

GRAND TORO

USER MANUAL

ANADOLU ISUZU

Revision No: 05



It is a symbolic photograph of Grand Toro vehicle.

INTRODUCTION

This User Manual is prepared to give general information about the efficient and most economical use of E6 Grand Toro vehicle.

We strongly encourage you to review the User Manual so you will have a better understanding of your vehicle's capabilities and limitations. Please follow the instructions and read warning notices carefully in the User Manual. Disregarding them may lead damage to the vehicle or personal injury. Vehicle damage results from the disregard of the instructions or restrictions is not covered by Anadolu Isuzu.

All information in the User Manual is current at the time of printing. Anadolu Isuzu reserves to make changes at any time without notice as a result of continual product improvement.

Keep the User Manual in the vehicle at all times. If you sell or rent the vehicle, always pass the User Manual on to the new owner or new user.

For further information about the vehicle, apply the authorized dealers and authorized services that are listed in the User Manual.

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Thank you for choosing an Anadolu Isuzu vehicle.

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VEHICLE INFORMATION

ABOUT WARRANTY

In the unlikely event that a failure occurs as a result of manufacturing liability, the vehicle will be repaired free of charge within the scope described in the warranty, so please read the warranty and contact your local sales company.

Anadolu Isuzu cannot guarantee the failure or accident that occurred due to carelessness in handling or failure to perform maintenance described in the maintenance note.

Please refer to Service Network for the location of the sales company.

VEHICLE IDENTIFICATION NUMBER (VIN) AND ENGINE NUMBER

The VIN and engine number are necessary for registering your vehicle. They are also necessary when your vehicle undergoes official inspections. Provide your Isuzu Dealer with these numbers when you are having the vehicle repaired or are ordering replacement parts. The Dealer will be able to do the requested jobs more competently and quickly.

VEHICLE IDENTIFICATION NUMBER (VIN)

VIN Location

The VIN is stamped on under the right-side front seat.

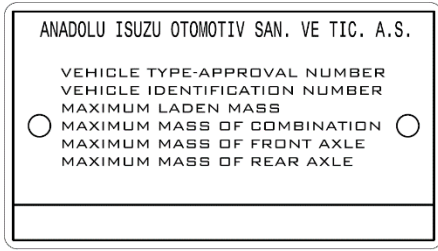


ADVICE

- The location of the ID plate may differ depending on the market. For further details, ask your Isuzu Dealer.

2 | VEHICLE INFORMATION

ID Plate



The ID plate indicates type approval number, VIN, the sum of the maximum axle load, maximum front axle load and the maximum rear axle load. This single number contains multiple pieces of information including the vehicle and engine model codes as shown below. The identification plate is in the front door entry, under the right front seat.



It is a symbolic photograph of Grand Toro vehicle.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
N	N	A	M	8	5	A	E	R	1	G	0	0	0	0	0	0

1-3	WMI CODE	NNA	ANADOLU ISUZU OTOMOTIV SANAYI VE TICARET A.Ş.
4	CATEGORY	M	BUS GROUP
5-6	MODEL NAME	85	BUS85
7	SUSPENSION TYPE	A	FRONT MECHANICAL, REAR AIR SUSPENSION
		M	FRONT MECHANICAL, REAR MECHANICAL SUSPENSION
8	ENGINE MODEL	D	CUMMINS - EURO6-E
9	DRIVING SYSTEM	L	LEFT HAND DRIVE
		R	RIGHT HAND DRIVE
10	WHEEL BASE	1	4475 mm
11	MANUFACTURING PLANT	G	AIOS GEBZE PLANT
12-17	PRODUCTION SEQUENCE NO		

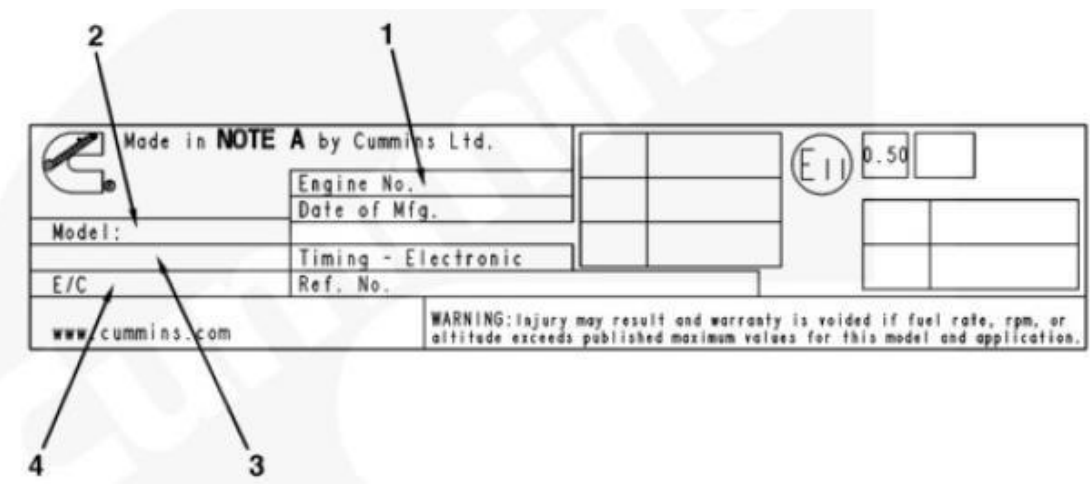
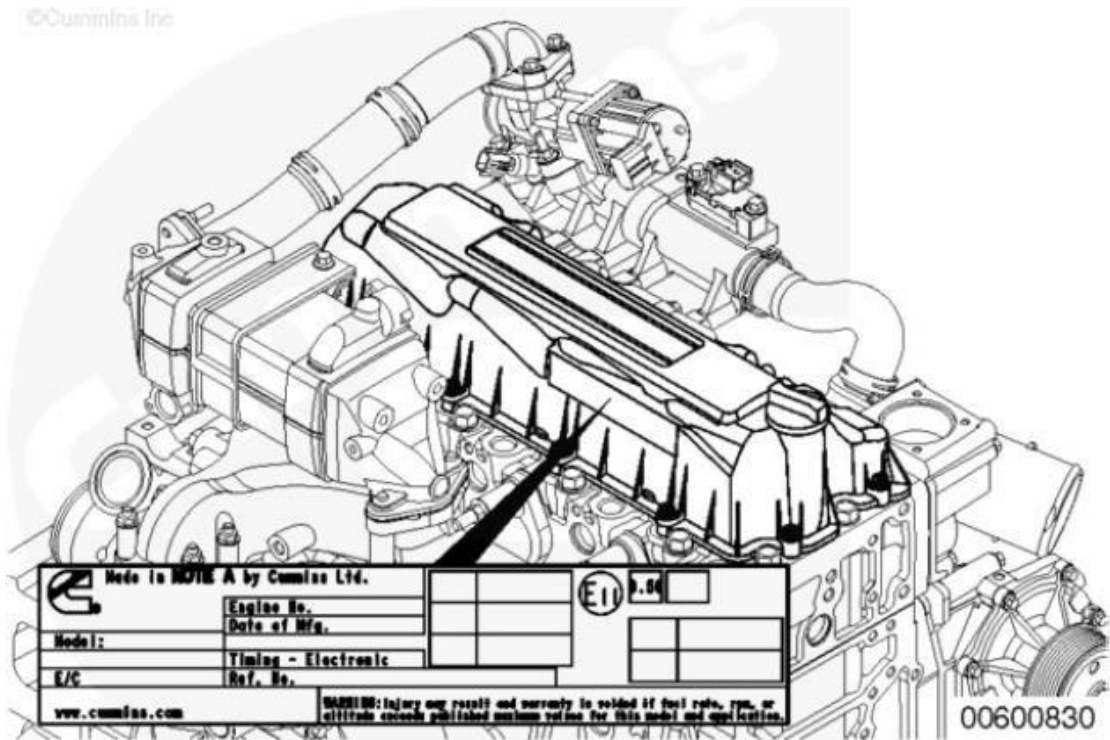
ADVICE

- Interpretation of the VIN may differ depending on the market. For further details, please ask your Isuzu Dealer.

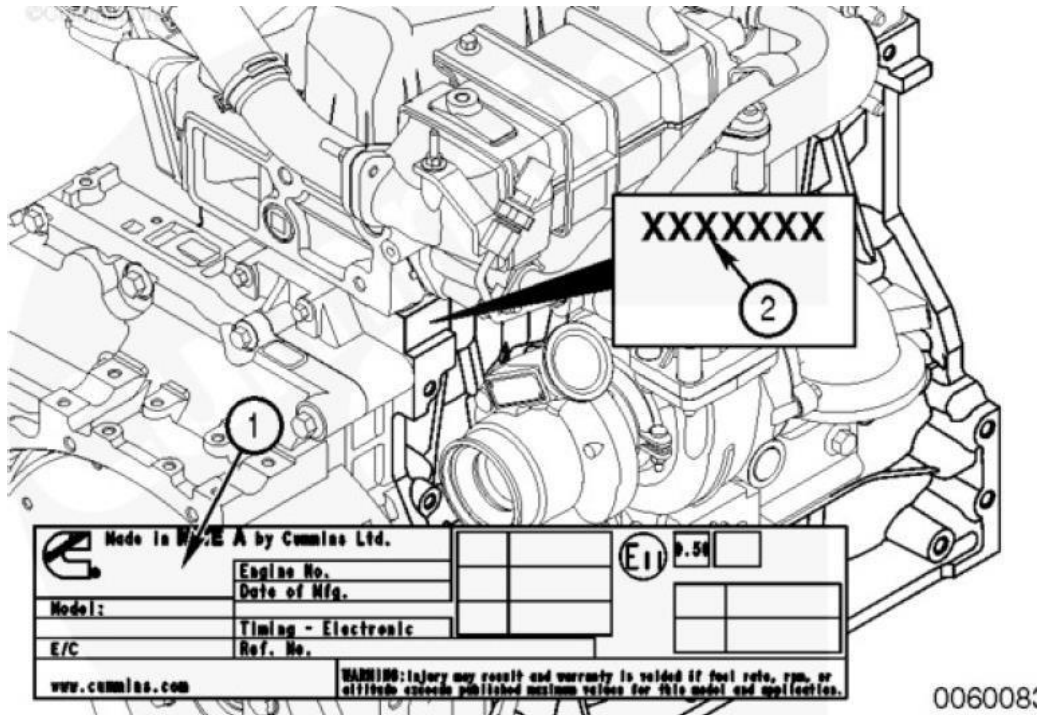
ENGINE NUMBER

The engine dataplate shows specific facts about an engine. The dataplate is typically located on the engine rocker lever cover. The engine serial number provides data for ordering parts and service. The engine dataplate must not be changed unless approved by ISUZU Dealer.

Have the following engine data available when communicating with a ISUZU Dealer.



1	Engine Serial Number
2	Engine Model Information
3	Engine Model FR Number
4	Calibration Code



NOTE

- If the engine dataplate (1) is not legible, the engine serial number (2) can be found on the engine block. Additional engine information is available by reading the engine control module (ECM) dataplate.

IMPORTANT INFORMATION**BEFORE DRIVING**

Proper care and driving is important not only in extended service life of your vehicle, but also in improved fuel and oil economy. Drive carefully and defensively.

PERFORM DAILY INSPECTIONS

For safe and comfortable driving, keep record of the distances driven and the condition of the vehicle during operation. Perform inspections at appropriate intervals, and perform maintenance in accordance with the findings of the inspections. If an inspection reveals an abnormality or there was an abnormality the previous time the vehicle was driven, have the vehicle repaired by the nearest Isuzu Dealer before it is driven again.

Daily Inspections Check List:

1. Checking components that showed abnormalities during the previous operation
2. Fan belt looseness and damage
3. Engine oil level
4. Engine coolant level
5. Power steering fluid level
6. Brake fluid level
7. Brake pedal free play
8. Exhaust sound from brake valve
9. Increase in air pressure
10. Operation of meters, gauges and warning/indicator lights
11. Engine startability, abnormal noise and color of exhaust gases
12. Parking brake lever stroke
13. Windshield washer fluid spray condition and windshield wiper effectiveness
14. Windshield washer fluid level
15. Steering wheel free play and mounting condition
16. Operation of horn and turn signal lights
17. Fuel level
18. Illumination, flashing or damaged lights
19. Battery fluid level
20. Condensation in air tank
21. Leakage of oil, engine coolant, fuel, brake fluid, power steering fluid
22. Water collecting in the fuel filter
23. Air pressure
24. Cracks and other damage
25. Abnormal wear
26. Tread depth of tires
27. Disc wheel mounting condition
28. Brake effectiveness
29. Checking the engine at low speeds and acceleration

USE THE SPECIFIED FUEL

CAUTION

- For models conforming to Euro IV emission standards, be sure to use low sulfur diesel fuel (containing sulfur of 50 ppm or lower) or extra-low-sulfur diesel fuel (containing sulfur of 10 ppm or lower). 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) (DIN EN 590).
- The use of a poor-quality diesel fuel, mixing such an additive as water remover to the fuel in the tank, or filling the tank with gasoline, kerosene or an alcohol based fuel or its mixture with a diesel fuel will badly affect the fuel filter and result in lubrication problems in fuel-lubricated components of the injectors. In addition, this practice can also impair the operation of the engine and the diesel particulate defuser (DPD), the urea selective catalytic reduction (SCR) system, the exhaust emission cleaning system, possibly leading to breakdown of the engine-related systems. If an incorrect fuel should accidentally be added, drain all fuel from the system. Failure to observe this precaution can result in a fire or permanent damage when the engine is started.
- Using diesel fuel other than extra-low-sulfur diesel fuel or low-sulfur diesel fuel in a model conforming to Euro IV emission standards, or using diesel fuel other than extra-low-sulfur diesel fuel in a model conforming to Euro V or Euro VI emission standards could prevent the vehicle from complying with local legal requirements.
- Open the fuel tank filler cap slowly. If you open it quickly, fuel may spurt out.
- Paraffinic fuels to be used (including hydrogen-treated vegetable oils (HVO) fuels) must meet the ASTM D975 standard together with the DIN EN15940 standard.
- If a biodiesel fuel mixture is to be used, the rate of biodiesel can be 20% at most.
- Fuel other than the above-mentioned fuels should not be used without consulting the relevant authorized service.

USING SELF-SERVICE FILLING STATIONS

WARNING

[Be sure to obey the following instructions when refueling the vehicle]

- Stop the engine and close the vehicle's doors and windows.
- Keep cigarettes and other flames away from the vehicle.
- Before opening the fuel tank filler cap, touch a metallic object to discharge static electricity from your body. If you have a static charge buildup on your body while refueling the vehicle, a spark caused by its discharge could ignite the fuel, resulting in burns.
- When filling, place the nozzle deeply into the fuel tank. If you try to fill more fuel by pulling out the nozzle from the fuel tank, the fuel may spill out, thus causing danger.
- All parts of the refueling procedure (from opening the fuel tank filler cap to completing the refueling and closing the fuel tank filler cap) must be performed by the same person. Other people may be carrying static electricity. Do not allow them to approach the fuel filler. The person performing the refueling procedure must not return to the seat in the cab part-way through the procedure. He/she could pick up another charge of static electricity by doing so.
- Obey all cautions posted in filling stations.
- Be sure to wipe off the fuel that is spilled at refueling.

CAUTION

- Be careful not to inhale fuel vapor when refueling the vehicle.

ECONOMICAL DRIVING

Driving too fast or driving so slowly that the engine knocks can lead to poor fuel economy.

In vehicles with exhaust brake, driving with the exhaust brake switched on all the time or using the exhaust brake frequently to adjust your speed can also lead to poor fuel economy.

Drive at a constant speed as much as possible. When accelerating, increase your speed gently and slowly, and up-shift early. Warming up the engine for longer than necessary and revving the engine are a waste of fuel. Driving with the vehicle overloaded is also a waste of fuel. Frequently check the tire pressures and make sure they are always correct.

DO NOT CARRY FUEL AND SPRAY CANS IN THE CAB



WARNING

- It is extremely dangerous to carry fuel and spray cans in the cab. If such a container were to ignite or rupture, it could cause a fire or explosion.

KEEP THE FLOOR AROUND THE DRIVER'S SEAT CLEAN AND TIDY



WARNING

- It is extremely dangerous to have empty cans, empty bottles or other items rolling around on the floor because they could get trapped under the brake pedal and prevent brake application. For proper pedal operation, it is also essential to lay floor mats properly. Incorrectly installed floor mats would hinder free movement of the pedals.
- Do not use the dashboard pocket or the top of the dashboard as a place to put items that could roll, which could interfere with your driving.

CHOOSE YOUR FOOTWEAR SUITABLE FOR DRIVING

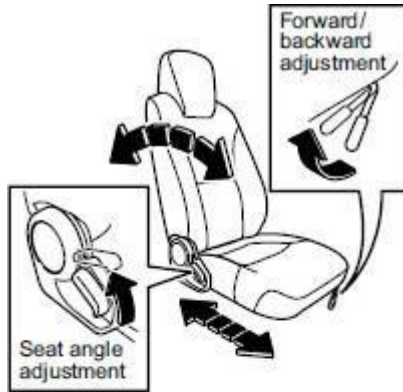
CAUTION

- Choose footwear that ensures proper operation of pedals when driving the vehicle. Use of footwear unsuitable for driving may cause an accident.

CORRECT DRIVING POSTURE

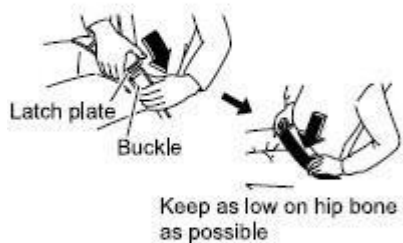
WARNING

- Before driving, be sure to adjust the seat, steering wheel and mirrors to positions that give you a correct driving posture. Make sure the seat is securely retained by trying to rock it forward and backward, and put on the seat belt. All other passengers must wear seat belts.



Seat Adjustment

Adjusting the seat for a correct driving posture is a fundamental part of safe driving.



Fastening Your Seat Belt

Be sure to wear your seat belt. Sit up straight with your lower back pressed against the seat and the lap belt as low on your hips as possible.



Seat adjustment recommendations

a	Make adjustments that allow you to easily turn the steering wheel with your elbows slightly bent.
b	Position the seatback so it is always touching your shoulders.
c	Make sure you can adequately press each pedal.

Seat belt fastening cautions

A	Position the lap belt as low on your hips as possible.
B	Position the shoulder belt so it is on your shoulder.
C	Make sure the seat belt is not twisted when you put it on.

DRIVING

Proper care and operation will not only extend the service life of your vehicle but also improve oil and fuel economy.

OPERATION OF NEW VEHICLE

The subsequent performance and the service life of your vehicle are under the direct influence of the care and treatment that your vehicle will receive during the initial break-in period. It is therefore always recommended that during the initial 1,000 km (600 miles) break-in period, the following few simple precautions are carefully observed.

1. It is recommended that the engine speed is restricted.
2. Avoid engine racing, abrupt starting and needless hard stops by popping the clutch.
3. Always let the engine idle until it becomes thoroughly warmed up.

CHECK AROUND THE VEHICLE BEFORE STARTING THE ENGINE

Before pulling away, perform a thorough safety check, making sure there are no children or obstructions around the vehicle.

WARNING

- Before starting the engine, make sure there is no flammable material under or around the vehicle. The presence of any such material could lead to a fire. If there is any wood within 50 cm (approximately 20 in) from the vehicle's heat source, it would represent a severe hazard as the wood could deform or discolor from the heat or it could catch fire.

BE CAREFUL ABOUT EXHAUST EMISSIONS

WARNING

- Exhaust emissions contain carbon monoxide, which is colorless, odorless and poisonous. If you inhale exhaust emissions, you may suffer carbon monoxide poisoning.
- Do not keep the engine running for any length of time in a place that is poorly ventilated. It is particularly dangerous to run the engine in a garage or other indoor place that could easily fill with exhaust gases because you could suffer carbon monoxide poisoning.
- Inspect the exhaust pipe from time to time. If you notice any defect (for example, a damaged joint, or a hole or crack caused by corrosion), have checks and maintenance performed by the nearest Isuzu Dealer. Continuing to use the vehicle without having the defect repaired would be dangerous because exhaust gases could get into the cab and cause carbon monoxide poisoning.
- If exhaust gases get into the cab, completely open all of the windows and place the inside/outside air selector of the heater or air conditioner to outside air. Promptly have checks and maintenance performed by the nearest Isuzu Dealer. Continuing to use the vehicle without having the defect repaired would be dangerous because exhaust gases could get into the cab and cause carbon monoxide poisoning.

STARTING THE ENGINE

CAUTION

[Manual transmission models or Smoother models without P-range]

- Make sure that the parking brake lever is securely pulled. On a manual transmission model, make sure the gearshift lever is in the "N" position and then hold the clutch pedal down fully before starting the engine. On Smoother models without P-range, hold the brake pedal down firmly and make sure the gearshift indicator is showing "N" before starting the engine.
- Be sure to sit in the driver's seat to start the engine. If you are not sitting in the driver's seat (if, for example, you reach through the window or through the door opening), you cannot confirm the "N" position. If you start the engine of a manual transmission model with the gearshift lever in a position other than "N", the vehicle could move.

[Smoother models with P-range]

- Make sure that the parking brake lever is securely pulled.
- Hold the brake pedal down, move the gearshift lever to the "P" position, and make sure that the gearshift indicator is showing "P" before starting the engine.

IF THE VEHICLE HAS NOT BEEN USED FOR A LONG PERIOD

ADVICE

- Before using a vehicle that has not been driven for a long period, check the engine, transmission and transfer case for oil leakage, and make sure the oil is at the required levels. If there is insufficient oil, it will not adequately reach and lubricate components, and a breakdown will result.
- Replace the AdBlue® for vehicles that have not been used for a year or more. Failure to do so may result a failure of the urea selective catalytic reduction (SCR) system.
- Start the engine and allow it to idle for at least 5 minutes. Check for abnormal noises.
- For instructions on warming up the engine, refer to "Starting the Engine".

RECOMMENDATIONS FOR WARMING UP THE ENGINE

The engine is sufficiently warmed up when the needle of the engine coolant temperature gauge starts to move.

ADVICE

- Do not rev the engine or quickly accelerate before the engine has sufficiently warmed up (in other words, when the engine is cold). Oil would not have adequately reached and lubricated components, so a breakdown would result.
- The exhaust pipe becomes extremely hot while the engine is idling. Before warming up the engine, make sure there is no flammable material (for example, grass, waste paper, oil or old tires) near the exhaust pipe.

DO NOT RUN THE ENGINE IN A GARAGE

WARNING

- Running the engine in a poorly ventilated place can lead to carbon monoxide poisoning. Start and warm up the engine only in places that have good ventilation. Also, on diesel particulate defuser (DPD) equipped models, do not perform manual DPD regeneration indoors. Combustion of particulate matter (PM) during DPD regeneration produces white smoke.

DO NOT FORGET TO RELEASE THE PARKING BRAKE

CAUTION

- Pulling away with the parking brake still engaged can result in brake failure or a fire.

ADVICE

- The parking brake lever can be collapsed by pulling the latch (if equipped) when the parking brake is engaged.
- Pulling away with the parking brake still applied can damage the brake system.
- The red sticker under the latch (if equipped) on the parking brake lever should not be visible. Before pulling away, make sure the parking brake is not engaged by checking that the parking brake warning light is off.

NEVER STOP ENGINE WHILE DRIVING



WARNING

- Do not move the starter switch away from the "ON" position while the vehicle is being driven. If the engine stops while the vehicle is moving, the brakes would not work properly, and the steering wheel and clutch pedal would become extremely stiff and hard to operate. The engine could also be damaged.
- Stopping the engine while driving would be extremely dangerous because the power steering would stop working, making the steering wheel extremely hard to turn.
- Stopping the engine while driving would be extremely dangerous because the warning lights, indicator lights and other electrical circuitry would completely stop working.
- Placing the starter switch in the "LOCK" position while driving would be extremely dangerous because the key could come out, causing the steering wheel to lock so that you could not turn it.

DRIVING DOWN A LONG SLOPE

When driving down a long slope, use engine brake and the auxiliary brake together with the foot brakes. Using the auxiliary brake and low-gear engine brake reduces the work load on the foot brakes and yields greater braking force. Even so, use the foot brakes appropriately to prevent the engine over-revving.

In models with Smoother, select the manual mode and downshift to the lower gear to use the engine brake.

CAUTION

- Frequent use of the foot brakes can cause vapor lock and brake fade, resulting in reduced brake effectiveness. Even so, you should be very careful when using engine braking in a low gear because the engine is likely to over-rev.
- Do not adjust the exhaust brake valve.

NOTE

- Engine brake is the braking effect that occurs when you release the accelerator pedal while driving. The lower the gear, the stronger the engine brake.
- The exhaust brake is a system that closes the exhaust pipe and uses the force of the exhaust emissions to enhance the effectiveness of engine brake.
- If the brakes overheat due to frequent use, the heat can cause the brake fluid to boil so that air bubbles are created in the brake fluid. Pressing the brake pedal simply compresses the air bubbles; pressure is not transmitted to the wheel cylinders, so the brakes' effectiveness sharply deteriorates. This phenomenon is called vapor lock.
- Frequent use of the brakes can cause the brakes to overheat so that the frictional force of the brake linings decreases and the brakes become less effective than normal. This phenomenon is called brake fade.
- An engine overrun is an engine-speed increase that causes the tachometer needle to enter the red zone.

SIDEWINDS

ADVICE

- If the vehicle catches a sidewind and drifts sideways, firmly grip the steering wheel, decelerate to a speed that allows you to stay completely in control and make a directional correction. The vehicle may catch strong sidewinds in the following situations:
 - emerging from a tunnel; driving over a bridge, driving on an embankment
 - being overtaken by a large truck or bus
 - overtaking a large truck or bus

DEALING WITH A BLOWOUT OR FLAT TIRE WHILE DRIVING

WARNING

- If you feel any abnormality in a tire while driving, immediately stop in a safe place. If you continue to drive on a flat tire, undue force would be applied to the wheel bolts, possibly causing the bolts to break and the wheel to come off.

ADVICE

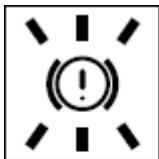
- If a blowout or flat tire occurs while you are driving, calmly grip the steering wheel and gradually apply the brakes to decelerate. (Hard braking would be dangerous because it could cause the steering wheel to be pulled to one side.) Stop the vehicle in a safe place, and change the tire.

IF THE UNDERSIDE OF THE VEHICLE RECEIVES A HARD BUMP

ADVICE

- If the underside of the vehicle receives a hard bump, stop in a safe place where the vehicle will not obstruct traffic and check for brake fluid leakage (hydraulic brake models), air leakage (full-air brake models), fuel leakage and component damage. If any part of the vehicle is damaged or broken, promptly have the vehicle inspected and repaired by the nearest Isuzu Dealer.

IF A WARNING LIGHT OR INDICATOR LIGHT COMES ON



ADVICE

- If a warning light comes on or flashes, do not ignore it and keep driving. Be sure to take corrective action referring to the explanation of the meters, warning lights and indicator lights.



STOPPING AND PARKING

PARKING

ADVICE

- Choose a flat place where stopping and parking are permitted and where the vehicle will not obstruct traffic. Firmly apply the parking brake and make sure the vehicle does not move.
- Remove all dirt from the vehicle's light lenses and reflectors to ensure that the vehicle can be seen from other vehicles.

APPLYING THE PARKING BRAKE

ADVICE

- Except in an emergency, do not apply the parking brake until the vehicle has come to a complete stop. Applying the parking brake before the vehicle has stopped can cause the tires to lock or the vehicle to spin, possibly causing an accident.

PARKING SAFELY ON A SLOPE

CAUTION

- Avoid parking your vehicle on a slope as much as possible and choose a level and flat place. If it is unavoidable to park your vehicle on a slope, be sure to set the parking brake fully, make sure that the vehicle does not move, and block the wheels with chocks for added safety. Also, leave the vehicle in gear to further ensure that it will not move.
- Leave the steering wheel turned such that the vehicle will be stopped by an obstruction (for example, the curb) in the unlikely event that it moves.

STOPPING AND PARKING WITH THE ENGINE RUNNING

WARNING

- When stopping and parking with the engine running: If your vehicle is equipped with a manual transmission, be sure to place the gearshift lever in the "N" position to select neutral. With a Smoother vehicle, make sure the shift indicator is showing "N" (Smoother models without P-range) or "P" (Smoother models with P-range). Then, firmly apply the parking brake. Unless you take these steps, any unintended pressure on the accelerator pedal could cause an accident.

CAUTION

- On diesel particulate defuser (DPD) equipped models, the DPD may automatically start regeneration when the vehicle is stopped and parked with the engine running. To prevent a fire, make sure there is no flammable material near the muffler, DPD, urea selective catalytic reduction (SCR) system, and exhaust pipe. Be careful not to get burned by hot exhaust gases.



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

BE SURE TO HAVE THE ENGINE RUNNING WHEN THE VEHICLE IS MOVING

CAUTION

- When the engine is not running, the power steering system does not work so the steering wheel is hard to turn. Also, the brake booster does not work so there is little braking ability. If you coast down a slope without the engine running, you would not be able to properly control the vehicle and could have an accident.

LOOK AROUND BEFORE OPENING A DOOR

CAUTION

- Before opening a door, check the area around the vehicle by looking forward, rearward and to the sides. If you suddenly open a door without checking the surrounding area, the door could be hit by a vehicle behind you or a pedestrian.

LEAVING THE VEHICLE

WARNING

- When leaving the vehicle, be sure to apply the parking brake, stop the engine and lock the doors. Do not leave valuables where they can be seen from outside the vehicle.
- If you are traveling with a child, do not leave the child alone in the vehicle. If the child touches the controls or equipment, an accident could occur. (For example, the vehicle could move or a fire could start.) Also, the cab inside could become dangerously hot in hot weather.
- Do not leave eyeglasses or a lighter in the vehicle. If the cab inside becomes hot, a lighter left there could explode and plastic eyeglass lenses or frames could deform or crack.
- Do not leave your vehicle unattended with the engine running. If the engine should overheat, you would not be there to react to the temperature warning light or gauge. This could result in costly damage to your vehicle and its contents.

STARTING TO DRIVE WHEN THE VEHICLE HAS BEEN PARKED

Before pulling away, perform a thorough safety check, making sure there are no children or obstructions around the vehicle.

REVERSING

If you cannot see the area behind your vehicle well enough to confirm it is safe to back up, get out of the vehicle and check behind it.

PULLING AWAY AFTER A TEMPORARY STOP

CAUTION

- Make it a habit to look around and confirm that it is safe to pull away after a temporary stop (at traffic lights, for example).

DIESEL PARTICULATE DEFUSER (DPD)

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

WARNING

- The DPD, 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.
- Any grass, waste paper or other flammable material near the vehicle could catch fire.
- Before doing maintenance work on the vehicle, shut down the engine and allow it to cool down. Otherwise, you could be burned.

CAUTION

- Using diesel fuel other than extra-low-sulfur diesel fuel (with sulfur content no higher than 10 ppm) for a vehicle equipped with a DPD/urea SCR could prevent the vehicle from complying with local legal requirements.

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 IV emission standards, be sure to use lowsulfur diesel fuel (containing sulfur of 50 ppm or lower) or extra-low-sulfur diesel fuel (containing sulfur of 10 ppm or lower). 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 Dealer.
- 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 multiinformation display (MID), the DPD manual regeneration indicator light will flash at this time. In a model with MID, the "PUSH DPD SWITCH" indicator (amber) will flash. Perform manual regeneration in accordance with the proper procedure. This is to restore DPD function and is normal.
- If the vehicle is left in gear during regeneration, the regeneration time could be extended, possibly having an effect on fuel consumption. Leave the transmission in neutral when idling the vehicle for extended periods of time.

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.
- The DPD may start operating and the engine speed may increase after a long continuous idling or driving with low speed.

UREA SELECTIVE CATALYTIC REDUCTION (SCR)

The urea SCR system reduces nitrogen oxides (NOx) in exhaust emissions. The nitrogen oxides (NOx) are then reduced to nitrogen and water and purified by the generated ammonia.

CAUTION

- Do not touch any water discharged from the muffler. In case of contact with skin, wash off thoroughly with water.

ADVICE

- Do not modify the exhaust pipe or muffler, or change the location of any items including the AdBlue® tank. Doing so could affect exhaust emission reduction capabilities. If any modifications or relocation is necessary, consult your nearest Isuzu Dealer.

NOTE

- Exhaust emissions from the tailpipe have a smell different from those emitted from vehicles without urea SCR systems due to the exhaust emission reduction functions of the exhaust system.
- AdBlue® is a registered trademark of Verband der Automobilindustrie (VDA).

HANDLING OF ADBLUE®

AdBlue® is a clear, colorless, and harmless aqueous solution. It is normal for AdBlue® to emit an odor in some circumstances.

CAUTION

- AdBlue® is harmless to the human body even if touched. However, it may cause inflammation in rare circumstances depending on its constitution. In such cases, take the following actions.
 - In the case of contact with skin, wash off with water. Failure to do so may result in irritation for those with sensitive skin.
 - In the case of accidental ingestion, drink one or two glasses of water or milk and consult your physician immediately.
 - In the case of contact with eyes, immediately wash out with large amounts of water for at least 15 minutes and consult your physician.

IS A SPECIFIED ADBLUE® BEING USED?

- Use AdBlue® specified by Isuzu.
 - Use AdBlue® that is compliant with the ISO (International Organization for Standardization) 22241 standard defined for AUS 32.

STORING ADBLUE®

- Seal the AdBlue® 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 AdBlue® varies depending on the temperature of the storage location. Contact your Isuzu Dealer for details.

NOTE

- Even if frozen, AdBlue® retains the same quality as when thawed and is usable as is.
- When storing or carrying AdBlue®, use the container in which the AdBlue® was contained when purchased. If not, use a dedicated polyethylene tank (PE) or stainless steel container that is free from any adhesion of foreign materials such as water or dust.

REFILLING ADBLUE®

WARNING

- Do not put anything other than AdBlue® in the AdBlue® tank.
- When refilling AdBlue®, 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
- If liquids, etc., other than the specified AdBlue® have been accidentally added, the urea SCR system must be inspected. Have the urea SCR system inspected/serviced at your Isuzu Dealer.

CAUTION

- AdBlue® rarely emits an odor when the tank cap is opened. Do not attempt to smell the tank from the supply inlet.

ADVICE

- Remember to add AdBlue® early so that the tank is always fully filled with AdBlue®.
- Do not fill with AdBlue® over the "F" line on the level gauge. Doing so may result in leakage of AdBlue® from the breather hose during driving. In addition, if AdBlue® freezes, sensors may be damaged.
- Do not step or ride on the AdBlue® tank. Doing so may result in damage to the AdBlue® tank, pipe, and sensors.
- The urea SCR system will continue to operate for approximately 3 minutes after the starter switch is set to the "LOCK" position. Wait for 3 minutes or longer when removing the battery or power line connectors for inspection or repair.

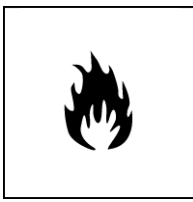
NOTE

- The level gauge, mounted in front of the AdBlue® tank, is intended to prevent oversupply and overflow of AdBlue®, not to measure the remaining amount of AdBlue®. Even when the surface level of the AdBlue® reaches the lower end of the level gauge, the AdBlue® amount display on the meter panel still indicates levels 4 or 5. Check the remaining amount of AdBlue® on the AdBlue® amount display, not using the level gauge.
- Operating noises may be heard from the AdBlue® tank or supply module after the engine stops. This is the sound of AdBlue® returning from the pipe to the AdBlue® tank and is normal.

DISPOSING OF ADBLUE®

Do not dispose of AdBlue® or its empty containers into lakes, seas, rivers, or other such places.

Dispose of in an appropriate way complying with local legal requirements.

ENGINE ROOM FIRE DETECTION SYSTEM

If the engine room temperature exceeds 175°C the engine room fire detection warning light come on and warning buzzer will sound.

ENGINE ROOM FIRE EXTINGUISHING SYSTEM

The engine room fire extinguishing system is an automatic fire detection, alarm and extinguishing system.

For details on the engine room fire extinguishing system, refer to the instruction manual of the device manufacturer.

VEHICLE DATA COLLECTION

Your vehicle, like other modern motor vehicles, has a number of sophisticated computer systems that monitor and control several aspects of the vehicle's performance. Your vehicle uses on-board vehicle computers to monitor emission control components to optimize fuel economy, to monitor conditions for airbag deployment and, if so equipped, to provide anti-lock braking and to help the driver control the vehicle in difficult driving situations. Some information may be stored during regular operations to facilitate repair of detected malfunctions.

Isuzu may download and retrieve stored information for the purpose of diagnosing, servicing, or repairing your motor vehicle or improvement to future Isuzu motor vehicles.

EQUIPMENT AND ACCESSORIES

OPENING AND CLOSING DOORS

The front door of the vehicle is opened/closed from the outside with the remote control.

There are door open/close switches in front control panel in order the doors to be opened/closed from the inside.

WARNING

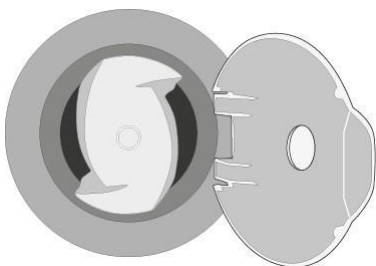
- If vehicle speed is below 3 km/h, Doors will not open/close.
- If the stop brake is adjusted manually and the door is opened while moving; the doors close automatically when the vehicle reaches 3km/h.

CAUTION

- Be sure to do the following whenever you leave the vehicle:
 1. Fully engage the parking brake.
 2. Stop the engine.
 3. Lock the doors.
- When you close the door after sitting behind the wheel, check that the door is fully closed. If the door is not properly closed, it may open while the vehicle is in motion.
- Before opening the door, carefully check all areas around the vehicle for safety, especially the area at the rear of the vehicle.
- Never leave the key in the vehicle.

OPENING DOORS IN AN EMERGENCY

Emergency Switch



The emergency switch is located above the doors.

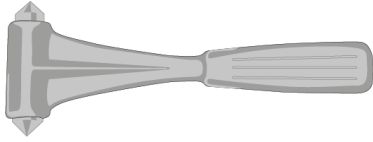
1. Open the emergency switch cover before operating the emergency switch.
2. Turn the emergency switch in the direction of the arrow from the drive position to the emergency position.
3. The door can be opened manually.

NOTE

- Exterior emergency switch next to the doors makes it possible for rescuers to gain access to the vehicle interior from the outside in the event of an emergency or an accident.

EMERGENCY EXITS

Emergency Hammer



In emergency cases, emergency exit may be ensured by breaking the windows at the with the help of emergency attractive.

EMERGENCY EXITS

Emergency Hammer



As an option, hammers inside the vehicle are used for exit in case of emergency.

DISABLED LIFT

WARNING

- To avoid serious bodily injury or death, the operator must use appropriate work clothes. NEVER wear loose-fitting clothes that may be trapped in the moving parts of the lift. ALWAYS wear professional safety-toe shoes, protective gloves, and eye protection. Use of a hardhat is recommended.

Must



Recommended



- Slipping (and falling) can result in serious bodily injury and death. To prevent injury by slipping:



- ALWAYS wear professional safety-toe shoes with a good non-slip sole.
- DO NOT use the lift if it is covered with snow, mud, dirt, debris, liquids or other substances.
- DO NOT run on the platform.

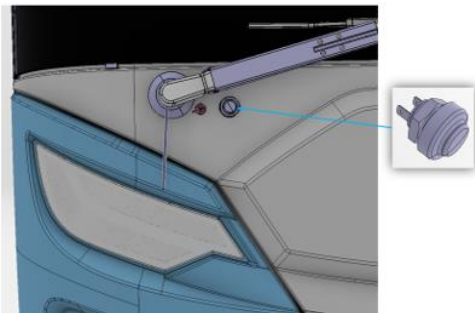
- Tripping (and falling) can result in serious bodily injury and death. To prevent injury by tripping:



- DO NOT use lift platform as a step. NEVER leave the lift unattended in partially deployed position.
- Pay attention to protruding items on the platform surface at all times (ex. platform lights, roll stops and their levers, foreign objects, etc...).
- DO NOT run on the platform.

- Falling from the platform can result in serious bodily injury and death. To prevent injury by falling

BUTTON OPENED – CLOSED (OPTIONAL)



Under the wiper is the front door open button. When the button is pressed outside the vehicle with the ignition switched off the front door opens.



For rear heater; The heater located under the driver is used to activate in two stages



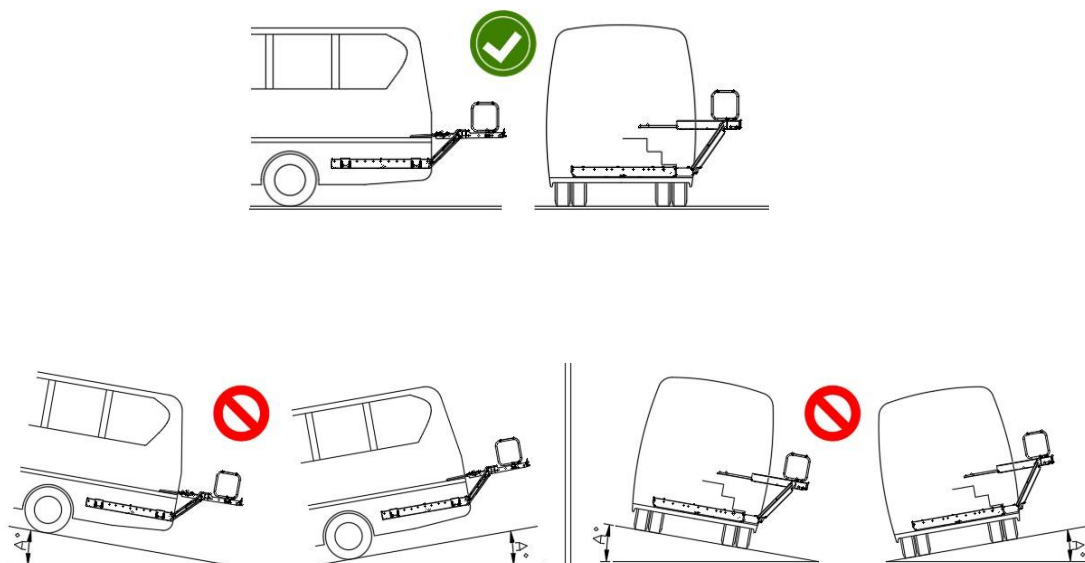
Used to enable and disable school bus warning lights.



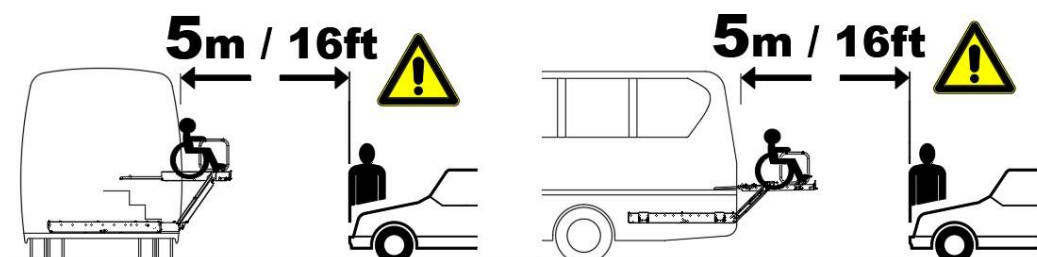
- Make sure your footing is solid and you maintain 3 points of contact (2 feet on the platform, 1 hand on a guard rail).
- Use guard rails where available.
- NEVER move the vehicle while a person is standing on the platform or inside the vehicle body.
- NEVER use the platform as an elevated working platform.

WARNING

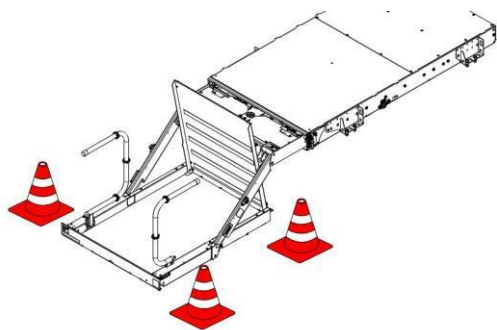
- Prior to operating the lift, the vehicle must be safely parked on level and solid ground, have the parking brake applied, and the engine switched off. Open any doors located in front of the lift and secure any moving parts of the vehicle body. Failure to abide by these instructions can result in serious bodily injury or death to the operator or bystanders.



- Prior to deploying the platform, check if the lift can be used safely. Take precautions to ensure your own safety, and the safety of bystanders or other parties in traffic. Clear the working area of any objects that could potentially impede movement of the lift. Failure to abide by these instructions can result in serious bodily injury or death to the operator or bystanders.
- To reduce the risk of serious bodily injury or death which may result from other vehicles when parked, ALWAYS make sure a safety distance of 16 ft or 5 m is kept between the back of the vehicle and the following vehicle.





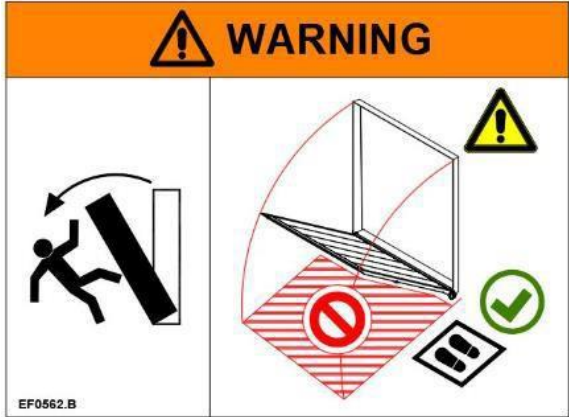
- Ensure that the vehicle cannot tip-over when putting weight on the platform. If the vehicle is equipped with mechanical or hydraulic stabilizing legs, deploy these before opening the platform. Ensure that the stabilizing legs are positioned on solid even ground. In case of soft terrain (sand, gravel...), solid support blocks must be used under the stabilizing legs. Failure to abide by these instructions can result in serious bodily injury or death to the operator or bystanders.



- To reduce the risk of serious bodily injury or death, ALWAYS make sure the platform is clearly visible to other persons from all approach directions. The lifts are equipped with flashing platform lights. Nevertheless, Recommends the use of 4 warning cones, placed around the work area of the platform.
- To reduce the risk of serious bodily injury or death, make sure the working zone is sufficiently lighted.

WARNING

- Inspect the lift prior to each use. If any unsafe condition exists or unusual noises or movements are noticed, DO NOT use the lift and contact an authorized ISUZU Dealer for repair.
- Read and comply with all warning decals, pictograms and instructions affixed to the lift. Failure to abide by warnings and instructions may result in serious bodily injury or death.
- The lift must not be used if the operator is intoxicated, impaired or distracted in any way. NEVER use a phone or mobile device when operating the lift.
- The lift shall be used by means of original control units only. Operating the lift with unauthorized control units will increase risk of serious bodily injury or death to the operator or any bystanders.
- Limit the operation of the lift to one single operator. Operation of the lift by more than one operator at a time may cause confusion and increase the risk of serious bodily injury or death.
- To prevent people from being hit by the platform, by objects falling off the platform; being caught in pinch points or being pinched by the moving parts of the lift:

	<p>Keep visual control over the entire working area of the lift and its platform at all times, including the area DIRECTLY and UNDER the platform.</p>
	<p>Upon deployment, DO NOT allow any other person to stand in the proximity of the lift and its platform. ENSURE AT ALL TIMES THAT NOBODY STANDS UNDER OR WITHIN REACH OF THE MOVING PLATFORM.</p> <div data-bbox="639 595 1209 1010">  </div> <p>Upon lifting and lowering: DO NOT allow any other person, except the person to be lifted or lowered, to be in the proximity of the lift and its platform.</p>

- Careful supervision is necessary if used on behalf of, or near children.
- NEVER leave the lift unattended in open position. Before leaving the vehicle unattended, close the doors of the vehicle, stow the platform in its travel position and switch off the electrical power to the lift. Leaving the lift in open position unattended can result in serious bodily injury or death to unaware bystanders.
- NEVER move the vehicle with the lift in the open position. ALWAYS stow the lift in its travel position, close and secure the doors of the vehicle and switch off the electrical power to the lift before moving the vehicle. Failure to properly stow the lift in its travel position prior to moving the vehicle may result in serious bodily injury or death.

DANGER ZONES, RISK OF CRUSH AND SHEAR INJURY

There are several main danger zones on and around the platform, that can be hazardous to the operator and any other persons nearby.



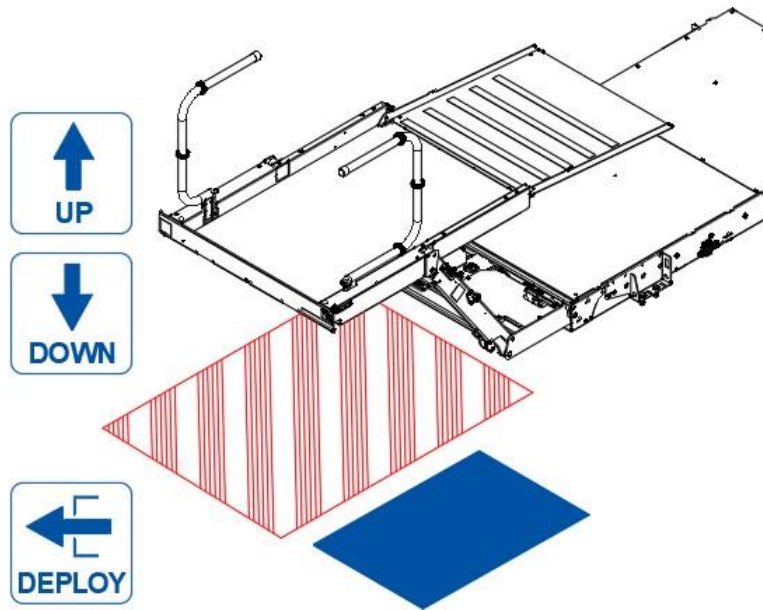
Correct operator position



Danger zone

CAUTION

- ALWAYS stay clear of the area behind the platform and the range of motion of the platform.

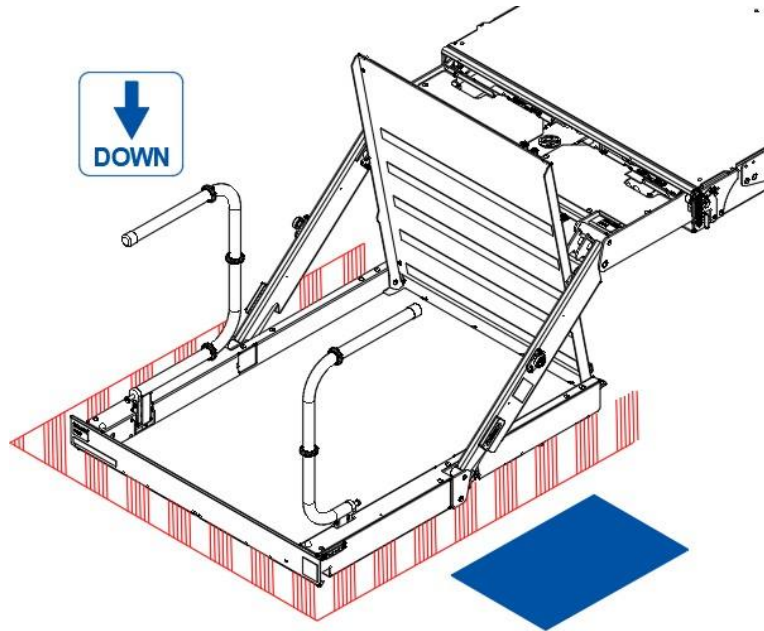


WARNING

	<p>Impact by the platform or the moving parts of the lift will result in serious bodily injury or death. To prevent people from being hit by the platform, by objects falling off the platform or being caught in pinch points or being pinched by the moving parts of the lift:</p> <ul style="list-style-type: none"> • Keep visual control over the entire working area of the lift at all times, including the area directly behind and under the platform; • DO NOT allow any person to stand near the lift and its platform. Ensure at all times that nobody stands under, or within reach of the moving platform and its load.
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CAUTION

- ALWAYS beware of the crushing zone between the lowering platform and the ground.

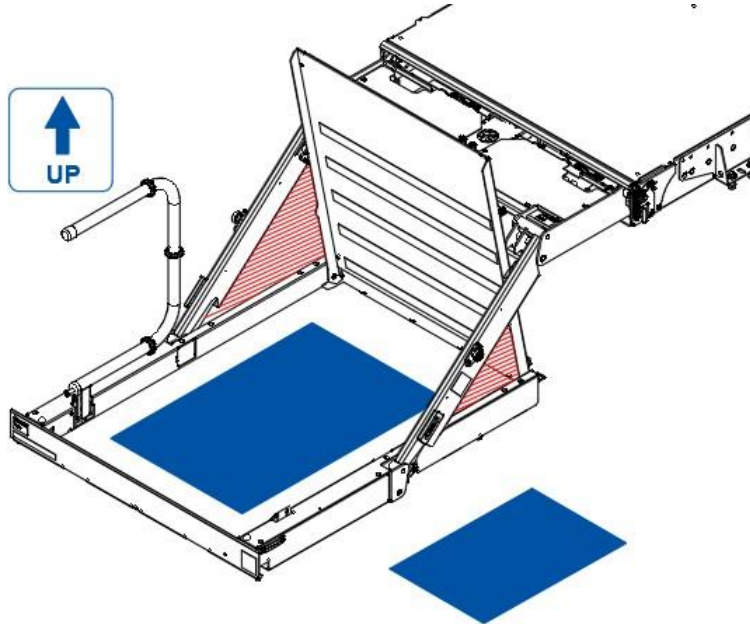


WARNING


	<p>Lowering an empty or fully loaded platform on one's feet may result in serious bodily injury. To prevent people from having their feet crushed or sheared by the lowering platform:</p> <ul style="list-style-type: none"> • Keep visual control over the entire working area of the lift at all times, including the area directly behind and under the platform; • When operating the lift from a position on the ground, ALWAYS stand at the side of vehicle body, at a safe distance of minimum 50 cm away from the moving platform.
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CAUTION

- ALWAYS beware of the crushing zone between rising platform and the lift arms, and between the moving parts of the lift generally.

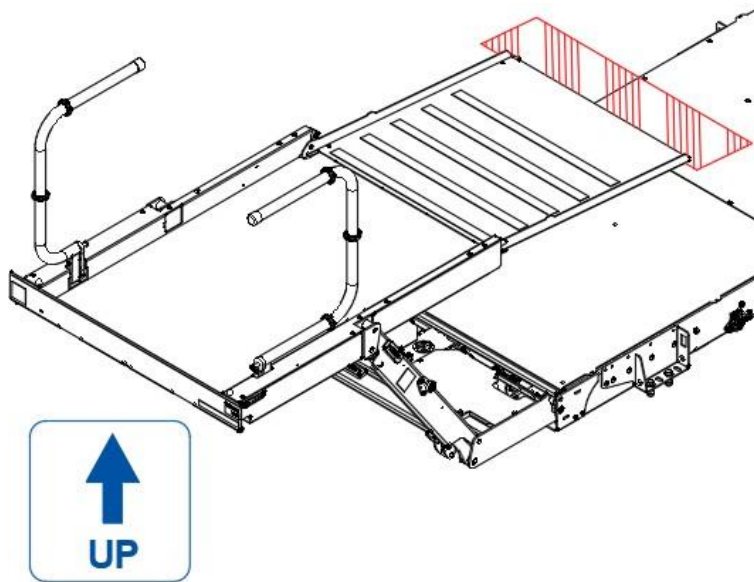


WARNING

	<ul style="list-style-type: none">• The triangular area between the platform and the lift arms diminishes as the platform rises. Parts of the body protruding into that area can be crushed or sheared upon lifting. This will result in serious bodily injury.• Therefore, ALWAYS keep arms, feet and clothing clear of pinch points and moving parts of the lift.• NEVER reach over or through any of the moving parts of the lift.• ALWAYS keep visual control over the entire working area of the lift.
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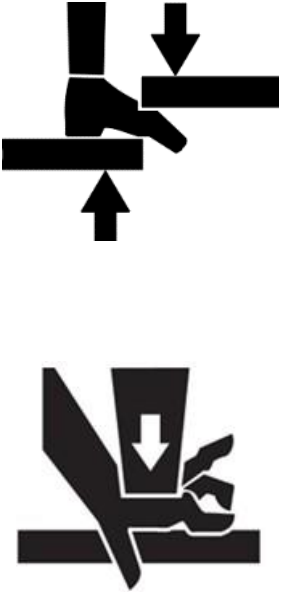
CAUTION

- When standing inside the vehicle, ALWAYS beware of the crushing zone between the bridge plate and the vehicle floor.

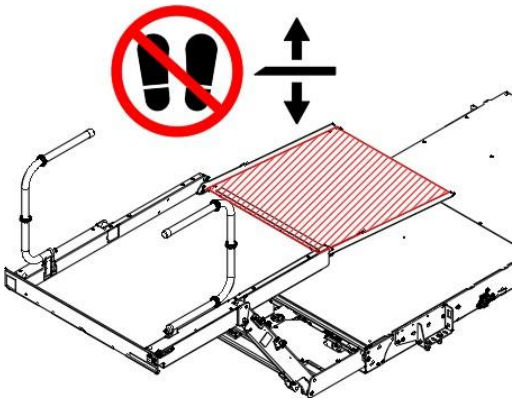
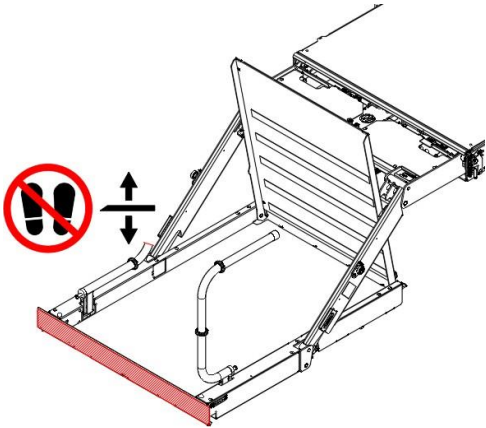
**WARNING**

A black silhouette of a foot is shown on a hatched ground line. Above the foot, a red arrow points downwards towards the foot. To the left of the arrow is a red triangle containing a white exclamation mark, indicating a warning of impact or falling objects.	<p>Impact by the platform or moving parts of the lift can result in bodily injury.</p> <ul style="list-style-type: none">• Therefore, also when standing inside the vehicle, ALWAYS stay clear of the moving platform.• ALWAYS stand at a safe distance from the bridge plate as it approaches the vehicle floor.
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WARNING

	<p>The operator or other persons approaching too close to these danger zones risk serious bodily injury or death by pinching, crushing or shearing of limbs, upper body or head. To prevent these hazards:</p> <ul style="list-style-type: none"> • ALWAYS stand clear of the range of motion of the platform and moving parts of the lift. • Keep hands, feet and upper body clear of pinch points and moving parts of the lift. • When standing on the platform, ALWAYS hold onto the guard rails . • When operating the lift from a different position, ALWAYS stand on the ground at a safe distance from the platform and the moving parts of the lift. • DO NOT allow any other person to stand near the lift and its platform.
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CAUTION


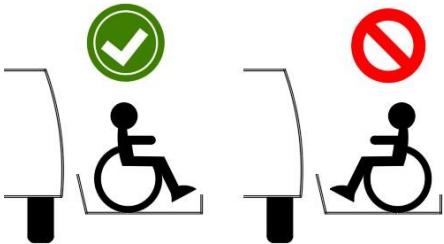
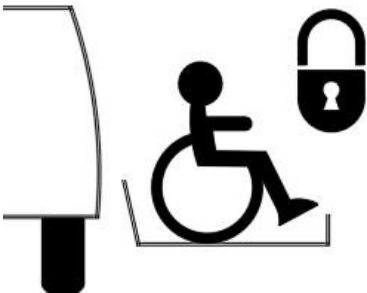
<p>NEVER allow anybody to stand on or hinder the bridge plate at the inboard platform edge when the platform is set in motion or is in motion.</p>	<p>NEVER allow anybody to stand on or hinder the roll stop at the outboard platform edge when the platform is set in motion or is in motion.</p>
	

WARNING

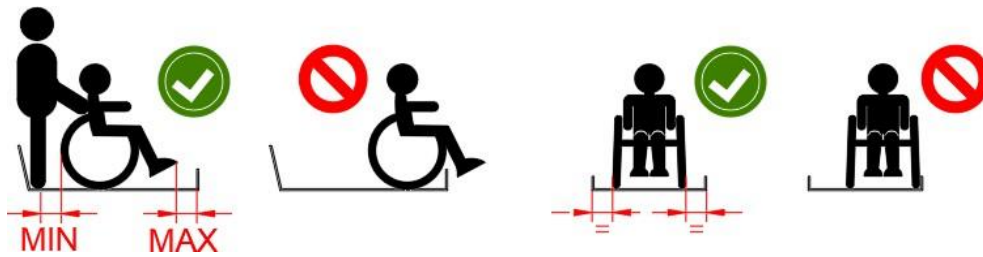
- The operator and the wheelchair occupant or platform occupant SHALL NOT attempt to leave the platform before it has reached its final position for embarkation or disembarkation, either at the ground or at the vehicle floor.
- Any persons assigned to assisting the wheelchair or platform occupant with embarkation or disembarkation, MUST stay out of reach of the platform until it has reached its final position and has come to a complete stop, either at the ground or at the vehicle floor.

ADDITIONAL INSTRUCTIONS FOR THE WHEELCHAIR OCCUPANTS AND STANDEES

WARNING

	<ul style="list-style-type: none"> • The roll stop prevents the wheelchair from slowly and unexpectedly rolling off the platform during lifting and lowering. It is NOT designed to stop fast and powered movements. • When the wheelchair rolls and falls off the platform, this can cause serious bodily injury to the wheelchair occupants or any persons standing near the platform.
	<ul style="list-style-type: none"> • To maximise the effectiveness of the roll stop, ALWAYS direct the small front wheels of the wheelchair towards to the roll stop. The roll stop is NOT designed to bring the big rear wheels of a wheelchair to a positive stop in case of abrupt or fast movement.
	<ul style="list-style-type: none"> • ALWAYS board the platform slowly and cautiously. • Do NOT ride against the roll stop as a mean of braking. • ALWAYS engage the parking brakes of the wheelchair prior to moving the platform. • For electric wheelchairs, ALWAYS put the controls in neutral position and switch the power off. If possible, the controls should be switched off and set to manual mode before embarking the platform, and the wheelchair be pushed manually onto the platform to reduce and control the speed.

- Make sure the wheelchair, wheelchair occupant and the standee don't interfere with the roll stop at the outboard platform edge and the automatic bridge plate at the inboard platform edge.
- Make sure the wheelchair occupant and standee are positioned as close as possible to the vehicle without interfering with the automatic bridge plate; and centrally between the 2 lift arms

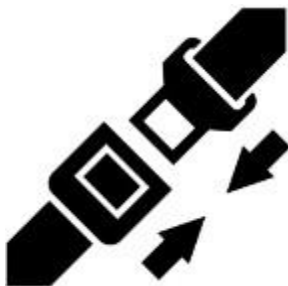


- When exiting the vehicle, never back onto the platform. Always face outward, ensure the platform is safely in place at the loading floor of the vehicle, the guard rails are secured in the upright position and the roll stop is raised and secured in vertical position.
- Use extreme care in wet or slippery conditions. Wheelchair brakes are less effective if the platform and / or wheels of the wheelchair are wet or dirty.

WARNING



- A fall of the platform may cause serious bodily injury or death to the platform occupants. Standees on the platform **MUST ALWAYS** make sure their footing is solid.
- Standees and wheelchair occupants physically capable of doing so, **MUST ALWAYS** hold onto the guard rails at the side of the platform.



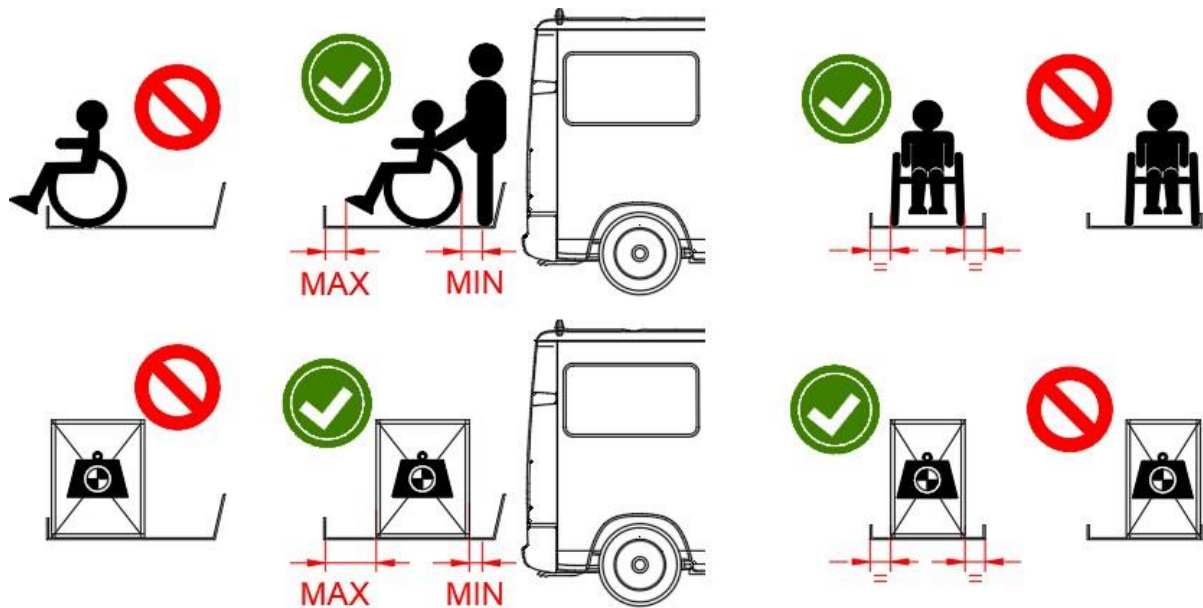
- Whenever available, position and secure the wheelchair-equipped safety belt (torso restraint) before loading the wheelchair onto the platform.

- Different disabilities require different types of wheelchairs and different types of wheelchair-equipped safety belts (torso restraint systems). It is the responsibility of the wheelchair occupant to have his or her wheelchair equipped with suitable safety devices.
- Wheelchair lift attendants should be instructed on any special needs and / or procedures required for the safe transport of the wheelchair occupants.
- Attendants on the platform pushing the wheelchair on and off, **MUST** face the same direction as the wheelchair itself, to maintain visual control over the wheelchair occupant while lifting and lowering.
- Standees alone shall face the direction of travel, toward the vehicle when embarking, or away from the vehicle when disembarking. They shall stand in the centre of the platform and hold onto the guard rail(s) at the side of the platform.
- It is **FORBIDDEN** to remove the guard rails or any other safety devices.

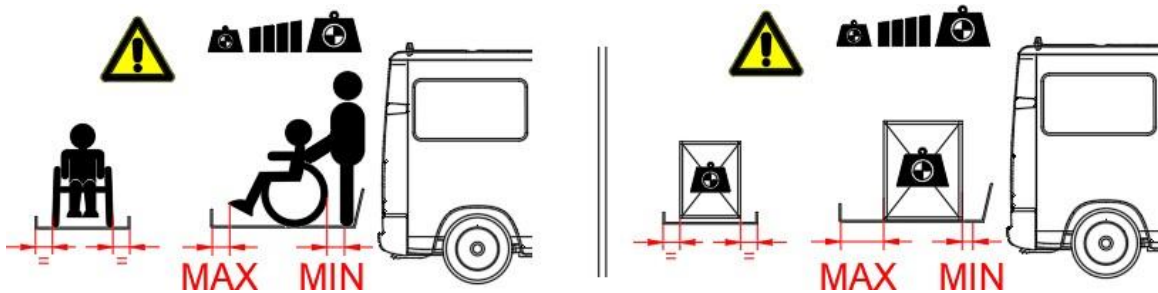
LOAD DIAGRAM

CAUTION

- Wheelchair and commercial lifts are **NOT** designed to lift / lower weights corresponding to their maximum rated capacity over the entire surface of the platform. The maximum rated capacity is valid at a center point of maximum load of 500 mm behind the inboard platform edge. Behind that point, the maximum safe working load diminishes.
- When lifting (= function UP), the wheelchair lift is normally protected against overload by the pressure relief valve in the hydraulic circuit. Most of overload events and resulting damage happen when lowering loads (= function DOWN).
- In order to prevent premature wear or damage of the lift, possibly resulting in accidents with injuries, it is important to follow the instructions below.
- The maximum rated capacity is indicated on the serial number decal and on the CE certificate of conformity. It is the maximum weight allowed to be carried on the platform in the best possible circumstances. This is under the following conditions:
- In longitudinal direction: the load or wheelchair is placed as close as possible to the vehicle and the inboard platform edge.
- In lateral direction: the load or wheelchair is placed in a central position between the lift arms (not out of center to one of the sides of the platform).



- Whenever the loading circumstances deviate from these best possible conditions, the safe working load (=SWL) decreases by 30%.



- The dimensions of the load or wheelchair should never exceed those of the platform. The load or wheelchair should never protrude beyond the perimeter of the platform.

OPERATING INSTRUCTIONS—PRINCIPLES AND PROCEDURES

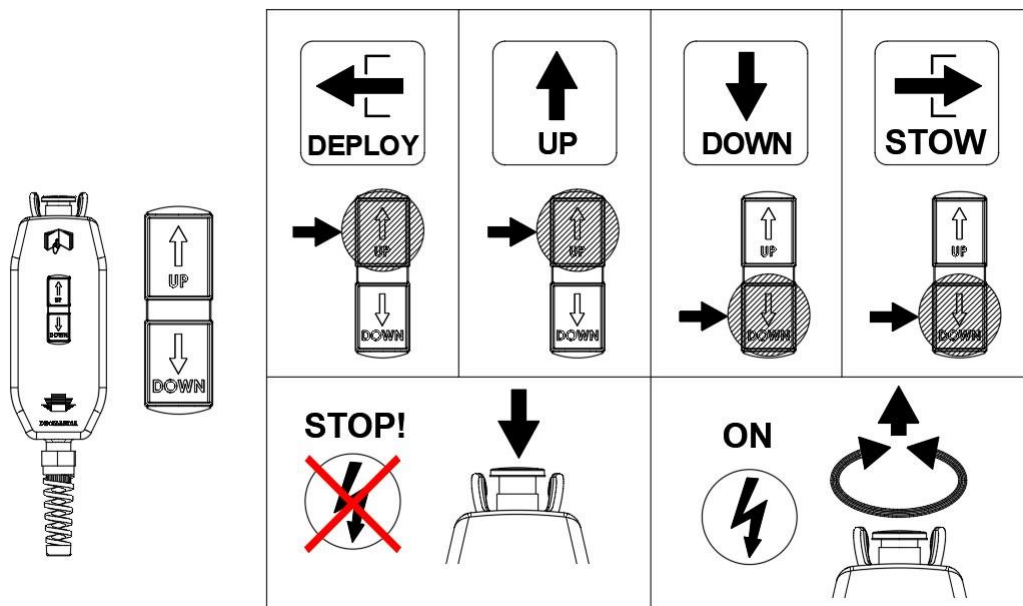
Control Units

The following types of controls are used on the DH-CH* lifts.

Standard 2-Button Wander Lead With Spiral Cable

- This control unit has 2 buttons to control the functions DEPLOY – UP – DOWN - STOW.
- Press DEPLOY to slide the platform out of the cassette. Continue to press UP to raise the platform, then open the bridge plate and the guard rails.
- To stow the platform, start from a platform position approx. 15 cm above the cassette. Stow the guard rails and bridge plate in the travel position. Press DOWN to lower the platform on the lift arms. Continue to press STOW to slide the platform back in the cassette.

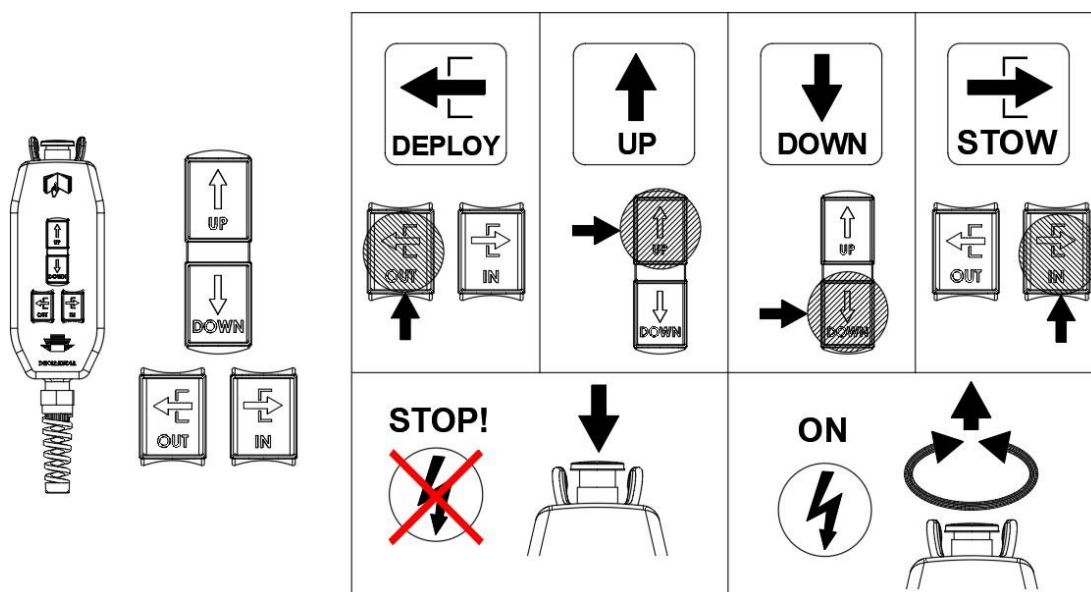
Operation:



Optional 4-Button Wander Lead With Spiral Cable

- This control unit has 4 separate and dedicated buttons to control the functions DEPLOY – UP – DOWN - STOW.
- Press DEPLOY to slide the platform out of the cassette. Then press UP to raise the platform. Open the bridge plate and the guard rails.
- To stow the platform, start from a platform position approx. 15 cm above the cassette. Stow the guard rails and bridge plate in the travel position. Press DOWN to lower the platform on the lift arms. Then press STOW to slide the platform back in the cassette.

Operation:



SWITCHING THE MAIN POWER ON/OFF

- The electrical power to the wheelchair lift is switched ON / OFF by means of a cabin switch, usually mounted near the driver's position.



- Push the button to switch the electrical power to the wheelchair lift ON.
- Push the button in opposite direction to switch the electrical power the wheelchair lift OFF.

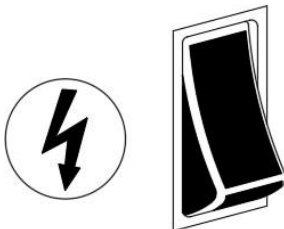
STANDARD OPERATION INSTRUCTIONS

- Prior to operating the lift, ALWAYS take note of the safety features, door system, door interlocks etc. installed by the manufacturer of the vehicle and the operation instructions issued by him. These might have a significant influence on the safety of the operator and any persons lifted or lowered with the platform.
- Negligence can put the operator and other parties at great risk of serious bodily injury and death.

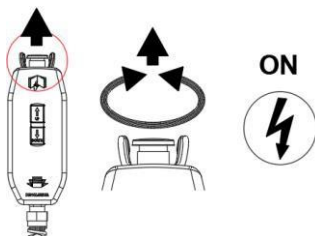
Deployment Of The Platform



- Consult the operation manual before getting started. Follow ALL safety and operation instructions.



- Switch ON the electrical power to the lift by means of the cabin switch.



- Ensure the emergency stop button is disengaged.



- For 2-button controls, press UP to slide the platform out of the cassette.
- For 4-button controls, press DEPLOY to slide the platform out of the cassette. Hold the button until the platform comes to a complete stop at its dedicated work position.



- Press up to raise the platform approx. 10-15 cm.



- Manually open the bridge plate at the inboard platform edge.



- Raise the guard rails at the left and right side of the platform.



- ALWAYS make sure the guard rails are properly secured in the upright position.



- The lift is now ready for use.

Loading And Unloading



- Press DOWN to lower the platform to the ground.



- DO NOT step or ride off the platform before it has come to a stop at the ground, and the roll stop is fully tilted down.



- Load and unload at the ground, help wheelchair occupants embark and disembark in accordance with the instructions from page 36 onwards.



- Press UP to raise the platform from the ground to the vehicle floor.



- When the platform leaves the ground, ALWAYS make sure the roll stop is raised and secured in the upright position.



- Lift (= UP) and lower (= DOWN) in accordance with the instructions in this manual.



- While lifting (= UP), the bridge plate will tilt down automatically as the platform approaches the vehicle floor. DO NOT stand on the bridge plate before the platform has come to a complete stop.



- Press UP until the platform has come to a complete stop. DO NOT disembark before the bridge plate is level with the vehicle floor and is solidly supported by it from underneath.

Stowing The Platform In Travel Position



- Press UP to raise the platform approx. 15 cm above the level of the cassette.



- Unlock the guard rails at the left and right side of the platform.



- Fold the guard rails back onto the platform surface.



- Fold the bridge plate back on top of the guard rails.



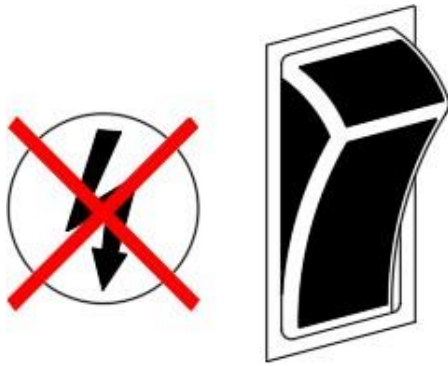
- Press DOWN to lower the platform onto the end stops mounted on the lift arms.



- For 2-button controls, continue to press DOWN to stow the platform until it comes to a complete stop at its travel position (= STOW).
- For 4-button controls, press STOW until the platform comes to a complete stop at its travel position.



- Make sure the platform is fully retracted inside the cassette and properly locked.



- Switch OFF the electrical power to the lift by means of the cabin switch.

CAUTION

- At all times during operation, release the activated button(s) to stop the platform from moving. Additionally switching off the cabin switch will switch off the electrical power to the lift

EXTRA INSTRUCTIONS FOR EXTENSIBLE PLATFORMS

Wheelchair lifts DH-CH003* are usually equipped with an extensible platform. Depending on options chosen, also other types of lifts may be equipped with an extensible platform.

The functions DEPLOY – UP – DOWN - STOW operate in the same way as explained. To deploy the lift, first open the bridge plate and raise the guard rails. Then pull out the extensible point by hand. To stow the lift, first push in the extensible point by hand. Then fold down the guard rails and bridge plate.

Deployment Of The Platform



- Follow the instructions of page 40 to deploy and lift the platform approx. 10-15 cm above cassette height.



- Manually open the bridge plate at the inboard platform edge.



- Raise the guard rails at the left and right hand side of the platform.



- ALWAYS make sure the guard rails are properly secured in the upright position.



- Manually pull out the extensible point of the platform until you feel a hard stop.



- The lift is now ready for use.

Stowage Of The Platform

Upon stowage of the platform, proceed in opposite order:

1. Press UP to raise the platform approx. 15 cm above the level of the cassette.
2. Manually push in the extensible point until you feel a hard stop. It will not be possible to fold down the guard rails if the extensible point is not fully retracted.
3. Unlock the guard rails at the left and right side of the platform. Carefully fold them back onto the platform surface. If they get stuck, the extensible point is probably not fully pushed in.
4. Fold the bridge plate back on top of the guard rails.
5. Further proceed as explained in page 40 onwards.

EXTRA INSTRUCTIONS FOR DH-CH101* AND EXTREME HEIGHTS

Wheelchair lifts DH-CH101* are usually mounted in a compartment above the wheels of the vehicle. Other types may also be mounted high above ground level.

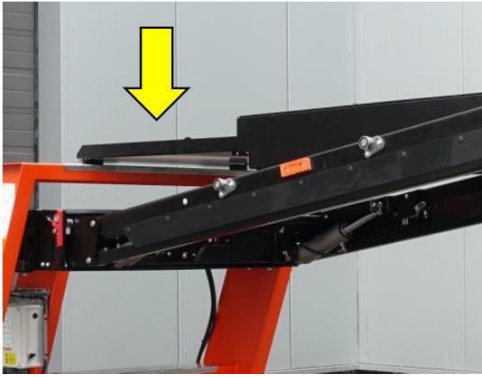
The opening of the bridge plate requires that the platform be raised 10-15 cm after sliding the lift out into its work position. The handling of the guard rails might be difficult at that height.

In such cases, it is better to first lower the platform (= DOWN) to a more convenient height, then raise the guard rails in the upright position.

Deployment Of The Platform



- Follow the instructions on page 40 until the platform is raised approx. 10-15 cm above the cassette height.



- Manually open the bridge plate at the inboard platform edge.
- Attention! Due to the high position of the platform, the bridge plate will tilt over almost 180°. Beware and expect this much rotation!



- Press DOWN to lower the platform to a more convenient height, that allows the operator to raise the guard rails comfortably.



- Raise the guard rails at the left and right side of the platform. ALWAYS make sure the guard rails are properly secured in the upright position.



- If so equipped, deploy the guard rail extensions

Stowage Of The Platform

Upon stowage of the platform, proceed in opposite order:

1. Press UP or DOWN to position the platform at a convenient height for stowing the guard rails.
2. Unlock the guard rails at the left and right side of the platform. Carefully fold them back onto the platform surface. If so equipped, fold back the guard rail extensions.
3. Press UP to raise the platform approx. 10 cm above the level of the cassette.
4. Fold the bridge plate back on top of the guard rails.
5. Press DOWN to lower the platform onto the end stops mounted on the lift arms.
6. For 2-button controls, continue to press DOWN to stow the platform until it comes to a complete stop at its travel position (= STOW). For 4-button controls, press STOW until the platform comes to a complete stop at its travel position.
7. Further proceed as explained from page 40 onwards.

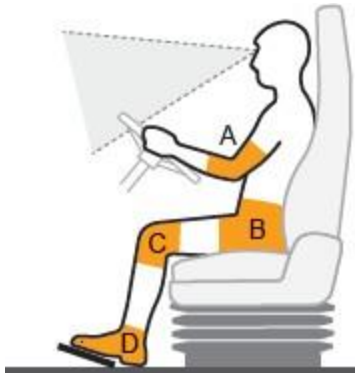
SEATS

DRIVER'S 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.

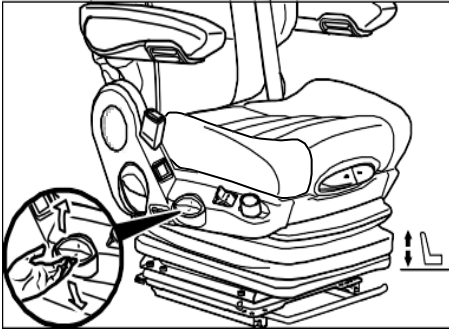
An improper adjusted seat may affect the ability to operate of the vehicle properly in a safe manner. Proper settings prevent accidents which may cause serious or fatal injuries.

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

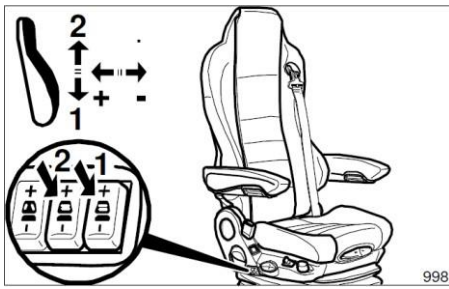


The height can be adjusted in 8 steps.

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.

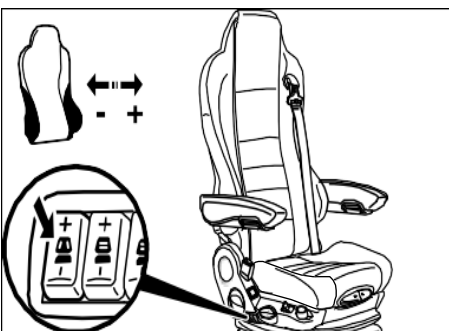
Lumbar Support



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 „-“.

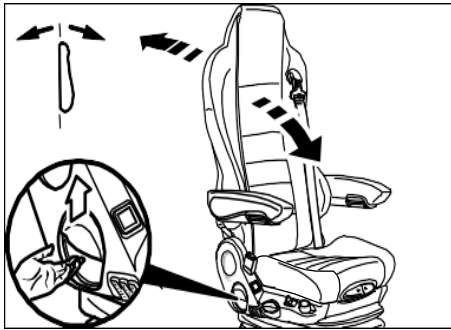
Lateral Support Adjustment



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

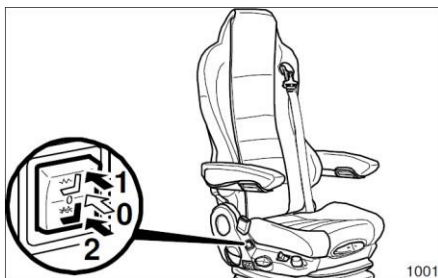


Pull up the locking lever to release the backrest catch. When releasing the backrest catch, do not apply load to the backrest by pressing against it.

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



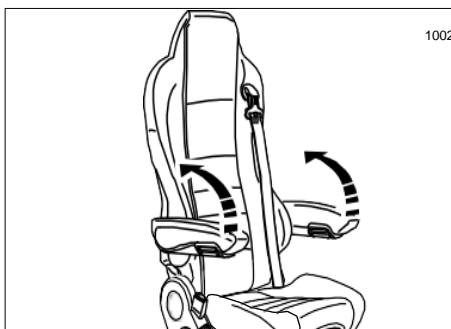
By operating the seat heater switch, the heating mats in backrest and seat cushion can be heated in two heating steps.

0 = heater OFF

1 = heater ON (heating step 1)

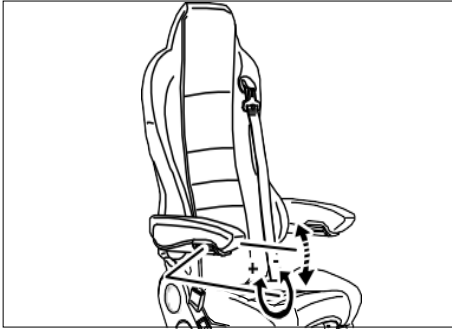
2 = heater ON (heating step 2)

Armrests



The armrests can be folded up if required.

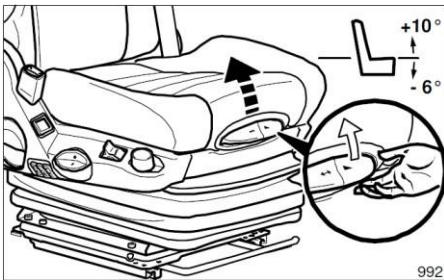
Armrest Adjustment



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.

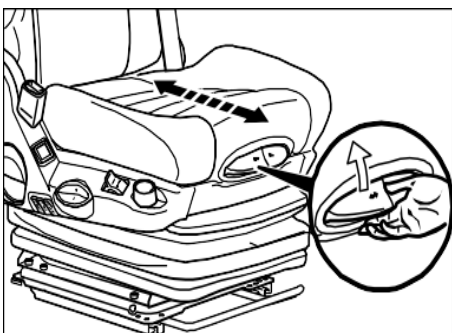
Seat Pan Angle Adjustment



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 $+10^{\circ}$.

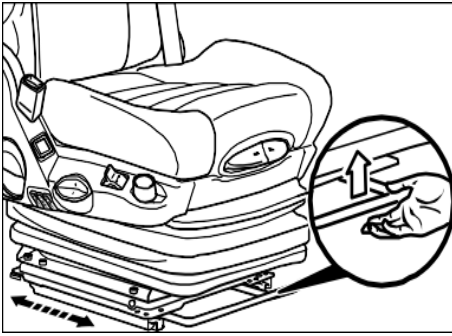
Seat Depth Adjustment



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.

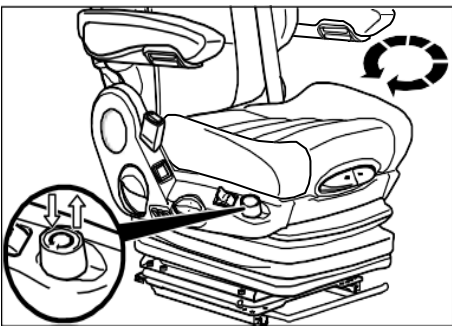
Adjustable within a range of 60 mm in 6 steps.

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.

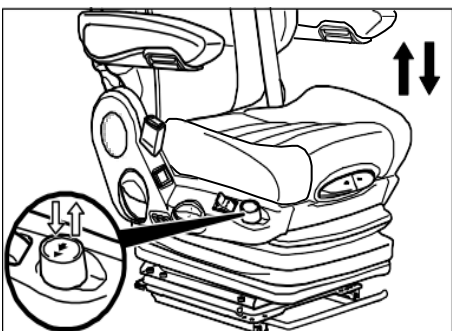
Swivel



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.

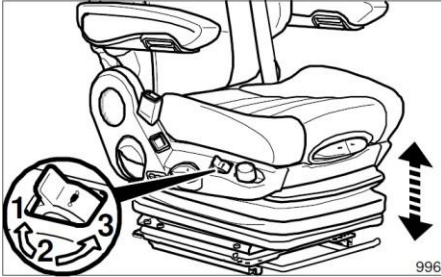
Quick Lowering



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.

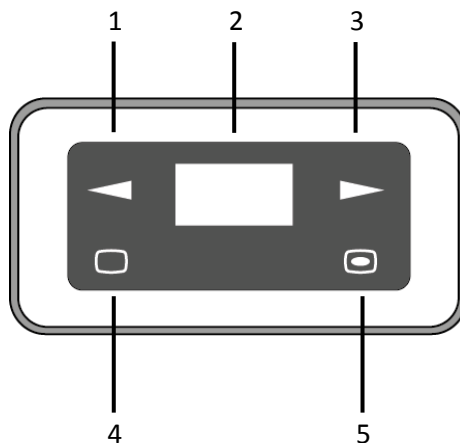
PREHEATER

The preheater can be used for preheating the engine at low temperatures in winter before starting.

The preselection timer enables you to preset the start of the heater operation up to 7 days in advance. It is possible to program 7 different starting times, only one of which can be activated.

The activation of the preset time is only possible for the same and the following day. Activation for Sunday and Monday is already on Friday, activation for Monday is possible on Saturday.

With switched on ignition, the display shows the current time and day of the week.



No.	Name
1	Control switch
2	Display
3	Control switch
4	Power off switch - Cancel switch
5	Power on switch - Confirm switch

BUTTON FUNCTIONS



LONGPRESS Button

The button must be pressed for longer than 2 seconds.

The heater is switched on immediately if ON or Off appears in the display (except if programming is running or while making settings).



SHORTPRESS Button

The button must be pressed for less than 2 seconds,

- If the display shows Off → EasyStart Timer ON, the Start display appears.
- A selected function is confirmed.
- Inputs are confirmed.



LONGPRESS Button

The button must be pressed for longer than 2 seconds,

- All functions are ended.
- If the display shows Off → EasyStart Timer On, the Start display appears.



SHORTPRESS Button

The button must be pressed for less than 2 seconds,

- The displayed, activated function is ended, other activated functions are retained.
- With each Short press the display changes to a next-higher level up to EasyStart Timer Off.
- The Start display appears and no function is active: → EasyStart Timer Off.
- EasyStart Timer is in submenu → the setting is exited, already set values are not saved.
- If the display shows Off → EasyStart Timer On, the Start display appears.

Press**Button 1x / Keep Pressed**

- EasyStart Timer is in the Main menu and the Start display appears → in the Menu bar the next, righthand symbol appears in the middle and flashing.
- EasyStart Timer is in the → submenu, the displayed value is changed (larger), or the next selection is displayed.
- If the display shows Off → EasyStart Timer On, the Start display appears.

Press**Button 1x / Keep Pressed**

- EasyStart Timer is in the Main menu and the Start display appears → in the Menu bar the next, lefthand symbol appears in the middle and flashing.
- EasyStart Timer is in the → submenu, the displayed value is changed (smaller), or the next selection is displayed.
- If the display shows Off → EasyStart Timer On, the Start display appears.

NOTES ON OPERATION AND SETTING

Activating The Easystart Timer

If the display is not lit the EasyStart Timer must be activated (not if heating On with Longpress).

Short press on one of the four buttons, the Start display appears in the display, then continue with the operation or setting.

Activating A Menu Item

The symbol of the menu item to be activated appears in the middle and flashing in the display. In the case of several activated menu items the symbols are displayed alternately.

Display

The display is lit


- During use of the EasyStart Timer.
- If terminal 58 is connected, with switched on vehicle lighting.
- If the heater / add-on heater is On.



Display Disappears

If the vehicle lighting is switched off, no heater or add-on unit is switched on or if no setting or actuation is made, the display goes out within 10 seconds, i.e. the EasyStart Timer switches to standby.

For renewed input, one of the four buttons must be pressed first (not in heating On with Longpress).

Flashing Symbol / Flashing Value

In the Main menu a flashing symbol in the Menu bar is activated with the  button.

In the submenu a flashing value can be confirmed or a selection made using the  or  button.

Heating On With LONGPRESS

The heater is switched on immediately. An add-on heater is not switched on immediately.


Heating OFF With LONGPRESS

If a heater and an add-on unit is in operation both are switched off.



Cancel / Exit Settings

The setting can be cancelled or exited by pressing the  button.

Confirm Input

The settings and changes must always be confirmed by pressing the  button, otherwise they are lost.

Setting The Operating Time

The operating time can be set using the  or  button. Setting range of the operating time min. 10 – max. 120 minutes, the input is made in 1 min. intervals. Continuous heating mode is additionally possible for air heaters.

The operating time for a heater and for an add-on unit can be set independently of each other.

Extending The Operating Time

The operating time can be extended to up to 720 min, the input is made from the 120th min. in 5 min intervals.

Ventilation Operating Mode

Ventilation mode is not possible with all heater types (see the Technical Description of the heater for details).

Temperature Sensor

In the settings and operations described in the following it is assumed that a temperature sensor is connected for a water heater.

In the case of air heaters the temperature sensor installed in the heater and which is provided for control of the heater can also be used to determine the interior temperature.

Add-On Unit

An add-on unit can be e.g. a second heater or parking air conditioning. Further, it is also possible to combine a heater with a fan; the fan is then used for air distribution in the vehicle interior.

A heater and the add-on unit can be operated simultaneously or independently of each other.

Factory Setting

Program / Preselection (for all heaters)

- Weekday group Mon – Fri
- Departure time 07:00
- Language DE
- Time format 24 h
- Operating time for preselection (preset) 30 minutes

Air Heaters

- Continuous heating operating time
- Setpoint temperature 21 °C






Water Heaters

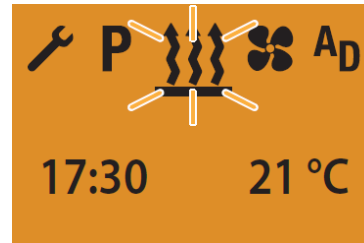
- Operating time 30 minutes
- automatic operating time calculation OFF

Main Menu

MENU BAR

The following menu items can be selected.





Symbol	Function
	Heating On / Off
	Ventilation On / Off
	Add-on unit On / Off (e.g. a second heater)
	Settings
	Program / Preselection



Menu bar

Status area

NOTE

- The **AD** symbol for the Add-On Unit menu item must be activated in the Workshop menu; contact ISUZU Dealer.
- The  symbol for the ventilation menu item is now displayed, if the heater supports this function.
- Only the  and  symbols are displayed in vehicles in ADR mode. If the heater supports the Ventilation function the  symbol is also displayed.

STATUS AREA

If no menu item is activated, the current time and, if an (optional) temperature sensor is connected, the temperature in the vehicle interior are displayed in the status area.

Start display:

- Time, e.g. 17:30
- Temperature in the vehicle interior, e.g. 21 °C.

If a menu item is activated (heating, ventilation, add-on unit, settings or program / preselection), different information is displayed in the status area; this appears and is described in the relevant sections.

SUBMENU



Menu bar




Input area

Display:


e.g. Heat ing On / Operating time 107 min.

In the submenu, the symbol of the selected menü item appears in the middle of the display.

The corresponding set value is displayed flashing in the entry area and can be set using the

 or  button and confirmed with the  button.

Heating Immediately With Longpress (Without Settings)

Press the  Longpress button for longer than 2 seconds.

Heater On.



Display for air heaters in continuous heating mode (factory setting).



NOTE

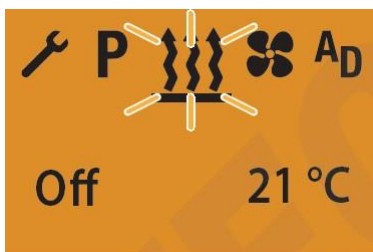
- After switching on, “On” is displayed for 2 sec and then the remaining operating time or ∞ for air heaters.
- Set values are copied from the previous heating mode.
- If Longpress is pressed during heating mode the display switches to the Heating submenu Set
- Temperature Setpoint – (only for air heater) and Set Operating Time.
- During heating mode it is possible to switch to another menu item. Under the Ventilation menü item, check the operating time and if necessary adjust.

Heating Off With Longpress

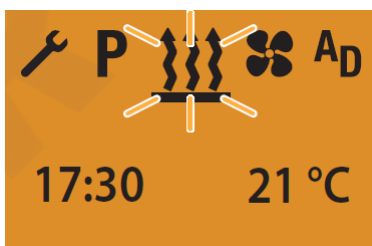
Display On, the Heating menu item is displayed.

Press the Longpress button for longer than 2 seconds.





Heater Off.



After the Heating Off the Start display appears. If the vehicle lighting is Off the display lighting goes out after 10 seconds.

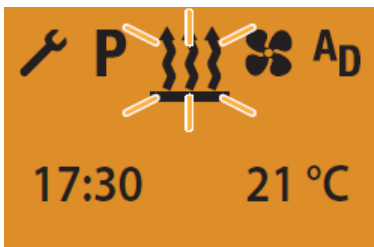



NOTE

- With Heating Off with Longpress all active functions are ended.
- The following actions are possible during the Heating Off display:
- Use the  or  button to select a menu item.
-  Short press button, the Start display appears, if the Short press button is pressed again, Display Off.
-  Short press button, the Heating submenu is displayed.

Heating On With Shortpress And With Settings

Display On, the Start display appears.



Press the  Short press button for less than 2 seconds.

NOTE

- The following settings and confirmations (temperature setpoint and operating time) are always required.

SET TEMPERATURE SETPOINT – FOR AIR HEATERS ONLY


If applicable, use the  or  button to set the temperature setpoint.

Temperature setpoint setting range:

8 °C – 36 °C in 1 °C increments,

46 °F – 97 °F in 1 °F increments.



Press the  button to confirm the temperature setpoint.


SETTING THE OPERATING TIME

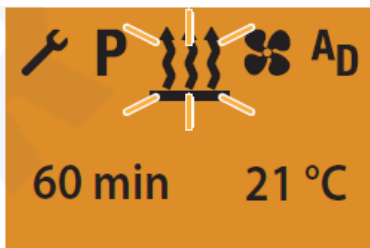
If necessary, use the  or  button to set the operating time.

Operating time setting range:

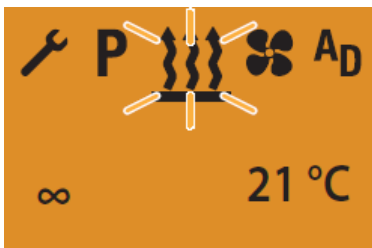
Min 10 – max 120 min in 1 min. increments, continuous heating mode is possible for air heaters.




Press the  button to confirm the operating time.
Heater ON.



Display for air heaters in continuous heating mode (factory setting).




NOTE

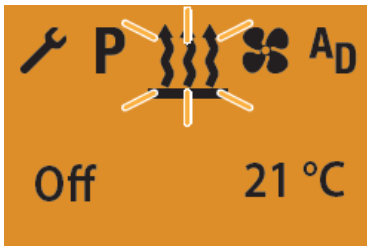
- After switching on, “On” is displayed for 2 sec and then the remaining operating time or  for air heaters.
- During heating mode it is possible to switch to another menu item. Under the Ventilation menu item, check the operating time and if necessary adjust.
- The changed operating time is offered again the next time the system is started.

Heating Off With Shortpress

Display On, the Heating menu item is displayed.

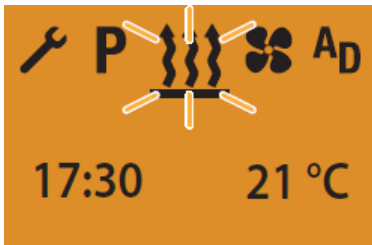
Press the  Short press button for less than 2 seconds.

Heater Off.







After the Heating Off the Start display appears.

If the vehicle lighting is Off the display lighting goes out after 10 seconds.




NOTE

- The heater switches off, an active add-on unit remains in operation.
- The following actions are possible during the Heating Off display:
- Use the  or  button to select a menu item.
-  Short press button, the Start display appears, if the Short press button is pressed again, Display Off.
-  Short press button, the heating submenu is displayed.

Change The Temperature Setpoint And / Or The Operating Time During Operation


Display On, the Heating / Ventilation / Add-On Unit Heating or Add-On Ventilation menu item is displayed.

Press the  Short press button for less than 2 seconds.

NOTE

- The temperature setpoint set before switching on the heater or confirmed temperature setpoint and the current remaining operating time (lower limit 10 min) are displayed as set values.
- The operating time and the temperature setpoint are changed once.
- Both set values must be confirmed.

SET TEMPERATURE SETPOINT – ONLY FOR AIR HEATERS, NOT FOR THE VENTILATION FUNCTION


Use the  or  button to set the temperature setpoint.

Temperature setpoint setting range:



8 °C – 36 °C in 1 °C increments,

46 °F – 97 °F in 1 °F increments.



Press the  button to confirm the temperature setpoint. The temperature setpoint is changed once.


SETTING THE OPERATING TIME

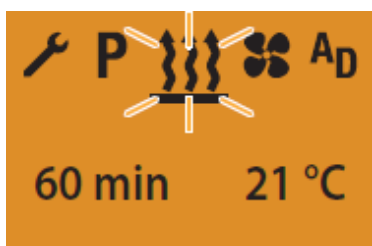
Use the  or  button to set the operating time.

Operating time setting range:

Min 10 – max 120 min in 1 min. increments, continuous heating mode is possible for air heaters.



Press the  button to confirm the operating time. The operating time is changed once.






Display for air heaters in continuous heating mode.




Set Ventilation On With Shortpress And If Applicable Set The Operating Time

Display On, the Start display appears.

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



Confirm the Ventilation menu item by pressing the  button.

NOTE

- The following setting or confirmation is absolutely necessary.


SETTING THE OPERATING TIME

If necessary, use the  or  button to set the operating time.

Operating time setting range:

Min 10 – max 120 min in 1 min. increments, continuous ventilation mode possible for air heaters.



Press the  button to confirm the operating time.


The operating time is changed permanently.




Display for air heaters in continuous ventilation mode.




NOTE

- After switching on, “On” is displayed for 2 sec and then the remaining operating time or  for air heaters.

- During ventilation mode it is possible to switch to another menu item. Under the Heating menu item, check the operating time and if necessary adjust.
- If the  symbol is not displayed the ventilation function is not activated or is not available for the heater.
- The changed operating time is offered again the next time the system is started.

Ventilation Off With Longpress

Display On, the ventilation menu item is displayed.

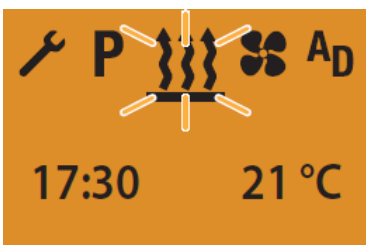
Press the  longpress button for longer than 2 seconds

Heater Off.








After the ventilation Off display the start display appears.

If the vehicle lighting is Off the display lighting goes out after 10 seconds.




NOTE

- With Ventilation Off with Longpress all active functions are ended.
- The following actions are possible during the
- Ventilation Off display:
- Use the  or  button to select a menu item.
-  Short press button, the Start display appears, if the  Short press button is pressed again, Display Off.
-  Short press button, the Ventilation submenu is displayed.

Ventilation Off With Shortpress

Display ON, the Ventilation menu item is displayed.

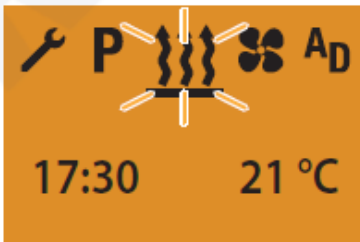
Press the  Short press button for less than 2 seconds.

Heater Off.








After the ventilation Off display the start display appears.

If the vehicle lighting is Off the display lighting goes out after 10 seconds.





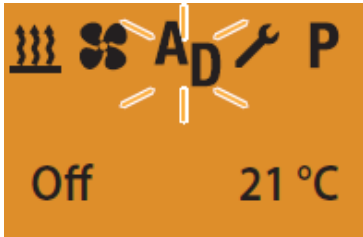
NOTE


- The heater switches off, an active add-on unit remains in operation.
- The following actions are possible during the Ventilation Off display:
- Use the  or  button to select a menu item.
-  Short press button, the Start display appears, if the  Short press button is pressed again,
Display Off.
-  Short press button, the Ventilation submenu is displayed.



Add-On Unit On – E.G. Activate The Heating Function For A 2nd Heater

Display on, the Start display appears.


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



Confirm the Add-On Unit menu item by pressing the  button.

Use the  or  button to select the wavy lines symbol.





Confirm the Heating function using the  button.

NOTE

- The following settings or confirmations are absolutely necessary.

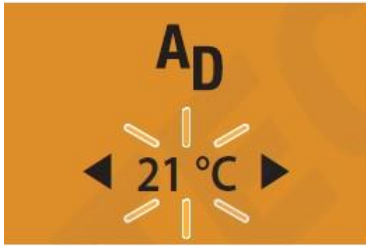
SET TEMPERATURE SETPOINT – FOR AIR HEATERS ONLY


Use the  or  button to set the temperature setpoint.

Temperature setpoint setting range:



8 °C – 36 °C in 1 °C increments,

46 °F – 97 °F in 1 °F increments.



Press the  button to confirm the temperature setpoint.


SETTING THE OPERATING TIME

Use the  or  button to set the operating time.

Operating time setting range:

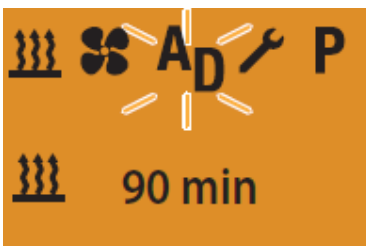
Min 10 – max 120 min in 1 min. increments, continuous heating mode is possible for air heaters.



Press the  button to confirm the operating time.

The operating time is changed permanently.


Heater On.



Display for air heaters in continuous heating mode (factory setting).





NOTE


- After switching on, “On” is displayed for 2 sec and then the remaining operating time or  for air heaters.
- During heating mode it is possible to switch to another menu item. Under the ventilation menu item, check the operating time and if necessary adjust.
- If the **AD** symbol is not displayed the Add-On Unit function is not activated or is not available for the heater.
- The add-on unit, e.g. a 2nd heater, can be operated simultaneously with the 1st heater yet with a different operating mode and with different values for the temperature setpoint and the operating time.
- The changed operating time is offered again the next time the system is started.

Add-On Unit On – E.G. Activate The Ventilation Function For A 2nd Heater

Display On, the Start display appears.


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



Confirm the Add-On Unit menu item by pressing the  button.

Use the  or  button to select the  symbol.





Confirm the ventilation function by pressing the  button.

NOTE

- The following setting or confirmation is absolutely necessary.


SETTING THE OPERATING TIME

Use the  or  button to set the operating time.

Operating time setting range:

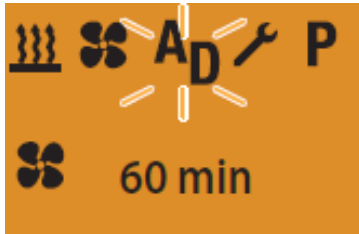
Min 10 – max 120 min in 1 min. increments, continuous ventilation mode possible for air heaters.



Press the  button to confirm the operating time.

The operating time is changed permanently.


Heater On.



Display for air heaters in continuous ventilation mode (factory setting).




NOTE

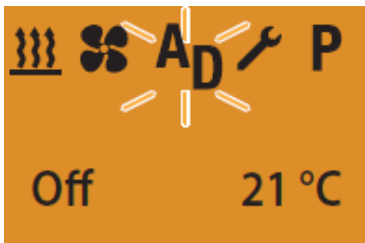
- After switching on, “On” is displayed for 2 sec and then the remaining operating time or  for air heaters.
- After switching on, “On” is displayed for 2 sec and then the remaining operating time or for air
- heaters.

- During ventilation mode it is possible to switch to another menu item. Under the HEATING menu item, check the operating time and if necessary adjust.
- If the **AD** symbol is not displayed the Add-On Unit function is not activated or is not available for the heater.
- The add-on unit, e.g. a 2nd heater, can be operated simultaneously with the 1st heater yet with a different operating mode and with different values for the temperature setpoint and the operating time.
- The changed operating time is offered a gain the next time the system is started.

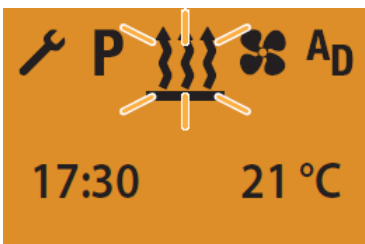
Add-On Unit Off With Longpress

Press the  Longpress button for longer than 2 seconds.





Add-on unit Off.




After the Add-On Unit Off display the Start display appears. If the vehicle lighting is Off the display lighting goes out after 10 seconds.




NOTE

- With Add-On Unit Off with Longpress all active functions are ended.
- The following actions are possible during the Add-On
- Unit Off display:
- Use the  or  button to select a menu item.
-  Short press button, the Start display appears, if the  Short press button is pressed a gain,

- Display Off.
-  Short press button, the Heating submenu is displayed.

Add-On Unit Off With Shortpress

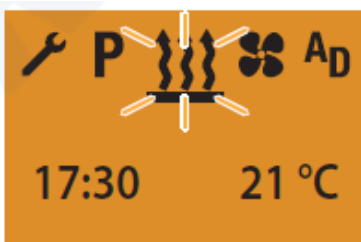
Display On, the Add-On Unit – Heating menu item is displayed.

Press the  Short press button for less than 2 seconds.





Add-on unit Off.



After the Add-On Unit Off display the Start display appears. If the vehicle lighting is Off the display lighting goes out after 10 seconds.



NOTE

- The following actions are possible during the Add-On
- Unit Off display:
- Use the  or  button to select a menu item.
-  Short press button, the Start display appears, if the Short press button is pressed again,
- Display Off.
-  Short press button, the Heating submenu is displayed.

General Information On Programming The Preset Time

The programming of the preset time is carried out in menu item **P**. The EasyStart Timer can be used to program 3 preset times. The 3 preset times can either all take place on one weekday or can be distributed between different weekdays.

3 weekday ranges are available to choose from, these can each be started daily with a preset time.

Weekday ranges:

Sat – Sun 2x Heating / Ventilation

Mon – Fri 5x Heating / Ventilation

Mon – Sun 7x Heating / Ventilation

If the system is activated with programmed weekday range, all weekdays are worked through consecutively; after that renewed programming is required.

DEPARTURE TIME OPERATING MODE (FACTORY SETTING)

Under the following conditions the preselected heating mode is not started on the current day.

The current day and the preselected day are identical.

The current time lies within the time period, departure time minus operating time.

START TIME OPERATING MODE

In Start Time operating mode the heater is started on the preselected day and when the set time is reached.

AUTOMATIC OPERATING TIME CALCULATION (FOR WATER HEATERS ONLY)

For water heaters and a temperature sensor connected to the EasyStart Timer the heating start is calculated automatically depending on the measured room temperature and the selected heating level (ECO or HIGH).

The operating time can lie between 10 and 60 minutes; operation is always ended 5 minutes after the programmed departure time. This can result in a minimum operating time of 15 minutes and a maximum operating time of 65 minutes.

The operating time set in the Program / Preselection menu is ineffective in this case.

In all other configurations the start takes place according to the preset operating time.



NOTE

- The following actions are possible during the Add-On
- The ECO and HIGH heating levels are only effective in conjunction with a programmed preset time.

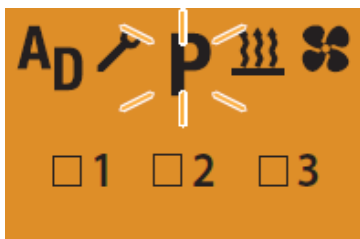
- The preset times are always departure times, even if the operating time calculation is deactivated.
- It is not possible to program more than 3 pre-set times.
- The max. operating time of 65 minutes for the automatic operating time calculation is a factory setting. This can be reduced to 15 minutes if necessary by the installation workshop.
- If the automatic operating time calculation function is activated for water heaters, the operating time for determining the time period is 60 min.

Program Preset Times

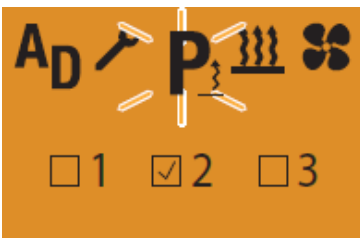
Display On, the Start display appears.


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

Display, if no preselection is activated.





Display, if a preselection is activated e.g. P2.



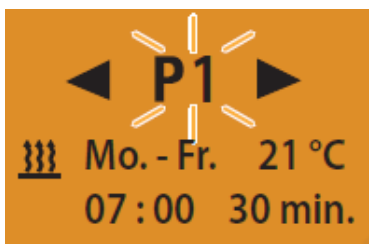
Confirm the Program menu item by pressing the  button.

Easystart Timer Settings

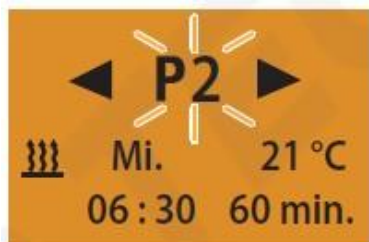
SELECTING THE PROGRAM MEMORY

The P1 program memory is displayed, if applicable, use the  or  button to select the next program memory P2, P3 or P1 again.

Program memory P1 display, factory setting.




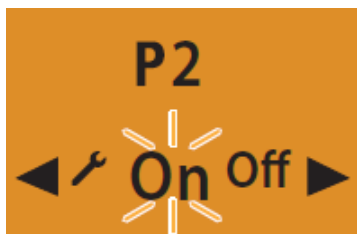
Program memory P2 display with programmed preselection.



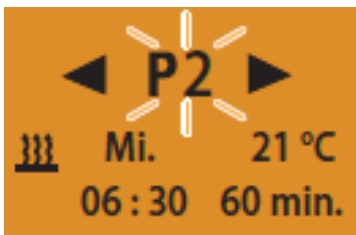
Press the  button to confirm the selected program memory.

ACTIVATING / DEACTIVATING THE PROGRAM MEMORY



Use the  or  button to select the "On" or "Off" setting.




Confirm the "On" or "Off" setting with the  button, the program, e.g. P2 is activated or deactivated.



NOTE


- After editing the program, press the  button to return to the Program / Preselection menu item or wait until
- if the vehicle lighting is On the Program / Preselection menu item is displayed,
- if the vehicle lighting is Off the display lighting goes out.
- Do not press the  button, as otherwise the “On” setting switches to “Off” and vice versa.

EDITING THE PROGRAM MEMORY

Use the  button to confirm the selected program memory, e.g. P2.

Use the  or  button to select the  symbol.




Press the  button to confirm the setting.

SELECTING THE WEEKDAY GROUP / WEEKDAY

Use the or button to select the weekday group Mon – Fri, Sat – Sun, Mon – Sun or a weekday Mon, Tue, Wed, Thu, Fri, Sat, Sun.




Press the  button to confirm the setting.

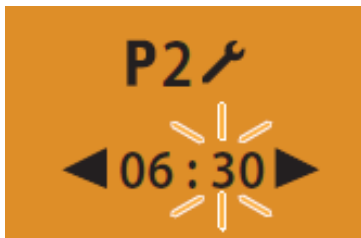
SETTING THE DEPARTURE TIME / START TIME


Use the  or  button to set the hours.







Press the  button to confirm the setting.

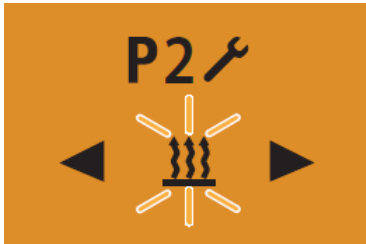
Use the  or  button to set the minutes.




Press the  button to confirm the setting.



SELECTING THE OPERATING MODE

Use the  or  button to deselect the  symbol or the  symbol.



Confirm the Heating or Ventilation function by pressing the  button.

SET TEMPERATURE SETPOINT FOR AIR HEATERS ONLY


Use the  or  button to set the temperature setpoint.

Temperature setpoint setting range:

8 °C – 36 °C in 1 °C increments,

46 °F – 97 °F in 1 °F increments.





Press the  button to confirm the temperature setpoint.

SELECTING THE HEATING LEVEL


Only for water heaters with automatic operating time calculation

ECO heating level = normal heating, approx. 20 °C.

HIGH heating level = convenient / comfortable heating, approx. 23 °C.

Select ECO heating level or HIGH heating level using the  or  button.



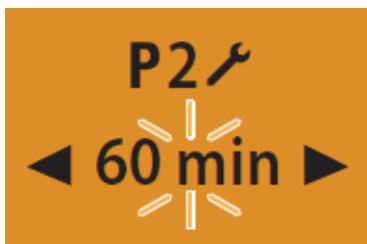
Press the  button to confirm the heating level.


SETTING THE OPERATING TIME

Use the  or  button to set the operating time.

Operating time setting range:

Min. 10 – max. 120 min. in 1 min increments.

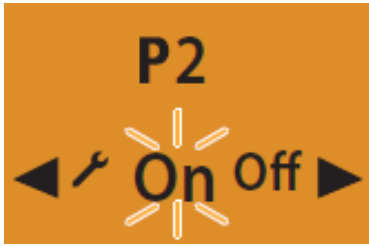



Press the  button to confirm the operating time.

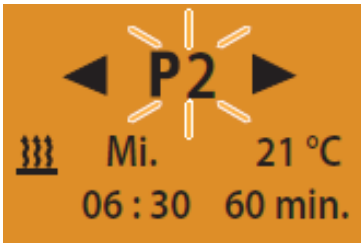
NOTE

- In the case of water heaters with automatic operating time calculation the operating time is limited to max. 65 min. The operating time cannot be set.
- For air heaters and preset mode the operating time is limited to 120 min. Continuous heating mode is not possible.



ACTIVATING THE PROGRAM MEMORY





Press the  button to confirm the "On" setting.




NOTE

- After editing the program, press the  button to return to the Program / Preselection menu item or wait until
- if the vehicle lighting is On the Program / Preselection menu item is displayed,
- if the vehicle lighting is Off the display lighting goes out.
- Do not press the  button, as otherwise the "On" setting switches to "Off" and vice versa.



DEACTIVATING THE PROGRAM MEMORY

Use the  or  button to select the "Off" setting.






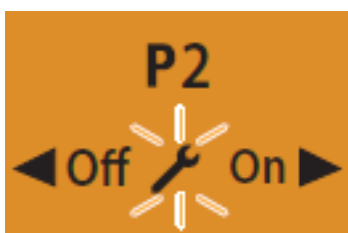
Press the  button to confirm the "Off" setting.

NOTE

- The settings remain saved.
- After editing the program, press the  button to return to the Program / Preselection menu item or wait until
- if the vehicle lighting is On the Program / Preselection menu item is displayed,
- if the vehicle lighting is Off the display lighting goes out.
- Do not press the  button, as otherwise the “On” setting switches to “Off” and vice versa.

EDIT THE PROGRAM MEMORY AGAIN

Use the  or  button to select the  symbol.






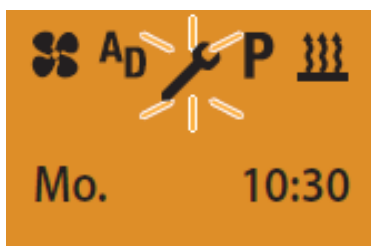
Use the button to confirm the setting


Settings

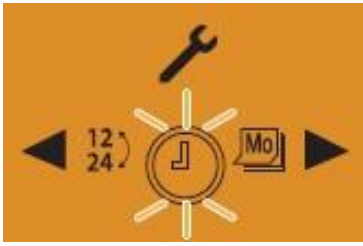
SETTING THE TIME


Display On, the Start display appears.

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




Confirm the Settings menu item by pressing the  button.



Confirm the Set the Time by pressing the  button.

Use the  or  button to set the hours.



Press the  button to confirm the setting.

Use the  or  button to set the minutes.






Press the  button to confirm the setting.

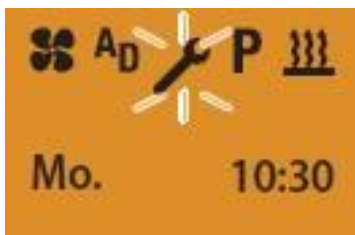
NOTE


- Do not press the button, as otherwise Set the Weekday appears in the display again.
- After making the setting, press the button to return to the Settings menu item or wait until
- If the vehicle lighting is On the Settings menu item is displayed,
- If the vehicle lighting is Off the display lighting goes out.

SETTING THE TIME FORMAT


Display ON, the Start display appears.




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



Confirm the Settings menu item by pressing the  button.





The Set the Time symbol  is displayed.

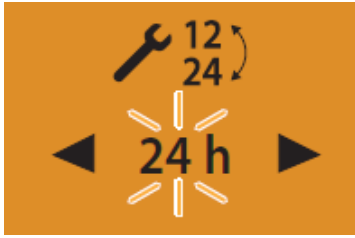
Use the  or  button to select the  Time Format symbol.




Press the  button to confirm the setting.

Use the  or  button to select the time format.





Press the  button to confirm the time format.

NOTE

- Do not press the button, as otherwise Set the Time Format appears in the display again.
- After making the setting, press the button to return to the Settings menu item or wait until
- If the vehicle lighting is On the Settings menu item is displayed,
- If the vehicle lighting is Off the display lighting goes out.

AIR CONDITION CONTROL UNIT



No.	Name
1	Opening/ Closing Button
2	Increment Button
3	Decrement Button
4	Mode Selection Button
5	Fan Speed Selection Button
6	Fresh Air Clack Button
7	Automatic (Heating- Cooling)
8	Manual
9	Failure Warning
10	Cooling
11	Heating
12	Fan (Ventilation)
13	Moisture Absorption

FUNCTIONS OF THE BUTTONS



Functions of the buttons have been described below related with the display and operations;

Opening/ Closing Button



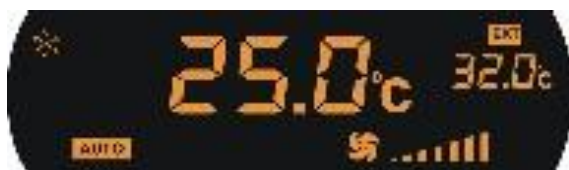
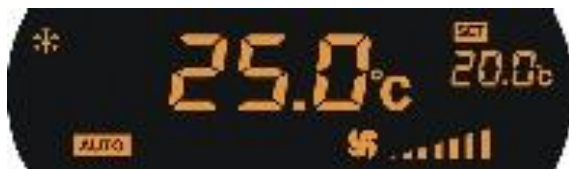
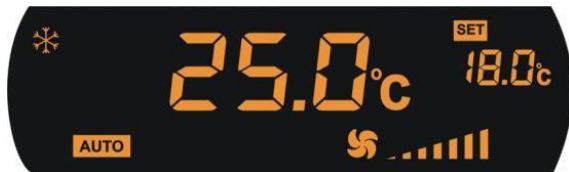
The system is opened by pressing the button. When the system is opened, the last set mode and values are shown on the display and the system is activated.

To close the system, press the same button for 3 seconds.

As the ignition key is closed, the system and therefore the control panel cannot be operated.

As seen in display; when the system is actuated values which are set before, Temperature 22 0C, Fan is in 3 position, system is in automatic cooling mode, are seen. After showing the set temperature value for 5 seconds on the display, the informations will continue to be shown on the display as seen

Increment Button



Increasing button is used to increase the set value.

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

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

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

New set values are shown for 5 seconds on the display, then the exterior temperature is shown by lighting the EXT icon on.

Decrement Button



It is used in decreasing temperature and parameter set values.

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

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

New set values are shown for 5 seconds on the display, then the exterior temperature is shown by lighting the EXT icon on.

Fresh Air Clack Button



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

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

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

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

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

Fan Speed Selection Button



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

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

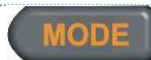
Fan speed cannot be changed in the automatic mode. When the fan speed is 0, heating/cooling process is stopped.








NOTE

- The heating process will not stop when the fan speed is 0 in models not having roof heating option.
- If the fan speed is increased, the system will continue to operate.

Mode Selection Button



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

No.	Name
	Heating and cooling (AUTO) *
	Cooling
	Heating **
	Fan
	Moisture absorption

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

** Is active in vehicles with automatic heater system.

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

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

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



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

MANUAL:



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

In the manual mode, functions will be like below.

**COOLING:**

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

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

**HEATING:**

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

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

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

**FAN (Ventilation):**

Heating and cooling is not performed in this mode, only air is ventilated. Fan intensity can be adjusted by the fan selection button.

**MOISTURE ABSORPTION:**

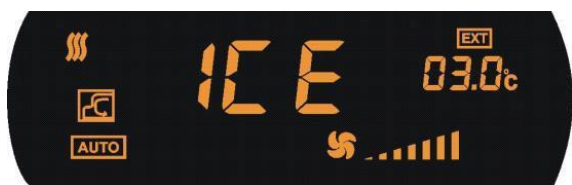
By operating heater and air conditioner at the same time, ventilation at the maximum fan speed is made. Ventilation time is 3 minutes. At the end of the ventilation period, the air conditioner continues to operate in the previous position.

NOTE

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

FUNCTIONS OF THE BUTTONS

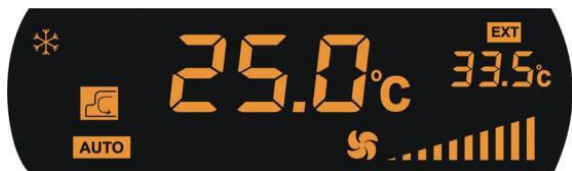
Other Specifications



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



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



FAILURE WARNING: When a failure happen in air conditioning system the failure sign will be seen on display, the fans will continue to work but the cooling operation will stop.

HEATER CONTROL UNIT

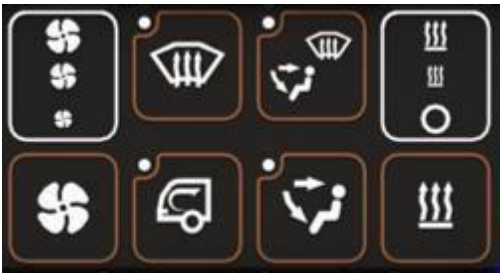


No.	Name
1	Driver Fan Level Setting
2	Driver Inlet Air Suction
3	Foot-Face Position
4	Driver Heater
5	Defrost Position
6	Mix Position
7	Passenger Heater Step Key



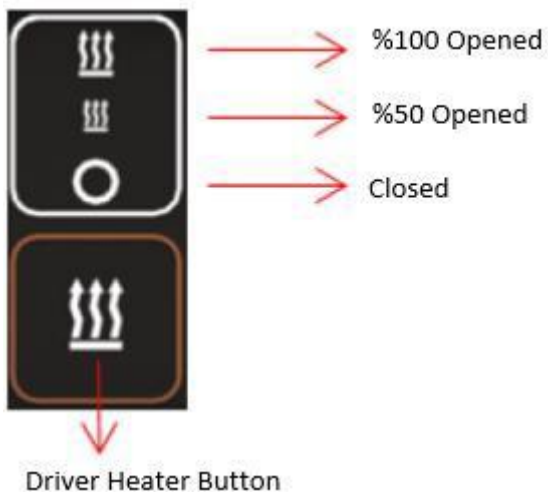
FUNCTIONS OF THE BUTTONS

Driver Blowing Section



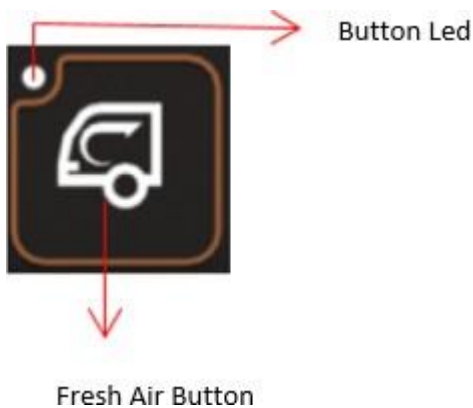
The ventilation control of the driver's area is provided by the buttons on the side. These buttons consist of driver heating, fresh air, driver fan, air direction buttons.

Driver Heater Button



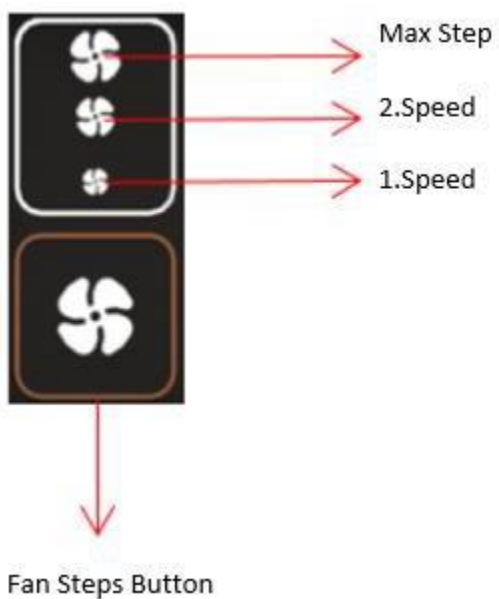
Controls front box heater water valve by 3 steps. Functions are closed, %50 opened and %100 opened. Lights up in orange are active position. It activates own output for pump and water valve when it receives signal.

Driver Fresh Air Button



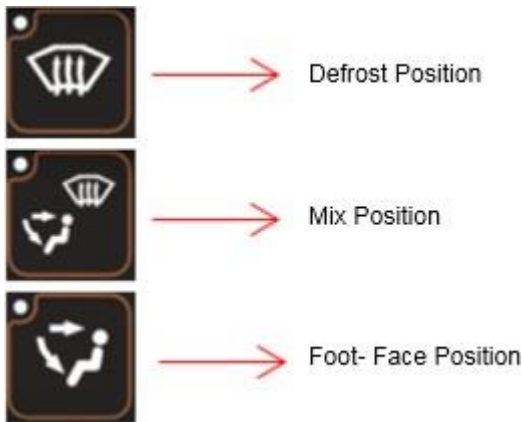
Driver fresh air button allows air suction from inside or outside of vehicle. It shows inlet air suction when led is active. It shows outlet air suction when led is passive.

Driver Fan Level Setting



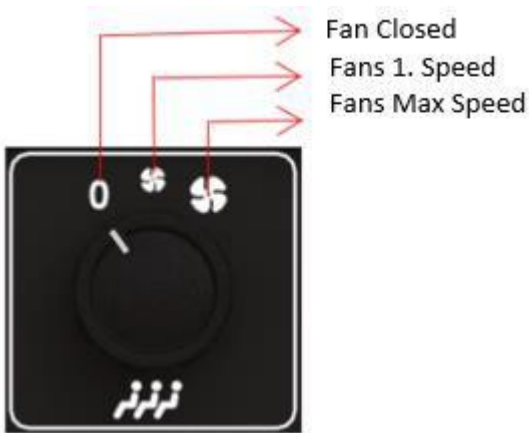
Driver fan level setting button allows fan setting of front box heater to regulate as a three level. Levels are %40 %70 and %100.

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




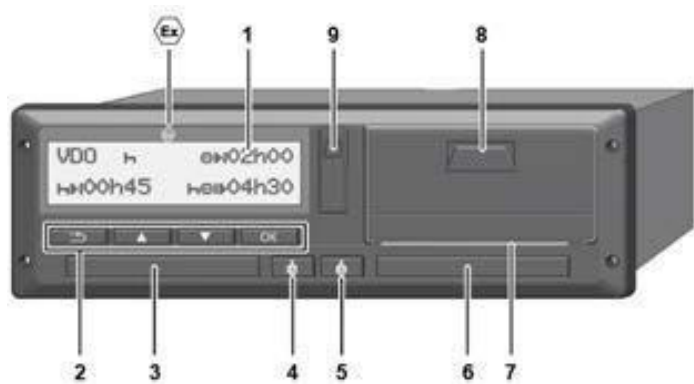
Passenger fans level setting button allows fan setting of passenger heaters to regulate as a two level. Levels are %50 and %100.

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 de- sired function.

Keep the button pressed: Scroll automatically.

 Press the button briefly: Con- firm 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 parametrisation 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.

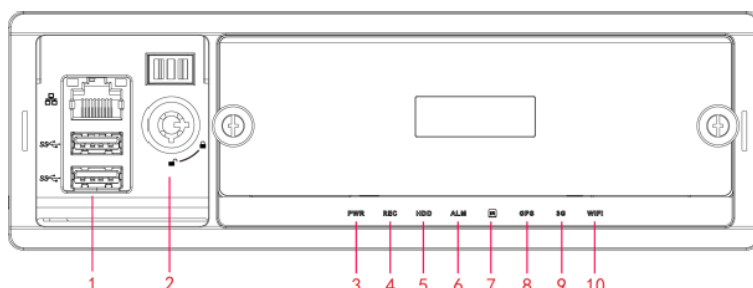
Mobile Digital Video Recorder

It integrates image process technology, wireless network technology, GPS technology, structure technology and vehicle information sampling and process technology together. Installed on the vehicle, it can realize local audio/video storage and vehicle information sampling, at the same time it can transmit real time video and vehicle information to the remote management center and establish real time remote wireless surveillance management system.



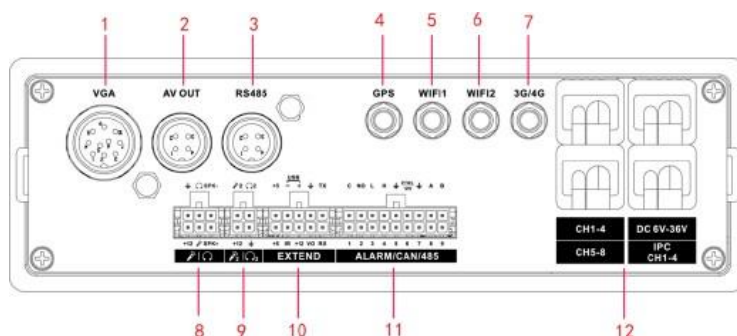
No.	Name
1	RJ45 Ethernet port USB port
2	Door lock/unlock (Device on/off button)
3	PWR
4	REC
5	HDD
6	ALM
7	IR
8	GPS
9	3G
10	Wi-Fi

Front Panel



No.	Name
1	VGA
2	AV OUT
3	RS485
4	GPS
5	Wi-Fi 1
6	Wi-Fi 2
7	3G/4G
8	Bidirectional talk input and output port.
9	Bidirectional talk input and output port2.
10	EXTEND
11	ALARM/CAN/485
12	CH1-4 CH5-8 DC 6V-36V IPC CH1-4

Rear Panel



RJ45 Ethernet port / USB port

1 network port. 2 USB ports to connect to mouse or flash disk to backup data.

Door lock/unlock

Please unlock the device before you remove the HDD box. Otherwise system is going to shut down automatically. System cannot boot up once the button is unlock. Please lock the device first and then boot up the device. It is to protect the HDD.

PWR

Power indicator light. The red light is on when the device is running. The light is off when the device is off.

REC

Record indicator light. The blue light is on when system is recording. The light is off when system is not recording.

HDD

HDD indicator light. The blue light is on when there is HDD. The light is off when there is no HDD.

ALM

Alarm indicator light. The blue light is on when there is an alarm. The light is off when there is no alarm.

IR

It is to receive the signal from the remote control.

GPS

GPS indicator light. The blue light is on when GPS function is OK. The light is off when GPS function is disabled.

NOTE

- Only the device of GPS module supports this function.

3G

3G indicator light. The blue light is on when 3G connection is OK. The light is off when 3G connection is offline.

NOTE

- Only the device of 3G module supports this function.

Wi-Fi

Wi-Fi indicator light. The blue light is on when Wi-Fi connection is OK. The light is off when Wi-Fi connection is offline.

NOTE

- Only the device of Wi-Fi module supports this function.

VGA

VGA port, including VGA all kinds of signal ports.

AV OUT

Audio/video output port. Connect to mobile screen.

RS485

Reserved port.

GPS

GPS antenna port.

NOTE

- Only the device of GPS module supports this function.

Wi-Fi 1

Wi-Fi antenna port.

NOTE

- Only the device of Wi-Fi module supports this function.

Wi-Fi 2

Reserved port.

3G/4G




3G/4G antenna port.

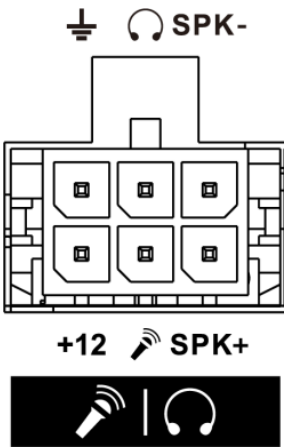
NOTE

- Only the device of 3G/4G module supports this function.

Bidirectional Talk Input And Output Port




Bidirectional input and output port.

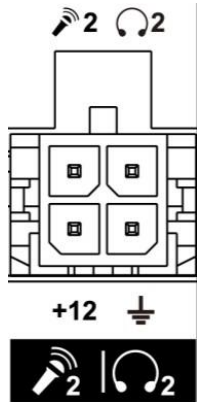
No.	Name	Function
1	+12	+12V output
2		GND
3		Mic In. Connect to speaker
4		Mic Out. Connect to earphone.
5	SPK+	Speak positive.
6	SPK-	Speak negative.



Bidirectional Talk Input And Output Port2

Connect to pickup.

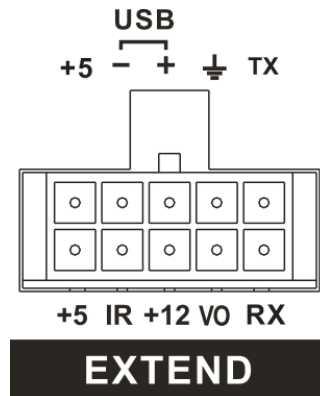
No.	Name	Function
1	+12	+12V output
2		GND
3		Mic In. Connect to peripheral pickup.
4		NC



EXTEND

Extension port. Each port has specified function.

No.	Name	Function
1	+5	+5V Output(Bottom line)
2	+5	USB 5V(Top line)
3	IR	IR receiver port
4	-	USB data-. Connect to peripheral USB port.
5	+12	+12V output
6	+	USB data+. Connect to peripheral USB port.
7	VO	AV video output
8	⏏	GND
9	RX	RS232 RX. Connect to peripheral RS232 port.
10	TX	RS232 TX. Connect to peripheral RS232 port.



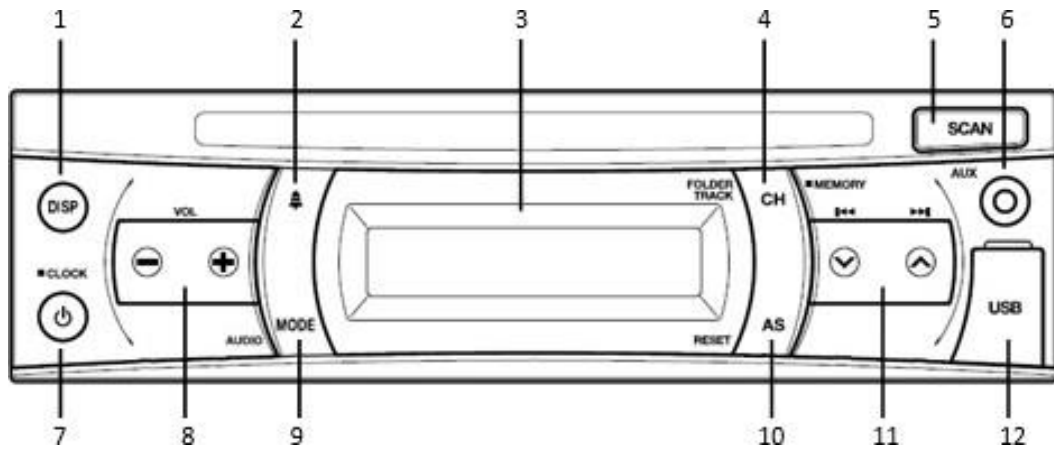
ALARM/CAN/485

Alarm input/output port. It includes alarm input port, alarm output port, GND cable and 12V output.
CAN BUS port: Reserved port. It is to exchange data with the vehicle CAN network and other devices of CAN port. A,B : Control PTZ.

CH1-4/ CH5-8/ DC 6V-36V/ IPC CH1-4

CH1-4/ CH5-8 connect to HDCVI mobile camera or analog mobile camera. DC 6V-36V power input port. IPC CH1-4 reserved function. Connect to network camera.

RADIO



No.	Name
1	Display button (DISP)
2	Alarm button
3	Display
4	Channel button (CH) - Folder/Track change button (FOLDER/TRACK) - Memory button (MEMORY)
5	Scan button (SCAN)
6	Auxiliary input (AUX)
7	Power button - Time adjustment button (CLOCK)
8	Volume buttons (VOL)
9	Mode button (MODE) - Audio button (AUDIO)
10	Auto-store button (AS) - Reset button (RESET) - Repeat/random button (RPT/RDM)
11	Tuning buttons - Search buttons
12	USB slot

Display button (DISP)

Press the "DISP" button to change display between "time" and "frequency".

Alarm button

Press the alarm button to set the alarm.

NOTE

- The alarm can be set regardless of whether the radio power is "ON" or "OFF".

Channel button (CH) - Folder/Track change button (FOLDER/TRACK) - Memory button (MEMORY)

Press and hold the "MODE" button to enter the tone/balance adjustment mode. Press and hold the "MEMORY/CH" button until you hear the beep to enter the preset memory mode. Press the "CH/FOLDER TRACK" button to select the "FOLDER".

Scan button (SCAN)

Press the "SCAN" button to start an automatic scan-seek tuning upwards through frequencies.

Auxiliary input (AUX)

Connect the portable audio player to the auxiliary input (AUX) using a 3.5 mm stereo mini plug cable.

Power button - Time adjustment button (CLOCK)

Press the power button to turn the power on. Press it again to turn it off.

Volume buttons (VOL)

The volume will increase/decrease in 1-step increments each time the "+" or "-" buttons are pressed.

Mode button (MODE) - Audio button (AUDIO)

Press the "MODE" button to select the mode. Each time you press the button, the mode cycles through AM, FM1, FM2, USB and AUX.

Auto-store button (AS) - Reset button (RESET) - Repeat/random button (RPT/RDM)

Press the auto-store button to store regional radio stations in memory.

Press the "AS/RESET" button while the time adjustment mode is active to set the time to the hour. Press the repeat/random button "AS/RPT/RDM" to select repeat playback.

Tuning buttons - Search buttons

Press the tuning buttons to manually select a track/radio station or to advance in the settings.

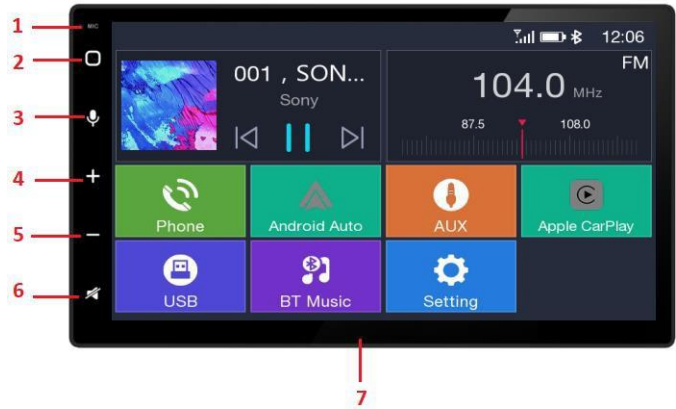
USB slot

Connect USB memory device to the USB slot, press the "MODE" button to switch to USB mode.

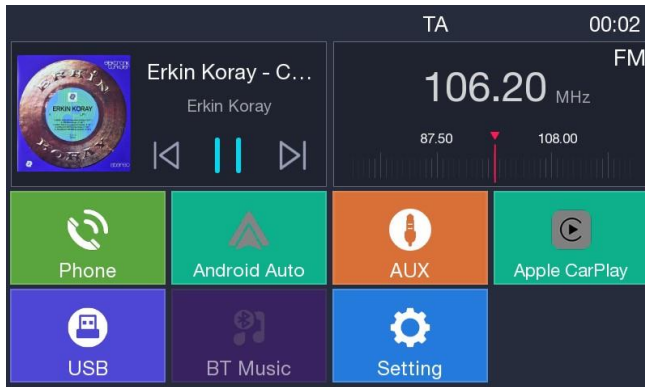
MULTIMEDIA SYSTEM

Introduction of Front Panel and Buttons

No.	Name
1	Bluetooth Microphone
2	Power / Home Button
3	Siri Voice Command Button
4	Volume + Button
5	Volume - Button
6	Mute Button
7	Touch Screen

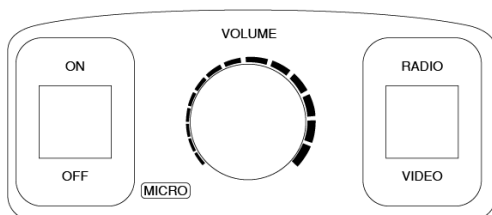


Main Menu



- FM Radio: Listen to FM / AM Radio program.
- Phone: Make a Bluetooth call.
- BT Music: Listen to music on Bluetooth.
- Settings: Change the settings of the device.
- Apple CarPlay: Connect iPhone.
- Android Auto: Connect the supported Android phone.
- USB: Play music / video from your USB disk.

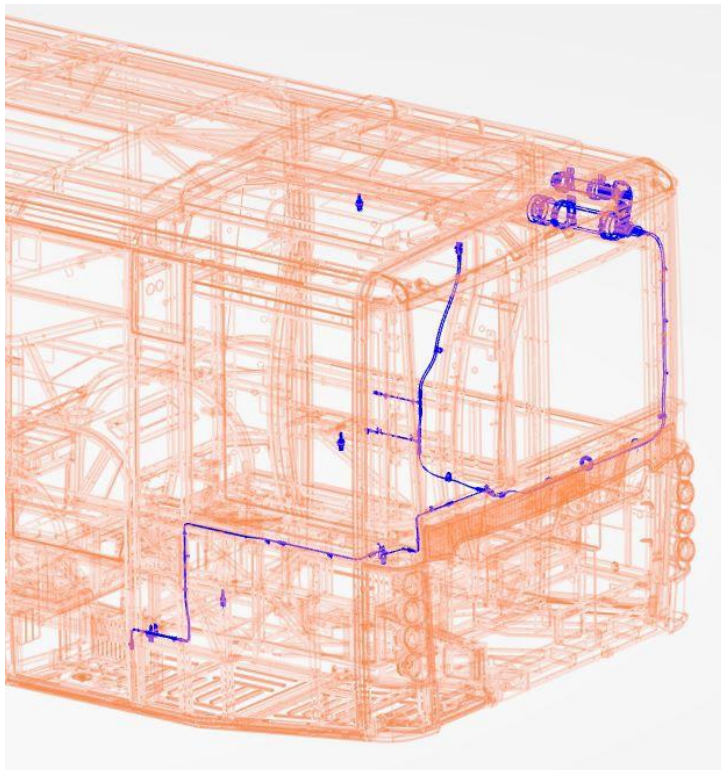
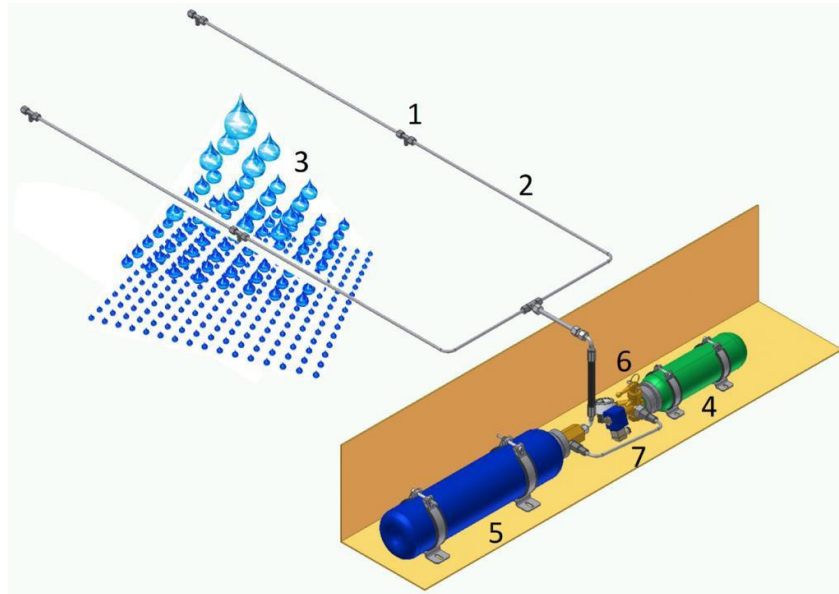
AMPLIFIER



The amplifier can be used for broadcasting indoor.

The amplifier can be used when the starter switch is in the "ACC" or "ON" position.

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 fire extinguishing 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

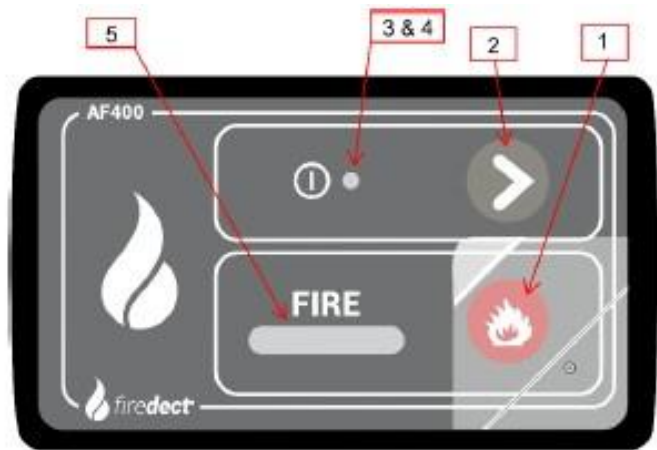
The following operations should be performed when the fire extinguishing system activated because of a reason other than fire and the tanks emptied:

- 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

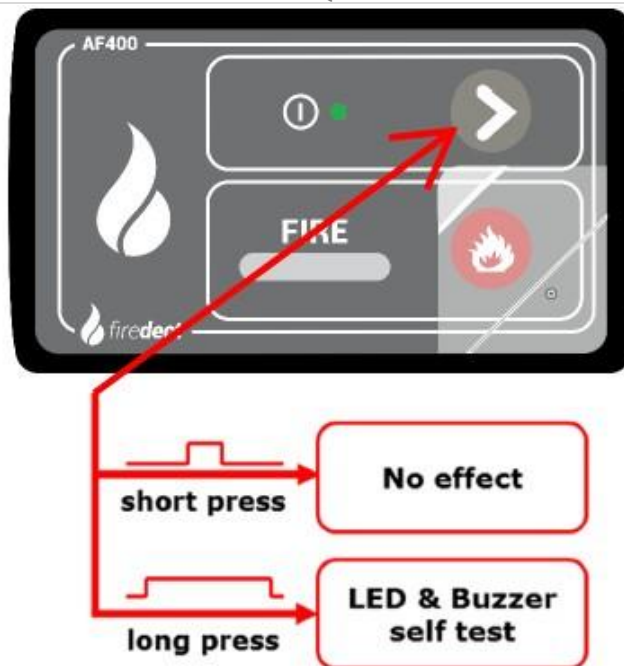
Alarm activated.

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.

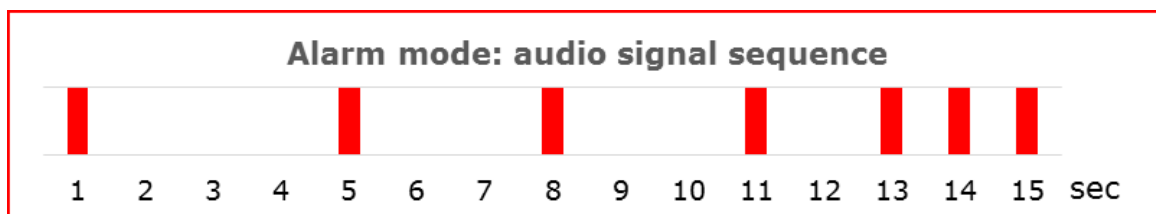
Normal Operational Mode

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.



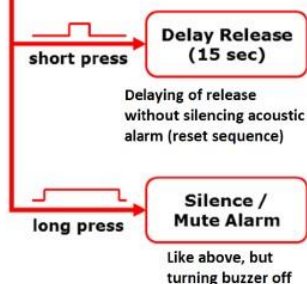
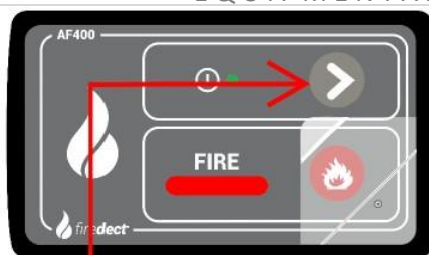
Alarm Mode

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.



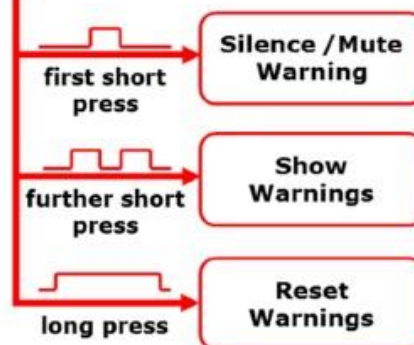
Warning / Diagnosis Mode

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:

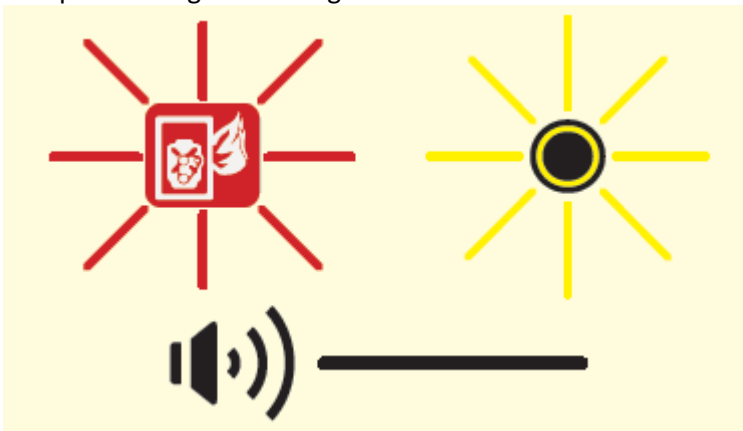
See bus manufacturer's manual.

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.

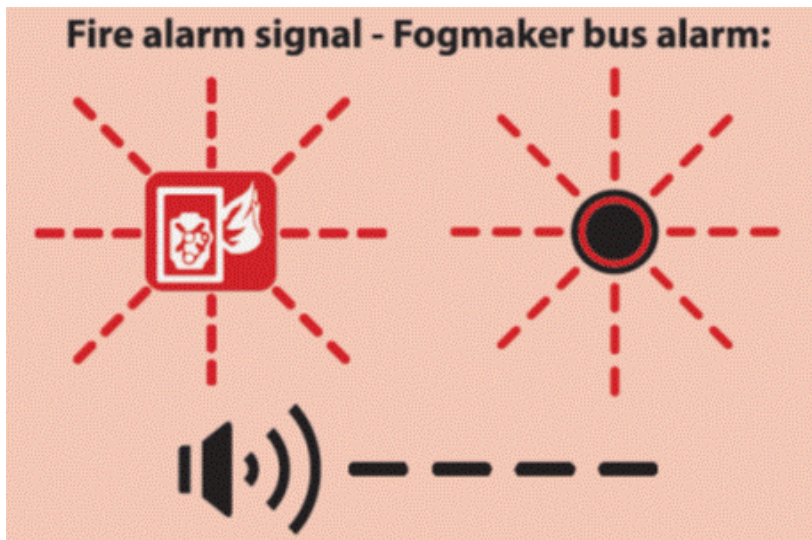
Engine wash after fire

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

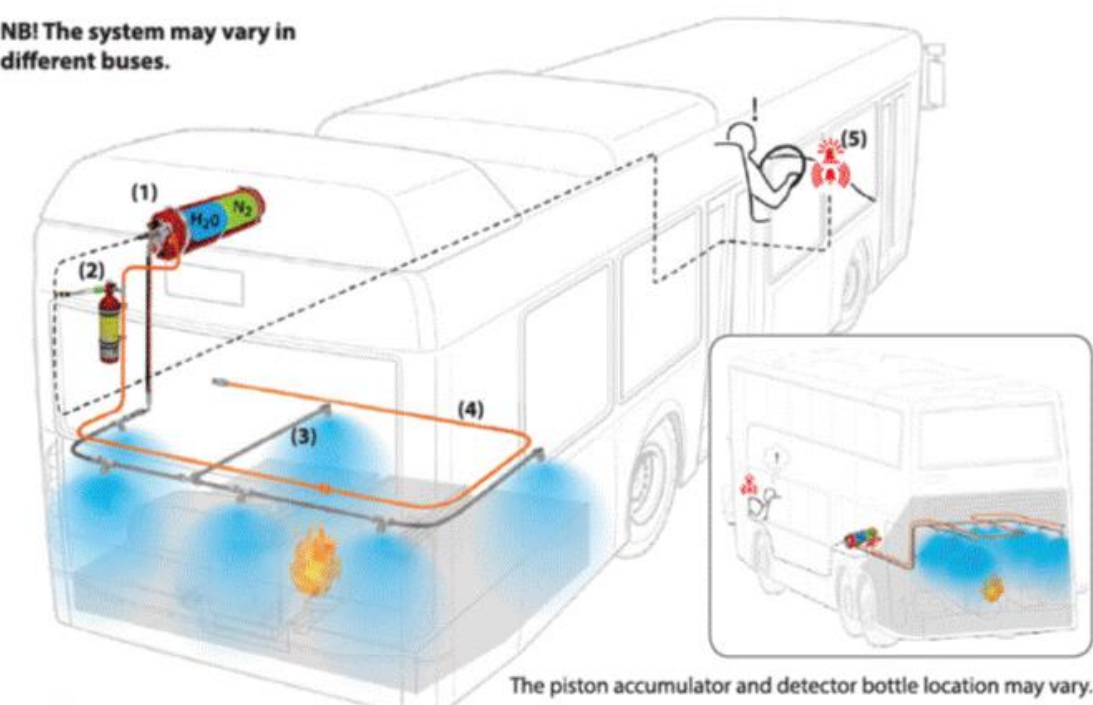


Overview, Fogmaker's Fire Protection System

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.

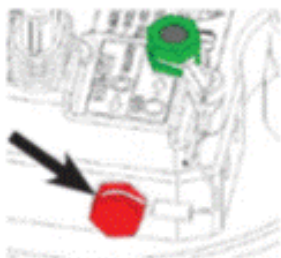


Alarm test – bus manufacturer's system:

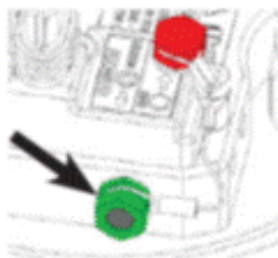
See bus manufacturer's manual.

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

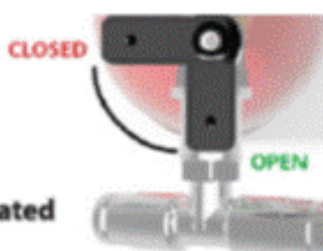


Green screw mounted
in the side of the valve **unlocks the system** so
it can deploy

Detector bottle: 20-24 bar at 20°C



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



MIRRORS

Sit in the correct driving position on the properly adjusted seat, and then check each mirror to ensure that it provides a proper view of the rear, the sides, the area just in front of the vehicle, and the area directly opposite to the driver's seat. Make adjustments if necessary and clean any dirty mirrors.

CAUTION

- Adjust the mirrors when the vehicle is stationary, not while the vehicle is in motion.
- When checking the rear of the vehicle with mirrors, be careful that this does not distract your attention from the traffic ahead.
- Rearview mirrors may make the vehicle behind you appear farther away than it really is. Use these mirrors very carefully until you are able to correctly determine distances from the images.
- Keep the mirrors in mind when passing another vehicle on a narrow road, moving the vehicle into a garage or driving near pedestrians.
- Do not drive with the mirrors folded.

ROLLER BLIND

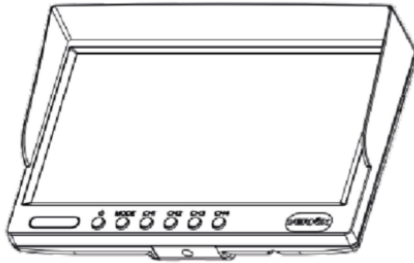
The roller blind protects your eyes in strong sunlight. Use it when sunlight is too bright.

CAMERA SYSTEM



The vehicle is equipped with interior and exterior cameras to record every action taken inside and around.

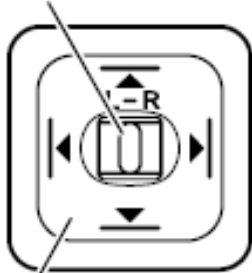
CAMERA MONITOR OPTIONAL



The monitor is used to monitor the interior, exterior and rear view cameras of the vehicle.

REMOTE CONTROL MIRROR SWITCH

Left/Right selector switch



Angle adjustment switch

The remote control mirror switch is active only when the starter switch is in the "ACC" or "ON" position.

Adjust

Press the left/right selector switch on the "L" or "R" side to move the mirror to the desired direction.

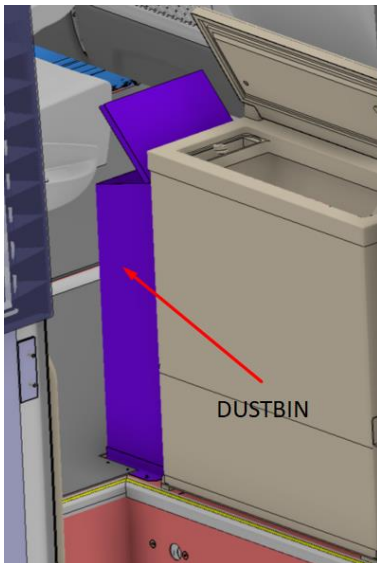
Press the angle adjustment switch to adjust the mirror angle.

ADVICE

- Do not try to forcefully move the mirror surface by hand. Otherwise, the mirror motor may sustain damage.

LIGHTER

The lighter is pushed towards the heating element inside of it, it gets out automatically when heated.

DUSTBIN

Located in the dustbin behind the seats at the level of the rear door.

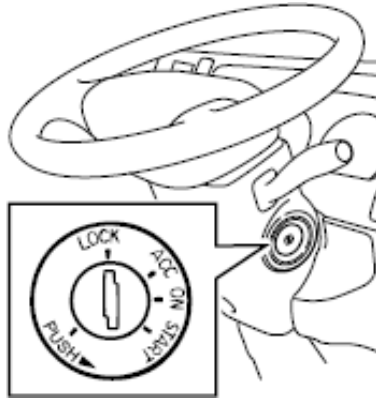
REFRIGERATOR

There is a 40 liter refrigerator next to the trash can behind the seats.

CONTROLS AND INSTRUMENTS

STARTING AND STOPPING THE ENGINE

STARTING THE ENGINE



Make sure that the switches, including those for the windshield wiper, light control and air conditioner, are in the off position.

Turn the starter switch to the "ON" position to check that the warning and indicator lights turn on normally and the fuel level is proper.

CAUTION

- When the engine does not start, wait for at least 2 seconds and then turn the starter switch again.

1. Make sure that the gearshift switch is in the "N" position and firmly press the brake pedal.
2. When the starter switch is turned to the "ON" position, the glow plug indicator light comes on and it goes out in about 0.5 seconds when the engine is warm, or in about 4 seconds when the engine is cold.
3. After confirming that the glow plug indicator light has gone out, turn the starter switch to the "START" position to start the engine.

WARNING

- Do not keep the starter switch in the "START" position for more than about 10 seconds. Operating the starter for too long might cause battery failure or might result in overheating and even a fire.

STOPPING THE ENGINE



Firmly apply the parking brake. With the accelerator pedal released, turn the starter switch to the "ACC" or "LOCK" position.

ADVICE

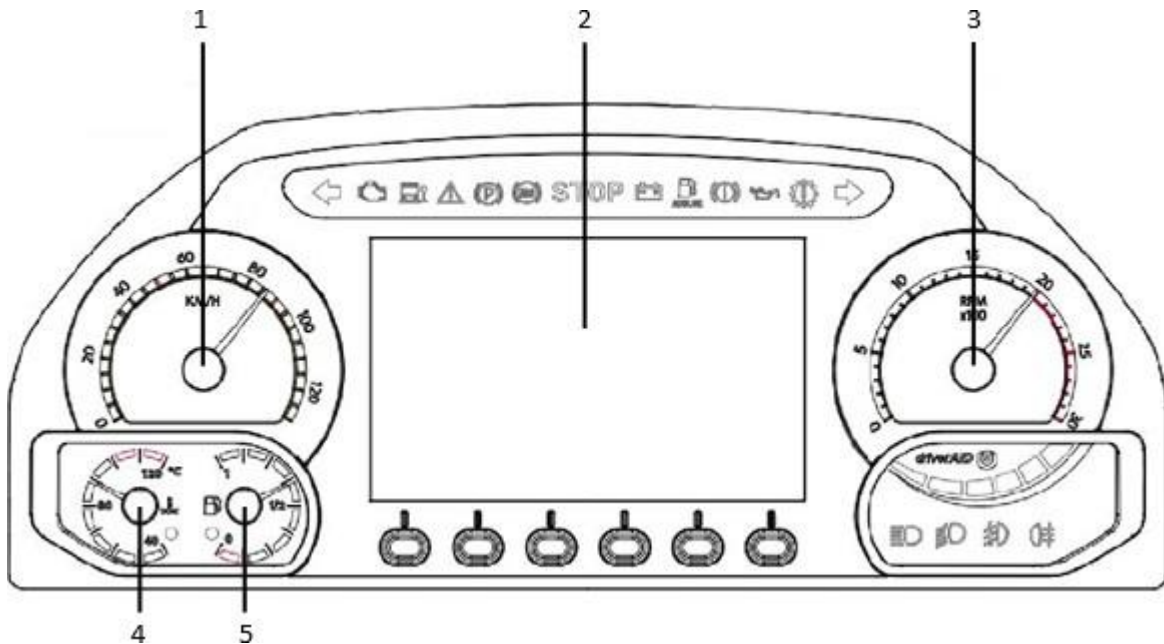
- Do not shut down the engine immediately after driving the vehicle. Otherwise, a seizure or other failures may result. Before stopping the engine, run the engine at idle for approximately 3 minutes to cool it down after applying the

parking brake and making sure of the following: The gearshift switch is in the "N" position and the shift indicator shows "N".

- To prevent the battery from going dead, turn the starter switch to the "ACC" or "LOCK" position after stopping the engine. If you leave the vehicle for an extended period of time, place the starter switch in the "LOCK" position.

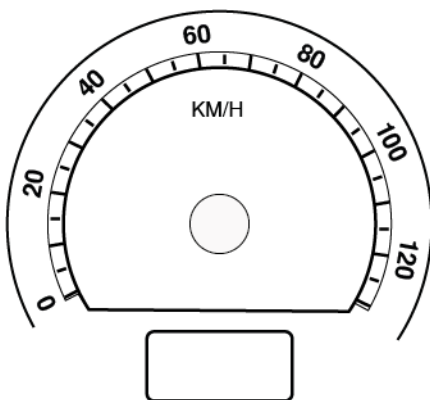
INSTRUMENTS, WARNING LIGHTS AND INDICATOR LIGHTS

INSTRUMENTS LAYOUT



No.	Name
1	Speedometer
2	Multi-Information Display (MID)
3	Tachometer
4	Engine coolant temperature gauge
5	Fuel gauge

SPEEDOMETER



The speedometer indicates the vehicle speed in km/h or MPH. The speedometer is an integral unit with the odometer/trip meter.

The total distance traveled by your vehicle is indicated in km if the speedometer is graduated in kilometer units.

Use the trip meter to learn the distance between the specific points or the distance traveled during a specific period of time.

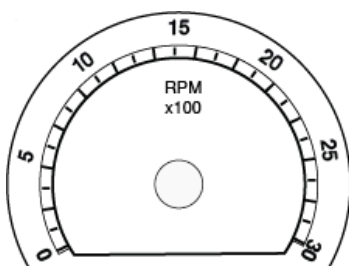
MULTI-INFORMATION DISPLAY (MID)



The MID in the instrument panel can display the following information.

- Warning and indicator lights
- Operation-related information
- Brake pressure
- Maintenance data
- AdBlue level
- Calendar and clock

THE ENGINE SPEED (RPM) GAUGE

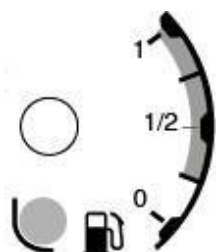


The tachometer indicates the engine speed in revolutions per minute (r/min). (Graduation "5" on the scale indicates 500 r/min.) The red zone indicates a range of dangerous engine speeds beyond permissible levels. Do not drive your vehicle with the needle of the tachometer in the red zone. The graduation and the red zone of tachometer are various depending on the models fitted.

ADVICE

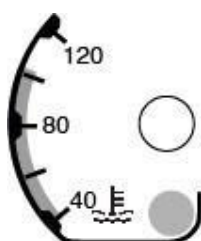
- Exercise extreme caution when shifting down on a steep downslope. The engine speed may easily exceed the critical speed, which can seriously damage the engine.

FUEL GAUGE



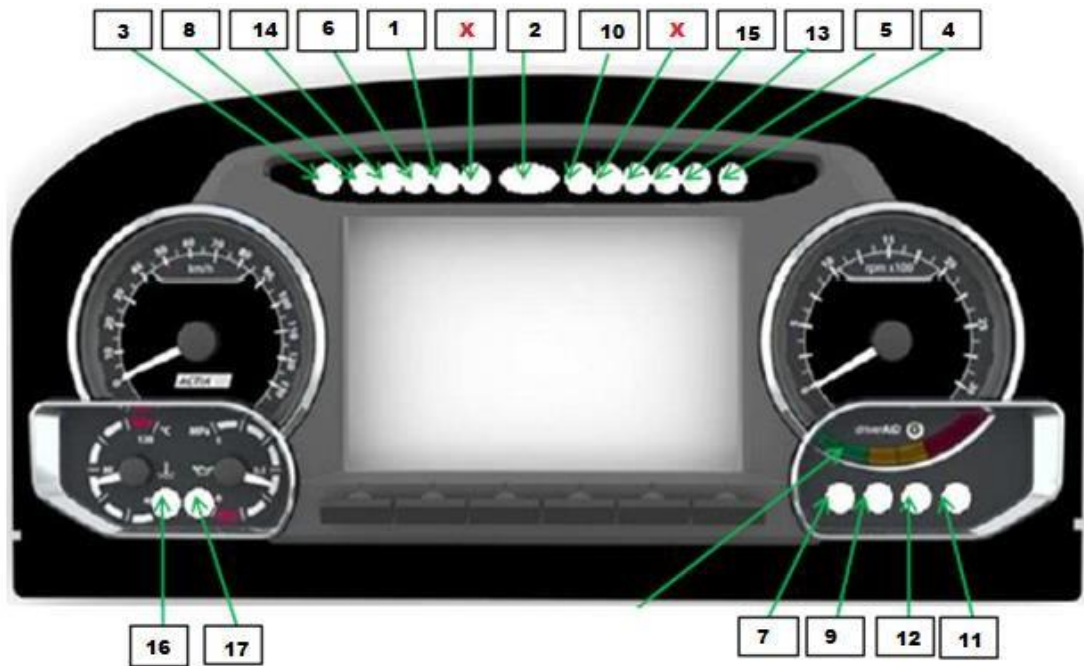
With the starter switch in the "ON" position, this gauge indicates the quantity of fuel remaining in the fuel tank. "1" means the tank is full while "0" means the tank is almost empty.

ENGINE COOLANT TEMPERATURE GAUGE



With the starter switch in the "ON" position, this gauge indicates the temperature of the engine coolant. If the engine overheats, the engine overheat warning light comes on and a warning buzzer sounds. During operation, the needle should stay in the safety zone.

WARNING AND INDICATOR LIGHTS



No.	Name
1	Parking Brake Warning Light
2	Engine STOP Warning
3	Turn Left Signal Warning Light
4	Turn Right Signal Warning Light
5	Tranmission Warning Light
6	Ecm Warning Light
7	High Beam Indicator Light
8	Check Engine Warning Light
9	Low Beam Indicator Light
10	Generator Warning Light
11	Rear Fog Light Indicator Light
12	Front Fog Light Indicator Light
13	Engine Oil Pressure Warning Light
14	Halt Brake Active
15	Brake Warning Light
16	Engine Overheat Warning Light
17	Low Fuel Warning Light

Parking Brake Warning Light



This warning light comes on when the parking brake lever is pulled up.

CAUTION

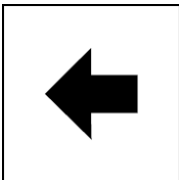
- The illumination of the warning light does not necessarily ensure firm application of the parking brake. The parking brake lever must be sufficiently pulled up and locked.

Engine STOP Warning Light



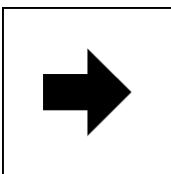
The red warning is a warning from the ECM. If the warning is ON, the engine must be stopped immediately. Check which errors are in the motor diagnostics.

Turn Left Signal Warning Light



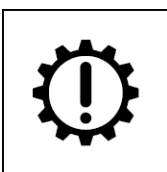
If the left signal switch is active, the warning is ON.

Turn Right Signal Warning Light



If the right signal switch is active, the warning is ON.

Transmission Warning Light



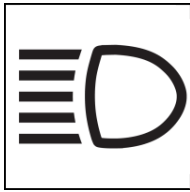
The red warning is a warning from the transmission. If the warning is ON, Check which errors are in the transmission diagnostics.

Ecm Warning Light



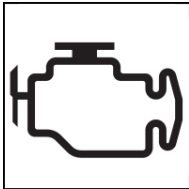
The red warning is a warning from the ECM. If the warning is ON, Check which errors are in the motor diagnostics

High Beam Indicator Light



This indicator light comes on when high beam is selected or the headlights are cycled between high and low beams (passing signal).

Check Engine Warning Light



This warning light should come on when the starter switch is turned to the "ON" position, and then should go out after the engine is started.

If this warning light comes on while the engine is running, this alerts you to a problem with the engine electronic control system.

ADVICE

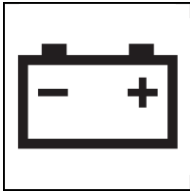
- If this warning light comes on while the engine is running, avoid driving at high speeds and promptly have the vehicle inspected at the nearest Isuzu Dealer.
- If this warning light comes on either intermittently or continuously while driving, service is required. Even if the vehicle is drivable, and does not require towing, see your Isuzu Dealer as soon as possible for service of the system. Continued driving without having the system serviced could cause damage to the emission control system. It could also affect fuel economy and drivability.

Low Beam Indicator Light



This indicator light comes on when low beam is selected.

Generator Warning Light



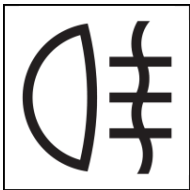
This warning light should come on when the starter switch is turned to the "ON" position, and then should go out after the engine is started.

This warning light comes on when, while the engine is running, there is a problem with the charging system (such as a loose or broken fan belt).

ADVICE

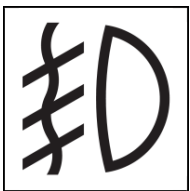
- If this warning light comes on while the engine is running, immediately pull off to a safe place well clear of traffic and promptly contact the nearest Isuzu Dealer for inspection.

Rear Fog Light Indicator Light



This indicator light stays on while the rear fog lights are on.

Front Fog Light Indicator Light



This indicator light stays on while the front fog lights are on.

Engine Oil Pressure Warning Light



This warning light should come on when the starter switch is turned to the "ON" position, and then should go out after the engine is started.

While the engine is running, this warning light comes on if the engine oil pressure, which lubricates the engine components, is abnormal.

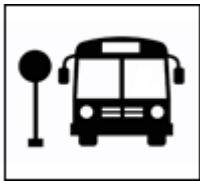
ADVICE

- If this warning light comes on while the engine is running, immediately pull off to a safe place well clear of traffic. Stop the engine immediately and check the engine oil level.
- The lubrication system may be faulty. Promptly have your vehicle inspected at the nearest Isuzu Dealer.

NOTE

- If your vehicle is equipped with MID, the check engine oil level warning light appears on the display when the engine oil level is too low.

Halt Brake Active



If the door brake system is active, the warning is ON.

Brake Warning Light



This warning light should come on when the starter switch is turned to the "ON" position, and then should go out after approximately 3 seconds.

This warning light comes on when the electronic braking system (EBS) has a problem.

CAUTION

- When the brake warning light is illuminated, it signals that an EBS malfunction has occurred. If the warning is ON, the engine must be stopped immediately. Check which errors are in the EBS diagnostics.
- In this case, although the feeling of the brakes will change considerably due to the inoperation of the EBS, the regular brakes will still operate normally. If the EBS malfunctions, firmly depress the brake pedal, stop the vehicle, and contact your nearest Isuzu Dealer.

Engine Overheat Warning Light



This warning light comes on when the engine has overheated. When the engine overheats, the engine coolant temperature gauge needle reaches the red zone, and the engine overheat warning light comes on, and at the same time a buzzer sounds. Immediately pull off to a safe place, and check the vehicle and take necessary actions.

WARNING

- Do not remove the radiator cap or reserve tank cap when the engine coolant is still hot. Careless removal could result in burns caused by hot vapor being released. Burns may also be caused by boiling water released due to the high temperature of the coolant. Perform inspection, refilling, and replacement of coolant only when its temperature has cooled.

Low Fuel Warning Light















This warning light comes on when the fuel level in the tank becomes too low while the engine is running.













ADVICE

- If the vehicle runs out of fuel, air bleeding procedure must be performed.

WARNING LAMPS (7" SCREEN)

Icon	Icon Name	Color	Function
	Lining pad	Amber	If at least one of the lining pads is low, the warning is ON.
	CC active	Green	If Cruise control is active, the warning is ON.
	CC is ready for active	White	If Cruise control is ready for active, the warning is ON.
	Hill Holder	Green	If Hill Holder system is ready for use, the warning is ON.
	AEBS warning	Amber	The red warning is a warning from the AEBS. If the warning is ON, Check which errors are in the AEBS diagnostics.
	ASR off	Amber	If the ASR system is disabled, the warning is ON.
	ASR on	Amber	If the ASR system is active, the warning is ON.
	DPF warning	Amber	Indicates that the aftertreatment Diesel Particulate Filter (DPF) requires regeneration.
	High Exhaust System Temperature	Amber	If Exhaust System Temperature is high, the warning is ON.
	Air filter warning	Amber	If Air filter is fault, the warning is ON.
	Engine Brake	Green	If Engine Brake is active, the warning is ON.
	Water in fuel	Amber	If Water in fuel, the warning is ON.
	Engine warning	Amber	The amber warning is a warning from the ECM. If the warning is ON, Check which errors are in the motor diagnostics
	AEBS collision warning	Amber	AEBS collision warning.
















Icon	Icon Name	Color	Function
	EBS amber warning	Amber	The amber warning is a warning from the EBS. If the warning is ON, Check which errors are in the EBS diagnostics
	Transmission amber warning	Amber	The amber warning is a warning from the Transmission. If the warning is ON, Check which errors are in the Transmission diagnostics
	Transmission amber warning	Amber	The amber warning is a warning from the Transmission. If the warning is ON, Check which errors are in the Transmission diagnostics
	LDWS left warning	Amber	LDWS left warning
	LDWS right warning	Amber	LDWS right warning
	LDWS is ready for active	Green	If LDWS system is ready for use, the warning is ON.
	LDWS system warning	Amber	The amber warning is a warning from the LDWS. If the warning is ON, Check which errors are in the LDWS diagnostics
	Fire warning	Red	If fire system is active, the warning is ON.
	Door valve warning	Red	If Door valve is open, the warning is ON.
	Greasing system Red warning	Red	The red warning is a warning from the Greasing module. If the warning is ON, Check which errors are in the Greasing module.
	Greasing system Green warning	Green	If Greasing module is active, the warning is ON.
	Engine coolant level warning	Red	If the Engine coolant level is low, the warning will be ON. If the warning is ON, the engine must be stopped immediately. Check which errors are in the motor diagnostics.

Icon	Icon Name	Color	Function
	Seat belt warning	Red	Seat Belt Warning. If the vehicle is below 20 km / h, only visual; on top, it gives both visual and audible warning.
	Hostess warning	Amber	If passengers press the button for hostess on the air duct, the warning is ON.
	Baggage lock warning	Red	All luggage in the central locking system is a locked warning. If it flashes, there is a malfunction.
	Passenger stop request warning	Red	Passenger stop request warning.
	Destination table warning	Amber	If Destination table is active, the warning is ON.
	Disable Passenger stop request warning	Red	Disable Passenger stop request warning
	Retarder Active warning	Amber	If foot or hand retarder Active is active, the warning is ON.
	Passenger door lock warning	Red	If At least one of the Passenger door is locked, the warning is ON.
	ELC warning	Amber	The amber warning is a warning from the ELC. If the warning is ON, Check which errors are in the ELC diagnostics
	ELC warning	Red	The red warning is a warning from the ELC. If the warning is ON, Check which errors are in the ELC diagnostics
	Baggage cap open	Red	If At least one of the Baggage cap is opened, the warning is ON.
	Press clutch pedal warning	Amber	Info for press clutch pedal.

KEYPAD FUNCTION

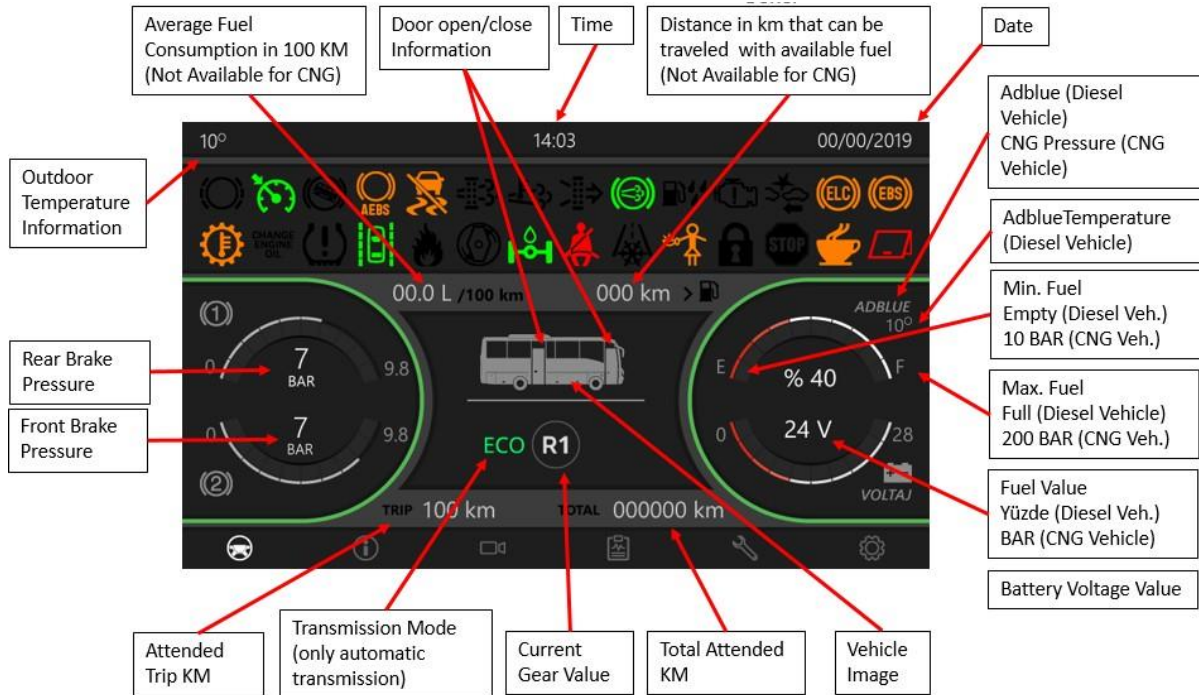


ICON	Name	Function
	ICON, FRONT DOOR	Sends command to open/close front door.
	ICON, REAR DOOR	Sends command to open/close rear door.
	ICON, ALL DOOR	Sends command to open/close all door.
	ICON, HAZARDS	Sends command to activate the hazards.
	ICON, WINDOW RESISTANCE	Sends command to activate resistance of window Heating works as 8 minutes working-4 minutes waiting. During this 4- minute waiting period, the driver cannot start the system again.
	ICON, MIRROR RESISTANCE	Sends command to activate resistance of mirror. Heating works as 8 minutes working-4 minutes waiting. During this 4-minute waiting period, the driver cannot start the system again.
	ICON, LDWS DISABLE	Sends command to cancel LDWS system.
	ICON, AEBS DISABLE	Sends command to cancel AEBS system.

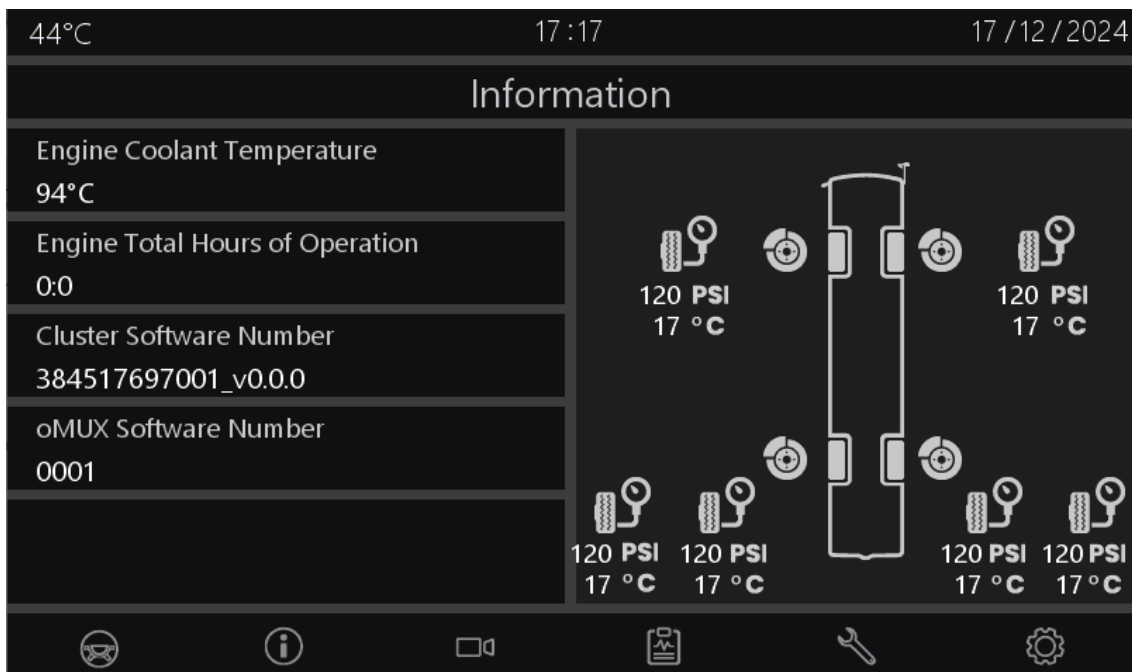
ICON	Name	Function
	ICON, ASR DISABLE	Sends command to cancel ASR system.
	ICON, FOOT RETARDER DISABLE	Sends command to cancel foot retarder system.
	ICON, INDOOR LIGHTING	Sends command to activate the indoor lighting.
	ICON, FRONT FOG	Sends command to activate front fog.
	ICON, READING LAMP	Sends command to activate reading lamp.
	ICON, REAR FOG	Sends command to activate rear fog.
	ICON, NIGHT LAMP	Sends command to activate night lamp.
	ICON, LOW BEAM	Sends command to activate low beam.
	ICON, BAGGAGE LAMP	Sends command to activate baggage lamp.
	ICON, PARKING LAMP	Sends command to activate parking lamp.
	ICON, DRIVER LAMP	Sends command to activate driver lamp.
	ICON, AUTO LAMP	Sends command to activate auto lamp system. If this key is active and the cluster sleeps, it becomes active automatically when the ignition is turned on and the cluster wakes up.
	ICON, HOSTES LAMP	Sends command to activate hostes lamp.
	ICON, TV/VIDEO	Sends command to activate TV.
	ICON, MAIN LAMP	For regulation. There is no any function at button.

CLUSTER SCREENS

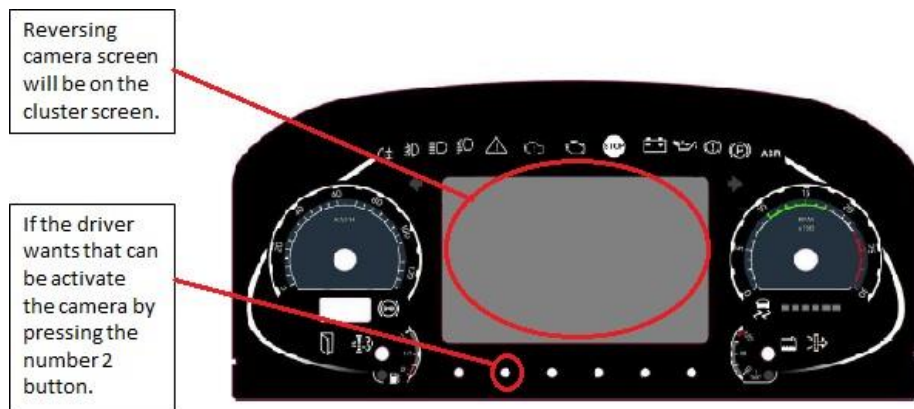
Main Screen



Information Screen



Rear Camera Screen



Timeouts Screen

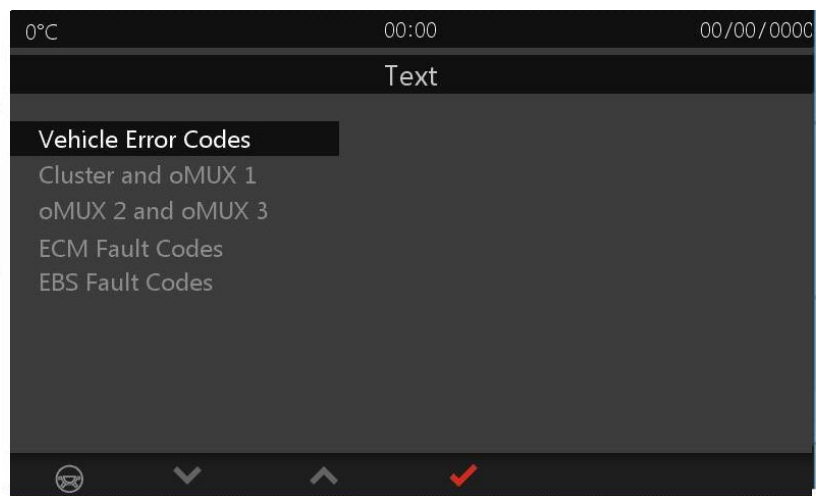
It gives a warning if there is a problem in the Can Bus line with the systems specified in the vehicle. (Systems that are non-existent won't show up on the timeout page.)



Diagnostic Screen

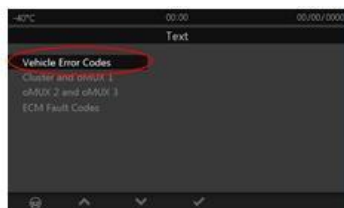
DiagnosticScreen:

- Vehicle Error Codes
- Cluster ve oMUX 1
- oMUX 2 ve oMUX 3
- ECM Error Codes



Selected screen opens when the 4th button is pressed

Maintenance Screen



The specified error codes will be in the vehicle manual. The driver will be able to find the equivalent of the specified codes from the user manual.
For example: AEC001, right front dipped beam malfunction



Code	Function	Code	Function
AEC001	Starter Relay Fault	AEC032	Roof Lamp State 2 Fault
AEC002	ASR Relay Fault	AEC033	Front Right Indicator Lamps Fault
AEC003	TV Relay Fault	AEC034	Night Lamp Fault
AEC004	Rear Door Solenoid Fault	AEC035	Right Reverse Lamp Fault
AEC005	Bus Stop Warning Signal Fault	AEC036	Left Reverse Lamp Fault
AEC006	Rear Suspension Solenoid Fault	AEC037	Rear Right Park Fault
AEC007	Window Resistance Fault	AEC038	n/a
AEC008	Mirror Resistance Fault	AEC039	Number Plate And Side Marker Lamp Fault
AEC009	Driver Lamp Fault	AEC040	Rear Left Park Fault
AEC010	Hostess Lamp Fault	AEC041	Rear Door Opening Buzzer Fault
AEC011	Front Right Fog Lamp Fault	AEC042	n/a
AEC012	Front Reading Lamp State 1 Fault	AEC043	n/a
AEC013	Front Park Lamp Fault	AEC044	Front Door Step Lamp Fault
AEC014	Front Reading Lamp State 2 Fault	AEC045	n/a
AEC015	Front Roof Lamp State 1 Fault	AEC046	Rear Door Safety Valve Fault
AEC016	Front Left Fog Lamp Fault	AEC047	Rear Left Fog Lamps Fault
AEC017	DRL Right Fault	AEC048	Rear Right Fog Lamps Fault
AEC018	n/a	AEC049	Rear Left Indicator Lamp Fault
AEC019	Wiper Motor High Speed Relay Fault	AEC050	Rear Right Indicator Lamp Fault
AEC020	Wiper Motor Low Speed Relay Fault	AEC051	Accelerator InterLock Switch Fault
AEC021	DRL Left Fault	AEC052	Rear Luggage Lamp Fault
AEC022	Front Right Low Beam Fault	AEC053	Left Brake Lamp Fault
AEC023	Refrigerator And Kitchen Relay Fault	AEC054	Right Brake Lamp Fault
AEC024	Inverter Relay Fault	AEC055	Rear Door Spot Light Fault
AEC025	Front Left Indicator Lamp Fault	AEC056	Engine Temperature Signal For A/C Fault
AEC026	Coffee Machine Relay Fault	AEC057	Reserve Signal1 Fault
AEC027	Wiper Water Pump Fault	AEC058	Reserve Signal2 Fault
AEC028	Front Left Right Luggage Lamp Fault	AEC083	Fire System Fault
AEC029	Front Left Low Beam Fault	AEC084	Air Pressure Sensor 1 Fault
AEC030	Front Door Solenoid Fault	AEC085	Air Pressure Sensor 2 Fault
AEC031	High Beam Fault	AEC086	Fuel Sensor Fault

0°C 00:00 00/00/0000

Cluster Inputs / Outputs

WK1 CN5/1: passive	IN19 CN6/31: passive	UBN19 CN6/23: passive
WK2 CN5/2: passive	UBN1 CN3/1: passive	UBN20 CN6/25: passive
WK3 CN5/3: active	IN20 CN6/32: passive	UBN21 CN3/9: passive
WK4 CN5/4: passive	IN21 CN6/18: passive	UBN22 CN3/10: passive
IN1 CN4/1: passive	IN22 CN6/35: passive	UBN23 CN3/11: passive
IN2 CN4/2: passive	UBN2 CN3/2: passive	UBN24 CN3/12: passive
IN3 CN4/3: passive	UBN3 CN3/3: passive	
IN4 CN4/4: passive	UBN4 CN3/4: passive	OUT1 CN3/13: passive
IN5 CN6/26: passive	UBN5 CN3/5: passive	OUT2 CN3/14: passive
IN6 CN6/28: passive	UBN6 CN3/6: passive	OUT3 CN3/15: passive
IN7 CN6/27: passive	UBN7 CN3/7: passive	OUT4 CN3/16: passive
IN8 CN6/34: passive	UBN8 CN3/8: passive	OUT5 CN6/9: passive
IN9 CN4/5: passive	UBN9 CN5/5: passive	OUT6 CN6/11: passive
IN10 CN4/6: passive	UBN10 CN5/6: passive	OUT7 CN6/13: active
IN11 CN4/7: passive	UBN11 CN5/7: passive	OUT8 CN6/15: passive
IN12 CN4/8: passive	UBN12 CN5/8: passive	OUT9 CN2/7: passive
IN13 CN4/9: passive	UBN13 CN6/17: passive	OUT10 CN2/8: passive
IN14 CN4/10: passive	UBN14 CN6/20: passive	
IN15 CN4/11: passive	UBN15 CN6/19: passive	
IN16 CN4/12: passive	UBN16 CN6/22: passive	
IN17 CN6/29: passive	UBN17 CN6/21: passive	
IN18 CN6/30: passive	UBN18 CN6/24: passive	

oMUX1 Inputs / Outputs

IN1 P3/2: passive	OUT2 P4/2: passive
IN2 P1/3: passive	OUT3 P4/7: passive
IN3 P5/8: passive	OUT4 P4/4: passive
IN4 P5/7: passive	OUT5 P4/9: passive
IN5 P5/11: passive	OUT6 P4/8: passive
IN6 P5/5: passive	OUT7 P5/15: passive
IN7 P5/6: passive	OUT8 P5/14: passive
IN8 P5/12: passive	OUT9 P5/4: passive
IN9 P5/9: active	OUT10 P5/1: passive
IN10 P2/14: passive	OUT11 P5/13: passive
IN11 P2/12: passive	OUT12 P5/10: passive
IN12 P2/11: passive	OUT13 P2/10: passive
IN13 P2/15: passive	OUT14 P2/7: passive
IN14 P2/2: passive	OUT15 P2/16: passive
IN15 P2/3: passive	OUT16 P2/13: passive
IN16 P1/7: passive	OUT17 P2/4: passive
IN17 P1/18: passive	OUT18 P2/1: passive
IN18 P3/12: passive	OUT19 P1/16: passive
IN19 P1/12: passive	OUT20 P1/13: passive
IN20 P1/9: passive	OUT21 P1/1: passive
IN21 P1/6: passive	OUT22 P1/2: passive
IN22 P1/5: passive	OUT23 P1/10: passive
OUT1 P4/1: passive	OUT24 P1/4: passive

Cluster ve oMux 1 module has input/output signals.

If there are input/output signals «active» if not present it is indicated «passive»

There are engine active warnings in Diagnostic Screen 3. Active malfunctions can be viewed from this screen instead of Cummins Insite.

Diagnostic Screen 3

ECM Active Messages

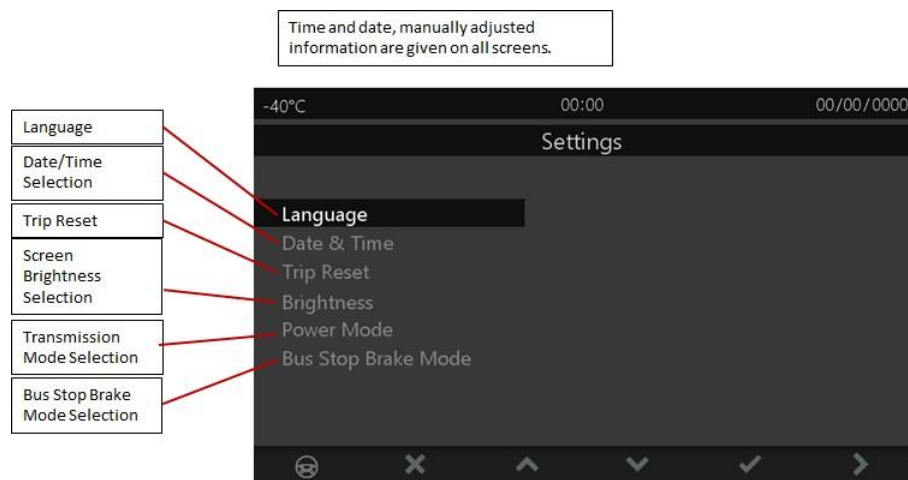
FaultCode	Count	Description
111	0	Engine Control Module Critical Internal Failure ? Bad Intelligent Device or Component
124	0	Intake Manifold 1 Pressure ? Data Valid But Above Normal Operating Range ? Moderately Severe Level
132	0	Accelerator Pedal or Lever Position Sensor 1 Circuit ? Voltage Below Normal or Shorted to Low Source
134	0	Remote Accelerator Pedal or Lever Position Sensor 1 Circuit ? Voltage Below Normal or Shorted to Low Source
585	0	Engine Starter Motor Relay Circuit ? Voltage Below Normal or Shorted to Low Source
1839	0	Gas Supply (Regulated) Pressure Sensor Circuit - Voltage Above Normal or Shorted to High Source
3843	0	Cruise Control Disable Command ? Abnormal Update Rate
2777	0	Aftertreatment Regeneration Inhibited Due to Inhibit Switch ? Condition Exists
7245	0	Fuel Control Module - Bad Intelligent Device or Component
7384	0	Engine Turbocharger 1 Boost Pressure - Data Not Rational - Drifted Low

-40°C 00:00 00/00/0000

EBS Active Messages

FaultCode	Count	Description
001004	3	ECU - Diagnostic override-This is a state. System forced to back-up via diagnostic.
001006	2	ECU - Internal error-Download new dataset. Download software update to the central ECU. Erase fault memory. If the error is reported again, the central ECU is to be replaced.
001156	4	ECU - Internal error-SW incompatibility-Download a proper software to the ECU.
001040	5	ECU - Wake-up error-Check the ECU-to-FBM wiring and the FBM. Erase fault memory. If the error is reported again, the central ECU is to be replaced.
053214	1	Yaw rate sensor - Longterm calibration incorrect-Check the mounting of the sensor - If mounting of the sensor is OK and the error is still reported, change the sensor
132045	2	EPM at wheel 3 - Electro-Electro-Pneumatic Module Internal error-Replace the EPM

Setting Screen



SWITCHES

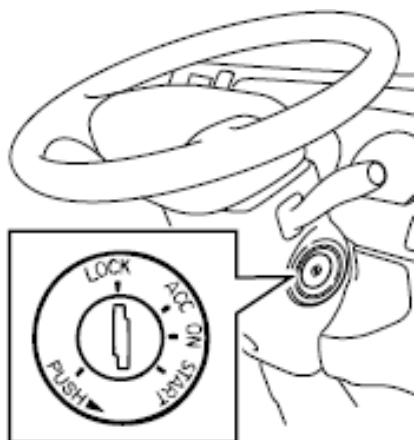
STARTER SWITCH

WARNING

- While driving, never turn the starter switch to the "LOCK" position. The key could be removed from the switch, which then locks the steering wheel. This is extremely dangerous.

ADVICE

- Using a key sticking with dirt or dust, etc. may possibly damage the starter switch. Make sure to wipe off any dirt or dust, etc. before inserting the key.
- After starting the engine, do not turn the starter switch to the "START" position. Otherwise, the starter motor may be damaged.
- Using electrical devices such as the audio system for an extended time period with the engine stopped can completely discharge the battery.



LOCK : In this position, the key can be inserted or removed. Remove the key and turn the steering wheel until it locks. The steering wheel will be locked to help prevent theft. To place the starter switch in the "LOCK" position, press and hold the key in the "ACC" position and then turn it to the "LOCK" position.

ACC : In this position, the audio and other accessories can be used with the engine stopped.

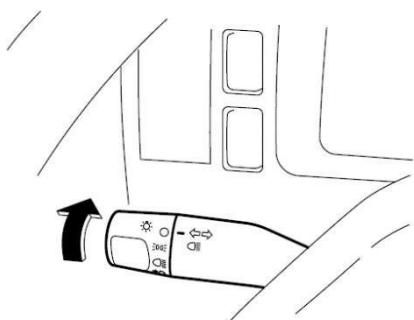
ON : The key stays in this position while the engine is running.

START : The engine is started in this position. Release the key as soon as the engine has started. The key automatically returns to the "ON" position.

NOTE

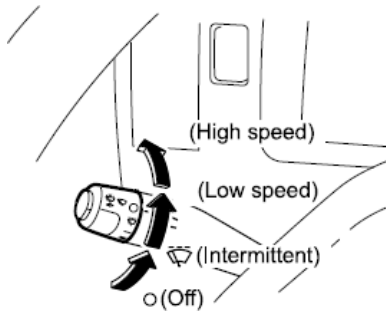
- If the key cannot be turned from the "LOCK" position to the "ON" position, lightly move the steering wheel clockwise and counterclockwise while trying to turn the key.

LIGHT CONTROL SWITCH



Turning the light control switch to the position indicated in the table causes the relevant lights to illuminate.

The light control switch can be used when the starter switch is placed in the "LOCK" or "ACC" position.



To use the windshield wiper and washer lever, the starter switch must be in the "ON" position.

Windshield washer fluid is sprayed over the windshield when this lever is pulled. At the same time, the windshield wiper operates.

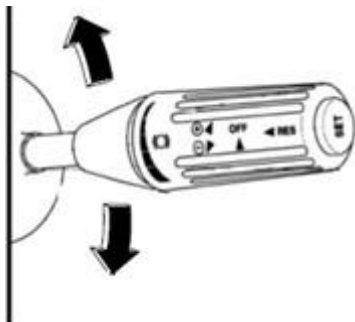
CAUTION

- At extremely low temperatures, washer fluid may freeze on the windshield after being sprayed, obstructing your forward view. In such a case, warm up the windshield before using the windshield washer.

ADVICE

- The safety system may work to stop the wiper when excessive load is applied on the motor. In this case, turn the switch to the off position and, a few minutes later, check to see if the wiper is back to normal operation. If the wiper frequently stops operation, refrain from using it and contact the nearest Isuzu Dealer.
- Before operating the wiper, ensure that the wiper rubber is not stuck on to the windshield. If the wiper rubber is stuck to the windshield and you still operate the wiper, the wiper may break or the wiper motor may fail.
- Do not operate the wiper on a dry windshield surface. Otherwise, the windshield surface may sustain damage. Always use the windshield washer when wiping a dry glass surface.
- If windshield washer fluid does not come out in sufficient quantity, immediately release the switch. Otherwise, the motor may seize up.
- Do not hold the lever pulled for more than 30 seconds. Otherwise, the washer pump may sustain damage.
- When the vehicle is used in a cold-climate region, use washer fluid with appropriate concentration for the season to prevent frozen fluid.

RETARDER SWITCH



To apply the retarder while driving, move the lever down.

CAUTION

- It is extremely dangerous to apply the retarder on slippery roads (with their surfaces being wet, frozen, or covered with compacted snow) as the tires can skid.

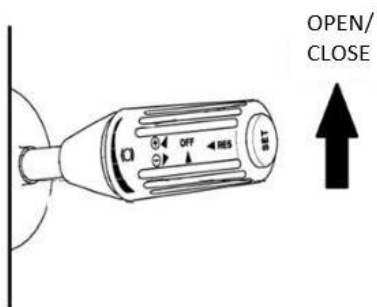
Conditions for Inoperable Retarder

Under the following conditions, the retarder does not engage.

- The accelerator pedal is pressed.
- The gearshift switch is in the "N" position.
- The vehicle is traveling at 5 km/h (3 MPH) or lower speeds.
- The engine speed is close to idling.
- During gear shifting.

CRUISE CONTROL

Open-Close



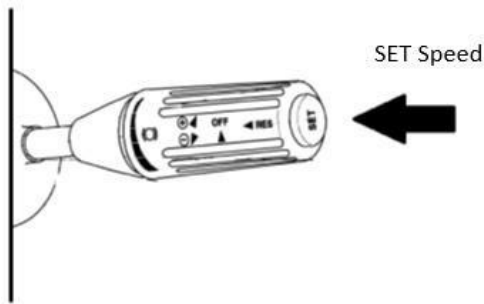
When "CruiseControl" is not open, «CruiseControl» is activated when the lever is moved 1 time in the direction of the up arrow. White warning is displayed on the screen. The speed value has not been set yet.



"CruiseControl" becomes disabled when the handle is moved once in the up arrow direction while "Cruise Control" is on. The white alert that appears on the screen disappears.



Set Speed



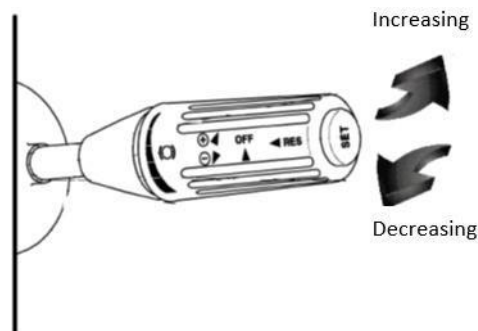
When the set button on the «CruiseControl» lever is the direction of the sign, the vehicle is set to the current speed value. A green warning and the set speed value are displayed on the screen.



By pressing the set button on the “Cruise Control” lever in the direction of the arrow, the vehicle is set to the current speed value. The green warning and the speed value set on the display appear on the screen.



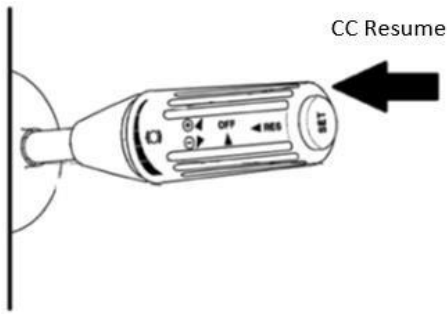
Control Speed Increase/Decrease



The "Cruise Control" lever is moved in the direction of increasing to increase the set speed value. When pressed and pulled one by one, the Set value seen on the screen will increase by 2-3 each. When pressed for 1 second in increment direction, speed value will increase by 2-3 by 0.5 seconds.

The “CruiseControl” lever is moved in the decreasing direction to decrease the set speed value. When pressed and pulled one by one, the Set value displayed on the screen will decrease by 2-3 each. When pressed for 1 second in the decrease direction, the speed value will decrease by 2-3 by 0.5 seconds.

Resume (Resuming The Old Setpoint)



Click the "RES" button on the "Cruise Control" lever pushed in the direction; "Cruise Control" will continue at the old Set value canceled due to the brake, clutch, retarder or exhaust brake. The green warning and the previous set speed value appear on the display. The next process will work the same way again.



HILL HOLD ASSIST OFF SWITCH



Press the switch to deactivate Hill Hold Assist. Press the switch again to reactivate the Hill Hold Assist.

DESTINATION INDICATOR SWITCH



Use the destination indicator to activate the destination route display. With the starter switch in the "ON" position, press the destination indicator switch to turn on the destination indicator display. Press the switch again to turn it to "OFF".

HILLHOLDER SWITCH



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

If the automatic mode is active, the station brake is activated under the following conditions;

- Vehicle speed should be under 3km / h,
- If any door is open,
- If any luggage is open,
- If the rear engine cover is open,
- Fuel filling cover is open,
- Disable lift is open,
- Keypad or rocker switch is pressed
- Deactivation takes place by pressing the accelerator pedal after all doors and covers are closed.

If manual mode is active;

- Fuel filling cover is open,
- Disable lift is open,
- Keypad or rocker switch is pressed.

PICTOGRAM SWITCH



It enables the pictogram in front of and behind the vehicle to be activated.

CENTRAL LOCK KEY

The trunk is unlocked when pressed the lower edge of the switch. The trunk is locked when pressed the upper edge of the switch.

EXHAUST SYSTEM CLEANING SWITCH

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

DRIVER WINDOW SWITCH

Driver window moves downwards when pressed the lower edge of the switch. It stops when pressed once. It moves upwards as long as pressed on the upper edge.

SUSPENSION CONTROL SWITCH

This switch is used for a higher driving level than the normal one. When pressed the lower edge of the switch, the vehicle gets a higher level and if you press the higher edge of the switch, the vehicle gets the normal driving level. When the switch is turned on, intermittent warning sound is activated.

ROLLER BLIND SWITCH



Use the roller blind switch to control the windshield roller blind.

TEA/COFFEE



While the vehicle is running, the boiler (heater) operates on the first level. On the second level, the refrigerator works.

TURBO



Runs the ceiling exhaust fan. When the switch is moved up, it gives out the air inside. When the switch is moved downwards it takes in the outside air.

WC



Use the WC fan runs.

EMERGENCY SWITCH SYSTEM



In order to use the emergency switch, the red colored safety cover on it is opened by holding up. When pushed forward, the electricity of the system cuts down, the engine stops, all internal lights and hazards turn on, door switches are in the active and workable position. When pulled back, system turns to normal.

If the emergency switch is active,

- Indoor lighting II. Stage will be active.
- Door step lamp will be active.
- Hazards will be active,
- Driver lamp will be active,
- Hostes will be active,
- Cluster gives audible and visual warning.

SMART OPTIONS

Follow Me Options

If it is dark and The driver close ignition key to leave the vehicle, the headlights will remain on for a certain period of time for illumination.

Welcome to The Vehicle

If it is dark and the driver opens the doors with the remote control when driver comes to the vehicle, headlights will stay on for a certain period of time.

Cornering Lamp

When the steering wheel is turned to the right and left, the fog lights on the relevant side are activated and the cornering lighting system is activated.

If the vehicle speed is below 30 km/h, the fog lights on the relevant side are activated when the right or left signal is given.

Smart Wiper

If the wiper speed is in the last step, the wiper speed decreases automatically when the vehicle stops, and the driver can take it to the desired level while stationary.

Transmission Economi-Normal-Power Mode Interfaces

Transmission power mode options can be selected by the driver from the Cluster.

FMS Standard 4.0

Fleet Management System Standard 4.0 (All of Can bus messages according to FMS 4.0 standart.

ECM Diagnostic Fault Code

Error message are displayed on the Cluster screen instead of connecting to the ECM with Cummins Insite.

MUX System Diagnostic Menu

It shows the activity of the input/output signals of the Cluster and MUX modules.

Driver Scoring

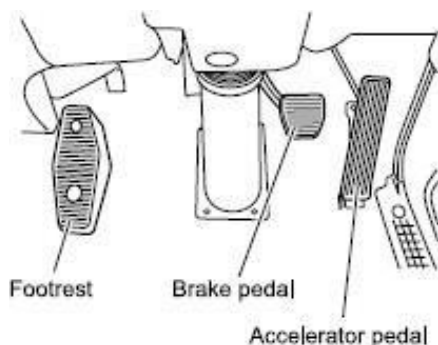
For the driver, scoring the vehicle driving characteristic is colored green-yellow-red. Each color consists of 2 levels. There are 6 levels in total. From green to red shows how efficiently the vehicle is used.

Language Options

There are 9 language options, Turkish-English-French-German-Italian-Spanish-Hungarian-Czech-Welsh. If desired, other languages can be added.

DRIVING CONTROLS

PEDALS



Sit in a correct driving position on the seat and operate the brake pedal and accelerator pedal with your right foot.

To avoid accidentally pressing the wrong pedal, check the pedal positions and practice putting your foot on the desired pedal.

NOTE

- If the accelerator pedal is depressed further after being almost fully depressed, it will be possible to forcibly shift into a lower gear (kick down). This will enable the rapid acceleration necessary to overtake other vehicles or climb steep slopes, etc.

SHIFT SELECTOR

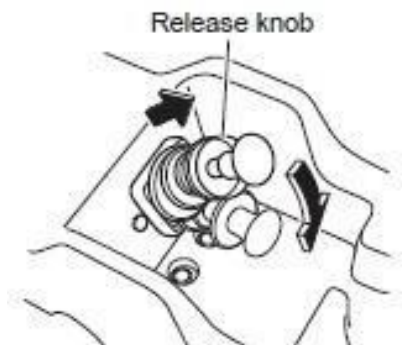


Smoother is a transmission system that allows the driver to move the vehicle from a standstill, drive the vehicle with gears automatically changing and bring the vehicle to a stop by only using the gearshift switch, accelerator pedal and brake pedal.

CAUTION

- Before starting the engine, place the gearshift switch into "N", make sure the shift indicator indicates "N", pull up the parking brake lever and fully depress the brake pedal.
- When moving the gearshift switch from "N" into "D" or "R", be sure to depress the brake pedal.
- Never leave the driver seat with the gearshift switch placed in "D" or "R" while the engine is running. The vehicle may start moving. When leaving the driver seat, be sure to securely set the parking brake and place the gearshift switch into "N".

PARKING BRAKE LEVER



Parking brake warning light



Pull the parking brake lever from the fully released position to the lever locked position. The parking brake warning light will then come on. Make sure that you hear the air being released from the system.

To release the parking brake, lower the parking brake lever while raising the release knob. The parking brake warning light will then go out.

CAUTION

- When parking or stopping your vehicle, pull the parking brake lever and make sure that the vehicle does not start moving.
- Avoid parking your vehicle on a slope as much as possible and choose a level and flat place. If it is unavoidable to park your vehicle on a slope, be sure to set the parking brake fully, make sure that the vehicle does not move, and block the wheels with chocks for added safety. Engage the transmission in a gear for more secure parking.
- Do not use the parking brake while the vehicle is in motion except in an emergency. Applying the parking brake before the vehicle has stopped can cause the tires to lock or the vehicle to spin, possibly causing an accident.
- Unless the parking brake is fully released during driving, a fault and/or a fire may be caused.
- Illumination of the parking brake warning light does not mean that the parking brake is fully applied. The parking brake lever must be fully pulled up.
- After using the parking brake during driving, be sure to check if any failure has been caused.

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 locking 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.

CAUTION

- ABS does not prevent accidents if you do not drive safely. Drive the vehicle at a safe speed.
- Install tires of the specified size, same brand and same tread design (including winter tires) on all wheels. If different tires are installed, the braking distance becomes longer and directional control stability of the vehicle decreases. This is very dangerous.
- Steering during sudden braking (when the ABS is working) will feel slightly different than it does when the brakes are not applied. Operate the steering wheel carefully keeping this in mind.
- For full-air brake models, ABS operation consumes the brake system air. When the air pressure drops and the air pressure warning light and the buzzer are activated, immediately stop the vehicle at a safe place and wait for the required air pressure to be recovered before driving.

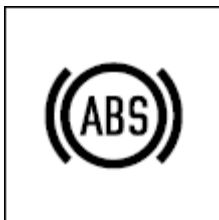
ADVICE

- Driving in sand or on a muddy road may adversely affect the brakes and ABS sensors. Wash the vehicle to remove sand and mud after operating the vehicle in sandy or muddy conditions.
- Before washing the vehicle, provide necessary protection to prevent water from being splashed on the ABS components (sensors and actuators). Especially when using high-pressure washing, be careful not to allow water to be directly sprayed onto the ABS components and their harness connectors.

NOTE

- ABS is not activated immediately after starting the vehicle. It is activated only when the vehicle speed reaches approx. 10 km/h (6 MPH). ABS operation is inactive when the vehicle speed reduces to approx. 5 km/h (3 MPH).

ABS Operation Indications and Signs



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.

When ABS is activated, slight vibration is generated on the steering wheel and an operating sound can be heard from the ABS equipment.

NOTE

- If the ABS warning light does any of the following, the ABS may be faulty. Please contact the nearest Isuzu Dealer.
 - If the ABS warning light comes on during driving
 - The light does not come on when the starter switch is placed into the "ON" position
- Even if a problem has occurred with the ABS, the regular brakes will still work normally. However, ABS will not operate.

Precautions for Driving an ABS-Equipped Vehicle

ABS is not a device that enables driving and stopping under conditions exceeding safe driving limits. Always drive safely.

CAUTION

- When braking suddenly, continue pressing brake pedal hard so that the ABS can take effect.
- When braking suddenly, do not pump the brakes (pushing and releasing the brake pedal little by little). Pumping brakes will increase the braking distance.
- The braking distance on slippery road surfaces is longer than that on a normal dry paved road even with an ABS-equipped vehicle. When ABS is activated in the following road surface conditions, the braking distance may be slightly longer compared to that of vehicles not equipped with an ABS. Therefore, always be aware of the road and tire condition (tire type and wear condition), observe safe driving habits and drive the vehicle while keeping a safe following distance.
 - When driving on a gravel road, or a road with a deep snow covering.
 - When tire chains are used.
 - When driving over road joints or bumps such as light reflectors on the road.
 - When driving on a bumpy road, stone-paved road or track.
 - When driving over an iron plate or manhole lid.
- ABS does not work for wheel skid during a standing start, acceleration and cornering which do not involve braking. On a very slippery icy road, tires may lose grip and steering wheel operation may not be able to control the vehicle's direction, resulting in very unstable driving. Always drive the vehicle observing a safe speed well matched with both road surface and tire conditions, and avoid sudden braking.
- If powerful engine braking is applied on a very slippery icy road, the drive wheels may be locked (the ABS then does not work), resulting in loss of vehicle control. If this happens with a manual transmission vehicle, disengage the clutch or place the gearshift switch into the "N" position to prevent engine braking from acting on the drive wheels. Then, drive the vehicle with the gearshift switch placed in an appropriate gear.
- When ABS is activated, a slight vibration (especially when the road surface is different between right and left wheels) and pulling may be felt on the steering wheel. In addition, an operating sound is produced from the ABS actuators. This does not indicate any abnormal condition. Stay calm and operate the steering wheel properly.

ANTI-SLIP REGULATOR (ASR)

ASR is a device that helps prevent the drive wheels from spinning and improve vehicle motion stability when driving on a snowy or otherwise slippery road surface. The ASR is automatically activated when the engine is started. You may cancel the ASR operation using the ASR OFF switch.

CAUTION

- When ASR is activated, the ASR indicator light (green) comes on. The road surface at this time is very slippery. If the indicator light comes on, drive carefully and reduce the speed sufficiently before negotiating a curve.
- Even with the ASR-equipped model, when driving on a snowy or icy road, carefully drive the vehicle, installing tire chains or winter tires.
- ASR is not a device to drastically improve the vehicle starting performance. Carefully operate the accelerator pedal when moving on an icy slope.
- When tire chains are installed, it may be easier for you to start the vehicle to move on an icy slope if the ASR is canceled. Be aware, however, that ASR deactivation will result in reduced stability of vehicle operation.

NOTE

- You may notice minimal vibrations or operating sound when starting and accelerating the vehicle on a slippery road. This sound is generated when ASR is operating.
- The engine speed may suddenly decrease, but this is because the ASR device is operating.

ASR OFF Switch



Use this icon when you want to cancel the ASR. When you press this icon while the ASR is active after starting the engine, the ASR is cancelled and the icon is pressed again, the ASR function turns back on.

ADVICE

- When you turn off the ASR, it will not be available to assist you in slippery driving conditions. Always use caution when driving on slippery roads.
- Be sure to enable the ASR during normal driving.

NOTE

- If the ASR is off when the engine is turned off, it is automatically re-enabled when you restart the engine.

ASR Operation Check and ASR Operation



When the starter switch is turned to the "ON" position, the ASR indicator light comes on amber and then turns green before it goes out in about 2 seconds. ASR is normal if the indicator light goes out.

When ASR is operating, the ASR indicator light (green) comes on. When the ASR OFF switch is pressed, the ASR indicator light (amber) comes on.

NOTE

- If the ASR indicator light does any of the following, ASR may be faulty. Please contact the nearest Isuzu Dealer.
 - When the ASR indicator light (green) remains on while driving on a firm, dry road.
 - When the ASR indicator light (amber) comes on during driving (when the ASR OFF switch is not operated).
 - The ASR indicator light does not come on when the starter switch is turned to the "ON" position.
- If the ASR is faulty, it does not interfere with normal driving. However, the ASR will not function.

Precautions for Driving an ASR-equipped Vehicle

ASR is not a device that enables driving under conditions exceeding safe limits. Always drive safely.

CAUTION

- The ASR does not increase the road grip of tires although it improves the starting and accelerating performance on a slippery road surface when compared to a model without ASR. On an icy or otherwise slippery road, the grip of tires decreases which also reduces steering control, resulting in unstable vehicle behavior. Always drive the vehicle observing a safe speed well matched to the road surface and tire conditions, and also avoid speeding.
- Even if ASR is equipped, avoid sudden operation of the accelerator pedal and steering wheel. Especially when starting the vehicle on a slippery road, start up slowly as you would in a vehicle without ASR.

NOTE

- When you drive up a slippery, long slope by increasing the engine speed, where the tires may slip, or when you want to dislodge the vehicle from a deep snowy road or mud, you can press the ASR OFF switch to disable the ASR system.

ELECTRONIC BRAKE SYSTEM (EBS)

EBS (Electronic Brake System) is a system that adds electronic signals to the brake air control system (sent by the brake pedal when it is depressed) in order to improve air brake responsiveness. The EBS maintains the same brake feel regardless of whether the vehicle is loaded or not and is a device that enhances driver operability and safety.

CAUTION

- The EBS is not a device to counteract unsafe driving practices. Always maintain a safe speed as well as a safe distance between yourself and other vehicles.
- All tires installed to the vehicle should be of the specified size, as well as be of the same brand and with the same tread design (this includes winter tires). Installing different types of tires to the vehicle is dangerous and could result in reduced braking ability and unstable vehicle operability.

EBS Operation Check, Operation, Malfunction



When the starter switch is turned to the "ON" position, the brake warning light comes on before going out approximately 3 seconds later. The EBS is normal if the warning light goes out. If the warning light does not come on even when the starter switch is turned to the "ON" position, it may be possible that the bulb has burned out or there is an EBS malfunction.

When EBS is operating, operating sounds can be heard from the EBS components.

If the brake warning light comes on or flashes during driving, the EBS, ABS/ASR may be malfunctioning. Please contact the nearest Isuzu Dealer.

NOTE

- Even if the EBS has malfunctioned, the regular brakes will still operate normally. Because the EBS will be inoperable at this time, it will be necessary for the brake pedal to be depressed more strongly than normal in order to achieve the required brake force.

Driving Precautions for Vehicles Equipped with EBS

The EBS is not so versatile that it enables driving under conditions that exceed safe limits. Always drive safely.

WARNING

- If the starter switch is turned to the "ON" position (engine start-up) on a slope, etc., the EBS may be affected due to a battery voltage decrease, resulting in the vehicle moving down the slope. After either pulling the parking brake lever or fully depressing the brake pedal, turn the starter switch to the "ON" position (engine start-up).

CAUTION

- Although models with EBS may have enhanced brake responsiveness when compared to models without EBS, the EBS is not a device to counteract unsafe driving practices. Always drive the vehicle while observing a safe speed.
- In models with EBS, the EBS is activated when the brake pedal is depressed, regardless of whether the starter switch is turned to the "LOCK" position. Even if the starter switch is turned to the "ON" position with the brake pedal depressed, emissions from the EBS device are not vented. (In this case, the EBS system operation check will not be performed.)
If exhaust sounds cannot be heard from the EBS system when the brake pedal is depressed and released, the EBS exhaust port may be frozen or blocked by snow or ice which must be removed.
- If battery voltage becomes low, EBS operation may be affected. Periodically inspect the battery.
- In models equipped with EBS, the vehicle's computer detects loading conditions, making it unnecessary for drivers to adjust how they depress the brake pedal, regardless of whether or not the vehicle is loaded or empty. However, as with vehicles not equipped with an EBS system, braking distance will be increased if the brake pedal is not sufficiently depressed when the vehicle is empty.
- The EBS will not function to its full capacity if the driver pumps the brake pedal instead of depressing it fully. Pumping the brakes will also lead to a decrease in brake performance caused by an increase in air. ("Pumping" the brakes is defined as continually depressing the brakes at a rate of once or more each second.)

ADVICE

- When installing an electronic device such as a radio, pay attention to the installation position and routing so that EBS functionality is not affected. Also, when installing, please contact the nearest Isuzu Dealer.

How to Make the EBS Function Correctly

Using the brake pedal stroke amount together with the vehicle deceleration rate, the EBS calculates loading conditions and determines the braking strength. If loading conditions change, the EBS recalculates the weight. This recalculation will be completed only after the vehicle has been brought to a complete stop from a speed of 30 km/h (19 MPH) or more a total of 3 to 4 times without the brakes being pumped.

CAUTION

- When the brake warning light is illuminated, it signals that an EBS malfunction has occurred. In this case, although the feeling of the brakes will change considerably due to the in operation of the EBS, the regular brakes will still operate normally. If the EBS malfunctions, firmly depress the brake pedal, stop the vehicle, and contact your nearest Isuzu Dealer.

DRIVER SUPPORT SYSTEMS

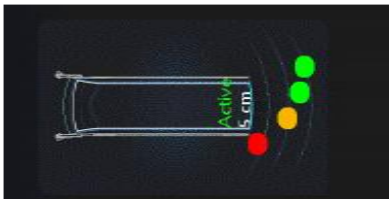
REVERSING DETECTION

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

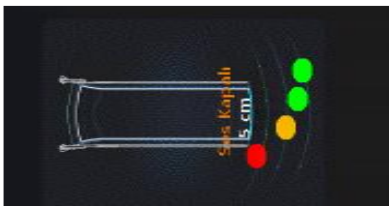
- The system is activated when the ignition key is turned on and is activated when the vehicle is put into reverse gear. When the sensors detect an object behind, the optical signal gives a warning as follows, accompanied by the acoustic signal.

Parking Sensor Active, Sound On



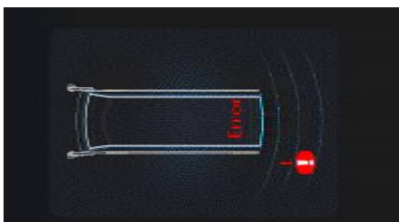
- Disabling the acoustic signal to avoid disturbing it is done via the menu. In this case, the following image will appear on the screen.











Parking Sensor Active, Sound Off

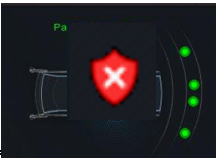


- The system will switch off automatically when there is a situation that prevents the system from working. When it switches off, the system is shown as off on the instrument panel. The system cannot be deactivated as there is no malfunction.

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	
PLCA Warning Signal	

DDAW Warning	
DDAW Deactivated & Malfunction Warning	
Cyber gateway secure	
Cyber Gateway Not Secure	
Cyber Gateway Not available	

TPMS(Tire Pressure Monitoring System)

- Tyre pressure information is transmitted to the driver.

The TPMS warning should illuminate in the following situations.

- Amber if any tyre pressure is 10% below the nominal pressure, red if it is 20% below the nominal pressure,
- If any tyre pressure is more than 25% above the nominal pressure,
- When a tyre without a sensor is fitted,
- When the sensor battery level is low

ISA(Intelligent Speed Assistant)

- The function works in conjunction with GPS and the camera.
- The driver is informed of the speed limit on the route.
- When the specified speed limit is exceeded, the driver receives a visual and acoustic warning.

LDWS(Lane Departure Warning System)

- At speeds above 60 km/h, the system provides visual and acoustic warning to the driver in case of lane violation.

AEBS(Advanced Emergency Braking System)

- The system works to prevent potential collisions with passenger cars, vans, trucks, lorries etc.
- It gives at least 2 warnings, at least 1 of which is acoustic, before braking.
- AEBS operates with a 3-phase brake intervention strategy;
 - **Warning phase:** Gives visual and acoustic warning before potential braking.
 - **Partial braking phase:** If the driver has not braked after the warnings in the first phase, the system decelerates the vehicle with an average braking acceleration of -3.5m/s^2 .
 - **Emergency braking (full brake) phase:** If the driver cannot prevent a potential collision in the first 2 braking phases, the system decelerates the vehicle with the maximum braking acceleration required.
- The function does not work when the accelerator pedal is in the kick down position.

PAEBS(Pedestrian Advanced Emergency Braking System)

- The function is activated in the speed range 10km/h-60km/h.
- It is activated to prevent collision with cyclists and pedestrians/reduce the collision speed.
- PAEBS operates with a 3-phase brake intervention strategy;
 - **Warning phase:** Gives visual and acoustic warning before potential braking.
 - **Partial braking phase:** If the driver has not braked after the warnings in the first phase, the system decelerates the vehicle with an average braking acceleration of -3.5m/s^2 .
 - **Emergency braking (full brake) phase:** If the driver cannot prevent a potential collision in the first 2 braking phases, the system decelerates the vehicle with the maximum braking acceleration required.
- The function does not work when the accelerator pedal is in the kick down position.

MOIS

- The function only gives cyclist and pedestrian warnings.
- The function is active when the vehicle speed is between 0-15km/h.
- The functions do not work when the vehicle is in reverse gear.

When objects enter the radar scanning area;

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

BSIS

- The warnings are activated when the object and the vehicle are travelling in the same direction.
- The function is activated when the vehicle speed is between 0-30km/h.
- Collision warning is not activated when the vehicle is stationary.
- The functions do not work when the vehicle is in reverse gear.

When objects enter the radar scanning area;

- Cyclist speed 5-20km/h,
- Pedestrian speed should be between 2-20 km/h.

LCDA(Side Lane Vehicle Warning)

- The function warns of vehicles (car, motorbike, lorry, etc.) approaching from behind in the side lane.
- LCDA warning warns when the specified objects are travelling in the same direction as the vehicle.
- The minimum vehicle speed required for the function to be activated is 43 km/h.

The speed limits required at the target object for the function to be activated;

- Minimum target vehicle speed 21km/h,
- Minimum relative speed -22km/h (example: vehicle speed 43km/h, target vehicle speed 21km/h)
- The maximum relative speed should be 36km/h (example: vehicle speed 50km/h, target vehicle speed 86km/h).

TIPS ON SAFE DRIVING**DRIVING SAFELY****GET PLENTY OF REST**

If you drive when you are tired, you will get sleepy and lose concentration. Please get plenty of rest before you drive.

TAKE BREAKS DURING LONG JOURNEYS

Driving long distances is tiring. Please take rest breaks from time to time.

ON THE ROAD**CAUTIONS FOR DRIVING**

perform checks.

- Concentrate on driving safely, obeying all legally designated speed limits, road signs and traffic signals.
- Do not place the starter switch to any position other than the "ON" position while driving. The power steering would stop working, making steering extremely difficult. Also, the brakes would not work well, putting you in extreme danger.
- If you notice any abnormal noise, abnormal smell or abnormal vibration from any part of the vehicle, immediately stop the vehicle in a safe place and perform checks.
- If a warning light comes on or a buzzer sounds while you are driving, immediately stop the vehicle in a safe place and

- Do not put your foot on the clutch pedal except when using the gearshift lever. Doing so would cause premature clutch wear.
- Slow down sufficiently when approaching a curve. Applying the brakes or sharply turning the steering wheel while turning the curve could cause the cargo to shift, the tires to slip and the vehicle to tip onto its side.
- While driving, do not place your hand on the gearshift lever except when changing gears. Doing so could cause the transmission to fail.
- Avoid scraping the tire sidewalls against curbstones or driving over dips and protrusions in the road surface. You could damage the tires, resulting in a blowout or flat tire.
- Never take your hand off the steering wheel while driving.

DRIVING UPHILL OR DOWNHILL

Uphill

Shift down well ahead of time in order to avoid a heavy load to the engine.

Downhill

- Be careful not to drive too fast on a downhill road.
- Use the same gear(s) that you used to drive up the hill. Also, if your vehicle is equipped with an exhaust brake, use the exhaust brake in order to avoid going too fast.
- Do not let the engine overrun.
- When going down on a steep slope, avoid driving the vehicle backward as much as possible. Drive it forward slowly on the down slope.
- Compared with forward movement, the braking distance of backward movement is longer, and the steering response of that is worse.
- If you must drive the vehicle backward, drive it very carefully and gradually by moving and stopping repeatedly in order to stop it any time.

NOTE

- An engine overrun is an engine speed increase that causes the tachometer needle to enter the red zone. It is dangerous because it can cause engine failure.

BRAKE OPERATION

The brakes give strong braking force with only light pressure on the pedal. Do not press the brake pedal hard except in the event of an emergency.

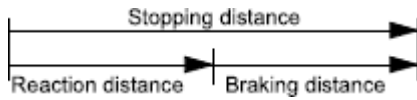
Model with Full-Air Brake System

1. Braking distances vary according to the vehicle speed and road conditions. First, slow down sufficiently using the engine brake and the exhaust brake.
2. Press the brake pedal and keep it pressed until just before the point at which you want the vehicle to stop.
3. Ease off the brake pedal.
4. Immediately before the point where you want the vehicle to stop, gently press the brake pedal to bring the vehicle to a halt.

CAUTION

- Do not allow the brake pedal to fully return. If you allow the brake pedal to fully return, there will be a short delay before the brakes start to work the next time you press the pedal, meaning that the stopping distance may be increased.
- Unnecessary frequent depression and release of the brake pedal reduces the vehicle's air pressure, thereby detracting from brake effectiveness.

Stopping distance




The vehicle's stopping distance consists of a reaction distance (from the point where the driver senses danger and presses the pedal to the point where the brakes start to work) and a braking distance (from the point where the brakes start to work to the point where the vehicle comes

to a halt). When driving, bear the stopping distance in mind. Maintain a speed and headway distance that allow you to stop safely even if a hazard occurs.

MAINTAINING A CLEAR FIELD OF VIEW

If the Windshield Fogs Up

Use the heater to blow hot air on the windshield or dehumidify the cabin using the air conditioner and place the vent knob in the  position. Place the inside/outside air selector in the outside-air position. Also, use commercially available antifog spray.

Night Time Visibility

If there is an oil film on the windshield, the lights of oncoming traffic will be reflected in many directions, making it hard for you to see ahead. Use glass cleaner to clean the glass and the wiper blades.

NOTE

- Worn wiper blades cannot wipe the windshield clean and thus cannot maintain visibility. When the wiper blades become worn, replace them with new ones.

DRIVING AT NIGHT

Nighttime driving is more dangerous than daytime driving because the field of view is narrower. Keep your speed down, and maintain an ample headway distance.

DRIVING IN FOG

Turn on the fog lights and drive slowly, using the road's center line as a guide. It is dangerous only to follow the lights of the preceding vehicle because they can cause optical illusions. Drive with caution.

HIGHWAYS

1. Speeds on highways are higher than those on regular roads, so there is more danger. Also, a breakdown on a highway represents a hazard to other vehicles and can cause an accident. Concentrate on safe driving. Remember to perform daily pre-operation inspections and use highway driving techniques. When performing daily pre-operation inspections, perform the checks shown in the table on the left with particularly great care.
2. When merging with traffic on a highway, use the turn signal lights to indicate your intentions ahead of time. Speed up sufficiently when you are in the acceleration lane. Pay attention to vehicles behind you and to conditions in the lane you are joining. Merge in such a way that you do not obstruct vehicles in the lane.
3. Your sense of how fast you are traveling becomes distorted on long highway drives. Constantly keep an eye on the speedometer, and maintain a suitable headway distance.
4. During high-speed driving, even a little turn of the steering wheel causes a big movement of the vehicle. Turn the steering wheel slowly.
5. Excessive use of the brake pedal is extremely dangerous because it rapidly wears the brake linings and causes brake fade. Make effective use of the engine brake and (if your vehicle is so equipped) the exhaust brake when you wish to decelerate.
6. When you wish to turn off a highway, use the turn signal lights to indicate your intentions ahead of time. Paying attention to vehicles behind you, turn off the highway smoothly so as not to obstruct other vehicles.

NOTE

- Frequent use of the brakes can cause the brakes to overheat so that the frictional force of the brake linings decreases and the brakes become less effective than normal. This phenomenon is called brake fade.

DRIVING ON SNOWY OR FROZEN ROADS

CAUTION

- On slippery roads, never accelerate rapidly, brake hard, decelerate rapidly or make sharp turns of the steering wheel.
- There is a risk of reduced grip between the tires and road surface and of increased braking distances. The danger of icy road surfaces is particularly great on bridges, in shady places and where there are puddles. Keep your speed down and be sure to use tire chains or winter tires on snowy or frozen road surfaces.
- Use lower gears to overcome the retardation effect of the engine. Apply the foot brakes lightly.

ADVICE

- With a Smoother vehicle, you can make a standing start in the manual-mode 3rd gear if you first hold down the brake pedal and move the gearshift lever to the "+" (upshift)" position.

NOTE

- For models that are equipped with anti-slip regulator (ASR), when you want to free the vehicle from snow where the tires may slip slightly by increasing the engine speed, you can press the ASR OFF switch to disable the ASR.

- For models that are equipped with electronic stability control (ESC) and the ESC OFF switch, when you want to free the vehicle from snow where the tires may slip slightly by increasing the engine speed, you can press the ESC OFF switch to disable just the anti-slip regulator (ASR).

BEFORE DRIVING IN COLD REGIONS

Getting In and Out of the Vehicle

The step can get icy in cold regions. Be careful not to slip when getting in and out of the vehicle.

Before Sitting in the Driver's Seat

Remove snow and ice from your shoes when getting into the vehicle. If you try to drive with snow on your shoes, your shoes would slip on the pedals and you would not be able to press the pedals properly, meaning that your driving would be inconsistent. Also, the cabin could become more humid, causing the glass to fog up.

Starting the Engine

When you start the engine, check that the accelerator pedal works smoothly.

NOTE

- For Smoother models, when the ambient temperature or the temperature inside the garage is lower than -25°C, the transmission needs to be warmed up in addition to the engine. To start the engine and operate the transmission correctly, warm them up sufficiently.

DRIVING ON SNOWY OR FROZEN ROADS (FENDERS)

CAUTION

- On snowy roads, water and snow splashed up by the tires can freeze and accumulate inside the fenders, making the steering wheel hard to turn. From time to time, get out of the vehicle and remove any accumulated snow. Do not use a sharp implement to remove the snow. Sharp edges could damage rubber parts.
- When the vehicle is driven or parked on a snowy surface, ice can form on the brakes, decreasing their effectiveness. From time to time while you are driving, press the brake pedal lightly and check the brake's effectiveness. Pay attention to vehicles both ahead and behind you when checking the brakes in this way.
- Also, check the brake's effectiveness as soon as possible when starting to drive the vehicle after it has been parked. If the brakes do not work well, drive slowly and gently press the brake pedal several times until the brakes dry out and start working normally.

REMOVING SNOW FROM THE GLASS AND UNDERBODY

To maintain an adequate field of view, use a plastic scraper to remove snow and frost from the glass surfaces. By using a plastic scraper, you can remove the snow and frost without scratching the glass. At this time, check whether the wiper blades are frozen onto the glass. Also, look under the vehicle and remove any lumps of ice that are stuck to the underbody. Be careful not to damage components.

ADVICE

- Do not use a sharp implement to remove snow. Sharp edges could damage rubber parts.

DRIVING ON POOR ROAD SURFACES (SAND OR MUD)

If the vehicle gets stuck in mud, pressing the accelerator pedal more than necessary will simply dig the vehicle deeper into the mud and make it harder to extricate. Either put stones, tree branches or blankets under the tires to gain traction or repeatedly drive forward and backward to use the vehicle's momentum to extricate it.

When you cannot avoid driving through deep mud, using tire chains is an effective way to avoid getting stuck.

ADVICE

- When driving in sand or mud, avoid hard braking, sudden acceleration and sharp turns of the steering wheel. Such actions could get the vehicle stuck and make it impossible to extricate.
- After driving through deep mud, any mud stuck to the vehicle can harm the steering, brakes and powertrain. Wash the vehicle and remove all mud and other incrustation.
- On anti-lock brake system (ABS) equipped model, the vehicle speed sensors are fitted on the wheels. When removing mud and other incrustation, take great care not to damage the components.
- Do not use a sharp implement to remove mud. Sharp edges could damage rubber parts.

NOTE

- For models that are equipped with anti-slip regulator (ASR), when you want to free the vehicle from mud where the tires may slip slightly by increasing the engine speed, you can press the ASR OFF switch to disable the ASR.

CAUTIONS FOR DRIVING IN HOT REGIONS

The engine will be prone to overheating in an environment where the ambient temperature is high. To prevent the engine from overheating, pay attention to the following points:

CAUTION

- Do not put well water, river water or other hard water in the engine cooling system. It would hasten the formation of rust and scale.

If foreign matter (insects, mud, etc.) gets stuck in the radiator's air passages, the cooling system's performance will deteriorate. Check the air passages for clogging, and remove any foreign matter using water under low pressure.

ADVICE

- When the ambient temperature is high, evaporation of battery fluid will become quicker. Frequently check the battery fluid level and, when necessary, add more fluid.

CAUTIONS FOR DRIVING IN COLD REGIONS

The following cautions apply to snowbound regions and to mountainous regions, ski resorts and other areas of extreme cold and/or snowfall. Please use them also for reference in winter in other regions.

For the sake of your vehicle, have your Isuzu Dealer make the winter preparations described hereafter. Also have these preparations made before driving to a cold region.

CAUTION

- Do not cover the front of the radiator with newspapers, cardboard or any other flammable material to raise the engine coolant temperature.
- If you allow the engine to warm up but the engine coolant temperature does not rise, have the nearest Isuzu Dealer inspect the thermostat.
- If you park in a place where there is a lot of snowfall, snow accumulating around the vehicle could limit ventilation. Running the engine with the vehicle in such a situation could cause exhaust gases to enter into the cab, resulting in carbonmonoxide poisoning. Take preventive action by, for example, clearing the snow around the vehicle.

PROTECTION OF ENGINE AGAINST OVERCOOLING

Overcooling of the engine not only accelerates wear of the vital engine parts but also deteriorates fuel economy.

COOLANT

To prevent the engine damage due to freezing of the engine coolant, mix the coolant and water at a ratio of 50/50. Replace damaged rubber hoses as the engine coolant becomes liable to leak even past minor cracks when the engine coolant solution is used.

REPLACING THE ENGINE OIL

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

ADBLUE®

ADVICE

- AdBlue® freezes at a temperature of -11°C. Since the urea SCR system is equipped with a heating function that utilizes the engine coolant, the engine will start even when AdBlue® is frozen.

CAUTION

- Do not warm up the AdBlue® tank using burners or heaters.

FUEL

CAUTION

- For models conforming to Euro IV emission standards, be sure to use low sulfur diesel fuel (containing sulfur of 50 ppm or lower) or extra-low-sulfur diesel fuel (containing sulfur of 10 ppm or lower). 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).
- The use of a poor-quality diesel fuel, mixing such an additive as water remover to the fuel in the tank, or filling the tank with gasoline, kerosene or an alcohol based fuel or its mixture with a diesel fuel will badly affect the fuel filter and result in lubrication problems in fuel-lubricated components of the injectors. In addition, this practice can also impair the operation of the engine and the diesel particulate defuser (DPD), the urea selective catalytic reduction (SCR) system, the exhaust emission cleaning system, possibly leading to breakdown of the engine-related systems. If an incorrect fuel should accidentally be added, drain all fuel from the system. Failure to observe this precaution can result in the outbreak of fire or permanent damage when the engine is started.
- Using diesel fuel other than extra-low-sulfur diesel fuel or low-sulfur diesel fuel in a model conforming to Euro IV emission standards, or using diesel fuel other than extra-low-sulfur diesel fuel in a model conforming to Euro V or Euro VI emission standards could prevent the vehicle from complying with local legal requirements.
- Open the fuel tank filler cap slowly. If you open it quickly, fuel may spurt out.

If you drive to a cold region in winter while using diesel fuel for warmer regions that freezes at a relatively high temperature, the fuel may freeze. As the ambient temperature decreases, the fuel in the fuel tank and pipes may freeze like slush, making the engine hard to start.

NOTE

- The specifications of diesel fuel differ according to the season and region.
- When driving to a cold region, put just enough fuel to reach the destination in the tank. As soon as you reach the cold region, fill the tank with fuel that has a low freezing temperature.
- When taking the vehicle to a cold region on a ferry, board the ferry with only a minimal amount of fuel in the tank and then, after reaching the cold region, fill the tank with fuel that has a low freezing temperature.

WHEN ICE PREVENTS YOU FROM OPENING THE DOOR

If you try to force the key into the door, you could bend it. And if you try to pull the door open with undue force, the rubber seal around the door could come unstuck or become damaged. Use warm water to melt the ice, then quickly wipe it away and open the door.

If the wipers, electric door mirrors, or power windows freeze up, also use warm water to melt the ice and then operate the system. Otherwise, you could damage the mechanism and drain the battery. After that, wipe the water away.

WINTER TIRES

Use winter tires of the same sizes as the standard tires. Also, use wheels of the same size as those with the standard tires. A winter tire has reached its wear limit when the tread grooves have worn to half of the depth of the new tire. At this time, platforms indicating that the tire can no longer give adequate performance on snow become visible in the grooves. Replace the tire with a new one.

CAUTION

- Avoid sharp turns of the steering wheel and hard braking. Use the engine brake to decelerate. When applying the brakes on snowy or frozen road, lightly press the pedal several times rather than giving it one hard press. A single hard press of the pedal would be dangerous because it could cause the vehicle to slip or skid.
- If your vehicle is equipped with an exhaust brake, and you use the exhaust brake on a slippery road when the vehicle is not loaded, the resulting hard deceleration can cause the back of the vehicle to swing sideways. Exercise caution.
- Avoid driving at high speeds on a dry road with winter tires.
- Comply with local legal requirements when using winter tires.

CLEANING THE VEHICLE AFTER DRIVING ON SNOWY ROADS

CAUTION

- Remove snow that has stuck to the inside of the fenders and to the brake hoses. Otherwise, it may damage components. After driving on a salted road, wash the underside of the vehicle as soon as possible to prevent the salt from causing rust. Spraying water under high pressure is an effective way to get the salt off.
- After washing the vehicle, wipe the door openings dry.

NOTE

- On anti-lock brake system (ABS) equipped model, the vehicle speed sensors are fitted on the wheels. When removing snow, ice and other incrustation, take great care not to damage the components.
- Do not use a sharp implement to remove snow. Sharp edges could damage rubber parts.

SERVICE AND MAINTENANCE

BEFORE SERVICE AND MAINTENANCE

PRECAUTIONS FOR CHECKING AND ADJUSTMENTS

WARNING

- Make sure to turn off the engine and remove the key from the starter switch before performing any checks.
- Pull firmly on the parking brake lever and put the transmission in neutral.
 - If your vehicle is equipped with a manual transmission, make sure the gearshift lever is in "N".
 - If your vehicle is equipped with a Smoother system, place the gearshift lever in "N" and make sure the shift indicator displays "N" (for Smoother models with P-range, place the gearshift lever in the "P" position and check that the shift indicator displays "P").
- Select a place with a solid and level surface to perform the checking and maintenance work. Make sure to chock the wheels. It would be very dangerous if the vehicle started to move.
- To prevent personal injury, keep hands, tools and clothing clear of the engine cooling fan when the engine is running.
- When raising the vehicle, use a suitable jack, not the one provided on the vehicle.
- After raising the vehicle and before going underneath to perform work, make sure the vehicle is supported with jack stands.
- When performing work on the electrical system, begin by turning the starter switch to the "LOCK" position, wait at least 3 minutes (models with SCR) or 2 minutes (models without SCR), and then disconnect the negative cable from the negative terminal on battery. If the negative cable is disconnected within 3 minutes (models with SCR) or 2 minutes (models without SCR), the engine control module may malfunction.
- The engine, exhaust pipe and radiator will be hot immediately after the vehicle is driven. Be careful around these parts to prevent burns. Perform all checks when the engine is cold.
- Do not perform work near an open flame or other heat sources.
- When working on the fuel line or fuel filter, remove the fuel tank filler cap. The fuel system is under pressure and the fuel will overspill unless the pressure is relieved, possibly leading to combustion or a fire.
- Do not let the engine run in poorly ventilated garages or sheds. This could cause carbon monoxide poisoning.

CAUTION

- Discarded parts, oil, grease and fluids could have an adverse effect on the environment. It is difficult to dispose of these, so have your Isuzu Dealer handle all checks and replacements.

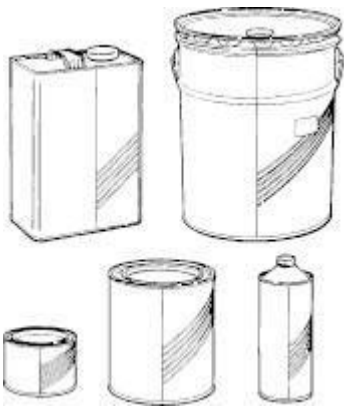
ADVICE

- Use only appropriate tools.
- Oils, brake fluid, battery fluid and engine coolant have lubrication, cooling and rust prevention functions. If these liquids deteriorate through loss or contamination, it will cause a decline in the performance of the parts and such problems as seizure or malfunctioning. Replenish or change these liquids when performing the checks (daily and periodic checks) as required by the relevant regulations or in accordance with the Maintenance Schedule (when either the specified driving distance or period of time, whichever comes first, has expired).
- Confirm that all systems and components are normal after performing the work.
- Do not leave the removed parts or tools in the engine compartment. They could damage the equipment if caught in the belts or other moving components.
- Dirty water, dirt and other impurities seriously impair the effectiveness of the oil, grease and fluids, and damage the parts. Exercise all due caution to prevent waste or other refuse from coming in contact with parts or materials that have been removed when changing or replenishing them.

DISCARDED PARTS, OILS AND OTHER LIQUIDS

- When changing oils, filters, engine coolant or other liquids, be sure to have a container ready in advance for their disposal.
- Use methods conforming to legal requirements for discarding or disposing of parts, oils, filters or engine coolant after change or replacement.

ISUZU GENUINE OILS AND GREASE



Periodically replenishing and changing the oil and grease is extremely important for maintaining your vehicle's performance and preventing malfunctions. Isuzu Motors guarantees the quality and performance of the Isuzu genuine oils and grease. We recommend the use of Isuzu genuine oils and grease for maintenance and service of your vehicle.

CAUTION

- Flames or other heat sources near spilled oil can cause a fire. Make sure to clean up all oil spills.

ENGINE-RELATED SERVICE AND MAINTENANCE

ENGINE CONDITIONS

Checking the Engine for Startability and Abnormal Noises

1. Make sure the parking brake is securely engaged. Step firmly on the brake pedal.
2. Make sure the transmission is in neutral.
3. Turn the starter switch to start the engine.

Check that the engine starts quickly with no abnormal noises.

CAUTION

- If your vehicle is equipped with the Smoother system, the engine will not start unless the transmission is actually in neutral.
- For safety, firmly press the brake pedal before starting the engine.

Checking Condition of the Engine at Low Speeds and during Acceleration



1. Make sure the transmission is in neutral and the parking brake is securely engaged.
2. Turn the starter switch to start the engine, and run it to warm up.
3. Check that the engine is running at a speed within the standard idle speed range.
4. Drive the vehicle, making sure the accelerator pedal does not stick when gradually accelerating, the engine speed rises smoothly and it does not knock.

NOTE

- For vehicles equipped with a diesel particulate defuser (DPD), engine idling speed may rise during DPD regeneration.

ENGINE OIL

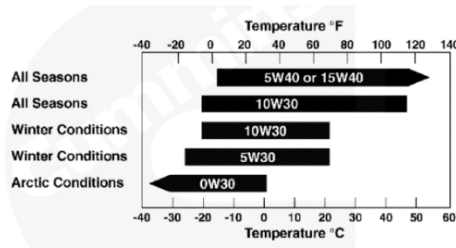
Engine oil is an important factor determining engine performance and longevity. Be sure to use only the specified oil and oil filters. The engine oil level must be checked and the oil should be changed regularly according to the Maintenance Schedule.

NOTE

- For vehicles equipped with a diesel particulate defuser (DPD), when particulate matter (PM) has accumulated to a preset level in the DPD filter, the filter is automatically regenerated through combustion. To make this regeneration (combustion) possible, a small amount of fuel is injected into the engine combustion chamber after firing. This causes fuel to gradually become mixed with the engine oil, and the engine oil level will rise beyond its original level. This does not indicate a malfunction of the engine.

WARNING

- While the preferred viscosity grade is 15W-40, lower viscosity multigrade oils can be used in colder climates. See the the following chart. Any viscosity grade lower than 15W-40 must still meet CES 20081

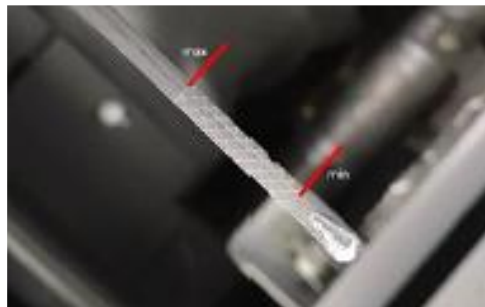


Checking the Engine Oil Level

Park the vehicle on a level surface and check the engine oil level before starting or at least 30 minutes after turning off the engine. To check the oil level, remove the oil dipstick, wipe off the end with a clean cloth, reinsert it and then gently remove it. If the oil level is between the "Inspection MAX" and "MIN" marks, the oil is at the correct level. Also check to see if there are any oil leaks.

ADVICE

- Any oil level above the "Inspection MAX" mark on the oil dipstick may cause engine malfunctions. Change the oil whenever its level exceeds the "Inspection MAX" mark.
- Fuel will gradually become mixed with the engine oil, thinning it out. Be sure to change the oil at the specified intervals.



NOTE

- Perform all engine oil level checks on a level surface before starting the engine.
- The oil level cannot be checked correctly when the engine is running.
- Fuel will gradually become mixed with the engine oil, and the engine oil level will rise beyond the original level. This does not indicate an engine malfunction.
- Wait for at least 30 minutes after stopping the engine when measuring the oil level after the engine has been operated.

Adding the Engine Oil

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

WARNING

- When adding oil, be careful not to spill any, but keep a workshop rag handy just in case there are any spills. If any oil should spill onto the engine, carefully wipe it away. If this precaution is not taken, the spilled oil could ignite and a fire could spread.
- Do not leave flammable items, such as rags or gloves, in the engine compartment. They could cause a fire.
- The engine oil is hot after driving, so when changing the oil after driving, be careful not to be scalded.

ADVICE

- Engine oil lubricates and cools the engine's internal components. The quality of the oil is degraded and the quantity of oil is reduced by evaporation, discharge and combustion during the engine's operation. Continually using the same oil without checking the level, or without replenishing and changing it could cause seizure or damage to the engine. Add or change the oil when the quality of the oil has been degraded or the quantity is reduced, even if this occurs before expiration of the specified intervals in the Maintenance Schedule, which will differ depending on the conditions of use.
- Prevent dirt from entering the filler port when adding the oil. If foreign matter mixes with the oil, it could damage the engine.
- Adding oil above the "Inspection MAX" mark on the oil dipstick could result in faulty engine operation. Be sure to check the oil level by using the oil dipstick.
- Failure to use DPD compatible oil could result in engine or DPD breakdown, or in poor fuel efficiency. Be sure to use DPD compatible engine oil.

Changing the Engine Oil and Oil Filter

Engine oil and the oil filter are important factors in engine performance and lifespan. 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.

WARNING

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

ADVICE

- Failure to use DPD compatible oil could result in engine or DPD breakdown, or in poor fuel efficiency. Be sure to use DPD compatible engine oil.

ENGINE COOLANT

The engine cooling system is a device for keeping the engine temperature at an appropriate level.

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

WARNING

- Check, replenish or change the engine coolant only after the engine has sufficiently cooled down.
- Do not loosen or remove the cap of the radiator 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 or 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.

ADVICE

- Replace the engine coolant periodically.
If the engine coolant is not replaced periodically, rust is generated due to degradation of the engine coolant, which may cause a failure such as water leakage, clogging of the radiator or heater core, or damage to the urea SCR system.

NOTE

- Engine coolant is fluid which is made by mixing coolant and water at an appropriate concentration.

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 (Arteco/BASF, etc.), it is recommended to use directly "50/50 Pre-diluted" product which is already diluted to 50% concentration.

ADVICE

- Isuzu does not guarantee the use of the engine or vehicle at the outside temperature of -30°C or below.
- If the engine or vehicle is used at the outside temperature of -30°C or below, the coolant concentration of 55% is recommended.

WARNING

- 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.

CAUTION

- Use only an Isuzu recommended coolant.
- Using any coolant other than that Isuzu recommended could cause damage to the engine, radiator or heater core. In particular, use of coolants containing borate salts or silicates may result in engine, urea selective catalytic reduction (SCR) system, or radiator corrosion, causing engine coolant leaks and other problems.

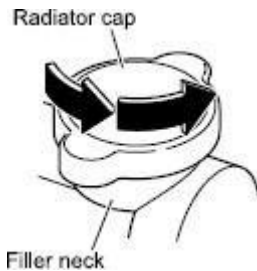
ADVICE

- To dilute the coolant, use distilled water or deionized water.
- Do not use the coolant at any coolant concentration other than that specified. If the coolant concentration is 60% or higher, overheating is likely to occur, while if it is 30% or lower, anti-corrosion function is not provided sufficiently.
- Using coolant at any coolant concentration other than that specified may reduce anti-freezing performance, and engine coolant may freeze.
- If the engine coolant decreases rapidly, go immediately to the nearest Isuzu Dealer for a check or repair.

Checking the Engine Coolant Level

The reserve tank is located behind the front-right wheel. When the engine has cooled down, make sure that the fluid level in the reserve tank is no lower than the "MIN" line.

In addition, carefully remove the radiator cap and check that the engine coolant is full to the filler neck. Check the engine coolant level only when it is cold.



Also, check to make sure there are no leaks from the radiator or radiator hose. Check for fluid or stains on the ground showing leaks where the vehicle is parked. Contact your Isuzu Dealer when you discover leaks.

CAUTION

- Using the vehicle when there are leaks can lead to engine seizure.

Adding the Engine Coolant

When the engine coolant level in the reserve tank is below the "MIN" line, open the tank cap and fill to near the "MAX" line with engine coolant. Tighten the cap securely after the engine coolant has been replenished.

WARNING

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

ADVICE

- Do not overfill the reserve tank.
- Check the reserve tank to determine engine coolant level. In situations, however, where the level in the reserve tank rises or falls suddenly, open the radiator cap and check the level within the radiator itself.
- When the engine is still hot, take care to prevent engine coolant from contact with the exhaust manifold. Any such contact could result in exhaust manifold damage.
- If the level of engine coolant changes rapidly, have your vehicle inspected at your Isuzu Dealer.

Changing the Engine Coolant

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

1. Confirm that the engine has fully cooled down before starting work.
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. Tighten the drain plugs on the radiator and the engine.
5. Remove the air bleed 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 bleed plug with a new one and tighten the air bleed plug.
6. 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.
7. Fill the reserve tank with engine coolant to the "MAX" line. Close the cap of the reserve tank.
8. Start the engine, let it idle for 5 minutes or more and then stop the engine.
9. 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.
10. After firmly closing the radiator cap, idle the engine until the needle of the coolant temperature gauge reaches the center and the thermostat opens.
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.
If the vehicle is equipped with a heater, turn the temperature control to the maximum setting and make sure that hot air comes out.
11. Let the engine idle for 5 minutes and then stop the engine.
12. 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.
13. Repeat steps 10 through 12 until the engine coolant level in the radiator filler opening stops declining.
14. Firmly close the radiator cap.
15. Replenish the engine coolant in the reserve tank up to the "MAX" line, and then close the reserve tank cap.
16. 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.

CAUTION

- Do not start the engine when engine coolant has been drained from the radiator. This could cause the engine to seize up.

ADVICE

- Tighten the radiator drain plug by hand. Tightening with pliers or some other tool could damage it.

AIR CLEANER

Use of clogged air cleaner element not only causes a deterioration in the engine output but also increased fuel consumption.

Change the air cleaner element in accordance with the Maintenance Schedule.

NOTE

- Your air cleaner service cover may be in a different position than shown.

Changing the Air Cleaner Element

The restriction indicator mounted on your filter system indicates when your filter element needs changing.



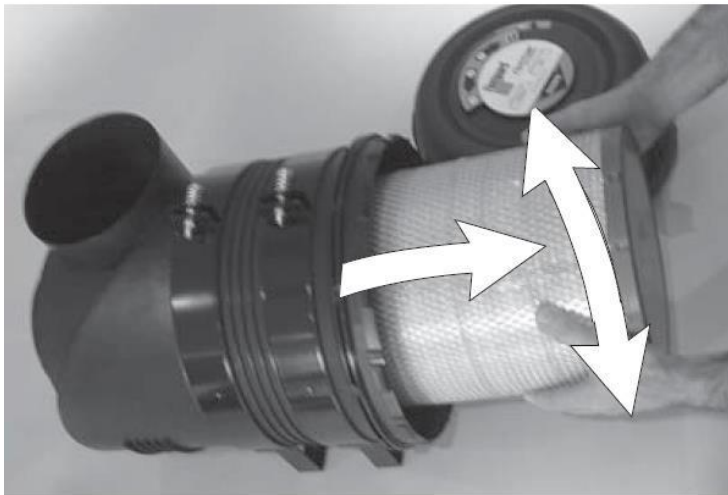
Lift the lever as indicated on the filter cover label.



Twist the filter cover to the left into the “open” position.



Remove the filter cover.



Twist the end of the filter to disengage seal. Gently remove the filter element¹ from the housing. Inspect the filter for foreign material on the sealing surface and potential marks of dust on the clean air side.



Thoroughly clean the sealing surface and the inside of the filter housing.



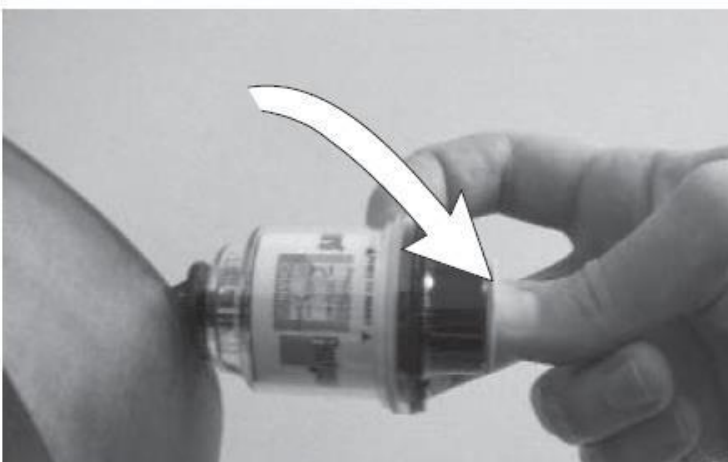
Inspect the new filter element for damage and insert into the housing.



Place the filter cover back on the housing. Make sure dust ejection valve is orientated downward.



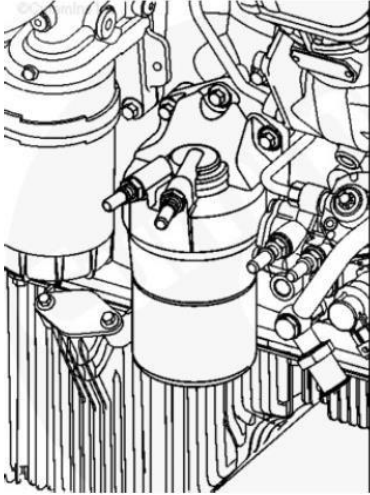
Twist the filter cover to the right into the "locked" position



Reset the restriction indicator.

FUEL FILTER

Change the fuel filter (both the chassis-side and engine-side fuel filters for vehicles with a pre-fuel filter) in accordance with the Maintenance Schedule. Drain the water when the water separator (fuel filter) warning light comes on.

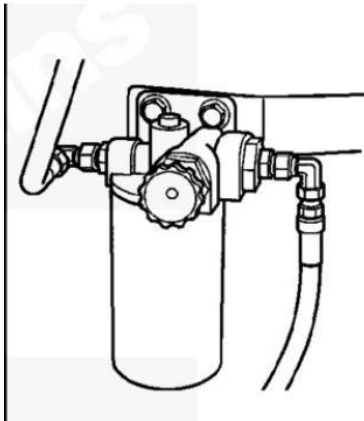


The engine uses a dual fuel filter system.

1. The pressure side fuel filter is used for filtration only and is pressurized by the gear pump mounted on the engine fuel pump.

NOTE

- Some applications utilize a chassis-mounted pressure-side filter.

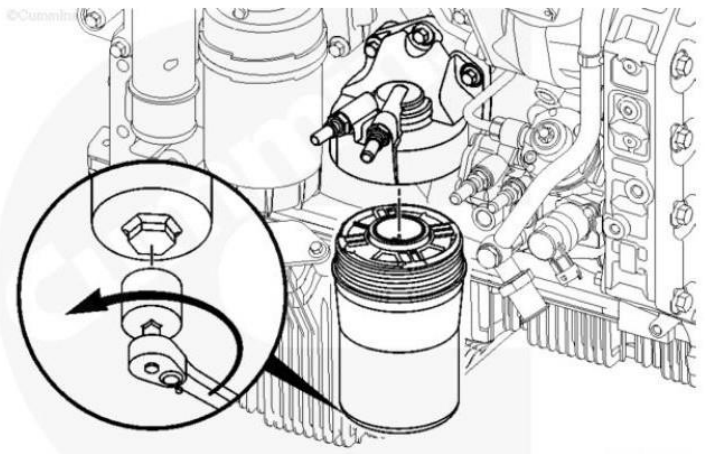


2. The suction-side fuel filter is a fuel/water separator and is located between the gear pump, mounted on the engine fuel pump, and the original equipment manufacturer (OEM) fuel supply tank. This filter is not pressurized, but operates under a vacuum. Some applications utilize an engine-mounted suction-side filter.

NOTE

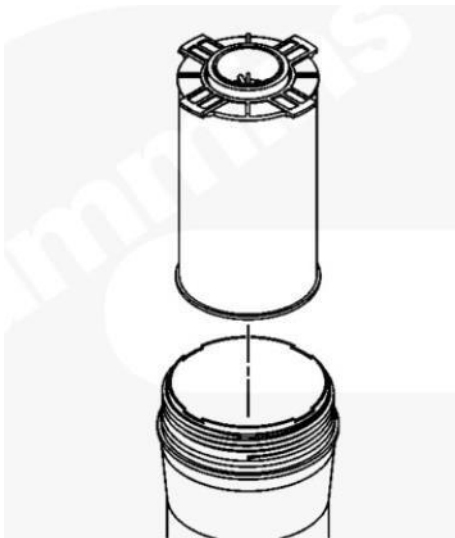
- The priming pump can be an OEM-supplied component and can be designed or installed differently. If a priming pump is not installed or is a different design, contact your ISUZU Dealer.

Remove



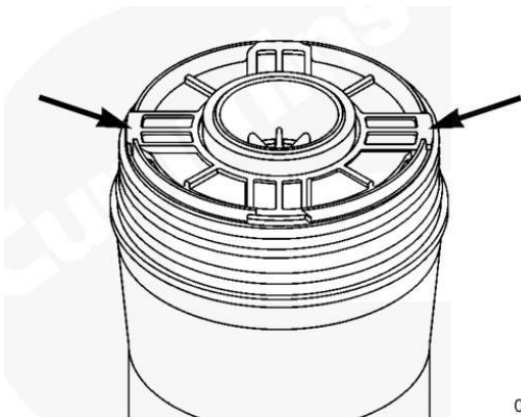
Remove the filter carefully.

Use a 32 mm hex drive on the bottom of the filter canister to remove the canister.



Remove and discard the filter element.

Remove and discard the o-ring seal on the filter canister.



06

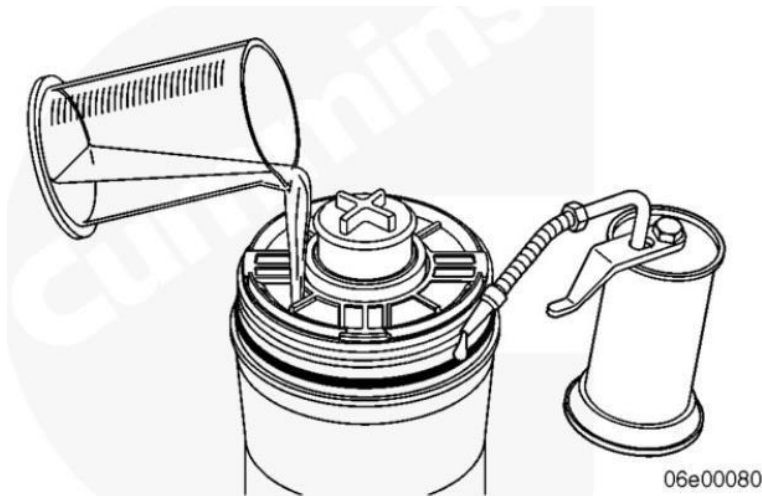
Install a new filter element.

Make sure the tabs of the filter element are properly seated in the canister.

Install

CAUTION

- Do not pre-fill the pressure-side fuel filter with fuel unless a clean side block-off plug is used. The system must be primed after the fuel filter is installed. Pre-filling the pressure-side fuel filter can result in debris entering the fuel system and damaging fuel system components.



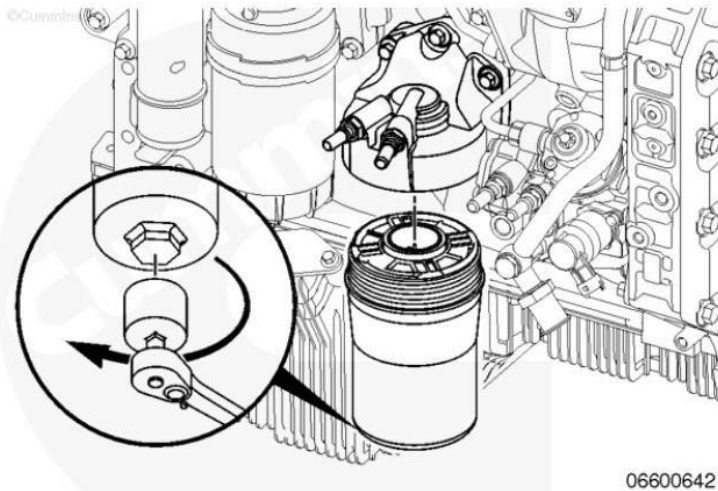
NOTE

- If available, pre-fill new filters, both pressure-side and suction-side, with clean fuel prior to assembly using the clean side block-off plug packed with the filter. Do not pour fuel directly into the center of the filter, since this will allow unfiltered fuel to enter the system. Unfiltered fuel can cause damage to fuel system components.

Use the correct fuel filter. Install the new fuel filter canister o-ring seal. Lubricate the fuel filter o-ring. Use clean lubricating oil.

CAUTION

- Mechanical overtightening can distort the threads as well as damage the filter element seal or filter can.



Install the filter on the filter head:

Pre-fill the filter with fuel.

Install to the point of first contact for the filter and head.

Tighten the canister. Use a 32 mm hex drive.

Finishing Steps

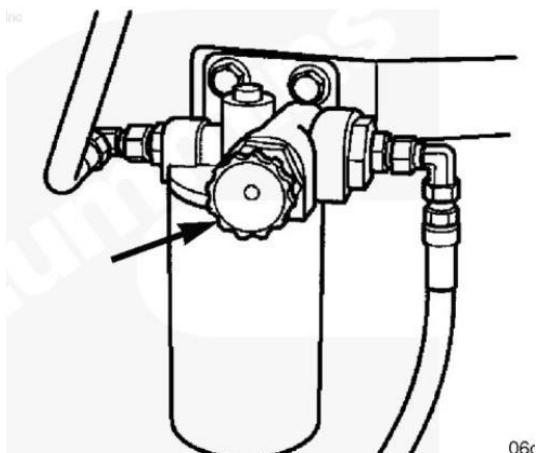
CAUTION

- Batteries can emit explosive gases. To reduce the possibility of personal injury, always ventilate the compartment before servicing the batteries. To reduce the possibility of arcing, remove the negative (-) battery cable first and attach the negative (-) battery cable last.

If required, connect the wiring harness to the water in fuel sensor.

Connect the batteries. See the equipment manufacturer service information.

Prime



WARNING

- The fuel pump, high-pressure fuel lines, and fuel rail contain very high-pressure fuel. To reduce the possibility of personal injury, never loosen any fittings while the engine is running.

CAUTION

- Do not engage the starter motor for more than 30 seconds at a time. Allow two minutes between cranking intervals.

NOTE

- If the starting motor is engaged for 30 or more seconds, without the engine starting, the starting motor will be locked out from operating, allowing for proper cooling of the starting motor.
- During this time, the WAIT TO START lamp, if equipped, will flash for 2 minutes. Once the lamp discontinues flashing, the starting motor will be allowed to function.

NOTE

- The priming pump can be an OEM-supplied component and can be designed or installed differently. If a priming pump is not installed or is a different design, contact your ISUZU Dealer.

NOTE

- To prevent damage to the hand pump priming seals, clean the fuel pump head and priming pump with electrical contact cleaner, Part Number 3824510, or equivalent, and compressed air prior to priming the fuel system.
- After a filter change or running the fuel tank dry, make sure there is fuel in the vehicle fuel tank.

NOTE

- It is not necessary to vent air from the high-pressure fuel system before starting the engine. Cranking the engine will prime the fuel system.

Unlock the manual priming pump handle by turning it counterclockwise. Pump the primer handle until resistance is felt and the handle can not be pumped anymore (approximately 140 to 150 strokes for dry filters, or 20 to 60 strokes for pre-filled filters).

Lock the manual priming pump handle.

Crank the engine. If the engine does not start after 30 seconds, turn the key to the OFF position.

Pump the priming pump again, repeating the previous steps until the engine starts.

When the engine does start, it can operate erratically and with increased noise levels for a few minutes. This is a normal condition as air is being removed from the system.

Water Separator (Fuel Filter) Warning Light



When a certain amount of water has collected in the water separator (the engine-side fuel filter), the water separator (fuel filter) warning light comes on. When this happens, drain the water and make sure that the warning light has gone out.

CAUTION

- Water remaining that is not discharged from the water separator could freeze and damage the vehicle.
- If the warning light comes on while the engine is in operation, immediately drain the water from the water separator (fuel filter). Continuing to drive with the light remaining on could damage the fuel injection system. If this happens, have the vehicle checked and serviced by the nearest Isuzu Dealer.

DIESEL PARTICULATE DEFUSER (DPD)

Checking and Cleaning the DPD

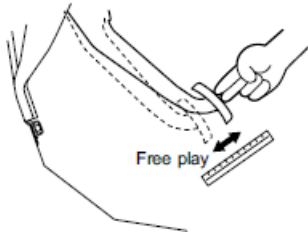
Have the exhaust pressure check performed at your Isuzu Dealer in accordance with the Maintenance Schedule. The filter may need cleaning depending on the results of the check. If you cannot do the exhaust pressure check, clean the filter and inspect the exhaust differential pressure sensor rubber.

CAUTION

- Failure to perform checks or cleaning of the DPD could result in a faulty DPD and engine damage, or poor fuel economy. Ask your Isuzu Dealer about checks and cleaning of the DPD.

CHASSIS-RELATED SERVICE AND MAINTENANCE

BRAKES



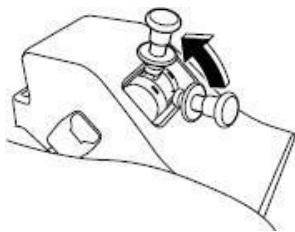
Shut off the engine and depress the brake pedal about 10 times strongly, then check the brake pedal for free play by lightly pushing it by hand until you feel resistance.

Run the vehicle slowly on a dry road and apply the brakes. Check that the brakes fully work and the vehicle does not pull on one side.

CAUTION

- A brake performance check should be performed on a wide road with good visibility while paying adequate attention to the traffic behind and the surroundings.

PARKING BRAKE



Pull the parking brake lever from the fully released position to the lever locked position to check that the air exhaust sound is heard and the lever stays in position. Also, on a dry sloping road, check that the parking brake can hold the vehicle stationary.

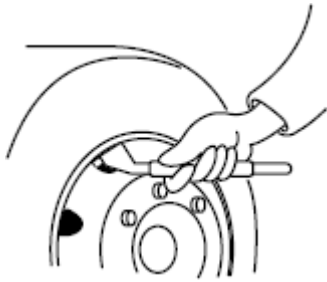
WHEELS AND TIRES

The wheels have a major influence upon the safety and comfort of driving. Should 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 tires daily and maintain them in satisfactory condition.

WARNING

- Do not drive the vehicle unless the tires are properly inflated and in safe condition.
- If you find anything abnormal with wheel bolts, wheel nuts or disc wheels when you check them, avoid driving the vehicle and contact the nearest Isuzu Dealer as soon as possible.
- If you find anything abnormal on the left wheels, check the right wheels carefully for similar defects. A defect on a wheel may be a sign of defects on other wheels.

Checking Tires



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

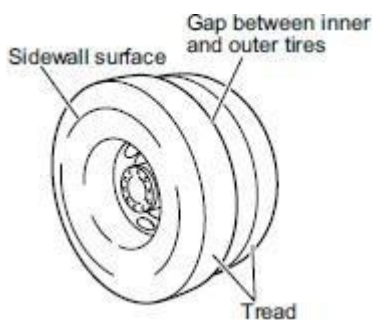
Use an appropriate tire air pressure gauge when measuring the air pressure of a tire. Tire air pressure should be measured when the tire is cold, or before the vehicle is driven.

WARNING

- Insufficiently inflated or worn-out tires are highly dangerous as they easily skid and can even burst. Should they burst, the tires may burn and this could cause a fire in the vehicle.
- If you drive on under-inflated or flat tires, 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.

ADVICE

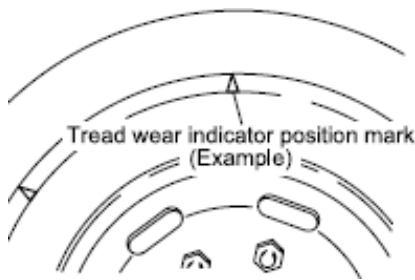
- There should not be a difference in air pressure between the inside and outside tires on a dual-tire wheel.
- It is not easy to visually identify an under-inflated dual-wheel tire or low aspect ratio tire (aspect ratio at 70% or 75%). Always use a tire air pressure gauge to check the air pressure of any tire.
- If your vehicle is equipped with aluminum wheels, use an extension attached to the inner tire valve together with a standard tire air pressure gauge or use a special air pressure gauge when checking the air pressure of a dual-wheel's inner tire. This facilitates checking.



Check the tread and sidewall surfaces of each tire for cracks or other damage. Especially check the tread for nails or other metal pieces embedded in grooves and also the gap between the inner and outer tires of a dual-tire wheel for pebbles lodged in it.

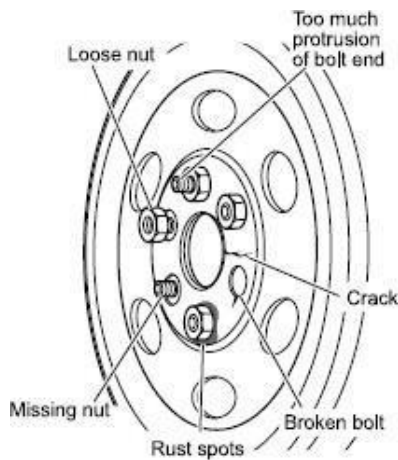
ADVICE

- When checking tires, pay attention to: low air pressure; pebbles or nails in tread grooves; cracks or other damage on tire surfaces; uneven wear; and pebbles lodged in the gap between tires of dual-wheel tires.



Using worn-out tires is dangerous because they might have an increased chance of getting punctured or bursting while driving. Check all tires to see if tread wear indicators appear on their treads and also check their entire tread for its depth with a depth gauge to make sure that the grooves are deeper than the specified depth.

A tire with tread wear indicators appearing must be changed. Also, check the tires for uneven or otherwise abnormal wear.



Visually check the condition of installation of each disc wheel.

1. Check that there are no missing wheel bolts and wheel nuts.
2. Check each disc wheel to see if there is any rust seepage from wheel bolts or nuts. Also check the disc wheel for cracks or other damage.
3. Check the end of each wheel bolt for proper length of protrusion from the wheel nut. The protrusion should be uniform among all bolts on a wheel and among all wheels.

TIRE ROTATION

Tires at different locations wear differently. For uniform tire wear and longer tire life, you should rotate the tires on your vehicle regularly.

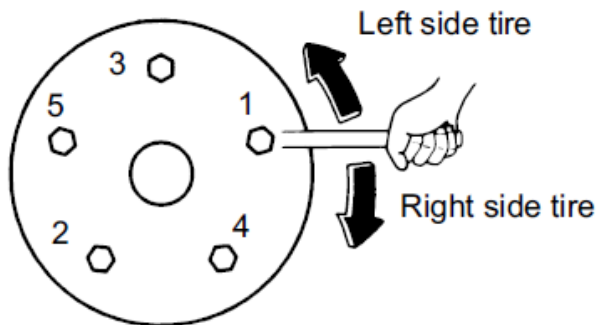
Make sure to use tires of the same type on the same axle. If you install tires of different types on the same axle, the vehicle may drift right or left when you apply the brakes. New tires are more likely to build up heat and wear faster than old tires, so they should be installed on the front axle where the load is smaller.

CAUTION

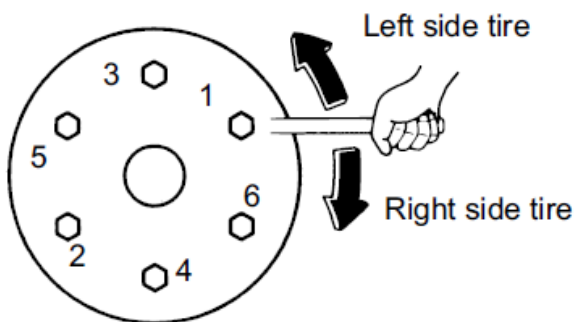
- Your vehicle may be equipped with special tires whose direction of rotation is specified. A tire of this type has a set of arrows on the sidewall. The larger arrow shows the direction of rotation for forward movement of the vehicle. When installing the wheel assembly consisting of a tire of this type and a disc wheel, install the assembly so that the larger arrow points in the direction of rotation when the vehicle moves forward. (If the tread depth is 5 mm (0.20 in) or less when measured, it is possible to install the assembly so that the smaller arrow points in the direction of rotation when the vehicle moves forward. The tread depth can be checked with a depth gauge in either of the two center grooves among the four.)

Wheel nut tightening sequence

Wheel with 5 nuts



Wheel with 6 nuts



Model or Specification	Front wheel nuts		Rear wheel nuts	
	Tightening torque	Quantity	Tightening torque	Quantity
Single tire	400 N·m	6	-	-
Dual tire	-	-	400 N·m	5 or 6

Advice

- After changing a tire, turn the steering wheel in both directions to make sure that the wheels do not interfere with the surrounding components. If you are unclear about any of this, please contact the nearest Isuzu Dealer.
- The tightening torque of the wheel nuts may decrease after tire replacement due to their initial settlement. Upon driving 50 to 100 km after a tire change, retighten the wheel nuts to the specified torque according to the instructions in the "Retightening Wheel Nuts" section in this chapter.

STEERING WHEEL

Checking the Steering Wheel



While the engine is idling, place the steering wheel in the straight forward position, then gently turn it to the left and right by hand, and check the play in the steering wheel as the peripheral distance to the point where the tires start moving.



Grasp the steering wheel with both hands, and move it in the axial direction and also up and down, and left and right to see if there is any looseness.

Also, drive the vehicle and check for abnormal shaking of the steering wheel, steering pull, sluggish steering, or inability to return to the straight forward position.

POWER STEERING FLUID

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

HUB BEARING GREASE

As disassembly and reassembly will be required in order to replace front and rear bearing grease, have these operations performed by your Isuzu Dealer.

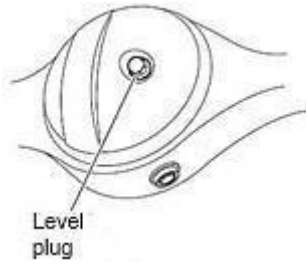
GREASING CHASSIS COMPONENTS

The type (characteristics) of the grease specified for use with a chassis component differs from that of the grease specified for use with another component. Be sure to use only the specified grease for each component and perform greasing according to the Maintenance Schedule.

REAR AXLE DIFFERENTIAL GEAR OIL

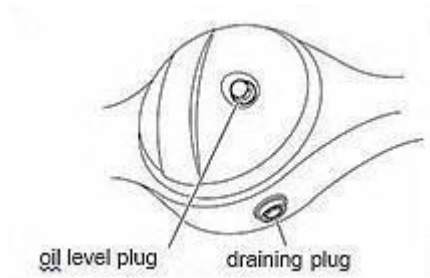
The rear axle differential gear oil level must be checked for its level and it must be changed according to the Maintenance Schedule.

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 (84Nm).

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).

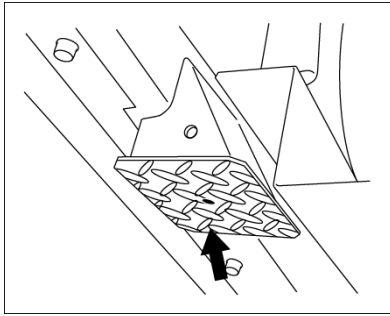
OTHER SERVICE AND MAINTENANCE

HANDLING THE JACK

WARNING

- Raising the vehicle with a jack could lead to an accident when carried out on soft or inclined surfaces. Ensure that you always carry out this operation on flat, solid surfaces.
- Always apply the parking brake fully and correctly chock the wheels before jacking the vehicle. Applying only the parking brake is insufficient to prevent the vehicle from moving; when a rear wheel is jacked up, the vehicle blocked only by the parking brake could move, creating a very dangerous situation.
- Ensure that there are no people or objects present in the vehicle before it is jacked up.
- In order to ensure safety, doors should never be opened and the engine should never be started during a jack-up operation. In addition, you should never have any part of your body below the vehicle at this time, nor allow anybody else to do so. Failure to observe this precaution could lead to an accident if the jack were to slip.
- If the underside of the vehicle is to be worked on after jacking up, jack stands must be used to support the vehicle.
- The jack must only be used at one of the specified jacking points. In addition, you must confirm that it makes good contact with the specified point.
- In order to provide extra safety should the jack slip, once a spare tire has been removed, it should be placed under the vehicle near the jack.
- Before starting a jacking operation, ensure that the jack and the jacking point to be used are clear of dirt, oil and grease. Failure to observe this precaution could lead to an accident should the dirt or oil cause the jack to slip.
- If your vehicle is equipped with a differential lock system or limited slip differential (LSD), it might start moving when the engine power is transmitted to the rear axle even when one of the wheels on the axle is raised clear of the ground. Do not start the engine with any rear wheel in contact with the ground.
- The jack provided with your vehicle must be used only for changing tires and fitting or removing tire chains. In order to ensure safety, furthermore, only one wheel should be jacked up at a time.
- If using a two-stage, extension type jack and the stop mark (yellow) becomes visible, stop raising the vehicle. Failure to observe this precaution can result in jack breakage.
- Do not use more than one jack at any one time.
- The jack supplied with your vehicle is specifically for that vehicle. Do not use it on another vehicle and never use another vehicle's jack.
- Turn the bleeder screw slowly. Turning it quickly will cause the vehicle to drop and the jack may slip off.

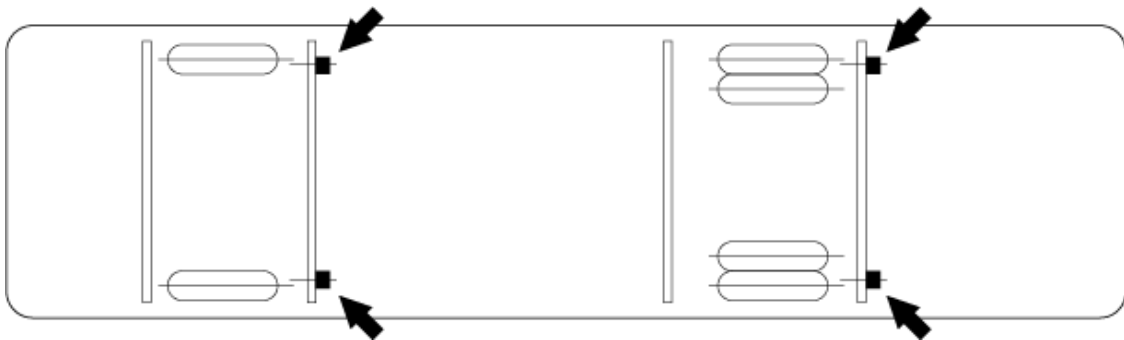
Jacking Points



Apply the jack to the jacking point of the bracket.

WARNING

- Do not jack up or lift up except at specified locations.
- Do not work on or leave the vehicle supported only by a jack.



WINDSHIELD WASHER FLUID

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.

Refilling Windshield Washer Fluid

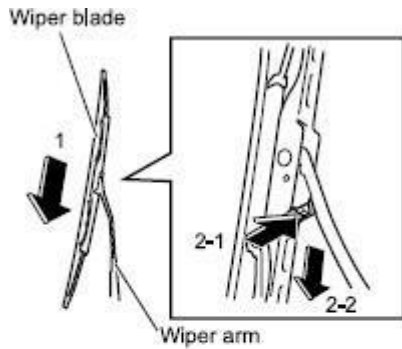
1. The windshield washer fluid tank is located under the instrument panel on the passenger side.
2. Open the cap and fill the tank with windshield washer fluid to the opening.

ADVICE

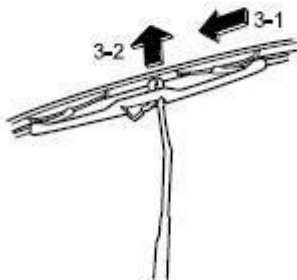
- Upon factory shipment, new vehicles contain only tap water in the washer fluid tank. Adjust the concentration of the fluid to suit your own usage.
- Follow the instructions provided with the windshield washer fluid regarding the ratio for mixing with tap water.
- Poor quality products, engine coolant, and soapy water must not be used. Failure to observe this precaution can result in nozzle blockage or damage to painted surfaces.
- The washer should never be used while the tank is empty. Operating the washer with the tank empty can result in motor damage.

WINDSHIELD WIPER BLADES

Windshield Wiper Blade Replacement



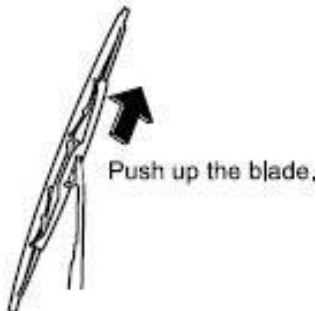
1. Pull the wiper arm up to the vertical position.
2. While pressing the wiper-blade hook towards the arm, slide the blade downwards (towards the base of the arm).



3. With the blade and arm almost perpendicular, remove the blade from the arm.

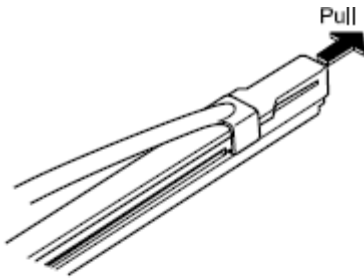


4. Insert the blade while holding it almost perpendicular to the arm.

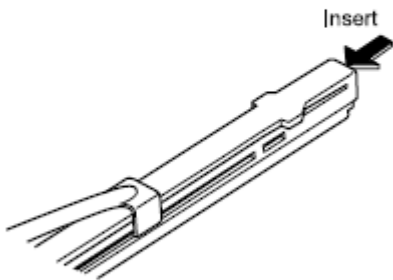


5. Then, with the blade and arm oriented in the same direction, push up the blade until it locks into place on the arm.

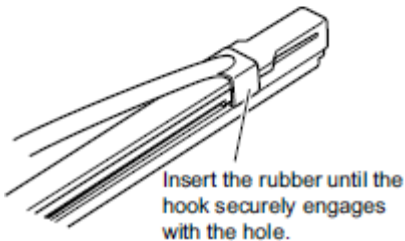
Replacement of Wiper Rubber Insert



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.



3. Insert a new wiper rubber insert into the wiper blade.



4. 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.
5. Attach the wiper blade to the wiper arm.

HEADLIGHTS AND TURN SIGNAL LIGHTS

Turn the starter switch to the "ON" position, and then check the way in which the headlights, turn signal lights, and other exterior lights come on and flash.

In addition, depress the brake pedal to confirm whether the stop lights come on, and shift the transmission to "R" position to confirm whether the back up lights come on.

Also examine the lights for discoloration, damage, and looseness.

HANDLING THE BATTERY

DANGER

- Usage or charging of the battery when the battery fluid is below the "LOWER LEVEL" line can accelerate deterioration and give rise to dangerous situations such as the generation of heat and even explosion.
- If battery fluid should come in contact with an eye, immediately wash away using a large amount of water and continue washing for at least 5 minutes. Following this, you should seek medical assistance.
- When using tools or other metal objects in the vicinity of the battery, take care to prevent them from coming into contact with the positive terminal. As the vehicle itself will conduct electricity, any such contact can result in a short-circuit and a highly dangerous electric shock.
- A vehicle battery generates extremely flammable hydrogen gas. For this reason, operations producing sparks or requiring the usage of an open flame must never be carried out near a vehicle battery. Failure to observe this precaution can result in explosion if the hydrogen gas ignites. Whenever wiping up battery fluid, a damp cloth should be used.

WARNING

- Always stop the engine whenever the battery is to be inspected.
- Dilute sulfuric acid is used as the battery fluid. Special care must be taken to ensure that this fluid does not come into contact with skin, clothing, or metal surfaces.
- When disconnecting cables, turn the starter switch to the "LOCK" position, wait at least 3 minutes (models with SCR) or 2 minutes (models without SCR), and then disconnect the cables starting with the negative cable from the terminals. If the negative cable is disconnected within 3 minutes (models with SCR) or 2 minutes (models without SCR), the engine control module may malfunction. When reconnecting them, the negative cable should be reconnected last.

REFRIGERANT

The air conditioning system will not be able to cool the cab interior effectively if the refrigerant level is low. Accordingly, the refrigerant level must be topped up whenever necessary.

Please contact your Isuzu Dealer whenever refrigerant must be added.

ADVICE

- Operating the air conditioning while the refrigerant level is too low leads not only to poor cooling performance but also to air conditioning system damage.

INTERIOR AND EXTERIOR MAINTENANCE

EXTERIOR MAINTENANCE

Washing

If the vehicle is operated with foreign material adhering to the exterior, this material may react chemically with paint or plating, resulting in staining, discoloration, rusting or corrosion of components. Also, the material may become trapped within mechanical components, adversely affecting their functions or forming an aerodynamic resistance. In the following cases, therefore, the vehicle must be washed and all foreign matter removed.

- When soot, iron powder, dead bugs, bird droppings, tree sap or oily matter from coal tar and smoke has adhered to painted surfaces.
- When the vehicle has been driven in coastal areas.
- When the vehicle has been driven on roads where road chemicals have been applied.
- When a large amount of mud or dirt has adhered to the exterior.
 1. Fully turn on the tap, and wash out the undercarriage and suspension.
 2. Close all openings and wash the cab and cargo body panels using a neutral detergent.
 3. Clean wheels and tires using a brush and detergent.
 4. After washing away all remaining detergent, use a shammy or other clean cloth to fully remove all moisture and water droplets.

CAUTION

- Do not apply water directly in order to clean the cab interior. Failure to observe this precaution can result in malfunction or breakdown of electronic control units and electrical components, or in rusting of the cab floor.
- Do not apply water from a high-pressure washer nozzle directly to the electric connectors. Failure to observe this precaution can lead to faulty operation of the electrical system.

ADVICE

- If an automatic car or truck-wash is used with vehicles having dark or metallic coating, the painted surfaces can be damaged by the brushes, lose their luster or be very noticeably scratched.
- Do not direct a large amount of water at the air inlet openings.
- Do not apply water to the engine compartment or at electrical components. Failure to observe this precaution can lead to a poorly starting and operating engine and problems in the electrical system.
- Ensure that mirrors and the antenna are retracted before washing the vehicle.
- If an automatic car or truck-wash must be used, avoid a high-temperature, high pressure type machine. Failure to observe this precaution can lead to heat deformation and breakage of plastic components, or to water leaks into the cab.
- When using an automatic car or truck-wash, ensure that a distance of at least 0.4 m is maintained between the nozzle and the vehicle, and when washing door windows, that the spray is perpendicular to the surface of the glass.
- Ensure that all detergent is fully washed and wiped away. Particularly in the case of strong alkaline detergents (typically those for industrial uses), there is a danger that hairline cracks can develop in lighting-cluster lenses if the vehicle is operated without detergent being fully wiped away. Always read the detergent manufacturer's instructions carefully before use.
- Airborne dirt that adheres to plastic front bumpers as a result of rain, for example, can be difficult to remove.

In such a case, use a commercially-available cleaner to clean away the dirt, and then apply a wax for use with plastic components.

Vehicle Storage

In order to maintain your vehicle's attractive appearance as long as possible, special consideration must be given to its storage location.

If the vehicle is stored or kept for an extended period of time in any of the following locations, a chemical change may occur in the paintwork, resulting in staining, discoloration, rusting, and corrosion of components.

- Locations where a large amount of oily matter, soot, heavy smoke or metal powder can adhere to the vehicle.
- Areas around pharmaceutical plants and other facilities that discharge chemical matter.
- Coastal areas
- Locations where a large amount of dead bugs, bird droppings or tree sap can adhere to the vehicle.

Waxing

Painted and chrome-plated surfaces should be waxed once or twice a month, or whenever water is being poorly repelled on the surfaces. Ensure that wax is not applied in direct sunlight, and that the temperature of the painted surface is no more than 40°C.

Always follow the instructions provided with your wax product.

CAUTION

- Wax must not be applied to the windshield. Failure to observe this precaution can result in irregular reflection of light, impairing your view.

ADVICE

- Do not use wax containing abrasive material. Failure to observe this precaution can lead to scratching of painted surfaces or plastic components.
- The application of wax to rubber component surfaces can result in permanent whitening.

NOTE

- Wax must not be applied to the windshield. A layer of wax can impair your view in rainy weather and can also lead to rough movements of the windshield wiper.
- If engine oil or grease comes into contact with the windshield, staining or discoloration may result. It must be immediately cleaned away.

Windshield Care



If not fully cleaned by the windshield wipers, the windshield should be cleaned using Isuzu genuine glass cleaner.

INTERIOR MAINTENANCE

Remove dust and dirt from the interior of the cab using an automotive cleaner or vacuum cleaner, and gently wipe surfaces clean using a cloth wet with warm or cold water.

WARNING

- Petroleum ether, gasoline and other organic solvents should not be used to clean seat belts. In addition, seat belt webbing should be neither bleached nor redyed. Failure to observe these precautions can lead to the performance or strength of the seat belts being impaired. In the case of a collision, therefore, the belts could be insufficiently effective, and serious life-threatening injuries could result. When cleaning, use warm water in which a small amount of neutral detergent has been dissolved to gently wipe the seat belts.

CAUTION

- The interior of the vehicle must never be cleaned using acidic or alkaline solvents, or petroleum ether, gasoline, and other organic solvents. Failure to observe this precaution can result in discoloration and staining. It should be noted that certain types of cleaning products contain these compounds. Be sure to read cleaning product labels carefully.
- Air fresheners (liquid, solid, gel or plate types) must not come into direct contact with, or spill onto, interior components such as the air conditioning or audio system. Compounds contained in these products can cause discoloration, staining or peeling of paint.
- Glass cleaners that contain these compounds must not be used to clean the inside of the windshield or window glass. To clean the glass, wipe using a cloth wet with warm or cold water.

Seat Belt Care

A dirty seat belt can develop retracting problems, and for this reason, regular inspection and upkeep are required.

CAUTION

- Seat belt webbing can lose its strength when bleached or redyed, or when cleaned using gasoline, paint thinners or other volatile substances.
- Do not disassemble the seat belt mechanism in order to remove any foreign material or objects that may have entered the buckle. Instead, arrange for inspection and maintenance to be carried out by your Isuzu Dealer.

Fabric Seat Covering and Carpet Care

Remove dirt and dust using a home-use electric vacuum cleaner.

Do not remove the carpet. Use standard household cleaning products and methods to remove stains from food, drink and the like.

Be sure to use neutral detergents or cleaning products indicated as higher alcohol based detergents.

DAILY CHECKS

Check your vehicle for the items listed below before starting the day's operation to ensure safe, trouble-free operation. Also, make note of the distance the vehicle has covered and the conditions under which the vehicle has been operated to be able to determine the inspection intervals most appropriate for your specific vehicle and adequately service it according to inspection results.

If the checks reveal an abnormality or if there are components that showed abnormalities during the previous operation, have the vehicle repaired by your Isuzu Dealer before using the vehicle.

DAILY CHECKS

Daily Inspections Check List:

1. Checking components that showed abnormalities during the previous operation
2. Fan belt looseness and damage
3. Engine oil level
4. Engine coolant level
5. Power steering fluid level
6. Brake fluid level
7. Brake pedal free play
8. Exhaust sound from brake valve
9. Increase in air pressure
10. Operation of meters, gauges and warning/indicator lights
11. Engine startability, abnormal noise and color of exhaust gases
12. Parking brake lever stroke
13. Windshield washer fluid spray condition and windshield wiper effectiveness
14. Windshield washer fluid level
15. Steering wheel free play and mounting condition
16. Operation of horn and turn signal lights
17. Fuel level
18. Illumination, flashing or damaged lights
19. Battery fluid level
20. Condensation in air tank
21. Leakage of oil, engine coolant, fuel, brake fluid, power steering fluid
22. Water collecting in the fuel filter
23. Air pressure
24. Cracks and other damage
25. Abnormal wear
26. Tread depth of tyres
27. Disc wheel mounting condition
28. Brake effectiveness
29. Checking the engine at low speeds and acceleration

MAINTENANCE DATA

For safe and economy driving, we recommend that you have your vehicle inspected and serviced regularly according to the schedule indicated in this chapter.

THE PERIODIC MAINTENANCE

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 road chemicals
- Check corrosion chassis and parts of body

CAUTION

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

MAINTENANCE SCHEDULE

To drive your vehicle safely and at minimum cost, it is essential to have your vehicle regularly inspected and serviced at your Isuzu Dealer as per the specified maintenance schedule.

Letters Used to Indicate Maintenance Service Types:

I : Inspect then clean, adjust, repair, or replace as necessary

A: Adjust

R: Replace

T: Tighten to the specified torque

L: Lubricate

ADVICE

- When inspecting the items listed below, also inspect the routine inspection items as well.

Service Interval (x1000 km)	30	60	90	120	150	180	210	240	270	Period Info
Diagnostic control of engine failures	I	I	I	I	I	I	I	I	I	
Engine oil	I	R	I	R	I	R	I	R	I	1500 hour / 12 month
Overhead Set / Valve gap setting *								A		5000 hours 48 months
Oil filter	I	R	I	R	I	R	I	R	I	1500 hour / 12 month
Fuel filter (Canister Type)	I	R	I	R	I	R	I	R	I	1500 hour / 12 month
Fuel water separator Filter	I	R	I	R	I	R	I	R	I	1500 hour / 12 month
Aftertreatment Diesel Exhaust Fluid Dosing Unit Filter	300.000km									
Aftertreatment Diesel Particulate Filter	450000km/12000 hour									
Air filter element	I	R	I	R	I	R	I	R	I	1500 hour / 12 month
Fuel pipes and hoses	I	I	I	I	I	I	I	I	I	
Charge Air Cooling system leak control	I	I	I	I	I	I	I	I	I	
Catalyst Housing	I	I	I	I	I	I	I	I	I	
Urea tank filter	I	R	I	R	I	R	I	R	I	
DEF system leak Control	I	I	I	I	I	I	I	I	I	
External cleaning of honeycomb radiators	I	I	I	I	I	I	I	I	I	
Supplemental Coolant Additive (SCA) and antifreeze Con.	I	I	I	I	I	I	I	I	I	
Radiator Pressure Cap and Hoses		I		I		I		I		
Drive Belt, Cooling Fan	I	R	I	R	I	R	I	R	I	1500 hour / 12 month
Belt tension, damage and belt alignments	I	I	I	I	I	I	I	I	I	
Pulley, Fan Hub, Tensioner	I	I	I	I	I	I	I	I	I	
Open Crankcase Ventilation Hoses	I	R	I	R	I	R	I	R	I	1500 hour
Air Compressor	I	I	I	I	I	I	I	I	I	
Air Compressor Discharge Lines	I	I	I	I	I	I	I	I	I	
Cooling System Fluid			R			R			R	2000 hour / 24 month
Turbocharger		I		I		I		I		

Service Interval (x1000 km)	30	60	90	120	150	180	210	240	270	Period Info
Vibration Damper Rubber & Viscous		I		I		I		I		
Transmission Filter – Automatic Trans. w/ retarder				R				R		3000 hours 36 months
Transmission Oil – Automatic Trans. w/ retarder								R		6000 hours 48 months
Transmission Oil – Manual Trans. *	Initial drain: 360.000km/3 year; Following drains 120000km/1 year									
Transmission oil leak control	I	I	I	I	I	I	I	I	I	
Transmission bolts torque control		I		I		I		I		
Transmission Ventilation valve Cleaning		R		R		R		R		
Front axle pins and bushings	L	L	L	L	L	L	L	L	L	
Auto greasing oil fill	L	L	L	L	L	L	L	L	L	
Differential oil *	150.000km / 1 year									
Front Hub	L	L	L	L	L	L	L	L	L	
Rear Hub	I	I	I	I	I	I	I	I	I	
Rear axle and brake calipers connection bolts	I	I	I	I	I	I	I	I	I	
Rear Axle anti- corrosion protection	I	I	I	I	I	I	I	I	I	
Rear Axle cracks	I	I	I	I	I	I	I	I	I	
Hydraulic steering oil	I	I	I	R	I	I	I	R	I	2000 hour / 24 month
Hyd. Str. Sys. leakage	I	I	I	I	I	I	I	I	I	
Hyd. Str. Sys. connections	I	I	I	I	I	I	I	I	I	
Hydraulic steering hose	I	I	I	I	I	I	I	I	I	
Tire bolts	I	I	I	I	I	I	I	I	I	
Wheel air pressure	I	I	I	I	I	I	I	I	I	
Wheel hub bearing	L: 500.000 km or every 48 months									
Draining of condensation tank	I	I	I	I	I	I	I	I	I	
Brake pipes and hoses leakage	I	I	I	I	I	I	I	I	I	
Brake pads and disc control	I	I	I	I	I	I	I	I	I	
Caliper adjusting bolt	I	I	I	I	I	I	I	I	I	
Measuring caliper gap	I	I	I	I	I	I	I	I	I	
Caliper piston blowers	I	I	I	I	I	I	I	I	I	
Measuring caliper control movement	I	I	I	I	I	I	I	I	I	
Overheating of rims	I	I	I	I	I	I	I	I	I	
Looseness in shock absorbers and connectors	I	I	I	I	I	I	I	I	I	

Service Interval (x1000 km)	30	60	90	120	150	180	210	240	270	Period Info
ECAS settings	I	I	I	I	I	I	I	I	I	
Air bellows	I	I	I	I	I	I	I	I	I	
Function control of headlights, signals, parking lights, fog lights and brake lights	I	I	I	I	I	I	I	I	I	
Internal illumination Control	I	I	I	I	I	I	I	I	I	
Function control of wipers and window washing system	I	I	I	I	I	I	I	I	I	
General control of fuse panel, electric cables and sockets	I	I	I	I	I	I	I	I	I	
Gas, brake and clutch Pedal	I	I	I	I	I	I	I	I	I	
Battery cables and Connections	I	I	I	I	I	I	I	I	I	
Battery electrolyte Density	I	I	I	I	I	I	I	I	I	
Starter electric Connections	I	I	I	I	I	I	I	I	I	
Alternator electric Connections	I	I	I	I	I	I	I	I	I	
Pneumatic door Adjustment	I	I	I	I	I	I	I	I	I	
Function control of the safety gear of all doors	I	I	I	I	I	I	I	I	I	
Air leakage, damage, tightness and door function control of door elements	I	I	I	I	I	I	I	I	I	
Compressor Pressure Line	I	I	I	I	I	I	I	I	I	
Control of rearview Connectors	I	I	I	I	I	I	I	I	I	
Corrosion control of chassis and parts of Body	I	I	I	I	I	I	I	I	I	
Replacement of additional heater fuel Filter	I	R	I	R	I	R	I	R	I	
Underbody wax checking and repairing	I: weekly									
Washing the entire bus, making sure to remove all road chemicals	I: weekly									

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Check bus accident and original parts situation.	I: daily									
Air condition compressor oil	I: every 5000 hours or every 36 months									
Air condition gas and oil	I: every 4000 hours or every 24 months									
Fire extinguishing tank, module	Visual Inspection in every 6 months									
Air dryer filter	R	R	R	R	R	R	R	R	R	12
Real time clock battery - Engine	R: every 24 months									
Visual inspection of fire extinguishing system parts	I	I	I	I	I	I	I	I	I	or every 6 months
Firecom fire extinguishing system Aerosol replacement	R: every 15 year									

NOTE

- Overhead Set / Valve gap setting initial valve lash adjustment to nominal specification to be performed at this interval (240.000km – 5000 hours – 48 months) and subsequent valve lash checks to be performed at every 60.000km or 2000 hours thereafter
- Manual transmission initial oil change interval (360.000km – 36 months) and subsequent interval every 120.000km or 12 months thereafter (Use oil, listed inside ZF TE-ML02 02E)
- Information under the heading of the engine is given for an average speed above 25 km/h.
- Maintenance table is prepared for 270.000 km. Maintenances after 270.000 km should be done b at the same periodic intervals.
- Suspension bushings (stabilizer and other) should be replaced if 30.000 km wear control is required.
- ISA MAP must be updated offline every year. Updating is required every year / for 7 years after the sale.

IN CASE OF EMERGENCY**TROUBLESHOOTING**

Performing regular inspections and maintenance prevents damage. Be sure to perform inspections and maintenance at regular intervals. Also, quickly rectify any fault in the vehicle (even a small fault) to prevent it from becoming more serious.

If a symptom shown in the following table occurs, perform inspections and take corrective action in accordance with the table. If you are unable to perform a repair, the corrective action shown in the table does not eliminate a symptom or you cannot locate a fault, contact the nearest Isuzu Dealer.

WHEN THE VEHICLE BREAKS DOWN DURING DRIVING

1. Operate the hazard warning flasher and pull the vehicle immediately over to a safe place that does not impede traffic (shoulder, verge). Place the triangle reflectors to alert other traffic to the presence of your vehicle.
2. Have the other passengers get out and wait in a safe place.
3. Walk to a safe place and take appropriate measures by using the closest telephone, etc.

WARNING

- Leaking fuel from the vehicle is dangerous due to possible combustion or explosion. Stop the engine immediately.

WHEN THE TIRE GOES FLAT

When the tire gets flat while driving, avoid hard braking, hold on to the steering wheel firmly and stop the vehicle.

The tire should be changed on a flat space to prevent obstructing other vehicles or pedestrians.

WARNING

- If you continue to drive on a flat tire, undue force will be applied to the wheel bolts, possibly causing the bolts to break and the wheel to come off.

WHEN THE ENGINE STOPS WHILE DRIVING

For full-air brake models, the brake air pressure will not rise, so immediately stop the vehicle at a safe place. Do not panic. Press the brake pedal to reduce speed, head immediately for a safe place, stop the vehicle and perform an inspection. If the engine cannot be started, promptly have the vehicle inspected and repaired by the nearest Isuzu Dealer.

If the engine stopped because the vehicle ran out of fuel while driving, refueling alone will not be enough to restart the engine. Bleed the fuel system after refueling the vehicle.

WHEN THE ENGINE STALLS AND CANNOT BE RESTARTED

Place the gearshift lever in the "N" position, and if the shift indicator shows "N", push the vehicle to a safe place. If the shift indicator displays a shift position other than "N", place the emergency switch to "ON" and the gearshift lever into the "N" position. Then, make sure that the shift indicator displays "N" and push the vehicle to a safe place.

NOTE

- For vehicles with hill start aid (HSA), cancel the HSA by pressing the HSA OFF switch.
- For vehicles with Hill Hold Assist, cancel the Hill Hold Assist by pressing the Hill Hold Assist OFF switch.

WHEN THE BRAKES DO NOT WORK

If the brakes become ineffective unexpectedly, reduce speed by quickly shifting down. Gradually pull the parking brake lever while firmly holding on to the steering wheel. Stop the vehicle on the side of the road.

CAUTION

- It is very dangerous to suddenly pull the parking brake lever all the way while moving at high speed. Reduce speed first by shifting down and then gradually pull the parking brake lever.

NOTE

- In worst case conditions on a mountain road or similar situations, stop the vehicle by scraping along a guardrail or cliff, or drop the front and rear wheels of one side into a ditch at the side of the road.

WHEN THE BATTERY GOES FLAT

Use a jumper cable (sold separately) and the batteries of another vehicle to start the engine in this sequence.

1. Check the battery fluid level in the disabled vehicle.
2. Use a vehicle that has a charged battery with the same voltage.
3. Remove the battery cover and connect the jumper cables in the numbered sequence in the drawing.
4. After connecting the cables, start the engine of the vehicle with the booster battery.
5. Slightly rev up the engine of the vehicle with the booster battery and start the engine of the disabled vehicle.
6. If the engine in the disabled vehicle starts, remove the jumper cables in the reverse sequence as they were connected.

CAUTION

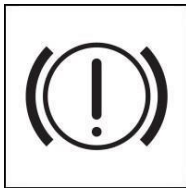
- For safety and the protection of the vehicle, do not push-start the vehicle.
- Make sure that the booster batteries in the vehicle providing the charge have the same voltage as the disabled vehicle.
- Under no circumstances should the battery's positive and negative terminals be put in contact with one another.
- When connecting the cables, under no circumstances should the clips be allowed to touch each other.
- Ask the nearest Isuzu Dealer to recharge the battery.
- Do not disconnect a battery terminal with the engine running. It could cause a breakdown in the electrical system.

WHEN THE FUEL RUNS OUT

When the fuel runs out, air will enter the fuel system, so refueling alone will not be enough to restart the engine. Ask the nearest Isuzu Dealer to bleed the fuel system.

WARNING

- Wipe off any fuel that adheres to the vehicle body or the engine compartment below the cab. This could cause a fire.

WHEN THE WARNING LIGHT COMES ON**BRAKE SYSTEM WARNING LIGHT**

The brake system warning light comes on while the engine is running (after startup) in the following situations:

- Drop in the level of brake fluid (due to brake lining wear or fluid leakage, etc.)
- Abnormality in the charging system (such as a generator malfunction, etc.)
- On an anti-lock brake system (ABS) model, abnormality in the ABS.

CAUTION

- If this warning light comes on while the engine is running, immediately stop the vehicle in a safe place well clear of traffic and promptly contact the nearest Isuzu Dealer for inspection.

AIR PRESSURE WARNING LIGHT



When this warning light comes on, there is insufficient air pressure in the air tank and the brakes will not work properly. A warning buzzer will sound at this time.

Immediately stop the vehicle in a safe place, perform checks and take corrective action. The warning buzzer will stop when the parking brake lever is pulled.

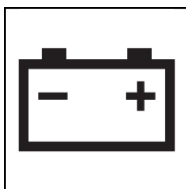
Check and Corrective Action

- Run the engine at idle and raise the air pressure until the warning light goes out.
- When the warning light does not go out or when it takes longer than the specified time for the light to go out after an air pressure of 0 kPa (0 kgf/cm²/0 psi) is reached, repair is required.
Contact the nearest Isuzu Dealer.

WARNING

- Do not drive the vehicle when the warning light is on. Brakes are not fully functional, so the vehicle is in a dangerous condition to operate.

GENERATOR WARNING LIGHT



When this warning light comes on, the charging system may have failed.

Immediately stop the vehicle in a safe place, perform checks and take corrective action.

Check and Corrective Action

1. Check to see if the fan belt is broken or loose.
2. If the fan belt is loose, adjust the tension.
3. If there is no abnormality in the fan belt, contact the nearest Isuzu Dealer.

CAUTION

- Do not drive the vehicle when the warning light is on. The battery can be discharged.

NOTE

- Since disassembling is required to replace the fan belt, have it performed by the nearest Isuzu Dealer.

ENGINE OIL PRESSURE WARNING LIGHT



When this warning light comes on, the oil pressure is too low.

Immediately stop the vehicle in a safe place, stop the engine, perform checks and then take corrective action.

Check and Corrective Action

1. Check the engine oil level.
2. If the engine oil level is too low, check for leaks and add oil.
3. When the oil level is normal and there are no oil leaks, the oil filter may be clogged.
Replace the oil filter.
4. When the oil level is normal and the oil filter is not clogged, but there are oil leaks, contact the nearest Isuzu Dealer.

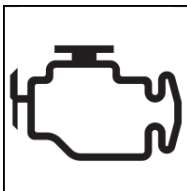
CAUTION

- Do not drive the vehicle when the warning light is on. It could damage the engine.

NOTE

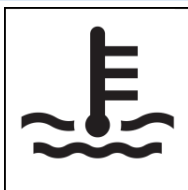
- In winter, when the engine oil temperature is low and the oil viscosity is high, the light might come on for a time. It will go out when the engine warms up.

CHECK ENGINE WARNING LIGHT



If this warning light comes on while the engine is running, there may be a problem with the engine electronic control system. Since checking and repairing the control system is required, immediately contact the nearest Isuzu Dealer.

WHEN THE ENGINE OVERHEATS



If engine power drops and the needle on the engine coolant temperature gauge goes up above the upper limit of the safety zone and enters the "H" zone, the engine is overheating. The engine overheat warning light will come on and the warning buzzer will sound. Either steam or boiling water will squirt out of the radiator. Take the following corrective actions immediately.

1. Operate the hazard warning flasher and pull the vehicle immediately over to a safe place that does not impede traffic (shoulder, verge) and park it.
2. Lower the temperature of the engine for a while with the engine idling.
3. When the needle of the engine coolant temperature gauge returns to the middle of the safety zone, stop the engine.
4. Check the engine coolant level in the reserve tank and radiator after the engine has sufficiently cooled. If the level is insufficient, add engine coolant. Also, check to see if the fan belt is loose or has been damaged.
5. Inspect to see if there is any dirt, etc. attached to the front surface of the radiator and intercooler. Also, inspect to see if there is anything blocking the core. If there is anything attached, clean and remove it.

WHEN THE BULB DOES NOT COME ON

1. Check each bulb for blowout.
2. If a bulb has blown out, replace it. Always place the starter switch in the "LOCK" position and place all the other switches in the off position before replacing the blown bulbs.
3. If the bulb has not blown out, the fault may be in the wiring. Contact the nearest Isuzu Dealer.

CAUTION

- Using bulbs with a wattage other than that specified could cause the bulb or the wiring to become hot. This could result in the warping of the lens and case, and it could also lead to the outbreak of fire.
- Bulbs are hot immediately after they go out. When replacing the bulbs, avoid being burned by making sure they are fully cooled.
- Never drive the vehicle with the bulbs not working. This could result in an accident.

WHEN YOUR VEHICLE IS INVOLVED IN AN ACCIDENT

Stay calm and take the following steps:

1. Avoid a chain of accidents
Operate the hazard warning flasher, pull the vehicle immediately over to a safe place that does not impede traffic (shoulder, verge) and stop the engine.
2. Aid the injured
Render whatever first aid is possible to injured people until a doctor or ambulance arrives. In particular, do not move people with head injuries. If there is a danger of a series of accidents, move them to a safe place.
3. Contact the police
Contact the police, give them the information on the location of the accident, the conditions, injured people and the extent of their injuries, and then receive instructions.
4. Confirm information from other parties (name, address and telephone number) and the conditions of the accident.
5. If necessary, contact the insurance company or the dealer you purchased the vehicle from.

ADVICE

- Make sure to notify the police and consult a doctor even for small accidents and light injuries. When receiving a blow to the head in particular, it is possible for symptoms to develop later even if there are no external wounds.

WHEN DRIVING ON BAD ROADS

Pressing the accelerator pedal will dig the vehicle deeper into the mud and make it harder to extricate. Either put stones, tree branches or blankets under the tires to gain traction, or repeatedly drive forward and in reverse and use the vehicle's momentum to extricate it.

WHEN TOWING

To move a disabled vehicle, it is best to rely on someone in the wrecker or tow truck business. If that is not possible, follow these procedures.

When towing, use appropriate equipment and comply with local legal requirements. Do not try to start the engine by towing or pushing the vehicle.

WARNING

- Be sure to chock the wheels when disconnecting the propeller shaft. The vehicle could start to move and cause a serious accident.

When it is possible to operate the steering wheel, the vehicle can be towed with all wheels on the ground. However, the power steering will not be able to provide any power assist when the engine cannot be started.

If the engine of a full-air brake vehicle cannot be started, the air pressure will be low and the brakes will not work. If the engine cannot be started, use a tow truck to move the disabled vehicle. If the transmission is damaged, disconnect the propeller shaft at the rear axle flange and secure it to the frame.

If the rear axle fails or rear axle failure is suspected, remove the axle shaft and plug up the opening of the hub to prevent differential gear oil from leaking, or to prevent dirt or foreign objects from entering the axle.

MAIN DATA

MAIN DATA AND SPECIFICATIONS

Dimension (mm)	
Max. Length	8516
Max. Width	2350
Max. Height	3368
Wheelbase	4475
Front Overhang	1669
Rear Overhang	2372
Front Track Width	1912
Rear Track Width	1697
Interior Height	1930
Mass (kg)	
Gross Vehicle Mass	11480
Curb Weight	7500
Front Axle Capacity	4500
Rear Axle Capacity	7000
Engine	
Model	Cummins ISB4.5 E6
Type	Commonrail Turbo Diesel Intercooler
Number of Cylinders	4
Engine Volume (cm ³)	4500
Max. Power (kW/rpm)	157 (213) / 2300
Max. Torque (Nm/rpm)	850 / 1200-1500
Exhaust Emission Class	Euro VI
Gearbox	
Model	
Number of Gears, Type	6+1
Final Gear Ratio	4,1
Steering System	Hydraulic
Tyres	245/70 R17,5
Suspension	
Front	Parabolic Steel Alloy Leaf Springs
Rear	Air Suspension
Brake System	
Front / Rear	Disc / Disc
Brief Explanation	Full Air Brake System with EBS and ASR, Dual Circuit, Auto-adjusted water separator (Opt.)
Parking Brake	Air driven-effective on the rear axle
Auxiliary Brake	Vacuum assisted exhaust brake (S), Hand brake applied to rear wheels(S), Retarder AT(S)
Fuel Tank (Lt)	190
Diesel Exhaust Fluid Tank (Lt)	30
Generator	24V - 180A
Nominal Voltage	24V
Battery	2 x 12V 150 Ah

FLUID SPECIFICATIONS

Description	Capacity	Norm	Class
Engine Oil	16 Lt	SAE15W 40	CES-20086, API CK-4 or CES-20081, ACEA E-9
Transmission Oil – Manual transmission	9 Lt	ZF TE-ML02 02E	
Transmission Oil – Automatic transmission with retarder	22 Lt	Allison	TES 295, TES 468
Differential Oil and Rear Axle	7 Lt	Castrol 80W 140 or 85W 140	API GL5
Front Hub	Grease until the grease comes out between knuckle and axle beam (2).	Castrol Optimol Long Time PD2	NLGI
Rear Hub	2x500 G	Shell Gadus S1 V160-2 or Shell Gadus S3 V220C-2	NLGI 2
Presuspension Greasing	0,3 Kg		NLGI-2
Steering Wheel Hydraulic Oil	3 Lt		ATF III
Clutch Hydraulic	1 Lt		DOT4
Air Condition Compressor Oil	0.6 Lt		P. ESTER OIL (MOBIL-ARCTIC-32 OR EQV.)
Antifreeze and Water - Manual transmission	25 Lt	ASTMD6210	Cummins Fleet Guard Complete
Antifreeze and Water - Automatic transmission	30 Lt	ASTMD6210	Cummins Fleet Guard Complete
Air Condition Gas	4150 G (± 50 G)	R134a	

PRESSURE VALUES

Name	Description	Pressure
Four Way Protector Valve	Static Closing Pressure	≥ 5,5 Bars
Air Dryer	Minimum Opening Pressure	7,1 Bars
Air Dryer	Maximum Closing Pressure	9,1 Bars
Wheels	Cold Mixed Inflation Pressure	8,25 Bars / 120 Psi

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

SEPTEMBER 2023