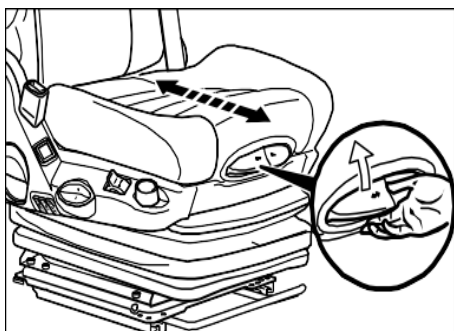
Seat Pan Angle Adjustment



To adjust the angle of the seat pan, pull the left handle upwards. The seat pan can be moved to the desired position by simultaneously pressing or relieving the seat to the front or to the rear.

The adjustment angle can be adjusted within a range between -6° and $+10^{\circ}$.

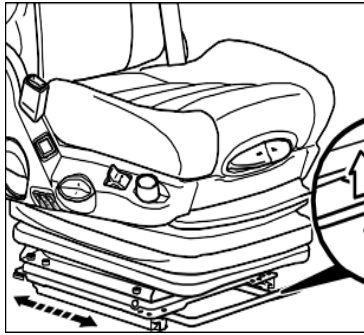
Seat Depth Adjustment



To adjust the depth of the seat cushion, pull the right handle upwards. By moving the seat cushion backwards or forwards the desired seating position can be reached.

Adjustable within a range of 60 mm in 6 steps.

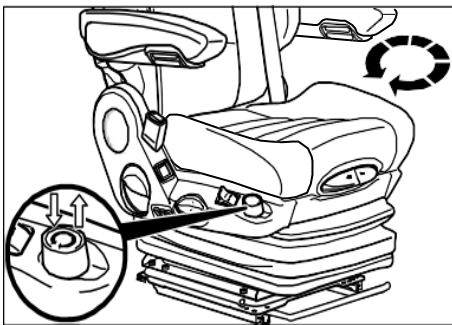
Fore/Aft Adjustment



The fore/aft adjustment can be adjusted by pulling the locking handle and by simultaneously sliding the seat forwards or backwards. The seat must lock into place with an audible click when the lever is released.

Adjustment travel: 200 mm in steps of 10 mm each.

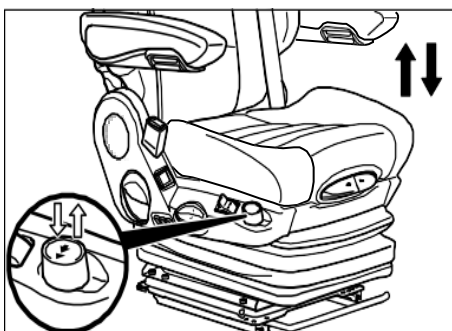
Swivel



By pressing the key and simultaneously turning the seat, the driver's seat can be swiveled to the left or to the right until the end stop is reached.

The key can be released during swiveling. The seat automatically locks into driving position.

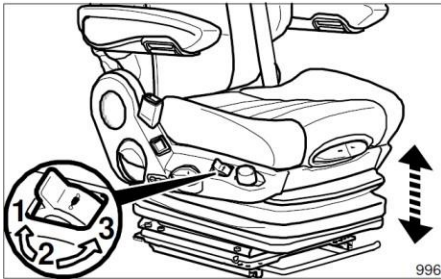
Quick Lowering



By pressing the key and locking it, the seat can be lowered to the lowest position.

By pressing the key again and releasing it, the seat will be lifted back to the driving position.

Vertical Shock Absorber Adjustment



The vertical vibration behavior of the seat can be adjusted continuously from soft to hard by using the turning knob.

1 = Soft shock absorption

2 = Medium shock absorption
3 = Hard shock absorption

Maintenance

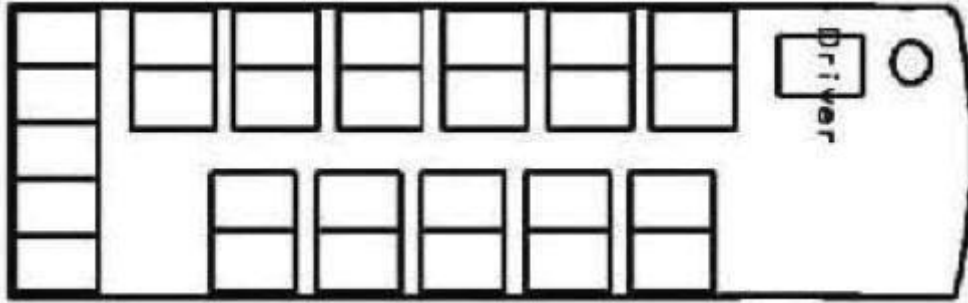


Dirt can impair the function of the seat, so make sure you keep your seat clean!

Upholstery does not need to be removed from the seat frame for cleaning.

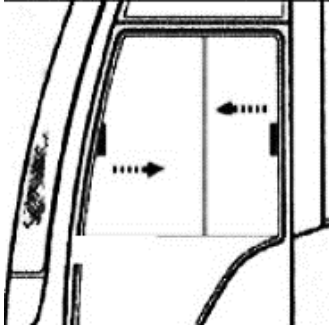
CAUTION

- Take care with the backrest - it may jerk forward and cause injury!
- When cleaning the backrest cushion the backrest must be held in place when operating the backrest lever.
- Do not clean the seat with a pressure washer!
- When cleaning the upholstery, make sure the upholstery is not soaked.
- Use standard commercially available upholstery or plastics cleaning agent. Test first for compatibility on a small, concealed area.

PASSENGER SEATS**Novo**

Passenger seats are covered in cloth. Leather upholstery is offered as an option. There is a crew seat at the front door entrance. Passenger seats may be laid backwards, seats by the aisle may spread to the side. 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. Right and left double seats have armrests by the aisle.

DRIVER SIDE WINDOW



Press the latch for opening the window and move the window in the direction of arrows.

ROLLER BLIND

There is a roller blind which is opened/closed manually on the front window. There are 2 adjusting ropes on the left side of the roller blind. When you draw one of these ropes, roller blind goes down, when you draw the other rope roller blind goes up.

DIGITAL CLOCK



Hour Minute

There is a digital clock at the the front side of the vehicle. Hour adjustment can be done with button on the left and minute adjustment can be done with button on the right.

MIRRORS

There are one rear door step mirror, one inside mirror and two outside mirrors in the vehicle.



Rear Door Step Mirror



Inside Mirror



Right Outside Mirror



Left Outside Mirror

AMPLIFIER



Sound levels of radio, video and microphone can be adjustable.

LANE DEPARTURE WARNING SYSTEM (LDWS)

LDWS is a lane departure warning system which warns the driver in the event of any inadvertent lane-change. There is a camera in the windscreen, it watches the lane markings. The system monitors indicator signalling, the brake light switch and the driving speed. The system is thus able to detect intended lane-changes and as a result does not warn you.

- LDWS is active when the vehicle is moving above 60 km/h or 37 miles/h.
- The function of the system can be hindered or disabled by the following conditions:
 - Dirty or damaged windscreen
 - Poor light conditions, such as insufficient illumination of the lane or strong glare
 - Poor weather conditions, such as snow, ice, heavy fog / rain
 - Missing, worn, faded, damaged or covered lane markings
 - Speed below the parameterised speed
 - Ignition off
- The system can be disabled for a period of 10 minutes on roads with no clear lane markings to avoid false alarms.

TRAPDOOR



There is a trapdoor for emergency exit and ventilation which is opened/closed manually.

SERVICE SET



There are service sets on the overhead of seats. There are two air discharge nozzles, one hostess button and two 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.



DISABLED LIFT (OPTIONAL)

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

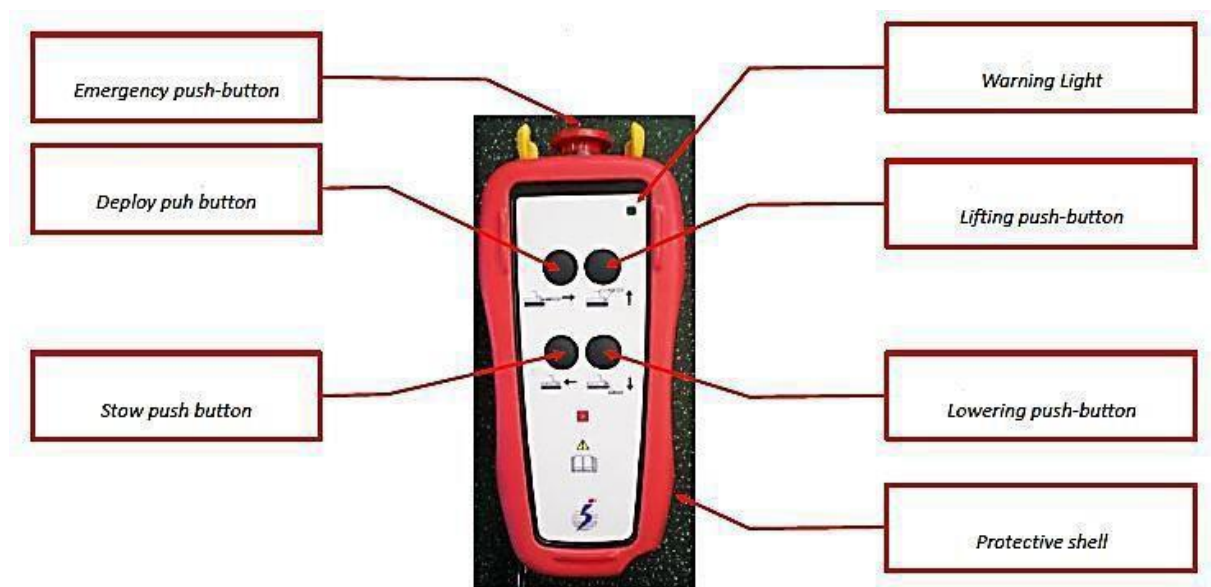
To get on the bus;



Disabled passengers press the button and lights on the warning lens panel, also audible warning activates.

In this case,

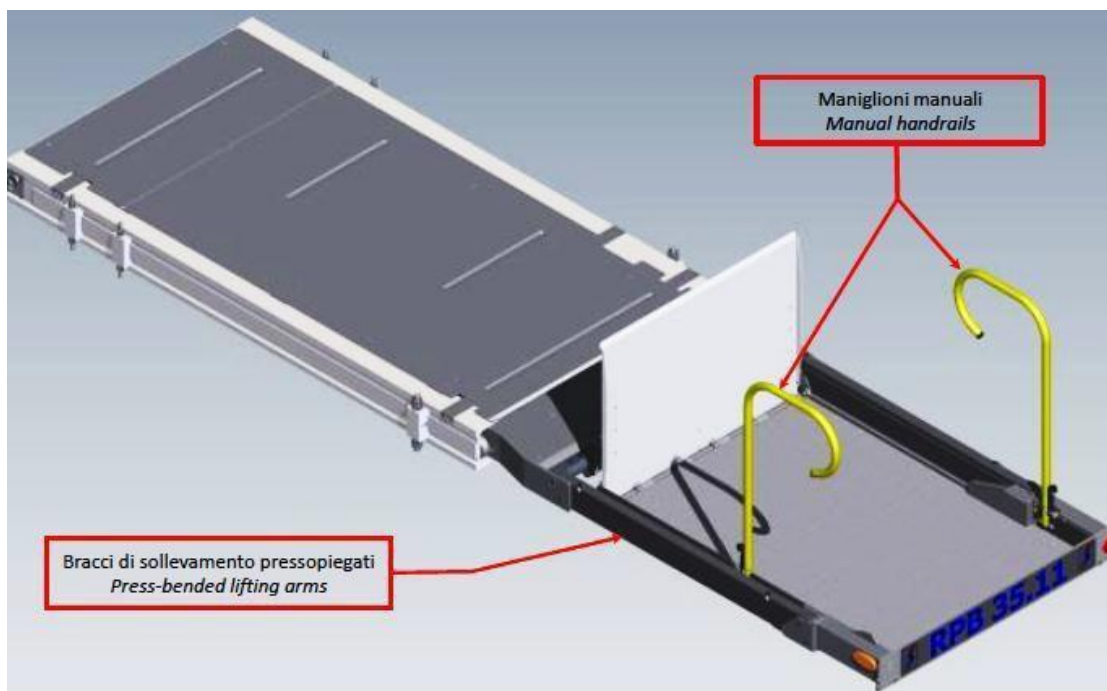
- Stop the bus
- Get off the bus and open the middle door
- Demount 4 seats which are close to the middle door
- Open the cap where the lift is located in
- Take the remote control



Remote control is equipped with four push-buttons, one for each lift movement(deploy, stow, lifting, lowering), clearly identified by icons.

Emergency push-button, built in the remote control, allows the operator to intervene earlier.

Remote control protective shell, as well as protect it from accidental drops, prevents unwanted lift movements when, for example, remote control is reversed on the ground and trampled.



Press-bended lifting arms (shaped in order to contain lower levers) and platform sides covers protect passenger from lift moving parts.

Platform is equipped with two manual handrails with locking device which can be driven by only one hand.

- 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.

CAUTION




- The trunk lid on the right side of the vehicle should not be opened when the door reserved for disabled passengers is open.
- Suitable and unsuitable situations are shown in the images above.

Stop Button for Disabled Passengers:

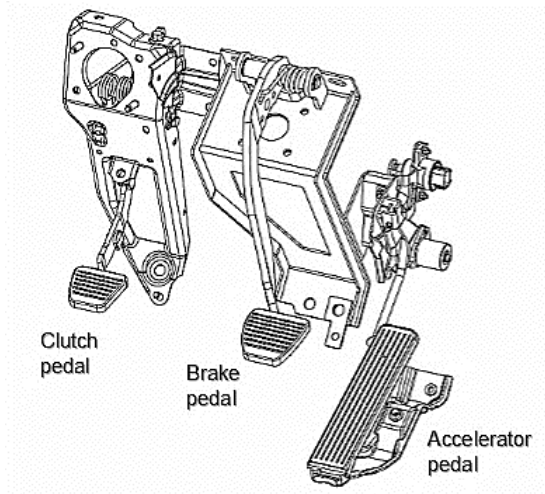


Disabled passengers who want to get off the bus, inform the driver by pressing on this button.

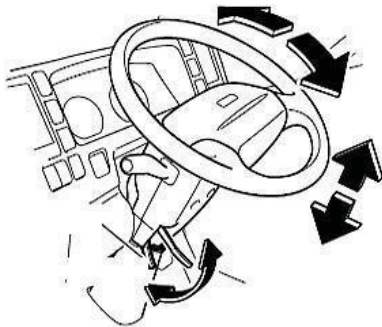
Then,  lights on the warning lens panel and also audible warning activates.

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

PEDALS



STEERING WHEEL ADJUSTMENT

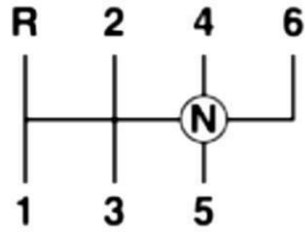


Steering wheel is tilt and telescopic. The lever located below the steering wheel on the left side is pulled upwards for this adjustment. Lever is pushed back when the desired position is reached.

HORN

Horn sounds when pressed the center of steering wheel.

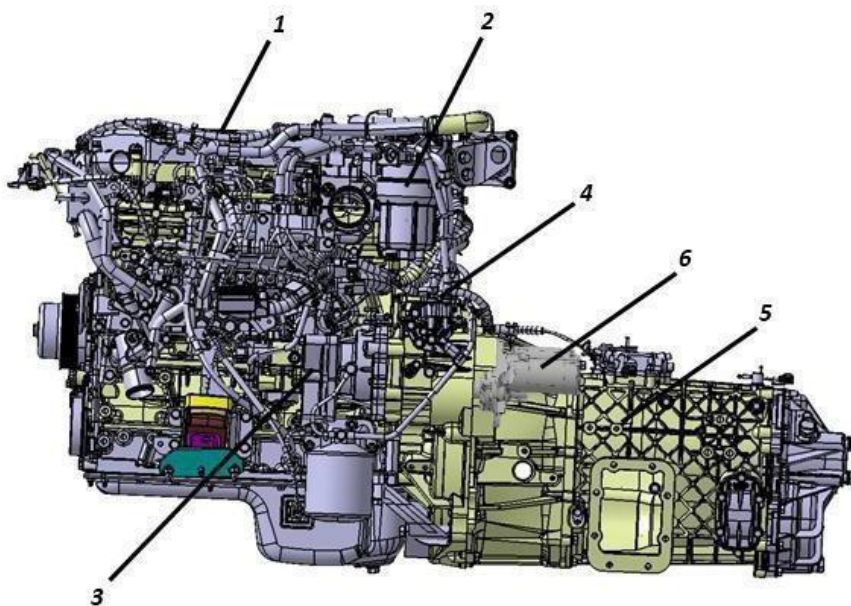
TRANSMISSION



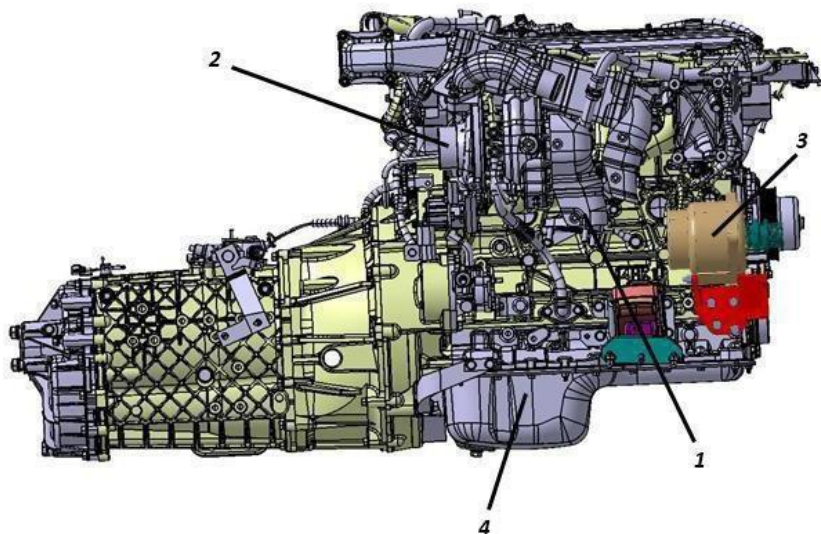
A manual transmission model requires fully depressing the clutch pedal when making a gearshift.

When the gearshift lever is placed into "R (Reverse)", the backup lamps come on.

ENGINE



1. Engine Oil Filling Plug
2. Fuel Filter
3. Vacuum pump
4. Fuel Pump
5. Transmission
6. Starter



- 1. Exhaust Manifold
- 2. Turbo Air Inlet
- 3. Generator
- 4. Engine Oil Sump

RETARDER (OPTIONAL)

Your vehicle is equipped with a retarder. It provides you with essential safety, cost effectiveness, accurate and reliable braking.

In town

Even at the lowest speeds, the retarder is very effective for common braking situations (junctions, bends, turns, etc.) and for stops, virtually without using the service brakes. Its highly flexible operation provides smooth braking and improves passenger comfort.

On the highway

Your retarder will provide the necessary braking, whether at high road speeds or in dense traffic. Its efficient usage will reduce fuel consumption and permit higher average speeds in safety, whilst increasing brake and tyre service life.

In hilly terrain

Use the retarder in conjunction with the engine braking for an optimum use of the gear ratios. This will allow you to achieve the speed best suited to changes in gradient and to the road conditions as quickly as possible.

For very long downhill gradients

After the vehicle stabilises at the required speed, we recommend that you use the retarder in position 2 to obtain maximum endurance efficiency.

Intermittently it may be useful to combine the use of the service brakes with the operation of the retarder to adapt the vehicle's speed to the road conditions (particularly entering bends).

Snow, ice, mud

When tyre adhesion is poor, the retarder is particularly valuable: it allows you not only to brake progressively, but may also be used for smooth startups on slippery ground. Try position 1 and position 2 successively, checking the vehicle's stability and tyre adhesion.

Maintenance Interval (x 1000 km)	20	40	60	80	100	120
Retarder	I	I	I	I	I	I
Carry out a full function check of the control system	I	I	I	I	I	I
Retarder air-gaps and adjust if necessary	I	I	I	I	I	I
Fastener torques are within specification	I	I	I	I	I	I
Oil leakage from the gearbox or axle flange seals	I	I	I	I	I	I
Retarder electrical cables	I	I	I	I	I	I
Cable terminations, tightening torques	I	I	I	I	I	I

FUEL TANK



Opening and Closing the Fuel Tank

1. Turn the cap counterclockwise to open.
2. Fill the tank.
3. Turn the cap clockwise to close.
4. Be sure that the fuel tank cap is tightly closed.



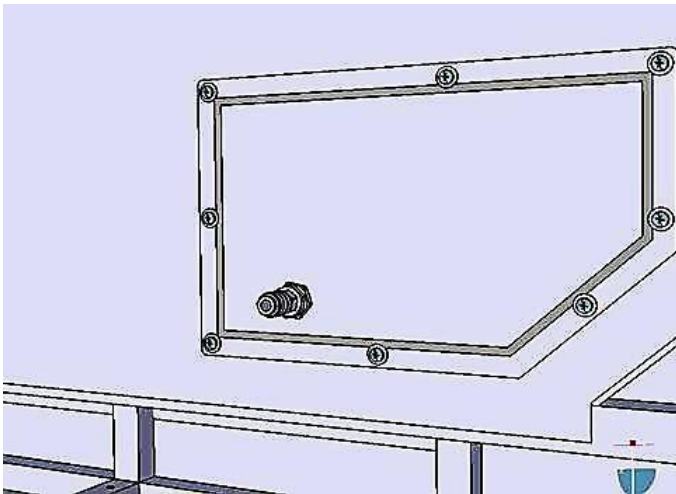
If the fuel tank cap is not tightly closed, leaking fuel could start a fire while driving.

BATTERY



There are two batteries in the vehicle, each of them is 12 V and 105 Ah. They are located at the front side of the front wheel which is on the left.

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 to 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 which is in rear trunk.
- Complete tyre inflation by accelerating the engine.

ANTI-LOCK BRAKE SYSTEM (ABS)

Wheels may be locked and slip during sudden braking or braking on a slippery road surface such as a snowy road. ABS is a device to prevent the wheels from by detecting a slippery condition during braking and to secure directional stability and handling stability of the vehicle. ABS is only to assist in slippery conditions and will not prevent an accident if you exceed safe driving speeds for road conditions. Always drive safely.



When the starter switch is placed into the "ON" position, the ABS warning light comes on and then goes out in approx. 2 seconds. The ABS is normal if the warning light goes out.

If

- ABS warning light comes on during driving
- The light does not come on when the starter switch is placed into the "ON" position

Contact the nearest Isuzu service.

Even if a problem has occurred with the ABS, the regular brakes will still work normally. However, ABS will not operate.

ADVANCED EMERGENCY BRAKING SYSTEM (AEBS)

Advanced Emergency Braking System is a system that automatically detect the emergency situation and activates the braking system to slow down the vehicle in order to avoid the collision or to reduce the impact of collision. AEBS is a requirement of General Safety Regulations and it is the user's responsibility to disable the system.

The operating speed range of the AEBS is 15 – 125 km/h. It will switch off at speeds above and below this range and switch to "Temporarily Out of Service" mode.

For AEBS system performance;

- Do not change radar position and radar cover position.
- Do not paint the sensor cover.
- Do not change the radar cover.
- Do not place any objects (plates, labels, etc.) on or in front of the radar cover.

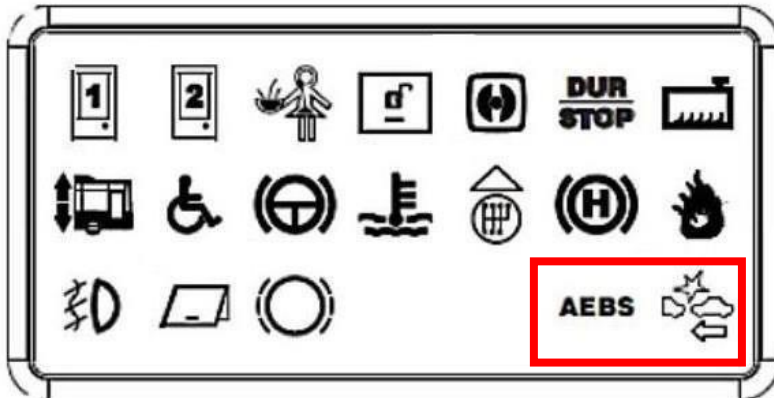
If the AEBS is not deactivated in the following situations, the vehicle may self-brake and create a hazardous situation:

- If the vehicle towed with the ignition switch on
- When the vehicle is in a stable position, it moves to a mechanism where wheels rotate
- If the wheels are turned by lifting the vehicle from front or rear axle to the air

AEBS function contains the sub-functions described in the following sections.

1. FCW Function - Front Collision Warning

- Visual and audible (FCW) warnings are given on the warning lens panel display.



- Along with the visual and audible warning signal, the wheel brakes are briefly given a tactile feedback (HCW) to reinforce the collision warning given to the driver.

2. AEB Function

The AEB function detects moving and stationary objects in the event of a potential collision from the rear and applies the wheel brakes. It does not react to oncoming traffic. Up to 70 km/h for moving objects and up to 20 km/h for stationary objects the vehicle is slowed down in order to reduce the impact of accident. However, depending on various factors, such as road friction, the prevention of the accident cannot be guaranteed even in case of moving objects.

3. Warning and Brake Levels

The standard sequence of a complete AEBS reaction is as follows:

- Start of visual and audible warning (FCW)
- Application of tactile feedback (HCW)
- Short braking and activation of FCW
- Automatic start of emergency braking

4. Response to Objects That Intercept the Main Vehicle

If the criteria for starting the FCW cannot be fulfilled early enough, the AEB ranking may change. For example; if an object cuts off the main vehicle at a short distance.

The situation is extremely critical after the collision warning is given and the AEB braking starts shortly after the FCW. In this case, it is not possible to avoid collision due to the limited AEB slowdown at the beginning of the event.

5. AEBS Limitations

The following limitations shows the different AEBS restrictions that can lead to an unexpected response and impaired system performance.

- Sudden changes that correct a critical situation and that have already been recognized by the driver cause warnings that are perceived as unnecessary by the driver.

- The response may be delayed if the system detects that an upcoming collision can be avoided by a maneuver of the driver.
- The system uses an avoidance path at low speeds for stationary objects.
- The system may not be able to prevent the collision if the ideal braking conditions due to weather conditions or road surface are not met.
- The tolerances the radar sensor uses for measurements may cause an accident without any system response.
- If the system cannot detect the center of the object in the road, there will be no braking.
- For narrow road bends, the sensor must be in the middle of the main vehicle path since the sensor has limited detection performance.
- If the brake lights do not flash for the minimum time required before emergency braking, the desired braking is restricted.
- The system is approved up to 90 km/h. At speeds above this, the braking level of the system is reduced.
- If the vehicle passes through a narrow road bend, the desired deceleration is restricted by the system to prevent the loss of cornering force.
- In high lateral acceleration road bends, system braking requirements are restricted in order to keep the deceleration below the critical level.
- If the system detects driving in tunnel, it limits the maximum deceleration as the radar sensor is affected by reflections on the tunnel wall and can create greater false detection risks.
- If any of the vehicle stability control functions are actively interfering, AEBS brake requests are restricted.
- The system will be in the restricted sensitivity operating mode after engine start, for at least 10 km, and in which the rolling rate probability control will use more protective parameters than its normal operation if it has not yet delivered a successful result.
- If the AEBS is in "Temporarily Out of Service" mode, no warnings and emergency braking will occur.

6. AEB Event Counter

The AEB event counter counts unrestricted emergency brake events initiated by AEBS. If the 3 event threshold is exceeded, the system enters a fault state. The event counter will reset if the maximum event threshold has not exceeded and the predefined minimum distance has been covered without increasing the counter.

7. Driver Disabling Conditions

After the AEBS has been deactivated by the driver, it is deactivated until it is manually reactivated or the ignition is reset. The hazard light switch and AEBS switch are used to deactivate the AEBS. AEBS must be deactivated if the vehicle is to be towed and the wheels must be rotated in a stable position. When the system is disabled, depending on the information display application, collision warning is not displayed to the driver.

EBA (Extended Brake Assistance)

The extended braking aid reinforces the driver's manual brake request to avoid an oncoming collision at times of collision. In the event of an active collision warning, the EBA will send a request for the required deceleration to the brake system, depending on the current brake pedal position, to avoid an accident if the driver has started to depress the brake pedal slightly. The EBA is not activated if the driver does not have an active collision warning when the brake pedal is depressed. If the object disappears during an active EBA event, the last deceleration request is maintained as long as the EBA is active.

TPMS (Tire Pressure Monitoring System)

Transmits tire pressure information to the driver. TPMS warning,

- If any tire pressure is 20% below the nominal pressure,
- If any tire pressure is 25% above the nominal pressure,
- When a sensorless tire is installed,
- When the sensor battery level is low,

Informs the driver.

During tire or wheel replacement, the sensors on the wheels must be mounted on the same wheel. In case of more than one sensor replacement, TPMS sensor identification process should be performed. Battery life is approximately 7 years. Tire change must be done at ISUZU authorized service centers. Interventions made outside the authorized service center may prevent the TPMS from working properly. If there is a fault in the sensors or the system, the red warning lights up.

DDAW (FATIGUE DETECTION SYSTEM)

It calculates the level of attention based on the driver's behavior when the vehicle speed is above about 60 km/h. The system analyzes the deterioration of driving and warns the driver to rest. It consists of a 2-stage warning system:

- A warning is given to advise you to rest. This remains on the instrument panel until you cancel it. If you do not rest and the system continues to detect that your driving is deteriorating, it will permanently display the fatigue icon and this will remain until you turn off the vehicle.

The system is integrated with cameras and sensors;

- If cameras and sensors are blocked or damaged, the system may not function correctly,
- The system may not work correctly on uneven roads or where the lanes cannot be read,
- Depending on weather conditions or environmental conditions (rainfall, light, etc.), the operation of the system may change.

The fatigue detection system can never know the driver's actual fatigue level with certainty. If you feel tired or distracted, you should rest. Vehicle control and safety is always the driver's responsibility.

ISA (Intelligent Speed Assist)

The driver receives a visual and acoustic warning when the specified speed limit is exceeded.

- The function works in combination with GPS and camera.
- The driver is informed of the speed limit on the route.

LDWS (Lane Departure Warning System)

It is a system that gives the driver an optical and acoustic warning when the vehicle violates the lane when the vehicle speed is above 60 km/h.

The system does not work when radar sensors are blocked (snow, mud, dirt, etc.).

Sensors are not a substitute for safe driving, they are only systems developed to assist the driver while driving. The systems may not work as expected in some situations. Driving safety and the need for attention are the responsibility of the driver.

- On roads where the lanes cannot be read properly,
- When the vehicle is traveling below approximately 60 km/h,
- In case of hard braking or sudden lane change,
- In cold, overcast or severe weather conditions,
- In intense or low light and sun glare,
- When the ABS, ESP, ASR systems are activated,
- Uneven road conditions and tight bends,

It may not work correctly.

ADVANCED EMERGENCY BRAKING SYSTEM FOR PEDESTRIANS (P-AEBS) – OPTION

PAEBS is a function that provides automatic braking against vulnerable road users in addition to the functions of AEBS. The system provides automatic braking against pedestrians and cyclists on the road.

Braking against pedestrians and cyclists is activated between speeds of 10 - 65 km/h. At speeds of 65 - 120 km/h, there is no braking and a collision warning is given.

MOVING OFF INFORMATION SYTEM (MOIS)

Activated when the vehicle is in the range of approximately 0-15 km/h. With UN ECE R159 regulation, it only gives cyclist and pedestrian warnings. The function does not work when the vehicle is in reverse gear.

- The function is active when the vehicle speed is between 0-15 km/h.

When objects enter the scanning area;

- Parallel moving object speed 2-7km/h,
 - Vertical moving object speed 0-12km/h,
- should be in the range.

MOIS may not operate correctly under the following conditions;

- In reverse gear (R) or when the vehicle speed is above approx. 15 km/h or the vehicle is stationary,
- Objects in front of the vehicle are moving too close or too far away from the vehicle,

- Objects are standing or moving fast,
- The sensors are blocked or damaged by dirt, snow, mud or an external cause,

The MOIS warning system must be switched off from the driver's instrument display under the following conditions.

- If there is a load (bicycle holder, etc.) attached to the front of the vehicle,
- The vehicle is towing a vehicle or being towed by a vehicle,

BLIND SPOT INFORMATION SYSTEM (BSIS)

The blind spot warning system has been developed to detect road users such as pedestrians, cyclists and vehicles in the field of view of the BSIS radars next to the truck. In accordance with UN ECE R151 regulation, 2 BSIS (right) and 1 MOIS (front) radars are used as standard in vehicles.

The blind spot warning system detects road users such as pedestrians and cyclists who enter or are entering the vehicle's blind spot and warns the driver. As standard, it monitors the right side of the vehicle and, if preferred, the blind spot area on the left side can also be included. Warnings are activated when the object and the vehicle are moving in the same direction.

The system provides the driver with an optical and acoustic warning from the blind spot warning lamp on the passenger side. If the system detects a risk of collision, the driver is warned with an icon on the instrument display and an optical and acoustic warning.

The function is active when the vehicle speed is between 0-30km/h.

- Collision warning is not activated when the vehicle is stationary.

When objects enter the radar scanning area;

- Cyclist speed 5-20km/h,
- Pedestrian speed 2-20km/h

It should be in the range.

The blind spot warning system may not function correctly under the following conditions;

- In reverse (R) or when the vehicle speed is above approx. 30 km/h or the vehicle is stationary,
- When the sensors are blocked by external factors such as dirt, snow, mud, foil, a different cover,
- If a vehicle enters the sensor detection zone at speed,
- If the sensors and sensor covers are damaged,
- If there is a stationary or very slow moving vulnerable road user (VRU) in the detection zone,

PLCA (PASSIVE LANE CHANGE WARNING)- OPTION

PLCA Function warns of vehicles (cars, motorcycles, trucks, etc.) approaching from behind in the side lane.

- LCDA warning warns when the specified objects are moving in the same direction as the vehicle.
- The minimum vehicle speed required for the function to be activated is 43km/h.

Required speed limits on the target object for the function to be activated;

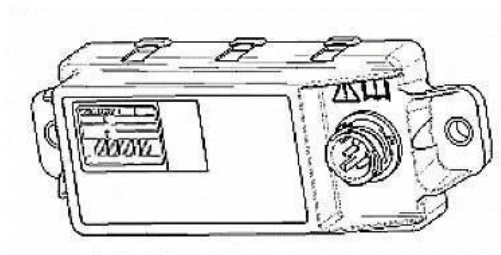
- Minimum target vehicle speed is 21km/h,
- Minimum relative speed -22km/h (example: vehicle speed 43km/h, target vehicle speed 21km/h),
- Maximum relative speed 36km/h (example: vehicle speed 50km/h, target vehicle speed 86km/h),

should be.

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 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 dismounted and mounted, changed or renewed in front alignment adjustment. In such cases, installation must be made in Isuzu services.

DRIVER SUPPORT SYSTEMS

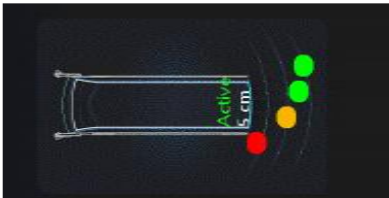
REVERSING DETECTION

When the vehicle is put into reverse gear and an object is detected near the rear of the vehicle across the width of the vehicle, the driver is informed about the detected objects thanks to the sensors built into the vehicle bumper.

Optical signal & Acoustic signal

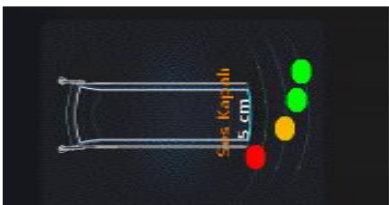
- The system is activated when the ignition key is turned on and is activated when the vehicle is put into reverse gear. When the sensors detect an object behind, the optical signal gives a warning as follows, accompanied by the acoustic signal.

Parking Sensor Active, Sound On



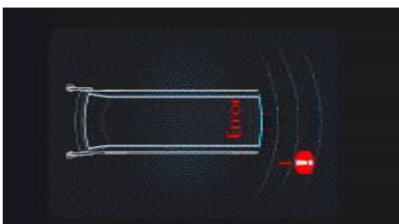
- Disabling the acoustic signal to avoid disturbing it is done via the menu. In this case, the following image will appear on the screen.






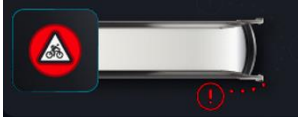



Parking Sensor Active, Sound Off














- The system will switch off automatically when there is a situation that prevents the system from working. When it switches off, the system is shown as off on the instrument panel. The system cannot be deactivated as there is no malfunction.

In case of parking sensor error;



ISA active	
ISA deactive	
ISA Faiure Warning Signal	
ISA Faiure Warning Signal no communication gps or camera & Mulfunction Warning -	
ISA Faiure Warning Signal communication with only camera or gps	
BSIS Collusion Warning Signal	
MOIS Information Signal	
MOIS Warning Signal	
BSIS/MOIS/PLCA Failure SignalBSIS Automatic Deactivation MOIS Manual & Automatic DeactivationBSIS/MOIS/PLCA Deactivation	

LDWS Activate	
LDWS Malfunction and Deactivation Signal	
LDWS Lane Departure Warning	
AEBS Collusion Warning Signal	
AEBS Malfunction and Deactivation Signal	
PLCA Warning Signal	
DDAW Warning	
DDAW Deactivated & Malfunction Warning	
Cyber gateway secure	

Cyber Gateway Not Secure	 A dark rectangular icon with a red shield in the center containing a white 'X'. To the left of the shield is a white padlock icon. To the right of the shield are three green dots arranged in a curve. The text 'Pa' is visible in the top left corner of the icon.
Cyber Gateway Not available	 A small square icon with a red circle in the center containing a green diagonal line from the bottom-left to the top-right.

DIESEL EXHAUST EMISSION FLUID HEATING SYSTEM

The diesel exhaust emission fluid used in the vehicle begins to freeze at -11°C . The engine begins to spray urea to the exhaust system when its heat has increased. If the fluid in the tank remained frozen when the engine heated, the engine cuts power since there would be no urea spraying operation. Therefore, under cold acclimatization (at temperatures of -7°C or lower), the engine heats the diesel exhaust emission fluid tank and the diesel exhaust emission fluid line going from tank to the injector with hot water.

DIESEL PARTICULATE DEFUSER (DPD)

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

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



- The exhaust pipe is extremely hot immediately after vehicle operation. Before parking, make sure the area is free of flammable material (for example, grass, waste paper, oil or old tires). Take particular care when parking in a garage.
- Use caution concerning exhaust gases while the engine is idling. Be particularly careful when the diesel particulate defuser (DPD) is regenerating while the engine is idling.

DPD Switch



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

DPD Manual Regeneration Procedure



1. Stop the vehicle at a safe place free of flammable materials such as grass and waste paper.

2. In a manual transmission model, place the gearshift lever into "N" and firmly engage the parking brake.
In a Smoother model, place the gearshift lever into "N", confirm that the "N" indication appears, and firmly engage the parking brake.
3. Run the engine at idle. Return the idling control knob to the fully counterclockwise position to decrease the engine speed when the engine speed has been increased using the idling control knob.
4. Press the DPD switch.
5. The "PUSH DPD SWITCH" message will stop flashing and change to a steady "MANUAL REGEN." message, while the engine speed is automatically increased to start regeneration.
6. Do not leave the vehicle during regeneration. Regeneration normally is completed in 15 to 20 minutes.
7. When the "MANUAL REGEN." message goes out, regeneration is completed. Normal driving is then possible.

Interruption of Manual Regeneration

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

The "MANUAL REGEN." message changes to a flashing "PUSH DPD SWITCH" message. Then, you can drive the vehicle. If you interrupt regeneration, you need to perform the regeneration again. Perform manual regeneration beginning with step 1 as soon as possible.

Automatic Regeneration of DPD



The engine speed may increase and the exhaust brake may activate while the vehicle is stopped with the engine idling. When this occurs, the DPD is automatically regenerated. This does not indicate a failure. The automatic regeneration causes the "AUTO REGEN." message to be displayed.

NOTE :

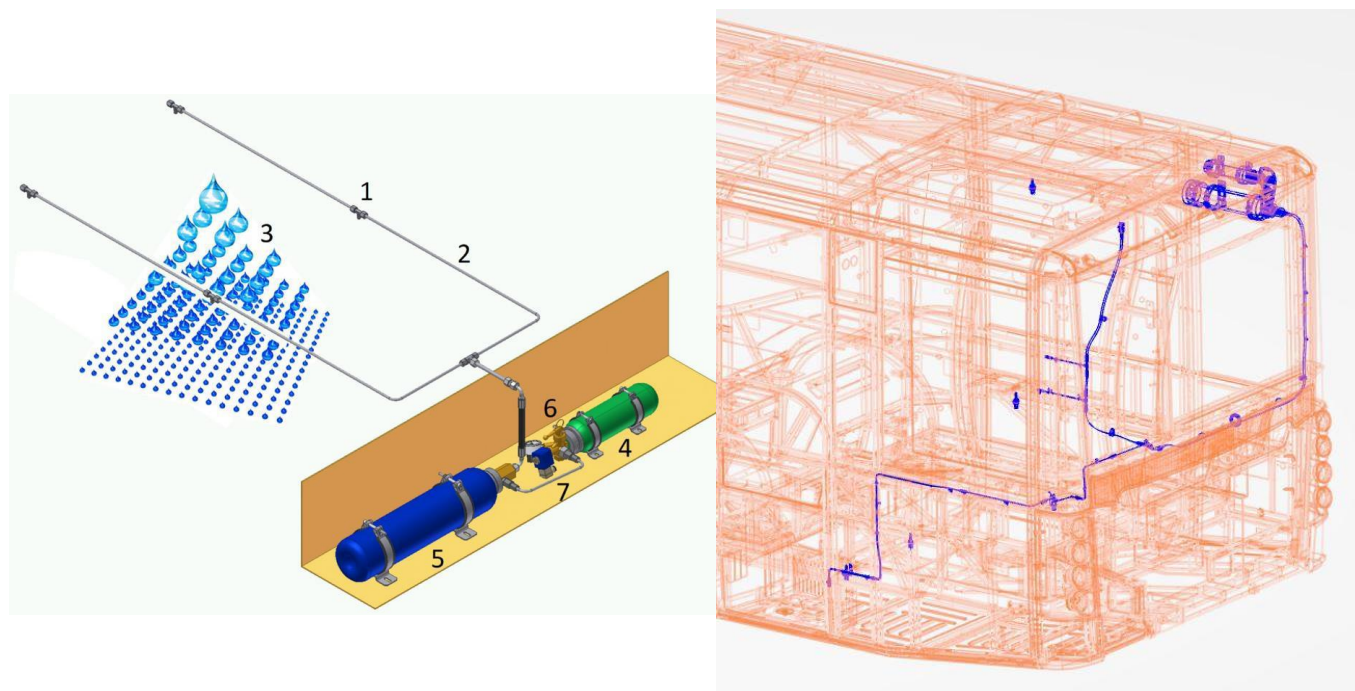
- If the vehicle is stationary with the engine idling during DPD regeneration, the exhaust brake or exhaust throttle operates. Operating sounds will be heard when the exhaust brake or exhaust throttle is activated or deactivated. The sounds do not indicate a fault.

- Combustion of PM during DPD regeneration can cause white smoke to be briefly emitted from the exhaust pipe. The white smoke does not indicate a fault. Do not perform manual regeneration in any poorly ventilated indoor place.
- When a new vehicle has been driven a certain distance, it can emit white smoke during DPD regeneration. The white smoke does not indicate a fault. The vehicle may not emit white smoke during its initial operation when new.
- Owing to the exhaust emission reduction function, the exhaust gases emitted by the exhaust pipe smell different from those emitted by the exhaust pipes of earlier diesel vehicles.
- The exhaust brake may automatically be activated in order to prevent emission of white smoke if the engine idles continuously over an extended period of time.
- A long continuous idling can cause white smoke to be briefly emitted from the exhaust pipe. The white smoke does not indicate a fault.

ADVICE :

- Use Isuzu genuine engine oil compatible with the DPD. Using oil other than Isuzu genuine engine oil compatible with the DPD would shorten the time between DPD filter cleaning and could increase fuel consumption.
- For models conforming to Euro V or Euro VI emission standards, be sure to use extra-low-sulfur diesel fuel (containing sulfur of 10 ppm or lower).
- If you fill the vehicle with poor-quality fuel, water-removing additive or other additive, gasoline, kerosene or alcohol-based fuel, it could harm the fuel filter, prevent proper movement of fuel-lubricated parts in the injectors and adversely affect engine components, possibly resulting in a breakdown.
- Do not modify the DPD, urea SCR, or exhaust pipe. Changing the alignment, length or diameter of the exhaust pipe would adversely affect the exhaust system's exhaust emission reduction function. If any modification is necessary to install a component to the rear of the vehicle, consult your Isuzu service.
- Although the DPD filter automatically undergoes regeneration (burning of the accumulated PM) when a certain amount of PM has accumulated, driving conditions can prevent completion of regeneration. In a model without multi information display (MID), the DPD manual regeneration indicator light will flash at this time. In a model with MID, the "PUSH DPD SWITCH" indicator will flash. Perform manual regeneration in accordance with the proper procedure. This is to restore DPD function and is normal.

ENGINE COMPARTMENT FIRE DETECTION AND AUTOMATIC FIRE SUPPRESSION SYSTEM (FIREDECT- OPTIONAL-1)



No	Name
1	High pressure (20MPascal/200bar) water mist nozzle
2	High-pressure stainless-steel pipe system
3	Extinguishing Agent (Temper S-30) as 50 µ droplets
4	Nitrogen pressure bottle
5	Temper S-30 Water + agent bottle
6	Mechanical pressure valve for manual actuation (optional / not all models)
7	Electric pressure valve (coil and solenoid valve), pressure gauge (optional)

This is a system which consists of a pressure fire detection hose and fire spout nozzles which pass from the areas where a fire may occur in the engine room. There are 2 tanks in the system, one is the nitrogen tank which provides the detection of fire, and the other one is the fighting tank in which there was fireextinguishing fluid. Illuminated and audible lights alert during the fire detection.

Fire suppression system uses water as the extinguishing agent. The water is atomized at a high pressure of at least 160 bars at the nozzles. The pressure energy is used to split the water into small droplets of 50µ with an extremely large surface area for cooling and provides these droplets with sufficient kinetic energy to bring them rapidly to the protected area. During fire extinguishing, the fire extinguisher is sprayed from nozzles which reduce the temperature, cut contact with air and convert them to columnar smoke clouds. The fire extinguisher is mainly antifreeze water based. Extinguishing time is between 3 - 5 seconds at normal but the effective time is 50 - 75 seconds.

WARNING

In case of fire;

- Stop the engine.
- Empty the vehicle.
- Turn off the current.
- Keep the bonnet closed at least 5 minutes.
- Use a portable fire extinguisher if needed.
- Connect with the authorized Isuzu Dealer.

WARNING

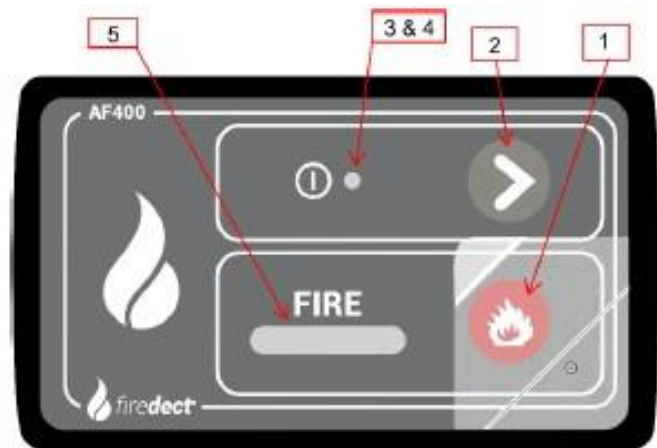
The following operations should be performed when the fire extinguishing system activated because of a reason other than fire and the tanks emptied:

- Wash all component surfaces with water in order for the parts in the engine room effected by the system not to corrode.
- Wash inside of the pipes and nozzles by giving water to the fire extinguishing piping system, but if it was too late for this, remove the nozzles and clean nozzles and pipes with water. Replace the nozzles if required.
- Insert protection covers to nozzles again.
- Activate the system again by mounting filled tanks.

FIRE DETECTION THE CONTROL UNIT

It integrates the control unit and the display / HMI in one single device only.

No.	Name
1	Fire Button
2	Action Button
3	Green Led
4	Yellow Led
5	Red Zone Led

**Fire Button****WARNING**

- Press only in emergency.

Press the fire button to activate immediately the suppression system manually.

CAUTION

- The fire button is protected by a plastic cab which has to be replaced every time the firebutton is actuated.

Action Button

Normal operational mode:

- Short press has no functionality.
- Long press will start the LED & Alarm self-test.

Warning/diagnosis mode:

- Short press
First press will silence/mute the warning signal.
Every further press will show you the "Fault Display" (blink codes). If there is at least one error.
- Long press will reset the warnings. (The resets will only be reset if you are in the "Fault Display").

Alarm mode:

- Short press will delay the activation by 15 seconds.
- Long press will silence/mute the alarm

Green Led

Blinking:

- The control unit is booting.

Blinking slowly:

- The control unit is in the emergency current mode.

Constantly:

- The control unit is on normal operational mode.

Yellow Led

Warning/Diagnosis mode:

- Blinking
There was a warning, but it has not yet been queried.
- Constantly
There is currently a warning.

Red Zone Led

Fire in zone X detected. The suppression system is automatically activated.

- Blinking

Alarm countdown for activation.

- Constantly

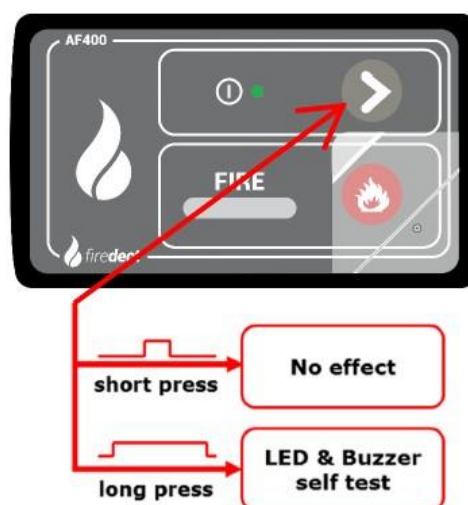
Alarm activated.

Starting The Control Unit

When the control unit is connected to the power source, the green led will flash for 20 seconds, showing that the control unit is in boot loader. After leaving the boot loader, all leds will flash for 2 seconds and the buzzer will also become audible. The control unit will then go into operational mode recognizable by the glowing green led. If any of the monitored zones is not operational when the control unit is booted, the yellow alert led and zone led will flash and the buzzer will sound. In this event, the suppression system will not be activated. The zone can be checked, and if operational, the alerts will reset to normal state.

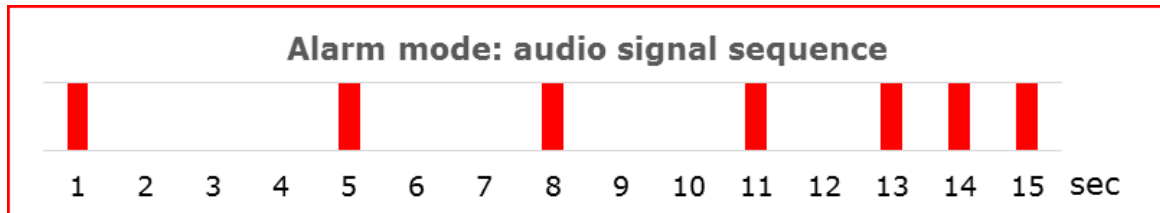
Normal Operational Mode

In normal operational mode, the control unit will monitor all three (3) zones for fire. A long press of the action button while the control unit is in normal operational mode will cause the buzzer to sound and all leds will light up.

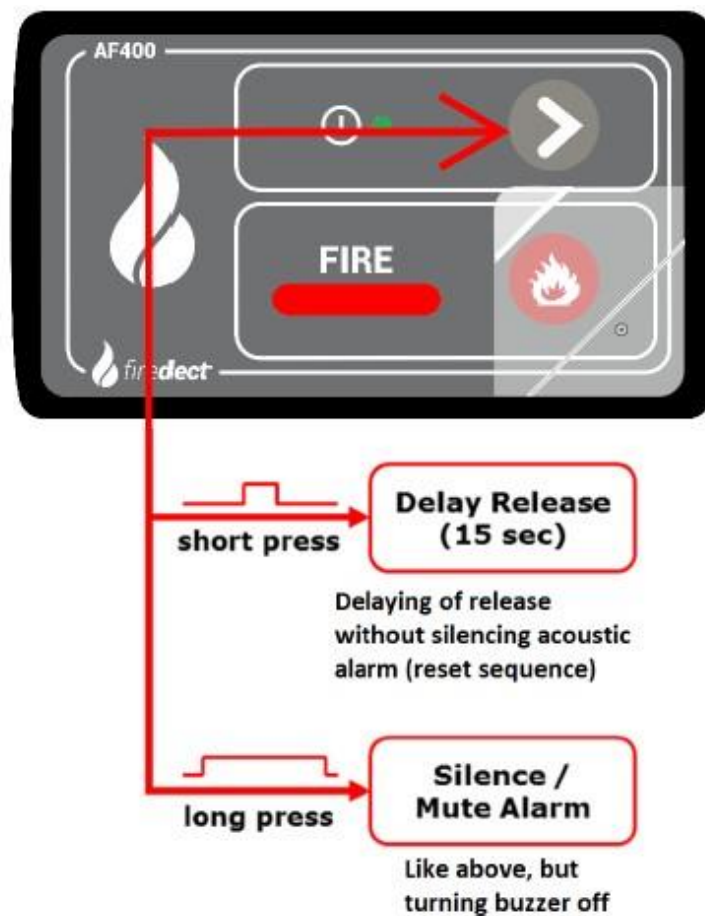


Alarm Mode

If a fire is detected in any of the zones, the zone led will start to flash and the buzzer will sound. The flashing and beeping will continue to get faster until the suppression system is activated.



If the suppression system is active the led will flash constantly as well as the buzzer beeps constantly. There is a 15 second delay on activation, and the system is activated for 3 seconds. The alarm can be muted by pressing the action button for 0.8 seconds. Pressing the action button for less than 0.8 seconds will reset the delay in activation to 15 seconds. If a fire is detected in another zone, the timer will not be reset to 15 seconds. After the initial delay, the suppression system in Zone 1 will be activated for 3 seconds, followed by Zone 2 for 3 seconds. If the fire button is pressed, the suppression system for the zones will be activated for 3 seconds one after another.



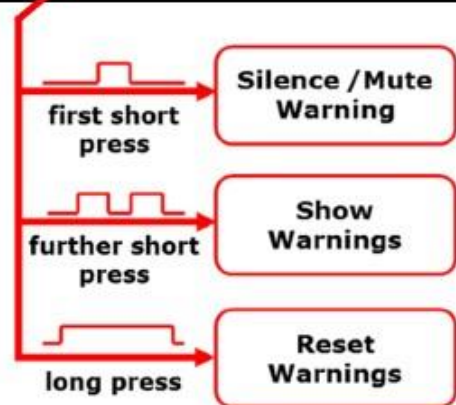
Warning / Diagnosis Mode

If any warning occurs, the yellow led will flash and the alarm will beep 3 times every 5 seconds (in the emergency current mode: 3 times every 10 seconds).



A short press on the action button will silence/mute the acoustic warning signal. Every further press of the action button for less than 0.8 seconds will cause the control interface to show an error codes this will not work in alarm mode. A long press on the action button while showing the error codes will reset all error codes.

#	Error - operational	Z1	Z2	Z3
1	Fire-Sensor/Terminating - Resistor -> bad value	0	1	0
2	Low-Pressure	0	2	0
3	Defect in Valve-Connection	0	3	0
4	Low Battery-Voltage	0	4	0
#	Error - boot	Z1	Z2	Z3
1	Fire-Sensor/Terminating - Resistor -> bad value/not connected	On	Off	Off
2	Low-Pressure/not connected	Off	On	Off
3	Defect in Valve-Connection	Off	Off	On
4	Fire Alarm	On	On	On
5	Wrong Battery	Off	Off	Off



ENGINE ROOM FIRE DETECTION SYSTEM AND CONTROL UNIT (FOGMAKER-OPTIONAL-2)**Control Module****In Case Of Alarm - Fire**

Red motor fire symbol/red lamp flashes red.

Alarm siren gives repeating acoustic signal.

Fire alarm signal – bus manufacturer's system:

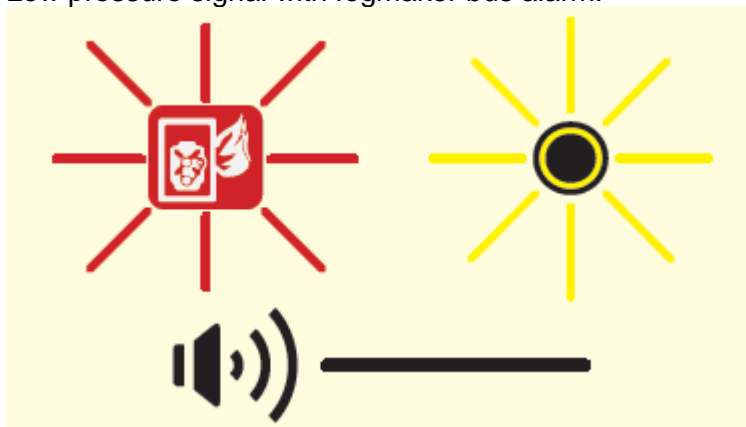
See bus manufacturer's manual.

Do not start the vehicle until the cause of the fire has been established and rectified!

Clean up the engine compartment as soon as possible to prevent corrosion on metal parts and unwanted flash-overs in the electrical system. Hose down with water, preferably at high-pressure. Alkaline washing agents can be used. See also the manufacturer's recommendations for washing the engine compartment.

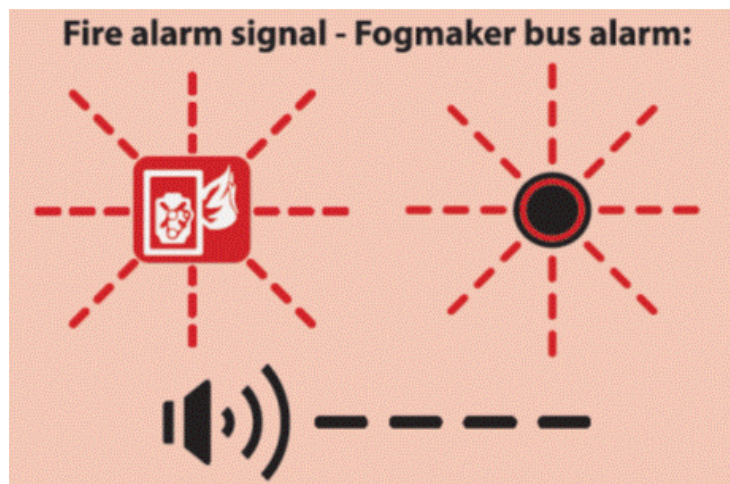
Engine wash after fire

Low pressure signal with fogmaker bus alarm:



- Red engine fire symbol/yellow lamp lights constantly
- Alarm siren sounds constantly.
- Low pressure signal- bus manufacturer's system:
- See bus manufacturer's manual.
- Contact the nearest authorized service.

In Case Of Alarm – Fire

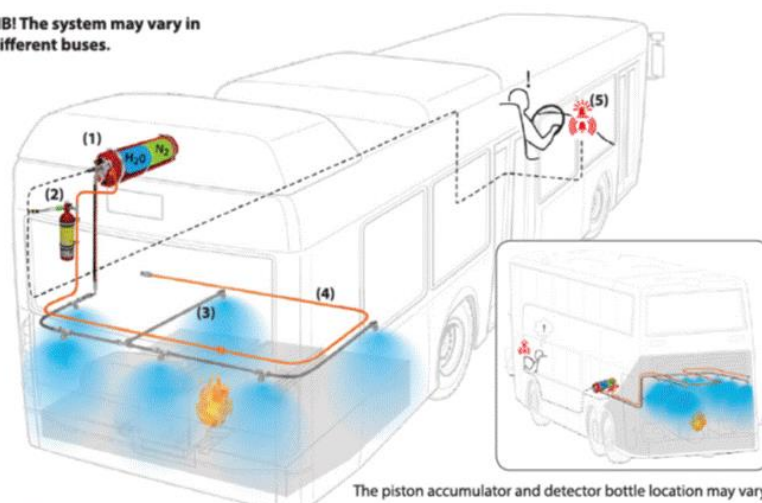


Overview, Fogmaker's Fire Protection System

This bus fitted with a fully automatic fire protection system for the engine compartment
The system comprises:

- Piston accumulator (1)
- Detector bottle (2)
- Pipe system with nozzles (3)
- Detector tube (4)
- Fogmaker bus alarm with acoustic and light signals or alternatively manufacturer-specific alarm panel (5)

NB! The system may vary in different buses.



Routine Maintenance

Pressure switch installed: Check that lamps indicating low pressure are not alight on the bus alarm button.

Pressure switch not installed: Make sure the pressure in the piston accumulator is within the green zone on the pressure gauge.

Test the alarm before starting the day's work..

Alarm test with the Fogmaker bus alarm:

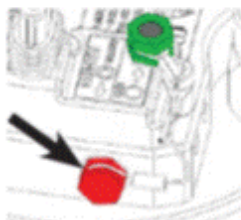
- Press down the button- two variants, see below:
- Check that there are both a sound and light signal.



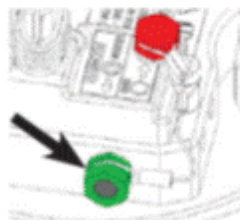
Alarm test – bus manufacturer's system:
See bus manufacturer's manual.

Quick-guide for piston accumulator and detector bottle

Piston accumulator: 100-105 bar at 20°C



Red safety screw
mounted in the side of the
valve **isolates the system**
- done before all handling

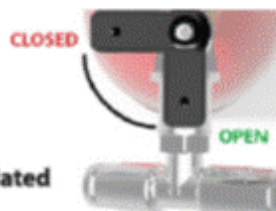


Green screw mounted
in the side of the valve
unlocks the system so
it can deploy

Detector bottle: 20-24 bar at 20°C



The detection system is **isolated**
by **closing the ball valve**:



1.SERVICE AND MAINTENANCE

CLEANING VEHICLE

External 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.

Internal 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.

TOWING VEHICLE



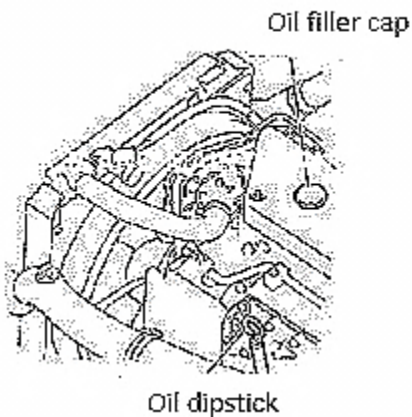
- Open the tow hook cap which is on the bumper.
- Take the tow hook by opening cap front left.
- Screw the tow hook to the hole on the casing and make sure that it fits.



ENGINE OIL

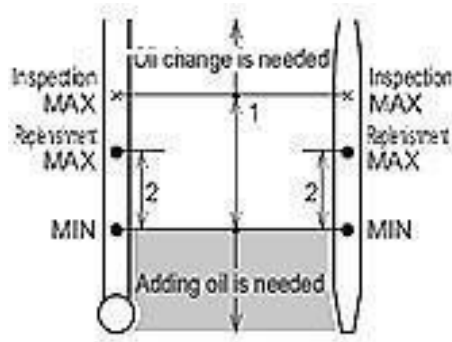
Engine oil is an important factor determining engine performance and longevity. Be sure to use only the specified oil and oil filters. The engine oil level must be checked and the oil should be changed regularly according to the Maintenance Schedule.

Checking the Engine Oil Level



Park the vehicle on a flat surface and check the engine oil level before starting 30 minutes after turning off the engine.
To check the oil level;

1. Remove the oil level gauge rod (oil dipstick) and wipe off any oil on the oil dipstick with a clean cloth.
2. Reinsert the oil dipstick fully and then gently remove it.



3. If the oil level is between the "Inspection MAX" and "MIN" marks, the oil is at the correct level.
4. If the oil level is too low, add oil to the "Replenishment MAX" mark. If the oil level is beyond the "Inspection MAX" level, then change the oil.
5. Reinstall the oil dipstick into position after checking the oil level.

Adding the Engine Oil

When the engine oil level is near the "MIN" mark on the oil level gauge rod (oil dipstick), remove the oil filler cap and add the oil. Remove the oil dipstick at this time. Use only the specified engine oil.

Changing the Engine Oil and Oil Filter

Engine oil and oil filter are important factors in engine performance and life time. Be sure to use only the specified oil and oil filters. The engine oil level must be checked and the oil should be changed regularly according to the Maintenance Schedule.

Changing the Oil

1. Clean around the oil filler cap so that foreign matter does not enter. Remove the oil filler cap.
2. Place a container for receiving the oil beneath the oil pan and the oil filter.
3. Remove the oil pan drain plug to discharge the oil into the container.
4. Use the special oil filter wrench to remove the oil filter.
5. Lightly coat the gasket of the new oil filter with clean engine oil.
6. Install the new oil filter. After the filter gasket comes in contact with the surface to which it will be attached, use the special oil filter wrench and tighten it by 1 1/4 (one and a quarter) turns.
7. Make sure that the oil pan drain plug is securely tightened (83 Nm torque).
8. Remove the oil dipstick and carefully fill the specified oil into the oil filler.
9. Install the oil dipstick and the oil filler cap. Start the engine 5 minutes after refilling it with the new oil and let it idle. While the engine is idling, check to see if any oil leaks around the oil filter or drain plug.
10. Shut off the engine. Then, after waiting at least 30 minutes, check the oil level using the oil dipstick.

ENGINE COOLANT

To prevent the engine damage due to freezing of the engine coolant, mix the coolant and water at the ratio of 50/50.

The engine oil tends to thicken with lowering temperatures. Use engine oil with a viscosity suited to ambient temperature.

The engine coolant must be changed according to the Maintenance Schedule.

- Check, replenish or change the engine coolant only after the engine has sufficiently cooled down.



- Do not loosen or remove the radiator cap, sub-tank cap or reserve tank cap when the engine coolant is still hot. Hot vapor or boiling water may burst out and cause a burn. Cover the cap with a cloth, etc. and remove it gradually after the engine is fully cooled down and the temperature of the engine coolant becomes low.
- When removing the radiator cap and reserve tank cap, use a thick cloth to cover the cap and turn it slowly.
- Engine coolant is toxic and must not be ingested. If the engine coolant is mistakenly ingested, immediately vomit it and seek prompt medical attention.
- If the engine coolant gets in your eyes, rinse it off immediately with a large amount of water for 15 minutes or longer. Also, if still abnormality such as irritation is felt, seek medical attention.
- If the engine coolant gets on your skin, rinse it off using a soap with a large amount of water. Also, if abnormality is seen, seek medical attention.
- Engine coolant is flammable, and therefore, it must be kept away from flames and other heat sources. Engine coolant also could ignite if it comes in contact with a hot surface, such as the exhaust manifold. Exercise caution to prevent this from happening.

Preparing Engine Coolant

To prevent the engine damage due to freezing of the engine coolant and to protect the cooling system from corrosion, mix the Isuzu recommended coolant and water to be at 50% concentration.

For other than Isuzu genuine coolant (Caltex/Texaco/Chevron, etc.), it is recommended to use directly "50/50 Pre-diluted" product which is already diluted to 50% concentration.

Engine Coolant Quantity

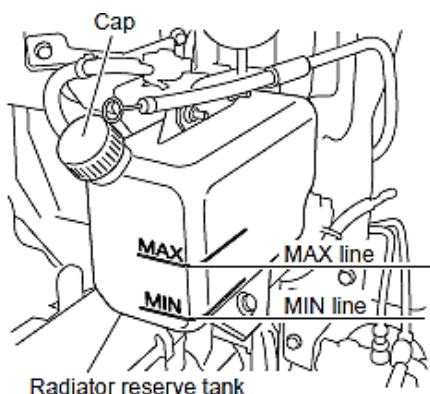
The quantity of engine coolant is indicated below for your use as a guideline when changing the engine coolant. After changing the engine coolant, check that the engine coolant is up to the specified level.

Engine coolant quantity (Reference value)
19 liters



- Coolant is toxic and must not be ingested. If the coolant is mistakenly ingested, immediately vomit it and seek prompt medical attention.
- If the coolant gets in your eyes, rinse it off immediately with a large amount of water for 15 minutes or longer. Also, if still abnormality such as irritation is felt, seek medical attention.
- If the coolant gets on your skin, rinse it off using a soap with a large amount of water. Also, if abnormality is seen, seek medical attention.
- For storage, close the cap securely and keep it in a place inaccessible to children.
- Coolant is flammable, and therefore, it must be kept away from flames and other heat sources. Coolant also could ignite if it comes in contact with a hot surface, such as the exhaust manifold. Exercise caution to prevent this from happening.

Checking the Engine Coolant Level



Check that the engine has cooled sufficiently, and inspect the coolant level of the radiator sub-tank or the reserve tank. The level is correct if it is between the "MIN" and "MAX" lines. If the engine coolant level is lower than the "MIN" line, replenish it by filling up to the "MAX" line.

Also, check to make sure there are no leaks from the radiator or radiator hose.

Check for stains or fluid on the ground where the vehicle is parked that would indicate there is a leak. Contact your Isuzu Service when you discover leaks.

Adding Engine Coolant

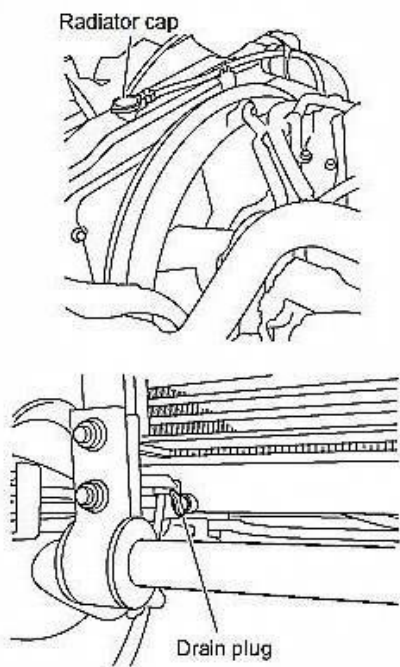
When the engine coolant level is too low, open the cap on the radiator sub-tank or the reserve tank and fill the tank almost to the "MAX" line with a solution of water and engine coolant at an appropriate concentration. Tighten the cap securely after the engine coolant has been replenished.

Changing the Engine Coolant

Change the engine coolant according to the Maintenance Schedule.

When changing the engine coolant, also clean the radiator cap, radiator, intercooler and engine coolant passages.

Draining the Cooling System

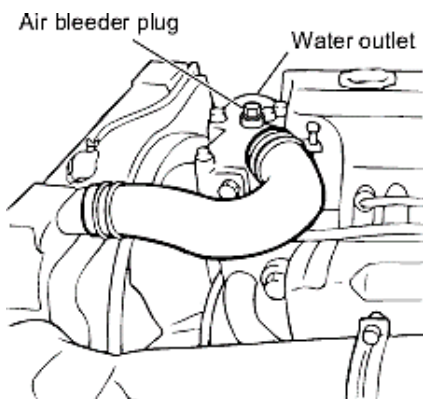


1. Check that the engine has cooled sufficiently.
2. Remove the radiator cap.
3. Open the drain plugs on the radiator and the engine to let the engine coolant run out. Drain the engine coolant from the reserve tank as well.
4. Close the drain plugs on the radiator and the engine.

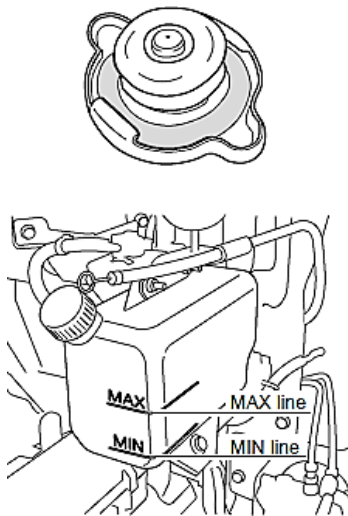
Cleaning the Radiator Core and Intercooler Core

Cooling efficiency is compromised when there is dirt or dust plugging air passages in the radiator core and intercooler core. It also could cause corrosion of the core. Periodically wash the core with water.

Cleaning the Engine Coolant Passages



1. Disconnect the air bleeder plug of the water outlet (if equipped). Refill the radiator with tap water up to the top of the opening. After refilling, tighten (23.5 Nm torque) the air bleeder plug.



2. Check and clean the radiator cap. Replace the cap if there is anything abnormal with it.
3. Securely fasten the radiator cap.
4. Engine coolant may leak from even minor cracks. Replace damaged rubber hoses.
5. Refill the reserve tank with tap water to the "MAX" line.
6. Close the cap of the reserve tank.

7. Start the engine and let it idle for 20 minutes. Stop the engine, wait until it cools down, and then drain out the water.

Filling the Cooling System

1. Confirm that the engine has fully cooled down before starting work.
2. Tighten the radiator drain plug. Tighten (22 Nm) the engine drain plug. Replace the gasket of the engine drain plug with a new one (if equipped).
3. Remove the air bleeder plug from the water outlet (if equipped) and pour engine coolant in the specified concentration. After filling with engine coolant, replace the gasket of air bleeder plug with a new one and tighten (23.5 Nm) the air bleeder plug.
4. Squeeze the radiator upper hose two or three times. If this action results in air being discharged from the hose and the level of engine coolant goes down, add engine coolant up to the top of the radiator filler opening from the radiator cap section. Repeat until the level of the engine coolant no longer decreases.
5. If the vehicle is not equipped with an air bleeder plug and exhaust gas recirculation (EGR) cooler, close the radiator cap. If the vehicle is equipped with an EGR cooler without air bleeder plugs, in the case that there is an air bleeder plug on the water outlet, replace the gasket with a new one and tighten the air bleeder plug. Disconnect the hose from the intake manifold side of the EGR cooler above the cylinder head to bleed the air. After the bleeding of air is complete, reconnect the hose. If the engine coolant level has decreased, refill with engine coolant up to the radiator inlet from the radiator cap section, and then close the radiator cap. If an EGR cooler with air bleeder plugs is equipped, close the radiator cap before performing the following operation. In the case that there is an air bleeder plug on the water outlet, replace the gasket with a new one and tighten the air bleeder plug. Remove both air bleeder plugs (A and B) from the EGR cooler above the cylinder head and refill with engine coolant from the air bleeder plug hole. Air bleeder plug (B) is used for bleeding air. After filling with engine coolant, replace the gasket of air bleeder plug with a new one and tighten (23.5 Nm) the air bleeder plug.

6. Fill the reserve tank with engine coolant to the "MAX" line. Close the cap of the reserve tank.
7. Start the engine, let it idle for 5 minutes or more and then stop the engine.
8. After checking that the engine has sufficiently cooled down, remove the radiator cap. If the engine coolant level has decreased, replenish with engine coolant up to the radiator filler opening. If the engine coolant level has abnormally decreased, check for leaks from the radiator, the engine coolant passages, or the reserve tank hose.
9. After firmly closing the radiator cap, idle the engine until the needle of the coolant temperature gauge reaches the center and the thermostat opens. In order to save time, if the vehicle is equipped with a warm-up switch, turn the switch on to warm up the engine. If the vehicle is not equipped with a warm-up switch, maintain the engine speed approximately 2,000 r/min to warm up the engine. After the needle of the coolant temperature gauge reaches the center, increase the engine speed to approximately 2,000 r/min, and maintain this speed for 5 minutes. If the vehicle is equipped with an air conditioner, turn the A/C switch off to facilitate warming. If the vehicle is equipped with a heater, turn off the fan to facilitate warming. Check if the thermostat is open or not by checking whether the upper hose and lower hose are hot. If the vehicle is equipped with a heater, turn the temperature control to the maximum setting and make sure that hot air comes out.
10. Let the engine idle for 5 minutes and then stop the engine.
11. After checking that the engine has sufficiently cooled down, remove the radiator cap and check the engine coolant level. If the engine coolant level has decreased, replenish with engine coolant up to the radiator filler opening from the radiator cap section. If the engine coolant level has abnormally decreased, check for engine coolant leaks.
12. Repeat steps 9 through 11 until the engine coolant level in the radiator filler opening stops declining.
13. Firmly close the radiator cap.
14. Replenish the engine coolant in the reserve tank up to the "MAX" line, and then close the reserve tank cap.
15. Check the engine coolant level of the reserve tank the next morning. If the engine coolant level has decreased, refill with engine coolant to the "MAX" line.

Cleaning the Radiator Core and Intercooler Core

Cooling performance is compromised if the radiator core and intercooler core become dusty or dirty. This can also cause corrosion of these cores. Periodically wash the radiator core with tap water.



- Be sure to stop the engine before cleaning cores. If the engine is running, you can get entangled in the rotating components, resulting in an injury.
- Do not clean cores until the engine, radiator, intercooler, and other parts have cooled. Otherwise, you could get burned.

TRANSMISSION OIL

Change the transmission oil according to the Maintenance Schedule.

Checking the Oil Level

1. Remove the oil level plug.
2. Check whether the oil level is up to the lower edge of the oil level plug hole. The correct oil level range is between 0 and 10 mm (0 and 0.39 in) below the bottom of the level plug hole. If the oil level is too low, add oil through the oil level plug hole.
3. Fasten the oil level plug to the specified torque (39 Nm). Also check to see if there are any transmission oil leaks

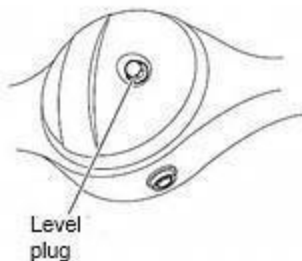
Changing the Oil

1. Place a container under the drain plug(s) to receive oil.
2. Remove both oil level plug and drain plug(s) to discharge the oil into the container.
3. After installing the drain plug(s) by tightening it to the specified torque (39 Nm), refill the transmission with new oil through the oil level plug hole up to the lower edge of the hole.
4. After refilling, confirm that the oil level is up to the lower edge of the oil level plug hole.
5. Install the oil level plug by tightening it to the specified torque (39 Nm)

REAR AXLE DIFFERENTIAL GEAR OIL

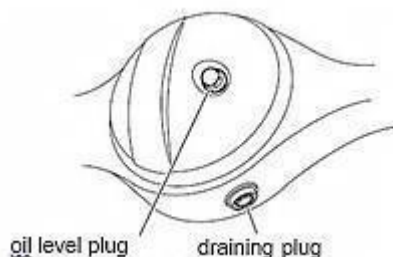
The rear axle differential gear oil level must be checked for its level and it must be changed according to the Maintenance Schedule.

Checking the Oil Level



1. Remove the oil level plug.
2. Check that the oil level is up to the lower edge of the oil level plug hole. If the oil level is too low, add oil through the oil level plug hole.
3. Fasten the oil level plug to the specified torque (84 Nm).

Changing the Oil



1. Place a container under the drain plug to receive oil.
2. Remove the plugs indicated in the figure to discharge the oil into the container.
3. After installing the drain plug by tightening it to the specified torque (84 Nm), refill the rear axle differential with new oil through the oil level plug hole up to the lower edge of the hole.
4. After refilling, confirm that the oil level is up to the lower edge of the oil level plug hole.
5. Install the oil level plug by tightening it to the specified torque (84 Nm).

POWER STEERING FLUID

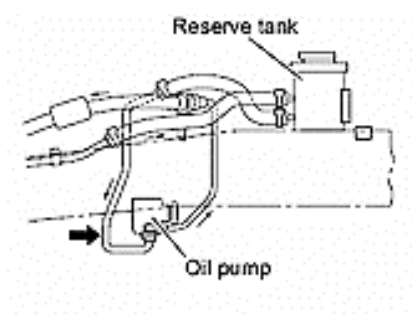
The power steering wheel fluid level must be checked and it must be changed according to the Maintenance Schedule.

Checking the Power Steering Fluid Level

The fluid level is correct if it is between the "MAX" and "MIN" lines on the reserve tank. If the level is lower than the "MIN" line, add fluid up to the "MAX" line. The reserve tank is located at the engine compartment left of the engine. When you have finished checking the fluid level, securely install the cap and cover.

Changing the Power Steering Fluid

Draining



1. Apply the parking brake firmly and chock the rear wheels.
2. Firmly apply the head of the jack to the jacking point.
3. Raise the vehicle until the front wheels are completely clear of the ground.
4. Disconnect the oil pipe between the steering unit and reserve tank as well as the oil hose between the oil pump and reserve tank, and discharge the power steering fluid.
5. When the power steering fluid has been completely discharged, turn the steering wheel fully to the left and right several times to remove fluid left in the piping.

Refilling

1. Securely connect the oil pipe and oil hose, and then refill the reserve tank with the specified power steering fluid.
2. When the reservoir tank is filled with the fluid up to the specified level, wait for 2 to 3 minutes to allow the fluid level to lower.
3. Without running the engine, fully turn the steering wheel in both directions a few times.
4. Lower the vehicle and start the engine. While running the engine at idle, fully turn the steering wheel in both directions a few times. If you do not hear any abnormal sounds, the system has been properly bled.

Bleeding

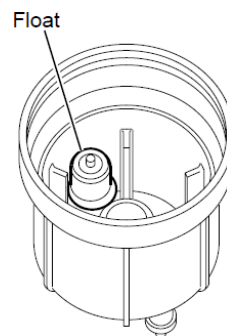
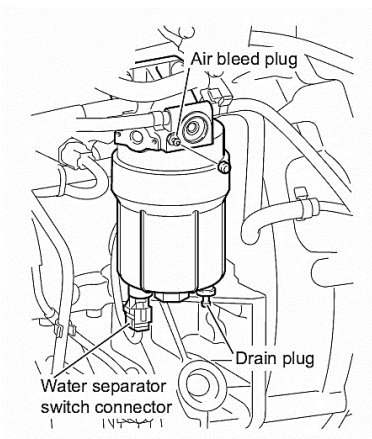
If you hear any abnormal sounds when you turn the steering wheel, air has gotten trapped in the hydraulic system. Follow the steps below to bleed the system.

1. Apply the parking brake firmly and chock the rear wheels.
2. Apply the head of the jack to the jacking point firmly.
3. Raise the vehicle until the front wheels are completely clear of the ground.
4. Start the engine. Turn the steering wheel fully in both directions a few times.
5. Lower the vehicle. With the engine still running, fully turn the steering wheel in both directions a few times. If you do not hear any abnormal sounds, the system has been properly bled. If you still hear any abnormal sounds, this means there is air remaining in the power steering system. To remove the remaining air from the system, fully turn the steering wheel in both directions a few times to increase the fluid temperature. When the fluid temperature has risen to between 60 to 80°C (140 to 176°F), stop the engine and wait for about 5 minutes (allowing air to be collected from high temperature fluid).
6. Check the level of the fluid in the reservoir and also check the joints for fluid leaks.
7. Test drive the vehicle on a road while checking that the steering wheel turns smoothly and the system produces no abnormal sounds when you turn the steering wheel.

FUEL FILTER

Change the fuel filter in accordance with the Maintenance Schedule.
 Drain the water when the water separator (fuel filter) warning light comes on.

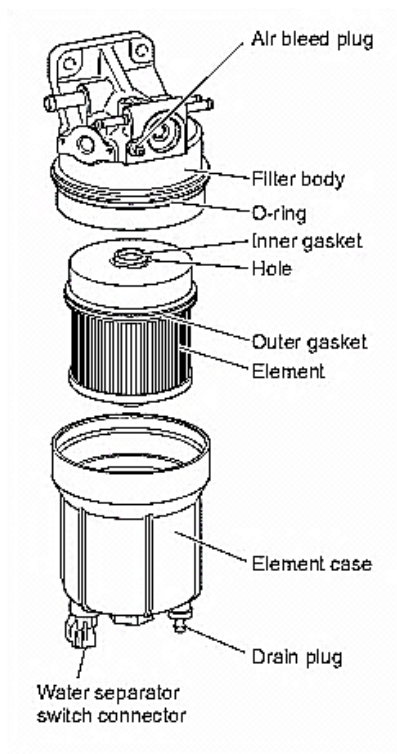
Changing the Fuel Filter Engine-side Fuel Filter



1. Loosen the drain plug at the bottom of the filter element case. Remove the rubber cap of the air bleed plug and then loosen the plug. This will allow the fuel in the filter element case to drain through the drain plug. Tighten the air bleed plug.
2. Disconnect the water separator switch connector.
3. Use a tool (like a 29 mm (1.14 in) socket wrench) to turn the hexagonal part at the bottom of the element case counterclockwise and remove the element case.

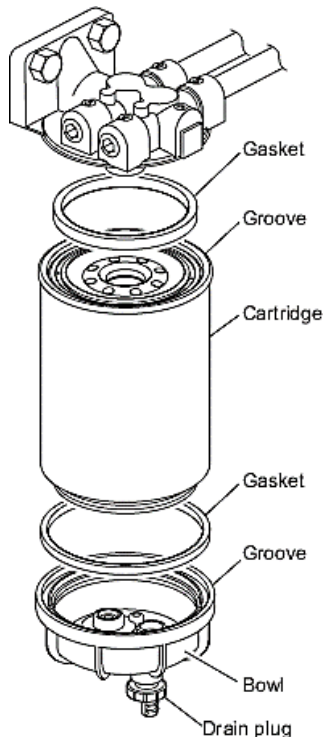
ADVICE :

- Check the float at the bottom of the interior of the filter element case for free and smooth movement.
 - Connect the water separator switch connector, turn the filter element case upside down, and confirm that the water separator (fuel filter) warning light comes on.
 - Clean any foreign matter or dirt at the bottom inside the filter element case.
4. Pull out the filter element downward and remove the O-ring. Use a clean cloth to wipe off any foreign matter that has accumulated on the inside surface of the filter body.



5. Attach the new O-ring to the filter body, making sure that it is not damaged by the screw threads.
6. After lightly coating the inner and outer gaskets of the new filter element with diesel fuel, insert the element until it touches the filter body.
7. After lightly coating the inner surface of the element case or the O-ring with diesel fuel, turn the element case clockwise until it touches the filter body. If the element case end fails to touch the filter body, the filter element has not been inserted fully. Reinsert the element while turning it.
8. Install the element case.
9. Tighten the drain plug and connect the water separator switch connector.
10. Bleed air from the fuel system.

Chassis-side Fuel Filter (Model with Pre-fuel Filter Only)

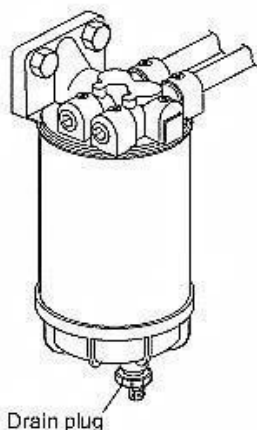


1. Loosen the drain plug at the bottom of the bowl to drain the fuel inside the filter. (Self-bleeding type)
2. Turn the filter element cartridge counterclockwise to loosen and remove it from the filter head.
3. Turn the bowl counterclockwise to loosen and remove it from the cartridge.
4. Fit a new gasket into the groove of the bowl, lightly coat it with clean diesel fuel and tighten the bowl until the gasket is firmly seated in position.
5. Fill a new cartridge with diesel fuel to make air bleeding easier.
6. Fit a new gasket into the groove on the top of the cartridge, lightly coat it with clean diesel fuel and screw the cartridge into the filter head until the gasket is firmly seated in position. Be careful not to spill any diesel fuel from inside during this process.

7. Use a filter wrench and tighten the cartridge and bowl by 1/2 to 2/3 turns. (Reference tightening torque for both cartridge and bowl: 10 N·m (1.0 kgf·m/87 lb·in)
8. Tighten the drain plug and bleed air from the fuel system.

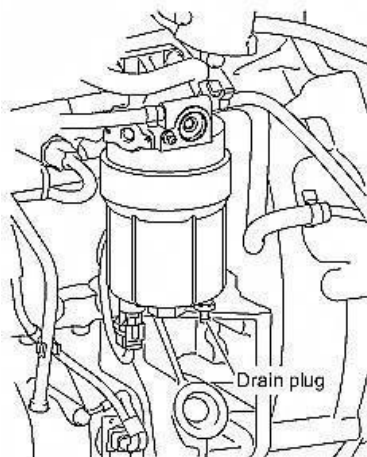
Draining Water from the Fuel Filter

Chassis-side Fuel Filter (Only Models with a Pre-fuel Filter)

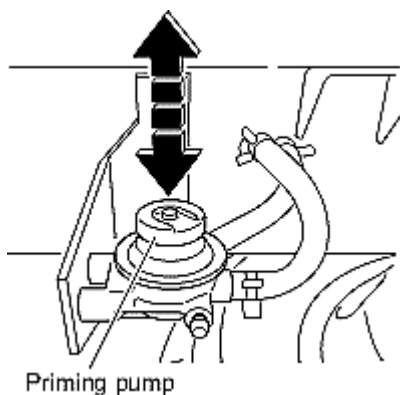


1. Connect one end of a plastic hose to the drain plug at the bottom of the chassis-side pre-fuel filter (primary filter) and place the other end of the hose inside a container to receive the drained fluid.
2. Loosen the drain plug; water will be discharged through the plug. Tighten the drain plug when water stops flowing out of it.
3. If the water separator (fuel filter) warning light comes on, drain water from the engine-side fuel filter as well.

Engine-side Fuel Filter (All Models)



1. Connect one end of a plastic hose to the drain plug at the bottom of the engine-side fuel filter and place the other end of the hose inside a container to receive the drained fluid.
2. Loosen the drain plug and move the priming pump up and down by hand between 10 and 20 times.



3. Fully tighten the drain plug and move the priming pump several times.
4. Test run the engine and check that there are no fuel leaks from the drain plugs of the chassis-side fuel filter and engine-side fuel filter. Also check that the water separator (fuel filter) warning light stays off.



- Clean off any fuel that has adhered to the vehicle body.
- Starting the engine immediately after draining the water from the fuel filter requires a little more time than usual. If the engine doesn't start in 10 seconds, wait for a while and try again.
- Fuel will be mixed in the drained water. Dispose of it in a method conforming to the regulatory requirements in your country.
- If the water separator (fuel filter) requires frequent draining, have the fuel tank drained at your Isuzu service. It would be better not to use the water separator (fuel filter), since it may possibly exert a bad effect on the fuel system.

UREA SELECTIVE CATALYTIC REDUCTION (SCR)

The urea SCR system reduces nitrogen oxides (NOx) in exhaust emissions. The system uses diesel exhaust emission fluid (DEF) as a reducing agent and hydrolyzes it into ammonia (NH₃) using the heat from exhaust emissions. The nitrogen oxides (NOx) are then reduced to nitrogen and water and purified by the generated ammonia. Diesel exhaust emission fluid is a clear, colorless and harmless aqueous solution. It is normal for diesel exhaust emission fluid to emit an odor in some circumstances.

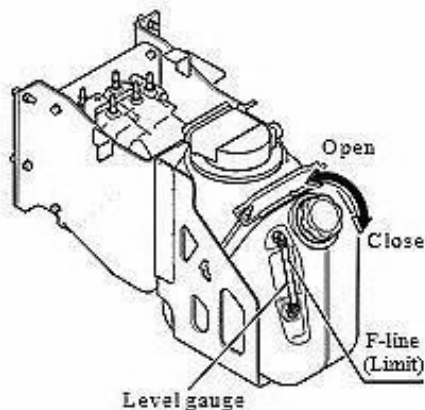
When storing ;

- Seal the diesel exhaust emission fluid container to prevent evaporation and store it indoors or in places that are well ventilated and not exposed to direct sunlight.
- When stored, the expiration date of diesel exhaust emission fluid varies depending on the temperature of the storage location. Contact your service for details.

When refilling ;

- Do not put anything other than diesel exhaust emission fluid in the diesel exhaust emission fluid tank.
- When refilling diesel exhaust emission fluid, doing any of the following may cause a fire or malfunction of the urea SCR system.
 - Diluting with water or other liquids
 - Adding gasoline or diesel fuel

How to add diesel exhaust emission fluid



1. Set the starter switch to the "LOCK" position and stop the engine.
2. Slightly loosen the cap of the DEF tank and wipe off any dust or dirt adhered to the cap or supply inlet.
3. Turn the tank cap slowly to open the tank.
4. Add DEF up to the "F" line while viewing the level gauge mounted in front of the DEF tank.
5. Turn the tank cap to securely install it to the DEF tank.
6. Confirm that the tank cap is securely installed.

DEF tank capacity : 16.5 liters

Because 3.6 liters of DEF will usually remain in the DEF tank, the effective capacity of the tank is 12.9 liters.

CONTROL OF BRAKE DISC and LININGS

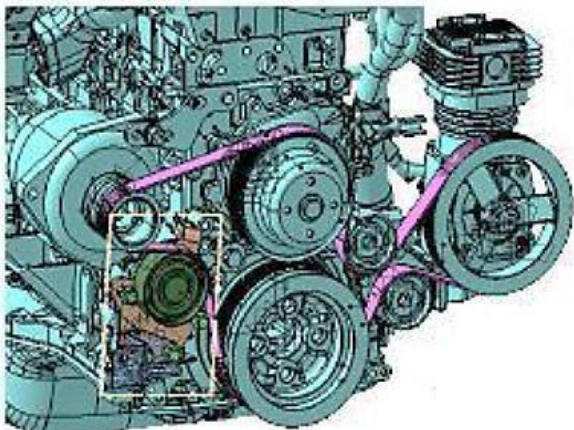


Lining wear indicator must be regularly controlled. When lining indicator value is 10%, contact an Isuzu service to change it.

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.

FAN BELT



Press the center of the span between pulleys of the belt with a force of 98 N (10.0 kgf / 22 lb) and check the amount of flection. The amount of flection must fall within the standard value range indicated below. Also check the fan belt for cracks. If there are cracks, replace the belt.

Generator	Standart value [Amount of flection]		Standart value [Vibration frequency]
100 A	Newbelt	5 - 7 mm.	200 - 220 Hz
100 A	Usedbelt	7 - 9 mm.	165 - 185 Hz

Adjustment

1. Loosen the tensioner's lock nut.
2. Adjust the belt tension with the adjusting bolt.
3. When the tension has been adjusted, securely fasten the tensioner's lock nut.

Changing the Belt

1. Loosen the tensioner's lock nut.
2. Loosen the adjusting bolt and remove the belt from the pulleys.
3. Take out the belt through the opening in the fan.

4. Insert the new belt through the opening in the fan, and install the belt while aligning its grooves with those in the pulleys.
5. Turn the adjusting bolt until the belt tension is within the standard value range.
6. When the tension has been adjusted, securely fasten the tensioner's lock nut.



- The V ribbed fan belt used in your engine requires the tension be adjusted more accurately than is required with conventional Vbelts. Inappropriate tension could cause the belt to make noise or break. When the fan belt is damaged, electricity is not properly generated or becomes a cause of engine overheating. You must check the tension of the fan belt carefully.
 - Use Isuzu genuine parts when changing the fan belt.

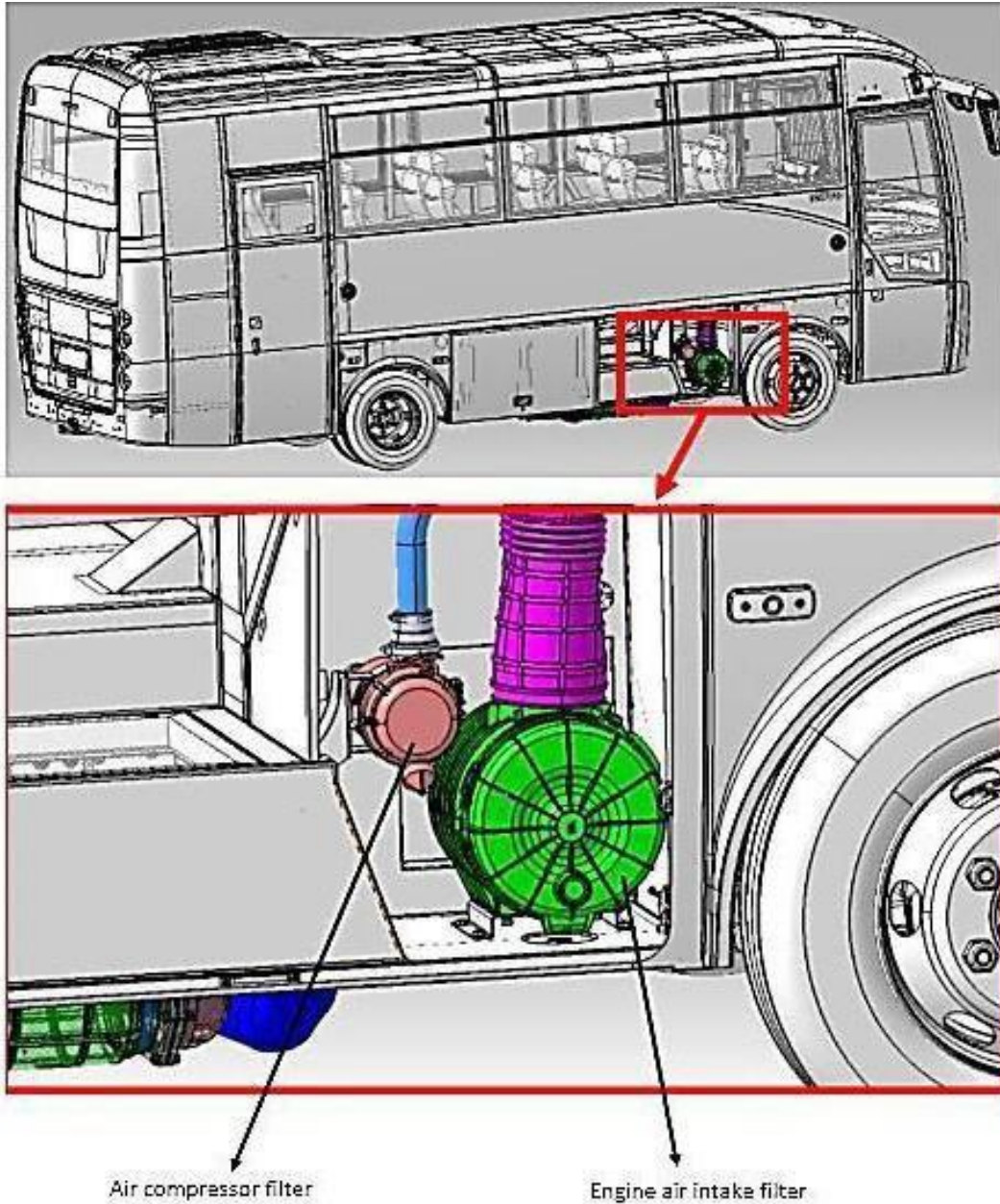
Follow this to properly adjust belt tension

Initial stretching takes place in any new belt after installation. For better seating of the belt in pulley grooves, make the following adjustments after installing either a new or used belt.

- Align the belt and pulley grooves and adjust the belt tension using the indicated method.
- Start the engine, and let it idle for at least 5 minutes to allow the belt to settle into the pulley grooves.
- Stop the engine, and once again adjust the belt tension to the specified value.

AIR CLEANER

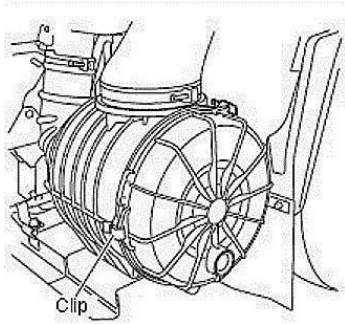
Air cleaners are located on the right side of the vehicle, in the area just behind of the front wheel. There are two filters on this area; while small one provides air to the compressor on the engine, bigger one is used on the layout of the engine intake.



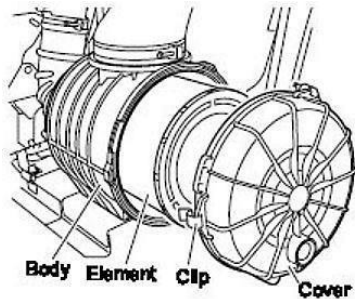
Checking the Air Cleaner

Remove the air cleaner element and check to see if it is blocked by dirt.

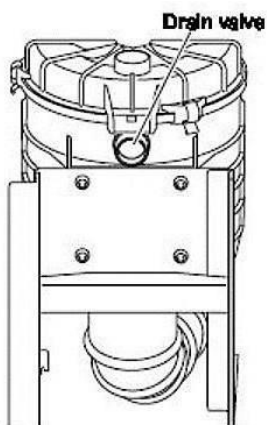
Changing the Air Cleaner Element (Engine Intake)



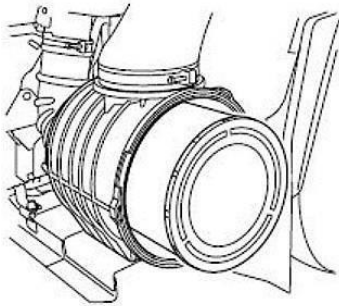
1. Unfasten the 3 clips and remove the air cleaner cover.



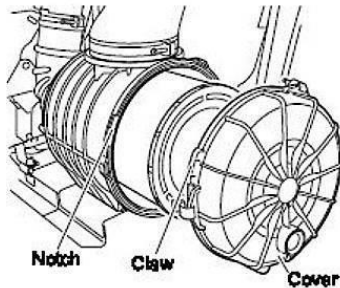
2. Remove the air cleaner element by pulling it out toward you.



3. Remove the dirt that has accumulated on the air cleaner cover and the air cleaner body.
4. Clean the drain valve at the bottom of the air cleaner.



5. Push the element back into position in the air cleaner body.



6. Install the air cleaner cover. Line up the notch on the left side of the body with the claw on the cover. Secure the cover in position by fastening the 3 clips.

Cleaning the Air Cleaner Element



Choose one of the following cleaning methods depending on how the element has become dirty.

1. When dry dust has adhered to the element;
 - a) Blow compressed air at a pressure of up to 690 kPa against the inside of the element while turning it to remove the dust.
 - b) Check to see if the element has been damaged or become thin in places.
2. When the element has become blackened by oily smoke or soot;
 - a) Soak the element in a mixture of water and neutral detergent for about 30 minutes.
 - b) Remove the element from the detergent solution and rinse well using tap water.
 - c) After cleaning, allow the element to dry naturally in a well-ventilated place.

Changing the Air Cleaner Element (Compressor Intake)



1. Remove bulk dust with vacuum cleaner and remove used filter carefully.



2. Clean inside of housing thoroughly with clean damp cloth or vacuum cleaner.



3. Clean the gasket sealing surfaces of the housing removing any hard built up dust patterns.



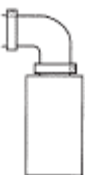
4. Inspect the old element for uneven patterns of dirt. If on the clean side it's a sure sign of bypass.



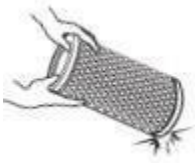
5. Test the gasket for resilience on the new filter.



6. Make sure the gasket seats firmly.



7. Inspect all connection and ducts for a leakproof fit.



8. Don't tap an element to clean it.



9. Don't judge an elements life by appearance.



10. Don't leave an air cleaner open any longer than necessary.

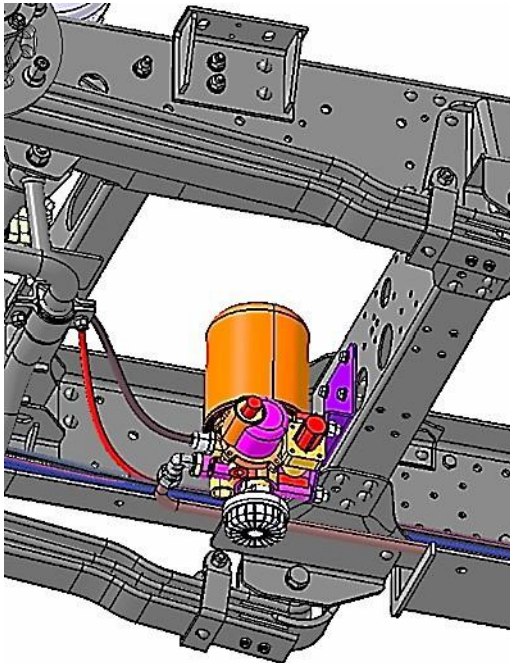


11. Don't install a defective element.



12. Don't use the wrong model or part number element.

AIR DRYER

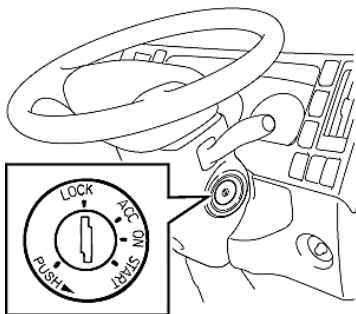


Air dryer is on the rear left of the chassis. Function of air dryer is to adjust the air system pressure and decrease the moisture and air in the air pressed from the compressor. Dryer has a heater that prevents freezing in cold weather, which is activated in low temperatures in particular and deactivated in high temperatures. Air dryer fills air into the system until the circuit cutting discharge at 8.3 bar. When filling is completed dryer discharges the water and oil accumulated from the muffler in the bottom part with pressure, thus cleaning itself.

BATTERY HANDLING PRECAUTIONS

Keep the battery clean. If the battery is left in a dirty condition, contaminants can get mixed into the battery fluid, the battery plates can be damaged, short circuits can occur on the top surface of the battery and the battery's service life can be reduced.

When Performing Inspection or Maintenance



Before starting inspection and maintenance of the battery and other parts of the electrical system, set the starter switch to the "LOCK" position, turn all other switches "OFF" and disconnect the battery's negative cables from the terminals.

There is a danger that electrical components could be damaged if inspection or maintenance is carried out if the battery remains connected.

Removing the Battery

When the battery is to be removed, disconnect the battery cable from the negative terminal first. If the battery cable remains connected to the negative terminal, any contact made by tools and the like between the positive terminal and the vehicle body could lead to a short-circuit and dangerous electrical shocks. The electrical system can also be damaged.



When the battery is to be removed, turn the starter switch to the “LOCK” position, wait at least 3 minutes.

Charging the Battery

- Before charging the battery, remove it from the vehicle to a location with good ventilation and take off the battery caps. If, on the other hand, the battery is to be charged while still on the vehicle, be sure to first disconnect the battery cables.
- Whenever a charger is being connected to or disconnected from a battery, ensure that it is turned off.
- Battery cables must always be disconnected when performing quick charging. Failure to observe this precaution can result in generator burnout.

Installing the Battery

1. When installing the battery in your vehicle, ensure that it is oriented correctly and securely fastened without any looseness. If the battery is not installed correctly, the battery case and battery plates can be damaged as a result of vibrations during driving.
2. When connecting the battery cables, start with the positive terminal and then connect the negative terminal.

Using the Battery as a Direct Power Source

The battery should not be used as a direct source of 12 - Volt power.

If your battery must be used as a direct power source, please consult with your Isuzu service.

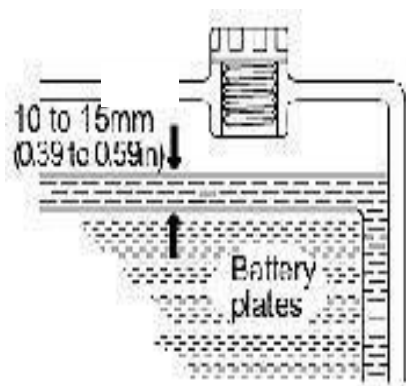
Checking the Battery Fluid Level

Daily Check

Remove the battery cover and confirm whether the level of fluid inside the battery case is within the specified range.

The surface of the battery fluid should be between the "UPPER LEVEL" and "LOWER LEVEL" lines. If the surface of the fluid cannot easily be seen, rock the vehicle gently. If no level marks are indicated on the case, a range between 10 and 15 mm (0.39 to 1.59 inches) from the top of the battery plates is considered appropriate.

Filling Battery Fluid



If the quantity of battery fluid inside the battery is insufficient, remove the cover and cap, and then add distilled water until the surface is close to the "UPPER LEVEL" mark or in a range between 10 and 15 mm (0.39 to 0.59 inches) from the top of the battery plates. When you have finished adding the distilled water, securely install the cap and battery cover.



- Battery fluid should never be filled beyond the "UPPER LEVEL" line. Failure to observe this precaution can result in battery fluid spillage and corrosion of battery terminals and other components. Any spilled battery fluid should be immediately washed away with water.
- Whenever battery fluid has been added, the battery should be recharged (by driving the vehicle). In winter months in particular, battery fluid can freeze and damage the battery case if you fail to recharge the battery.
- If the battery fluid level continues to drop at an unusually fast rate, have an inspection carried out immediately by the nearest Isuzu service.

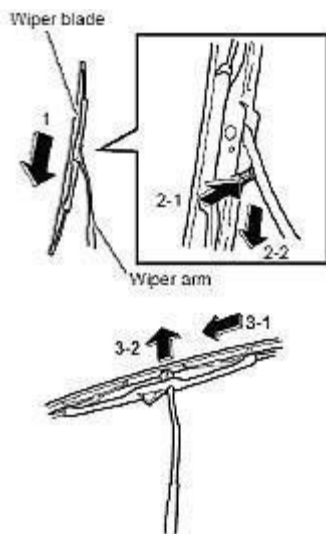
WINDSHIELD WIPERS CHANGE

Check the level of fluid in the windshield washer tank. In addition, spray windshield washer fluid and operate the windshield wipers to check for any areas not properly wiped. At this time, also check the windshield washer's spraying condition.

1. The windshield washer fluid tank is located under the instrument panel on the passenger side.
2. Open the cap and fill the tank with windshield washer fluid to the opening.

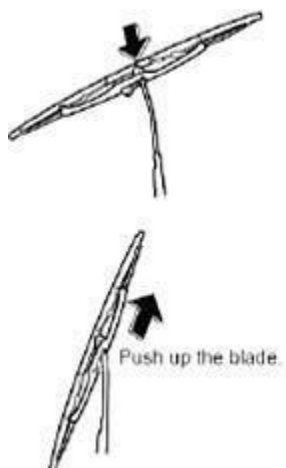
Windshield Wiper Blades

Removal



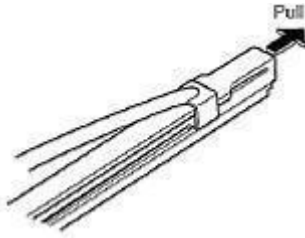
1. Pull the wiper arm up to the vertical position.
2. While pressing the wiper-blade hook towards the arm, slide the blade downwards (towards the base of the arm).
3. With the blade and arm almost perpendicular, remove the blade from the arm.

Installation



1. Insert the blade while holding it almost perpendicular to the arm.
2. Then, with the blade and arm oriented in the same direction, push up the blade until it locks into place on the arm.

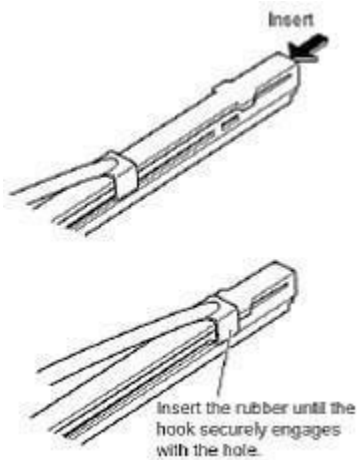
Replacement of Wiper Rubber Insert



Removal

1. Remove the wiper blade from the wiper arm.
2. Pull the wiper rubber insert in the direction indicated by the arrow and extract it from the wiper blade.

Installation



1. Insert a new wiper rubber insert into the wiper blade.
2. Continue pushing in the wiper rubber insert until the wiper blade's hook engages with the hole in it, and then confirm that the rubber insert is securely held in place.
3. Attach the wiper blade to the wiper arm.

WHEELS AND TYRES

The wheels have a major influence upon the safety and comfort of driving. If any wheel fall off the vehicle, it not only causes the vehicle to break down on the road and block other traffic, but it may also lead to a serious accident. We strongly recommend that you check the wheels and tyres daily and maintain them in satisfactory condition.

Checking Tyres

Air Pressure

Too low or too high a tyre air pressure not only affects the ride or causes damage to the cargo but also causes abnormal heat buildup, premature wear, a tyre puncture, or may even cause the tyre to burst.

Use an appropriate tyre air pressure gauge when measuring the air pressure of a tyre. Tyre air pressure should be measured when the tyre is cold, or before the vehicle is driven. (After driving, tyre air pressure increases by about 10%.)

As the tyre air pressure varies depending on the vehicle model and tyre size, refer to the air pressure label on the driver's door opening frame or the tyre air pressure tables on the following pages.

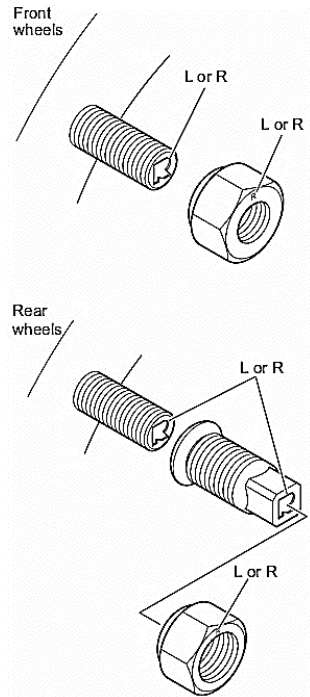
Also check the air pressure of the spare tyre using a tyre air pressure gauge at the intervals specified by the Maintenance Schedule.

Tyre size		Tyre air pressure (bar / psi)	
Front	Rear	Front	Rear
225/75R17,5	215/75R17,5	7 / 102	7 / 102



- If you drive on under-inflated or flat tyres, the wheel bolts will be placed under excessive stress. Under such conditions, the bolts may break and the wheel may detach from the vehicle, possibly causing an accident.
- Over-inflated tyres result in a harsh ride and are likely to cause damage to the cargo. Under-inflated tyres build up heat and could burst. Always keep the tyres of your vehicle adjusted at the standard air pressures.

Changing Tyres



Change a tyre on a level and solid surface after checking safety in the surrounding area.

Every stud or nut for right-hand wheels is marked "R" or "R", and each stud or nut for left-hand wheels is marked "L" or "L"..

Preparation

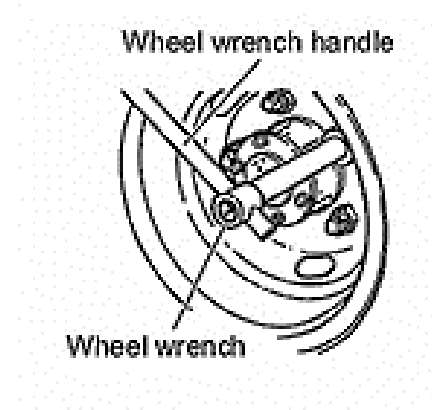
When you park the vehicle to change tyres, choose a place where;

- Your vehicle does not hinder other traffic,
- The surface is level, flat and solid

When changing tyres on a road, use the hazard warning flasher and triangle reflectors to alert other traffic to the presence of your vehicle.

Fully pull the parking brake lever. Chock both the front and back sides of the wheel diagonally opposite to the one to be changed with chocks (or stones, wood blocks, etc.). (Example: When changing the right rear wheel, chock the left front wheel.) Have the passengers get out of the vehicle.

Removing a Wheel



1. Firmly apply the parking brake. When changing a front wheel, chock the rear wheel diagonally opposite to the front wheel. When changing a rear wheel, chock the front wheel diagonally opposite to the rear wheel.
2. Firmly apply the head of the jack to the jacking point.
3. Raise the vehicle enough so that the tyre not quite clear of the ground.
4. Using the wheel nut wrench, loosen the wheel nuts just enough so that the wheel remains stable in position. Do not remove the wheel nuts yet.
5. Jack up the vehicle so that the tyre is clear of the ground completely.
6. Remove all the wheel nuts that have been loosened, and then remove the wheel. Remove the wheel being careful to not damage the threads of the wheel studs.
7. When removing either of the dual rear wheels, first remove the wheel nuts from the outer wheel and remove that wheel. Then, lower the vehicle and loosen the inner wheel nuts.
8. Raise the vehicle again, and then remove the inner wheel.
9. Check the following parts: the disc wheel for deformation and damage such as cracks; the hub for excessive wear of the disc wheel fitting surface; and the wheel studs and nuts for damage to the threads. If anything abnormal is found in the above parts, check other parts as well, and replace any defective part with a new one.

Installing a Wheel

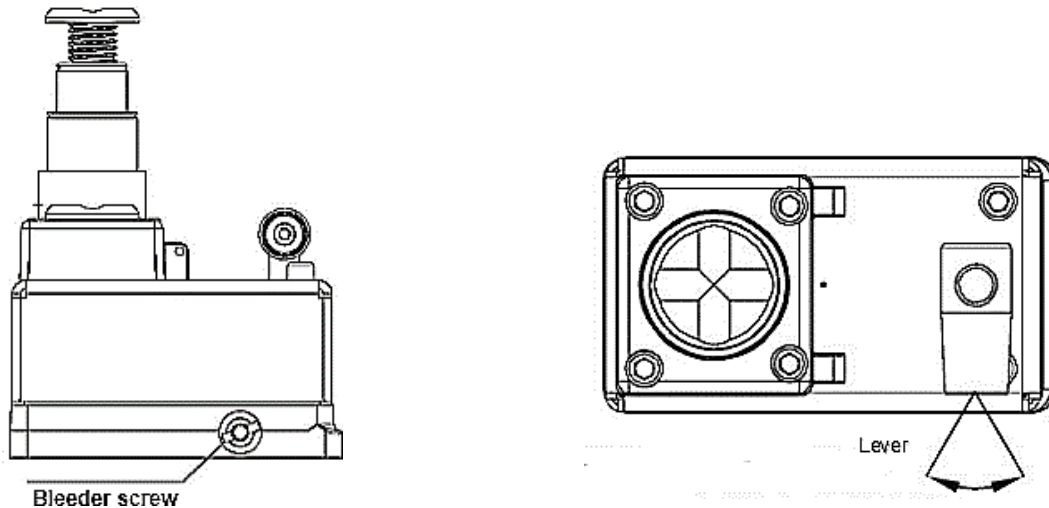
1. Check the disc wheel for the following:
 - Cracks or other damage around the stud holes and decorative holes
 - Cracks or other damage or deformation on the wheel nut seating surfaces (tapered surfaces)
 - Cracks or other damage on welds
 - Wear or other damage on the hub fitting surface or wheel-to-wheel mating surface
2. Check the wheel studs and wheel nuts for the following:
 - Cracks or other damage
 - Stud elongation or excessive rust
 - Crushed, thinned or seized threads



- Remove rust and dirt from a wheel stud and nut, lightly lubricate the threads with engine oil, gear oil or power steering fluid and turn the nut on the stud. If the nut does not turn smoothly, the threads are defective.
 - If the threads are defective, replace both wheel stud and wheel nut as a set.
 - If any wheel stud is broken, change all the wheel studs and wheel nuts on the wheel.
3. Remove rust, dust and mud from the fitting surface, hub fitting surface or wheel-to-wheel mating surfaces, and wheel nut seating surfaces (tapered surfaces) of the disc wheel, and from the threads of the wheel studs and nuts.
 4. Install the wheel while aligning the stud holes in the disc wheel with the wheel studs. When installing the rear wheel, place the outer wheel so that its tyre air valve will be 180 degrees apart from that of the inner wheel to enable inflating both inner and outer tyres.
 5. Screw in each wheel nut by hand until it touches the nut seating surface on the disc wheel, and then finger tighten all wheel nuts until the wheel is held in position without any looseness. Face the tapered end of wheel nuts inward.
 6. Turn the bleeder screw of the jack counterclockwise to lower the vehicle slowly.
 7. Tighten the wheel nuts in a diagonal sequence and in two or three passes. When installing a rear wheel, tighten the nuts of the inner wheel first and then the nuts of the outer wheel.
 8. Finally, tighten all wheel nuts using a torque wrench to the specified torque. You must tighten the nuts of the rear inner wheel before tightening the nuts of the rear outer wheel even when you change only the rear outer wheel.

Front wheel nuts		Rear wheel nuts	
Tightening torque	Quantity	Tightening torque	Quantity
490 ± 49 Nm	6	490 ± 49 Nm	6

Operating the Jack



1. Before raising the vehicle, pull the handbrake and gear.
2. The jack must be placed on a flat, solid surface.
3. Place the jack below the vehicle in upright position.
4. Use jack handle to raise the jack.
5. Do not add any extra load while jack is operating.
6. To lower the jack, turn the bleeder screw two rounds left.

MAINTENANCE SCHEDULE

DAILY MAINTENANCE

- Check bus accident and original parts situation.
- Check corrosion chassis and parts of body

WEEKLY MAINTENANCE

- Check washing the entire bus weekly, making sure to remove all roadchemicals
- 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

To drive your vehicle safely and at minimum cost, it is essential to have your vehicle

regularly inspected.

I: Inspect, clean, repair

A: Adjust

R: Replace

T: Tighten to the specified torque

L: Lubricate

Maintenance interval for the vehicle is prepared for 120.000 km. The maintenances after 120.000 km are the same with the maintenance intervals starting from 20.000 km and going on. In severe conditions (operations involving frequent starts and stops, driving in dusty areas, driving on rough roads, mountain roads), maintenance intervals have to be decreased in half.

Maintenance Interval (x 1000 km)	20	40	60	80	100	120	Month or Km whichever comes first
ENGINE							
Engine oil	R	R	R	R	R	R	or every 12 months
Engine oil filter	R	R	R	R	R	R	or every 12 months
Fuel filter	-	R	-	R	-	R	or every 12 months
Air cleaner element	I	R	I	R	I	R	or every 24 months
Air compressor filter	I	R	I	R	I	R	or every 12 months
Air dryer filter	I	R	I	R	I	R	or every 12 months
Idle speed and acceleration	I	I	I	I	I	I	or every 12 months
Valve clearance	-	A	-	A	-	A	or every 12 months
Functions of air compressor and air system valves	-	I	-	I	-	I	or every 15 months
Looseness in or damage to fuel tank cap and fuel line	-	I	-	I	-	I	or every 24 months
Drive belt tension and damage	I	I	I	I	I	I	or every 6 months
Engine coolant	Every 12 months : I ; Every 24 months : R						
Damage to or looseness in exhaust pipe, exhaust brake and their mounting	I	I	I	I	I	I	or every 12 months
Damage to air intake ducts	I	I	I	I	I	I	or every 12 months
CLUTCH							
Clutch fluid	I	R	I	R	I	R	or every 24 months
Smoother clutch oil	I	R	I	R	I	R	or every 24 months
Clutch, gas and brake pedal stroke and free play	I	I	I	I	I	I	or every 3 months
TRANSMISSION							
Transmission oil	I	R	I	R	I	R	or every 24 months
Gear control mechanism	-	I	-	I	-	I	or every 24 months
Gear control cable	A	A	A	A	A	A	or every 12 months
SHAFT							
Propeller shaft, universal joints	L	L	L	L	L	L	or every 6 months
Propeller shaft, sliding sleeves	L	L	L	L	L	L	or every 6 months
Propeller shaft center bearing	L	L	L	L	L	L	or every 6 months
REAR AXLE							
Differential gear oil	I	R	I	R	I	R	or every 24 months
FRONT AXLE							
King pin (model with rigid front suspension)	L	L	L	L	L	L	or every 6 months
STEERING							
Oil leaks from power steering system	I	I	I	I	I	I	or every 6 months
Power steering fluid	-	R	-	R	-	R	or every 24 months

Maintenance Interval (x 1000 km)	20	40	60	80	100	120	Month or Km whichever comes first
Power steering hose	-	R	-	R	-	R	or every 48 months
Looseness in rod end connection	I	I	I	I	I	I	or every 6 months
Looseness in or damage to steering mechanism	-	I	-	I	-	I	or every 24 months
Wheel alignment	-	I	-	I	-	I	or every 24 months
BRAKES							
Leaks from brake system air tanks, air valves, hoses, pipes	I	I	I	I	I	I	or every 12 months
Air tanks	I	I	I	I	I	I	or every 6 months
Disc brake pad and disc wear	I	I	I	I	I	I	or every 6 months
Looseness in or damage to brake hose connections	I	I	I	I	I	I	or every 6 months
Air leak of parking brake	I	I	I	I	I	I	or every 6 months
Function of brake chamber	Every 50.000 km : I						or every 12 months
SUSPENSION							
Leaf spring damage	I	I	I	I	I	I	or every 6 months
Looseness in or damage to suspension mounting	I	I	I	I	I	I	or every 6 months
Shock absorber oil leaks	I	I	I	I	I	I	or every 6 months
Shock absorber mounting looseness	I	I	I	I	I	I	or every 6 months
WHEELS							
Wheel nuts and wheel bolts-	T	T	T	T	T	T	or every 12 months
Disc wheel damage	I	I	I	I	I	I	or every 12 months
Wheel hub bearing grease(rear axle only)	-	R	-	R	-	R	or every 24 months
Tire air pressure and damage	I	I	I	I	I	I	or every 6 months
ELECTRICITY							
Battery fluid specific gravity	I	I	I	I	I	I	or every 6 months
Inspection of lights, horn, windshield wiper and	I	I	I	I	I	I	or every 6 months
Battery and starter connections	I	I	I	I	I	I	or every 6 months
General control of fuse panel, electric cables and sockets	I	I	I	I	I	I	or every 6 months
OTHER							
Inspection of DPD filter pressure difference or DPDfilter cleaning	-	-	-	-	I	-	or every 12 months
Sensor hoses of DPD pressure difference	-	R	-	R	-	R	or every 12 months
DEF filter	Every 200.000 km : R						or every 120 months
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						
Inspection of nuts and boltson chassis and body	-	I	-	I	-	I	or every 6 months
Draining of condensation tank	I	I	I	I	I	I	or every maintenance
Visual inspection of fire extinguishing system parts	I	I	I	I	I	I	or every 6 months
Firecom fire extinguishing system Aerosol replacement	R: every 15 year						

6. TECHNICAL INFORMATION

NOVO EURO6 SPECIFICATIONS	
Dimensions(mm)	
Maximum length	7420
Maximum width	2350
Maximum height	3320
Wheelbase	3385
Front overhang	1665
Rear overhang	2370
Front track width	1914
Rear track width	1650
Inner height	1930
Masses (kg)	
Gross vehicle mass	max. 9600
Empty mass	5800-7250
Front axle capacity	3700
Rear axle capacity	5900
Engine	
Model	ISUZU 4HK1E6E (Euro VI)
Type	Commonrail Turbo Diesel Intercooler
Number of cylinders	4
Engine volume (cm ³)	5193
Maximum power (PS/rpm)	190 / 2600
Maximum torque (Nm/rpm (Kgm/rpm)	(510/1600-2800) (52/1600-2800)
Exhaust gas emission class	EURO VI
Clutch	Hydraulic Actuated With Diaphragm Spring and Single Dry Plate
Gearbox	
Model	ISUZU MZZ-6/ NEES AMT
Number of gears, type	6 Forward, 1 Reverse, Overdrive / AMT
Final gear ratio	4,777
Steering system	Hydraulic, Tilt and Telescopic
Tyres	225/75 R17,5
Minimum turning radius	Left: Rc (Curb To Curb) = 6,57m Right: Rc (Curb To Curb) = 6,72m
Gradeability % (at GVW),	<41%
Suspensions	

Front	Parabolic steel alloy leaf springs
Rear	Parabolic steel alloy leaf springs
Brake system	
Front / Rear	Disc / Disc
System	Full Air Brake System with ABS and ESC, Dual Circuit, Auto-adjusted
Parking brake	Air Actuated, Operating on Rear Axle
Auxiliary brake	Exhaust Brake
Fuel tank (lt)	150
Diesel Exhaust Fluid Tank (lt)	16
Generator	24V - 100A
Nominal voltage	24V
Battery	24V (2X12V)-105 Ah
Starter engine	24V - 4kW

PRESSURE VALUES		
Four Circuit Protection Valve	Static Closing Pressure	≥ 5.5 bar
Air Dryer	Min. Cut in Pressure	7.1 bar
Air Dryer	Max. Cut out Pressure	9.1 bar
Tyres	Cold Inflation Pressure	7.03 bar / 102 psi

FLUID SPECIFICATIONS

DEFINITION	CAPACITY	VISCOSITY	OIL GRADE (API)	OIL GRADE (ACEA)
Engine oil	12,6 lt (with oil filter) 10,6 lt (without oil filter)	10W-30, 10W-40	CJ4	E9
Transmission oil	4,4 lt	5W-30, 5W-40	CH4, CI4	E4, E7
Differential oil	4,8 lt	80W-90	API GL5	
Suspension and greasing	0,3 kg		NLGI-2	
Shaft spiders	Molybdenum grease			
Clutch and brake fluid	DOT 4			
Power steering fluid	1,5 lt	ATF III		
Antifreeze (%50) + Water (%50)	37 lt	LLC		
DEF	16,5 lt	AdBlue®		
A/C Gas	4,5 kg	R134		

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 - Bakü	+(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	STP Krapina Presečki Grupa d.o.o.	Frana Galovića 15 49 000 Krapina	+385 (049)328-045
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	Sejari Ltd. Belgrade	Auto-put za Zagreb 15 11199 Novi Beograd	+381 112608 700
SLOVAKIA	Turancar	Bratislavská 29 94901 Nitra	+421 37 6555 777

MAY 2025